

LINEAR MOTION SYSTEMS







Simplicity® Self-lubricated Bearings, Guides, Systems & Slides










800.962.8979 www.pacific-bearing.com

SMOOTH & QUIET LINEAR MOTION™





SIMPLICITY® SELF-LUBRICATING BEARINGS - INCH SERIES

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SIMPLICITY® SELF-LUBRICATING BEARINGS - ISO METRIC

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SIMPLICITY® SELF-LUBRICATING BEARINGS - TECHNICAL INFORMATION

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SIMPLICITY® LINEAR SHAFTING - ISO METRIC


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SIMPLICITY® BALL BEARINGS - INCH SERIES

| | |
|--|--|
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|  IP-W Series 72-73 Double Wide Linear Ball Bearings |  IPFC Series 82-83 Round Flange Center Mount |
|  IPF Series 74-75 Round Flange Mount |  IPKC Series 84-85 Square Flange Center Mount |
|  IPF-W Series 76-77 Round Flange Mount Double Wide |  IPP & IPPN 86 Closed & Open Pillow Blocks |
|  IPK Series 78-79 Square Flange Mount |  IPPW & IPPWN 87 Closed & Open Twin Pillow Blocks |

SIMPLICITY® BALL BEARINGS - ISO METRIC

| | |
|---|--|
|  EP Series 88-89 Linear Ball Bearings |  EPK-W Series 98-99 Square Flange Mount Double Wide |
|  EP-W Series 90-91 Double Wide Linear Ball Bearings |  EPFC Series 100-101 Round Flange Center Mount |
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|  EPK Series 96-97 Square Flange Mount |  KHP 105 Compact Thin Wall Bearings |

SIMPLICITY® BALL BEARINGS - JIS METRIC









| | |
|--|--|
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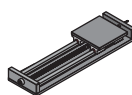
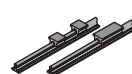
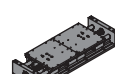
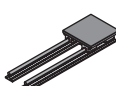
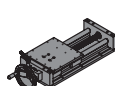
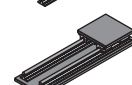

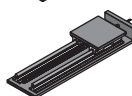
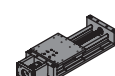
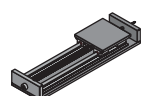
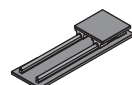
SIMPLICITY® PLANE BEARINGS - INCH SERIES

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SIMPLICITY® PLANE BEARINGS - ISO METRIC






| | | |
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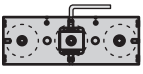




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Simplicity® Self-lubricating Bearings

Ordering Information

Linear Motion Systems

SERIES

FL - Standard Inch Series
 FM - ISO Metric Series
 FMT - Compact ISO Metric Thin Wall Series
 FG - "FAG"™ Thin Wall Interchange
 FJ - JIS Standard Series
 PS - Inch Series Sleeve Bearings
 PSF - Inch Series Flange Bearings
 PSM - ISO Metric Series Sleeve Bearings
 PSFM - ISO Metric Series Flange Bearings

O.D. Features

NOTE: Available ONLY on the "FL, FM, FJ" series
No Entry - Standard Straight O.D. bearing
A - Crowned "self-aligning" O.D. bearing (closed only)

I.D. Features

NOTE: Does NOT apply to "PS, PSF, PSM, PSFM"
No Entry - Standard Precision running clearance on the I.D.
C - Compensated running clearance on the I.D.

Closed or Open Style

No Entry - Standard Closed bearing
N - Open series bearing (not available in "FLA")
NOTE: Available ONLY on the "FL, FM, FJ" series

Bearing Shell Material

NOTE: Available ONLY on "FL, FM, FMT, FG, FJ" series
No Entry - Standard Aluminum Alloy
***S** - 316 Stainless Steel (**NOTE:** No finish plating or anodize available)

Nominal Shaft Diameter

NOTE: English units in 16ths of an inch
 Metric units in mm

FL A C N S 16 - D E JKM Q

Seal Options

NOTE: Available only with "FL, FM, FJ" series.
D - Double seals of Standard Polymod material
DU - Double seals of moly impregnated urethane material
DV - Double seals of viton - high temperature material
NOTE: Available size FL08-FL32 and FM20-FM80

Bearing Liner Material

No Entry - Standard FrelonGOLD® liner for hardened steel shafting and Feather Shafting®
***E** - Special FrelonJ® liner for soft shafting (aluminum, 300 series stainless steel, etc.)
***Limited availability may require special quote**

Internal Lubrication

NOTE: Available with "FL, FM and FJ" series only.
No Entry - Standard bearing - NO lube system
JKM - Thru hole, and internal felt wick to help lubrication retention and flow. (**NOTE:** Zerk fitting added to O.D. of PAC & PACM)
NOTE: Available for size "FM12 - FM80" only.

Special Modifications

NOTE: Consult Factory
No Entry - Standard Options
Q - Shipped Oil Free (Consult Factory)

CAUTION: The catalog is designed to represent all possibilities, however may not all be standard parts.

*These are options only - combination could lead to unavailable options.

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Simplicity® Self-lubricating Bearings

Ordering Information

Linear Motion Systems

SERIES

NOTE: Standard Simplicity bearings are installed in housings

P - Standard Inch Series Pillow Blocks (FL)
PW - Inch Series Twin Pillow Blocks (FL)
PM - ISO Metric Pillow Blocks (FM)
SDS - Single Steel Flange Mount Die Set Series (FL)
DDS - Double Steel Flange Mount Die Set Series (FL)
SFP - Inch Series Single Aluminum Flange Mounts (FL)
DFP - Inch Series Double Aluminum Flange Mounts (FL)
PAC - Inch Series Die Set Bushings
PACM - ISO Metric Series Die Set Bushings
SFPM - ISO Metric Series Single Aluminum Flange Mounts
DFPM - ISO Metric Series Double Aluminum Flange Mounts
CFPM - ISO Metric Series Double Aluminum Center Flange Mounts
SFPJ - JIS Metric Series Single Aluminum Flange Mounts
DFPJ - JIS Metric Series Double Aluminum Flange Mounts
CFPJ - JIS Metric Series Double Aluminum Center Flange Mounts

Closed or Open Style

NOTE: Available ONLY on "P, PW, PM" series

No Entry - Standard Closed Series

N - Open Series

Housing I.D. Features

No Entry - Standard Spherical "self-aligning" I.D. in the housing. (Uses standard straight O.D. bearings)

B - Straight I.D. housing. (For rigid fit use standard bearing. For self-alignment use "FLA" bearings.)

No Entry - Standard Square Flange

R - Available Round Flange

NOTE: Available ONLY on "SFPM, DFPM, CFPM, SFPJ, DFPJ, CFPJ" series

Housings Only

No Entry - Housings with bearing included

E - Empty Housings with NO bearing included

Nominal Shaft Diameter

NOTE: English units in 16ths of an inch
Metric units in mm

Bearing I.D. Features

No Entry - Standard Precision running clearance on the I.D.

C - Compensated running clearance on the I.D.

Seal Options

NOTE: "PAC" and "PACM" available ONLY as "S, SU, or SV"

D - Double seals of Standard Polymod material

DU - Double seals of moly impregnated urethane material

DV - Double seals of viton - high temperature material

Bearing Liner Material

No Entry - Standard FrelonGOLD® liner for hardened steel shafting and Feather Shafting®

E - Special FrelonJ® liner for soft shafting (aluminum, 300 series stainless steel, 440 stainless steel shafting)

Internal Lubrication

No Entry - Standard pillowblock assembly with NO lubrication system

JKM - Thru holes, and internal felt wick to help lubrication retention and flow 1/4-28 Zerk.

Special Modifications

NOTE: Consult Factory

No Entry - Standard Options

Q - Shipped Oil Free (Consult Factory)

P N B E 16 - C D E JKM Q

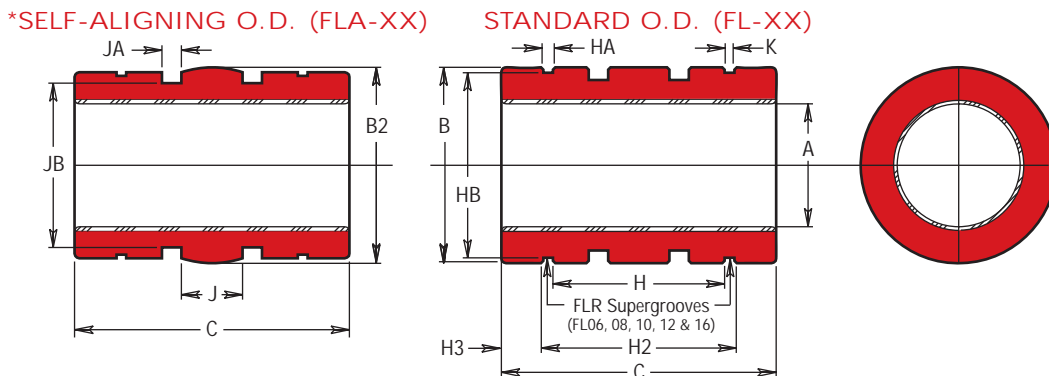
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FL LINEAR BEARINGS



*Except for the O.D., bearings with the self-aligning feature have the same dimensions and tolerances as the standard bearing. There is a spherical crown on the O.D. to create the self-aligning feature. They are for use in a straight bore housing. Add an "A" to the part number per the example. More information on self-aligning bearings is on pages 41-42.

BASIC DIMENSIONAL INFORMATION

| PRECISION I.D. SERIES Similar to preloaded ball bearing | | | | | COMPENSATED I.D. SERIES Allows additional running clearance | | | | B STANDARD O.D. | | B2 | | C LENGTH | | CONCENTRIC | BEARING WEIGHT (lbs.) | K FLR RET. RING GR. |
|--|--------|-----------------|-------------------|--------|--|---------|-------------------|--------|--------------------|--------|---------------------------------|--------|-------------|--------|------------|-----------------------------|---------------------------|
| PART NO. | | NOMINAL SIZE | A BEARING I.D. | | PART NO. | | A BEARING I.D. | | | | SELF-ALIGNING FLA CROWN O.D. | | | | | | |
| CLOSED | OPEN | (in.) | MIN. | MAX. | CLOSED | OPEN | MIN. | MAX. | MIN. | MAX. | MIN. | MAX. | MIN. | MAX. | | | |
| FL 03 | N / A | 3/16 | 0.1877 | 0.1884 | FLC 03 | N / A | 0.1897 | 0.1904 | 0.3740 | 0.3750 | 0.3725 | 0.3735 | 0.5470 | 0.5620 | 0.0010 | 0.0030 | N / A |
| FL 04 | FLN 04 | 1/4 | 0.2502 | 0.2511 | FLC 04 | FLCN 04 | 0.2522 | 0.2531 | 0.4990 | 0.5000 | 0.4975 | 0.4985 | 0.7350 | 0.7500 | 0.0010 | 0.0090 | N / A |
| FL 06 | FLN 06 | 3/8 | 0.3752 | 0.3761 | FLC 06 | FLCN 06 | 0.3772 | 0.3781 | 0.6240 | 0.6250 | 0.6225 | 0.6235 | 0.8600 | 0.8750 | 0.0010 | 0.0160 | 0.0720 |
| FL 08 | FLN 08 | 1/2 | 0.5002 | 0.5013 | FLC 08 | FLCN 08 | 0.5022 | 0.5033 | 0.8740 | 0.8750 | 0.8725 | 0.8735 | 1.2350 | 1.2500 | 0.0010 | 0.0410 | 0.0800 |
| FL 10 | FLN 10 | 5/8 | 0.6252 | 0.6263 | FLC 10 | FLCN 10 | 0.6272 | 0.6283 | 1.1240 | 1.1250 | 1.1225 | 1.1235 | 1.4850 | 1.5000 | 0.0010 | 0.0910 | N / A |
| FL 12 | FLN 12 | 3/4 | 0.7503 | 0.7516 | FLC 12 | FLCN 12 | 0.7533 | 0.7546 | 1.2490 | 1.2500 | 1.2475 | 1.2485 | 1.6100 | 1.6250 | 0.0010 | 0.1090 | 0.1710 |
| FL 16 | FLN 16 | 1 | 1.0003 | 1.0016 | FLC 16 | FLCN 16 | 1.0033 | 1.0046 | 1.5613 | 1.5625 | 1.5599 | 1.5609 | 2.2350 | 2.2500 | 0.0010 | 0.2280 | 0.1330 |
| FL 20 | FLN 20 | 1-1/4 | 1.2504 | 1.2519 | FLC 20 | FLCN 20 | 1.2544 | 1.2559 | 1.9988 | 2.0000 | 1.9974 | 1.9984 | 2.6100 | 2.6250 | 0.0010 | 0.4590 | N / A |
| FL 24 | FLN 24 | 1-1/2 | 1.5004 | 1.5019 | FLC 24 | FLCN 24 | 1.5044 | 1.5059 | 2.3738 | 2.3750 | 2.3724 | 2.3734 | 2.9850 | 3.0000 | 0.0010 | 0.7250 | N / A |
| FL 32 | FLN 32 | 2 | 2.0004 | 2.0022 | FLC 32 | FLCN 32 | 2.0054 | 2.0072 | 2.9986 | 3.0000 | 2.9973 | 2.9983 | 3.9850 | 4.0000 | 0.0010 | 1.4420 | N / A |
| FL 40 | FLN 40 | 2-1/2 | 2.5004 | 2.5022 | FLC 40 | FLCN 40 | 2.5054 | 2.5072 | 3.7484 | 3.7500 | 3.7472 | 3.7482 | 4.9850 | 5.0000 | 0.0013 | 2.8160 | N / A |
| FL 48 | FLN 48 | 3 | 3.0004 | 3.0022 | FLC 48 | FLCN 48 | 3.0064 | 3.0082 | 4.4980 | 4.5000 | 4.4970 | 4.4980 | 5.9850 | 6.0000 | 0.0015 | 4.9140 | N / A |
| FL 64 | FLN 64 | 4 | 4.0005 | 4.0026 | FLC 64 | FLCN 64 | 4.0065 | 4.0086 | 5.9980 | 6.0000 | 5.9970 | 5.9980 | 7.9850 | 8.0000 | 0.0020 | 11.8360 | N / A |

MOUNTING DIMENSIONAL INFORMATION

| PART NO. | | NOMINAL SIZE | H | HA | HB | TRUARC RET. RING PART NO. | J | JA | JB | PARKER O'RING PART NO. | H2 | H3 |
|----------|--------|--------------|--------------------|----------------------|---------------------|---------------------------|----------------------|-------------------|------------------|------------------------|-------------------|---------------|
| CLOSED | OPEN | (in.) | BETWEEN RET. RINGS | RET. RING GRV. WIDTH | RET. RING GRV. DIA. | | BETWEEN O'RING GRVS. | O'RING GRV. WIDTH | O'RING GRV. DIA. | | FLR BETWEEN RINGS | FLR RING EDGE |
| FL 03 | N / A | 3/16 | 0.375 | 0.030 | 0.352 | N 5100-37 | N / A | N / A | N / A | N / A | N / A | N / A |
| FL 04 | FLN 04 | 1/4 | 0.437 | 0.041 | 0.467 | N 5100-50 | 0.125 | 0.080 | 0.399 | 2-010 | N / A | N / A |
| FL 06 | FLN 06 | 3/8 | 0.562 | 0.041 | 0.587 | N 5100-62 | 0.187 | 0.080 | 0.524 | 2-012 | .711/.701 | 0.081 |
| FL 08 | FLN 08 | 1/2 | 0.875 | 0.048 | 0.820 | N 5100-87 | 0.250 | 0.125 | 0.712 | 2-113 | 1.042/1.032 | 0.103 |
| FL 10 | FLN 10 | 5/8 | 1.000 | 0.058 | 1.060 | N 5100-112 | 0.312 | 0.125 | 0.962 | 2-117 | N / A | N / A |
| FL 12 | FLN 12 | 3/4 | 1.062 | 0.058 | 1.177 | N 5100-125 | 0.312 | 0.125 | 1.087 | 2-119 | 1.281/1.271 | 0.171 |
| FL 16 | FLN 16 | 1 | 1.625 | 0.070 | 1.471 | N 5100-156 | 0.500 | 0.125 | 1.399 | 2-123 | 1.895/1.885 | 0.176 |
| FL 20 | FLN 20 | 1-1/4 | 1.875 | 0.070 | 1.889 | N 5100-200 | 0.625 | 0.125 | 1.837 | 2-129 | N / A | N / A |
| FL 24 | FLN 24 | 1-1/2 | 2.250 | 0.089 | 2.241 | N 5100-237 | 0.750 | 0.162 | 2.152 | 2-225 | N / A | N / A |
| FL 32 | FLN 32 | 2 | 3.000 | 0.105 | 2.839 | N 5100-300 | 1.000 | 0.189 | 2.775 | 2-229 | N / A | N / A |
| FL 40 | FLN 40 | 2-1/2 | 3.750 | 0.123 | 3.553 | N 5100-375 | 1.250 | 0.250 | 3.408 | 2-340 | N / A | N / A |
| FL 48 | FLN 48 | 3 | 4.500 | 0.123 | 4.309 | N 5100-450 | 1.500 | 0.287 | 4.158 | 2-346 | N / A | N / A |
| FL 64 | FLN 64 | 4 | 6.000 | 0.145 | 5.748 | N 5100-600 | 2.000 | 0.287 | 5.660 | 2-356 | N / A | N / A |

NOTES: FLR is not available on FL03 and FL04.

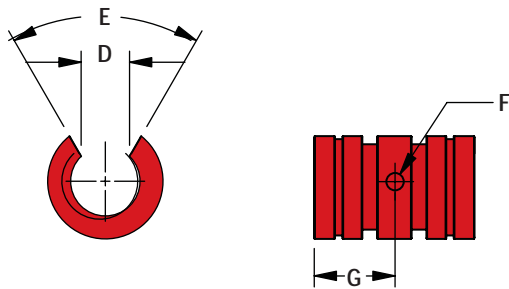
FLR is only available on FL06, FL08, FL10, FL12 and FL16.

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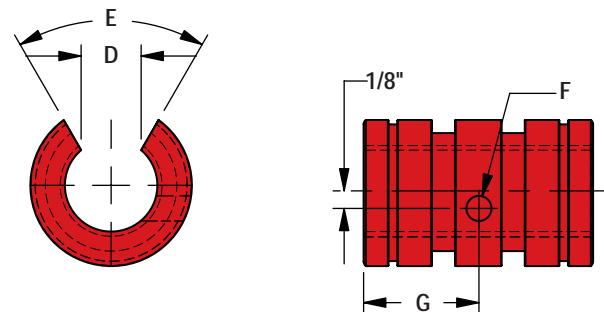


FL & FLN LINEAR BEARINGS

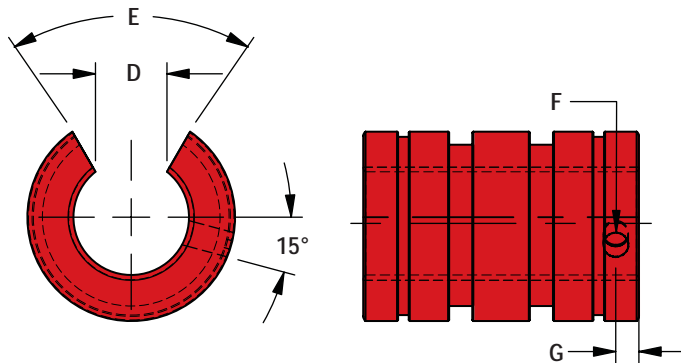
FLN 04 - FLN 06



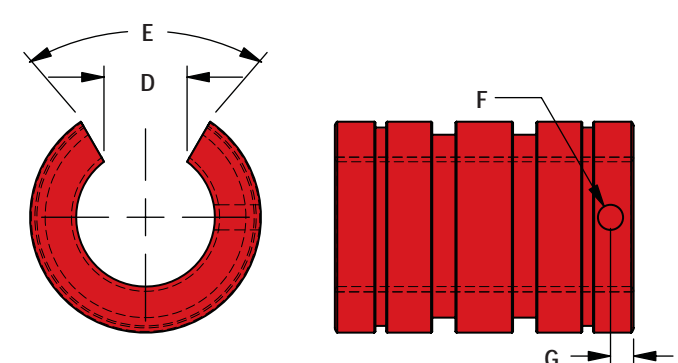
FLN 08



FLN 10



FLN 12 THRU FLN 64



OPEN DIMENSIONAL INFORMATION

| PART NO. | | NOMINAL SIZE | D SLOT WIDE MIN. | E SLOT ANGLE | F RETAINING HOLE DIA. | G RETAINING HOLE LOCATE | BEARING WEIGHTS |
|-----------|-------------|--------------|------------------|--------------|-----------------------|-------------------------|-----------------|
| PRECISION | COMPENSATED | (in.) | | | | (in.) | (lbs.) |
| FLN 04 | FLCN 04 | 1/4 | 0.188 | 60° | 0.094 | 3/8 | 0.008 |
| FLN 06 | FLCN 06 | 3/8 | 0.250 | 60° | 0.094 | 7/16 | 0.013 |
| FLN 08 | FLCN 08 | 1/2 | 0.313 | 60° | 0.136 | 5/8 | 0.034 |
| FLN 10 | FLCN 10 | 5/8 | 0.375 | 60° | 0.136 | 1/8 | 0.072 |
| FLN 12 | FLCN 12 | 3/4 | 0.438 | 60° | 0.136 | 1/8 | 0.091 |
| FLN 16 | FLCN 16 | 1 | 0.563 | 60° | 0.136 | 1/8 | 0.184 |
| FLN 20 | FLCN 20 | 1-1/4 | 0.625 | 60° | 0.201 | 3/16 | 0.381 |
| FLN 24 | FLCN 24 | 1-1/2 | 0.750 | 60° | 0.201 | 3/16 | 0.603 |
| FLN 32 | FLCN 32 | 2 | 1.000 | 60° | 0.265 | 5/16 | 1.192 |
| FLN 40 | FLCN 40 | 2-1/2 | 1.250 | 60° | 0.265 | 5/16 | 2.334 |
| FLN 48 | FLCN 48 | 3 | 1.500 | 60° | 0.265 | 5/16 | 4.080 |
| FLN 64 | FLCN 64 | 4 | 2.000 | 60° | 0.265 | 5/16 | 9.870 |

NOTE: All other dimensions same as closed bearing.

| | |
|--|---------|
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| Pillow Block Information..... | 12-13 |
| Sleeve Bearings | 154-155 |
| Flange Mount Housing Information | 14 |
| Flange Mount Die Sets..... | 15 |
| Die Set Bushings | 24 |
| Shafting, Support Blocks and Rails | 63 |

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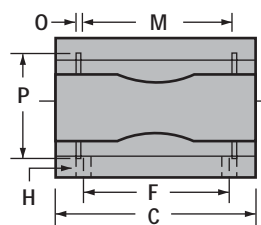
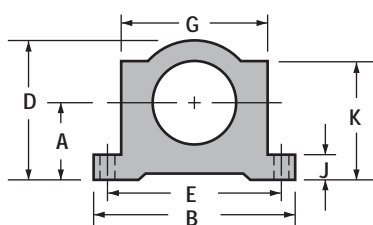
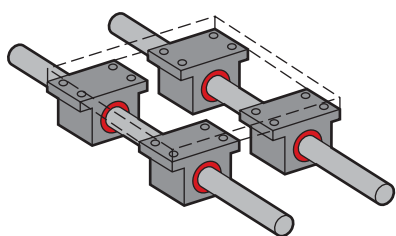
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LOAD & SPEED DATA

| PART NO. | EFFECTIVE SURFACE AREA (sq. in.) | MAX. STATIC LOAD FRELON | |
|--|-------------------------------------|----------------------------|--------|
| | | GOLD | J |
| | | (lbs.) | (lbs.) |
| FL 03 | 0.110 | 220 | 100 |
| FL 04 | 0.200 | 600 | 300 |
| FL 06 | 0.340 | 1020 | 510 |
| FL 08 | 0.650 | 1950 | 975 |
| FL 10 | 0.980 | 2940 | 1470 |
| FL 12 | 1.270 | 3810 | 1905 |
| FL 16 | 2.350 | 7050 | 3525 |
| FL 20 | 3.430 | 10830 | 5415 |
| FL 24 | 4.700 | 14100 | 7050 |
| FL 32 | 8.350 | 25050 | 12525 |
| FL40 | 13.000 | 39000 | 19500 |
| FL 48 | 18.800 | 56400 | 28200 |
| FL 64 | 33.500 | 100500 | 50250 |
| MAX. PV (ft./min. * psi) FrelonGold = 20000 PV FrelonJ = 10000 PV | | | |
| MAX. Speed Running Dry (ft./min.) FrelonGold = 300 sfm FrelonJ = 140 sfm | | | |
| MAX. Speed Running with Lubrication (ft./min.) FrelonGold = 825 sfm FrelonJ = 400 sfm | | | |



P & PN PILLOW BLOCKS



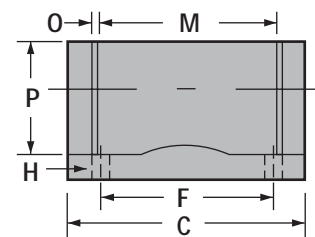
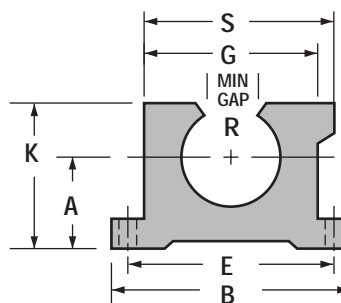
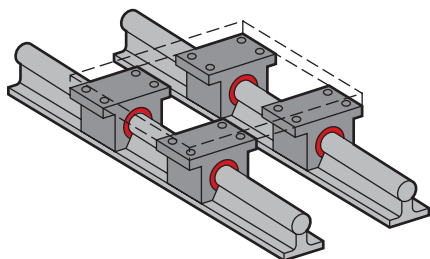
CLOSED PILLOW BLOCKS

| PART NO. CLOSED | | NOM. BRG. I.D. | A CENTERLINE | B | C | D | E | F | G BODY | H | | J FLNG. | K | M GRV. | O GRV. | P GRV. | SMALLEY RET. RING | MAX. STATIC LOAD (lbs.) FREELON | | ASSEM. WT. |
|--------------------|---------|----------------------|-----------------|-------|--------|--------|----------|----------|-----------|------|--------|------------|-------|-----------|-----------|-----------|-------------------------|---------------------------------------|-------|---------------|
| PRECISION | COMPEN. | MIN. | +/- .001 | WIDTH | LENGTH | HEIGHT | +/- .010 | +/- .010 | WIDTH | BOLT | HOLE | THICK | | SPACE | WIDTH | DIA. | PART NO. | GOLD | J | (lbs.) |
| P 04 | P 04C | 1/4" | 0.437 | 1.625 | 1.19 | 0.813 | 1.312 | 0.750 | 1.000 | #6 | 5/32" | 0.188 | 0.750 | 0.750 | 0.039 | 0.532 | WH-51 | 600 | 300 | 0.099 |
| P 06 | P 06C | 3/8" | 0.500 | 1.750 | 1.31 | 0.938 | 1.437 | 0.875 | 1.125 | #6 | 5/32" | 0.188 | 0.875 | 0.875 | 0.039 | 0.665 | WH-65 | 1020 | 510 | 0.129 |
| P 08 | P 08C | 1/2" | 0.687 | 2.000 | 1.69 | 1.250 | 1.688 | 1.000 | 1.375 | #6 | 5/32" | 0.250 | 1.125 | 1.250 | 0.046 | 0.931 | WH-90 | 1950 | 975 | 0.250 |
| P 10 | P 10C | 5/8" | 0.875 | 2.500 | 1.94 | 1.625 | 2.125 | 1.125 | 1.750 | #8 | 3/16" | 0.281 | 1.438 | 1.500 | 0.056 | 1.197 | WH-115 | 2940 | 1470 | 0.500 |
| P 12 | P 12C | 3/4" | 0.937 | 2.750 | 2.06 | 1.750 | 2.375 | 1.250 | 1.875 | #8 | 3/16" | 0.313 | 1.563 | 1.625 | 0.056 | 1.330 | WH-128 | 3710 | 1905 | 0.580 |
| P 16 | P 16C | 1" | 1.187 | 3.250 | 2.81 | 2.188 | 2.875 | 1.750 | 2.375 | #10 | 7/32" | 0.375 | 1.938 | 2.250 | 0.068 | 1.671 | WH-156 | 7050 | 3525 | 1.000 |
| P 20 | P 20C | 1-1/4" | 1.500 | 4.000 | 3.63 | 2.813 | 3.500 | 2.000 | 3.000 | #10 | 7/32" | 0.438 | 2.500 | 2.625 | 0.068 | 2.122 | WH-200 | 10290 | 5145 | 2.000 |
| P 24 | P 24C | 1-1/2" | 1.750 | 4.750 | 4.00 | 3.250 | 4.125 | 2.500 | 3.500 | 1/4" | 9/32" | 0.500 | 2.875 | 3.000 | 0.086 | 2.519 | WH-237 | 14100 | 7050 | 3.000 |
| P 32 | P 32C | 2" | 2.125 | 6.000 | 5.00 | 4.063 | 5.250 | 3.250 | 4.500 | 3/8" | 13/32" | 0.625 | 3.625 | 4.000 | 0.103 | 3.182 | WH-300 | 25050 | 12525 | 6.500 |

NOTES: (1) Standard, pre-assembled pillow blocks include self-aligning housing and precision bearing.

(2) All standard pillow blocks use standard "FL" series bearings found on page 10.

(3) Straight bore, pre-assembled pillow blocks use standard "FL" series bearing.



OPEN PILLOW BLOCKS

| PART NO. CLOSED | | NOM. BRG. I.D. | A CENTERLINE | B | C | E | F | G BODY | H | | J FLNG. | K | M GRV. | O GRV. | P GRV. | R MIN. | EATON RET. RING | MAX. STATIC LOAD (lbs.) FREELON | | ASSEM. WT. | S OVERALL |
|--------------------|---------|----------------------|-----------------|-------|--------|----------|----------|-----------|------|--------|------------|--------|-----------|-----------|-----------|-----------|-----------------------|---------------------------------------|-------|---------------|--------------|
| PRECISION | COMPEN. | MIN. | +/- .001 | WIDTH | LENGTH | +/- .010 | +/- .010 | WIDTH | BOLT | HOLE | THICK | HEIGHT | SPACE | WIDTH | DIA. | OPEN | PART NO. | GOLD | J | (lbs.) | WIDTH |
| PN 08 | PN 08C | 1/2" | 0.687 | 2.000 | 1.50 | 1.688 | 1.000 | 1.375 | #6 | 5/32" | 0.250 | 1.125 | 1.250 | 0.046 | 0.931 | 0.313 | MNAN-87 | 1950 | 975 | 0.250 | 1.438 |
| PN 10 | PN 10C | 5/8" | 0.875 | 2.500 | 1.75 | 2.125 | 1.125 | 1.750 | #8 | 3/16" | 0.281 | 1.438 | 1.500 | 0.056 | 1.197 | 0.375 | MNAN-112 | 2940 | 1470 | 0.500 | 1.813 |
| PN 12 | PN 12C | 3/4" | 0.937 | 2.750 | 1.88 | 2.375 | 1.250 | 1.875 | #8 | 3/16" | 0.313 | 1.563 | 1.625 | 0.056 | 1.330 | 0.438 | MNAN-125 | 3710 | 1905 | 0.580 | 1.938 |
| PN 16 | PN 16C | 1" | 1.187 | 3.250 | 2.63 | 2.875 | 1.750 | 2.375 | #10 | 7/32" | 0.375 | 1.938 | 2.250 | 0.068 | 1.671 | 0.563 | MNAN-156 | 7050 | 3525 | 1.000 | 2.438 |
| PN 20 | PN 20C | 1-1/4" | 1.500 | 4.000 | 3.38 | 3.500 | 2.000 | 3.000 | #10 | 7/32" | 0.438 | 2.500 | 2.625 | 0.068 | 2.122 | 0.625 | MNAN-200 | 10290 | 5145 | 2.000 | 3.125 |
| PN 24 | PN 24C | 1-1/2" | 1.750 | 4.750 | 3.75 | 4.125 | 2.500 | 3.500 | 1/4" | 9/32" | 0.500 | 2.875 | 3.000 | 0.086 | 2.519 | 0.750 | MNAN-237 | 14100 | 7050 | 3.000 | 3.625 |
| PN 32 | PN 32C | 2" | 2.125 | 6.000 | 4.75 | 5.250 | 3.250 | 4.500 | 3/8" | 13/32" | 0.625 | 3.625 | 4.000 | 0.103 | 3.182 | 1.000 | MNAN-300 | 25050 | 12525 | 6.500 | 4.688 |

NOTES: (1) Standard, pre-assembled pillow blocks include self-aligning housing and precision bearing.

(2) All standard pillow blocks use standard "FL" series bearings found on page 10.

(3) All open pillow blocks have "notch".

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See Page 162 for SRB Series – Preassembled Pillow Block, Shaft and Support Rail.

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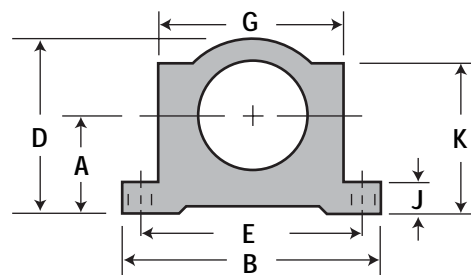
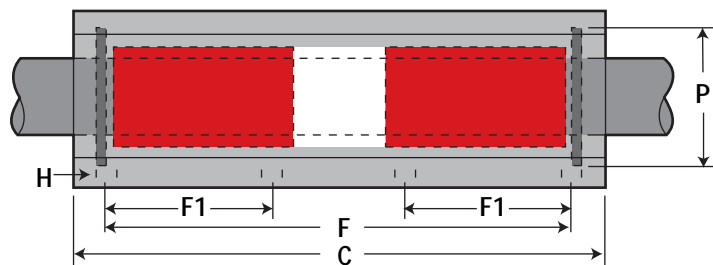


Simplicity® Self-lubricating Bearings

Twin Pillow Blocks - Inch Series

Linear Motion Systems

PW & PWN TWIN PILLOW BLOCKS

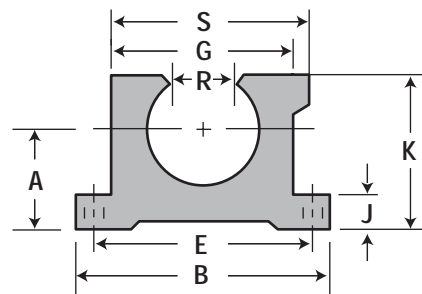
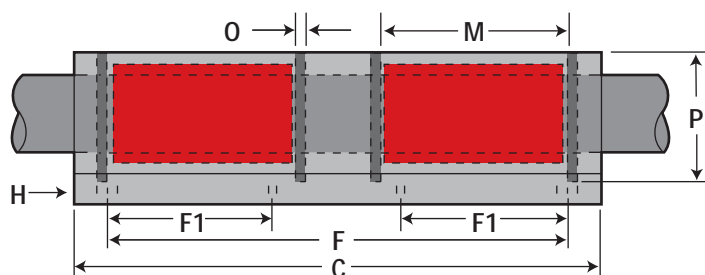


TWIN CLOSED PILLOW BLOCKS

| PART NO. CLOSED | | NOM. BRG. I.D. | A CENTERLINE | B | C | D | E | F | F1 | G BODY | H | | J FLNG. | K | P GRV. | SMALLEY RET. RING | MAX. STATIC LOAD (lbs.) FRELO | | ASSEM. WT. |
|--------------------|---------|----------------------|-----------------|-------|--------|--------|----------|----------|----------|-----------|------|--------|------------|-------|-----------|-------------------------|-------------------------------------|-------|---------------|
| PRECISION | COMPEN. | MIN. | +/- .001 | WIDTH | LENGTH | HEIGHT | +/- .010 | +/- .010 | +/- .010 | WIDTH | BOLT | HOLE | THICK | | DIA. | PART NO. | GOLD | J | (lbs.) |
| PW 04 | PW 04C | 1/4" | 0.437 | 1.625 | 2.500 | 0.813 | 1.3120 | 2.0000 | .750 | 1.000 | #6 | 5/32" | 0.188 | 0.750 | 0.532 | WH-51 | 1200 | 600 | 0.197 |
| PW 06 | PW 06C | 3/8" | 0.500 | 1.750 | 2.750 | 0.938 | 1.4370 | 2.2500 | .875 | 1.125 | #6 | 5/32" | | 0.875 | 0.665 | WH-65 | 2040 | 1020 | 0.258 |
| PW 08 | PW 08C | 1/2" | 0.687 | 2.000 | 3.500 | 1.250 | 1.6880 | 2.5000 | 1.000 | 1.375 | #6 | 5/32" | 0.250 | 1.125 | 0.931 | WH-90 | 3900 | 1950 | 0.500 |
| PW 10 | PW 10C | 5/8" | 0.875 | 2.500 | 4.000 | 1.625 | 2.1250 | 3.0000 | 1.125 | 1.750 | #8 | 3/16" | 0.281 | 1.438 | 1.197 | WH-115 | 5880 | 2940 | 1.000 |
| PW 12 | PW 12C | 3/4" | 0.937 | 2.750 | 4.500 | 1.750 | 2.3750 | 3.5000 | 1.250 | 1.875 | #8 | 3/16" | 0.313 | 1.563 | 1.330 | WH-128 | 7620 | 3810 | 1.125 |
| PW 16 | PW 16C | 1" | 1.187 | 3.250 | 6.000 | 2.188 | 2.8750 | 4.5000 | 1.750 | 2.375 | #10 | 7/32" | 0.375 | 1.938 | 1.671 | WH-156 | 14100 | 7050 | 2.188 |
| PW 20 | PW 20C | 1-1/4" | 1.500 | 4.000 | 7.500 | 2.813 | 3.5000 | 5.5000 | 2.000 | 3.000 | #10 | 7/32" | 0.438 | 2.500 | 2.122 | WH-200 | 20580 | 10290 | 4.250 |
| PW 24 | PW 24C | 1-1/2" | 1.750 | 4.750 | 9.000 | 3.250 | 4.1250 | 6.5000 | 2.500 | 3.500 | 1/4" | 9/32" | 0.500 | 2.875 | 2.519 | WH-237 | 28200 | 14100 | 6.375 |
| PW 32 | PW 32C | 2" | 2.125 | 6.000 | 10.000 | 4.063 | 5.2500 | 8.2500 | 3.250 | 4.500 | 3/8" | 13/32" | 0.625 | 3.625 | 3.182 | WH-300 | 50100 | 25050 | 13.500 |

- NOTES: (1) Standard, pre-assembled pillow blocks include self-aligning housing and precision bearing.
 (2) All standard pillow blocks use standard "FL" series bearings found on page 10.
 (3) Twin Closed Pillow Blocks use a spacer to separate the bearings.

- (4) Twin pillow blocks, closed, with no seal option: Use (2) standard bearings, based on compensated or std option.
 (5) Twin pillow blocks, closed, with double seal option: Use (2) single seal bearings.



TWIN OPEN PILLOW BLOCKS

| PART NO. CLOSED | | NOM. BRG. I.D. | A CENTERLINE | B | C | E | F | F1 | G BODY | H | J FLNG. | K | M GRV. | O GRV. | P GRV. | R MIN. | EATON RET. RING | MAX. STATIC LOAD (lbs.) FRELO | ASSEM. WT. | S OVERALL | | |
|--------------------|---------|----------------------|-----------------|-------|--------|----------|----------|----------|-----------|------|------------|-------|-----------|-----------|-----------|-----------|-----------------------|-------------------------------------|---------------|--------------|--------|-------|
| PRECISION | COMPEN. | MIN. | +/- .001 | WIDTH | LENGTH | +/- .010 | +/- .010 | +/- .010 | WIDTH | BOLT | HOLE | THICK | HEIGHT | SPACE | WIDTH | DIA. | OPEN | PART NO. | GOLD | J | (lbs.) | WIDTH |
| PWN 08 | PWN 08C | 1/2" | 0.687 | 2.000 | 3.500 | 1.688 | 2.500 | 1.000 | 1.375 | #6 | 5/32" | 0.250 | 1.125 | 1.250 | 0.046 | 0.931 | 0.313 | MNAN-87 | 3900 | 1950 | 0.400 | 1.438 |
| PWN 10 | PWN 10C | 5/8" | 0.875 | 2.500 | 4.000 | 2.125 | 3.000 | 1.125 | 1.750 | #8 | 3/16" | 0.281 | 1.438 | 1.500 | 0.056 | 1.197 | 0.375 | MNAN-112 | 5880 | 2940 | 0.910 | 1.813 |
| PWN 12 | PWN 12C | 3/4" | 0.937 | 2.750 | 4.500 | 2.375 | 3.500 | 1.250 | 1.875 | #8 | 3/16" | 0.313 | 1.563 | 1.625 | 0.056 | 1.330 | 0.438 | MNAN-125 | 7620 | 3810 | 1.060 | 1.938 |
| PWN 16 | PWN 16C | 1" | 1.187 | 3.250 | 6.000 | 2.875 | 4.500 | 1.750 | 2.375 | #10 | 7/32" | 0.375 | 1.938 | 2.250 | 0.068 | 1.671 | 0.563 | MNAN-156 | 14100 | 7050 | 1.970 | 2.438 |
| PWN 20 | PWN 20C | 1-1/4" | 1.500 | 4.000 | 7.500 | 3.500 | 5.500 | 2.000 | 3.000 | #10 | 7/32" | 0.438 | 2.500 | 2.625 | 0.068 | 2.122 | 0.625 | MNAN-200 | 20580 | 10290 | 3.725 | 3.125 |
| PWN 24 | PWN 24C | 1-1/2" | 1.750 | 4.750 | 9.000 | 4.125 | 6.500 | 2.500 | 3.500 | 1/4" | 9/32" | 0.500 | 2.875 | 3.000 | 0.086 | 2.519 | 0.750 | MNAN-237 | 28200 | 14100 | 5.800 | 3.625 |
| PWN 32 | PWN 32C | 2" | 2.125 | 6.000 | 10.000 | 5.250 | 8.250 | 3.250 | 4.500 | 3/8" | 13/32" | 0.625 | 3.625 | 4.000 | 0.103 | 3.182 | 1.000 | MNAN-300 | 50100 | 25050 | 12.125 | 4.688 |

- NOTES: (1) Standard, pre-assembled pillow blocks include self-aligning housing and precision bearing.
 (2) All standard pillow blocks use standard "FL" series bearings found on page 10.
 (3) All open pillow blocks have "notch".

- (4) Twin pillowblocks, open, with no seal option: Use (2) standard open bearings, based on compensated or std option.
 (5) Twin pillowblocks, open, with double seal option: Use (2) double seal bearings.

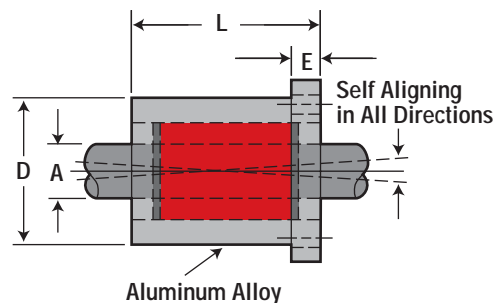
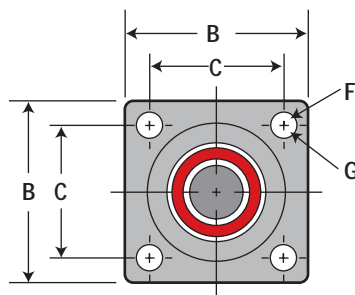
FrelonGOLD® and FrelonJ® are registered trademarks of Pacific Bearing.

See Page 162 for SRB Series – Preassembled Pillow Block, Shaft and Support Rail.

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SFP FLANGE MOUNTS

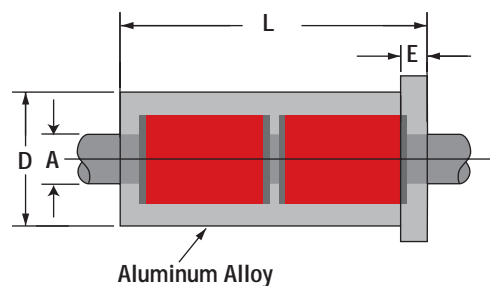
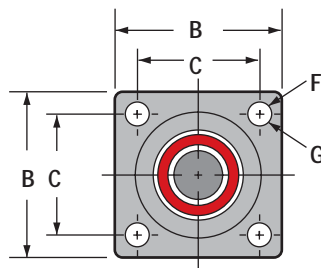


BASIC DIMENSIONAL INFORMATION

| PART NO. | | A BEARING NOMINAL SIZE | B FLANGE SQUARE | C HOLE SPACING | D BARREL DIA. | E FLANGE LENGTH | F BOLT SIZE | G HOLE SIZE | L LENGTH OVERALL | MAX. STATIC LOAD (lbs.) FRELON | | ASSEMBLY WEIGHT (lbs.) |
|----------|----------|---------------------------------|-----------------------|-------------------|---------------------|-----------------------|-------------------|-------------------|------------------------|--------------------------------------|------|------------------------------|
| | | | | | | | | | | GOLD | J | |
| SFP 08 | SFP 08 C | 1/2" | 1.63 | 1.25 | 1.25 | 0.250 | #8 | 0.187 | 1.687 | 1950 | 975 | 0.175 |
| SFP 12 | SFP 12 C | 3/4" | 2.38 | 1.75 | 1.75 | 0.375 | #10 | 0.219 | 2.067 | 2940 | 1470 | 0.463 |
| SFP 16 | SFP 16 C | 1" | 2.75 | 2.125 | 2.25 | 0.500 | 1/4" | 0.281 | 2.812 | 3810 | 1905 | 1.206 |

NOTES: All standard, pre-assembled "SFP" assemblies include a self-aligning housing and standard "FL" bearings found on page 10.
Straight bore "SFPB" assemblies include a straight bore housing and standard "FL" bearings.

DFP FLANGE MOUNTS



BASIC DIMENSIONAL INFORMATION

| PART NO. | | A BEARING NOMINAL SIZE | B FLANGE SQUARE | C HOLE SPACING | D BARREL DIA. | E FLANGE LENGTH | F BOLT SIZE | G HOLE SIZE | L LENGTH OVERALL | MAX. STATIC LOAD (lbs.) FRELON | | ASSEMBLY WEIGHT (lbs.) |
|----------|----------|---------------------------------|-----------------------|-------------------|---------------------|-----------------------|-------------------|-------------------|------------------------|--------------------------------------|------|------------------------------|
| | | | | | | | | | | GOLD | J | |
| DFP 08 | DFP 08 C | 1/2" | 1.63 | 1.25 | 1.25 | 0.250 | #8 | 0.187 | 3.375 | 3900 | 1950 | 0.325 |
| DFP 12 | DFP 12 C | 3/4" | 2.38 | 1.75 | 1.75 | 0.375 | #10 | 0.219 | 4.188 | 5880 | 2940 | 0.825 |
| DFP 16 | DFP 16 C | 1" | 2.75 | 2.125 | 2.25 | 0.500 | 1/4" | 0.281 | 5.625 | 7620 | 3810 | 1.750 |

NOTES: All standard, pre-assembled "DFP" assemblies include a self-aligning housing and standard "FL" bearings found on page 10.
Straight bore "DFPB" assemblies include a straight bore housing and standard "FL" bearings.

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Simplicity® Self-lubricating Bearings

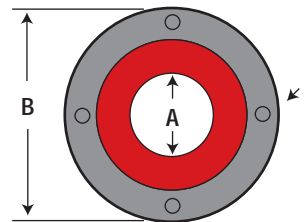
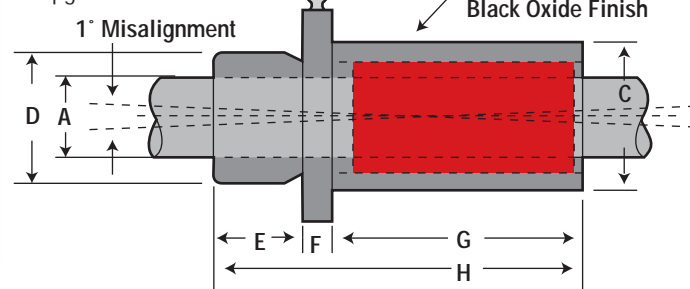
Flange Mount Die Sets - Inch Series

Linear Motion Systems

SDS FLANGE MOUNTS



Lube System Optional
Order as JKM
See pg. 8 for information



Flange Mount Die Sets

BASIC DIMENSIONAL INFORMATION

| PART NO. | | A BEARING NOMINAL SIZE | B FLANGE O.D. | C BARREL DIA. | | D PILOT DIA. | | E PILOT LENGTH | F FLANGE LENGTH | G HEAD LENGTH | H OVERALL LENGTH | I MOUNTING HOLES (4 PLACES) | | | MAX. STATIC LOAD (lbs.) FRELON | | ASSEMBLY WEIGHT (lbs.) |
|-----------|----------|---------------------------------|---------------------|------------------|-------|-----------------|-------|----------------------|-----------------------|---------------------|------------------------|-----------------------------------|--------------|--------|--------------------------------------|-------|------------------------------|
| PRECISION | COMPEN. | | | MIN. | MAX. | MIN. | MAX. | | | | | BOLT SIZE | HOLE SIZE | CIRCLE | GOLD | J | |
| SDS 16 | SDS 16 C | 1" | 3.00 | 2.098 | 2.100 | 1.4995 | 1.500 | 0.875 | 0.562 | 2.500 | 3.927 | 1/4" | 0.281 | 2.550 | 7050 | 3525 | 2.431 |
| SDS 20 | SDS 20 C | 1-1/4" | 3.50 | 2.598 | 2.600 | 1.7495 | 1.750 | 1.125 | 0.750 | 3.000 | 4.875 | 1/4" | 0.281 | 3.050 | 10290 | 5145 | 4.400 |
| SDS 24 | SDS 24 C | 1-1/2" | 4.25 | 2.998 | 3.000 | 1.9990 | 2.000 | 1.375 | 1.000 | 3.500 | 5.875 | 3/8" | 0.406 | 3.650 | 14100 | 7050 | 7.238 |
| SDS 32 | SDS 32 C | 2" | 5.00 | 3.748 | 3.750 | 2.4990 | 2.500 | 1.625 | 1.000 | 4.500 | 7.125 | 3/8" | 0.406 | 4.400 | 25050 | 12525 | 11.788 |

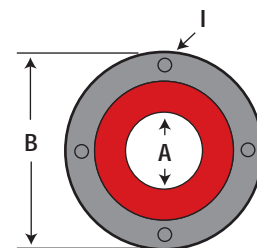
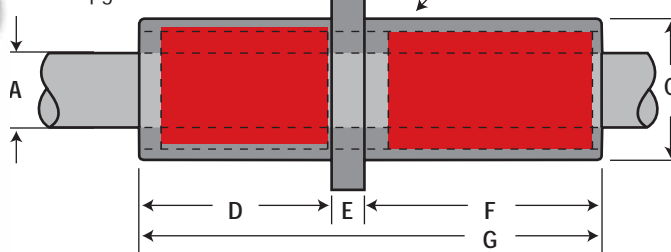
NOTES: All standard, pre-assembled "SDS" assemblies include a straight bore housing and standard "FLA" bearings found on page 10.

All straight bore, pre-assembled "SDSB" assemblies include a straight bore housing and standard "FL" bearings found on page 10.

DDS FLANGE MOUNTS



Lube System Optional
Order as JKM
See pg. 8 for information



BASIC DIMENSIONAL INFORMATION

| PART NO. | | A BEARING NOMINAL SIZE | B FLANGE O.D. | C BARREL DIA. | | D LENGTH | E FLANGE LENGTH | F LENGTH | G OVERALL LENGTH | I MOUNTING HOLES (4 PLACES) | | | MAX. STATIC LOAD (lbs.) FRELON | | ASSEMBLY WEIGHT (lbs.) |
|-----------|----------|---------------------------------|---------------------|------------------|-------|-------------|-----------------------|-------------|------------------------|-----------------------------------|--------------|--------|--------------------------------------|-------|------------------------------|
| PRECISION | COMPEN. | | | MIN. | MAX. | | | | | BOLT SIZE | HOLE SIZE | CIRCLE | GOLD | J | |
| DDS 16 | DDS 16 C | 1" | 3.00 | 2.098 | 2.100 | 2.5 | 0.562 | 3.500 | 6.563 | 1/4" | 0.281 | 2.550 | 14100 | 7050 | 3.823 |
| DDS 20 | DDS 20 C | 1-1/4" | 3.50 | 2.598 | 2.600 | 3 | 0.750 | 4.250 | 8.000 | 1/4" | 0.281 | 3.050 | 20580 | 10290 | 6.625 |
| DDS 24 | DDS 24 C | 1-1/2" | 4.25 | 2.998 | 3.000 | 3.5 | 1.000 | 5.000 | 9.500 | 3/8" | 0.406 | 3.650 | 28200 | 14100 | 10.363 |
| DDS 32 | DDS 32 C | 2" | 5.00 | 3.748 | 3.750 | 4.5 | 1.000 | 6.500 | 12.000 | 3/8" | 0.406 | 4.400 | 50100 | 25050 | 18.400 |

NOTES: All standard, pre-assembled "DDS" assemblies include a straight bore housing and standard "FLA" bearings found on page 10.

All straight bore, pre-assembled "DDSB" assemblies include a straight bore housing and standard "FL" bearings found on page 10.

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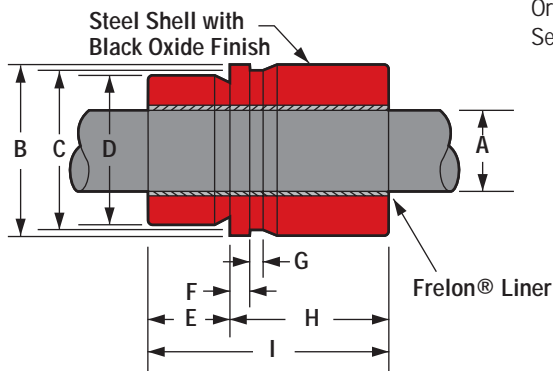


Simplicity® Self-lubricating Bearings

Flange Mount Die Sets - Inch Series

Linear Motion Systems

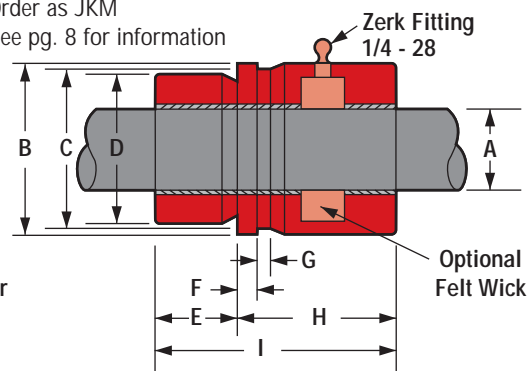
PAC FLANGE MOUNT DIE SETS



Lube System Optional

Order as JKM

See pg. 8 for information



BASIC DIMENSIONAL INFORMATION

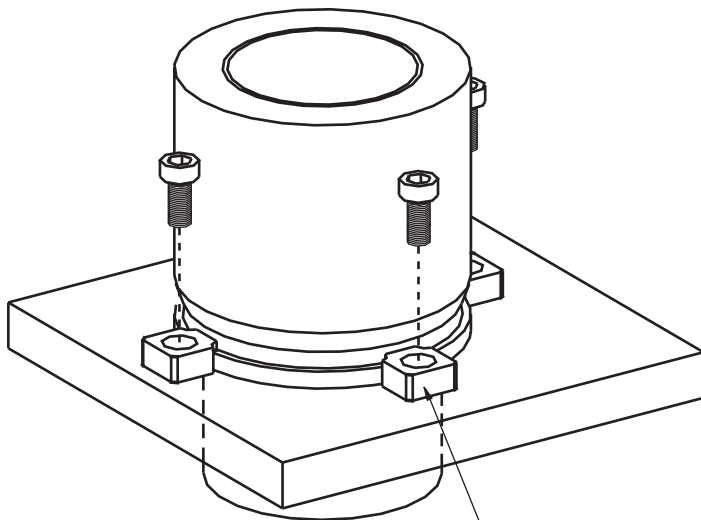
| PART NO. | NOMINAL SIZE | A BEARING I.D. | | PART NO. | A BEARING I.D. | | B FLANGE & BARREL O.D. | | C CLAMP DIA. | D PILOT O.D. | | E PILOT LENGTH | F FLANGE LENGTH | G RECESS LENGTH | H HEAD LENGTH | I OVERALL LENGTH | EFFECTIVE SURFACE AREA | MAX STATIC LOAD (lbs.) FRELON | | BEARING WEIGHT |
|-----------|--------------|----------------|--------|-------------|----------------|--------|------------------------|-------|--------------|--------------|--------|----------------|-----------------|-----------------|---------------|------------------|------------------------|-------------------------------|-------|----------------|
| | | MIN. | MAX. | | MIN. | MAX. | MIN. | MAX. | MIN. | MIN. | MAX. | | | | | | | (sq. in.) | GOLD | |
| PRECISION | (in.) | | | COMPENSATED | MIN. | MAX. | | | | | | | | | | | | | | |
| PAC 750 | 3/4" | 0.750 | 0.7510 | PAC 750 C | 0.7530 | 0.7540 | 1.285 | 1.300 | 1.012 | 1.1245 | 1.1250 | 0.812 | 0.188 | 0.712 | 2.000 | 2.812 | 2.209 | 6626 | 3313 | 0.625 |
| PAC 100 | 1" | 1.000 | 1.0010 | PAC 100 C | 1.0030 | 1.0040 | 1.723 | 1.738 | 1.450 | 1.4995 | 1.5000 | 0.875 | 0.188 | 0.812 | 2.250 | 3.125 | 3.272 | 9817 | 4909 | 1.000 |
| PAC 125 | 1-1/4" | 1.250 | 1.2510 | PAC 125 C | 1.2540 | 1.2550 | 2.097 | 2.112 | 1.825 | 1.7495 | 1.7500 | 1.125 | 0.188 | 0.812 | 2.375 | 3.500 | 4.581 | 13744 | 6872 | 1.500 |
| PAC 150 | 1-1/2" | 1.500 | 1.5012 | PAC 150 C | 1.5040 | 1.5050 | 2.346 | 2.361 | 2.075 | 1.9995 | 2.0000 | 1.375 | 0.188 | 1.112 | 2.750 | 4.125 | 6.480 | 19439 | 9719 | 2.000 |
| PAC 200 | 2" | 2.000 | 2.0014 | PAC 200 C | 2.0050 | 2.0064 | 3.095 | 3.110 | 2.825 | 2.4995 | 2.5000 | 1.625 | 0.188 | 1.112 | 3.000 | 4.625 | 9.687 | 29060 | 14530 | 4.188 |
| PAC 250 | 2-1/2" | 2.500 | 2.5016 | PAC 250 C | 2.5050 | 2.5065 | 3.595 | 3.610 | 3.325 | 2.9995 | 3.0000 | 1.875 | 0.188 | 1.112 | 3.500 | 5.375 | 14.072 | 42215 | 21108 | 6.000 |
| PAC 300 | 3" | 3.000 | 3.0020 | PAC 300 C | 3.0060 | 3.0080 | 4.345 | 4.360 | 4.075 | 3.6245 | 3.6250 | 1.875 | 0.188 | 1.112 | 4.000 | 5.875 | 18.457 | 55371 | 27685 | 10.000 |

NOTES: Formula used for effective surface area is $(\pi * ID * L)/3$

Max Static load is effective surface area times max load for FrelonGOLD®

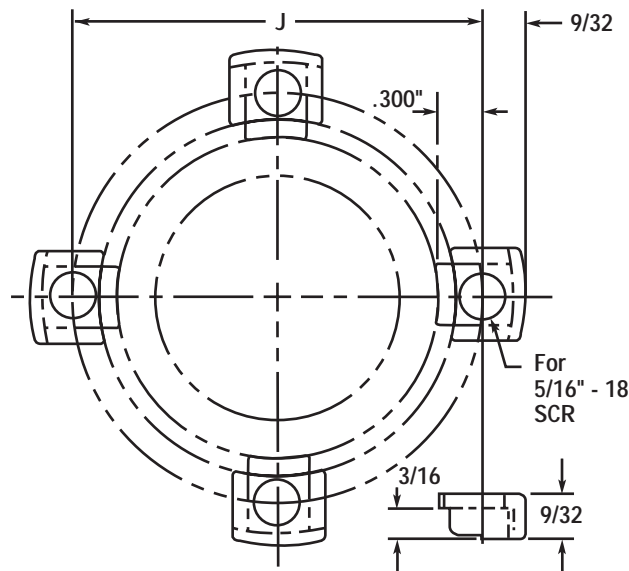
- 3000 psi is the rating for FrelonGOLD®

- 1500 psi is the rating for FrelonJ®



4 PAC CLAMPS ARE SHIPPED WITH EACH DIESET

EXTRAS CAN BE ORDERED USING PART #: PACCLAMP



NOTE: DIMENSION FOR CALCULATING BOLT CIRCLE

$$J = C + .600"$$

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Simplicity[®] Self-lubricating Bearings

Notes Page

Linear Motion Systems

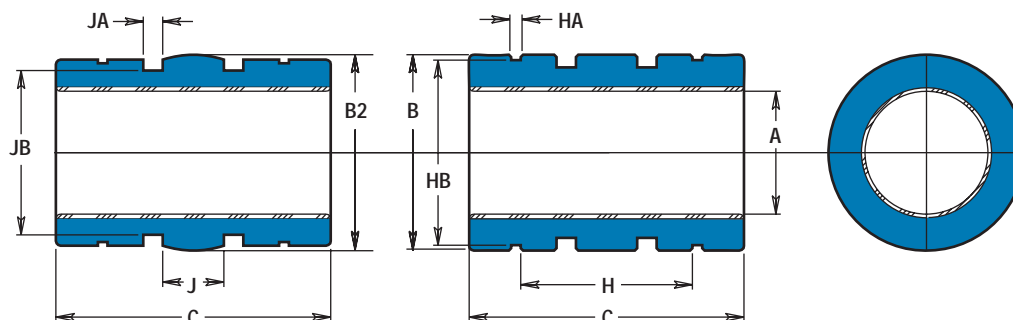
Notes

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FM LINEAR BEARINGS

*SELF-ALIGNING O.D. (FMA-XX) STANDARD O.D. (FM-XX)



*Except for the O.D., bearings with the self-aligning feature have the same dimensions and tolerances as the standard bearing. There is a spherical crown on the O.D. to create the self-aligning feature. They are used in a straight bore housing. Add an "A" to the part number per the example. More information on self-aligning bearings is on pages 41-42.

BASIC DIMENSIONAL INFORMATION

| PRECISION I.D. SERIES Similar to preloaded ball bearing | | | | | COMPENSATED I.D. SERIES Similar to standard ball bearing | | | | | | FMA | | | | | |
|--|--------|-----------------|------------------------|--------|---|---------|-------------------|--------|---------|------|----------------|---------|---------|------|-----------|-------|
| PART NO. | | NOMINAL SIZE | A BEARING I.D. (F8) | | PART NO. | | A BEARING I.D. | | | | B O.D. (h7) | | | | | |
| CLOSED | OPEN | (mm) | MIN. | MAX. | CLOSED | OPEN | MIN. | MAX. | MIN. | MAX. | MIN. | MAX. | MIN. | MAX. | MAX. (mm) | (kg.) |
| FM 05 | FMN 05 | 5 | 5.010 | 5.028 | FMC 05 | FMCN 05 | 5.060 | 5.078 | 11.982 | 12 | 11.941 | 11.966 | 21.746 | 22 | 0.0254 | 0.004 |
| FM 08 | FMN 08 | 8 | 8.013 | 8.035 | FMC 08 | FMCN 08 | 8.063 | 8.085 | 15.982 | 16 | 15.941 | 15.966 | 24.746 | 25 | 0.0254 | 0.009 |
| FM 10 | FMN 10 | 10 | 10.013 | 10.035 | FMC 10 | FMCN 10 | 10.063 | 10.085 | 18.979 | 19 | 18.938 | 18.964 | 28.746 | 29 | 0.0254 | 0.014 |
| FM 12 | FMN 12 | 12 | 12.016 | 12.043 | FMC 12 | FMCN 12 | 12.066 | 12.093 | 21.979 | 22 | 21.938 | 21.963 | 31.746 | 32 | 0.0254 | 0.017 |
| FM 16 | FMN 16 | 16 | 16.016 | 16.043 | FMC 16 | FMCN 16 | 16.066 | 16.093 | 25.979 | 26 | 25.938 | 25.964 | 35.746 | 36 | 0.0254 | 0.028 |
| FM 20 | FMN 20 | 20 | 20.020 | 20.053 | FMC 20 | FMCN 20 | 20.096 | 20.129 | 31.975 | 32 | 31.938 | 31.963 | 44.746 | 45 | 0.0254 | 0.054 |
| FM 25 | FMN 25 | 25 | 25.020 | 25.053 | FMC 25 | FMCN 25 | 25.096 | 25.129 | 39.975 | 40 | 39.936 | 39.962 | 57.746 | 58 | 0.0254 | 0.109 |
| FM 30 | FMN 30 | 30 | 30.020 | 30.053 | FMC 30 | FMCN 30 | 30.096 | 30.129 | 46.975 | 47 | 46.937 | 46.962 | 67.746 | 68 | 0.0254 | 0.176 |
| FM 40 | FMN 40 | 40 | 40.025 | 40.064 | FMC 40 | FMCN 40 | 40.127 | 40.166 | 61.970 | 62 | 61.935 | 61.961 | 79.746 | 80 | 0.0254 | 0.356 |
| FM 50 | FMN 50 | 50 | 50.025 | 50.064 | FMC 50 | FMCN 50 | 50.127 | 50.166 | 74.970 | 75 | 74.935 | 74.960 | 99.746 | 100 | 0.0254 | 0.628 |
| FM 60 | FMN 60 | 60 | 60.030 | 60.076 | FMC 60 | FMCN 60 | 60.182 | 60.228 | 89.965 | 90 | 89.931 | 89.957 | 124.492 | 125 | 0.0380 | 1.117 |
| FM 80 | FMN 80 | 80 | 80.030 | 80.076 | FMC 80 | FMCN 80 | 80.182 | 80.228 | 119.965 | 120 | 119.931 | 119.957 | 164.492 | 165 | 0.0510 | 2.679 |

MOUNTING DIMENSIONAL INFORMATION

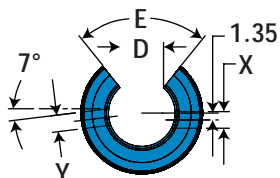
| PART NO. | | NOMINAL SIZE (mm) | H | HA | HB | RET. RING PART NO. (DIN 471) | J | JA | JB | METRIC O'RING PART NO. |
|----------|--------|-------------------------|-----------------------|-------------------------|------------------------|------------------------------------|-------------------------|----------------------|---------------------|------------------------------|
| CLOSED | OPEN | | BETWEEN RET. RINGS | RET. RING GRV. WIDTH | RET. RING GRV. DIA. | | BETWEEN O'RING GRVS. | O'RING GRV. WIDTH | O'RING GRV. DIA. | |
| FM 05 | FMN 05 | 5 | 12 | 1.14 | 11.5 | 12 | 5 | 2 | 9.86 | 9.7 x 1.3 |
| FM 08 | FMN 08 | 8 | 14 | 1.14 | 15.2 | 16 | 5.33 | 2 | 13.2 | 13 x 1.7 |
| FM 10 | FMN 10 | 10 | 19.4 | 1.32 | 18.0 | 19 | 5.63 | 2.44 | 15.7 | 15.5 x 2 |
| FM 12 | FMN 12 | 12 | 20 | 1.32 | 21.0 | 22 | 6 | 3.17 | 17.9 | 17.5 x 2.5 |
| FM 16 | FMN 16 | 16 | 22 | 1.32 | 24.9 | 26 | 8 | 3.17 | 21.9 | 21.5 x 2.5 |
| FM 20 | FMN 20 | 20 | 28 | 1.63 | 30.3 | 32 | 10 | 3.17 | 27.9 | 27.5 x 2.5 |
| FM 25 | FMN 25 | 25 | 40 | 1.90 | 37.5 | 40 | 12.5 | 3.17 | 35.9 | 35.5 x 2.5 |
| FM 30 | FMN 30 | 30 | 48 | 1.90 | 44.5 | 47 | 15 | 3.17 | 42.7 | 42.52 x 2.62 |
| FM 40 | FMN 40 | 40 | 56 | 2.20 | 59.0 | 62 | 20 | 4.1 | 56.3 | 56 x 3.5 |
| FM 50 | FMN 50 | 50 | 72 | 2.70 | 72.0 | 75 | 25 | 4.1 | 69.2 | 69 x 3.5 |
| FM 60 | FMN 60 | 60 | 95 | 3.20 | 86.4 | 90 | 30 | 7.1 | 81.7 | 81 x 5 |
| FM 80 | FMN 80 | 80 | 125 | 4.17 | 116.1 | 120 | 40 | 7.1 | 111.7 | 111 x 5 |

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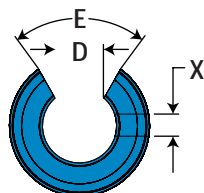


FM & FMN LINEAR BEARINGS

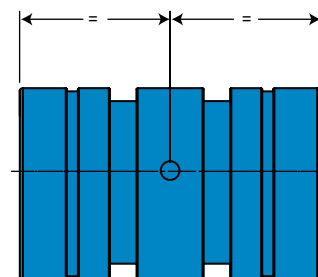
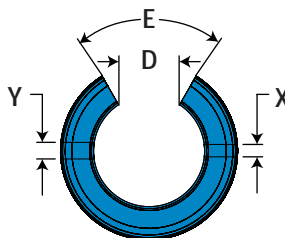
FMN 12 ONLY



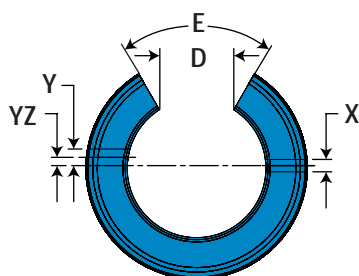
FMN 05 THRU FMN 10 & FMN 80



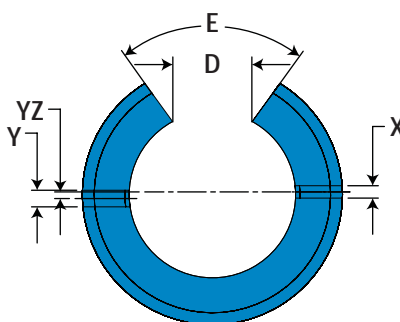
FMN 16 THRU FMN 20



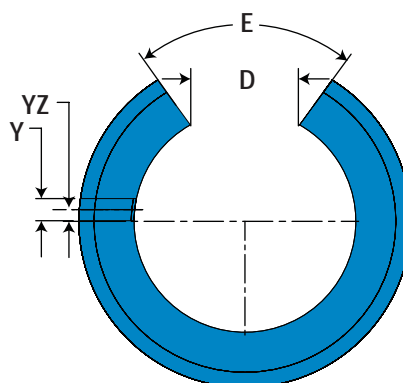
FMN 25 ONLY



FMN 30 THRU FMN 50



FMN 60 ONLY



OPEN DIMENSIONAL INFORMATION

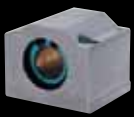
| PART NO. | NOMINAL SIZE | D SLOTTED WIDE MIN. | E SLOTTED ANGLE | X RET. HOLE DIA. | Y RET. HOLE DIA. | YZ RET. HOLE LOCATE | BEARING WT. (kg.) |
|----------|--------------|---------------------|-----------------|------------------|------------------|---------------------|-------------------|
| CLOSED | (mm) | | | | | | |
| FMN 05 | 5 | 3.2 | 60 | 2.2 | N / A | N / A | 0.0034 |
| FMN 08 | 8 | 5.1 | 60 | 3.0 | N / A | N / A | 0.0077 |
| FMN 10 | 10 | 6.4 | 60 | 3.0 | N / A | N / A | 0.0119 |
| FMN 12 | 12 | 7.6 | 78 | 3.0 | 3.0 | 7.0 | 0.0156 |
| FMN 16 | 16 | 10.4 | 78 | 2.2 | 3.0 | 0 | 0.0213 |
| FMN 20 | 20 | 10.8 | 60 | 2.2 | 3.0 | 0 | 0.0439 |
| FMN 25 | 25 | 13.2 | 60 | 3.0 | 3.0 | 1.5 | 0.0893 |
| FMN 30 | 30 | 14.2 | 72 | 3.0 | 3.0 | 2.0 | 0.1460 |
| FMN 40 | 40 | 19.5 | 72 | 3.0 | 3.0 | 1.5 | 0.2948 |
| FMN 50 | 50 | 24.0 | 72 | 3.0 | 5.0 | 2.5 | 0.5202 |
| FMN 60 | 60 | 29.6 | 72 | N / A | 6.0 | 0 | 0.9199 |
| FMN 80 | 80 | 39.0 | 72 | N / A | 8.0 | 0 | 2.2269 |

LOAD & SPEED DATA

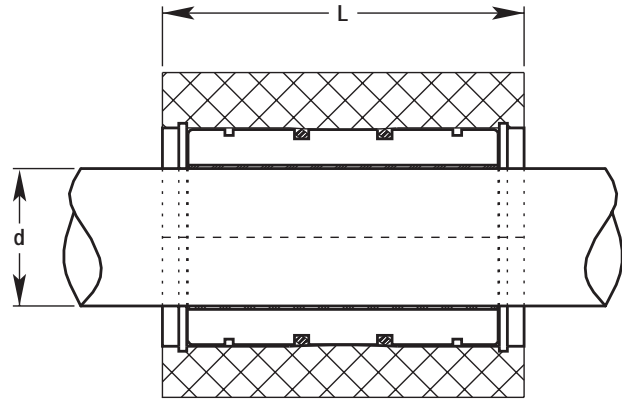
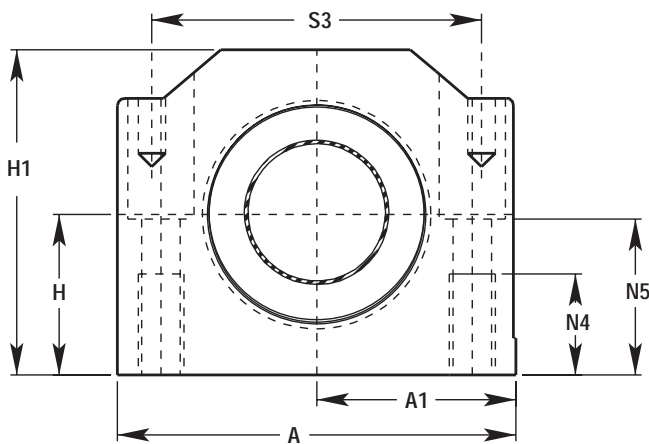
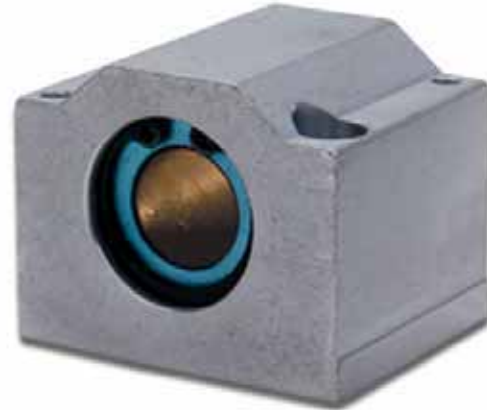
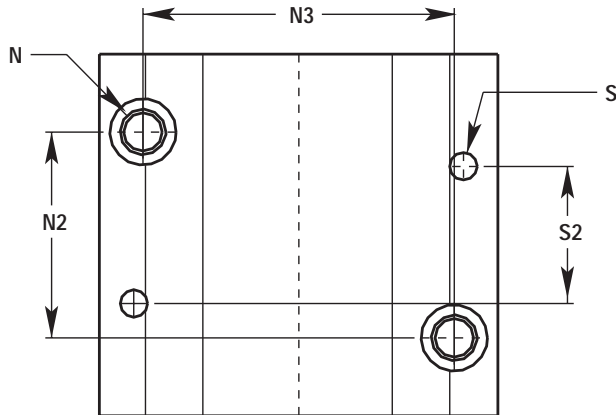
| PART NO. | EFFECTIVE SURFACE AREA (sq. in.) | MAX. STATIC LOAD FRELON | | EFFECTIVE SURFACE AREA (mm²) | MAX. STATIC LOAD FRELON | |
|--|----------------------------------|--|----------|------------------------------|-------------------------|--------|
| | | GOLD (lbs.) | J (lbs.) | | GOLD (N) | J (N) |
| FMN 05 | 1.1 | 232 | 116 | 110 | 2276 | 1138 |
| FMN 08 | 2 | 420 | 210 | 200 | 4120 | 2060 |
| FMN 10 | 2.9 | 610 | 305 | 290 | 5984 | 2992 |
| FMN 12 | 3.8 | 806 | 403 | 380 | 7907 | 3953 |
| FMN 16 | 5.8 | 1210 | 605 | 580 | 11870 | 5935 |
| FMN 20 | 9 | 1890 | 945 | 900 | 18541 | 9270 |
| FMN 25 | 14.5 | 3046 | 1523 | 1450 | 29881 | 14941 |
| FMN 30 | 20.4 | 4284 | 2142 | 2040 | 42026 | 21013 |
| FMN 40 | 32 | 6720 | 3360 | 3200 | 65923 | 32962 |
| FMN 50 | 50 | 10500 | 5250 | 5000 | 103005 | 51503 |
| FMN 60 | 75 | 15750 | 7875 | 7500 | 154508 | 77254 |
| FMN 80 | 132 | 27720 | 13860 | 13200 | 271933 | 135967 |
| MAX. PV (m/min. * kg/sq. cm) | | MAX. PV (m/s. * N/mm²) | | | | |
| FrelonGold = 430 PV | | FrelonGold = 0.70 PV | | | | |
| FrelonJ = 215 PV | | FrelonJ = 0.35 PV | | | | |
| MAX. Speed Running Dry (m/min.) | | MAX. Speed Running Dry (m/s.) | | | | |
| FrelonGold = 91.4 | | FrelonGold = 1.52 | | | | |
| FrelonJ = 42.6 | | FrelonJ = 0.71 | | | | |
| MAX. Speed Running with Lubrication (m/min.) | | MAX. Speed Running with Lubrication (m/s.) | | | | |
| FrelonGold = 251.5 | | FrelonGold = 4.19 | | | | |
| FrelonJ = 122 | | FrelonJ = 2.03 | | | | |

| | |
|-------------------------------|---------|
| Pillow Block Information..... | 20-21 |
| Thin Wall Bearings..... | 22-23 |
| Sleeve Bearings | 156-157 |
| Die Set Bushings | 24 |
| Flange Mounted Bearings | 25-27 |

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PM CLOSED PILLOW BLOCKS

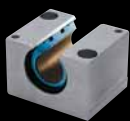


CLOSED PILLOW BLOCKS

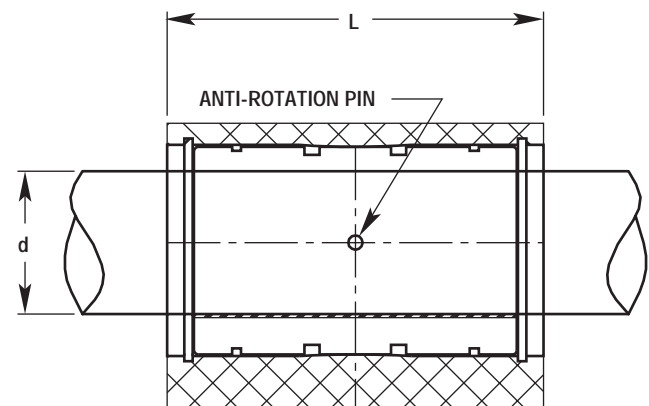
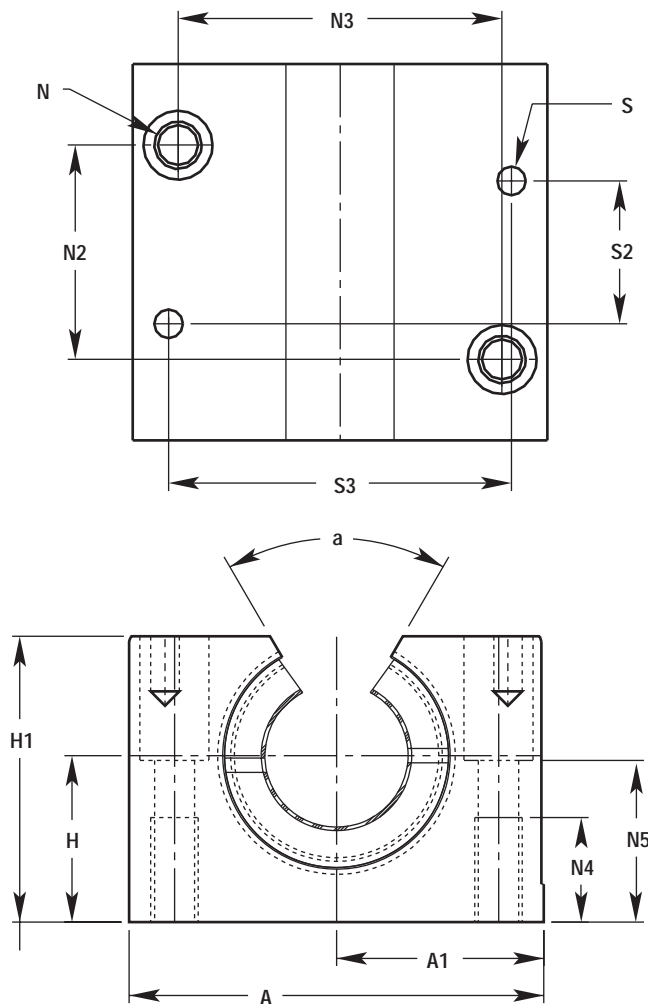
| PART NO. CLOSED | | d NOM. I.D. | H CENTERLINE | H1 | A | A1 | L | N | N2 | N3 | N4 | N5 | S | S2 | S3 | MAX. STATIC LOAD (kg.) FRECON | | MAX. STATIC LOAD (N) FRECON | | ASSEM. WT. |
|-----------------|---------|-------------------|-----------------|--------|-------|------|--------|------------|-------|--------|----|------|-------|-------|-------|-------------------------------------|------|-----------------------------------|-------|---------------|
| PRECISION | COMPEN. | MIN. | .015 | HEIGHT | WIDTH | .013 | LENGTH | BOLT | | | | | | | | GOLD | J | GOLD | J | (kg.) |
| PM 08 | PM 08 C | 8 | 15 | 28 | 35 | 17.5 | 32 | M4 x 0.7 | 20.15 | 25.15 | 9 | 14.5 | N / A | N / A | N / A | 420 | 210 | 4120 | 206 | 0.069 |
| PM 10 | PM 10 C | 10 | 16 | 31.5 | 40 | 20 | 36 | M5 x 0.8 | 20.15 | 29.15 | 11 | 15 | 4 | 29 | 31 | 610 | 305 | 5984 | 2992 | 0.095 |
| PM 12 | PM 12 C | 12 | 18 | 35 | 43 | 21.5 | 39 | M5 x 0.8 | 23.15 | 32.15 | 11 | 16.5 | 4 | 32 | 34 | 806 | 403 | 7907 | 3953 | 0.118 |
| PM 16 | PM 16 C | 16 | 22 | 42 | 53 | 26.5 | 43 | M6 x 1.0 | 26.15 | 40.15 | 13 | 21 | 4 | 35 | 42 | 1210 | 605 | 11870 | 5935 | 0.200 |
| PM 20 | PM 20 C | 20 | 25 | 50 | 60 | 30 | 54 | M8 x 1.25 | 32.15 | 45.15 | 18 | 24 | 5 | 45 | 50 | 1890 | 945 | 18541 | 9270 | 0.329 |
| PM 25 | PM 25 C | 25 | 30 | 60 | 78 | 39 | 67 | M10 x 1.5 | 40.15 | 60.15 | 22 | 29 | 6 | 20 | 64 | 3046 | 1523 | 29881 | 14941 | 0.655 |
| PM 30 | PM 30 C | 30 | 35 | 71 | 87 | 43.5 | 79 | M10 x 1.5 | 45.15 | 68.15 | 22 | 34 | 6 | 30 | 72 | 4284 | 2142 | 42026 | 21013 | 1.020 |
| PM 40 | PM 40 C | 40 | 45 | 91 | 108 | 54 | 91 | M12 x 1.75 | 58.15 | 86.15 | 26 | 44 | 8 | 35 | 90 | 6720 | 3360 | 65923 | 32962 | 1.846 |
| PM 50 | PM 50 C | 50 | 50 | 105 | 132 | 66 | 113 | M16 x 2.0 | 50.20 | 108.20 | 34 | 49 | 10 | 42 | 108 | 10500 | 5250 | 103005 | 51503 | 3.169 |

- NOTES:** (1) Standard pillow block assembly includes self-aligning housing and precision bearing.
 (2) All standard metric pillow blocks use standard "FM" series bearings found on page 18.
 (3) Straight bore pillow block assembly includes standard O.D. "FM" series bearing in straight bore housing.

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PMN OPEN PILLOW BLOCKS



OPEN PILLOW BLOCKS

| PART NO. CLOSED | | d NOM. I.D. | H CENTERLINE | H1 | A | A1 CENTERLINE | L | N | N2 | N3 | N4 | N5 | S | S2 | S3 | a | MAX. STATIC LOAD (kg.) FRELON | | MAX. STATIC LOAD (N) FRELON | | ASSEM. WT. |
|-----------------|---------|-------------------|-----------------|--------|-------|------------------|--------|------------|-------|--------|----|------|----|----|-----|----|-------------------------------------|------|-----------------------------------|-------|---------------|
| PRECISION | COMPEN. | MIN. | .015 | HEIGHT | WIDTH | .013 | LENGTH | BOLT | | | | | | | | | GOLD | J | GOLD | J | (kg.) |
| PMN 12 | PMN 12C | 12 | 18 | 28 | 43 | 21.5 | 39 | M5 x 0.8 | 23.15 | 32.15 | 11 | 16.5 | 4 | 32 | 34 | 66 | 806 | 403 | 7907 | 3953 | 0.096 |
| PMN 16 | PMN 16C | 16 | 22 | 35 | 53 | 26.5 | 43 | M6 x 1.0 | 26.15 | 40.15 | 13 | 21 | 4 | 35 | 42 | 68 | 1210 | 605 | 11870 | 5935 | 0.162 |
| PMN 20 | PMN 20C | 20 | 25 | 42 | 60 | 30 | 54 | M8 x 1.25 | 32.15 | 45.15 | 18 | 24 | 5 | 45 | 50 | 60 | 1890 | 945 | 18541 | 9270 | 0.267 |
| PMN 25 | PMN 25C | 25 | 30 | 51 | 78 | 39 | 67 | M10 x 1.5 | 40.15 | 60.15 | 22 | 29 | 6 | 20 | 64 | 60 | 3046 | 1523 | 29881 | 14941 | 0.536 |
| PMN 30 | PMN 30C | 30 | 35 | 60 | 87 | 43.5 | 79 | M10 x 1.5 | 45.15 | 68.15 | | 34 | 6 | 30 | 72 | 60 | 4284 | 2142 | 42026 | 21013 | 0.831 |
| PMN 40 | PMN 40C | 40 | 45 | 77 | 108 | 54 | 91 | M12 x 1.75 | 58.15 | 86.15 | 26 | 44 | 8 | 35 | 90 | 60 | 6720 | 3360 | 65923 | 32962 | 1.499 |
| PMN 50 | PMN 50C | 50 | 50 | 88 | 132 | 66 | 113 | M16 x 2.0 | 50.20 | 108.20 | 34 | 49 | 10 | 42 | 108 | 60 | 10500 | 5250 | 103005 | 51503 | 2.539 |

NOTES: (1) Standard pillow block assembly includes self-aligning housing and precision bearing.
 (2) All standard metric pillow blocks use standard "FM" series bearings found on page 18.

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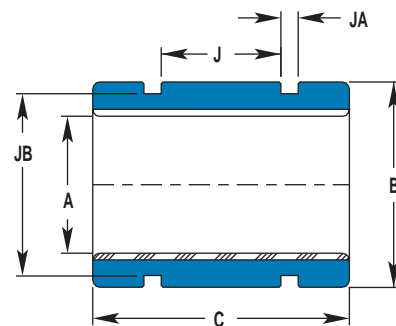
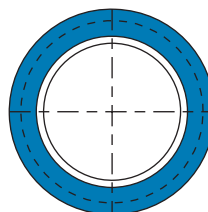
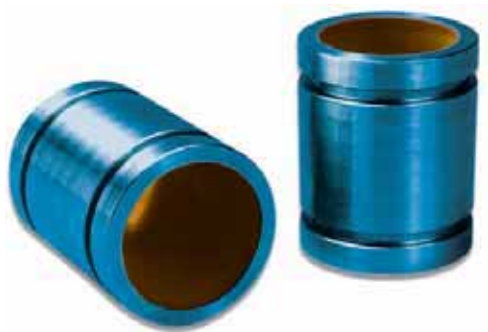


Simplicity® Self-lubricating Bearings

Compact Thin Wall Bearings - ISO Metric

Linear Motion Systems

FMT COMPACT THIN WALL BEARINGS



BASIC DIMENSIONAL INFORMATION

| PRECISION I.D. SERIES Similar to preloaded ball bearing | | | | COMPENSATED I.D. SERIES Similar to standard ball bearing | | | | | | | | |
|--|-----------------|------------------------|--------|---|-------------------|--------|----------------|------|-------------------|------|------------|-------------------|
| PART NO. | NOMINAL SIZE | A BEARING I.D. (F8) | | PART NO. | A BEARING I.D. | | | | | | | |
| CLOSED | (mm) | MIN. | MAX. | CLOSED | MIN. | MAX. | B O.D. (h7) | | C LENGTH (h13) | | CONCENTRIC | BEARING WEIGHT |
| | | | | | | | MIN. | MAX. | MIN. | MAX. | MAX. (mm) | (kg.) |
| FMT 06 | 6 | 6.010 | 6.028 | FMT C 06 | 6.060 | 6.078 | 11.982 | 12 | 21.746 | 22 | 0.0254 | 0.0057 |
| FMT 08 | 8 | 8.013 | 8.035 | FMT C 08 | 8.063 | 8.085 | 14.982 | 15 | 23.746 | 24 | 0.0254 | 0.0071 |
| FMT 10 | 10 | 10.013 | 10.035 | FMT C 10 | 10.063 | 10.085 | 16.982 | 17 | 25.746 | 26 | 0.0254 | 0.0085 |
| FMT 12 | 12 | 12.016 | 12.043 | FMT C 12 | 12.066 | 12.093 | 18.979 | 19 | 27.746 | 28 | 0.0254 | 0.0113 |
| FMT 14 | 14 | 14.016 | 14.043 | FMT C 14 | 14.066 | 14.093 | 20.979 | 21 | 27.746 | 28 | 0.0254 | 0.0128 |
| FMT 16 | 16 | 16.016 | 16.043 | FMT C 16 | 16.066 | 16.093 | 23.979 | 24 | 29.746 | 30 | 0.0254 | 0.0184 |
| FMT 20 | 20 | 20.020 | 20.053 | FMT C 20 | 20.096 | 20.129 | 27.979 | 28 | 29.746 | 30 | 0.0254 | 0.0227 |
| FMT 25 | 25 | 25.020 | 25.053 | FMT C 25 | 25.096 | 25.129 | 34.975 | 35 | 39.746 | 40 | 0.0254 | 0.0439 |
| FMT 30 | 30 | 30.020 | 30.053 | FMT C 30 | 30.090 | 30.129 | 39.975 | 40 | 49.746 | 50 | 0.0254 | 0.0652 |
| FMT 40 | 40 | 40.025 | 40.064 | FMT C 40 | 40.127 | 40.166 | 51.970 | 52 | 59.746 | 60 | 0.0254 | 0.1233 |
| FMT 50 | 50 | 50.025 | 50.064 | FMT C 50 | 50.127 | 50.166 | 61.970 | 62 | 69.746 | 70 | 0.0254 | 0.1772 |

MOUNTING DIMENSIONS

| PART NO. | | NOMINAL SIZE | J BETWEEN O-RING GRVS. | JA O-RING GRV. WIDTH | JB O-RING GRV. DIA. | METRIC O-RING PART NO. |
|-----------|-------------|-----------------|---------------------------------|-------------------------------|---------------------------|------------------------------|
| PRECISION | COMPENSATED | | | | | |
| FMT 06 | FMT 06 | 6 | N / A | N / A | N / A | N / A |
| FMT 08 | FMT 08 | 8 | 10.0 | 2.000 | 12.200 | 12 x 1.7 |
| FMT 10 | FMT 10 | 10 | 12.0 | 2.000 | 14.400 | 14 x 1.6 |
| FMT 12 | FMT 12 | 12 | 14.0 | 2.000 | 16.600 | 16 x 1.5 |
| FMT 14 | FMT 14 | 14 | 14.0 | 2.000 | 18.500 | 18 x 1.5 |
| FMT 16 | FMT 16 | 16 | 14.0 | 2.000 | 21.300 | 21.1 x 1.6 |
| FMT 20 | FMT 20 | 20 | 14.0 | 2.000 | 25.500 | 25 x 1.5 |
| FMT 25 | FMT 25 | 25 | 22.0 | 3.200 | 30.900 | 30.5 x 2.5 |
| FMT 30 | FMT 30 | 30 | 30.0 | 3.200 | 35.900 | 35.5 x 2.5 |
| FMT 40 | FMT 40 | 40 | 40.0 | 4.100 | 46.200 | 46 x 3.5 |
| FMT 50 | FMT 50 | 50 | 50.0 | 4.100 | 56.300 | 26 x 3.5 |

LOAD & SPEED DATA

| PART NO. | EFFECTIVE SURFACE AREA (sq. cm.) | MAX. STATIC LOAD FRELON | | EFFECTIVE SURFACE AREA (mm ²) | MAX. STATIC LOAD FRELON | |
|----------|---|--|------|--|-------------------------|-------|
| | | GOLD | J | | GOLD | J |
| FMT 06 | 1.3 | 278 | 139 | 130 | 2727 | 1364 |
| FMT 08 | 1.9 | 404 | 202 | 190 | 3963 | 1982 |
| FMT 10 | 2.6 | 546 | 273 | 260 | 5356 | 2678 |
| FMT 12 | 3.4 | 706 | 353 | 340 | 6926 | 3463 |
| FMT 14 | 3.9 | 824 | 412 | 390 | 8083 | 4042 |
| FMT 16 | 4.8 | 1008 | 504 | 480 | 9888 | 4944 |
| FMT 20 | 6.0 | 1260 | 630 | 600 | 12361 | 6180 |
| FMT 25 | 10.0 | 2100 | 1050 | 1000 | 20601 | 10301 |
| FMT 30 | 15.0 | 3150 | 1575 | 1500 | 30902 | 15451 |
| FMT 40 | 24.0 | 5040 | 2520 | 2400 | 49442 | 24721 |
| FMT 50 | 35.0 | 7350 | 3675 | 3500 | 72104 | 36052 |
| | | MAX. PV (m/min. * kg/sq. cm) FrelonGold = 430 PV FrelonJ = 215 PV | | MAX. PV (m/s. * N/mm ²) FrelonGold = 0.70 PV FrelonJ = 0.35 PV | | |
| | | MAX. Speed Running Dry (m/min.) FrelonGold = 91.4 FrelonJ = 42.6 | | MAX. Speed Running Dry (m/s.) FrelonGold = 1.52 FrelonJ = 0.71 | | |
| | | MAX. Speed Running with Lubrication (m/min.) FrelonGold = 251.5 FrelonJ = 122 | | MAX. Speed Running with Lubrication (m/s.) FrelonGold = 4.19 FrelonJ = 2.03 | | |

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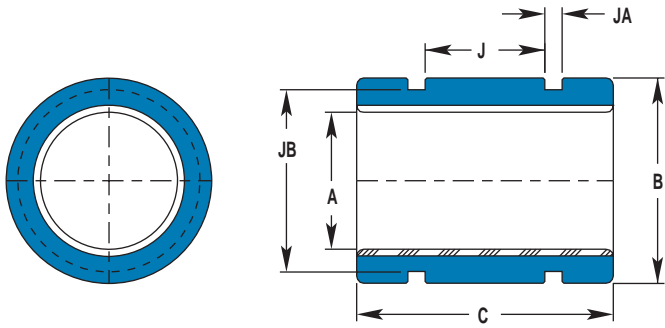


Simplicity® Self-lubricating Bearings

Compact Thin Wall Bearings - ISO Metric

Linear Motion Systems

FG COMPACT THIN WALL BEARINGS



BASIC DIMENSIONAL INFORMATION

| PRECISION I.D. SERIES Similar to preloaded ball bearing | | | | COMPENSATED I.D. SERIES Similar to standard ball bearing | | | B O.D. (h7) | | C LENGTH (h13) | | CONCENTRIC | BEARING WEIGHT |
|--|-----------------|------------------------|--------|---|-------------------|--------|----------------|------|-------------------|------|------------|-------------------|
| PART NO. | NOMINAL SIZE | A BEARING I.D. (F8) | | PART NO. | A BEARING I.D. | | | | | | | |
| CLOSED | (mm) | MIN. | MAX. | CLOSED | MIN. | MAX. | MIN. | MAX. | MIN. | MAX. | MAX. mm | (kg.) |
| FG 06 | 6 | 6.010 | 6.028 | FGC 06 | 6.060 | 6.078 | 11.98 | 12 | 17.8 | 18 | 0.0254 | 0.004 |
| FG 08 | 8 | 8.013 | 8.035 | FGC 08 | 8.063 | 8.085 | 14.98 | 15 | 19.8 | 20 | 0.0254 | 0.006 |
| FG 10 | 10 | 10.013 | 10.035 | FGC 10 | 10.063 | 10.085 | 16.98 | 17 | 21.8 | 22 | 0.0254 | 0.008 |
| FG 12 | 12 | 12.016 | 12.043 | FGC 12 | 12.066 | 12.093 | 21.98 | 22 | 26.8 | 27 | 0.0254 | 0.018 |
| FG 15 | 15 | 15.016 | 15.043 | FGC 15 | 15.066 | 15.093 | 24.98 | 25 | 27.8 | 28 | 0.0254 | 0.022 |
| FG 16 | 16 | 16.016 | 16.043 | FGC 16 | 16.066 | 16.093 | 25.98 | 26 | 29.8 | 30 | 0.0254 | 0.025 |
| FG 18 | 18 | 18.020 | 18.053 | FGC 18 | 18.096 | 18.129 | 27.98 | 28 | 29.8 | 30 | 0.0254 | 0.027 |
| FG 20 | 20 | 20.020 | 20.053 | FGC 20 | 20.096 | 20.129 | 31.98 | 32 | 34.8 | 35 | 0.0254 | 0.044 |
| FG 25 | 25 | 25.020 | 25.053 | FGC 25 | 25.096 | 25.129 | 39.98 | 40 | 44.8 | 45 | 0.0254 | 0.091 |
| FG 30 | 30 | 30.020 | 30.053 | FGC 30 | 30.096 | 30.129 | 44.98 | 45 | 53.8 | 54 | 0.0254 | 0.127 |
| FG 35 | 35 | 35.025 | 35.064 | FGC 35 | 35.127 | 35.166 | 51.98 | 52 | 61.7 | 62 | 0.0254 | 0.189 |
| FG 40 | 40 | 40.025 | 40.064 | FGC 40 | 40.127 | 40.166 | 59.98 | 60 | 71.7 | 72 | 0.0254 | 0.301 |
| FG 50 | 50 | 50.025 | 50.064 | FGC 50 | 50.127 | 50.166 | 74.98 | 75 | 89.7 | 90 | 0.0254 | 0.596 |

MOUNTING DIMENSIONS

| PART NO. | | NOMINAL SIZE | J | JA | JB | METRIC O-RING PART NO. |
|-----------|-------------|--------------|----------------------|-------------------|------------------|------------------------|
| PRECISION | COMPENSATED | | BETWEEN O-RING GRVS. | O-RING GRV. WIDTH | O-RING GRV. DIA. | |
| FG 06 | FGC 06 | 6 | N / A | N / A | N / A | N / A |
| FG 08 | FGC 08 | 8 | 8.0 | 2.032 | 12.201 | 12 x 1.7 |
| FG 10 | FGC 10 | 10 | 8.3 | 2.032 | 14.415 | 14 x 1.6 |
| FG 12 | FGC 12 | 12 | 12.0 | 3.175 | 17.907 | 17.5 x 2.5 |
| FG 15 | FGC 15 | 15 | 12.7 | 3.175 | 20.671 | 20 x 2.65 |
| FG 16 | FGC 16 | 16 | 12.7 | 3.175 | 21.882 | 21.5 x 2.5 |
| FG 18 | FGC 08 | 18 | 14.0 | 3.175 | 23.885 | 23.5 x 2.5 |
| FG 20 | FGC 20 | 20 | 17.0 | 3.175 | 27.864 | 27.5 x 2.5 |
| FG 25 | FGC 25 | 25 | 24.0 | 3.175 | 35.865 | 35.5 x 2.5 |
| FG 30 | FGC 30 | 30 | 30.0 | 3.175 | 40.895 | 40 x 2.5 |
| FG 35 | FGC 35 | 35 | 36.0 | 4.115 | 46.200 | 46 x 3.5 |
| FG 40 | FGC 40 | 40 | 37.3 | 4.115 | 54.255 | 53 x 3.5 |
| FG 50 | FGC 50 | 50 | 50 | 4.115 | 69.215 | 69 x 3.5 |

LOAD & SPEED DATA

| PART NO. | EFFECTIVE SURFACE AREA (sq. cm.) | MAX. STATIC LOAD FRELON | | EFFECTIVE SURFACE AREA (mm ²) | MAX. STATIC LOAD FRELON | |
|---|-------------------------------------|---|------|--|-------------------------|-------|
| | | GOLD | J | | GOLD | J |
| FG 06 | 1.1 | 226 | 113 | 110 | 2217 | 1109 |
| FG 08 | 1.6 | 336 | 168 | 160 | 3296 | 1648 |
| FG 10 | 2.2 | 462 | 231 | 220 | 4532 | 2266 |
| FG 12 | 3.2 | 680 | 340 | 320 | 6671 | 3335 |
| FG 15 | 4.2 | 882 | 441 | 420 | 8652 | 4326 |
| FG 16 | 4.8 | 1008 | 504 | 480 | 9888 | 4944 |
| FG 18 | 5.4 | 1134 | 567 | 540 | 11125 | 5562 |
| FG 20 | 7.0 | 1470 | 735 | 700 | 14421 | 7210 |
| FG 25 | 11.3 | 2362 | 1181 | 1130 | 23171 | 11586 |
| FG 30 | 16.2 | 3402 | 1701 | 1620 | 33374 | 16687 |
| FG 35 | 21.7 | 4558 | 2279 | 2170 | 44714 | 22357 |
| FG 40 | 28.8 | 6048 | 3024 | 2880 | 59331 | 29665 |
| FG 50 | 45.0 | 9450 | 4725 | 4500 | 92705 | 46352 |
| MAX. PV (m/min. * kg/sq. cm) FrelonGold = 430 PV FrelonJ = 215 PV | | MAX. PV (m/s. * N/mm ²) FrelonGold = 0.70 PV FrelonJ = 0.35 PV | | | | |
| MAX. Speed Running Dry (m/min.) FrelonGold = 91.4 FrelonJ = 42.6 | | MAX. Speed Running Dry (m/s.) FrelonGold = 1.52 FrelonJ = 0.71 | | | | |
| MAX. Speed Running with Lubrication (m/min.) FrelonGold = 251.5 FrelonJ = 122 | | MAX. Speed Running with Lubrication (m/s.) FrelonGold = 4.19 FrelonJ = 2.03 | | | | |

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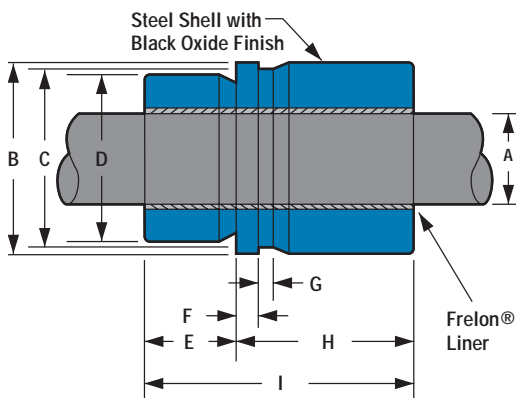


Simplicity® Self-lubricating Bearings

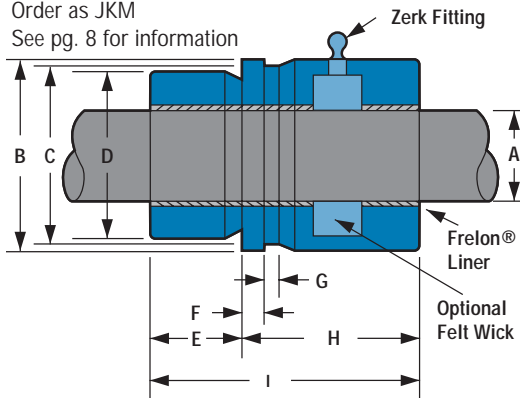
Die Set Bushings - ISO Metric

Linear Motion Systems

PACM DIE SET BUSHINGS



Lube System Optional
Order as JKM
See pg. 8 for information



| PART NO. | NOMINAL SIZE (in.) | A BEARING I.D. | | PART NO. | A BEARING I.D. | | B FLANGE & BARREL O.D. (H7) | | C CLAMP DIA. | D PILOT O.D. (H7) | | E PILOT LENGTH | F FLANGE LENGTH | G RECESS LENGTH | H HEAD LENGTH | I OVERALL LENGTH | EFFECTIVE SURFACE AREA (sq. cm) | MAX. STATIC LOAD (kg.) FRELON | | BEARING WEIGHT (kg.) |
|----------|--------------------|----------------|--------|-----------|----------------|--------|-----------------------------|------|--------------|-------------------|------|----------------|-----------------|-----------------|---------------|------------------|---------------------------------|-------------------------------|-------|----------------------|
| | | MIN. | MAX. | | MIN. | MAX. | MIN. | MAX. | | MIN. | MAX. | | | | | | | GOLD | J | |
| PACM 19 | 19 | 19.020 | 19.053 | PACM 19 C | 19.096 | 19.129 | 33.975 | 34 | 29 | 27.979 | 28 | 18 | | 18 | 52 | 70 | 13.928 | 2925 | 1469 | 0.282 |
| PACM 25 | 25 | 25.020 | 25.053 | PACM 25 C | 25.096 | 25.129 | 43.975 | 44 | 39 | 37.975 | 38 | 23 | | 20 | 57 | 80 | 20.944 | 4398 | 2209 | 0.551 |
| PACM 32 | 32 | 32.020 | 32.053 | PACM 32 C | 32.096 | 32.129 | 52.970 | 53 | 48 | 44.975 | 45 | 26 | | | 64 | 90 | 30.159 | 6333 | 3180 | 0.834 |
| PACM 40 | 40 | 40.025 | 40.064 | PACM 40 C | 40.127 | 40.166 | 62.970 | 63 | 58 | 53.970 | 54 | 30 | | | 70 | 100 | 41.888 | 8796 | 4417 | 1.229 |
| PACM 50 | 50 | 50.025 | 50.064 | PACM 50 C | 50.127 | 50.166 | 78.970 | 79 | 74 | 64.970 | 65 | 35 | | | 75 | 110 | 57.596 | 12095 | 6073 | 2.055 |
| PACM 63 | 63 | 63.030 | 63.076 | PACM 63 C | 63.182 | 63.228 | 91.965 | 92 | 87 | 80.970 | 81 | 48 | | | 82 | 130 | 85.765 | 10811 | 9044 | 2.984 |
| PACM 80 | 80 | 80.030 | 80.076 | PACM 80 C | 80.182 | 80.228 | 110.965 | 111 | 106 | 99.965 | 100 | 48 | | | 102 | 150 | 125.664 | 26389 | 13251 | 4.772 |

NOTES: Formula used for effective surface area is $(\pi \times ID \times L)/3$

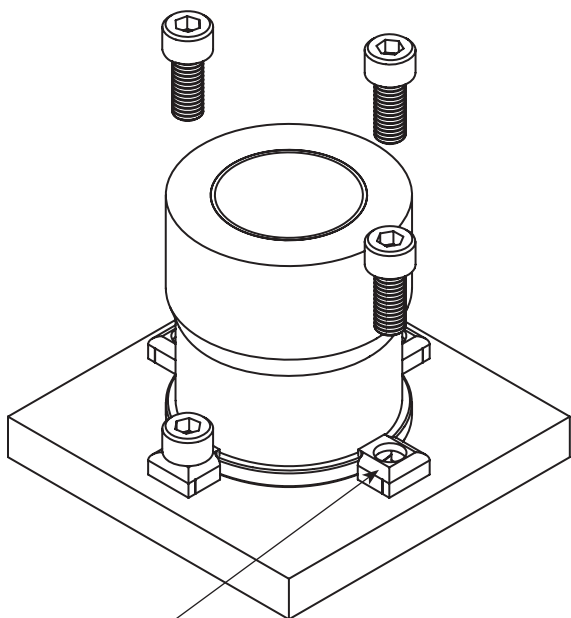
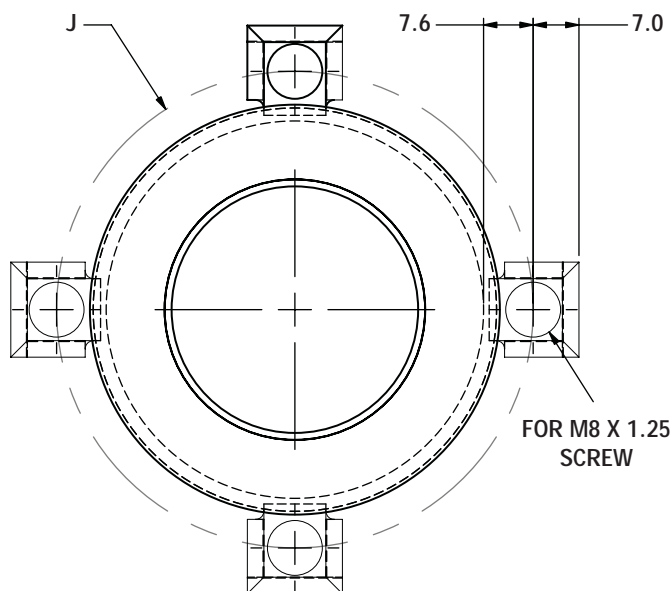
Max static load is effective surface area times max load for FrelonGOLD®

- 210 kgf/cm² is the rating for FrelonGOLD®

- 105.45 kgf/cm² is the rating for FrelonJ®

NOTE: DIMENSION FOR CALCULATING BOLT CIRCLE

$$J = C + 15.8\text{mm}$$



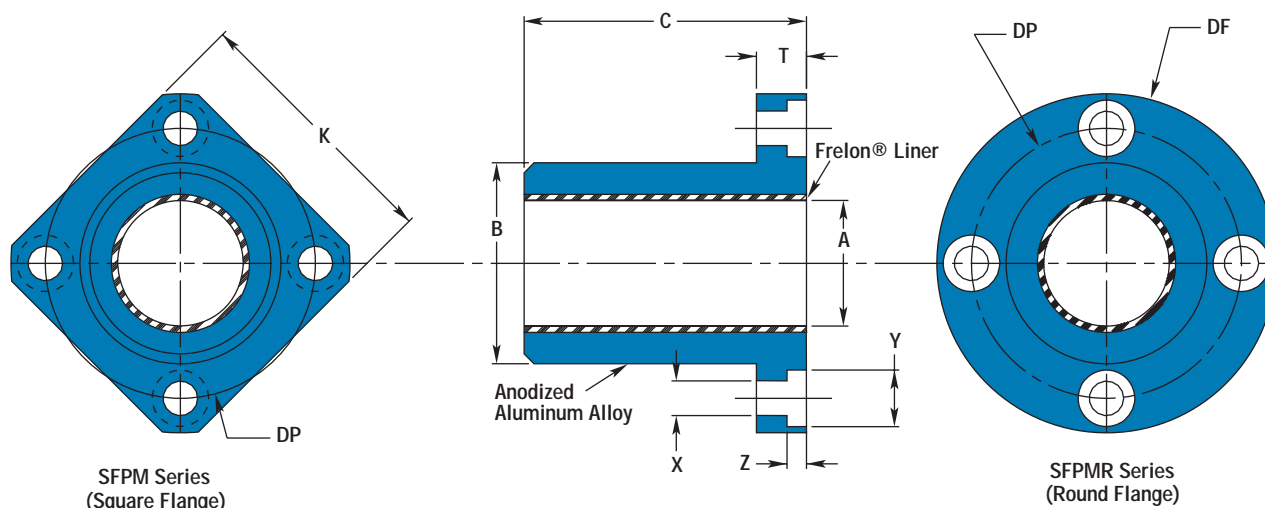
4 PAC CLAMPS ARE SHIPPED WITH EACH DIESET

EXTRAS CAN BE ORDERED USING PART #: PACCLAMP

The data and specifications in this publication have been carefully compiled and are believed to be accurate and correct. However, it is the responsibility of the user to determine and ensure the suitability of Pacific Bearing® products for a specific application. Pacific Bearing's only obligation will be to repair or replace without charge, any defective components if returned promptly. No liability is assumed beyond such replacement. *Consult www.pacific-bearing.com for the latest technical updates.



SFPM FLANGE BEARINGS



BASIC DIMENSIONAL INFORMATION

| PRECISION I.D. SERIES Similar to preloaded ball bearing | | | | | COMPENSATED I.D. SERIES Similar to standard ball bearing | | | | B BODY O.D. (h7) | | C LENGTH (h13) | | EFFECTIVE SURFACE AREA | MAX. STATIC LOAD (kg.) FRELON | |
|--|----------|-----------------|------------------------|--------|---|-----------|-------------------|--------|---------------------|------|-------------------|------|------------------------------|-------------------------------------|-------|
| PART NO. | | NOMINAL SIZE | A BEARING I.D. (F8) | | PART NO. | | A BEARING I.D. | | | | | | | | |
| SQUARE | ROUND | (mm) | MIN. | MAX. | SQUARE | ROUND | MIN. | MAX. | MIN. | MAX. | MIN. | MAX. | (sq. cm) | GOLD | J |
| SFPM 08 | SFPMR 08 | 8 | 8.013 | 8.035 | SFPM 08C | SFPMR 08C | 8.063 | 8.085 | 15.982 | 16 | 24.8 | 25 | 2.094 | 440 | 221 |
| SFPM 12 | SFPMR 12 | 12 | 12.016 | 12.043 | SFPM 12C | SFPMR 12C | 12.066 | 12.093 | 21.979 | 22 | 31.8 | 32 | 4.021 | 844 | 424 |
| SFPM 16 | SFPMR 16 | 16 | 16.016 | 16.043 | SFPM 16C | SFPMR 16C | 16.066 | 16.093 | 25.979 | 26 | 35.8 | 36 | 6.032 | 1267 | 636 |
| SFPM 20 | SFPMR 20 | 20 | 20.020 | 20.053 | SFPM 20C | SFPMR 20C | 20.096 | 20.129 | 31.975 | 32 | 44.8 | 45 | 9.425 | 1979 | 994 |
| SFPM 25 | SFPMR 25 | 25 | 25.020 | 25.053 | SFPM 25C | SFPMR 25C | 25.096 | 25.129 | 39.975 | 40 | 57.7 | 58 | 15.184 | 3189 | 1601 |
| SFPM 30 | SFPMR 30 | 30 | 30.020 | 30.053 | SFPM 30C | SFPMR 30C | 30.096 | 30.129 | 46.975 | 47 | 67.7 | 68 | 21.363 | 4486 | 2253 |
| SFPM 40 | SFPMR 40 | 40 | 40.025 | 40.064 | SFPM 40C | SFPMR 40C | 40.127 | 40.166 | 61.970 | 62 | 79.7 | 80 | 33.510 | 7037 | 3534 |
| SFPM 50 | SFPMR 50 | 50 | 50.025 | 50.064 | SFPM 50C | SFPMR 50C | 50.127 | 50.166 | 74.970 | 75 | 99.7 | 100 | 52.360 | 10996 | 5521 |
| SFPM 60 | SFPMR 60 | 60 | 60.030 | 60.076 | SFPM 60C | SFPMR 60C | 60.182 | 60.228 | 89.965 | 90 | 124.6 | 125 | 78.540 | 16493 | 8282 |
| SFPM 80 | SFPMR 80 | 80 | 80.030 | 80.076 | SFPM 80C | SFPMR 80C | 80.182 | 80.228 | 119.965 | 120 | 164.6 | 165 | 138.230 | 29028 | 14576 |

NOTES: Formula used for effective surface area is $(\pi * ID * L)/3$

Max static load is effective surface area times max load for FrelonGOLD®

- 210 kgf/cm² is the rating for FrelonGOLD®

- 105.45 kgf/cm² is the rating for FrelonJ®

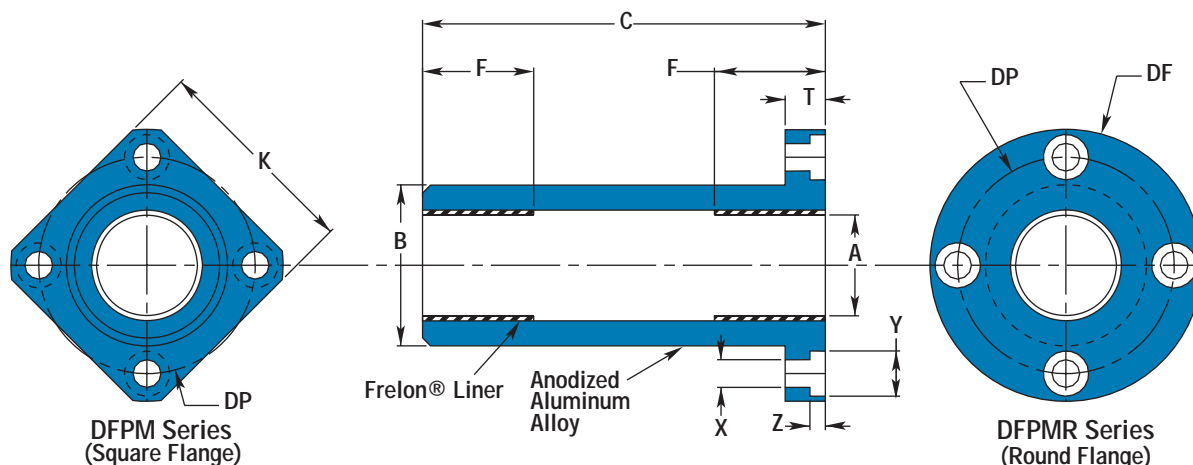
MOUNTING DIMENSIONAL INFORMATION

| PART NO. | | K SQUARE | Df O.D. | T LENGTH | Dp BOLT CIRCLE | X HOLE | Y C'BORE DEPTH | Z C'BORE DEPTH | CLAMPING BOLT | CONCENTRICITY | SQUARENESS | SFPM WEIGHTS | SFPMR WEIGHTS |
|----------|----------|-------------|------------|-------------|----------------------|-----------|----------------------|----------------------|------------------|---------------|------------|-----------------|------------------|
| SQUARE | ROUND | MAX. | MAX. | MAX. | | | | | | | | (kg.) | (kg.) |
| SFPM 08 | SFPMR 08 | 25 | 32 | 8 | 24 | 3.5 | 6 | 3.1 | M 3 | 0.012 | 0.012 | 0.018 | 0.022 |
| SFPM 12 | SFPMR 12 | 32 | 42 | 9 | 32 | 4.5 | 7.5 | 4.1 | M 4 | | | 0.037 | 0.046 |
| SFPM 16 | SFPMR 16 | 35 | 46 | | 36 | | | | | | | 0.047 | 0.058 |
| SFPM 20 | SFPMR 20 | 42 | 54 | 11 | 43 | 5.5 | 9 | 5.1 | M 5 | 0.015 | 0.015 | 0.085 | 0.101 |
| SFPM 25 | SFPMR 25 | 50 | 62 | | 51 | | | | | | | 0.156 | 0.172 |
| SFPM 30 | SFPMR 30 | 60 | 76 | 14 | 62 | 6.6 | 11 | 6.1 | M 6 | | | 0.257 | 0.293 |
| SFPM 40 | SFPMR 40 | 75 | 98 | 18 | 80 | 9.0 | 14 | 8.1 | M 8 | 0.017 | 0.017 | 0.500 | 0.595 |
| SFPM 50 | SFPMR 50 | 88 | 112 | | 94 | | | | | | | 0.825 | 0.930 |
| SFPM 60 | SFPMR 60 | 106 | 134 | 24 | 112 | 11.0 | 17 | 11.1 | M 10 | | | 0.020 | 0.020 |
| SFPM 80 | SFPMR 80 | 136 | 164 | | 142 | | | | | 3.308 | 3.483 | | |

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DFPM FLANGE BEARINGS



BASIC DIMENSIONAL INFORMATION

| PRECISION I.D. SERIES Similar to preloaded ball bearing | | | | | COMPENSATED I.D. SERIES Similar to standard ball bearing | | | | B BODY O.D. (h7) | | C LENGTH | | F LENGTH EACH END | EFFECTIVE SURFACE AREA | MAX. STATIC LOAD (kg.) FRELON | |
|--|----------|-----------------|------------------------|--------|---|-----------|-------------------|--------|---------------------|------|-------------|------|-------------------------|------------------------------|-------------------------------------|------|
| PART NO. | | NOMINAL SIZE | A BEARING I.D. (F8) | | PART NO. | | A BEARING I.D. | | | | | | | | | |
| SQUARE | ROUND | (mm) | MIN. | MAX. | SQUARE | ROUND | MIN. | MAX. | MIN. | MAX. | MIN. | MAX. | | (sq. cm) | GOLD | J |
| DFPM 08 | DFPMR 08 | 8 | 8.013 | 8.035 | DFPM 08C | DFPMR 08C | 8.063 | 8.085 | 15.982 | 16 | 44.7 | 45 | 12.1 | 2.027 | 426 | 214 |
| DFPM 12 | DFPMR 12 | 12 | 12.016 | 12.043 | DFPM 12C | DFPMR 12C | 12.066 | 12.093 | 21.979 | 22 | 56.7 | 57 | 15.4 | 3.870 | 813 | 408 |
| DFPM 16 | DFPMR 16 | 16 | 16.016 | 16.043 | DFPM 16C | DFPMR 16C | 16.066 | 16.093 | 25.979 | 26 | 69.7 | 70 | 20.4 | 6.836 | 1436 | 721 |
| DFPM 20 | DFPMR 20 | 20 | 20.020 | 20.053 | DFPM 20C | DFPMR 20C | 20.096 | 20.129 | 31.975 | 32 | 79.7 | 80 | 22.1 | 9.257 | 1944 | 976 |
| DFPM 25 | DFPMR 25 | 25 | 25.020 | 25.053 | DFPM 25C | DFPMR 25C | 25.096 | 25.129 | 39.975 | 40 | 111.6 | 112 | 33.1 | 17.331 | 3640 | 1828 |
| DFPM 30 | DFPMR 30 | 30 | 30.020 | 30.053 | DFPM 30C | DFPMR 30C | 30.096 | 30.129 | 46.975 | 47 | 122.6 | 123 | 35 | 21.991 | 4618 | 2319 |
| DFPM 40 | DFPMR 40 | 40 | 40.025 | 40.064 | DFPM 40C | DFPMR 40C | 40.127 | 40.166 | 61.970 | 62 | 150.6 | 151 | 44 | 36.861 | 7741 | 3887 |
| DFPM 50 | DFPMR 50 | 50 | 50.025 | 50.064 | DFPM 50C | DFPMR 50C | 50.127 | 50.166 | 74.970 | 75 | 191.6 | 192 | 69.5 | 72.780 | 15284 | 7675 |
| DFPM 60 | DFPMR 60 | 60 | 60.030 | 60.076 | DFPM 60C | DFPMR 60C | 60.182 | 60.228 | 89.965 | 90 | 208.6 | 209 | 73 | 91.735 | 19264 | 9673 |

NOTES: Formula used for effective surface area is $(\pi \times ID \times L)/3$

Max static load is effective surface area times max load for FrelonGOLD®

- 210 kgf/cm² is the rating for FrelonGOLD®

- 105.45 kgf/cm² is the rating for FrelonJ®

Frelon pads in each end (F dimension)

MOUNTING DIMENSIONAL INFORMATION

| PART NO. | | K SQUARE | Df O.D. | T LENGTH | Dp BOLT CIRCLE | X HOLE | Y C'BORE DEPTH | Z C'BORE DEPTH | CLAMPING BOLT | CONCENTRICITY | SQUARENESS | DFPM WEIGHTS | DFPMR WEIGHTS |
|----------|----------|-------------|------------|-------------|----------------------|-----------|----------------------|----------------------|------------------|---------------|------------|-----------------|------------------|
| SQUARE | ROUND | MAX. | MAX. | MAX. | | | | | | | | (kg.) | (kg.) |
| DFPM 08 | DFPMR 08 | 25 | 32 | 8 | 24 | 3.5 | 6 | 3.1 | M 3 | 0.015 | 0.015 | 0.027 | 0.031 |
| DFPM 12 | DFPMR 12 | 32 | 42 | 9 | 32 | 4.5 | 7.5 | 4.1 | M 4 | | | 0.055 | 0.064 |
| DFPM 16 | DFPMR 16 | 35 | 46 | | 36 | | | | | | | 0.078 | 0.089 |
| DFPM 20 | DFPMR 20 | 42 | 54 | 11 | 43 | 5.5 | 9 | 5.1 | M 5 | 0.017 | 0.017 | 0.133 | 0.149 |
| DFPM 25 | DFPMR 25 | 50 | 62 | | 51 | | | | | | | 0.270 | 0.286 |
| DFPM 30 | DFPMR 30 | 60 | 76 | 14 | 62 | 6.6 | 11 | 6.1 | M 6 | | | 0.413 | 0.450 |
| DFPM 40 | DFPMR 40 | 75 | 98 | 18 | 80 | 9.0 | 14 | 8.1 | M 8 | 0.020 | 0.020 | 0.846 | 0.942 |
| DFPM 50 | DFPMR 50 | 88 | 112 | | 94 | | | | | | | 1.450 | 1.556 |
| DFPM 60 | DFPMR 60 | 106 | 134 | 24 | 112 | 11.0 | 17 | 11.1 | M 10 | 0.025 | 0.025 | 2.329 | 2.519 |

The data and specifications in this publication have been carefully compiled and are believed to be accurate and correct. However, it is the responsibility of the user to determine and ensure the suitability of Pacific Bearing® products for a specific application. Pacific Bearing's only obligation will be to repair or replace without charge, any defective components if returned promptly. No liability is assumed beyond such replacement. *Consult www.pacific-bearing.com for the latest technical updates.

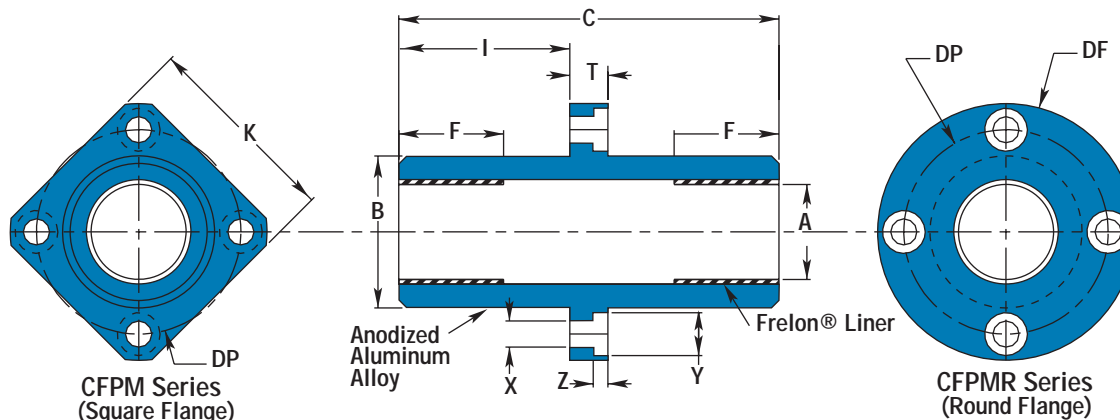


Simplicity® Self-lubricating Bearings

Flange Bearings - ISO Metric

Linear Motion Systems

CFPM FLANGE BEARINGS



BASIC DIMENSIONAL INFORMATION

| PRECISION I.D. SERIES Similar to preloaded ball bearing | | | | | COMPENSATED I.D. SERIES Similar to standard ball bearing | | | | B BODY O.D. (h7) | | C LENGTH | | I LENGTH TO FLNG. | F LENGTH EACH END | EFFECTIVE SURFACE AREA (sq. cm) | MAX. STATIC LOAD (kg.) FRELON | |
|--|----------|-----------------|------------------------|--------|---|-----------|-------------------|--------|---------------------|------|-------------|-------|-------------------------|----------------------------|--|-------------------------------------|------|
| PART NO. | | NOMINAL SIZE | A BEARING I.D. (F8) | | PART NO. | | A BEARING I.D. | | | | | | | | | | |
| SQUARE | ROUND | (mm) | MIN. | MAX. | SQUARE | ROUND | MIN. | MAX. | MIN. | MAX. | MIN. | MAX. | | | | GOLD | J |
| CFPM 08 | CFPMR 08 | 8 | 8.013 | 8.035 | CFPM 08C | CFPMR 08C | 8.063 | 8.085 | 15.982 | 16 | 60.7 | 46.3 | 20.5 | 12.1 | 2.027 | 426 | 214 |
| CFPM 12 | CFPMR 12 | 12 | 12.016 | 12.043 | CFPM 12C | CFPMR 12C | 12.066 | 12.093 | 21.979 | 22 | | 61.3 | 27.5 | 15.4 | 3.870 | 813 | 408 |
| CFPM 16 | CFPMR 16 | 16 | 16.016 | 16.043 | CFPM 16C | CFPMR 16C | 16.066 | 16.093 | 25.979 | 26 | | 68.3 | 31 | 20.4 | 6.836 | 1436 | 721 |
| CFPM 20 | CFPMR 20 | 20 | 20.020 | 20.053 | CFPM 20C | CFPMR 20C | 20.096 | 20.129 | 31.975 | 32 | 79.7 | 80.3 | 36 | 22.1 | 9.257 | 1944 | 976 |
| CFPM 25 | CFPMR 25 | 25 | 25.020 | 25.053 | CFPM 25C | CFPMR 25C | 25.096 | 25.129 | 39.975 | 40 | 111.7 | 112.3 | 52 | 33.1 | 17.331 | 3640 | 1828 |
| CFPM 30 | CFPMR 30 | 30 | 30.020 | 30.053 | CFPM 30C | CFPMR 30C | 30.096 | 30.129 | 46.975 | 47 | 122.7 | 123.3 | 56.5 | 35 | 21.991 | 4618 | 2319 |
| CFPM 40 | CFPMR 40 | 40 | 40.025 | 40.064 | CFPM 40C | CFPMR 40C | 40.127 | 40.166 | 61.970 | 62 | 150.7 | 151.3 | 69 | 44 | 36.861 | 7741 | 3887 |
| CFPM 50 | CFPMR 50 | 50 | 50.025 | 50.064 | CFPM 50C | CFPMR 50C | 50.127 | 50.166 | 74.970 | 75 | 191.7 | 192.3 | 89.5 | 69.5 | 72.780 | 15284 | 7675 |
| CFPM 60 | CFPMR 60 | 60 | 60.030 | 60.076 | CFPM 60C | CFPMR 60C | 60.182 | 60.228 | 89.965 | 90 | 208.7 | 209.3 | 95.5 | 73 | 91.735 | 19264 | 9673 |

NOTES: Formula used for effective surface area is $(\pi * ID * L)/3$

Max static load is effective surface area times max load for FrelonGOLD®

- 210 kgf/cm² is the rating for FrelonGOLD®

- 105.45 kgf/cm² is the rating for FrelonJ®

Frelon pads in each end (F dimension)

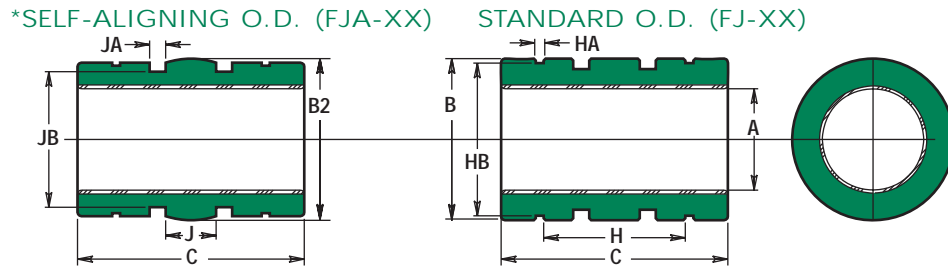
MOUNTING DIMENSIONAL INFORMATION

| PART NO. | | K SQUARE | Df O.D. | T LENGTH | Dp BOLT CIRCLE | X HOLE | Y C'BORE DEPTH | Z C'BORE DEPTH | CLAMPING BOLT | CONCENTRICITY | SQUARENESS | CFPM WEIGHTS | CFPMR WEIGHTS |
|----------|----------|-------------|------------|-------------|----------------------|-----------|----------------------|----------------------|------------------|---------------|------------|-----------------|------------------|
| SQUARE | ROUND | MAX. | MAX. | MAX. | | | | | | | | (kg.) | (kg.) |
| CFPM 08 | CFPMR 08 | 25 | 32 | 8 | 24 | 3.5 | 6 | 3.1 | M 3 | 0.015 | 0.015 | 0.027 | 0.031 |
| CFPM 12 | CFPMR 12 | 32 | 42 | 9 | 32 | 4.5 | 7.5 | 4.1 | M 4 | | | 0.058 | 0.067 |
| CFPM 16 | CFPMR 16 | 35 | 46 | | 36 | | | | | | | 0.077 | 0.088 |
| CFPM 20 | CFPMR 20 | 42 | 54 | 11 | 43 | 5.5 | 9 | 5.1 | M 5 | 0.017 | 0.017 | 0.133 | 0.149 |
| CFPM 25 | CFPMR 25 | 50 | 62 | | 51 | | | | | | | 0.270 | 0.286 |
| CFPM 30 | CFPMR 30 | 60 | 76 | 14 | 62 | 6.6 | 11 | 6.1 | M 6 | | | 0.413 | 0.450 |
| CFPM 40 | CFPMR 40 | 75 | 98 | 18 | 80 | 9.0 | 14 | 8.1 | M 8 | 0.020 | 0.020 | 0.846 | 0.942 |
| CFPM 50 | CFPMR 50 | 88 | 112 | | 94 | | | | | | | 1.450 | 1.556 |
| CFPM 60 | CFPMR 60 | 106 | 134 | 24 | 112 | 11.0 | 17 | 11.1 | M 10 | 0.025 | 0.025 | 2.329 | 2.519 |

The data and specifications in this publication have been carefully compiled and are believed to be accurate and correct. However, it is the responsibility of the user to determine and ensure the suitability of Pacific Bearing® products for a specific application. Pacific Bearing's only obligation will be to repair or replace without charge, any defective components if returned promptly. No liability is assumed beyond such replacement. *Consult www.pacific-bearing.com for the latest technical updates.



FJ LINEAR BEARINGS



*Except for the O.D. bearings with the self-aligning feature have the same dimensions and tolerances as the standard bearing. There is a spherical crown on the O.D. to create the self-aligning feature. They are for use in a straight bore housing. Add an "A" to the part number per the example. More information on self-aligning bearings is on page 41-42.

BASIC DIMENSIONAL INFORMATION

| PRECISION I.D. SERIES Similar to preloaded ball bearing | | | | | COMPENSATED I.D. SERIES Allows additional running clearance | | | | | | FJA B2 O.D. | | C LENGTH | | CONCENTRIC | BEARING WEIGHT |
|--|---------|-----------------|-------------------|---------|--|----------|-------------------|---------|---------|------|-------------------|---------|-------------|------|------------|-------------------|
| PART NO. | | NOMINAL SIZE | A BEARING I.D. | | PART NO. | | A BEARING I.D. | | | | | | | | | |
| CLOSED | OPEN | (mm) | MIN. | MAX. | CLOSED | OPEN | MIN. | MAX. | MIN. | MAX. | MIN. | MAX. | MIN. | MAX. | MAX. | (kg.) |
| FJ06 | N / A | 6 | 6.010 | 6.028 | FJC 06 | FJCN 06 | 6.06 | 6.078 | 11.989 | 12 | 11.943 | 11.968 | 18.8 | 19 | 0.0254 | 0.004 |
| FJH 08 | FJHN 08 | 8 | 8.013 | 8.035 | FJCH 08 | FJCHN 08 | 8.063 | 8.085 | 14.989 | 15 | 14.943 | 14.968 | 16.8 | 17 | 0.0254 | 0.005 |
| FJ 08 | FJN 08 | 8 | 8.013 | 8.035 | FJC 08 | FJCN 08 | 8.063 | 8.085 | 14.989 | 15 | 14.943 | 14.968 | 23.8 | 24 | 0.0254 | 0.008 |
| FJ 10 | FJN 10 | 10 | 10.013 | 10.035 | FJC 10 | FJCN 10 | 10.063 | 10.086 | 18.987 | 19 | 18.936 | 18.969 | 28.8 | 29 | 0.0254 | 0.015 |
| FJ 12 | FJN 12 | 12 | 12.016 | 12.043 | FJC 12 | FJCN 12 | 12.066 | 12.093 | 20.987 | 21 | 20.942 | 20.968 | 29.8 | 30 | 0.0254 | 0.018 |
| FJ 13 | FJN 13 | 13 | 13.016 | 13.043 | FJC 13 | FJCN 13 | 13.066 | 13.093 | 22.987 | 23 | 22.944 | 22.969 | 31.8 | 32 | 0.0254 | 0.024 |
| FJ 16 | FJN 16 | 16 | 16.016 | 16.043 | FJC 16 | FJCN 16 | 16.066 | 16.093 | 27.988 | 28 | 27.943 | 27.968 | 36.8 | 37 | 0.0254 | 0.039 |
| FJ 20 | FJN 20 | 20 | 20.020 | 20.053 | FJC 20 | FJCN 20 | 20.096 | 20.129 | 31.984 | 32 | 31.941 | 31.966 | 41.8 | 42 | 0.0254 | 0.052 |
| FJ 25 | FJN 25 | 25 | 25.020 | 25.053 | FJC 25 | FJCN 25 | 25.096 | 25.129 | 39.984 | 40 | 39.942 | 39.967 | 58.7 | 59 | 0.0254 | 0.119 |
| FJ 30 | FJN 30 | 30 | 30.020 | 30.053 | FJC 30 | FJCN 30 | 30.096 | 30.129 | 44.984 | 45 | 44.940 | 44.966 | 63.7 | 64 | 0.0254 | 0.149 |
| FJ 35 | FJN 35 | 35 | 35.020 | 35.053 | FJC 35 | FJCN 35 | 35.100 | 35.136 | 51.981 | 52 | 51.940 | 51.966 | 69.7 | 70 | 0.0254 | 0.212 |
| FJ 38 | FJN 38 | 38 | 38.025 | 38.064 | FJC 38 | FJCN 38 | 38.127 | 38.166 | 56.981 | 57 | 56.940 | 56.966 | 75.7 | 76 | 0.0254 | 0.284 |
| FJ 40 | FJN 40 | 40 | 40.025 | 40.064 | FJC 40 | FJCN 40 | 40.127 | 40.166 | 59.981 | 60 | 59.939 | 59.964 | 79.7 | 80 | 0.0254 | 0.333 |
| FJ 50 | FJN 50 | 50 | 50.025 | 50.064 | FJC 50 | FJCN 50 | 50.127 | 50.166 | 79.981 | 80 | 79.939 | 79.964 | 99.7 | 100 | 0.0254 | 0.823 |
| FJ 60 | FJN 60 | 60 | 60.030 | 60.076 | FJC 60 | FJCN 60 | 60.182 | 60.228 | 89.978 | 90 | 89.939 | 89.964 | 109.7 | 110 | 0.0254 | 1.024 |
| FJ 80 | FJN 80 | 80 | 80.030 | 80.076 | FJC 80 | FJCN 80 | 80.182 | 80.228 | 119.978 | 120 | 119.939 | 119.964 | 139.6 | 140 | 0.0380 | 2.359 |
| FJ 100 | FJN 100 | 100 | 100.030 | 100.076 | FJC 100 | FJCN 100 | 100.182 | 100.228 | 149.975 | 150 | 149.936 | 149.962 | 174.6 | 175 | 0.0510 | 4.651 |
| FJ 120 | FJN 120 | 120 | 120.035 | 120.089 | FJC 120 | FJCN 120 | 120.190 | 120.236 | 179.975 | 180 | 179.936 | 179.962 | 199.6 | 200 | 0.0510 | 7.706 |
| FJ 150 | FJN 150 | 150 | 150.035 | 150.089 | FJC 150 | FJCN 150 | 150.190 | 150.236 | 209.971 | 210 | 209.934 | 209.959 | 239.6 | 240 | 0.0510 | 11.104 |

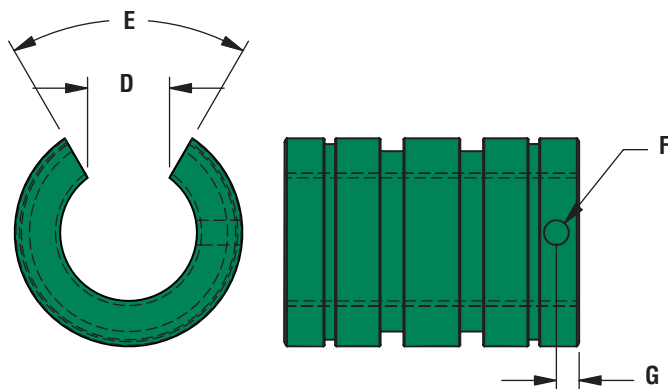
MOUNTING DIMENSIONAL INFORMATION

| PART NO. | | NOMINAL SIZE | H | HA | HB | RET. RING PART NO. (JIS B 2904) | J | JA | JB | METRIC O'RING PART NO. |
|----------|---------|--------------|-----------------------|-------------------------|------------------------|---------------------------------------|-------------------------|----------------------|---------------------|------------------------------|
| CLOSED | OPEN | (mm) | BETWEEN RET. RINGS | RET. RING GRV. WIDTH | RET. RING GRV. DIA. | | BETWEEN O'RING GRVS. | O'RING GRV. WIDTH | O'RING GRV. DIA. | |
| FJ06 | N / A | 6 | 11.3 | 1.15 | 11.5 | STW - 12 | 4.293 | 2.032 | 9.859 | 9.7 x 1.3 |
| FJH 08 | FJHN08 | 8 | 9.2 | 1.15 | 14.3 | STW - 15 | 2.540 | 2.362 | 12.243 | 12 x 1.7 |
| FJ 08 | FJN08 | 8 | 15.2 | 1.15 | 14.3 | STW - 15 | 7.493 | 2.362 | 12.243 | 12 x 1.7 |
| FJ 10 | FJN 10 | 10 | 19.3 | 1.35 | 18.0 | STW - 19 | 9.500 | 2.362 | 15.700 | 15.5 x 2 |
| FJ 12 | FJN 12 | 12 | 20.3 | 1.35 | 20.0 | STW - 20 | 10.490 | 2.362 | 18.546 | 18 x 1.5 |
| FJ 13 | FJN 13 | 13 | 20.3 | 1.35 | 22.0 | STW - 23 | 11.481 | 2.362 | 20.544 | 20 x 1.5 |
| FJ 16 | FJN 16 | 16 | 23.2 | 1.65 | 26.6 | STW - 28 | 11.100 | 3.556 | 23.978 | 23.5 x 2.5 |
| FJ 20 | FJN 20 | 20 | 27.2 | 1.65 | 30.3 | STW - 32 | 15.977 | 3.556 | 27.864 | 27.5 x 2.5 |
| FJ 25 | FJN 25 | 25 | 37.2 | 1.85 | 38.0 | STW - 40 | 19.990 | 3.556 | 35.865 | 35.5 x 2.5 |
| FJ 30 | FJN 30 | 30 | 40.7 | 1.85 | 42.5 | STW - 45 | 22.479 | 3.556 | 40.843 | 40 x 2.5 |
| FJ 35 | FJN 35 | 35 | 44.8 | 2.20 | 49.0 | STW - 52 | 25.984 | 4.115 | 46.200 | 46 x 3.5 |
| FJ 38 | FJN 38 | 38 | 54.3 | 2.20 | 54.5 | STW - 58 | 28.499 | 4.115 | 51.200 | 51 x 3.5 |
| FJ 40 | FJN 40 | 40 | 56.1 | 2.20 | 57.0 | STW - 60 | 29.997 | 4.115 | 54.225 | 53 x 3.5 |
| FJ 50 | FJN 50 | 50 | 68.6 | 2.70 | 76.5 | STW - 80 | 39.980 | 4.750 | 74.193 | 73 x 3.5 |
| FJ 60 | FJN 60 | 60 | 78.7 | 3.15 | 86.5 | STW - 90 | 44.983 | 7.036 | 81.738 | 81 x 5 |
| FJ 80 | FJN 80 | 80 | 97.2 | 4.15 | 116.0 | STW - 120 | 59.995 | 7.137 | 111.727 | 111 x 5 |
| FJ 100 | FJN 100 | 100 | 117.2 | 4.15 | 145.0 | STW - 150 | 74.981 | 7.137 | 141.199 | 140 x 5.3 |
| FJ 120 | FJN 120 | 120 | 150.3 | 4.15 | 175.0 | STW - 180 | 89.992 | 7.137 | 171.740 | 170 x 5 |
| FJ 150 | FJN 150 | 150 | 160.3 | 5.15 | 204.0 | STW - 210 | 104.978 | 7.137 | 201.193 | 200 x 5.3 |

The data and specifications in this publication have been carefully compiled and are believed to be accurate and correct. However, it is the responsibility of the user to determine and ensure the suitability of Pacific Bearing® products for a specific application. Pacific Bearing's only obligation will be to repair or replace without charge, any defective components if returned promptly. No liability is assumed beyond such replacement. *Consult www.pacific-bearing.com for the latest technical updates.



FJ & FJN LINEAR BEARINGS



OPEN DIMENSIONAL INFORMATION

| PART NO. | | NOMINAL SIZE (mm) | D SLOT WIDTH MIN. | E SLOT ANGLE | F RET. HOLE DIA. | G RET. HOLE LOC. | BEARING WEIGHTS (kg.) |
|----------|----------|-------------------|-------------------|--------------|------------------|------------------|-----------------------|
| CLOSED | OPEN | | | | | | |
| FJHN 08 | FJHCN 08 | 8 | 5.1 | 60 | 2.200 | 8.460 | 0.004 |
| FJN 08 | FJCN 08 | | | | | 11.940 | 0.006 |
| FJN 10 | FJCN 10 | 10 | 7.0 | 80 | 3.454 | 1.941 | 0.012 |
| FJN 12 | FJCN 12 | 12 | 8.0 | | | 2.441 | 0.014 |
| FJN 13 | FJCN 13 | 13 | 9.0 | | | 2.441 | 0.018 |
| FJN 16 | FJCN 16 | 16 | 11.0 | | | 3.019 | 0.030 |
| FJN 20 | FJCN 20 | 20 | | 60 | | 3.175 | 0.044 |
| FJN 25 | FJCN 25 | 25 | 12.0 | 50 | 5.105 | | 0.102 |
| FJN 30 | FJCN 30 | 30 | 15.0 | | | | 0.128 |
| FJN 35 | FJCN 35 | 35 | 17.0 | | | | 0.182 |
| FJN 38 | FJCN 38 | 38 | 18.0 | | | | 0.245 |
| FJN 40 | FJCN 40 | 40 | 20.0 | | 6.731 | | 0.286 |
| FJN 50 | FJCN 50 | 50 | 25.0 | | | 7.938 | 0.709 |
| FJN 60 | FJCN 60 | 60 | 30.0 | | | | 0.882 |
| FJN 80 | FJCN 80 | 80 | 40.0 | | | 13.181 | 2.031 |
| FJN 100 | FJCN 100 | 100 | 50.0 | 80 | | 14.500 | 4.005 |
| FJN 120 | FJCN 120 | 120 | 85.0 | | | 16.103 | 5.994 |
| FJN 150 | FJCN 150 | 150 | 105.0 | | | 17.350 | 8.637 |

LOAD & SPEED DATA

| PART NO. | EFFECTIVE SURFACE AREA (sq.cm.) | MAX. STATIC LOAD FRELON | | EFFECTIVE SURFACE AREA (mm ²) | MAX. STATIC LOAD FRELON | |
|--|---------------------------------|--|---------|---|-------------------------|--------|
| | | GOLD (kg.) | J (kg.) | | GOLD (N) | J (N) |
| FJ 06 | 1.1 | 239 | 119.7 | 114 | 2348 | 1174 |
| FJH 08 | 1.4 | 286 | 143 | 140 | 2805 | 1402 |
| FJ 08 | 1.9 | 404 | 202 | 190 | 3962 | 1981 |
| FJ 10 | 2.9 | 610 | 305 | 290 | 5982 | 2991 |
| FJ 12 | 3.6 | 756 | 378 | 360 | 7413 | 3707 |
| FJ 13 | 4.0 | 874 | 437 | 400 | 8570 | 4285 |
| FJ 16 | 5.9 | 1244 | 622 | 590 | 12199 | 6099 |
| FJ 20 | 8.4 | 1764 | 882 | 840 | 17298 | 8649 |
| FJ 25 | 15.0 | 3098 | 1549 | 1500 | 30379 | 15189 |
| FJ 30 | 19.0 | 4032 | 2016 | 1900 | 39538 | 19769 |
| FJ 35 | 25.0 | 5146 | 2573 | 2500 | 50462 | 25231 |
| FJ 38 | 29.0 | 6064 | 3032 | 2900 | 59464 | 29732 |
| FJ 40 | 32.0 | 6720 | 3360 | 3200 | 65896 | 32948 |
| FJ 50 | 50.0 | 10500 | 5250 | 5000 | 102963 | 51482 |
| FJ 60 | 66.0 | 13860 | 6930 | 6600 | 135911 | 67956 |
| FJ 80 | 112.0 | 23520 | 11760 | 11200 | 230637 | 115319 |
| FJ 100 | 175.0 | 36750 | 18375 | 17500 | 360371 | 180185 |
| FJ 120 | 240.0 | 50400 | 25200 | 24000 | 494222 | 247111 |
| FJ 150 | 360.0 | 75600 | 37800 | 36000 | 741334 | 370667 |
| MAX. PV (m/min. * kg/sq. cm) | | MAX. PV (m/s. * N/mm ²) | | | | |
| FrelonGold = 430 PV | | FrelonGold = 0.70 PV | | | | |
| FrelonJ = 215 PV | | FrelonJ = 0.35 PV | | | | |
| MAX. Speed Running Dry (m/min.) | | MAX. Speed Running Dry (m/s.) | | | | |
| FrelonGold = 91.4 | | FrelonGold = 1.52 | | | | |
| FrelonJ = 42.6 | | FrelonJ = 0.71 | | | | |
| MAX. Speed Running with Lubrication (m/min.) | | MAX. Speed Running with Lubrication (m/s.) | | | | |
| FrelonGold = 251.5 | | FrelonGold = 4.19 | | | | |
| FrelonJ = 122 | | FrelonJ = 2.03 | | | | |

Flange Mounted Bearings 30-32

Retaining Ring Groove Dimension.....28

The data and specifications in this publication have been carefully compiled and are believed to be accurate and correct. However, it is the responsibility of the user to determine and ensure the suitability of Pacific Bearing® products for a specific application. Pacific Bearing's only obligation will be to repair or replace without charge, any defective components if returned promptly. No liability is assumed beyond such replacement. *Consult www.pacific-bearing.com for the latest technical updates.

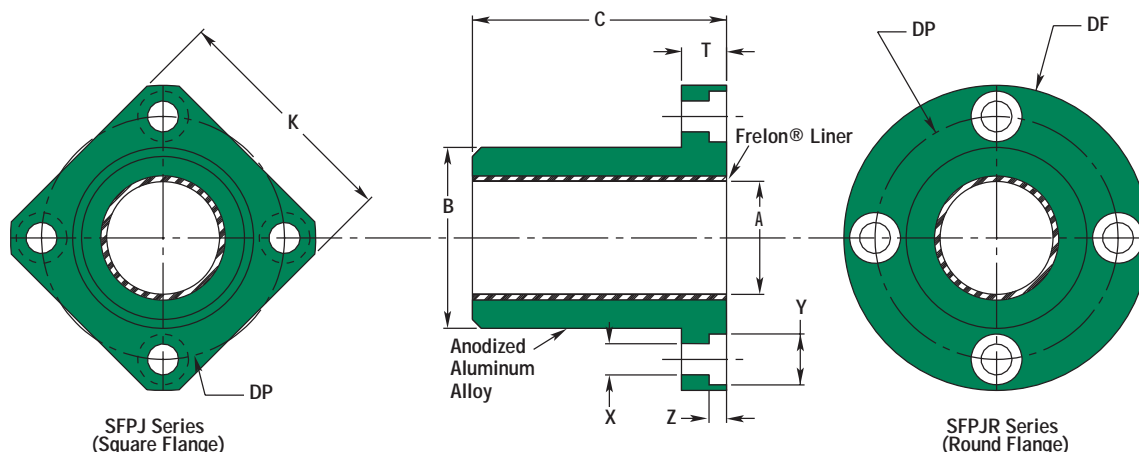


Simplicity® Self-lubricating Bearings

Flange Bearings - JIS Metric

Linear Motion Systems

SFPJ FLANGE BEARINGS



BASIC DIMENSIONAL INFORMATION

| PRECISION I.D. SERIES Similar to preloaded ball bearing | | | | | COMPENSATED I.D. SERIES Similar to standard ball bearing | | | | B BODY O.D. (h7) | | C LENGTH (h13) | | EFFECTIVE SURFACE AREA | MAX. STATIC LOAD (kg.) FRELON | |
|--|----------|-----------------|------------------------|--------|---|-----------|-------------------|--------|---------------------|------|-------------------|------|------------------------------|-------------------------------------|-------|
| PART NO. | | NOMINAL SIZE | A BEARING I.D. (F8) | | PART NO. | | A BEARING I.D. | | | | | | | | |
| SQUARE | ROUND | (mm) | MIN. | MAX. | SQUARE | ROUND | MIN. | MAX. | MIN. | MAX. | MIN. | MAX. | (sq. cm) | GOLD | J |
| SFPJ 06 | SFPJR 06 | 6 | 6.010 | 6.028 | SFPJ 06C | SFPJR 06C | 6.060 | 6.078 | 11.982 | 12 | 18.8 | 19 | 1.194 | 251 | 126 |
| SFPJ 08 | SFPJR 08 | 8 | 8.013 | 8.035 | SFPJ 08C | SFPJR 08C | 8.063 | 8.085 | 14.982 | 15 | 23.8 | 24 | 2.011 | 422 | 212 |
| SFPJ 10 | SFPJR 10 | 10 | 10.013 | 10.035 | SFPJ 10C | SFPJR 10C | 10.063 | 10.085 | 18.979 | 19 | 28.8 | 29 | 3.037 | 638 | 320 |
| SFPJ 12 | SFPJR 12 | 12 | 12.016 | 12.043 | SFPJ 12C | SFPJR 12C | 12.066 | 12.093 | 20.979 | 21 | 29.8 | 30 | 3.770 | 792 | 398 |
| SFPJ 13 | SFPJR 13 | 13 | 13.016 | 13.043 | SFPJ 13C | SFPJR 13C | 13.066 | 13.093 | 22.979 | 23 | 31.8 | 32 | 4.356 | 915 | 459 |
| SFPJ 16 | SFPJR 16 | 16 | 16.016 | 16.043 | SFPJ 16C | SFPJR 16C | 16.066 | 16.093 | 27.979 | 28 | 36.8 | 37 | 6.199 | 1302 | 654 |
| SFPJ 20 | SFPJR 20 | 20 | 20.020 | 20.053 | SFPJ 20C | SFPJR 20C | 20.096 | 20.129 | 31.975 | 32 | 41.8 | 42 | 8.796 | 1847 | 928 |
| SFPJ 25 | SFPJR 25 | 25 | 25.020 | 25.053 | SFPJ 25C | SFPJR 25C | 25.096 | 25.129 | 39.975 | 40 | 58.7 | 59 | 15.446 | 3244 | 1629 |
| SFPJ 30 | SFPJR 30 | 30 | 30.020 | 30.053 | SFPJ 30C | SFPJR 30C | 30.096 | 30.129 | 44.975 | 45 | 63.7 | 64 | 20.106 | 4222 | 2120 |
| SFPJ 35 | SFPJR 35 | 35 | 35.020 | 35.053 | SFPJ 35C | SFPJR 35C | 35.096 | 35.129 | 51.970 | 52 | 69.7 | 70 | 25.656 | 5388 | 2705 |
| SFPJ 40 | SFPJR 40 | 40 | 40.025 | 40.064 | SFPJ 40C | SFPJR 40C | 40.127 | 40.166 | 59.970 | 60 | 79.7 | 80 | 33.510 | 7037 | 3534 |
| SFPJ 50 | SFPJR 50 | 50 | 50.025 | 50.064 | SFPJ 50C | SFPJR 50C | 50.127 | 50.166 | 79.965 | 80 | 99.7 | 100 | 52.360 | 10996 | 5521 |
| SFPJ 60 | SFPJR 60 | 60 | 60.030 | 60.076 | SFPJ 60C | SFPJR 60C | 60.182 | 60.228 | 89.965 | 90 | 109.6 | 110 | 69.115 | 14514 | 7288 |
| SFPJ 80 | SFPJR 80 | 80 | 80.030 | 80.076 | SFPJ 80C | SFPJR 80C | 80.182 | 80.228 | 119.965 | 120 | 139.6 | 140 | 117.286 | 24630 | 12368 |

NOTES: Formula used for effective surface area is $(\pi \cdot ID \cdot L)/3$

Max static load is effective surface area times max load for FrelonGOLD®

- 210 kgf/cm² is the rating for FrelonGOLD®

- 105.45 kgf/cm² is the rating for FrelonJ®

MOUNTING DIMENSIONAL INFORMATION

| PART NO. | | K | Df | T | Dp | X | Y | Z | CLAMPING BOLT | CONCENTRICITY | SQUARENESS | SFPJ | |
|----------|----------|----------------|--------------|----------------|----------------|------|----------------|-----------------|------------------|---------------|------------|------------------|------------------|
| SQUARE | ROUND | SQUARE MAX. | O.D. MAX. | LENGTH MAX. | BOLT CIRCLE | HOLE | C'BORE DIA. | C'BORE DEPTH | | | | WEIGHTS (kg.) | WEIGHTS (kg.) |
| SFPJ 06 | SFPJR 06 | 22 | 28 | 8 | 20 | 3.5 | 6 | 3.1 | M 3 | 0.012 | 0.012 | 0.011 | 0.014 |
| SFPJ 08 | SFPJR 08 | 25 | 32 | 8 | 24 | 3.5 | 6 | 3.1 | M 3 | 0.012 | 0.012 | 0.017 | 0.021 |
| SFPJ 10 | SFPJR 10 | 30 | 40 | 9 | 29 | 4.5 | 7.5 | 4.1 | M 4 | 0.012 | 0.012 | 0.029 | 0.038 |
| SFPJ 12 | SFPJR 12 | 32 | 42 | 9 | 32 | 4.5 | 7.5 | 4.1 | M 4 | 0.012 | 0.012 | 0.033 | 0.042 |
| SFPJ 13 | SFPJR 13 | 34 | 43 | 9 | 33 | 4.5 | 7.5 | 4.1 | M 4 | 0.012 | 0.012 | 0.041 | 0.048 |
| SFPJ 16 | SFPJR 16 | 37 | 48 | 9 | 38 | 4.5 | 7.5 | 4.1 | M 4 | 0.012 | 0.012 | 0.058 | 0.069 |
| SFPJ 20 | SFPJR 20 | 42 | 54 | 11 | 43 | 5.5 | 9 | 5.1 | M 5 | 0.015 | 0.015 | 0.081 | 0.097 |
| SFPJ 25 | SFPJR 25 | 50 | 62 | 11 | 51 | 5.5 | 9 | 5.1 | M 5 | 0.015 | 0.015 | 0.158 | 0.174 |
| SFPJ 30 | SFPJR 30 | 58 | 74 | 14 | 60 | 6.6 | 11 | 6.1 | M 6 | 0.015 | 0.015 | 0.216 | 0.252 |
| SFPJ 35 | SFPJR 35 | 64 | 82 | 14 | 67 | 6.6 | 11 | 6.1 | M 6 | 0.017 | 0.017 | 0.292 | 0.338 |
| SFPJ 40 | SFPJR 40 | 75 | 96 | 18 | 78 | 9.0 | 14 | 8.1 | M 8 | 0.017 | 0.017 | 0.467 | 0.547 |
| SFPJ 50 | SFPJR 50 | 92 | 116 | 18 | 98 | 9.0 | 14 | 8.1 | M 8 | 0.017 | 0.017 | 0.999 | 1.104 |
| SFPJ 60 | SFPJR 60 | 106 | 134 | 24 | 112 | 11.0 | 17 | 11.1 | M 10 | 0.020 | 0.020 | 1.359 | 1.550 |
| SFPJ 80 | SFPJR 80 | 136 | 164 | 24 | 142 | 11.0 | 17 | 11.1 | M 10 | 0.020 | 0.020 | 2.873 | 3.048 |

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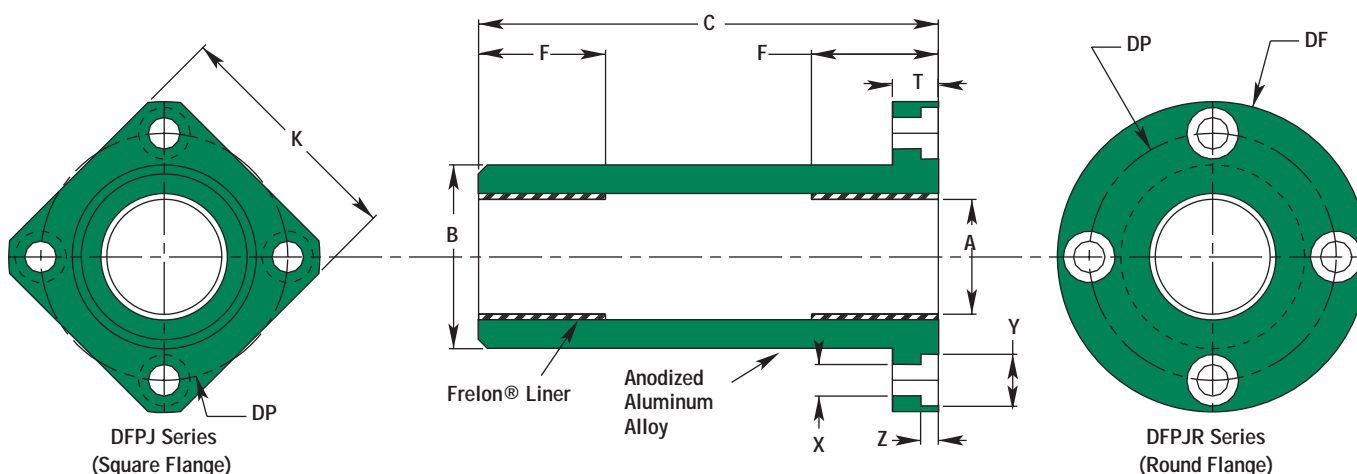


Simplicity® Self-lubricating Bearings

Flange Bearings - JIS Metric

Linear Motion Systems

DFPJ FLANGE BEARINGS



BASIC DIMENSIONAL INFORMATION

| PRECISION I.D. SERIES Similar to preloaded ball bearing | | | | | COMPENSATED I.D. SERIES Similar to standard ball bearing | | | | | | | | | | | |
|--|----------|-----------------|------------------------|--------|---|-----------|-------------------|--------|--------|------|-------|------|-------------------------|--|-------|------|
| PART NO. | | NOMINAL SIZE | A BEARING I.D. (F8) | | PART NO. | | A BEARING I.D. | | | | | | | | | |
| SQUARE | ROUND | (mm) | MIN. | MAX. | SQUARE | ROUND | MIN. | MAX. | MIN. | MAX. | MIN. | MAX. | F LENGTH EACH END | EFFECTIVE SURFACE AREA (sq. cm) | GOLD | J |
| DFPJ 06 | DFPJR 06 | 6 | 6.010 | 6.028 | DFPJ 06C | DFPJR 06C | 6.060 | 6.078 | 11.982 | 12 | 34.7 | 35 | 12 | 1.508 | 317 | 159 |
| DFPJ 08 | DFPJR 08 | 8 | 8.013 | 8.035 | DFPJ 08C | DFPJR 08C | 8.063 | 8.085 | 14.982 | 15 | 44.7 | 45 | 12 | 2.011 | 422 | 212 |
| DFPJ 10 | DFPJR 10 | 10 | 10.013 | 10.035 | DFPJ 10C | DFPJR 10C | 10.063 | 10.085 | 18.979 | 19 | 54.7 | 55 | 14 | 2.932 | 616 | 309 |
| DFPJ 12 | DFPJR 12 | 12 | 12.016 | 12.043 | DFPJ 12C | DFPJR 12C | 12.066 | 12.093 | 20.979 | 21 | 56.7 | 57 | 15 | 3.770 | 792 | 398 |
| DFPJ 13 | DFPJR 13 | 13 | 13.016 | 13.043 | DFPJ 13C | DFPJR 13C | 13.066 | 13.093 | 22.979 | 23 | 60.7 | 61 | 16 | 4.356 | 915 | 459 |
| DFPJ 16 | DFPJR 16 | 16 | 16.016 | 16.043 | DFPJ 16C | DFPJR 16C | 16.066 | 16.093 | 27.979 | 28 | 69.7 | 70 | 20 | 6.702 | 1407 | 707 |
| DFPJ 20 | DFPJR 20 | 20 | 20.020 | 20.053 | DFPJ 20C | DFPJR 20C | 20.096 | 20.129 | 31.975 | 32 | 79.7 | 80 | 22 | 9.215 | 1935 | 972 |
| DFPJ 25 | DFPJR 25 | 25 | 25.020 | 25.053 | DFPJ 25C | DFPJR 25C | 25.096 | 25.129 | 39.975 | 40 | 111.6 | 112 | 33 | 17.279 | 3629 | 1822 |
| DFPJ 30 | DFPJR 30 | 30 | 30.020 | 30.053 | DFPJ 30C | DFPJR 30C | 30.096 | 30.129 | 44.975 | 45 | 122.6 | 123 | 35 | 21.991 | 4618 | 2319 |
| DFPJ 35 | DFPJR 35 | 35 | 35.020 | 35.053 | DFPJ 35C | DFPJR 35C | 35.096 | 35.129 | 51.970 | 52 | 134.6 | 135 | 40 | 29.322 | 6158 | 3092 |
| DFPJ 40 | DFPJR 40 | 40 | 40.025 | 40.064 | DFPJ 40C | DFPJR 40C | 40.127 | 40.166 | 59.970 | 60 | 150.6 | 151 | 44 | 36.861 | 7741 | 3887 |
| DFPJ 50 | DFPJR 50 | 50 | 50.025 | 50.064 | DFPJ 50C | DFPJR 50C | 50.127 | 50.166 | 79.965 | 80 | 191.6 | 192 | 70 | 73.304 | 15394 | 7730 |
| DFPJ 60 | DFPJR 60 | 60 | 60.030 | 60.076 | DFPJ 60C | DFPJR 60C | 60.182 | 60.228 | 89.965 | 90 | 208.6 | 209 | 73 | 91.735 | 19264 | 9673 |

NOTES: Formula used for effective surface area is $(\pi * ID * L)/3$

Max static load is effective surface area times max load for FrelonGOLD®

- 210 kgf/cm² is the rating for FrelonGOLD®

- 105.45 kgf/cm² is the rating for FrelonJ®

Frelon pads in each end (F dimension)

MOUNTING DIMENSIONAL INFORMATION

| PART NO. | | K SQUARE | Df O.D. | T LENGTH | Dp BOLT CIRCLE | X HOLE | Y C'BORE DIA. | Z C'BORE DEPTH | CLAMPING BOLT | CONCENTRICITY | SQUARENESS | DFPJ WEIGHTS (kg.) | DFPJR WEIGHTS (kg.) |
|----------|----------|-------------|------------|-------------|----------------------|-----------|---------------------|----------------------|------------------|---------------|------------|--------------------------|---------------------------|
| SQUARE | ROUND | MAX. | MAX. | MAX. | | | | | | | | | |
| DFPJ 06 | DFPJR 06 | 22 | 28 | 8 | 20 | 3.5 | 6 | 3.1 | M 3 | 0.015 | 0.015 | 0.015 | 0.018 |
| DFPJ 08 | DFPJR 08 | 25 | 32 | | 24 | | | | | | | 0.024 | 0.028 |
| DFPJ 10 | DFPJR 10 | 30 | 40 | | 29 | | | | | | | 0.044 | 0.053 |
| DFPJ 12 | DFPJR 12 | 32 | 42 | 9 | 32 | 4.5 | 7.5 | 4.1 | M 4 | 0.015 | 0.015 | 0.051 | 0.060 |
| DFPJ 13 | DFPJR 13 | 34 | 43 | | 33 | | | | | | | 0.063 | 0.071 |
| DFPJ 16 | DFPJR 16 | 37 | 48 | | 38 | | | | | | | 0.096 | 0.107 |
| DFPJ 20 | DFPJR 20 | 42 | 54 | 11 | 43 | 5.5 | 9 | 5.1 | M 5 | 0.017 | 0.017 | 0.133 | 0.149 |
| DFPJ 25 | DFPJR 25 | 50 | 62 | | 51 | | | | | | | 0.270 | 0.286 |
| DFPJ 30 | DFPJR 30 | 58 | 74 | | 60 | 6.6 | 11 | 6.1 | M 6 | 0.017 | 0.017 | 0.360 | 0.397 |
| DFPJ 35 | DFPJR 35 | 64 | 82 | 14 | 67 | | | | | 0.020 | 0.020 | 0.501 | 0.547 |
| DFPJ 40 | DFPJR 40 | 75 | 96 | | 78 | | | | | | | 0.776 | 0.856 |
| DFPJ 50 | DFPJR 50 | 92 | 116 | | 98 | 9.0 | 14 | 8.1 | M 8 | 0.020 | 0.020 | 1.780 | 1.885 |
| DFPJ 60 | DFPJR 60 | 106 | 134 | 24 | 112 | | | | | | | 2.329 | 2.519 |

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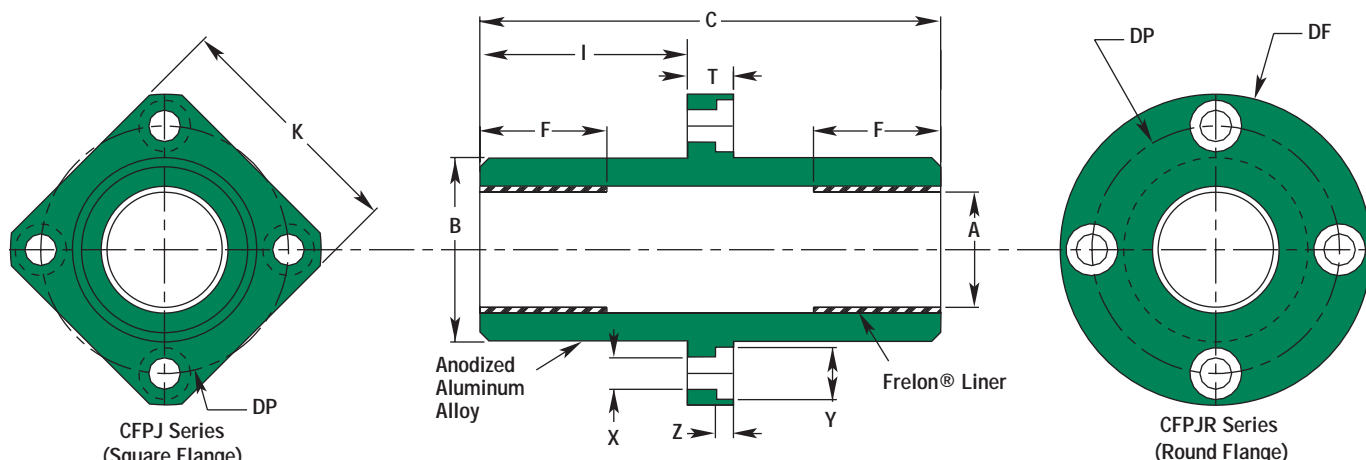


Simplicity® Self-Lubricating Bearings

Flange Bearings - JIS Metric

Linear Motion Systems

CFPJ FLANGE BEARINGS



BASIC DIMENSIONAL INFORMATION

| PRECISION I.D. SERIES Similar to preloaded ball bearing | | | | | COMPENSATED I.D. SERIES Similar to standard ball bearing | | | | | | | | I LENGTH TO FLNG. | F LENGTH EACH END | EFFECTIVE SURFACE AREA | MAX. STATIC LOAD (kg.) FRELON | |
|--|----------|-----------------|------------------------|--------|---|-----------|-------------------|--------|--------|------|-------|-------|----------------------------|----------------------------|------------------------------|-------------------------------------|------|
| PART NO. | | NOMINAL SIZE | A BEARING I.D. (F8) | | PART NO. | | A BEARING I.D. | | | | | | | | | | |
| SQUARE | ROUND | (mm) | MIN. | MAX. | SQUARE | ROUND | MIN. | MAX. | MIN. | MAX. | MIN. | MAX. | | | (sq. cm) | GOLD | J |
| CFPJ 06 | CFPJR 06 | 6 | 6.010 | 6.028 | CFPJ 06C | CFPJR 06C | 6.060 | 6.078 | 11.982 | 12 | 34.7 | 35.3 | 15 | 12 | 1.508 | 317 | 159 |
| CFPJ 08 | CFPJR 08 | 8 | 8.013 | 8.035 | CFPJ 08C | CFPJR 08C | 8.063 | 8.085 | 14.982 | 15 | 44.7 | 45.3 | 20 | 12 | 2.011 | 422 | 212 |
| CFPJ 10 | CFPJR 10 | 10 | 10.013 | 10.035 | CFPJ 10C | CFPJR 10C | 10.063 | 10.085 | 18.979 | 19 | 54.7 | 55.3 | 24.5 | 14 | 2.932 | 616 | 309 |
| CFPJ 12 | CFPJR 12 | 12 | 12.016 | 12.043 | CFPJ 12C | CFPJR 12C | 12.066 | 12.093 | 20.979 | 21 | 56.7 | 57.3 | 25.5 | 15 | 3.770 | 792 | 398 |
| CFPJ 13 | CFPJR 13 | 13 | 13.016 | 13.043 | CFPJ 13C | CFPJR 13C | 13.066 | 13.093 | 22.979 | 23 | 60.7 | 61.3 | 27.5 | 16 | 4.356 | 915 | 459 |
| CFPJ 16 | CFPJR 16 | 16 | 16.016 | 16.043 | CFPJ 16C | CFPJR 16C | 16.066 | 16.093 | 27.979 | 28 | 69.7 | 70.3 | 32 | 20 | 6.702 | 1407 | 707 |
| CFPJ 20 | CFPJR 20 | 20 | 20.020 | 20.053 | CFPJ 20C | CFPJR 20C | 20.096 | 20.129 | 31.975 | 32 | 79.7 | 80.3 | 36 | 22 | 9.215 | 1935 | 972 |
| CFPJ 25 | CFPJR 25 | 25 | 25.020 | 25.053 | CFPJ 25C | CFPJR 25C | 25.096 | 25.129 | 39.975 | 40 | 111.7 | 112.3 | 52 | 33 | 17.279 | 3629 | 1822 |
| CFPJ 30 | CFPJR 30 | 30 | 30.020 | 30.053 | CFPJ 30C | CFPJR 30C | 30.096 | 30.129 | 44.975 | 45 | 122.7 | 123.3 | 56.5 | 35 | 21.991 | 4618 | 2319 |
| CFPJ 35 | CFPJR 35 | 35 | 35.020 | 35.053 | CFPJ 35C | CFPJR 35C | 35.096 | 35.129 | 51.970 | 52 | 134.7 | 135.3 | 62.5 | 40 | 29.322 | 6158 | 3092 |
| CFPJ 40 | CFPJR 40 | 40 | 40.025 | 40.064 | CFPJ 40C | CFPJR 40C | 40.127 | 40.166 | 59.970 | 60 | 150.7 | 151.3 | 69 | 44 | 36.861 | 7741 | 3887 |
| CFPJ 50 | CFPJR 50 | 50 | 50.025 | 50.064 | CFPJ 50C | CFPJR 50C | 50.127 | 50.166 | 79.965 | 80 | 191.7 | 192.3 | 89.5 | 70 | 73.304 | 15394 | 7730 |
| CFPJ 60 | CFPJR 60 | 60 | 60.030 | 60.076 | CFPJ 60C | CFPJR 60C | 60.182 | 60.228 | 89.965 | 90 | 208.7 | 209.3 | 95.5 | 73 | 91.735 | 19264 | 9673 |

NOTES: Formula used for effective surface area is $(\pi \cdot ID \cdot L)/3$

Max static load is effective surface area times max load for FrelonGOLD®

- 210 kgf/cm² is the rating for FrelonGOLD®

- 105.45 kgf/cm² is the rating for FrelonJ®

Frelon pads in each end (F dimension)

MOUNTING DIMENSIONAL INFORMATION

| PART NO. | | K SQUARE | Df O.D. | T LENGTH | Dp BOLT CIRCLE | X HOLE | Y C'BORE DIA. | Z C'BORE DEPTH | CLAMPING BOLT | CONCENTRICITY | SQUARENESS | CFPJ WEIGHTS | CFPJR WEIGHTS |
|----------|----------|-------------|------------|-------------|----------------------|-----------|---------------------|----------------------|------------------|---------------|------------|-----------------|------------------|
| SQUARE | ROUND | MAX. | MAX. | MAX. | | | | | | | | (kg.) | (kg.) |
| CFPJ 06 | CFPJR 06 | 22 | 28 | 8 | 20 | 3.5 | 6 | 3.1 | M 3 | 0.015 | 0.015 | 0.015 | 0.018 |
| CFPJ 08 | CFPJR 08 | 25 | 32 | | 24 | | | | | | | 0.024 | 0.028 |
| CFPJ 10 | CFPJR 10 | 30 | 40 | 9 | 29 | 4.5 | 7.5 | 4.1 | M 4 | | | 0.044 | 0.053 |
| CFPJ 12 | CFPJR 12 | 32 | 42 | | 32 | | | | | | | 0.051 | 0.060 |
| CFPJ 13 | CFPJR 13 | 34 | 43 | | 33 | | | | | | | 0.063 | 0.071 |
| CFPJ 16 | CFPJR 16 | 37 | 48 | | 38 | | | | | | | 0.096 | 0.107 |
| CFPJ 20 | CFPJR 20 | 42 | 54 | 11 | 43 | 5.5 | 9 | 5.1 | M 5 | 0.017 | 0.017 | 0.133 | 0.149 |
| CFPJ 25 | CFPJR 25 | 50 | 62 | | 51 | | | | | | | 0.270 | 0.286 |
| CFPJ 30 | CFPJR 30 | 58 | 74 | 14 | 60 | 6.6 | 11 | 6.1 | M 6 | | | 0.360 | 0.397 |
| CFPJ 35 | CFPJR 35 | 64 | 82 | | 67 | | | | | 0.501 | 0.547 | | |
| CFPJ 40 | CFPJR 40 | 75 | 96 | 18 | 78 | 9.0 | 14 | 8.1 | M 8 | 0.020 | 0.020 | 0.776 | 0.856 |
| CFPJ 50 | CFPJR 50 | 92 | 116 | | 98 | | | | | | | 1.780 | 1.885 |
| CFPJ 60 | CFPJR 60 | 106 | 134 | 24 | 112 | 11.0 | 17 | 11.1 | M 10 | 0.025 | 0.025 | 2.329 | 2.519 |

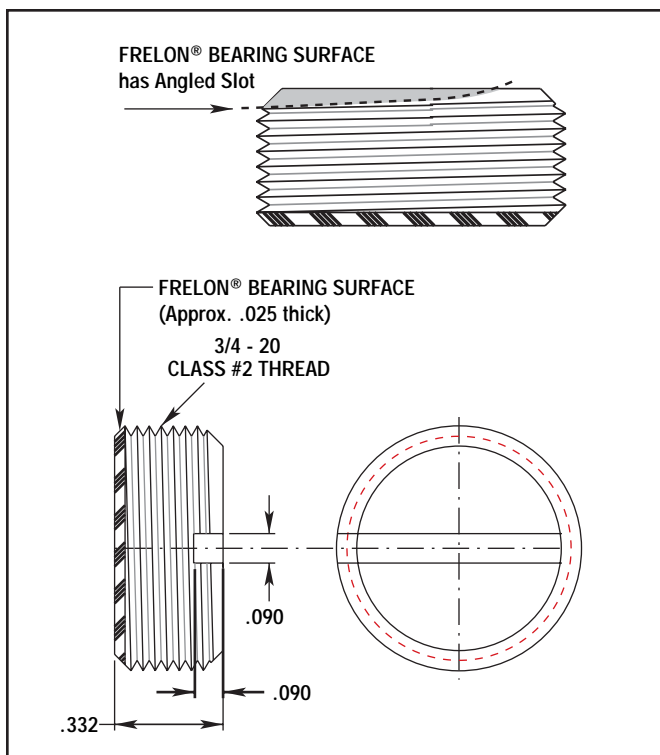
The data and specifications in this publication have been carefully compiled and are believed to be accurate and correct. However, it is the responsibility of the user to determine and ensure the suitability of Pacific Bearing® products for a specific application. Pacific Bearing's only obligation will be to repair or replace without charge, any defective components if returned promptly. No liability is assumed beyond such replacement. *Consult www.pacific-bearing.com for the latest technical updates.



Simplicity® Square Bearings

Square Bearings Technical Information

Linear Motion Systems



ORDERING INFORMATION

| PART NO. | DESCRIPTION |
|----------|---|
| APN16E | Standard - Adjustable bearing plug with FrelonJ® bearing liner. Use with 300 series stainless or soft shafting. |
| APN16 | Optional - Adjustable bearing plug with FrelonGOLD® bearing liner. Use with steel shafting. |



ADJUSTABLE BEARING PLUGS

Plug material is 316 stainless steel.

BEARING MATERIAL: FrelonJ® is standard for stainless square steel shafting (APN16 - E). FrelonGold® is also available for applications to be run on steel.

- Bearing plugs can be purchased separately
- Ideal for use in many applications as a wear pad
- Bearing surface area = .300 in²
- MAX Static Load Capacity per Plug = 450 lbs.
- The use of green Loctite is recommended to hold the adjustable bearing plugs in position

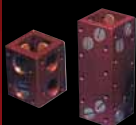
SQUARE BEARING BENEFITS & FEATURES

- Runs on a single, square shaft eliminating costly components
- Maintains radial integrity and can eliminate the need for parallel shafting
- Can be mounted in any orientation
- Housings are aluminum alloy with a standard anodized finish
- Utilizes standard bearing plugs
- Adjustable to maintain tight running clearances, contingent upon shafting
- Bearing plugs are easily replaced

SAME CHARACTERISTICS OF THE STANDARD ROUND-WAY SIMPLICITY® BEARINGS:

- Self-lubricating
- High load capacity
- Wide temperature range (-400°F/+400°F)
(-240°C/+240°C)
- Excel in contaminated environments
- High shock loading abilities
- Low wear rates

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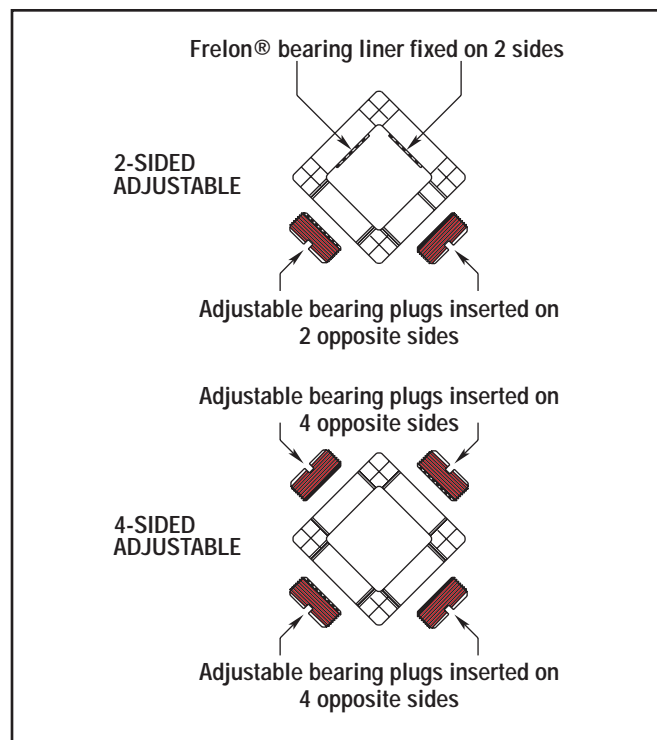


CUT-AWAY VIEW



2-SIDED ADJUSTABLE

4-SIDED ADJUSTABLE



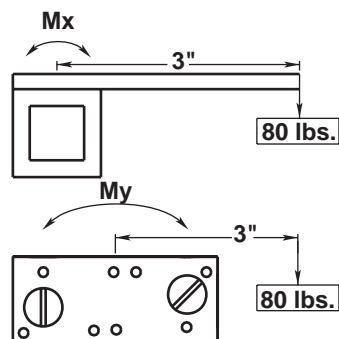
APPLICATION NOTE

Use green Loctite to hold the adjustable bearing plugs in position.

Two parameters must be met in the design and use of square bearings:

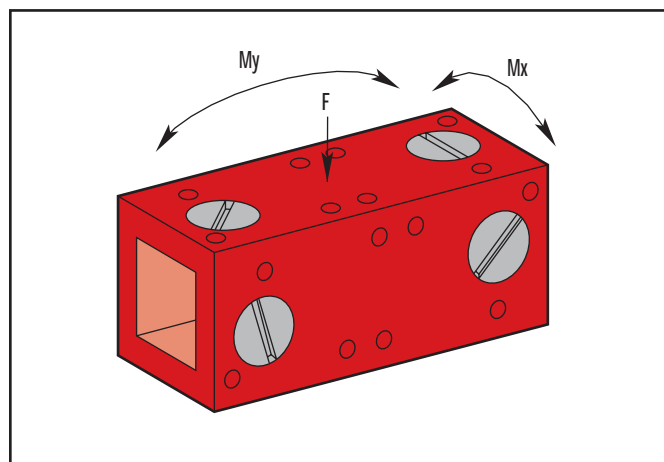
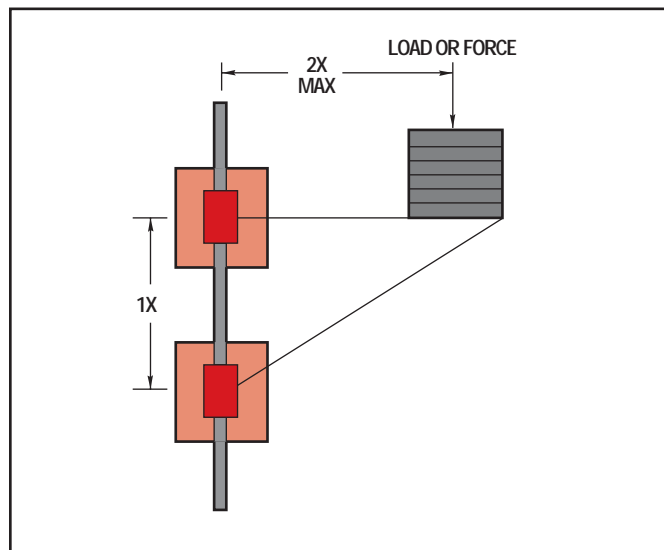
1. The 2:1 ratio for cantilevered loads applies to square bearings in the same way as roundway Simplicity® bearings. Binding will occur if the ratio is not met! **NOTE:** if only one bearing is used, the 2:1 applies from plug centers.
2. The maximum load and moment load must be met. To calculate the acceptable cantilever or lever arm, multiply the length (from center of the bearing to the center of the load) times the weight. The result must be less than the moment load for that orientation.

EXAMPLE: Distance of cantilever = 3"
Amount of load = 40 lbs.
3" x 80 lbs. = 240 in.-lbs.



SQUARE BEARING LOAD INFORMATION

| PART NO. | MAXIMUM MOMENTS (TORSIONAL CAPACITIES) (in.-lbs.) | | MAXIMUM FORCE (lbs.) |
|----------|---|------|----------------------|
| | Mx | My | |
| SB16 | 74 | 165 | 920 |
| SBL16 | | 475 | |
| SB24 | 416 | 402 | 1840 |
| SBL24 | | 1413 | |



NOTE: Square Shafting on page 37.

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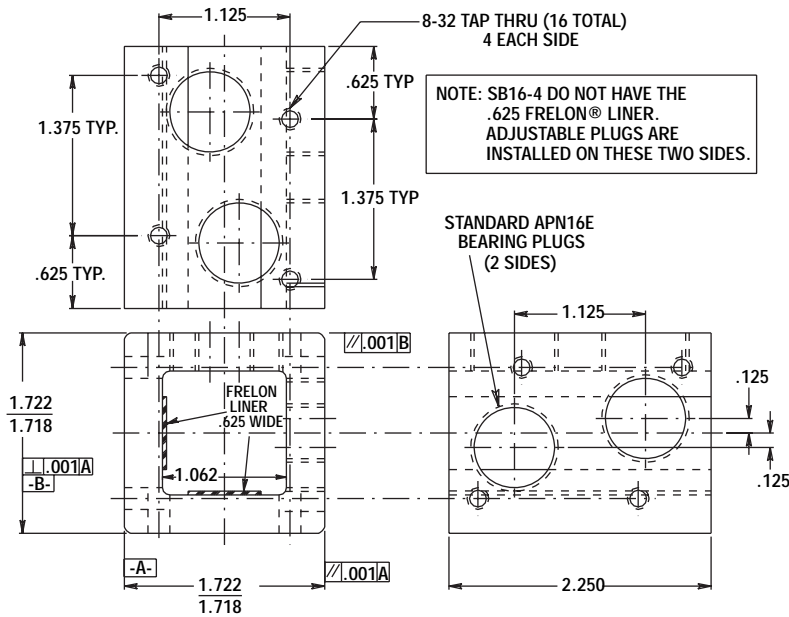
Simplicity® Square Bearings

1.0" Specifications

Linear Motion Systems

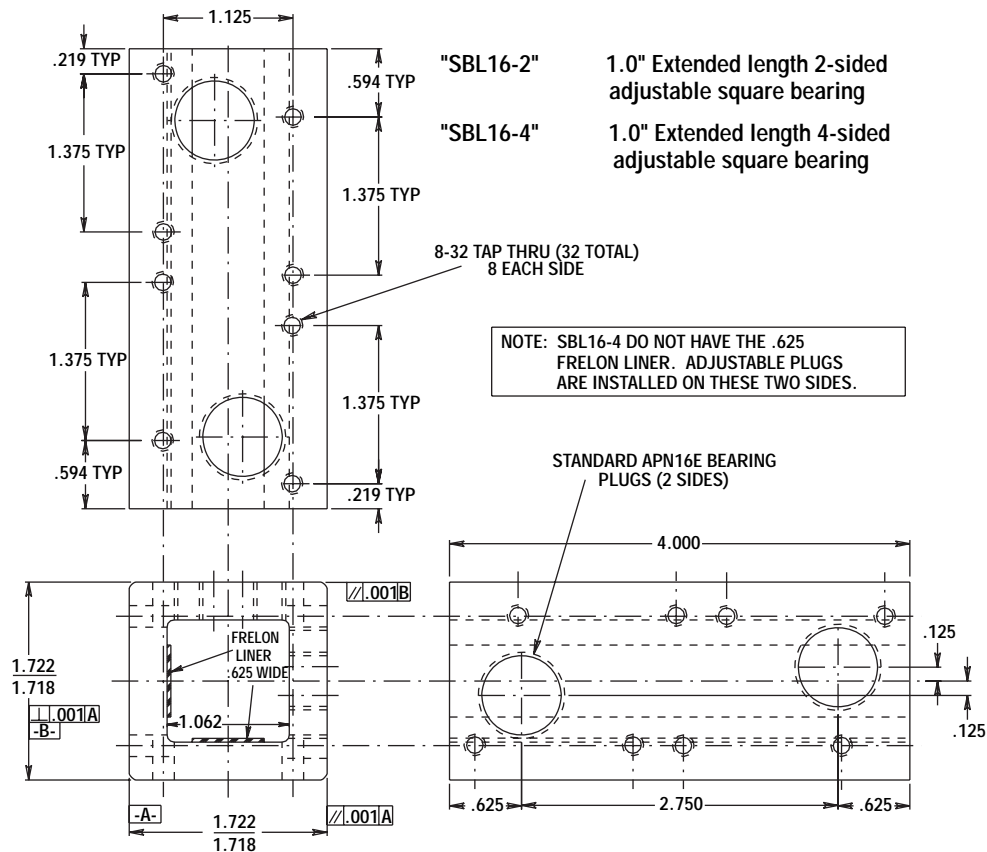
"SB16-2"
"SB16-4"

1.0" 2-Sided adjustable square bearing
1.0" 4-Sided adjustable square bearing



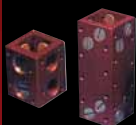
ORDERING INFORMATION

| PART NO. | DESCRIPTION | BEARING WEIGHT (lbs.) |
|----------|---|-----------------------|
| SB16-2E | Standard 1.0" two-sided adjustable square bearing with FrelonJ® plugs for stainless steel shafting | .48 |
| SB16-2 | Optional 1.0" two-sided adjustable square bearing with FrelonGOLD® plugs for steel shafting | |
| SB16-4E | Standard 1.0" four-sided adjustable square bearing with FrelonJ plugs for stainless steel shafting | .56 |
| SB16-4 | Optional 1.0" four-sided adjustable square bearing with FrelonGOLD plugs for steel shafting | |
| SBL16-2E | Standard 1.0" extended length, two-sided adjustable square bearing with FrelonJ plugs for stainless steel shafting | .77 |
| SBL16-2 | Optional 1.0" extended length, two-sided adjustable square bearing with FrelonGOLD plugs for steel shafting | |
| SBL16-4E | Standard 1.0" extended length, four-sided adjustable square bearing with FrelonJ plugs for stainless steel shafting | .85 |
| SBL16-4 | Optional 1.0" extended length, four-sided adjustable square bearing with FrelonGOLD plugs for steel shafting | |



NOTE: Square Shafting on page 37.

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Simplicity® Square Bearings

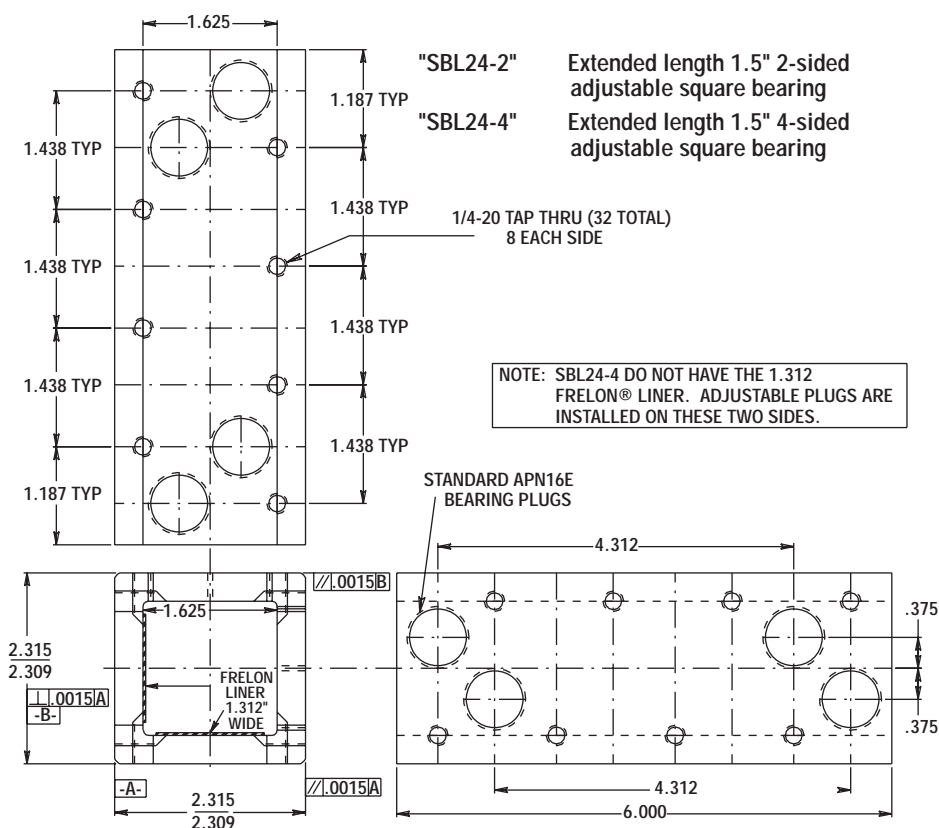
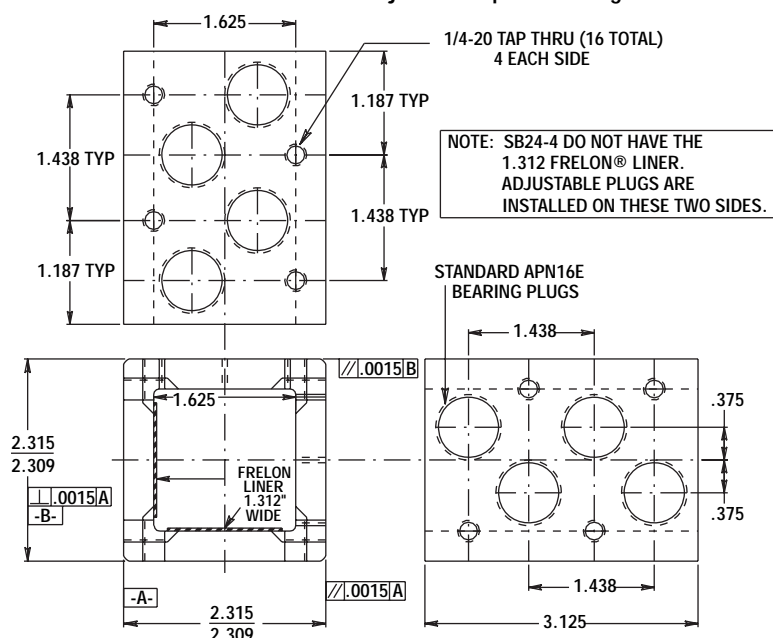
1.5" Specifications

Linear Motion Systems

"SB24-2" 1.5" 2-Sided adjustable square bearing
 "SB24-4" 1.5" 4-Sided adjustable square bearing

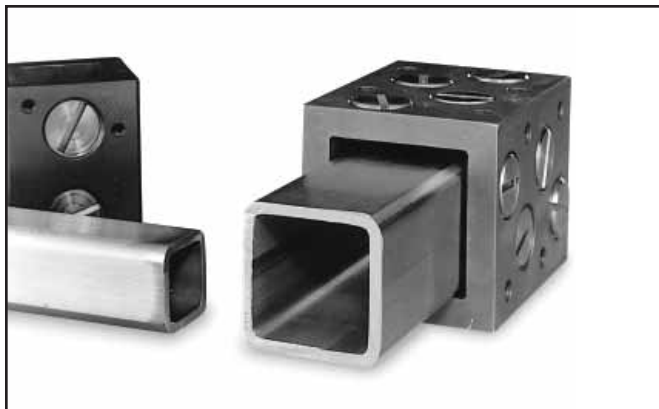
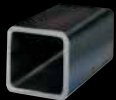
ORDERING INFORMATION

| PART NO. | DESCRIPTION | BEARING WEIGHT (lbs.) |
|----------|---|-----------------------|
| SB24-2E | Standard 1.5" two-sided adjustable square bearing with FrelonJ® plugs for stainless steel shafting | .96 |
| SB24-2 | Optional 1.5" two-sided adjustable square bearing with FrelonGOLD® plugs for steel shafting | |
| SB24-4E | Standard 1.5" four-sided adjustable square bearing with FrelonJ plugs for stainless steel shafting | 1.12 |
| SB24-4 | Optional 1.5" four-sided adjustable square bearing with FrelonGOLD plugs for steel shafting | |
| SBL24-2E | Standard 1.5" extended length, two-sided adjustable square bearing with FrelonJ plugs for stainless steel shafting | 1.71 |
| SBL24-2 | Optional 1.5" extended length, two-sided adjustable square bearing with FrelonGOLD plugs for steel shafting | |
| SBL24-4E | Standard 1.5" extended length, four-sided adjustable square bearing with FrelonJ plugs for stainless steel shafting | 1.84 |
| SBL24-4 | Optional 1.5" extended length, four-sided adjustable square bearing with FrelonGOLD plugs for steel shafting | |



NOTE: Square Shafting on page 37.

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SQUARE SHAFTING

- 304 Stainless steel (standard) is highly corrosion resistant
- Buffed and polished to provide an excellent running surface for FrelonJ®
- Both 1" and 1.5" available cut to any length up to 10 feet
- Wall thickness is $\cong .120"$

ORDERING INFORMATION

| PART NO. | DESCRIPTION | WT. (lbs./in.) |
|----------|---|----------------|
| PST16-xx | Standard 1.0" 304 stainless steel square shafting | 0.12 |
| PST24-xx | Standard 1.5" 304 stainless steel square shafting | 0.18 |

xx - Specify length in inches. Cut charge applied.

SQUARE MOUNTING ACCESSORIES

All mounting accessories are made from cast 356-T6 aluminum for good strength and corrosion resistance.

ORDERING INFORMATION (Square Clamps)

| PART NO. | A | B | C | D | E | F | G | H |
|----------|------|-------|-------|-------|-------|-------|-------|-------|
| PFL1000 | 1.00 | 0.984 | 1.968 | 0.630 | 2.362 | 0.197 | 0.200 | 0.787 |
| PFL1500 | 1.50 | 1.338 | 2.677 | 0.787 | 2.953 | 0.276 | 0.256 | 1.024 |

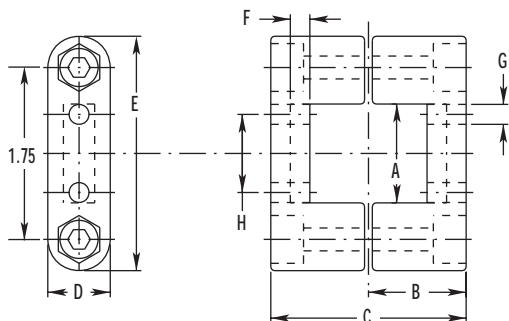
Includes 2 M6 x 1 Hex head bolts, 1.5" long

ORDERING INFORMATION (Flanged Base)

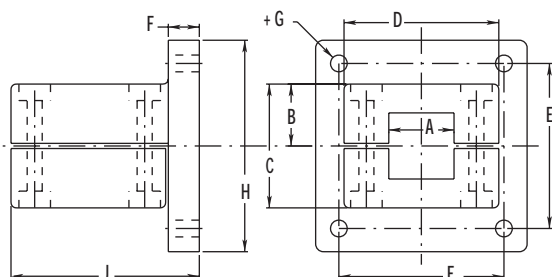
| PART NO. | A | B | C | D | E | F | G | H | J |
|----------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| PBH1000 | 1.00 | 0.984 | 1.890 | 2.362 | 2.520 | 0.472 | 0.256 | 3.228 | 2.874 |
| PBH1500 | 1.50 | 1.338 | 2.440 | 2.756 | 2.992 | 0.551 | 0.256 | 3.740 | 3.347 |

Other housing configurations are also available. Size specifications are available upon request.

PFL



PBH



ANGLE BRACKET – 1 1/2" only
Part No. PAN1515



CROSS MOUNT – 1 1/2" only
Part No. PXK1515



CROSS MOUNT ROUND & SQUARE – 1 1/2" only
Part No. PXM1515

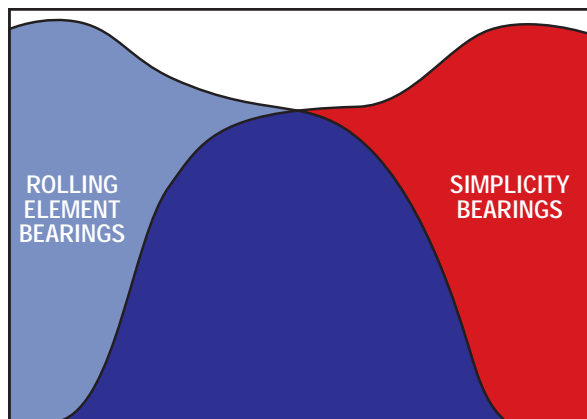
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Simplicity® Self-lubricating Bearings

What Makes Simplicity the Right Choice?

Linear Motion Systems

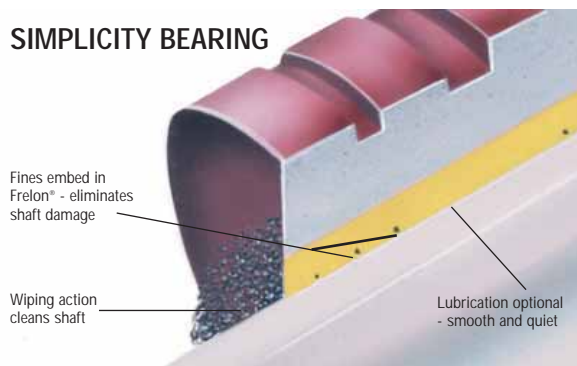


- Machine Tool Accuracies
- Preloaded - zero play
- Very high speeds

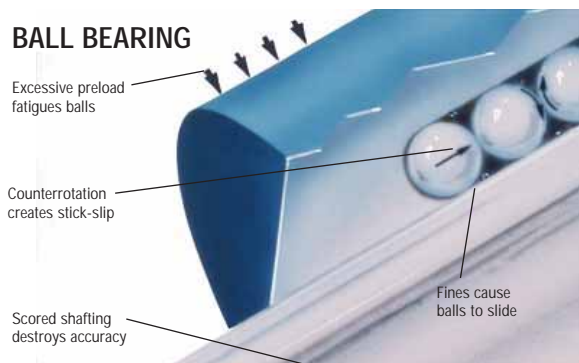
ALL OTHER APPLICATIONS

- Water washdowns
- Foundry & welding environments
- Shock loads & vibration
- Extreme temperatures

SIMPLICITY BEARING



BALL BEARING



Plane bearing applications represent 25% of total worldwide bearing usage.

Why? Good engineering principles dictate the best bearing design for the application. Often ball bearings are asked to perform beyond their design capabilities. The rolling element industry has not helped users understand the limitations of their technology.

In 1983, linear ball bearing users came to Pacific Bearing® and asked for a linear bearing that simply would not fail. Dirt, vibration, shock loading, water washdowns, etc. were causing premature failure, often within days. After testing many material combinations, we chose the Simplicity design as the best solution.

In 1997, three years of rigorous development and testing resulted in the release of the next generation of plane bearing material – FrelonGOLD®. The original Simplicity bearings were improved with additional performance advantages. These are the advantages you will gain with Simplicity:

LINER

- Self-lubricating – requires no external lubricant
- Embeddability of hard particulate eliminates galling and shaft damage
- Dampens vibration for quiet and smooth operation

LOAD CAPACITY

- FrelonGOLD® supplies an average of 20x more load capacity than a standard linear ball bearing allowing the Design Engineer to use a more compact package
- Shock loads are absorbed without damage to components

PERFORMANCE

- Simultaneous linear, oscillating, and rotary motions expand possibilities
- Reliable friction characteristics that do not increase over the life of the bearing
- Liner material similar to energized Teflon® seals
- Close fit & wiping action - cleans shafting - eliminating the need for seals

LOW COST

- Average purchase price 15-30% less than rolling element linear bearings
- Operates maintenance free
- Reliable, predictable life
- WILL NOT CATASTROPHICALLY FAIL!!

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Simplicity® Self-lubricating Bearings

What Gives Simplicity these Advantages?

Linear Motion Systems

THE FRELON® BEARING LINER MATERIALS

FrelonGOLD® and FrelonJ® are a compound of Teflon® and fillers developed for improved performance over other bearings. They provide low wear, low friction, self-lubrication, and high strength.

TEFLON FEATURES:

- Self-lubricating (runs without added lubricant)
- Embeddability of hard particulate
- Wide temperature range (-400°F/+400°F)
(-240°C/+240°C)
- Chemically inert
- Vibration dampening (NO metal-to-metal contact)

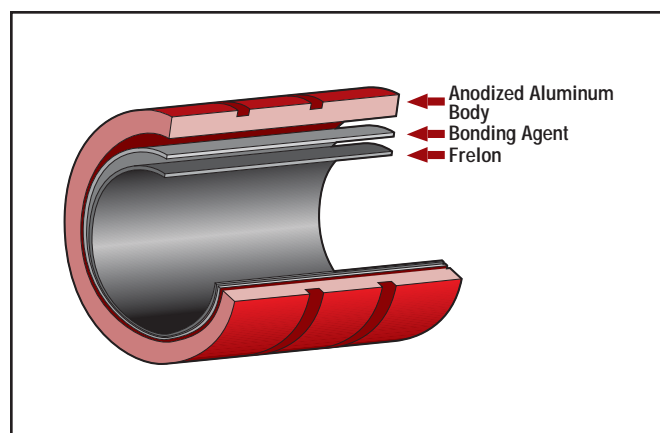
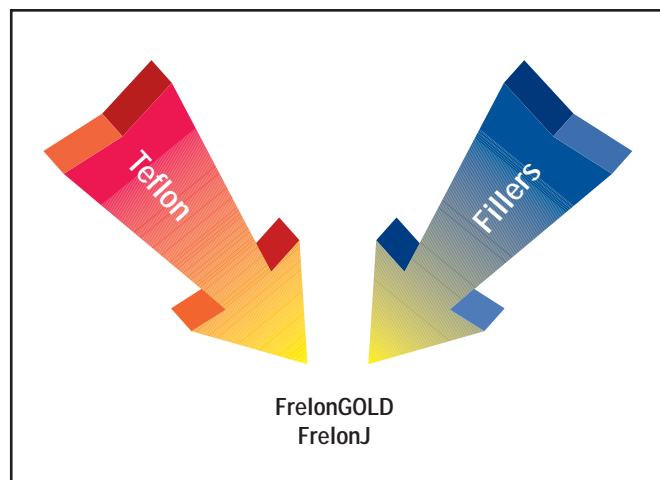
FILLER BENEFITS:

- High load capacity
- High strength
- Low wear rate vs. other materials

PACIFIC BEARING HAS COMBINED FRELON® WITH PRECISION BEARING TECHNOLOGY TO CREATE SIMPLICITY®

- The Frelon liner is bonded to the bearing shell at the molecular level, which transfers the load and dissipates heat buildup throughout the bearing
- Will not rust or corrode due to anodized aluminum or stainless steel shell
- Patented self-aligning capabilities are standard
(See pages 41-42 for information)
- Provides both linear, oscillating, rotary, or any combination of motions
- Maintenance free operation
- Will not damage shafting
- Smooth, quiet operation
- Highly accurate – all critical surfaces are ground on precision bearing grinders
- WILL NOT CATASTROPHICALLY FAIL!

Teflon® is a registered trademark of Dupont Corporation



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FrelonGOLD®

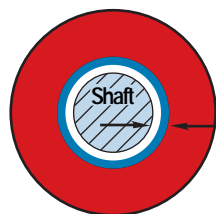


FrelonJ®



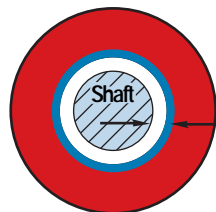
Bearing Plug Shown - See Page 33.

RUNNING CLEARANCE



Standard "FL"
Performs like a preloaded linear ball bearing

.0005" per side clearance average
(.0127 mm)



Compensated "FLC"
Performs like a standard linear ball bearing

.0015" + per side clearance average
(.0381 + mm)

STANDARD



Inch Series



ISO Metric Series



JIS Metric Series

OPTIONAL



316 Stainless Steel

BEARING LINER MATERIAL

Simplicity bearings are available with three liner materials.

FrelonGOLD is a dark gold colored high performance material with gold-colored fillers and is compatible with standard RC60 hardened steel shafting, RC70 ceramic coated Feather Shafting™ and 440 stainless steel shafting.

Frelon J is a yellow colored material specially formulated to provide the optimum performance with 300 series stainless steel and softer shafting like bare aluminum.

RUNNING CLEARANCE

Simplicity bearings are available with two classes of running clearance.

PRECISION—"FL":

- Performs like a preloaded ball bearing
- Tightest running clearance approximately .001" (.025mm)
- Use in applications that require high precision

CAUTION: Not recommended for all parallel shaft applications. Any misalignment can cause binding on the shaft. See recommended "FLC".

COMPENSATED—"FLC":

- Performs like a standard ball bearing
- Additional clearance built into the I.D. (all other dimensions are the same as the precision bearings)
- Ideally suited for parallel shaft applications

NOTE: Many parallel shaft applications will run "FL" precision on one rail and "FLC" compensation on the opposite rail to accommodate slight misalignments.

BEARING SHELL

Simplicity bearings are available in a variety of configurations to help meet specific application needs.

- Standard is aluminum alloy with anodized finish (standard)
- Special 316 stainless steel (no plating) (optional)



Simplicity® Self-lubricating Bearings

Technical Information - Inch & Metric

Linear Motion Systems

BEARING SHELL (cont.)

MATERIALS:

Aluminum Alloy – Is a heat treated and artificially aged aluminum with good strength and corrosion resistance.

316 Stainless Steel – Has an excellent corrosion resistance and is widely used by the paper, food, and other industries.

FINISHES:

Standard Anodized – A sulfuric bath anodizing with a nickel acetate seal that will stand up to 14 days exposure in a 5% salt spray solution at 96°F. It is applied at a .0002" thickness.

NOTE: See page 62 for details on chemical resistance.

TOLERANCES:

- All bearings are precision ground both I.D. and O.D. to provide the highest quality.
- Statistical Process Control (SPC) capabilities also increase final quality.

SELF-ALIGNMENT FEATURE

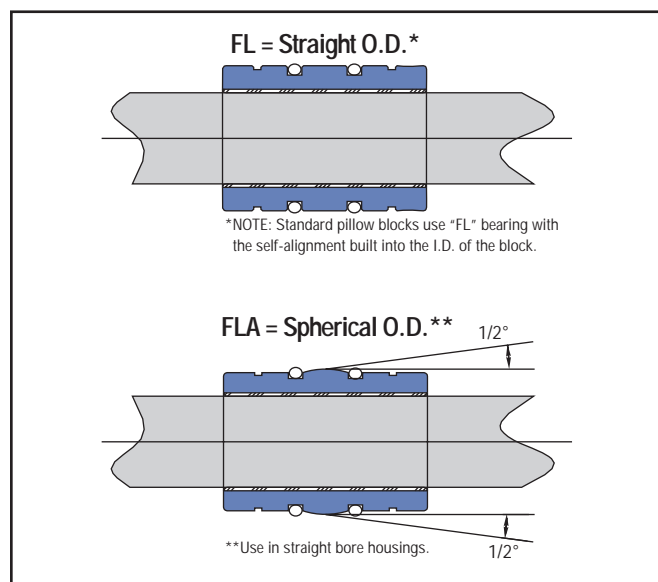
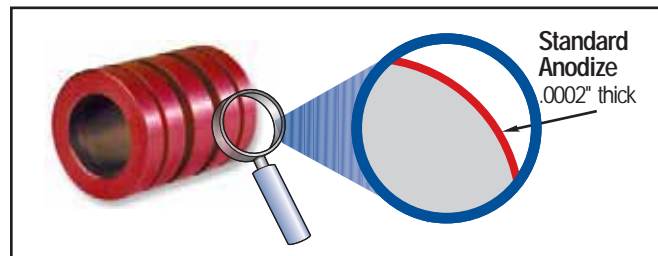
Simplicity bearings are available with a standard straight O.D. or a crowned self-aligning O.D.

"FL" – (Standard):

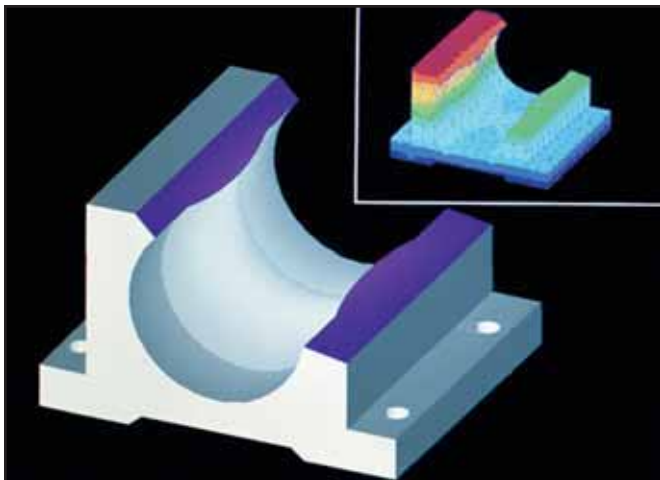
- Straight O.D.
- Pacific Bearing standard pillow blocks have the self-aligning capability designed into the block using standard "FL" bearings for the final assembly

"FLA" – (Self-aligning O.D.):

- Has a crown on the O.D. allowing the bearing to re-align itself in binding situations
- Specifically designed to easily retrofit straight bore housings
- The bearing will allow 1/2° of misalignment capability from centerline (1° overall).
- O-rings are used on either side of the crown. This cushions and eliminates clatter in operation.



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PILLOW BLOCKS

- Made of aluminum alloy
- Pillow blocks are interchangeable with industry standard ball bearing pillow blocks
- Critical centerline dimensions hold accuracy within $\pm.001"$ on inch sizes and $\pm.015$ mm on metric sizes

FINISHES:

- Clear anodized finish (Standard)

Standard pillow blocks have built-in self-alignment in all directions.

- Standard pillow blocks have $1/2^\circ$ misalignment from centerline.
- This feature is built into the housing with a patented spherical radius at the midpoint of the block.
- This self-aligning capability will allow for some shaft deflection and misalignment.

Rigid or straight bore housings are available.

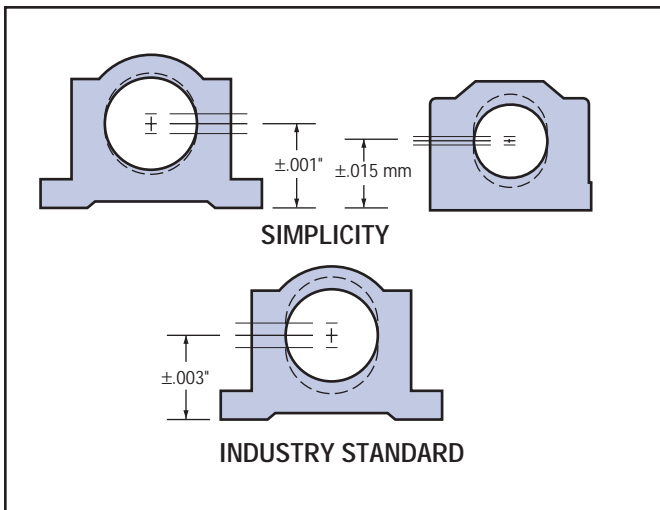
- This does not allow for any self-alignment and provides a very rigid assembly.
- They are typically used in single shaft applications.

ADDITIONAL FEATURES

O-Rings – Used in standard pillow blocks and with self-aligning bearings.

Nitrile Buna 70 (standard) – A good general purpose rubber that is used in 98% of applications.
-65°F to 275°F (-50°C to 135°C)

Viton (special – designate with "V") – Used only in high temperature applications up to 400°F (up to 204°C).





PILLOW BLOCKS - ADDITIONAL FEATURES (cont.)

SEALS: Use only in the most contaminated environments.

Polymod® (standard) – A high performance polymer modified material that reduces friction of a standard buna material by 50% and increases wear life

*Polymod is a registered trademark of Polymod Technologies, Inc.

Temperature – -40 – +400°F

Urethane (special - designate with “U”) – A moly-impregnated urethane scraper that is only for the severest applications - friction is greatly increased!

Temperature – -40 – +180°F

Viton™ (special - designate with “V”) – Used only in high temperature applications up to 400°F (up to 204°C).

ATTENTION: 90% of applications do not require seals when using Simplicity bearings. The liner has a natural ability to wipe particles from the shafting. Any particulate (metal, sand, etc.) that does enter the bearing will embed itself into the soft liner not scoring the shafting or locking mechanical parts.

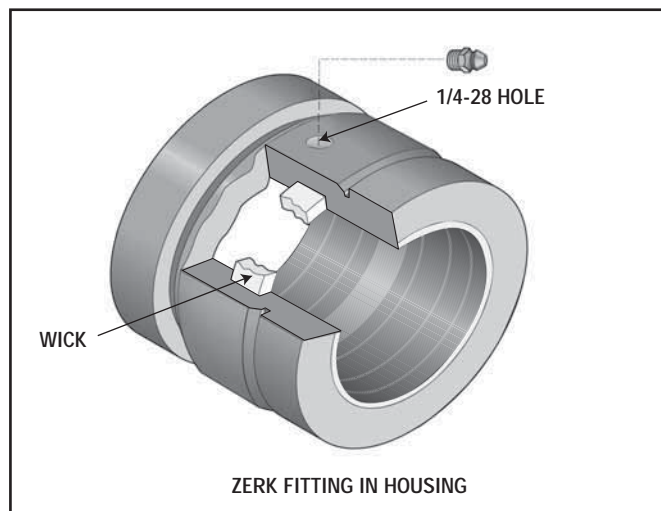
LUBRICATION SYSTEM: Order with “JKM” modifier

- Recommended for high speed, high load, and rotary or oscillating applications

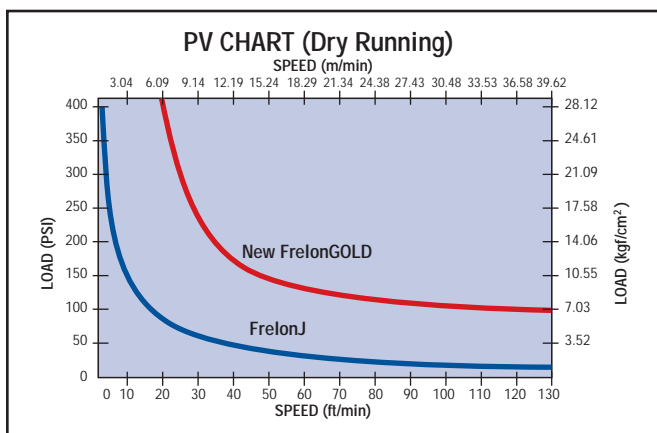
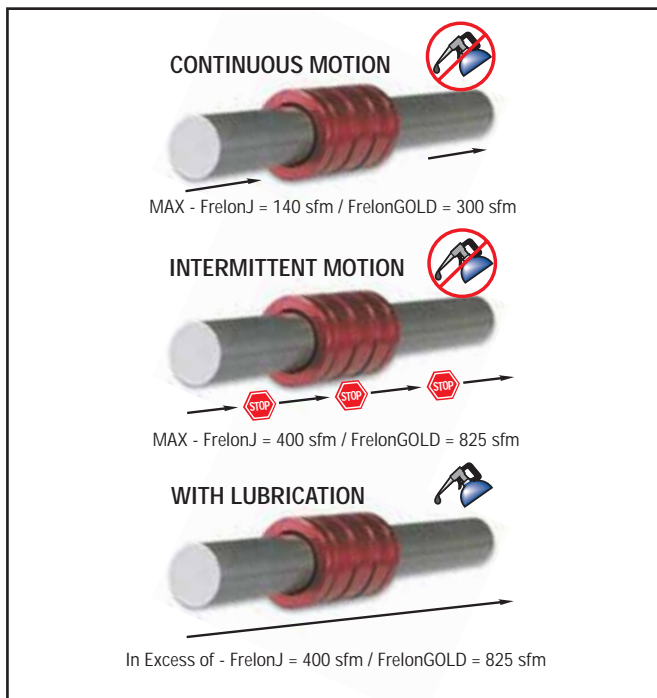
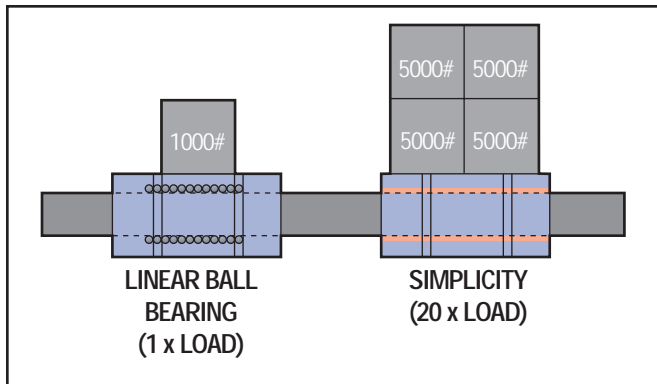
Lubrication System consists of:

Felt wick – Retains oil lubricants (remove when using grease lubrication)

Zerk fitting – Installed into pillow block, other housing, or directly into die sets PAC, PACM



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LOAD CAPACITY OF LINER

Simplicity bearings can carry from 4 to 20 times the load of a linear ball bearing.

| BEARING MATERIAL | STATIC LOAD CAPACITY |
|------------------|----------------------|
| FrelonGOLD® | 20.68 N/mm² |
| FrelonJ® | 10.34 N/mm² |

- Allows the engineer to maintain performance in a smaller designed package

Example: Simplicity 1/2" I.D. = 1" I.D. linear ball bearing

- Shock loads and vibration are absorbed
- Metal to metal contact is eliminated providing a smoother, quieter running assembly

SPEED CHARACTERISTICS

Exceeding these speeds causes frictional heat and accelerates liner wear.

| BEARING MATERIAL | NO LUBE CONTINUOUS MOTION | NO LUBE INTERMITTENT MOTION | WITH LUBRICATION* |
|------------------|---------------------------|-----------------------------|-------------------|
| FrelonGOLD | 300 sfm | 825 sfm | 825 sfm |
| | 60 in./sec. | 165 in./sec. | 165 in./sec. |
| | 1.524 m/sec. | 4.19m/sec. | 4.19 m/sec. |
| FrelonJ | 140 sfm | 400 sfm | 400 sfm |
| | 28 in./sec. | 80 in./sec. | 80 in./sec. |
| | .711 m/sec. | 2.03 m/sec. | 2.03 m/sec. |

*Depending on the lubrication used, loads, and frequency of continuous or intermittent motion, speeds can be in excess of the numbers shown.

PERFORMANCE RATINGS (for Linear Motion)

Plane bearings are rated by their limiting PV which is a combination of load over a given surface area and the velocity.

| BEARING MATERIAL | MAX. "PV" | MAX. "P" | MAX. "V" (NO LUBRICATION) |
|------------------|--------------------------|----------------|------------------------------|
| FrelonGOLD | 20,000 (psi) x ft./min.) | 3000 psi | 300 sfm |
| | 430 (kgf/cm² x m/min.) | 210.9 kgf/cm² | 91.44 m/min. |
| FrelonJ | 10,000 (psi x ft./min.) | 1500 psi | 140 sfm |
| | 215 (kgf/cm² x m/min.) | 105.45 kgf/cm² | 42.66 m/min. |

PV = The performance measurement of plane bearings

PV = P x V where P = pressure (load) in psi (kgf/cm²)

V = velocity (speed) in sfm (m/min.)

NOTE: All 3 parameters must be met by an application for the bearing to perform properly.

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WEAR RATE/LIFE EXPECTANCY

The life expectancy of a Simplicity bearing is dependent on application parameters.

Factors that will affect life...

- Shaft hardness, surface finish, and preparation
- Length of travel • Temperature
- Contamination • Running clearance
- Lubrication • Speed
- And many, many other factors

The Radial Wear chart gives a guideline for a typical application at 10 psi (.703 kgf/cm²) traveling at 100 ft./min. (30.48 m/min.).

FACTORS AFFECTING WEAR RATE/LIFE

Shafting requirements for Frelon® bearing materials.

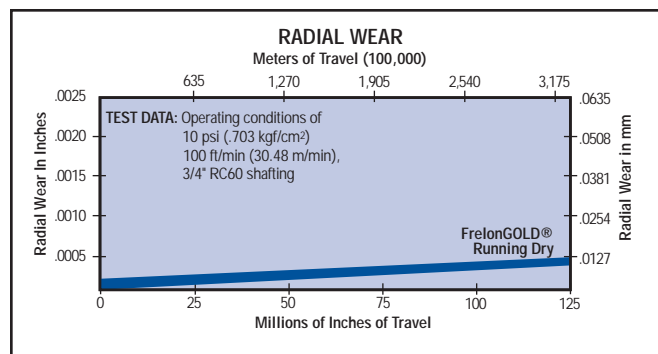
BEST PERFORMANCE:

- Finish of 8 - 12 RMS
- Hardness of RC60

ACCEPTABLE PERFORMANCE:

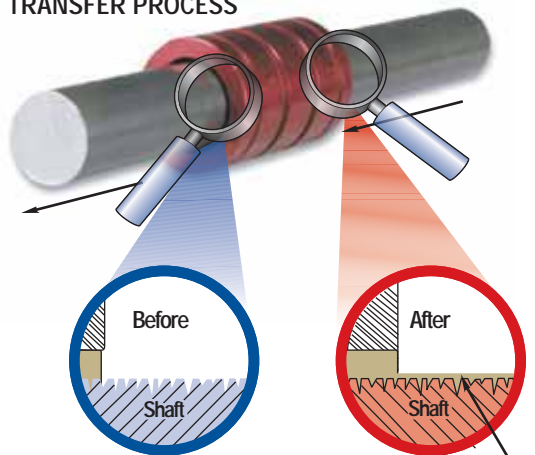
- Finish of 8 - 16 RMS
- Hardness of RC35
- Surface finish requirements apply to all three Frelon bearing materials.
- Rougher shafting can be used, but both bearing and shafting will wear at accelerated rates and binding may occur.

NOTE: Consult factory if using chrome plated shafting.





FRELON® TRANSFER PROCESS



NOTE: At break-in, Frelon deposits a microscopic film on the shaft and fills the valleys in the surface finish creating a Frelon-on-Frelon running condition that is true self-lubrication.

RECOMMENDED LUBRICATION

- Waylube Oil
- Light Weight Oils
- Petroleum Based Grease
- 3-in-1 oils



NOT RECOMMENDED

- WD-40
- PTFE Sprays
- Fluorocarbons
- Silicon Oils, Grease or Spray



WD40® is a registered trademark of the WD40 company

TRANSFER PROCESS OF LINER TO SHAFT

The interaction of the Frelon® material and the shafting creates a natural, microscopic transfer of the Frelon to the running surface. A thin film is deposited on the shaft, and the valleys in the surface finish are filled in with Frelon material during the initial break-in period. This transfer creates the self-lubricating condition of Frelon riding on Frelon.

This break-in period will vary depending on several criteria:

1. Preparation of the shafting prior to installation - it is best to clean the shafting with a 3-in-1 type oil before installing the bearings. This ensures that the surface will receive a full transfer of material.
2. Speed, load, and length of stroke specific to the application - typically the initial transfer process will take approximately 50-100 strokes of continuous operation. The running clearance on the bearing will increase an average of .0002" to .0005", depending on the length of the stroke and surface requiring the transfer.
3. How often the shafting is cleaned - if the shafting is cleaned regularly, increased wear will be seen in the bearings. This is due to the transfer process being performed over and over again.

CAUTION: Do not repeatedly clean the shafting with alcohol! This will remove the previously transferred material entirely and increase the wear to the bearing liner.

LUBRICATION

Lubrication can...

- Reduce friction up to 50%.
- Minimize wear of liner.
- Reduce heat buildup allowing greater speeds. Actual speeds achieved are dependent on type of lubricant and frequency of application.
- Aid in cleaning the shafting for a proper transfer process. A minimum of initial lubrication of Simplicity bearings is strongly recommended.



TEMPERATURE

Simplicity bearings can operate in a wide range of temperatures (-400°F/+400°F) (-240°C /+240°C). Temperature dependent on materials housed in pillow block and size of bearing.

- Maintains the same performance characteristics
- The thin liner allows heat to dissipate through the bearing shell

THERMAL EXPANSION

The standard bearing ID options are designed for use in most industrial applications.

For temperatures below 0° F, the standard I.D. is recommended. (FL series)

For extreme high temperatures, the Compensated I.D. bearing is recommended (FLC) for the increased running clearance.

CAUTION: It is always best to inspect actual size at extreme temperatures to insure proper running clearance.

ROTARY APPLICATIONS

Simplicity bearings will operate very well in rotary applications if applied properly.

Stationary rotary applications do not allow the heat to be spread over an extended area. It is retained in the I.D. of the bearing limiting speed and load.

- MAX Rotary Speed (No lube/continuous motion)
- 40 sfm (12.2 m/min.) for standard precision ID clearances
- 140 sfm (42.6 m/min.) for compensated ID clearances

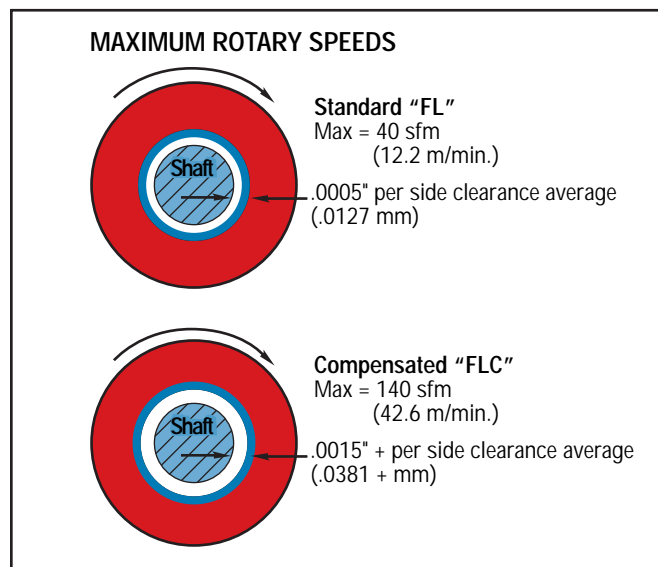
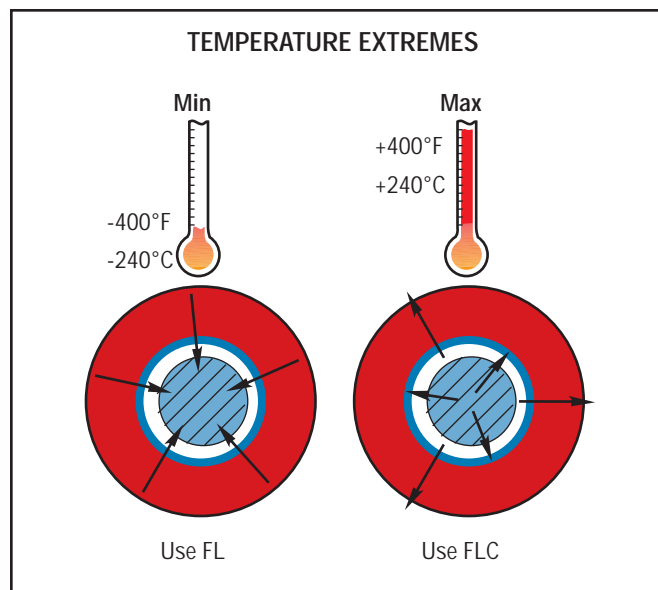
$$V(\text{sfm}) = .262 \times d \times \text{RPM}$$

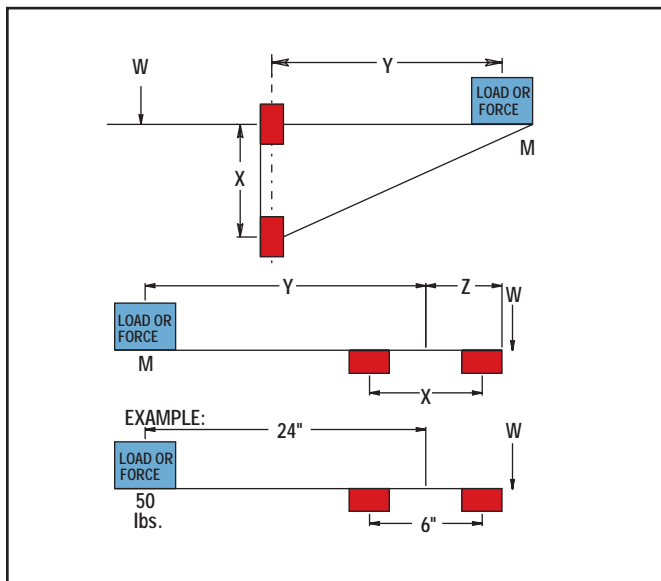
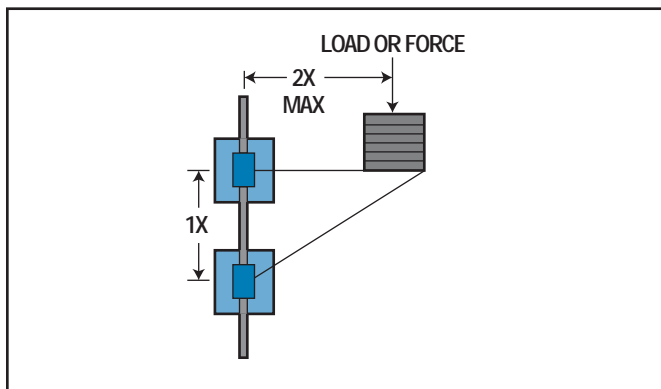
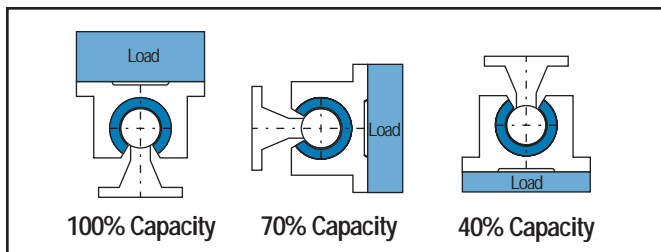
d = shaft diameter (inches)

RPM = revolutions per minute

- Properly maintained lubrication can increase these speeds dramatically.

CAUTION: It is always best to do specific testing for rotary applications above these limits where lubrication is to be used.





OPEN BEARINGS ORIENTATION

Simplicity bearings can operate in any orientation.

Load capacities will vary on open bearings depending on the orientation in which they are being used.

CANTILEVERED LOADS

- Maximum 2:1 ratio
- 1x = bearing separation on same shaft
- 2x = distance from shaft to load or force

EXAMPLE: If 2x equals 10" then 1x must be at least 5"

CAUTION: BINDING will occur if the 2:1 ratio is exceeded!

This principle is NOT load dependent! It is also NOT dependent on the driving force used! The bearings will bind whether hand or mechanically driven.

This principle is a product of friction.

What if more than 2:1 is required?

Often times holding the 2:1 ratio is not possible. One method of preventing binding problems in these cases is to use a counter balance.

For efficient counter balances, use this formula:

$$M * Y = W * Z$$

NOTES: To avoid problems when running without mass (M) $Z = 1.5X$

W can be calculated; load on bearing will be:

$$\frac{M + W}{\# \text{ of bearings}}$$

EXAMPLE: $50 * 24 = W * Z$ ($Z = 1.5 * 6 = 9$)

$$W = \frac{50 * 24}{9} = 133 \text{ lbs.}$$

$$\text{Load per bearing} = \frac{50 + 133}{4} = 45.75 \text{ lbs./bearing}$$



SEVERE MISALIGNMENT SOLUTIONS

Linear ball bearings will continue to operate in a misaligned condition, but will cause damage to shafting and catastrophically fail.

Simplicity bearings DO NOT tolerate misalignment. They simply will stop moving without any damage to the shafting.

Self-aligning housings will aid in misalignment - up to $1/2^\circ$ from centerline.

POSSIBLE SOLUTIONS for use with Standard "FL":

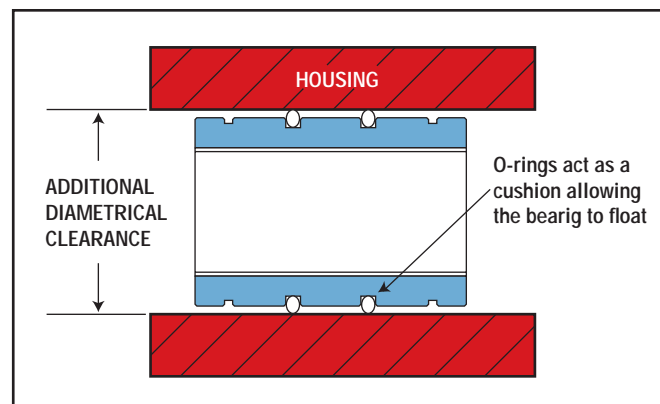
Undersize the bearing O.D. (see chart) and install o-rings. See product pages for o-ring numbers.

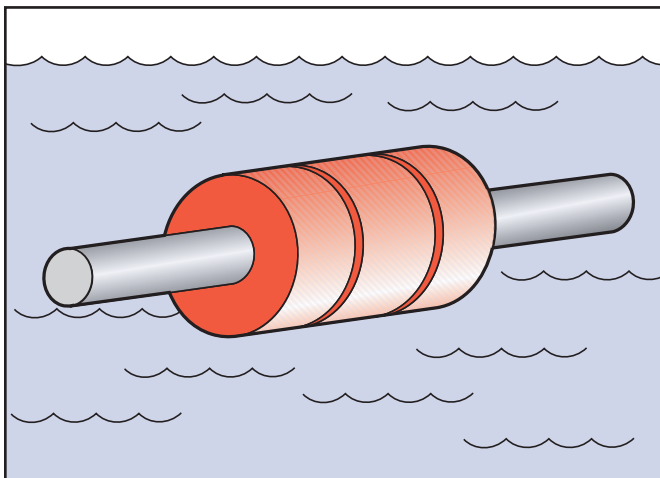
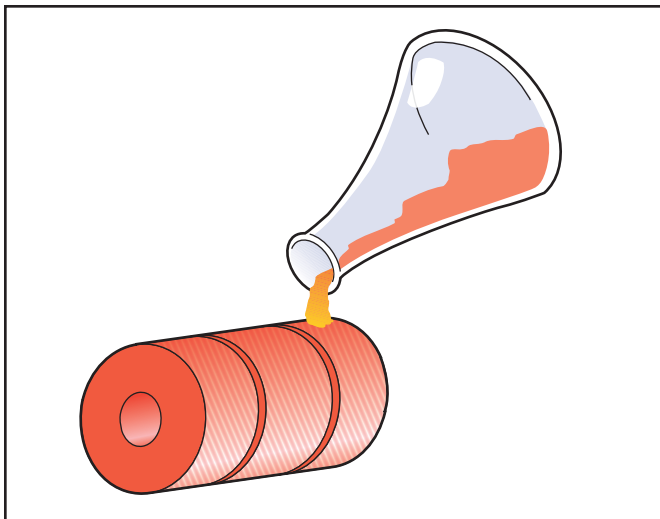
Oversize the housing I.D. (see chart) and install the standard bearing with o-rings. See product pages for o-ring part numbers.

The additional clearance created by either method will allow the bearing to float in the housing and match the non-parallelism of the shafting.

CAUTION: This solution is only for SEVERE cases that the standard self-aligning will not accommodate.

NOTE: Maximum additional clearance and o-ring information for severe misalignment solutions on page 61. For complete installation instructions, see pages 58-61 in the Technical Section.





CHEMICAL RESISTANCE

Simplicity bearings stand up to harsh environments.

FrelonJ® – almost universal chemical inertness. Only molten sodium and fluorine at elevated temperatures and pressures show any signs of attack.

FrelonGOLD® – the fillers in the material can be attacked by deionized water and other harsh chemicals.

Anodized Aluminum Shell (Standard) – good chemical resistance in most industrial applications.

316 Stainless Steel Shell (Optional) – excellent chemical and corrosion resistance in harsh environments. (See page 62 for complete chemical interaction listing.)

SUBMERGED APPLICATIONS

Simplicity bearings will provide excellent performance in a submerged condition.

The bearings will employ the fluid as a lubricant showing increased velocities and wear life. Oils and non-salt water are especially effective.

Do not use FrelonGOLD® in submerged applications, however FrelonGOLD® is suitable for washdowns.

VACUUMS/OUTGASSING/CLEAN ROOMS

Due to self-lubrication, low outgassing, and a minimum of particulate (buildup), Simplicity bearings are excellent in clean rooms and vacuums.

Testing has been done on the Frelon® materials in accordance with ASTM E-595-90 with acceptable maximums of 1.00% TML and .10% CVCM.

| MATERIAL | % TML | % CVCM |
|----------|-------|--------|
| Frelon | 0.00 | 0.00 |
| FrelonJ | 0.18 | 0.01 |

TML = Total Mass Loss

CVCM = Collected Volatile Condensable Materials



CLASSES OF PLANE BEARINGS

Simplicity bearings are in a class of bearings known as plane bearings, which means that they have no rolling elements. There are three classes of plane bearings:

Class I - Require an outside source of lubrication (oil, grease, etc.).

Class II - Lubrication is impregnated within the walls of the bearing. (Bronze, powder metal, etc.) Typically these bearings require an added lubricant also.

Class III - Self-lubricating bearings, which do not require added lubricants.

Simplicity bearings are Class III plane bearings and are self-lubricating.

RATING A PLANE BEARING

Plane bearing performance capacity is rated by PV.

P - pressure or load in pounds per square inch (psi) or kilograms per square centimeter (kg/cm²).

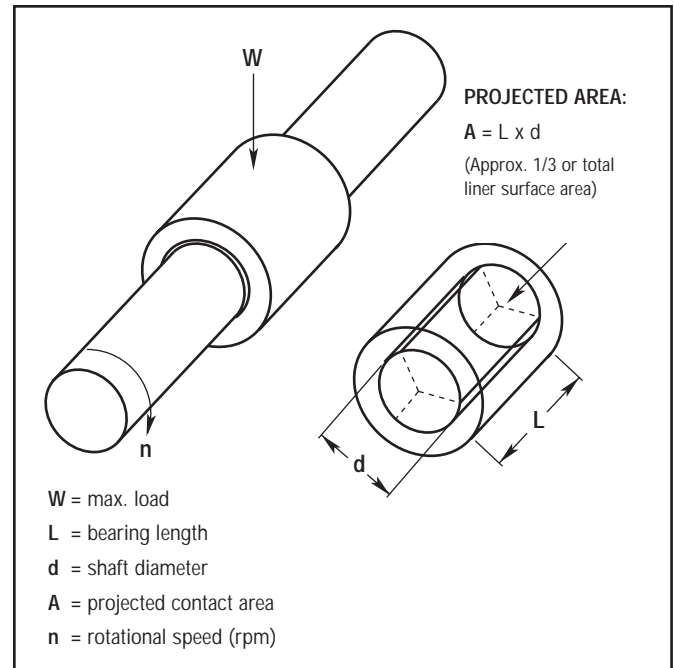
V - velocity or surface speed in feet per minute (fpm or sfm) or meters per minute (m/min.).

PV - pressure velocity value.

SIMPLICITY MAXIMUM PERIMETER

| MAXIMUM PARAMETERS | P | V (RUNNING DRY) | PV |
|--------------------|--|-------------------------------|---|
| FrelonJ® | 1500 psi or 105.45 kgf/cm ² | 140 sfm or 42.67 m/min. | 10,000 psi x ft./min. or 215 kgf/cm ² x m/min. |
| FrelonGOLD® | 3000 psi or 210.9 kgf/cm ² | 300 sfm or 91.44 m/min. | 20,000 psi x ft./min. or 430 kgf/cm ² x m/min. |

NOTE: All three parameters must be met in order for the bearing to operate properly.



FORMULAS FOR RATINGS

PRESSURE IS OVER THE PROJECTED AREA OF LOAD:

$$A = L \times d$$

$$P = \frac{W}{A} \text{ psi (or kg/cm}^2\text{)}$$

VELOCITY:

Linear = total distance traveled in one minute

ROTATIONAL VELOCITY:

$$V = \frac{\pi \times d \times n}{12} \text{ fpm (or m/min.)}$$

PRESSURE VELOCITY VALUE (PV):

$$PV = P \times V \text{ psi x fpm (or kg/cm}^2 \times \text{m/min.)}$$

PV EQUIVALENTS

| | INCH | TECHNICAL METRIC | INT'L METRIC (SI) |
|--------------------|------------|---------------------------|-------------------------|
| LOAD | 1 psi | .0703 kgf/cm ² | .0069 N/mm ² |
| VELOCITY | 1 ft./min. | .3048 m/min. | .00508 m/sec. |
| PV | 1 PV | .0214 PV | .000036 PV |
| FrelonJ® MAX PV | 10,000 | 215 | .36 |
| FrelonGOLD® MAX PV | 20,000 | 430 | .72 |

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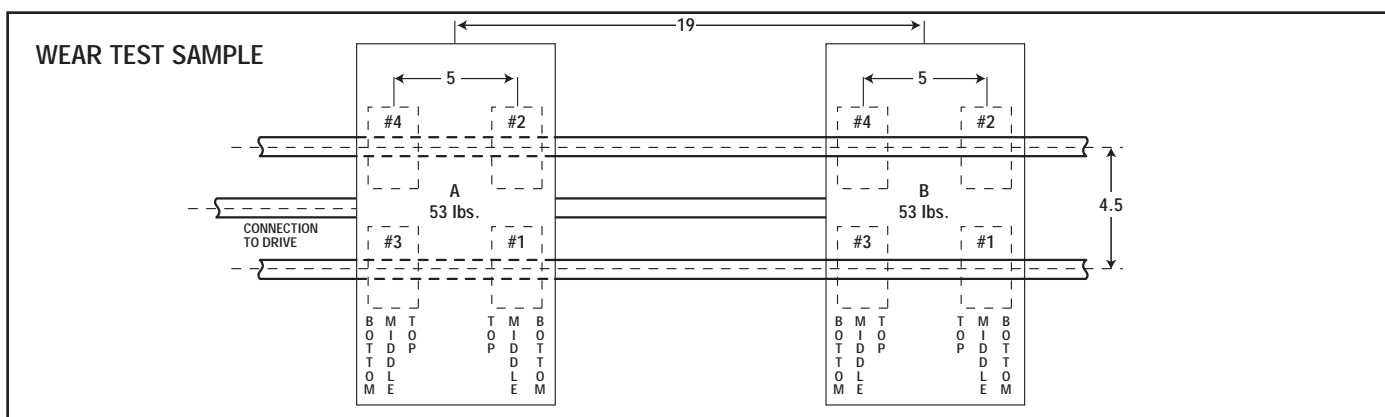
WEAR RATE VS. LIFE EXPECTANCY

A rolling element linear bearing's life expectancy is usually expressed in total inches or meters. A rolling element rotary bearing's life expectancy is expressed in hours of operation. Both are also rated for average (L-50) and minimum (L-10) life. L-50 life is the average life that can be expected from 50% of rolling element bearings. In other words, 50% will not reach the average life expectancy. L-10 life is the minimum life (1/5 the average life) expected from 90% of rolling element bearings. In other words, 10% will not reach the minimum life expectancy. Theoretically they could fail upon installation.

Plane bearings are not rated by a life expectancy but by the wear rate of the bearing material. Wear is greatly dependent

upon the proper application of the bearing and material used. If it is not properly applied, it will fail. Failure, however, is subjective and dependent upon specific application requirements. 0.002" running clearance may not be acceptable in one application while another may be able to run a bearing until the liner is completely worn through. The user may then rotate it 30 degrees and continue to run it. This broad range of acceptability makes it difficult to determine life expectancy.

The first step is to determine what wear is acceptable for your application. Then utilizing the test data below, you can estimate the wear expected for your given application.



CONDUCTED BY: Pacific Bearing® Company

BEARING MATERIAL: FrelonGOLD®

SHAFT MATERIAL: Standard RC60 steel shafting

SURFACE FINISH: 8-12 RMS

SPEED: 140 fpm (70 cycles/min; 1,680"/min; 100,800"/hour; 2,419,200"/day)

STROKE: 12"

LOAD: 10.87 psi (53 lbs.)

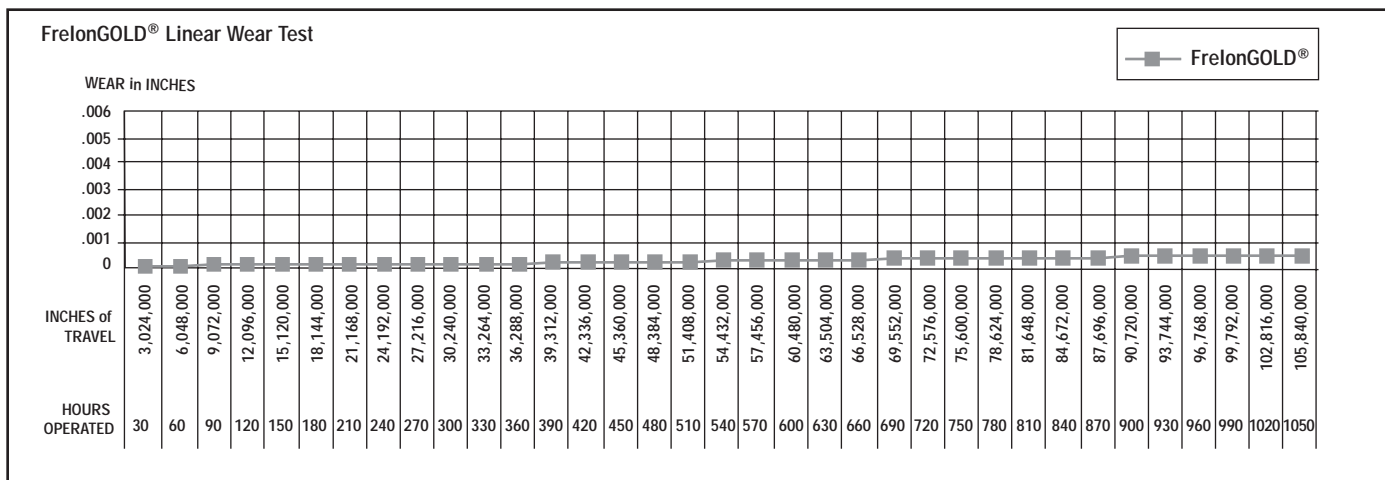
BEARINGS USED: FLN12 (3/4" open style bearings)

LUBRICATION: None

TOTAL WEAR TO BEARING MATERIAL:

FrelonGOLD® = .00042"

NOTE: Wear is an average of totals taken from 4 bearings per carriage.



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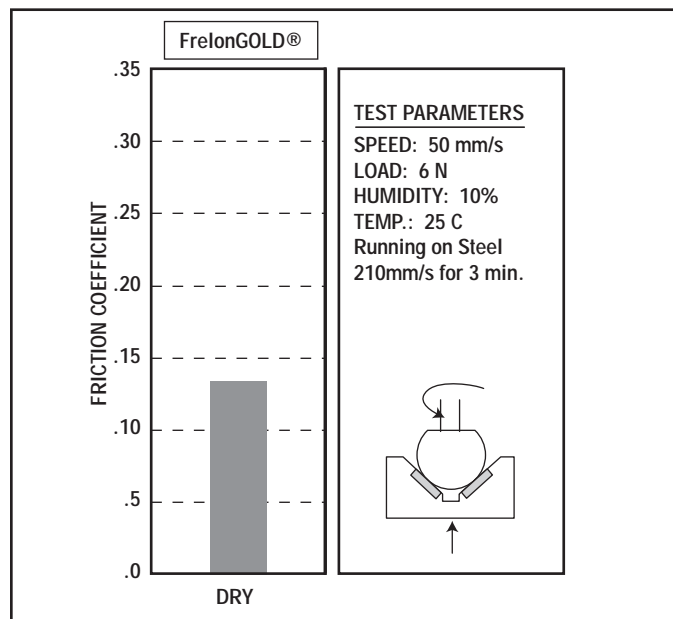


COEFFICIENT OF FRICTION

A frequent misconception of plane bearings is that wear and friction are basically synonymous, in that, high friction equals high wear or that low friction equals low wear. While there can be a relation between the two, they should be addressed as separate issues in the design process.

For example, dry running virgin (unfilled) Teflon® on steel's coefficient of friction (c.o.f.) is approximately .1 while filled Teflon's c.o.f. can range from .125 to .4 depending on the fillers used. By comparison, however, the virgin Teflon will wear at a much greater rate.

FRICTION TEST SAMPLE #1



CONDUCTED BY: Dr. Tillwich GmbH

MANAGING DIRECTOR: Mr. Werner Stehr (World leading tribologist with a seat on the ISOTC123 Committee establishing standards for tribological testing.)

BEARING MATERIAL: FrelonGOLD®

SHAFT MATERIAL: Standard RC60 steel shafting

SURFACE FINISH: 8-12 RMS

SPEED: 50 mm/sec

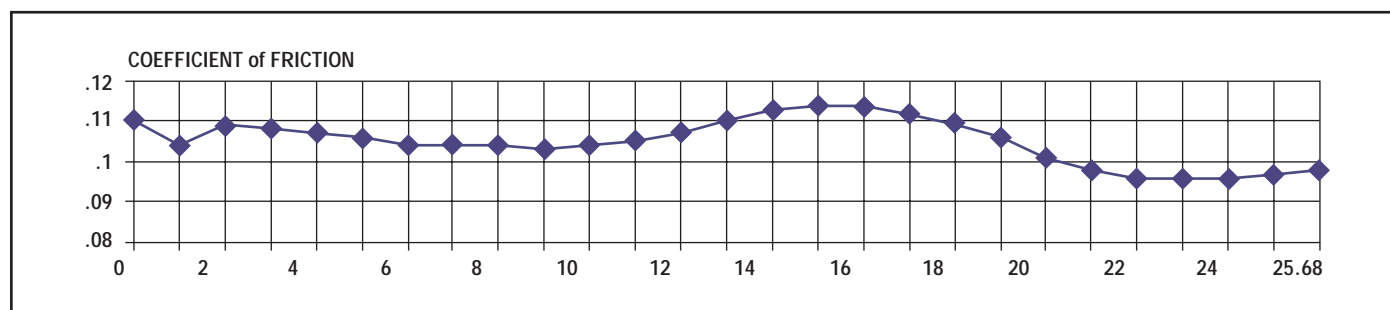
LOAD: 6 N

TEMP.: 25° C

LUBRICATION: None

AVG. COEFFICIENT OF FRICTION:
FrelonGOLD® = .125

FRICTION TEST SAMPLE #2



CONDUCTED BY: FrelonGOLD® material processor

BEARING MATERIAL: FrelonGOLD®

SHAFT MATERIAL: CRS 1018

SPEED: 100 fpm

LOAD: 100 psi

DURATION: 25.68 hours

LUBRICATION: None

SURFACE FINISH: 8 RMS

AVERAGE COF: 0.10

MAX. COF: 0.15

MIN. COF: 0.08

AVG. RUNNING TEMP.: 95.40° F

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LOAD CAPACITY (Pressure)

Depending upon the material used, a plane bearing's load capacity can greatly exceed a rolling element bearing. There are three basic reasons for this:

1. The area of surface contact with the shaft is far greater than rolling element bearings, which have point-to-point contact with a given number of balls.
2. A rolling element bearing must be oriented properly for the ball tracks to carry the load adequately, while a plane bearing can be mounted in any orientation.
3. Only one or two of the tracks in a rolling element bearing will actually carry any of the load applied.

Simplicity bearings have a thin liner that is bonded to a metal shell at the molecular level, allowing the load to be transferred throughout the bearing. This gives it an advantage over other plane bearings of solid plastic or polymer materials. These other materials will tend to "cold flow" under pressure. "Cold flow" means to deform or lose shape. The idea is similar to pressing your finger into a bar of soap - material will move or deform as pressure is applied.

LINEAR SURFACE SPEEDS (Velocity)

In typical applications, speed is a known quantity and easily converted. Typically feet per minute or meters per minute are used. The most important factor that speed (along with friction) produces is heat buildup. This is not a critical factor in most linear applications because the heat is dissipated over the length of travel, and it does not affect the bearing. Short stroke or extremely high speed applications may see the effects of heat buildup in thermal expansion and the bearing ID locking on the shaft. A compensated ID bearing (FLC) is recommended in these applications.

FACTORS THAT CONTRIBUTE TO WEAR LIFE

Proper mating of shaft and liner materials.

Surface finish 8-16 RMS (.20-.40mm) is required. Peaks in the surface that are polished to a radius provide the best running surface. Sharp peaks in the finish will be like a fine lapping compound wearing the I.D. of the bearing.

NOTE: Shafting damaged by use with ball bearings can be salvaged and used with Simplicity bearings. Spin in a lathe and polish with sand papers in this order: 120 grit, 180 grit, and 300 grit. This will also remove sharp peaks in the surface finish.

Surface speed - at high speeds, heat buildup will affect liner wear.

Break-in transfer - proper transfer process of the liner to the shaft. (pg. 46)

Lubrication - proper lubrication can greatly improve the wear rate of a bearing. At the same time, improper lubrication can increase wear and failure.

Load & Wear Relationship - Wear is proportional to $(load)^3$, so if load is reduced to $1/2$, wear will be reduced to $(1/2)^3$.

Contamination - while migrating into the bearing and embedding into the liner, certain types of contamination may, over time, cause increased wear to the liner.

NOTE: This is not an all inclusive list. There are many, many more factors within an application that can affect wear to different degrees. These are the major issues and the first things to address in a design.

TYPES AND EFFECTS OF LUBRICATION

Lubrication is any outside technique used for reducing the friction, wear, or both of a bearing. **Proper lubrication of Simplicity bearings is critical.** Evaluate lubrication needs on an application by application basis to determine whether or not it should be used at all, what type is needed, and how it is applied. Below are some criteria on which to base the lubricant decision:

DO NOT USE WD40™, PTFE sprays, or other oils, greases, or sprays that contain fluorocarbons or silicone. In testing, these lubricants have proven to cause long-term stick-slip problems with the Frelon lined bearings. They tend to become a gummy substance that ultimately increases friction.

RECOMMENDED LUBRICANTS:

- Waylube oils
- Lightweight oils
- 3-in-1 type oils
- Lightweight petroleum based greases

WD40™ is a registered trademark of the WD40 Corporation.



USING OILS WITH SIMPLICITY

DO NOT USE ANY TYPE OF MOTOR OIL OR OILS WITH ADDITIVES! These types of oils work well short term, but quickly become ineffective, and will cause stick-slip reactions in the bearing. As a rule of thumb, the less additives in the oil, the better the performance. Recommended oils are Mobil Vactra #2 (a way lube oil) and any standard 3-in-1 oil. The 3-in-1 oils are tremendous cleaning oils and are the best in preparing for a proper transfer of teflon to the shafting.

GREASE PRODUCTS

DO NOT USE A MOLY FILLED OR OTHER TYPE FILLED GREASES! They become like a lapping compound on the ID of the bearing and increase wear dramatically.

PROPER USE OF GREASES

Proper use of grease is critical for trouble-free operation.

Be sure the felt wick is removed from a “FL-xx-JKM” bearing because grease inserted through the zerk will cause the wick to act like a brake.

Do not fill all of the running clearance with grease! The temptation is to treat it like a rolling element bearing and fill it until it weeps from the end. This will cause greater friction and binding.

The rule of thumb for the bearing liner that “thin is better” applies to the use of grease also.

If grease is used and does not work in the application, it is possible to salvage the bearing with minimal work and to continue to operate. Follow the steps below:

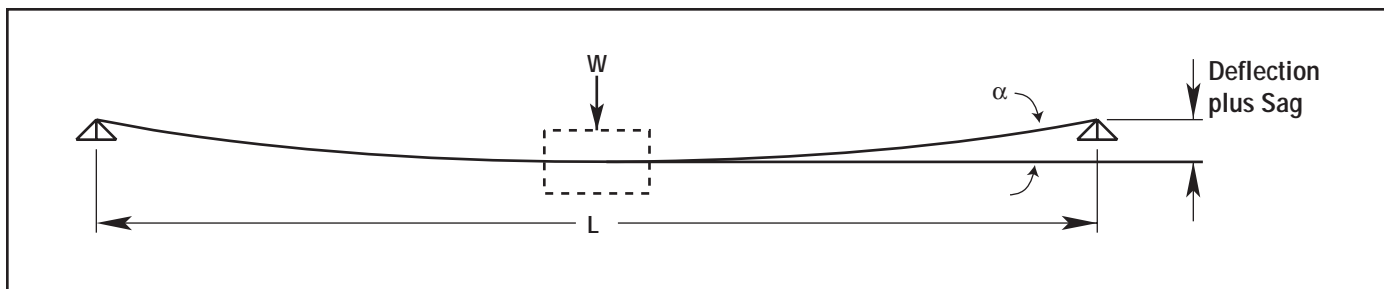
1. If possible, remove the bearing from the housing, wipe the grease from the liner, use a 3-in-1 type oil to clean the excess remaining grease, and reinstall.
2. If it is not possible to remove the bearing, wipe as much grease as possible away from the ends of the bearing, then start to fill with a 3-in-1 type oil for cleaning the liner. To speed the cleaning process, apply forced air to the bearing through the zerk hole and continue using oil lubrication.

EFFECTS OF LUBRICATION

Lubrication can greatly increase the performance of a bearing when applied properly as noted earlier. Actual performance results for specific applications are difficult to predict due to the number of elements involved (temperature change with lube, useable life or aging of lubricant, etc.). Specific application testing is recommended to establish specific performance parameters. Below are charts with guidelines of performances.



APPLICATION INFORMATION



INCH

| SHAFT DIAMETER | HARDENED STEEL | | STAINLESS STEEL | | FEATHER® SHAFT | |
|----------------|-----------------------|--------------------|-----------------------|--------------------|--------------------|-------------------|
| | D | S | D | S | D | S |
| 3/16" | 8.4×10^4 | 1.7×10^7 | 8.0×10^4 | 1.6×10^7 | 2.9×10^4 | $1.65\text{E}+05$ |
| 1/4" | 2.67×10^5 | 3.1×10^7 | 2.54×10^5 | 2.9×10^7 | 9.2×10^4 | $2.93\text{E}+05$ |
| 3/8" | 1.35×10^6 | 6.9×10^7 | 1.29×10^6 | 6.5×10^7 | 4.7×10^5 | $6.58\text{E}+05$ |
| 1/2" | 4.27×10^6 | 1.23×10^8 | 4.06×10^6 | 1.16×10^8 | 1.5×10^6 | $1.17\text{E}+06$ |
| 5/8" | 1.04×10^7 | 1.92×10^8 | 9.92×10^6 | 1.81×10^8 | 3.6×10^6 | $1.83\text{E}+06$ |
| 3/4" | 2.16×10^7 | 2.77×10^8 | 2.06×10^7 | 2.61×10^8 | 7.5×10^6 | $2.63\text{E}+06$ |
| 1" | 6.83×10^7 | 4.92×10^8 | 6.5×10^7 | 4.63×10^8 | 2.4×10^7 | $4.68\text{E}+06$ |
| 1-1/4" | 1.67×10^8 | 7.69×10^8 | 1.59×10^8 | 7.24×10^8 | 5.8×10^7 | $7.31\text{E}+06$ |
| 1-1/2" | 3.46×10^8 | 1.11×10^9 | 3.29×10^8 | 1.04×10^9 | 1.22×10^8 | $1.05\text{E}+07$ |
| 2" | 1.09×10^8 | 1.97×10^9 | 1.04×10^9 | 1.85×10^9 | 3.8×10^8 | $1.87\text{E}+07$ |
| 2-1/2" | 2.67×10^8 | 3.07×10^9 | 2.54×10^9 | 2.9×10^9 | N/A | N/A |
| 3" | 5.53×10^9 | 4.43×10^9 | 5.27×10^9 | 4.17×10^9 | N/A | N/A |
| 4" | 1.75×10^{10} | 7.87×10^9 | 1.66×10^{10} | 7.41×10^9 | N/A | N/A |

METRIC

| SHAFT DIAMETER | HARDENED STEEL | | STAINLESS STEEL | |
|----------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | D | S | D | S |
| 5 mm | 2.94×10^8 | 3.12×10^{11} | 2.8×10^8 | 2.94×10^{11} |
| 6 mm | 6.11×10^8 | 4.5×10^{11} | 5.81×10^8 | 4.24×10^{11} |
| 8 mm | 1.93×10^9 | 8.0×10^{11} | 1.84×10^9 | 7.53×10^{11} |
| 10 mm | 4.71×10^9 | 1.25×10^{12} | 4.48×10^9 | 1.18×10^{12} |
| 12 mm | 9.77×10^9 | 1.8×10^{12} | 9.3×10^9 | 1.69×10^{12} |
| 13 mm | 1.35×10^{11} | 2.11×10^{12} | 1.28×10^{11} | 1.99×10^{12} |
| 14 mm | 1.81×10^{10} | 2.45×10^{12} | 1.72×10^{11} | 2.31×10^{12} |
| 16 mm | 3.09×10^{10} | 3.2×10^{12} | 2.94×10^{11} | 3.01×10^{12} |
| 20 mm | 7.54×10^{10} | 5.0×10^{12} | 7.17×10^{11} | 4.71×10^{12} |
| 25 mm | 1.84×10^{11} | 7.81×10^{12} | 1.75×10^{11} | 7.35×10^{12} |
| 30 mm | 3.82×10^{11} | 1.12×10^{13} | 3.63×10^{11} | 1.06×10^{13} |
| 35 mm | 7.07×10^{11} | 1.53×10^{13} | 6.73×10^{11} | 1.44×10^{13} |
| 38 mm | 9.82×10^{11} | 1.8×10^{13} | 9.35×10^{11} | 1.7×10^{13} |

The data and specifications in this publication have been carefully compiled and are believed to be accurate and correct. However, it is the responsibility of the user to determine and ensure the suitability of Pacific Bearing® products for a specific application. Pacific Bearing's only obligation will be to repair or replace without charge, any defective components if returned promptly. No liability is assumed beyond such replacement. *Consult www.pacific-bearing.com for the latest technical updates.



SHAFT DEFLECTION

In applications where a support rail is not used, shaft deflection can become critical in the function of the bearing. If deflection is greater than the misalignment capabilities of a standard pillow block, binding can occur. Solutions would be to increase shaft and bearing size (to lessen the amount of deflection) or to use an open bearing configuration with a support rail. Follow the formulas below to check shaft deflection and sag.

FORMULA FOR INCH AND METRIC SHAFTING DEFLECTION

Total shaft deflection in horizontal applications:

$$\text{Tot. Def} = \text{Def} + \text{Sag}$$

$$\text{Def} = w \times L^3 / D$$

$$\text{Sag} = L^4 / S$$

Def = Pure deflection due to load at center of shaft (inches or mm)

Sag = Deflection of shaft due to its own weight (inches or mm)

L = Shaft unsupported length (inches or mm)

w = load being applied at center of shaft (lbs. or N)

D = Deflection coefficient (D = 48 x E x I)

S = Sag coefficient (S = E x I x 384 / (5 x sw))

NOTES: I = $\pi \times \text{diam}^4 / 64$

sw = $\pi \times \text{diam}^2 / 4 \times \text{density}$

E = Modulus of Elasticity (Young's modulus)

TOTAL DEFLECTION

Ø1 in. Shaft

24 in. Length (L)

250 lbs. load (W)

$$\begin{aligned} \text{Deflection} &= \frac{W \times L^3}{D \text{ (from table)}} \\ &= \frac{250 \text{ lbs.} \times (24 \text{ in.})^3}{6.83 \times 10^7} \\ &= \frac{3,456,000 \text{ in.}^3 \text{ lbs.}}{68,300,000 \text{ in.}^2 \text{ lbs.}} \end{aligned}$$

$$\text{Deflection} = 0.0506 \text{ in.}$$

$$\begin{aligned} \text{SAG} &= \frac{L^4}{S \text{ (from table)}} \\ &= \frac{(24)^4}{4.92 \times 10^8} \end{aligned}$$

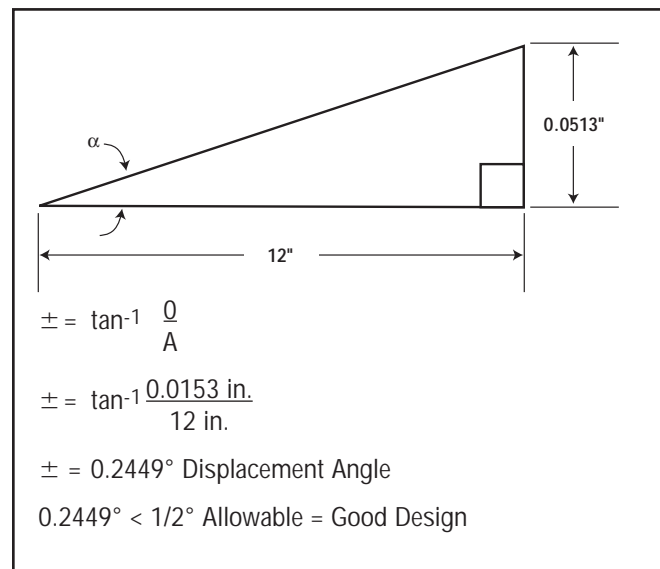
$$\text{SAG} = \frac{331,776 \text{ in.}^4}{492,000,000 \text{ in.}^3}$$

$$\text{SAG} = .000674 \text{ in.}$$

$$\begin{aligned} \text{Total Deflection} &= \text{Deflection} + \text{SAG} \\ &= 0.0506 \text{ in.} + .000674 \text{ in.} \end{aligned}$$

$$\text{Total Deflection} = 0.0513 \text{ in.}$$

DISPLACEMENT ANGLE





INSTALLING SIMPLICITY® BEARINGS

Applies to standard linear bearing series.

For sleeve and flange bearings, see product pages in the catalog.

PS - Page 154, PSM - Page 156, PSF - Page 155, PSFM - Page 157

STRAIGHT BORE HOUSING - PRESS FIT BEARING

This type of configuration is NOT recommended for the vast majority of applications using Simplicity bearings.

It does NOT allow for any misalignment or shaft deflection.

Misalignment or shaft deflection will cause the bearing to bind on the shafting.

Extremely high precision applications may be able to employ this type of mounting. Typically the shafting has been aligned with a laser or some other highly precise equipment.

Due to bore closure in the pressing process, use a "C" series (compensated I.D.) bearing.

EXAMPLE: FLC24, FMC30, FJC30

The recommended installation procedure is to freeze the bearings at 0°F (-17.75°C) for 30-45 minutes. Using gloves, remove the bearings from the freezer and slip them into the housing. As they heat to room temperature, full contact between bearing and housing will be achieved. The greatest advantage to this technique over traditional pressing is greater accuracy in alignment.

This type of mounting will not allow for misalignment or shaft deflection. Both are very critical in the smooth operation of Simplicity bearings. A rolling element bearing may appear to initially operate in this condition, but it is operating in an extremely preloaded condition and will prematurely fail and in most cases destroy the shafting. Simplicity bearings will indicate the problem immediately upon installation by failing to move due to the binding condition. There are alternative mounting options that work extremely well.

| PART NO. | MIN. HOUSING I.D. | MAX. HOUSING I.D. | PART NO. | MIN. HOUSING I.D. | MAX. HOUSING I.D. | PART NO. | MIN. HOUSING I.D. | MAX. HOUSING I.D. | PART NO. | MIN. HOUSING I.D. | MAX. HOUSING I.D. | PART NO. | MIN. HOUSING I.D. | MAX. HOUSING I.D. |
|----------|-------------------|-------------------|----------|-------------------|-------------------|----------|-------------------|-------------------|----------|-------------------|-------------------|----------|-------------------|-------------------|
| | (inches) | (inches) | | (mm) | (mm) | | (mm) | (mm) | | (mm) | (mm) | | (mm) | (mm) |
| FLC03 | 0.3729 | 0.3737 | FMC05 | 11.972 | 11.995 | FMTC06 | 11.954 | 11.972 | FGC06 | 11.952 | 11.970 | FJC06 | 11.961 | 11.979 |
| FLC04 | 0.4978 | 0.4986 | FMC08 | 15.954 | 15.972 | FMTC08 | 14.954 | 14.972 | FGC08 | 14.952 | 14.970 | FJC08 | 14.961 | 14.979 |
| FLC06 | 0.6228 | 0.6236 | FMC10 | 18.948 | 18.969 | FMTC10 | 16.954 | 16.972 | FGC10 | 16.952 | 16.970 | FJC08 | 14.961 | 14.979 |
| FLC08 | 0.8725 | 0.8734 | FMC12 | 21.944 | 21.965 | FMTC12 | 18.948 | 18.969 | FGC12 | 21.945 | 21.966 | FJC10 | 18.952 | 18.973 |
| FLC10 | 1.1224 | 1.1234 | FMC16 | 25.944 | 25.965 | FMTC14 | 20.944 | 20.965 | FGC15 | 24.945 | 24.966 | FJC12 | 20.952 | 20.997 |
| FLC12 | 1.2474 | 1.2484 | FMC20 | 31.940 | 31.961 | FMTC16 | 23.944 | 23.965 | FGC16 | 25.945 | 25.966 | FJC13 | 22.952 | 22.973 |
| FLC16 | 1.5596 | 1.5607 | FMC25 | 39.932 | 39.957 | FMTC20 | 27.944 | 27.965 | FGC18 | 27.945 | 27.966 | FJC16 | 27.952 | 27.973 |
| FLC20 | 1.9970 | 1.9981 | FMC30 | 46.932 | 46.957 | FMTC25 | 34.940 | 34.961 | FGC20 | 31.945 | 31.966 | FJC20 | 31.950 | 31.971 |
| FLC24 | 2.3717 | 2.3729 | FMC40 | 61.917 | 61.947 | FMTC30 | 39.932 | 39.957 | FGC25 | 39.937 | 39.962 | FJC25 | 39.941 | 39.966 |
| FLC32 | 2.9965 | 2.9977 | FMC50 | 74.917 | 74.947 | FMTC40 | 51.932 | 51.957 | FGC30 | 44.937 | 44.962 | FJC30 | 44.941 | 44.966 |
| FLC40 | 3.7461 | 3.7473 | FMC60 | 89.906 | 89.936 | FMTC50 | 61.917 | 61.947 | FGC35 | 51.937 | 51.962 | FJC35 | 51.938 | 51.963 |
| FLC48 | 4.4953 | 4.4966 | FMC80 | 119.886 | 119.921 | | | | FGC40 | 59.927 | 59.957 | FJC38 | 56.938 | 56.963 |
| FLC64 | 5.9949 | 5.9963 | | | | | | | FGC50 | 74.927 | 74.957 | FJC40 | 59.928 | 59.958 |
| | | | | | | | | | | | | FJC50 | 79.922 | 79.952 |
| | | | | | | | | | | | | FJC60 | 89.919 | 89.949 |
| | | | | | | | | | | | | FJC80 | 119.899 | 119.934 |
| | | | | | | | | | | | | FJC100 | 149.896 | 149.931 |
| | | | | | | | | | | | | FJC120 | 179.875 | 179.915 |
| | | | | | | | | | | | | FJC150 | 209.849 | 209.895 |

NOTE: Use "C" (compensated I.D.) series bearings.

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INSTALLING SIMPLICITY® BEARINGS

STRAIGHT BORE HOUSING - SLIP FIT BEARING

There are three basic configurations that work well, depending on the misalignment and shaft deflection in the application:

1. Virtually NO misalignment

This method allows for NO or very little shaft deflection and misalignment.

Standard I.D. bearings will need tighter alignment than a "C" series (compensated I.D.) bearing.

Standard retention methods are acceptable.

EXAMPLE: snap rings, epoxy, etc.

NOTE: If using epoxy, do not touch the bearing liner with the bonding agent!

This type of mounting will allow for minimum misalignment or shaft deflection. Both are very critical in the smooth operation of Simplicity bearings. A rolling element bearing may appear to initially operate in this condition, but it is operating in an extremely preloaded condition and will prematurely fail and in most cases destroy the shafting. Simplicity bearings will indicate the problem immediately upon installation by failing to move due to the binding condition.

| PART NO. | MIN. HOUSING I.D. (inches) | MAX. HOUSING I.D. (inches) | PART NO. | MIN. HOUSING I.D. (mm) | MAX. HOUSING I.D. (mm) | PART NO. | MIN. HOUSING I.D. (mm) | MAX. HOUSING I.D. (mm) | PART NO. | MIN. HOUSING I.D. (mm) | MAX. HOUSING I.D. (mm) | PART NO. | MIN. HOUSING I.D. (mm) | MAX. HOUSING I.D. (mm) |
|----------|-------------------------------------|-------------------------------------|----------|---------------------------------|---------------------------------|----------|---------------------------------|---------------------------------|----------|---------------------------------|---------------------------------|----------|---------------------------------|---------------------------------|
| FL03 | 0.3755 | 0.3764 | FM05 | 12.016 | 12.043 | FMT06 | 12.016 | 12.043 | FG06 | 12.016 | 12.043 | FJ06 | 12.016 | 12.043 |
| FL04 | 0.5006 | 0.5017 | FM08 | 16.016 | 16.043 | FMT08 | 15.016 | 15.043 | FG08 | 15.016 | 15.043 | FJH08 | 15.016 | 15.043 |
| FL06 | 0.6256 | 0.6267 | FM10 | 19.020 | 19.053 | FMT10 | 17.016 | 17.043 | FG10 | 17.016 | 17.043 | FJ08 | 15.016 | 15.043 |
| FL08 | 0.8758 | 0.8771 | FM12 | 22.020 | 22.053 | FMT12 | 19.020 | 19.053 | FG12 | 22.020 | 22.053 | FJ10 | 19.020 | 19.053 |
| FL10 | 1.1258 | 1.1271 | FM16 | 26.020 | 26.053 | FMT14 | 21.020 | 21.053 | FG15 | 25.020 | 25.053 | FJ12 | 21.020 | 21.053 |
| FL12 | 1.2510 | 1.2525 | FM20 | 32.025 | 32.064 | FMT16 | 24.020 | 24.053 | FG16 | 26.020 | 26.053 | FJ13 | 23.020 | 23.053 |
| FL16 | 1.5635 | 1.5650 | FM25 | 40.025 | 40.064 | FMT20 | 28.020 | 28.053 | FG18 | 28.020 | 28.053 | FJ16 | 28.020 | 28.053 |
| FL20 | 2.0012 | 2.0030 | FM30 | 47.025 | 47.064 | FMT25 | 35.025 | 35.064 | FG20 | 32.025 | 32.064 | FJ20 | 32.025 | 32.064 |
| FL24 | 2.3762 | 2.3780 | FM40 | 62.030 | 60.076 | FMT30 | 40.025 | 40.064 | FG25 | 40.025 | 40.064 | FJ25 | 40.025 | 40.064 |
| FL32 | 3.0012 | 3.0030 | FM50 | 75.030 | 75.076 | FMT40 | 52.030 | 52.076 | FG30 | 45.025 | 45.064 | FJ30 | 45.025 | 45.064 |
| FL40 | 3.7514 | 3.7535 | FM60 | 90.036 | 90.090 | FMT50 | 62.030 | 62.076 | FG35 | 52.030 | 52.076 | FJ35 | 52.030 | 52.076 |
| FL48 | 4.5014 | 4.5035 | FM80 | 120.036 | 120.090 | | | | FG40 | 60.030 | 60.076 | FJ38 | 57.030 | 57.076 |
| FL64 | 6.0017 | 6.0042 | | | | | | | FG50 | 75.030 | 75.076 | FJ40 | 60.030 | 60.076 |
| | | | | | | | | | | | | FJ50 | 80.030 | 80.076 |
| | | | | | | | | | | | | FJ60 | 90.036 | 90.090 |
| | | | | | | | | | | | | FJ80 | 120.036 | 120.090 |
| | | | | | | | | | | | | FJ100 | 150.043 | 150.106 |
| | | | | | | | | | | | | FJ120 | 180.043 | 180.106 |
| | | | | | | | | | | | | FJ150 | 210.050 | 210.122 |

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INSTALLING SIMPLICITY® BEARINGS

STRAIGHT BORE HOUSING - SLIP FIT BEARING (cont.)

2. Standard applications with average misalignment

A self-aligning O.D. bearing is recommended.

EXAMPLE: FLA24, FMA30, FJA30

For details on the self-aligning O.D. feature, see page 41 of the product catalog.

The recommended method of retention for this mounting is a snap ring at each end.

NOTE: Do not use epoxy in this configuration. It will lock the bearing in place not allowing it to self-align.

Be sure to install the o-rings around the O.D. of the bearing to reduce noise while the bearing is in operation.

| PART NO. | MIN. HOUSING I.D. | MAX. HOUSING I.D. | PART NO. | MIN. HOUSING I.D. | MAX. HOUSING I.D. | PART NO. | MIN. HOUSING I.D. | MAX. HOUSING I.D. | PART NO. | MIN. HOUSING I.D. | MAX. HOUSING I.D. | PART NO. | MIN. HOUSING I.D. | MAX. HOUSING I.D. |
|----------|-------------------------|-------------------------|----------|-------------------------|-------------------------|----------|-------------------------|-------------------------|----------|-------------------------|-------------------------|----------|-------------------------|-------------------------|
| | (Inches) | (Inches) | | (mm) | (mm) | | (mm) | (mm) | | (mm) | (mm) | | (mm) | (mm) |
| FLA03 | 0.3755 | 0.3764 | FMA05 | 12.016 | 12.043 | FMT06 | N / A | N / A | FG06 | N / A | N / A | FJA06 | 12.016 | 12.043 |
| FLA04 | 0.5006 | 0.5017 | FMA08 | 16.016 | 16.043 | FMT08 | | | FG08 | | | FJHA08 | 15.016 | 15.043 |
| FLA06 | 0.6256 | 0.6267 | FMA10 | 19.020 | 19.053 | FMT10 | | | FG10 | | | FJA08 | 15.016 | 15.043 |
| FLA08 | 0.8758 | 0.8771 | FMA12 | 22.020 | 22.053 | FMT12 | | | FG12 | | | FJA10 | 19.020 | 19.053 |
| FLA10 | 1.1258 | 1.1271 | FMA16 | 26.020 | 26.053 | FMT14 | | | FG15 | | | FJA12 | 21.020 | 21.053 |
| FLA12 | 1.2510 | 1.2525 | FMA20 | 32.025 | 32.064 | FMT16 | | | FG16 | | | FJA13 | 23.020 | 23.053 |
| FLA16 | 1.5635 | 1.5650 | FMA25 | 40.025 | 40.064 | FMT20 | | | FG18 | | | FJA16 | 28.020 | 28.053 |
| FLA20 | 2.0012 | 2.0030 | FMA30 | 47.025 | 47.064 | FMT25 | | | FG20 | | | FJA20 | 32.025 | 32.064 |
| FLA24 | 2.3762 | 2.3780 | FMA40 | 62.030 | 60.076 | FMT30 | | | FG25 | | | FJA25 | 40.025 | 40.064 |
| FLA32 | 3.0012 | 3.0030 | FMA50 | 75.030 | 75.076 | FMT40 | | | FG30 | | | FJA30 | 45.025 | 45.064 |
| FLA40 | 3.7514 | 3.7535 | FMA60 | 90.036 | 90.090 | FMT50 | | | FG35 | | | FJA35 | 52.030 | 52.076 |
| FLA48 | 4.5014 | 4.5035 | FMA80 | 120.036 | 120.090 | | | | FG40 | | | FJA38 | 57.030 | 57.076 |
| FLA64 | 6.0017 | 6.0042 | | | | | | | FG50 | | | FJA40 | 60.030 | 60.076 |
| | | | | | | | | | | | | FJA50 | 80.030 | 80.076 |
| | | | | | | | | | | | | FJA60 | 90.036 | 90.090 |
| | | | | | | | | | | | | FJA80 | 120.036 | 120.090 |
| | | | | | | | | | | | | FJA100 | 150.043 | 150.106 |
| | | | | | | | | | | | | FJA120 | 180.043 | 180.106 |
| | | | | | | | | | | | | FJA150 | 210.050 | 210.122 |

NOTE: FMT and FG series are NOT available with a self-aligning O.D



INSTALLING SIMPLICITY® BEARINGS

STRAIGHT BORE HOUSING - SLIP FIT BEARING (cont.)

3. Severe misalignment

A standard O.D. bearing is recommended.

EXAMPLE: FL24, FM30, FJ30

Oversize the I.D. of the housing and install the bearing with o-rings. This will allow the bearing to “float” in the housing and match the misalignment or non-parallelism of the shafting.

The recommended method of retention for this mounting is a snap ring at each end.

NOTE: Do not use epoxy in this configuration. It will lock the bearing in place, not allowing it to self-align.

See page 50 of the product catalog for more details on this solution.

| PART NO. | MAX. ADDITIONAL CLEARANCE (Inches) | PART NO. | MAX. ADDITIONAL CLEARANCE (mm) | PART NO. | MAX. ADDITIONAL CLEARANCE (mm) | PART NO. | MAX. ADDITIONAL CLEARANCE (mm) | PART NO. | MAX. ADDITIONAL CLEARANCE (mm) |
|----------|---|----------|---|----------|---|----------|---|----------|---|
| FL03 | 0.0070 | FM05 | 0.203 | FMT06 | 0.203 | FG06 | 0.203 | FJ06 | 0.203 |
| FL04 | 0.0080 | FM08 | | FMT08 | | FG08 | | FJH08 | |
| FL06 | | FM10 | | FMT10 | | FG10 | | FJ08 | |
| FL08 | | FM12 | | FMT12 | | FG12 | | FJ10 | |
| FL10 | 0.0100 | FM16 | 0.254 | FMT14 | 0.254 | FG15 | 0.254 | FJ12 | 0.254 |
| FL12 | | FM20 | | FMT16 | | FG16 | | FJ13 | |
| FL16 | 0.0120 | FM25 | 0.305 | FMT20 | | FG18 | | FJ16 | |
| FL20 | | FM30 | | FMT25 | 0.305 | FG20 | 0.305 | FJ20 | 0.305 |
| FL24 | | FM40 | | FMT30 | | FG25 | | FJ25 | |
| FL32 | 0.0160 | FM50 | | FMT40 | | FG30 | | FJ30 | |
| FL40 | | FM60 | 0.406 | FMT50 | | FG35 | | FJ35 | 0.305 |
| FL48 | | FM80 | 0.508 | | | FG40 | | FJ38 | |
| FL64 | 0.0200 | | | | | FG50 | | FJ40 | |
| | | | | | | | | FJ50 | 0.406 |
| | | | | | | | | FJ60 | |
| | | | | | | | | FJ80 | 0.508 |
| | | | | | | | | FJ100 | 0.610 |
| | | | | | | | | FJ120 | |
| | | | | | | | | FJ150 | |

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CHEMICAL REACTION CHART

The original FrelonJ® has almost universal chemical inertness. Only molten sodium and fluorine at elevated temperatures and pressures show any signs of attack. It is approved for use with liquid oxygen, N₂O₂ hydrazine, UDMH, hydrocarbon fuels, high strength hydrogen peroxide, etc.

The FrelonGOLD® material is a composite of PTFE and a bearing filler. The PTFE is chemically inert. The chemical resistance shown in the chart below is defined by the compatibility of the filler with the various chemicals.

Other data in the chart below applies to the bearing shell and pillow block materials. The table is provided as a reference only. The data given will be affected by factors such as temperature, PV, degree of contact, strength of solution, etc. In each specific application, it is always advisable to conduct specific testing to determine suitability of use. This table only addresses general corrosion, NOT galvanic, SCC, or other types of corrosion. Corrosion rates are at room temperature unless otherwise noted.

Standard and hard coat data only apply when the coating is intact. If the coating is worn through or damaged, an area of galvanic and pitting corrosion will be created. Then use the bare aluminum data.

Standard Simplicity products use aluminum alloy, which is known to have the best corrosion resistance of the high strength aluminum alloys. The sulfuric bath anodizing and nickel acetate sealing provide the best corrosion resistance available in anodized coatings. They can withstand a rigorous 14-day exposure in a 5% salt spray solution at 96°F per military specifications without significant damage. With the coating intact, it is considered to be inert in most fluids with a pH value between 5 and 8. Hard coat anodizing provides the same chemical resistance but is applied to a .002" thickness, providing a more durable surface that will stand up to greater abuse. However, if the coating is penetrated, the resistance is reduced.

Special stainless steel bearings use AISI 316 stainless, which has superior resistance over 303, 304, 420, 440, 17-4PH, and most other common stainless grades. 316 is generally considered to be the most corrosion resistant of conventional stainless steels.

NOTE: This information was compiled for Pacific Bearing® Company by Materials Engineering, Inc. of Virgil, IL. This specification information is believed to be accurate and reliable, however, no liability is assumed. INFORMATION IS FOR REFERENCE ONLY. USER MUST TEST SPECIFIC APPLICATIONS.

E = < .002" per year

G = < .020" per year

S = < .050" per year

U = > .050" per year

| CHEMICAL | FRELONGOLD® | BARE ALUMINUM | STANDARD & HARD COAT ANODIZED ALUMINUM | 316 STAINLESS STEEL | CHEMICAL | FRELONGOLD® | BARE ALUMINUM | STANDARD & HARD COAT ANODIZED ALUMINUM | 316 STAINLESS STEEL |
|------------------------------|-------------|---------------|--|---------------------|--------------------------|-------------|---------------|--|---------------------|
| Acetic Acid, 20% | U | G | G | E | Hydrogen sulfide, dry | U | G | E | E |
| Acetone | G | E | E | E | JP-4 | G | G | G | G |
| Ammonia, anhydrous | G | E | E | E | Kerosene | G | G | G | G |
| Ammonium hydroxide, 10% | U | U | U | E | Lactic acid, 10% | G | G | G | E |
| Ammonium chloride, 10% | U | U | U | G | Magnesium chloride, 50% | G | U | U | G |
| Ammyl acetate (122°F / 50°C) | G | E | E | E | Mercury | U | U | U | E |
| Barium hydroxide | U | U | U | G | Methyl alcohol | G | G | G | G |
| Beer | G | E | E | E | Methyl ethyl ketone | G | G | G | G |
| Boric acid solutions | G | E | E | G | Methylene chloride | G | E | E | G |
| Butane | G | G | G | G | Mineral oil | G | G | G | G |
| Calcium chloride, 20% | G | G | G | G | Naptha | G | G | G | G |
| Calcium hydroxide, 10% | G | G | G | G | Nitric acid, 70% | U | U | U | E |
| Carbon dioxide | G | E | E | G | Phosphoric acid, 10% | U | U | U | E |
| Carbon monoxide | G | E | E | E | Sodium chloride | G | U | U | E |
| Chlorine gas, dry | G | G | G | G | Sodium hydroxide, 20% | G | U | U | G |
| Chlorine gas, wet | U | U | U | U | Sodium hypochlorite, 20% | U | G | G | U |
| Chromic acid, 10% | U | G | E | E | Sodium peroxide, 10% | U | G | G | G |
| Citric acid, 5% | G | E | E | E | Steam (see water) | - | - | - | - |
| Ethyl acetate | G | E | E | G | Sulfur dioxide, wet | U | U | U | G |
| Ethyl alcohol | G | E | E | G | Sulfur dioxide, dry | G | G | G | G |
| Ethylene glycol | G | E | E | G | Sulfur trioxide | U | G | G | G |
| Ferric chloride, 50% | U | U | U | U | Sulfuric acid, 50% | U | U | U | U |
| Formic acid - Anhydrous | U | E | E | E | Sulfurous acid | U | G | G | E |
| Gasoline, Unleaded | G | G | G | G | Toluene (122°F / 50°C) | G | E | E | E |
| Hydrochloric acid, 20% | U | U | U | U | Turpentine | G | G | E | E |
| Hydrochloric acid, 35% | U | U | U | U | Water, demineralized | U | G | E | E |
| Hydrocyanic acid, 10% | U | G | G | G | Water, distilled | G | U | S | G |
| Hydrofluoric acid - dilute | U | U | U | U | Sea Water | G | G | E | G |
| Hydrofluoric acid, 48% | I | U | U | U | Water, sewage | G | U | S | G |
| Hydrogen | G | E | E | E | Xylene | G | G | G | G |
| Hydrogen peroxide - dilute | U | E | E | G | Zinc chloride solutions | U | U | U | G |

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RC60 STEEL SHAFTING

- RC60 case hardened steel
- Polished for optimum surface finish



SMALL DIAMETER RC60 STEEL SHAFTING*

| PART NUMBER | NOMINAL SIZE | DIAMETER TOLERANCE CLASS "L" | | MAX. LENGTH | HARDNESS DEPTH | WEIGHT PER INCH |
|-------------|--------------|------------------------------|--------|-------------|----------------|-----------------|
| | (inches) | MIN. | MAX. | (in.) | MIN. | (lbs.) |
| NIL02-xx | 1/8" | 0.1248 | 0.1247 | 252 | N / A | 0.004 |
| NIL03-xx | 3/16" | 0.1873 | 0.1872 | 252 | N / A | 0.008 |
| NIL04-xx | 1/4" | 0.2498 | 0.2497 | 252 | N / A | 0.014 |
| NIL06-xx | 3/8" | 0.2490 | 0.2495 | 252 | 0.040 | 0.031 |

RC60 STEEL SHAFTING*

| PART NUMBER | NOMINAL SIZE | DIAMETER TOLERANCE CLASS "L" | | MAX. LENGTH | HARDNESS DEPTH | WEIGHT PER INCH |
|-------------|--------------|------------------------------|--------|-------------|----------------|-----------------|
| | (inches) | MIN. | MAX. | (in.) | MIN. | (lbs.) |
| NIL02-xx | 1/8" | 0.1248 | 0.1247 | 252 | N / A | 0.004 |
| NIL03-xx | 3/16" | 0.1873 | 0.1872 | 252 | N / A | 0.008 |
| NIL04-xx | 1/4" | 0.1865 | 0.1870 | 252 | N / A | 0.014 |
| NIL06-xx | 3/8" | 0.2490 | 0.2495 | 252 | 0.040 | 0.031 |
| NIL08-xx | 1/2" | 0.4990 | 0.4995 | 180 | 0.060 | 0.055 |
| NIL10-xx | 5/8" | 0.6240 | 0.6245 | 180 | 0.060 | 0.086 |
| NIL12-xx | 3/4" | 0.7490 | 0.7495 | 180 | 0.060 | 0.125 |
| NIL16-xx | 1" | 0.9990 | 0.9995 | 204 | 0.080 | 0.222 |
| NIL20-xx | 1-1/4" | 1.2490 | 1.2495 | 204 | 0.080 | 0.348 |
| NIL24-xx | 1-1/2" | 1.4989 | 1.4994 | 204 | 0.080 | 0.500 |
| NIL32-xx | 2" | 1.9987 | 1.9994 | 204 | 0.100 | 0.890 |
| NIL40-xx | 2-1/2" | 2.4985 | 2.4993 | 204 | 0.100 | 1.391 |
| NIL48-xx | 3" | 2.9983 | 2.9992 | 204 | 0.100 | 2.003 |
| NIL64-xx | 4" | 3.9976 | 3.9988 | 204 | 0.100 | 3.560 |

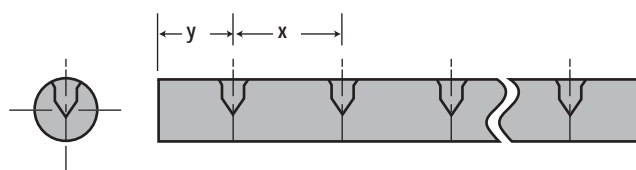
*NOTES: Specify length in part number using inches.
 Example: for 1/2" shafting total length 15" = NIL08-15
 Surface finish 8 Ra Max.
 Surface finish 4 Ra Max. - Instrument Shafting

COMPLETE PRODUCT OFFERING

- RC60 Steel
- 440 Stainless Steel
- End Blocks
- Cut-to-Length
- Joinable for longer lengths
- Custom Options
- Support Rails
- Random Lengths
- Pre-drilled and Tapped Shafting

- Suitable for Simplicity® bearings and linear ball bearings
- Available cut-to-length or in full random lengths

PRE-DRILLED & TAPPED RC60 STEEL SHAFTING*



| PART NUMBER | NOMINAL SIZE | DIAMETER TOLERANCE CLASS "L" | | HOLE SPACING | | THREAD | MAX. LENGTH | WEIGHT PER INCH |
|-------------|--------------|------------------------------|--------|--------------|------|---------|-------------|-----------------|
| | (inches) | MIN. | MAX. | x | y | | (in.) | (lbs.) |
| NIPDL08-xx | 1/2" | 0.4990 | 0.4995 | 4.00 | 2.00 | 6-32 | 156 | 0.055 |
| NIPDL10-xx | 5/8" | 0.6240 | 0.6245 | | | 8-32 | | 0.086 |
| NIPDL12-xx | 3/4" | 0.7490 | 0.7495 | 6.00 | 3.00 | 10-32 | 192 | 0.125 |
| NIPDL16-xx | 1" | 0.9990 | 0.9995 | | | 1/4-20 | | 0.222 |
| NIPDL20-xx | 1-1/4" | 1.2490 | 1.2495 | 8.00 | 4.00 | 5/16-18 | | 0.348 |
| NIPDL24-xx | 1-1/2" | 1.4989 | 1.4994 | | | 3/8-16 | | 0.500 |
| NIPDL32-xx | 2" | 1.9987 | 1.9994 | | | 1/2-13 | | 0.890 |

NOTES: Specify length in part number using inches.
 For random lengths, add "R" to the part number.
 Example: for 1/2" shafting total length 13" = NIPDL08-13
 Customer specifies "y" dimension.

| | |
|---|-------|
| RC60 Steel Shafting..... | 63 |
| 440 Stainless Steel Shafting..... | 64 |
| Aluminum Pre-drilled Support Rails..... | 64 |
| Aluminum End Support Blocks..... | 64 |
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| Steel Shaft Rail Assembly..... | 65 |
| Feather Shafting®..... | 66 |
| Feather Rails®..... | 67 |
| Inch Self-lubricated Bearings..... | 10 |
| Inch Pillow Blocks..... | 12 |
| Inch Flange Mounted Bearings..... | 14-16 |
| Inch Ball Bearings..... | 70 |
| Inch Ball Bearing Pillow Blocks..... | 86 |
| ISO Metric Shafting..... | 68-69 |

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Simplicity® Linear Shafting

Inch Shafting & Rails

Linear Motion Systems

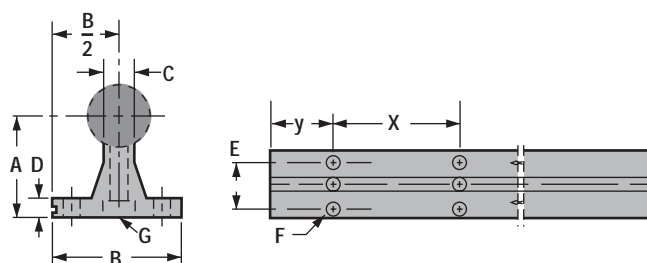
440 STAINLESS STEEL SHAFTING



- 440 Stainless Steel
- Suitable for linear ball bearings
- Available cut-to-length or in full random lengths
- Tolerance of $\pm 1/32"$
- Predrilled available NIPDLXXSS-same dimension as NIPDL page 63

| PART NO. | NOMINAL SIZE | DIAMETER TOLERANCE CLASS "L" | | LENGTH (in.) | HARDNESS DEPTH | WEIGHT |
|------------|--------------|------------------------------|--------|--------------|----------------|------------|
| | (in.) | MIN. | MAX. | MAX. | MIN. | (lbs./in.) |
| NIL02SS-xx | 1/8" | 0.1248 | 0.1247 | 210 | N/A | 0.06 |
| NIL03SS-xx | 3/16" | 0.1873 | 0.1872 | | | 0.10 |
| NIL04SS-xx | 1/4" | 0.2498 | 0.2497 | | | 0.15 |
| NIL06SS-xx | 3/8" | 0.3740 | 0.3745 | 252 | 0.040 | 0.031 |
| NIL08SS-xx | 1/2" | 0.4990 | 0.4995 | 180 | 0.060 | 0.055 |
| NIL10SS-xx | 5/8" | 0.6240 | 0.6245 | | | 0.086 |
| NIL12SS-xx | 3/4" | 0.7490 | 0.7495 | | | 0.125 |
| NIL16SS-xx | 1" | 0.9990 | 0.9995 | 204 | 0.080 | 0.222 |
| NIL20SS-xx | 1-1/4" | 1.2490 | 1.2495 | | | 0.348 |
| NIL24SS-xx | 1-1/2" | 1.4989 | 1.4994 | | | 0.500 |
| NIL32SS-xx | 2" | 1.9987 | 1.9994 | | | 0.890 |

ALUMINUM PRE-DRILLED SUPPORT RAILS



| PART NO. | NOMINAL SIZE | A | B | C | D | E | F | | G | | HOLE SPACING | | WEIGHT |
|-----------|--------------|------------|-------|-------|-------|-------|-------|-------|------------------|-------|--------------|------|------------|
| | (in.) | $\pm .002$ | | | | | BOLT | HOLE | SCREW | HOLE | X | y | (lbs./ft.) |
| SR08PD-xx | 1/2" | 1.125 | 1.500 | 0.250 | 0.188 | 1.000 | #6 | 0.169 | 6-32 x 7/8" | 0.169 | 4.00 | 2.00 | 1.26 |
| SR10PD-xx | 5/8" | 1.125 | 1.625 | 0.313 | 0.250 | 1.125 | #8 | 0.193 | 8-32 x 7/8" | 0.193 | | | 1.88 |
| SR12PD-xx | 3/4" | 1.500 | 1.750 | 0.375 | | 1.250 | #10 | 0.221 | 10-32 x 7/8" | 0.221 | 6.00 | 3.00 | 2.50 |
| SR16PD-xx | 1" | 1.750 | 2.125 | 0.500 | 0.313 | 1.500 | 1/4" | 0.281 | 1/4-20 x 1-1/2" | 0.281 | | | 4.06 |
| SR20PD-xx | 1-1/4" | 2.125 | 2.500 | 0.563 | | 1.875 | 5/16" | 0.343 | 5/16-18 x 1-3/4" | 0.343 | 8.00 | 4.00 | 6.28 |
| SR24PD-xx | 1-1/2" | 2.500 | 3.000 | 0.688 | 0.375 | 2.250 | 5/16" | 0.343 | 3/8-16 x 2" | 0.406 | | | 8.06 |
| SR32PD-xx | 2" | 3.250 | 3.750 | 0.875 | 0.500 | 2.750 | 3/8" | 0.406 | 1/2-13 x 2-1/2" | 0.531 | | | 14.88 |

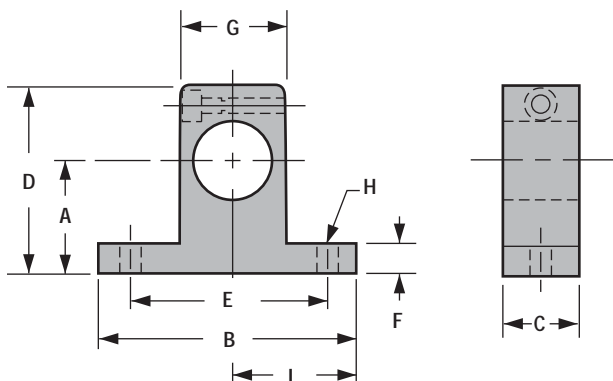
NOTES: Specify length in part number. Example: for 1/2" shafting support rail to 24" length = SR08-PD-24 (Aluminum alloy construction)

Shafts & support rails sold separately.

Customer specifies "y" dimension.

Maximum length, 4 ft.

ALUMINUM END SUPPORT BLOCKS



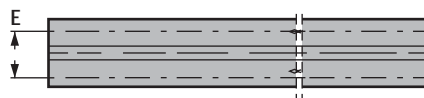
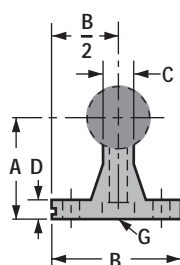
| PART NO. | NOMINAL SIZE | A | B | C | D | E | F | G | H | I | WEIGHT |
|----------|--------------|------------|-------|-------|-------|------------|-------|-------|-------|--------|--------|
| | (in.) | $\pm .001$ | | | | $\pm .001$ | | | BOLT | HOLE | (lbs.) |
| NSB04 | 1/4" | 0.687 | 1.500 | 0.500 | 1.050 | 1.125 | | 0.625 | #6 | 5/32" | 0.750 |
| NSB06 | 3/8" | 0.750 | 1.625 | 0.563 | 1.175 | 1.250 | 0.250 | 0.688 | | | 0.800 |
| NSB08 | 1/2" | 1.000 | 2.000 | 0.625 | 1.625 | 1.500 | | 0.750 | #8 | 3/16" | 1.000 |
| NSB10 | 5/8" | | 2.500 | 0.688 | 1.750 | 1.875 | | 0.875 | | | 1.250 |
| NSB12 | 3/4" | 1.250 | 2.500 | 0.750 | 2.055 | 2.000 | 0.313 | 1.000 | #10 | 7/32" | 1.375 |
| NSB16 | 1" | 1.500 | 3.055 | 1.000 | 2.500 | 2.500 | 0.375 | 1.375 | | | 1.625 |
| NSB20 | 1-1/4" | 1.750 | 3.750 | 1.125 | 3.000 | 3.000 | 0.438 | 1.750 | 5/16" | 11/32" | 2.000 |
| NSB24 | 1-1/2" | 2.000 | 4.375 | 1.250 | 3.435 | 3.500 | 0.500 | 2.000 | | | 2.375 |
| NSB32 | 2" | 2.500 | 5.500 | 1.500 | 4.375 | 4.375 | 0.625 | 2.625 | 3/8" | 13/32" | 3.000 |

Shaft rails and assemblies are available in long lengths, consult factory.

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ALUMINUM NON-DRILLED SUPPORT RAILS



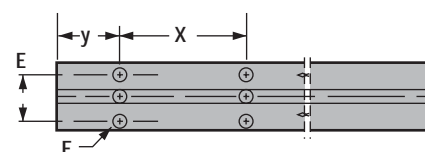
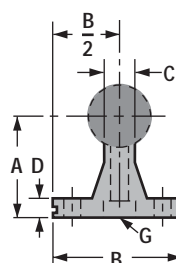
| PART NO. | NOMINAL SIZE (in.) | A +/- .002 | B | C | D | E | RECOMMENDED HOLE SIZE G | | WEIGHT (lbs./ft.) |
|----------|-----------------------|---------------|-------|-------|-------|-------|----------------------------|-------|----------------------|
| | | | | | | | SCREW | HOLE | |
| SR08-xx | 1/2" | 1.125 | 1.500 | 0.250 | 0.188 | 1.000 | 6-32 x 7/8" | 0.169 | 1.26 |
| SR10-xx | 5/8" | 1.125 | 1.625 | 0.313 | 0.250 | 1.125 | 8-32 x 7/8" | 0.193 | 1.88 |
| SR12-xx | 3/4" | 1.500 | 1.750 | 0.375 | 0.250 | 1.250 | 10-32 x 7/8" | 0.221 | 2.50 |
| SR16-xx | 1" | 1.750 | 2.125 | 0.500 | 0.250 | 1.500 | 1/4-20 x 1-1/2" | 0.281 | 4.06 |
| SR20-xx | 1-1/4" | 2.125 | 2.500 | 0.563 | 0.313 | 1.875 | 5/16-18 x 1-3/4" | 0.343 | 6.28 |
| SR24-xx | 1-1/2" | 2.500 | 3.000 | 0.688 | 0.375 | 2.250 | 3/8-16 x 2" | 0.406 | 8.06 |
| SR32-xx | 2" | 3.250 | 3.750 | 0.875 | 0.500 | 2.750 | 1/2-13 x 2-1/2" | 0.531 | 14.88 |

NOTES: Specify length in part number. Example: for 1/2" shafting support rail to 24" length = SR08-24 (Aluminum alloy construction)
Shafts & support rails sold separately.
Maximum length = 4ft.

STEEL SHAFT ALUMINUM RAIL ASSEMBLY



- 2 Piece Assemblies - Shaft & Support Rail
- RC60 Steel shaft and aluminum support rail
- Available cut-to-length
- Longer lengths available, optional shaft materials include (440 Stainless Steel & Feather Shafting)



| PART NO. | NOMINAL SHAFT SIZE | DIAMETER TOLERANCE | | A | B | C | D | E | F | | HOLE SPACING | | MAX. LENGTH | WEIGHT |
|----------|--------------------------|--------------------|--------|----------|-------|-------|-------|-------|-------|-------|--------------|---|----------------|------------|
| | (in.) | MIN. | MAX. | +/- .002 | | | | | BOLT | HOLE | x | y | *(ft.) | (lbs./in.) |
| SRA08-xx | 1/2 | 0.4988 | 0.4996 | 1.125 | 1.500 | 0.250 | 0.188 | 1.000 | #6 | 0.169 | 4 | 2 | 4 | 0.019 |
| SRA10-xx | 5/8 | 0.6238 | 0.6246 | | 1.625 | 0.313 | 0.250 | 1.125 | #8 | 0.193 | | | | 0.030 |
| SRA12-xx | 3/4 | 0.7488 | 0.7496 | 1.500 | 1.750 | 0.375 | | 1.250 | #10 | 0.221 | 6 | 3 | | 0.043 |
| SRA16-xx | 1 | 0.9988 | 0.9996 | 1.750 | 2.125 | 0.500 | 1.500 | 1/4" | 0.281 | 0.076 | | | | |
| SRA20-xx | 1-1/4 | 1.2488 | 1.2496 | 2.125 | 2.500 | 0.563 | 0.313 | 1.875 | 5/16" | 0.343 | 8 | 4 | | 0.119 |
| SRA24-xx | 1-1/2 | 1.4987 | 1.4995 | 2.500 | 3.000 | 0.688 | 0.375 | 2.250 | 5/16" | 0.343 | | | | 0.172 |
| SRA32-xx | 2 | 1.9985 | 1.9995 | 3.250 | 3.750 | 0.875 | 0.500 | 2.750 | 3/8" | 0.406 | | | | 0.305 |

NOTE: Specify length in part number using inches. Example: for 1/2" shafting total length 36" long = SRA08-36.
Customer specifies "y" dimension.

Shaft rails and assemblies are available in long lengths, consult factory.

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CERAMIC COATED ALUMINUM SOLID SHAFTING

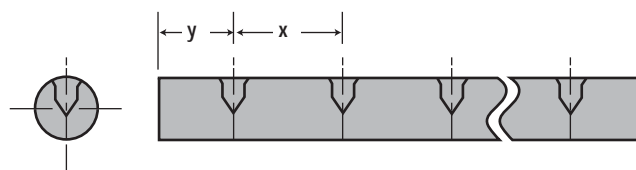


- Aluminum alloy base material
- RC70 ceramic coated finish
- Designed to run with Simplicity FrelonGOLD® lined bearings
- Non-magnetic and vibration resistant
- Weld splatter, paints, contaminants will not stick

| PART NO. | NOMINAL SHAFT SIZE | DIAMETER TOLERANCE | | MAX. LENGTH | WEIGHT |
|----------|--------------------|--------------------|--------|-------------|------------|
| | (in.) | MIN. | MAX. | (in.) | (lbs./in.) |
| CC03-xx | 3/16 | 0.1863 | 0.1871 | 144 | 0.003 |
| CC04-xx | 1/4 | 0.2488 | 0.2496 | | 0.005 |
| CC06-xx | 3/8 | 0.3738 | 0.3746 | | 0.010 |
| CC08-xx | 1/2 | 0.4988 | 0.4996 | | 0.019 |
| CC10-xx | 5/8 | 0.6238 | 0.6246 | | 0.030 |
| CC12-xx | 3/4 | 0.7488 | 0.7496 | | 0.043 |
| CC16-xx | 1 | 0.9988 | 0.9996 | | 0.077 |
| CC20-xx | 1-1/4 | 1.2488 | 1.2496 | | 0.120 |
| CC24-xx | 1-1/2 | 1.4987 | 1.4995 | | 0.173 |
| CC32-xx | 2 | 1.9985 | 1.9995 | | 0.308 |

NOTES: Specify length in part number using inches.
 Example: for 1/2" shafting total length 36" long = CC08-36.
 Ends of cut-to-length shafting are not coated.
 Fully coated shafting is available on special request.

PRE-DRILLED & TAPPED CERAMIC COATED ALUMINUM SHAFTING

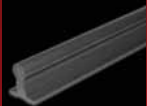


- Aluminum alloy base material
- RC70 ceramic coated finish
- Designed to run with Simplicity FrelonGOLD® lined bearings
- Interchanges with standard pre-drilled shafting
- Non-magnetic and vibration resistant
- Weld splatter, paints, contaminants will not stick

| PART NO. | NOMINAL SHAFT SIZE | DIAMETER TOLERANCE | | HOLE SPACING | | THREAD | MAX. LENGTH | WEIGHT |
|------------|--------------------|--------------------|--------|--------------|---|---------|-------------|------------|
| | (in.) | MIN. | MAX. | x | y | | (in.) | (lbs./in.) |
| CCPDL08-xx | 1/2 | 0.4988 | 0.4996 | 4 | 2 | 6-32 | 144 | 0.019 |
| CCPDL10-xx | 5/8 | 0.6238 | 0.6246 | | | 8-32 | | 0.030 |
| CCPDL12-xx | 3/4 | 0.7488 | 0.7496 | 6 | 3 | 10-32 | | 0.043 |
| CCPDL16-xx | 1 | 0.9988 | 0.9996 | | | 1/4-20 | | 0.077 |
| CCPDL20-xx | 1-1/4 | 1.2488 | 1.2496 | 8 | 4 | 5/16-18 | | 0.120 |
| CCPDL24-xx | 1-1/2 | 1.4987 | 1.4995 | | | 3/8-16 | | 0.173 |
| CCPDL32-xx | 2 | 1.9985 | 1.9995 | | | 1/2-13 | | 0.308 |

NOTES: Specify length in part number using inches.
 Example: for 1/2" shafting total length 36" long = CCPDL08-36.
 Ends of cut-to-length shafting are not coated.
 Fully coated shafting is available on special request.
 Counterbore .063" from top.
 Customer specifies "y" dimension.

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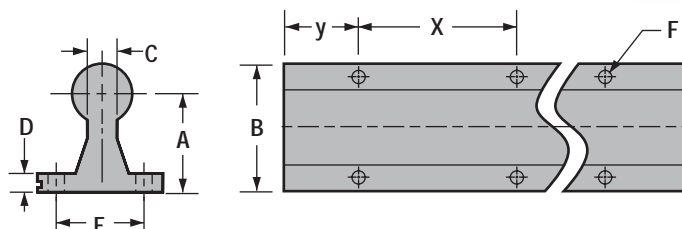


CERAMIC COATED ALUMINUM RAIL ASSEMBLY

- Aluminum alloy base material
- RC70 ceramic coated finish
- One piece integrated design eliminates assembly time
- Weld splatter, paints, and other contaminants will not stick to the shaft
- Non-magnetic and vibration resistant
- Economical, weight saving alternative to traditional steel shafting
- Designed to run with Simplicity FrelonGOLD® lined linear bearings
- Available drilled and undrilled



Inch Feather Rails®



| PART NO. | NOMINAL SHAFT SIZE | DIAMETER TOLERANCE | | A | B | C | D | E | F | | HOLE SPACING | | MAX. LENGTH | WEIGHT |
|----------|--------------------------|--------------------|--------|-------|-------|-------|-------|-------|-------|-------|--------------|---|----------------|------------|
| | (in.) | MIN. | MAX. | .002 | | | | | BOLT | HOLE | x | y | *(ft.) | (lbs./in.) |
| CCR08-xx | 1/2 | 0.4988 | 0.4996 | 1.125 | 1.500 | 0.250 | 0.188 | 1.000 | #6 | 0.169 | 4 | 2 | 4 | 0.019 |
| CCR10-xx | 5/8 | 0.6238 | 0.6246 | | 1.625 | 0.313 | 0.250 | 1.125 | #8 | 0.193 | | | | 0.030 |
| CCR12-xx | 3/4 | 0.7488 | 0.7496 | 1.500 | 1.750 | 0.375 | | 1.250 | #10 | 0.221 | 6 | 3 | | 0.043 |
| CCR16-xx | 1 | 0.9988 | 0.9996 | 1.750 | 2.125 | 0.500 | 1.500 | 1/4" | 0.281 | 0.076 | | | | |
| CCR20-xx | 1-1/4 | 1.2488 | 1.2496 | 2.125 | 2.500 | 0.563 | 0.313 | 1.875 | 5/16" | 0.343 | 8 | 4 | | 0.119 |
| CCR24-xx | 1-1/2 | 1.4987 | 1.4995 | 2.500 | 3.000 | 0.688 | 0.375 | 2.250 | | | | | | 0.172 |
| CCR32-xx | 2 | 1.9985 | 1.9995 | 3.250 | 3.750 | 0.875 | 0.500 | 2.750 | 3/8" | 0.406 | | | 0.305 | |

NOTES: Specify length in part number using inches. Example: for 1/2" shafting total length 36" long = CCR08-36.

Cut-to-length rails may not be coated on the ends.

Customer specifies "y" dimension.

DO NOT use with Linear Ball Bearings.

Shaft rails and assemblies are available in long lengths, consult factory.

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RC60 STEEL SHAFTING

- RC60 case hardened steel
- Polished for optimum surface finish



SMALL DIAMETER RC60 STEEL SHAFTING*

| PART NO. | NOMINAL SIZE | DIAMETER TOLERANCE CLASS "M" | | LENGTH in m* | HARDNESS DEPTH | WEIGHT (kg/m) |
|----------|--------------|------------------------------|------|--------------|----------------|---------------|
| | (mm) | MIN. | MAX. | MAX. | MIN. (mm) | |
| NIM03-xx | 3 | 2.991 | 3 | 6.4 | 1.0 | 0.06 |
| NIM04-xx | 4 | 3.991 | 4 | 6.4 | 1.0 | 0.1 |
| NIM05-xx | 5 | 4.991 | 5 | 6.4 | 1.0 | 0.15 |
| NIM06-xx | 6 | 5.991 | 6 | 6.4 | 1.0 | 0.23 |
| NIM08-xx | 8 | 7.991 | 8 | 6.4 | 1.0 | 0.39 |
| NIM10-xx | 10 | 9.991 | 10 | 6.4 | 1.0 | 0.62 |

RC60 STEEL SHAFTING*

| PART NO. | NOMINAL SIZE | DIAMETER TOLERANCE CLASS "M" | | LENGTH in m* | HARDNESS DEPTH | WEIGHT (kg/m) |
|----------|--------------|------------------------------|------|--------------|----------------|---------------|
| | (mm) | MIN. | MAX. | MAX. | MIN. (mm) | |
| NIM03-xx | 3 | 2.991 | 3 | 6.4 | 1.0 | 0.06 |
| NIM04-xx | 4 | 3.991 | 4 | 6.4 | 1.0 | 0.1 |
| NIM05-xx | 5 | 4.991 | 5 | 6.4 | 1.0 | 0.15 |
| NIM06-xx | 6 | 5.991 | 6 | 6.4 | 1.0 | 0.23 |
| NIM08-xx | 8 | 7.991 | 8 | 6.4 | 1.0 | 0.39 |
| NIM10-xx | 10 | 9.991 | 10 | 6.4 | 1.0 | 0.62 |
| NIM12-xx | 12 | 11.989 | 12 | 4.6 | 1.0 | 0.89 |
| NIM16-xx | 16 | 15.989 | 16 | 4.6 | 1.7 | 1.57 |
| NIM20-xx | 20 | 19.987 | 20 | 4.6 | 1.7 | 2.45 |
| NIM25-xx | 25 | 24.987 | 25 | 5.2 | 2.7 | 3.8 |
| NIM30-xx | 30 | 29.987 | 30 | 5.2 | 2.7 | 5.5 |
| NIM40-xx | 40 | 39.984 | 40 | 5.2 | 2.7 | 9.8 |
| NIM50-xx | 50 | 49.984 | 50 | 5.2 | 3.7 | 15.3 |
| NIM60-xx | 60 | 59.981 | 60 | 5.2 | 3.7 | 22.2 |
| NIM80-xx | 80 | 79.981 | 80 | 5.2 | 3.7 | 39.5 |

*NOTES: Specify length in part number using millimeters.

Example: for 25 mm shafting total length 900mm = NIM25-900

Shaft rails and assemblies are available in long lengths, consult factory.

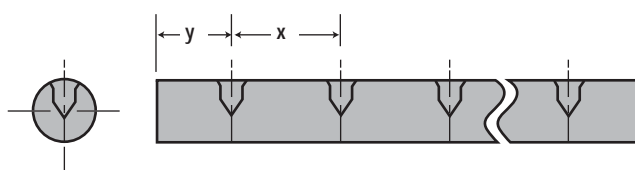
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COMPLETE PRODUCT OFFERING

- RC60 Steel
- 440 Stainless Steel
- Custom Options
- Cut-to-Length
- Random Lengths
- Pre-drilled and Tapped Shafting
- Joinable for even longer lengths

- Suitable for Simplicity® bearings and linear ball bearings
- Available cut-to-length or in full random lengths

PRE-DRILLED & TAPPED RC60 STEEL SHAFTING*



| PART NO. | NOMINAL SIZE | DIAMETER TOLERANCE CLASS "M" | HOLE SPACING | | THREAD | MAX. LENGTH | WEIGHT |
|------------|--------------|------------------------------|--------------|------|-----------|-------------|--------|
| | (mm) | (µm) | x | y | | (m) | |
| NIPDM08-xx | 8 | +0/-9 | 101.6 | 50.8 | M2 x .4 | 5.0 | 0.39 |
| NIPDM10-xx | 10 | +0/-9 | 101.6 | 50.8 | M3 x .5 | 5.0 | 0.62 |
| NIPDM12-xx | 12 | +0/-11 | 150 | 75 | M4 x .7 | 5.7 | 0.89 |
| NIPDM16-xx | 16 | +0/-11 | 150 | 75 | M5 x .8 | 5.7 | 1.57 |
| NIPDM20-xx | 20 | +0/-13 | 150 | 75 | M6 x 1.0 | 5.7 | 2.45 |
| NIPDM25-xx | 25 | +0/-13 | 200 | 100 | M8 x 1.25 | 5.7 | 3.80 |
| NIPDM30-xx | 30 | +0/-13 | 200 | 100 | M10 x 1.5 | 5.7 | 5.50 |

NOTES: Specify length in part number using mm.

For random lengths, add "R" to the part number.

Example: for 12mm shafting total length 97mm = NIPDM12-97

Customer specifies "y" dimension.

| | |
|--|-------|
| RC60 Metric Shafting..... | 68 |
| 440 Stainless Steel Shafting | 69 |
| Ceramic Coated Aluminum Solid Shafting | 69 |
| Pre-drilled & Tapped | |
| Ceramic Coated Aluminum Shafting | 69 |
| Metric Bearings..... | 18-19 |
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| Metric Ball Bearing Pillow Blocks | 104 |
| Metric Pillow Blocks | 20-21 |
| Compact ISO Metric Thin Wall Bearings..... | 22-23 |
| Metric Flange Mounted Bearings | 25-27 |
| Inch Shafting | 63 |



440 STAINLESS STEEL SHAFTING



- 440 Stainless Steel
- Suitable for linear ball bearings
- Available cut-to-length or in full random lengths
- Tolerance of $\pm .79375$

| PART NO. | NOMINAL SIZE | DIAMETER TOLERANCE CLASS "M" | MAX. LENGTH | HARDNESS DEPTH | WEIGHT |
|------------|--------------|------------------------------|-------------|----------------|--------|
| | (mm) | (μ m) | (m) | MAX. | (kg/m) |
| NIM03SS-xx | 3 | +0/-8 | 5.0 | 1.0 | 0.06 |
| NIM04SS-xx | 4 | +0/-8 | 5.0 | 1.0 | 0.10 |
| NIM05SS-xx | 5 | +0/-8 | 5.0 | 1.0 | 0.15 |
| NIM06SS-xx | 6 | +0/-8 | 5.0 | 1.0 | 0.23 |
| NIM08SS-xx | 8 | +0/-9 | 5.0 | 1.0 | 0.39 |
| NIM10SS-xx | 10 | +0/-9 | 5.0 | 1.0 | 0.62 |
| NIM12SS-xx | 12 | +0/-11 | 5.7 | 1.0 | 0.89 |
| NIM16SS-xx | 16 | +0/-11 | 5.7 | 1.7 | 1.57 |
| NIM20SS-xx | 20 | +0/-13 | 5.7 | 1.7 | 2.45 |
| NIM25SS-xx | 25 | +0/-13 | 5.7 | 2.7 | 3.80 |
| NIM30SS-xx | 30 | +0/-13 | 5.7 | 2.7 | 5.50 |

CERAMIC COATED ALUMINUM SOLID SHAFTING



- Aluminum alloy base material
- RC70 ceramic coated finish
- Designed to run with Simplicity FrelonGOLD® lined bearings
- Non-magnetic and vibration resistant
- Weld splatter, paints, contaminants will not stick

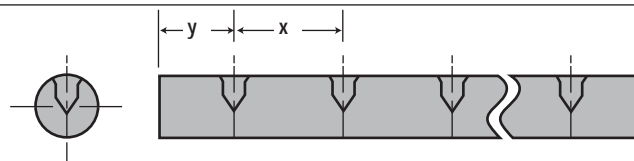
| PART NO. | NOMINAL SIZE | DIAMETER TOLERANCE CLASS "M" | MAX. LENGTH | WEIGHT |
|----------|--------------|------------------------------|-------------|--------|
| | (mm) | (μ m) | (m) | (kg/m) |
| CCM03-xx | 3 | +0/-8 | 3.7 | 0.01 |
| CCM04-xx | 4 | +0/-8 | 3.7 | 0.02 |
| CCM05-xx | 5 | +0/-8 | 3.7 | 0.03 |
| CCM06-xx | 6 | +0/-8 | 3.7 | 0.04 |
| CCM08-xx | 8 | +0/-9 | 3.7 | 0.07 |
| CCM10-xx | 10 | +0/-9 | 3.7 | 0.10 |
| CCM12-xx | 12 | +0/-11 | 3.7 | 0.15 |
| CCM16-xx | 16 | +0/-11 | 3.7 | 0.26 |
| CCM20-xx | 20 | +0/-13 | 3.7 | 0.41 |
| CCM25-xx | 25 | +0/-13 | 3.7 | 0.63 |
| CCM30-xx | 30 | +0/-13 | 3.7 | 0.92 |
| CCM40-xx | 40 | +0/-16 | 3.7 | 1.63 |
| CCM50-xx | 50 | +0/-16 | 3.7 | 2.55 |
| CCM60-xx | 60 | +0/-19 | 3.7 | 3.70 |
| CCM80-xx | 80 | +0/-19 | 3.7 | 6.58 |

NOTES: Specify length in part number using mm.
 Example: for 8mm shafting total length 97mm = CCM08-97
 Ends of cut-to-length shafting are not coated.
 Fully coated shafting is available on special request.

PRE-DRILLED & TAPPED CERAMIC COATED ALUMINUM SHAFTING



- Aluminum alloy base material
- RC70 ceramic coated finish
- Designed to run with Simplicity FrelonGOLD® lined bearings
- Interchanges with standard pre-drilled shafting
- Non-magnetic and vibration resistant
- Weld splatter, paints, contaminants will not stick



| PART NO. | NOMINAL SIZE | DIAMETER TOLERANCE CLASS "M" | HOLE SPACING | | THREAD | MAX. LENGTH | WEIGHT |
|------------|--------------|------------------------------|--------------|------|-----------|-------------|--------|
| | (mm) | (μ m) | x | y | | (m) | (kg/m) |
| CCMDL08-xx | 8 | +0/-9 | 101.6 | 50.8 | M2 x .4 | 3.7 | 0.07 |
| CCMDL10-xx | 10 | +0/-9 | 101.6 | 50.8 | M3 x .5 | 3.7 | 0.10 |
| CCMDL12-xx | 12 | +0/-11 | 150 | 75 | M4 x .7 | 3.7 | 0.15 |
| CCMDL16-xx | 16 | +0/-11 | 150 | 75 | M5 x .8 | 3.7 | 0.26 |
| CCMDL20-xx | 20 | +0/-13 | 150 | 75 | M6 x 1.0 | 3.7 | 0.41 |
| CCMDL25-xx | 25 | +0/-13 | 200 | 100 | M8 x 1.25 | 3.7 | 0.63 |
| CCMDL30-xx | 30 | +0/-13 | 200 | 100 | M10 x 1.5 | 3.7 | 0.92 |

NOTES: Specify length in part number using mm.
 Example: for 10mm shafting total length 97mm = CCMDL08-97.
 Ends of cut-to-length shafting are not coated.
 Fully coated shafting is available on special request.
 Customer specifies "y" dimension.

Shaft rails and assemblies are available in long lengths, consult factory.

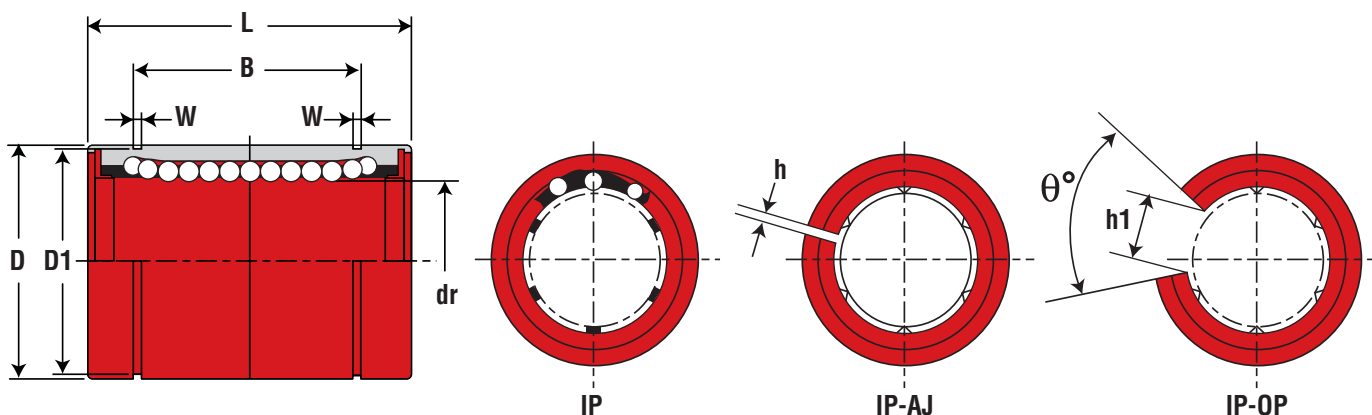
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Simplicity® Ball Bearings

Linear Ball Bearings - Inch Series

Linear Motion Systems



IP SERIES - DIMENSIONAL INFORMATION

| NOMINAL SHAFT DIAMETER (Inch /mm) | PART NUMBER | | | | | MAJOR DIMENSIONS & TOLERANCES | | | | | |
|---|--------------------------------------|-----------------|---------------|-------------------------------------|-------------------------------|-------------------------------|----------------------------|--------------------|----------------------------|--------------------|----------------------------|
| | STANDARD CLOSE POLYMER CAGE | BALL CIRCUIT | WEIGHT (g) | STANDARD OPEN POLYMER CAGE | ADJUSTABLE POLYMER CAGE | dr (Inch/ mm) | TOLERANCE (Inch/ μm) | D (Inch/ mm) | TOLERANCE (Inch/ μm) | L (Inch/ mm) | TOLERANCE (Inch/ mm) |
| 1/4 6.350 | IP4G | 4 | 8 | - | - | 0.2500 6.350 | 0/- .0004 0/- 9 | 0.5000 12.700 | 0/- .00045 0/- 11 | 0.7500 19.050 | 0/- .008 0/- 0.2 |
| 3/8 9.525 | IP6G | | 14 | - | - | 0.3750 9.525 | | 0.6250 15.875 | 0/- .00050 0/- 13 | 0.8750 22.225 | |
| 1/2 9.525 | IP8G | | 37 | IP8G-OP | IP8G-AJ | 0.5000 12.700 | | 0.8750 22.225 | | 1.2500 31.750 | |
| 5/8 15.875 | IP10G | 5 | 76 | IP10G-OP | IP10G-AJ | 0.6250 15.875 | | 1.1250 28.575 | 0/- .00065 0/- 16 | 1.5000 38.100 | |
| 3/4 19.050 | IP12G | | 95 | IP12G-OP | IP12G-AJ | 0.7500 19.050 | 0/- .0004 0/- 10 | 1.2500 31.750 | | 1.625 41.275 | 0/- .012 0/- 0.3 |
| 1 25.400 | IP16G | 6 | 200 | IP16G-OP | IP16G-AJ | 1.0000 25.400 | 0/- .0005 0/- 12 | 1.5625 39.688 | 0/- .00075 0/- 19 | 2.2500 57.150 | |
| 1-1/4 31.750 | IP20G | | 440 | IP20G-OP | IP20G-AJ | 1.2500 31.750 | | 2.0000 50.800 | | 2.6250 66.675 | |
| 1-1/2 38.100 | IP24G | | 670 | IP24G-OP | IP24G-AJ | 1.5000 38.100 | | 2.3750 60.325 | | 3.0000 76.200 | |
| 2 50.800 | IP32G | | 1,140 | IP32G-OP | IP32G-AJ | 2.0000 50.800 | | 3.0000 76.200 | 0/- .00090 0/- 22 | 4.0000 101.600 | |

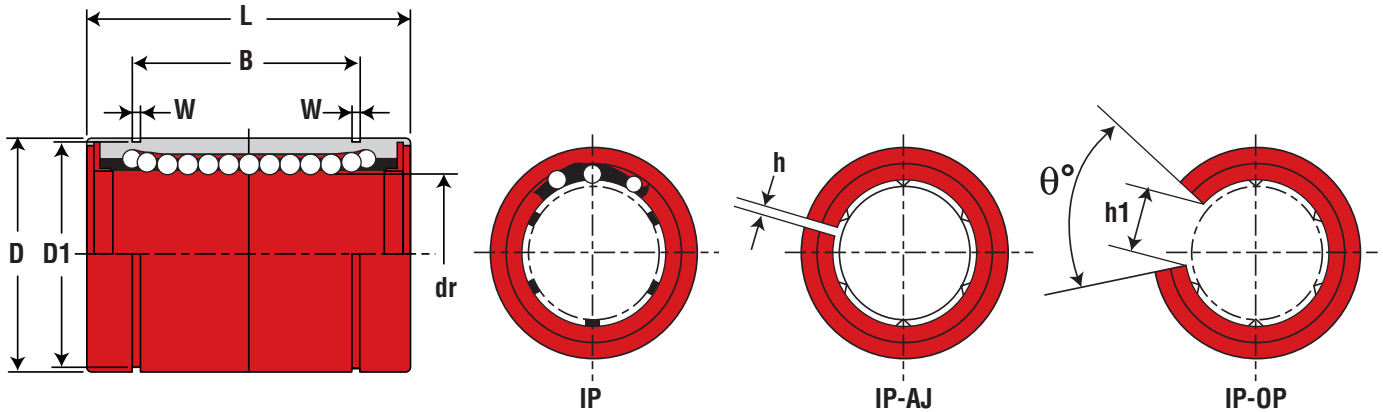
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Simplicity® Ball Bearings

Linear Ball Bearings - Inch Series

Linear Motion Systems



IP SERIES - DIMENSIONAL INFORMATION (cont.)

(Standard Steel Finish)

| MAJOR DIMENSIONS & TOLERANCES | | | | | | | | LOAD RATING | | | | |
|-------------------------------|---------------------------|---------------------|--------------------|---------------------|-------------|-------------------------------|--|---------------------|------------------------|---------------------|------------------------|---|
| B MAX/MIN (inch/ mm) | W MIN (inch/ mm) | D1 (inch/ mm) | h (inch/ mm) | h1 (inch/ mm) | θ° | ECCENTRICITY (inch/ μm) | MAX RADIAL CLEARANCE (inch/ μm) | DYNAMIC C (N) | DYNAMIC C (lbs.) | STATIC Co (N) | STATIC Co (lbs.) | NOMINAL SHAFT DIAMETER (inch/ mm) |
| .515/.499 13.091/12.675 | .0390 0.992 | 0.4687 11.906 | .04 1 | - | - | .0005 12 | -.0001 -3 | 206 | 46 | 265 | 60 | 1/4 6.350 |
| .640/.624 16.256/15.850 | .0390 0.992 | 0.5880 14.935 | | - | - | | | 225 | 51 | 314 | 71 | 3/8 9.525 |
| .967/.951 24.562/24.155 | .0459 1.168 | 0.8209 20.853 | .06 1.5 | 0.3400 7.937 | 80 | | -.0001 -4 | 510 | 115 | 784 | 176 | 1/2 9.525 |
| 1.108/1.092 28.143/27.737 | .0559 1.422 | 1.0590 26.899 | | 0.3750 9.525 | | 774 | | 174 | 1,180 | 265 | 5/8 15.875 | |
| 1.170/1.154 29.718/29.312 | .0559 1.422 | 1.1760 29.870 | | 0.4375 11.112 | 60 | .0006 15 | -.0002 -6 | 862 | 194 | 1,370 | 308 | 3/4 19.050 |
| 1.759/1.741 44.679/44.421 | .0679 1.727 | 1.4687 37.306 | 0.5625 14.287 | 50 | 980 | | | 220 | 1,570 | 353 | 1 25.400 | |
| 2.009/1.991 51.029/50.571 | .0679 1.727 | 1.8859 47.904 | 0.6250 15.875 | | .0008 20 | -.0003 -8 | 1,570 | 353 | 2,740 | 616 | 1-1/4 31.750 | |
| 2.415/2.397 61.341/60.884 | .0859 2.184 | 2.2389 56.870 | 0.7500 19.050 | | | | 2,180 | 490 | 4,020 | 904 | 1-1/2 38.100 | |
| 3.195/3.177 81.153/80.696 | .1029 2.616 | 2.8379 72.085 | .12 3 | 1.000 25.400 | | .0010 25 | -.0005 -13 | 3,820 | 859 | 7,940 | 1,785 | 2 50.800 |

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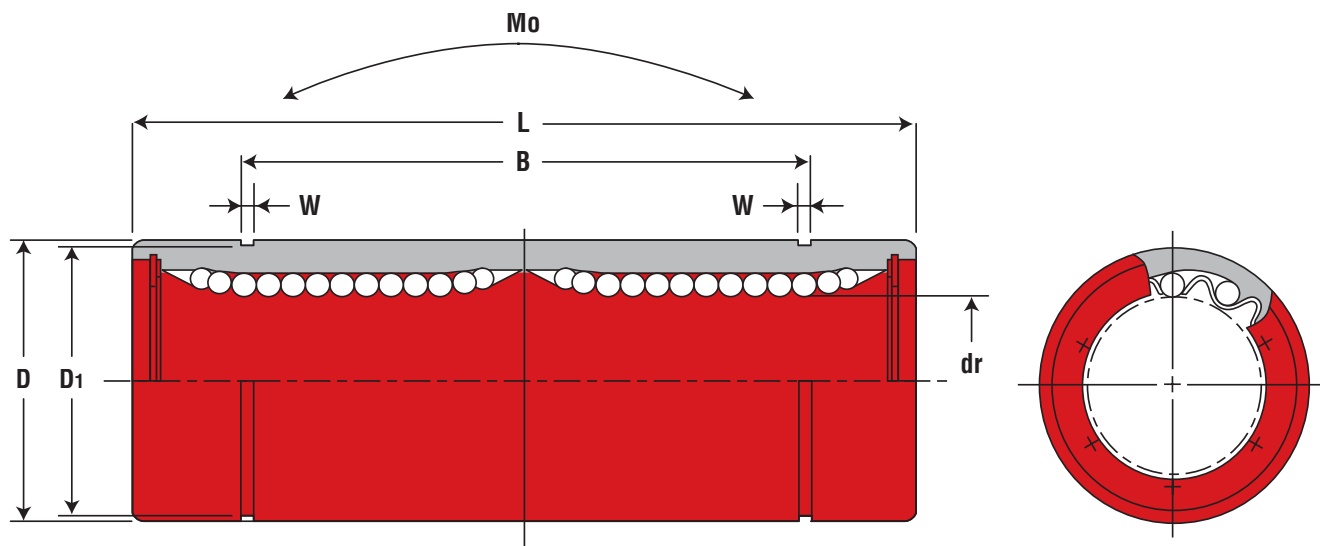


Simplicity® Ball Bearings

Double Wide Linear Ball Bearings - Inch Series

Linear Motion Systems

Ball Bearings



IP-W SERIES - DIMENSIONAL INFORMATION

| | PART NUMBER | MAJOR DIMENSIONS & TOLERANCES | | | | | | | |
|---|-----------------|-------------------------------|---------------|---------------------|----------------------------|--------------------|----------------------------|--------------------|----------------------------|
| NOMINAL SHAFT DIAMETER (Inch/ mm) | POLYMER CAGE | BALL CIRCUIT | WEIGHT (g) | dr (inch/ mm) | TOLERANCE (inch/ mm) | D (inch/ mm) | TOLERANCE (inch/ µm) | L (inch/ mm) | TOLERANCE (inch/ mm) |
| 1/4 6.350 | IP4GW | 4 | 18 | 0.2500 6.350 | 0/-0.0004 0/-10 | 0.5000 12.700 | 0/-0.0005 0/-13 | 1.3750 34.925 | 0/-0.012 0/-0.3 |
| 3/8 9.525 | IP6GW | | 28 | 0.3750 9.525 | | 0.6250 15.875 | 0/-0.00065 0/-16 | 1.5938 40.481 | |
| 1/2 12.700 | IP8GW | | 80 | 0.5000 12.700 | | 0.8750 22.225 | | 2.3750 60.235 | |
| 5/8 15.875 | IP10GW | 5 | 160 | 0.6250 15.875 | | 1.1250 28.575 | 0/-0.00075 0/-19 | 2.8125 71.438 | |
| 3/4 19.050 | IP12GW | | 195 | 0.7500 19.050 | 0/-0.0005 0/-12 | 1.2500 31.750 | | 3.0937 78.581 | 0/-0.016 0/-0.4 |
| 1 25.400 | IP16GW | 6 | 410 | 1.0000 25.400 | | 1.5625 39.688 | 0/-0.0009 0/-22 | 4.2813 108.744 | |
| 1-1/4 31.750 | IP20GW | | 820 | 1.2500 31.750 | 0/-0.0006 0/-15 | 2.0000 50.800 | | 5.0000 127.000 | |
| 1-1/2 38.100 | IP24GW | | 1,250 | 1.5000 38.100 | | 2.3750 60.325 | 0/-0.00100 0/-25 | 5.6875 144.463 | |
| 2 50.800 | IP32GW | | 2,350 | 2.0000 50.800 | | 3.0000 76.200 | | 7.7500 196.850 | |

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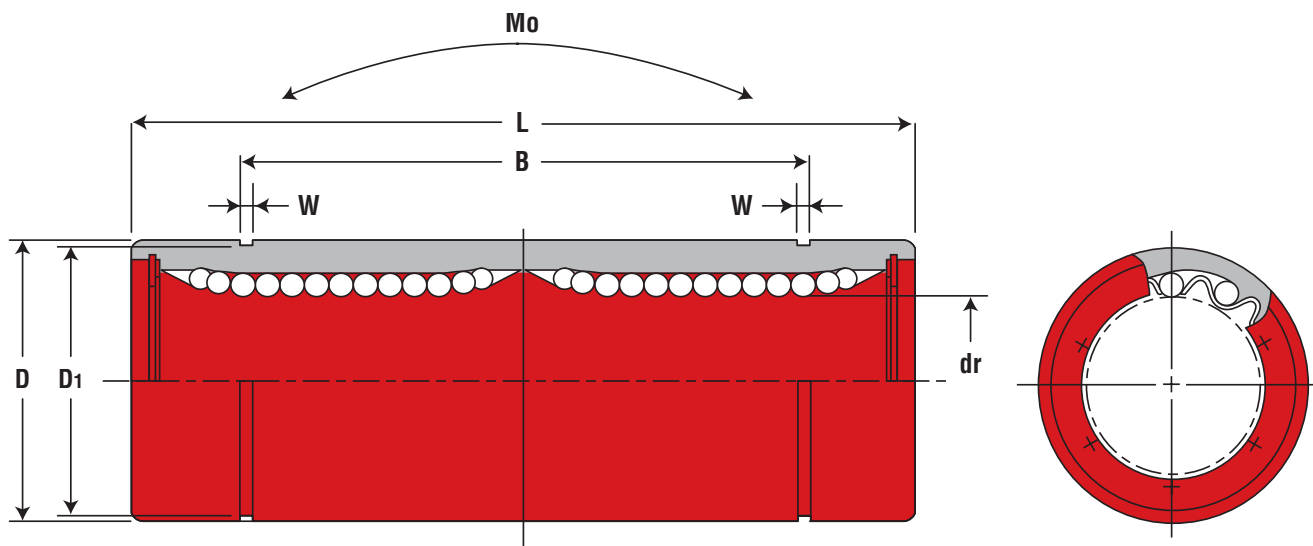


Simplicity® Ball Bearings

Double Wide Linear Ball Bearings - Inch Series

Linear Motion Systems

Ball Bearings



IP-W SERIES - DIMENSIONAL INFORMATION (cont.)

(Standard Steel Finish)

| MAJOR DIMENSIONS & TOLERANCES | | | | | LOAD RATING | | | | | |
|-------------------------------|----------------------------|---------------------------|---------------------|-------------------------------|---------------------|------------------------|---------------------|------------------------|--|---|
| B (inch/ mm) | TOLERANCE (inch/ mm) | W MIN (inch/ mm) | D1 (inch/ mm) | ECCENTRICITY (inch/ µm) | DYNAMIC C (N) | DYNAMIC C (lbs.) | STATIC Co (N) | STATIC Co (lbs.) | ALLOWABLE STATIC MOMENT Mo (N-m) | NOMINAL SHAFT DIAMETER (inch/ mm) |
| 1.0220 25.959 | 0/-0.012 0/-0.3 | .0390 0.992 | 0.4687 11.906 | .0006 15 | 323 | 73 | 530 | 119 | 2 | 1/4 6.350 |
| 1.2716 32.298 | | .0390 0.992 | 0.5880 14.935 | | 353 | 79 | 630 | 142 | 2.7 | 3/8 9.525 |
| 1.9250 48.895 | | .0459 1.168 | 0.8209 20.853 | | 813 | 183 | 1,570 | 353 | 11.5 | 1/2 12.700 |
| 2.2079 56.080 | | .0559 1.422 | 1.0590 26.899 | | 1,230 | 277 | 2,350 | 528 | 20 | 5/8 15.875 |
| 2.3314 59.218 | | | 1.1760 29.870 | .0008 20 | 1,370 | 308 | 2,740 | 616 | 26.5 | 3/4 19.050 |
| 3.5094 89.139 | 0/-0.16 0/-0.4 | .0679 1.727 | 1.4687 37.306 | | 1,570 | 353 | 3,140 | 706 | 41.2 | 1 25.400 |
| 4.0094 101.839 | | | 1.8859 47.904 | .0010 25 | 2,500 | 562 | 5,490 | 1,234 | 84.8 | 1-1/4 31.750 |
| 4.8236 122.519 | | .0859 2.184 | 2.2389 56.870 | | 3,430 | 771 | 8,040 | 1,807 | 143 | 1-1/2 38.100 |
| 6.3834 162.138 | | .1029 2.616 | 2.8379 72.085 | .0012 30 | 6,080 | 1,367 | 15,900 | 3,574 | 399 | 2 50.800 |

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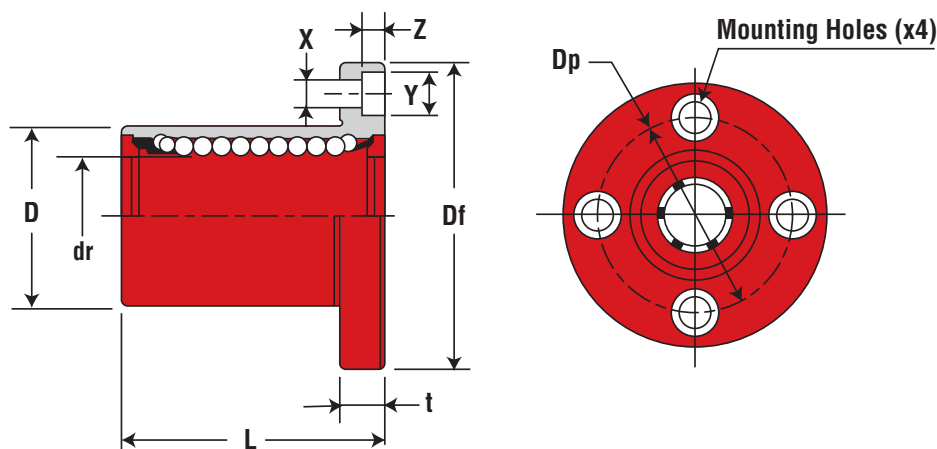


Simplicity® Ball Bearings

Round Flange Mount - Inch Series

Linear Motion Systems

Flange Mount



IPF SERIES - DIMENSIONAL INFORMATION

| | PART NUMBER | MAJOR DIMENSIONS & TOLERANCES | | | | | | | |
|----------------------------------|--------------|-------------------------------|------------|------------------|---------------------------|------------------|---------------------------|-------------------|--------------------------|
| NOMINAL SHAFT DIAMETER (inch/mm) | POLYMER CAGE | BALL CIRCUIT | WEIGHT (g) | dr (inch/mm) | TOLERANCE (inch/ μ m) | D (inch/mm) | TOLERANCE (inch/ μ m) | L (inch/mm) | TOLERANCE (inch/mm) |
| 1/4 6.350 | IPF4G | 4 | 32 | 0.2500 6.350 | 0/- .0004 0/-9 | 0.5000 12.700 | 0/- .0005 0/-13 | 0.7500 19.050 | ± 0.012 ± 0.3 |
| 3/8 9.525 | IPF6G | | 47 | 0.3750 9.525 | | 0.6250 15.875 | 0/- .00065 0/-16 | 0.8750 22.225 | |
| 1/2 6.350 | IPF8G | | 88 | 0.5000 12.700 | | 0.8750 22.225 | | 1.2500 31.750 | |
| 5/8 15.875 | IPF10G | 5 | 140 | 0.6250 15.875 | 0/- .0004 0/-10 | 1.1250 28.575 | 0/- .00075 0/-19 | 1.5000 38.100 | |
| 3/4 19.050 | IPF12G | | 190 | 0.7500 19.050 | | 1.2500 31.750 | | 1.6250 41.275 | |
| 1 25.400 | IPF16G | 6 | 325 | 1.0000 25.400 | 0/- .0005 0/-12 | 1.5625 39.688 | 0/- .0009 0/-22 | 2.5000 63.500 | |
| 1-1/4 31.750 | IPF20G | | 665 | 1.2500 31.750 | | 2.0000 50.800 | | 2.6250 66.675 | |
| 1-1/2 38.100 | IPF24G | | 1,100 | 1.5000 38.100 | | 2.3750 60.325 | | 3.0000 76.200 | |
| 2 50.800 | IPF32G | | 1,760 | 2.0000 50.800 | | 3.0000 76.200 | 0/- .0010 0/-25 | 4.0000 101.600 | |

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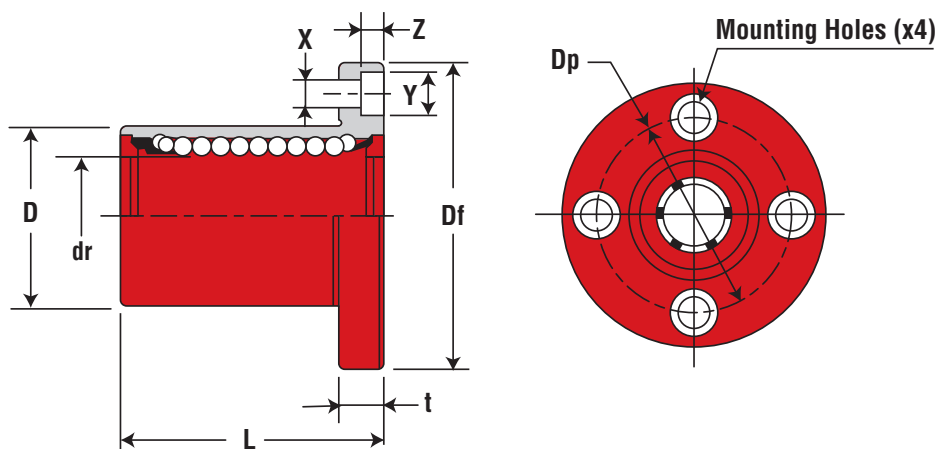


Simplicity® Ball Bearings

Round Flange Mount - Inch Series

Linear Motion Systems

Flange Mount



IPF SERIES - DIMENSIONAL INFORMATION (cont.)

(Standard Steel Finish)

| MAJOR DIMENSIONS & TOLERANCES | | | | | | LOAD RATING | | | | NOMINAL SHAFT DIAMETER (inch/mm) |
|-------------------------------|-----------------|------------------|--|---------------------------------|--|---------------|------------------|---------------|------------------|----------------------------------|
| Df (inch/mm) | t (inch/mm) | Dp (inch/mm) | X x Y x Z (inch/mm) | ECCENTRICITY ID to OD (inch/μm) | PERPENDICULARITY FLANGE FACE to ID (inch/μm) | DYNAMIC C (N) | DYNAMIC C (lbs.) | STATIC Co (N) | STATIC Co (lbs.) | |
| 1.2500 31.750 | .2190 5.556 | 0.8750 22.225 | .156 x .250 x .141 3.969 x 6.350 x 3.572 | .0005 12 | .0005 12 | 206 | 46 | 265 | 60 | 1/4 6.350 |
| 1.5000 38.100 | .2500 6.350 | 1.0620 26.988 | .1875 x .297 x .172 4.763 x 7.541 x 4.366 | | | 225 | 51 | 314 | 71 | 3/8 9.525 |
| 1.7500 44.450 | .2500 6.350 | 1.3120 33.338 | .1875 x .297 x .172 4.763 x 7.541 x 4.366 | | | 510 | 115 | 784 | 176 | 1/2 6.350 |
| 2.0000 50.800 | .2500 6.350 | 1.5620 39.688 | .1875 x .297 x .172 4.763 x 7.541 x 4.366 | | | 774 | 174 | 1,180 | 265 | 5/8 15.875 |
| 2.1875 55.563 | .3125 7.938 | 1.7180 43.660 | .219 x .344 x .203 5.556 x 8.731 x 5.159 | .0006 15 | .0006 15 | 862 | 194 | 1,370 | 308 | 3/4 19.050 |
| 2.5000 63.500 | .3125 7.938 | 2.0310 51.594 | .219 x .344 x .203 5.556 x 8.731 x 5.159 | | | 980 | 220 | 1,570 | 353 | 1 25.400 |
| 3.1250 79.375 | .3750 9.525 | 2.5625 65.088 | .281 x .406 x .266 7.144 x 10.312 x 6.747 | .0008 20 | .0008 20 | 1,570 | 353 | 2,740 | 616 | 1-1/4 31.750 |
| 3.7500 95.250 | .5000 12.700 | 3.0625 77.788 | .344 x .500 x .328 8.731 x 12.700 x 8.334 | .0010 25 | .0010 25 | 2,180 | 490 | 4,020 | 904 | 1-1/2 38.100 |
| 4.3750 111.125 | .5000 12.700 | 3.6875 93.662 | .344 x .500 x .328 8.731 x 12.700 x 8.334 | | | 3,820 | 859 | 7,940 | 1,785 | 2 50.800 |

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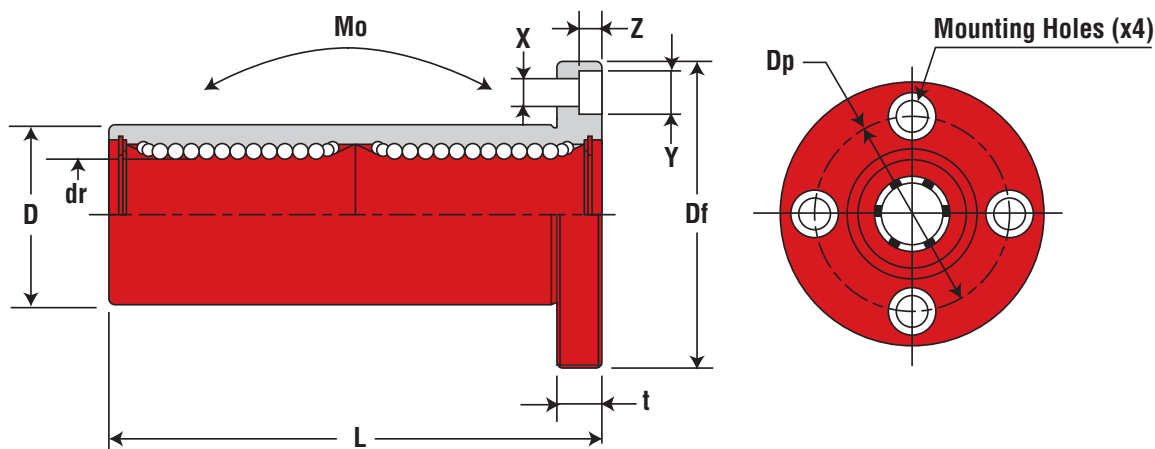


Simplicity® Ball Bearings

Round Flange Mount Double Wide - Inch Series

Linear Motion Systems

Flange Mount



IPF-W SERIES - DIMENSIONAL INFORMATION

| PART NUMBER | | MAJOR DIMENSIONS & TOLERANCES | | | | | | | | |
|----------------------------------|--------------|-------------------------------|------------|------------------|---------------------|------------------|---------------------|-------------------|---------------------|-------------------|
| NOMINAL SHAFT DIAMETER (inch/mm) | POLYMER CAGE | BALL CIRCUIT | WEIGHT (g) | dr (inch/mm) | TOLERANCE (inch/μm) | D (inch/mm) | TOLERANCE (inch/μm) | L (inch/mm) | TOLERANCE (inch/mm) | Df (inch/mm) |
| 1/4 6.350 | IPF4GW | 4 | 40 | 0.2500 6.350 | 0/-0.0004 0/-10 | 0.5000 12.700 | 0/-0.0005 0/-13 | 1.375 34.925 | ±0.012 ±0.3 | 1.2500 31.750 |
| 3/8 9.525 | IPF6GW | | 60 | 0.3750 9.525 | | 0.6250 15.875 | 0/-0.00065 0/-16 | 1.5938 40.481 | | 1.5000 38.100 |
| 1/2 12.700 | IPF8GW | | 126 | 0.5000 12.700 | | 0.8750 22.225 | | 2.3750 60.325 | | 1.7500 44.450 |
| 5/8 15.875 | IPF10GW | 5 | 215 | 0.6250 15.875 | 0/-0.0005 0/-12 | 1.1250 28.575 | 0/-0.00075 0/-19 | 2.8125 71.438 | | 2.0000 50.800 |
| 3/4 19.050 | IPF12GW | | 280 | 0.7500 19.050 | | 1.2500 31.750 | | 3.0937 78.581 | | 2.1875 55.563 |
| 1 25.400 | IPF16GW | 6 | 515 | 1.0000 25.400 | 0/-0.0006 0/-15 | 1.5625 39.688 | 0/-0.0009 0/-22 | 4.2813 108.744 | | 2.5000 63.500 |
| 1-1/4 31.750 | IPF20GW | | 1,020 | 1.2500 31.750 | | 2.0000 50.800 | | 5.000 127.000 | | 3.1250 79.375 |
| 1-1/2 38.100 | IPF24GW | | 1,630 | 1.5000 38.100 | | 2.3750 60.325 | | 5.6875 144.463 | | 3.7500 95.250 |
| 2 50.800 | IPF32GW | | 2,800 | 2.0000 50.800 | | 3.0000 76.200 | 0/-0.0010 0/-25 | 7.7500 196.850 | | 4.3750 111.125 |

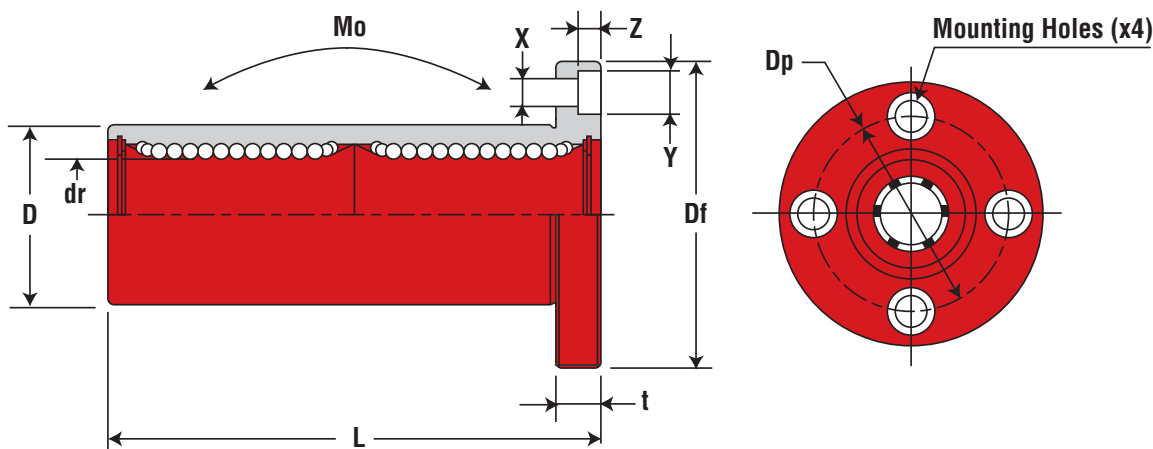
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Simplicity® Ball Bearings

Round Flange Mount Double Wide - Inch Series

Linear Motion Systems



Flange Mount

IPF-W SERIES - DIMENSIONAL INFORMATION (cont.)

(Standard Steel Finish)

| MAJOR DIMENSIONS & TOLERANCES | | | | | LOAD RATING | | | | | NOMINAL SHAFT DIAMETER (inch/mm) |
|-------------------------------|------------------|--|---------------------------------|--|---------------|------------------|---------------|------------------|----------------------------------|----------------------------------|
| t (inch/mm) | Dp (inch/mm) | X x Y x Z (inch/mm) | ECCENTRICITY ID to OD (inch/μm) | PERPENDICULARITY FLANGE FACE to ID (inch/μm) | DYNAMIC C (N) | DYNAMIC C (lbs.) | STATIC Co (N) | STATIC Co (lbs.) | ALLOWABLE STATIC MOMENT Mo (N-m) | |
| 0.219 5.556 | 0.8750 22.225 | .156 x .250 x .141 3.969 x 6.350 x 3.572 | .0006 15 | .0006 15 | 323 | 73 | 530 | 119 | 2 | 1/4 6.350 |
| .2500 6.350 | 1.0620 26.988 | .1875 x .297 x .172 4.763 x 7.541 x 4.366 | | | 353 | 79 | 630 | 142 | 2.7 | 3/8 9.525 |
| .2500 6.350 | 1.312 33.338 | .1875 x .297 x .172 4.763 x 7.541 x 4.366 | | | 813 | 183 | 1,570 | 353 | 11.5 | 1/2 12.700 |
| .2500 6.350 | 1.5625 39.688 | .1875 x .297 x .172 4.763 x 7.541 x 4.366 | | | 1,230 | 277 | 2,350 | 528 | 20 | 5/8 15.875 |
| .3125 7.938 | 1.7188 43.656 | .219 x .344 x .203 5.556 x 8.731 x 5.159 | .0008 20 | .0008 20 | 1,370 | 308 | 2,740 | 616 | 26.5 | 3/4 19.050 |
| .3125 7.938 | 2.0313 51.594 | .219 x .344 x .203 5.556 x 8.731 x 5.159 | | | 1,570 | 353 | 3,140 | 706 | 41.2 | 1 25.400 |
| .3750 9.525 | 2.5625 65.088 | .281 x .406 x .266 7.144 x 10.312 x 6.747 | .0010 25 | .0010 25 | 2,500 | 562 | 5,490 | 1,234 | 84.8 | 1-1/4 31.750 |
| .5000 12.700 | 3.0625 77.788 | .344 x .500 x .328 8.731 x 12.700 x 8.334 | | | 3,430 | 771 | 8,040 | 1,807 | 143 | 1-1/2 38.100 |
| .5000 12.700 | 3.6875 93.662 | .344 x .500 x .328 8.731 x 12.700 x 8.334 | .0012 30 | .0012 30 | 6,080 | 1,367 | 15,900 | 3,574 | 399 | 2 50.800 |

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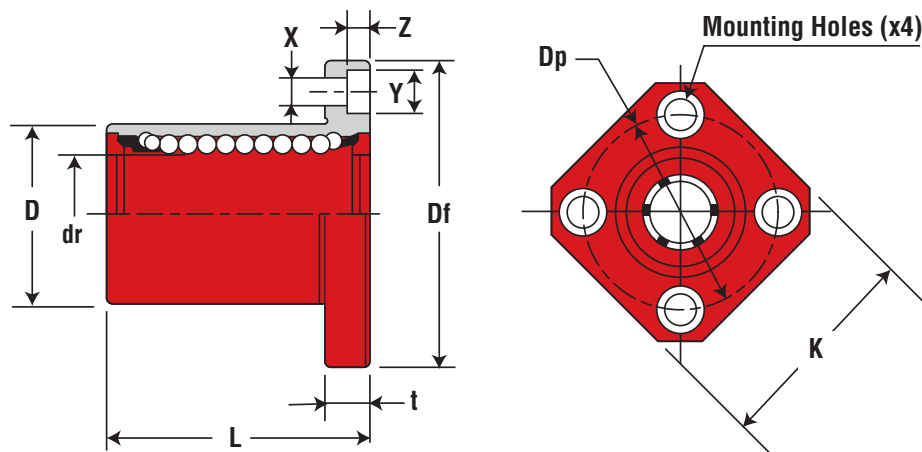


Simplicity® Ball Bearings

Square Flange Mount - Inch Series

Linear Motion Systems

Flange Mount



IPK SERIES - DIMENSIONAL INFORMATION

| | PART NUMBER | MAJOR DIMENSIONS & TOLERANCES | | | | | | | | |
|---|-----------------|-------------------------------|---------------|---------------------|----------------------------|--------------------|----------------------------|--------------------|----------------------------|---------------------|
| NOMINAL SHAFT DIAMETER (inch/ mm) | POLYMER CAGE | BALL CIRCUIT | WEIGHT (g) | dr (inch/ mm) | TOLERANCE (inch/ µm) | D (inch/ mm) | TOLERANCE (inch/ µm) | L (inch/ mm) | TOLERANCE (inch/ mm) | Df (inch/ mm) |
| 1/4 6.350 | IPK4G | 4 | 32 | 0.2500 6.350 | 0/- .0004 0/-9 | 0.5000 12.700 | 0/- .0005 0/-13 | 0.7500 19.050 | ±0.012 ±0.3 | 1.2500 31.750 |
| 3/8 9.525 | IPK6G | | 47 | 0.3750 9.525 | | 0.6250 15.875 | 0/- .00065 0/-16 | 0.8750 22.225 | | 1.5000 38.100 |
| 1/2 12.700 | IPK8G | | 88 | 0.5000 12.700 | | 0.8750 22.225 | | 1.2500 31.750 | | 1.7500 44.450 |
| 5/8 15.875 | IPK10G | 5 | 140 | 0.6250 15.875 | 0/- .0004 0/-10 | 1.1250 28.575 | 0/- .00075 0/-19 | 1.5000 38.100 | | 2.0000 50.800 |
| 3/4 19.050 | IPK12G | | 190 | 0.7500 19.050 | | 1.2500 31.750 | | 1.6250 41.275 | | 2.1875 55.563 |
| 1 25.400 | IPK16G | 6 | 325 | 1.0000 25.400 | 0/- .0005 0/-12 | 1.5625 39.688 | 0/- .0009 0/-22 | 2.2500 57.150 | | 2.5000 63.500 |
| 1-1/4 31.750 | IPK20G | | 665 | 1.2500 31.750 | | 2.0000 50.800 | | 2.6250 66.675 | | 3.1250 79.375 |
| 1-1/2 38.100 | IPK24G | | 1,100 | 1.5000 38.100 | | 2.3750 60.325 | | 3.0000 76.200 | | 3.7500 95.250 |
| 2 50.800 | IPK32G | | 1,760 | 2.0000 50.800 | | 3.0000 76.200 | 0/- .0010 0/-25 | 4.0000 101.600 | | 4.3750 111.125 |

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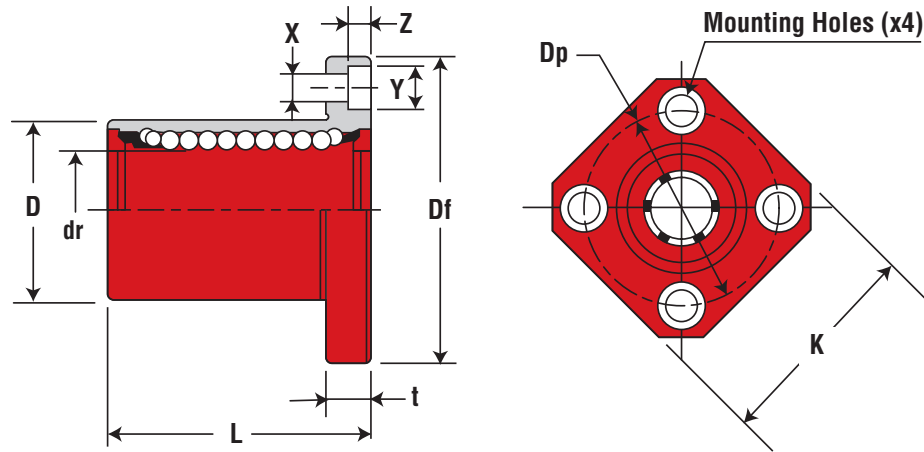


Simplicity® Ball Bearings

Square Flange Mount - Inch Series

Linear Motion Systems

Flange Mount



IPK SERIES - DIMENSIONAL INFORMATION (cont.)

(Standard Steel Finish)

| MAJOR DIMENSIONS & TOLERANCES | | | | | | LOAD RATING | | | | |
|-------------------------------|--------------------|---------------------|--|---|--|---------------------|------------------------|---------------------|------------------------|---|
| K (inch/ mm) | t (inch/ mm) | Dp (inch/ mm) | X x Y x Z (inch/ mm) | ECCENTRICITY ID to OD (inch/ µm) | PERPENDICULARITY FLANGE FACE to ID (inch/ µm) | DYNAMIC C (N) | DYNAMIC C (lbs.) | STATIC Co (N) | STATIC Co (lbs.) | NOMINAL SHAFT DIAMETER (inch/ mm) |
| 1.0000 25.400 | .2190 5.556 | .8750 22.225 | .156 x .250 x .141 3.969 x 6.350 x 3.572 | .0005 12 | .0005 12 | 206 | 46 | 265 | 60 | 1/4 6.350 |
| 1.2500 31.750 | .2500 6.350 | 1.0620 26.988 | .1875 x .297 x .172 4.763 x 7.541 x 4.366 | | | 225 | 51 | 314 | 71 | 3/8 9.525 |
| 1.3750 34.925 | | 1.3120 33.338 | .1875 x .297 x .172 4.763 x 7.541 x 4.366 | | | 510 | 115 | 784 | 176 | 1/2 12.700 |
| 1.5000 38.100 | | 1.5620 39.688 | .1875 x .297 x .172 4.763 x 7.541 x 4.366 | | | 774 | 174 | 1,180 | 265 | 5/8 15.875 |
| 1.6875 42.863 | .3125 7.938 | 1.7180 43.660 | .219 x .344 x .203 5.556 x 8.731 x 5.159 | .0006 15 | .0006 15 | 862 | 194 | 1,370 | 308 | 3/4 19.050 |
| 2.0000 50.800 | | 2.0310 51.594 | .219 x .344 x .203 5.556 x 8.731 x 5.159 | | | 980 | 220 | 1,570 | 353 | 1 25.400 |
| 2.5000 63.500 | .3750 9.525 | 2.5625 65.088 | .281 x .406 x .266 7.144 x 10.312 x 6.747 | .0008 20 | .0008 20 | 1,570 | 353 | 2,740 | 616 | 1-1/4 31.750 |
| 3.0000 76.200 | .5000 12.700 | 3.0625 77.788 | .344 x .500 x .328 8.731 x 12.700 x 8.334 | .0010 25 | .0010 25 | 2,180 | 490 | 4,020 | 904 | 1-1/2 38.100 |
| 3.5000 88.900 | | 3.6875 93.662 | .344 x .500 x .328 8.731 x 12.700 x 8.334 | | | 3,820 | 859 | 7,940 | 1,785 | 2 50.800 |

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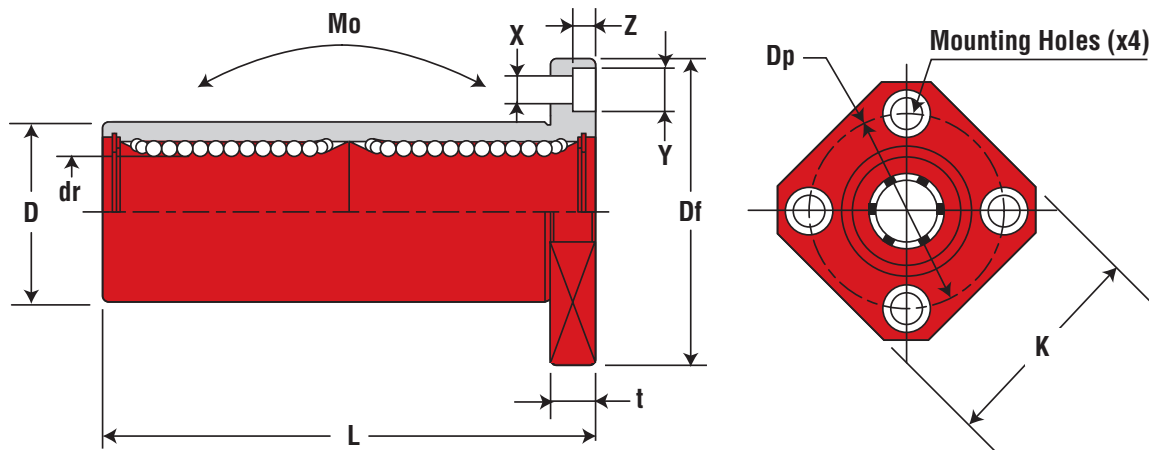


Simplicity® Ball Bearings

Square Flange Mount Double Wide - Inch Series

Linear Motion Systems

Flange Mount



IPK-W SERIES - DIMENSIONAL INFORMATION

| PART NUMBER | | MAJOR DIMENSIONS & TOLERANCES | | | | | | | | |
|----------------------------------|--------------|-------------------------------|------------|------------------|---------------------------|------------------|---------------------------|-------------------|--------------------------|-------------------|
| NOMINAL SHAFT DIAMETER (inch/mm) | POLYMER CAGE | BALL CIRCUIT | WEIGHT (g) | dr (inch/mm) | TOLERANCE (inch/ μ m) | D (inch/mm) | TOLERANCE (inch/ μ m) | L (inch/mm) | TOLERANCE (inch/mm) | Df (inch/mm) |
| 1/4 6.350 | IPK4GW | 4 | 33 | 0.2500 6.350 | 0/-0.0004 0/-10 | 0.5000 12.700 | 0/-0.0005 0/-13 | 1.3750 34.925 | ± 0.012 ± 0.3 | 1.2500 31.750 |
| 3/8 9.525 | IPK6GW | | 45 | 0.3750 9.525 | | 0.6250 15.875 | 0/-0.00065 0/-16 | 1.5938 40.481 | | 1.5000 38.100 |
| 1/2 12.700 | IPK8GW | | 106 | 0.5000 12.700 | | 0.8750 22.225 | | 2.3750 60.325 | | 1.7500 44.450 |
| 5/8 15.875 | IPK10GW | 5 | 200 | 0.6250 15.875 | 0/-0.0005 0/-12 | 1.1250 28.575 | 0/-0.00075 0/-19 | 2.8125 71.438 | | 2.0000 50.800 |
| 3/4 19.050 | IPK12GW | | 240 | 0.7500 19.050 | | 1.2500 31.750 | | 3.0937 78.581 | | 2.1875 55.563 |
| 1 25.400 | IPK16GW | 6 | 470 | 1.0000 25.400 | 0/-0.0006 0/-15 | 1.5625 39.688 | 0/-0.0009 0/-22 | 4.2813 108.744 | | 2.5000 63.500 |
| 1-1/4 31.750 | IPK20GW | | 935 | 1.2500 31.750 | | 2.0000 50.800 | | 5.0000 127.000 | | 3.1250 79.375 |
| 1-1/2 38.100 | IPK24GW | | 1,460 | 1.5000 38.100 | | 2.3750 60.325 | | 5.6875 144.463 | | 3.7500 95.250 |
| 2 50.800 | IPK32GW | | 2,620 | 2.0000 50.800 | | 3.0000 76.200 | 0/-0.0010 0/-25 | 7.7500 196.850 | | 4.3750 111.125 |

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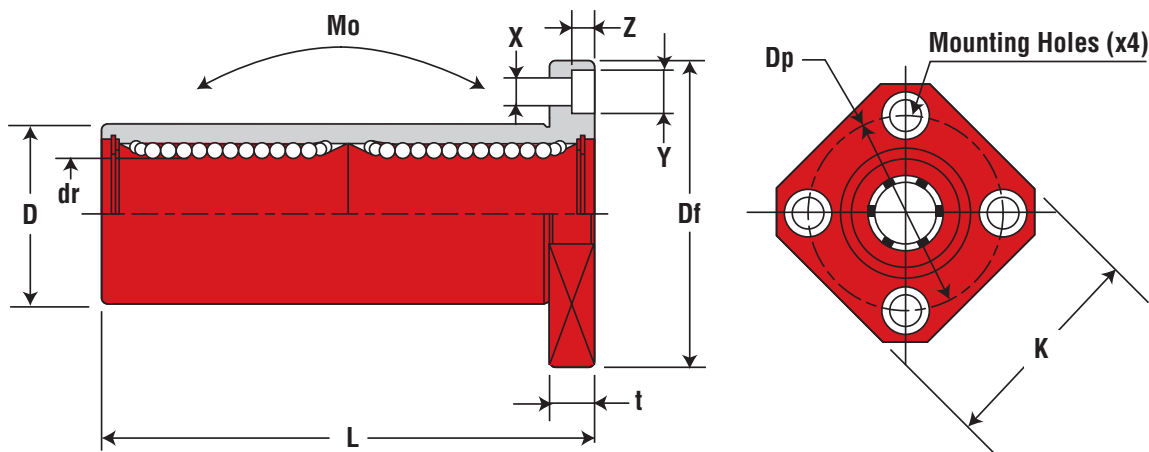


Simplicity® Ball Bearings

Square Flange Mount Double Wide - Inch Series

Linear Motion Systems

Flange Mount



IPK-W SERIES - DIMENSIONAL INFORMATION (cont.)

(Standard Steel Finish)

| MAJOR DIMENSIONS & TOLERANCES | | | | | | LOAD RATING | | | | | |
|-------------------------------|--------------------|---------------------|--|---|--|---------------------|------------------------|---------------------|------------------------|--|---|
| K (inch/ mm) | t (inch/ mm) | Dp (inch/ mm) | X x Y x Z (inch/ mm) | ECCENTRICITY ID to OD (inch/ μm) | PERPENDICULARITY FLANGE FACE to ID (inch/ μm) | DYNAMIC C (N) | DYNAMIC C (lbs.) | STATIC Co (N) | STATIC Co (lbs.) | ALLOWABLE STATIC MOMENT Mo (N-m) | NOMINAL SHAFT DIAMETER (inch/ mm) |
| 1.0000 25.400 | .2190 5.556 | 0.8750 22.225 | .156 x .250 x .141 3.969 x 6.350 x 3.572 | .0006 15 | .0006 15 | 323 | 73 | 530 | 119 | 2 | 1/4 6.350 |
| 1.2500 31.750 | .2500 6.350 | 1.0620 26.988 | .1875 x .297 x .172 4.763 x 7.541 x 4.366 | | | 353 | 79 | 630 | 142 | 2.7 | 3/8 9.525 |
| 1.3750 34.925 | | 1.3120 33.338 | .1875 x .297 x .172 4.763 x 7.541 x 4.366 | | | 813 | 183 | 1,570 | 353 | 11.5 | 1/2 12.700 |
| 1.5000 38.100 | | 1.5620 39.688 | .1875 x .297 x .172 4.763 x 7.541 x 4.366 | | | 1,230 | 277 | 2,350 | 528 | 20 | 5/8 15.875 |
| 1.6875 42.863 | .3125 7.938 | 1.7180 43.660 | .219 x .344 x .203 5.556 x 8.731 x 5.159 | .0008 20 | .0008 20 | 1,370 | 308 | 2,740 | 616 | 26.5 | 3/4 19.050 |
| 2.0000 50.800 | | 2.0310 51.594 | .219 x .344 x .203 5.556 x 8.731 x 5.159 | | | 1,570 | 353 | 3,140 | 706 | 41.2 | 1 25.400 |
| 2.5000 63.500 | .3750 9.525 | 2.5625 65.088 | .281 x .406 x .266 7.144 x 10.312 x 6.747 | .0010 25 | .0010 25 | 2,500 | 562 | 5,490 | 1,234 | 84.8 | 1-1/4 31.750 |
| 3.0000 76.200 | .5000 12.700 | 3.0625 77.788 | .344 x .500 x .328 8.731 x 12.700 x 8.334 | | | 3,430 | 771 | 8,040 | 1,807 | 143 | 1-1/2 38.100 |
| 3.5000 88.900 | | 3.6875 93.662 | .344 x .500 x .328 8.731 x 12.700 x 8.334 | | | 6,080 | 1,367 | 15,900 | 3,574 | 399 | 2 50.800 |

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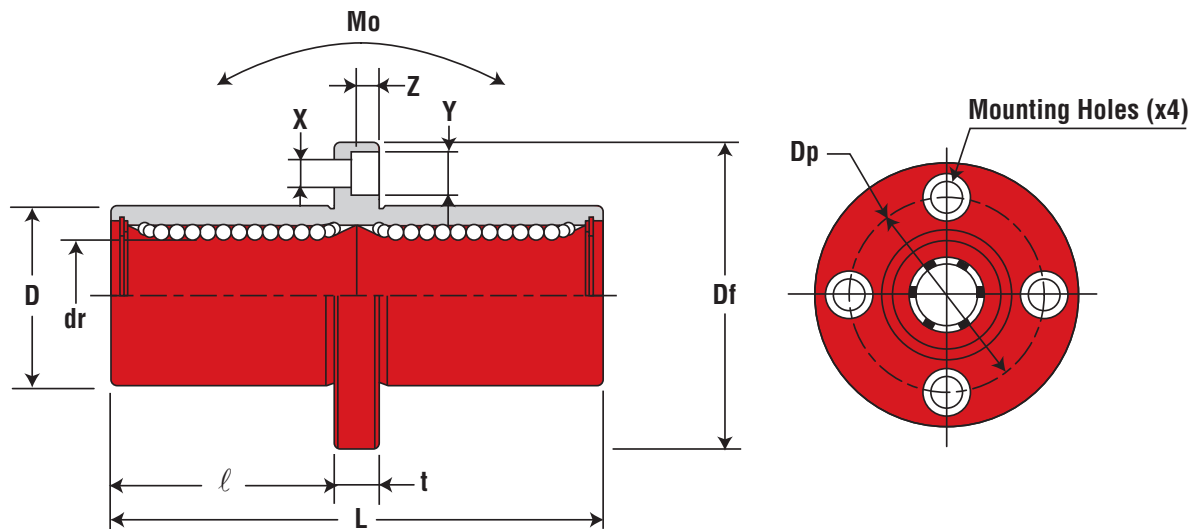


Simplicity® Ball Bearings

Round Flange Center Mount - Inch Series

Linear Motion Systems

Flange Mount



IPFC SERIES - DIMENSIONAL INFORMATION

| NOMINAL SHAFT DIAMETER (Inch/ mm) | PART NUMBER | | MAJOR DIMENSIONS & TOLERANCES | | | | | | | |
|---|-----------------|-----------------|-------------------------------|---------------------|----------------------------|--------------------|----------------------------|--------------------|----------------------------|--------------------|
| | POLYMER CAGE | BALL CIRCUIT | WEIGHT (g) | dr (Inch/ mm) | TOLERANCE (Inch/ µm) | D (Inch/ mm) | TOLERANCE (Inch/ µm) | L (Inch/ mm) | TOLERANCE (Inch/ µm) | ℓ (Inch/ mm) |
| 1/4 6.350 | IPFC4G | 4 | 40 | .2500 6.350 | 0/- .0004 0/-10 | .5000 12.700 | 0/- .0005 0/-13 | 1.3750 34.925 | ±0.012 ±0.3 | .5781 14.684 |
| 3/8 9.525 | IPFC6G | | 60 | .3750 9.525 | | .6250 15.875 | 0/- .00065 0/-16 | 1.5938 40.481 | | .6719 17.066 |
| 1/2 12.700 | IPFC8G | | 126 | .5000 12.700 | | .8750 22.225 | | 2.3750 60.235 | | 1.0625 26.988 |
| 5/8 15.875 | IPFC10G | 5 | 215 | .6250 15.875 | | 1.1250 28.575 | 0/- .00075 0/-19 | 2.8125 71.438 | | 1.2813 32.544 |
| 3/4 19.050 | IPFC12G | | 280 | .7500 19.050 | 0/- .0005 0/-12 | 1.2500 31.750 | | 3.0937 78.581 | | 1.3906 35.322 |
| 1 25.400 | IPFC16G | 6 | 515 | 1.0000 25.400 | | 1.5625 39.688 | 0/- .0009 0/-22 | 4.2813 108.744 | | 1.9844 50.403 |
| 1-1/4 31.750 | IPFC20G | | 1,020 | 1.2500 31.750 | 0/- .0006 0/-15 | 2.0000 50.800 | | 5.0000 127.000 | | 2.3125 58.738 |
| 1-1/2 38.100 | IPFC24G | | 1,630 | 1.5000 38.100 | | 2.3750 60.325 | | 5.6875 144.463 | | 2.5938 65.882 |
| 2 50.800 | IPFC32G | | 2,800 | 2.0000 50.800 | | 3.0000 76.200 | | 7.7500 196.850 | | 3.6250 92.075 |

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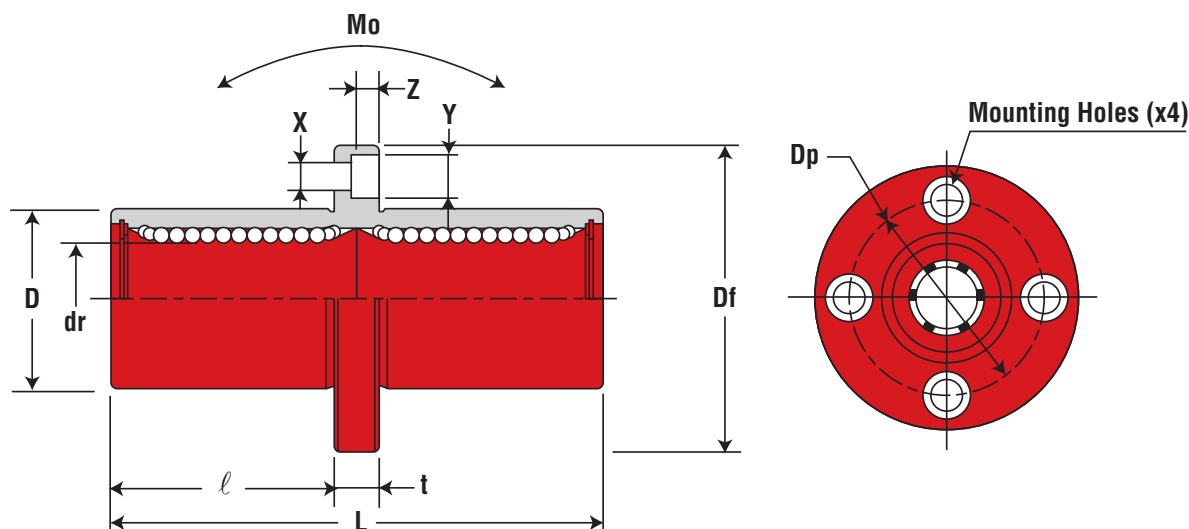


Simplicity® Ball Bearings

Round Flange Center Mount - Inch Series

Linear Motion Systems

Flange Mount

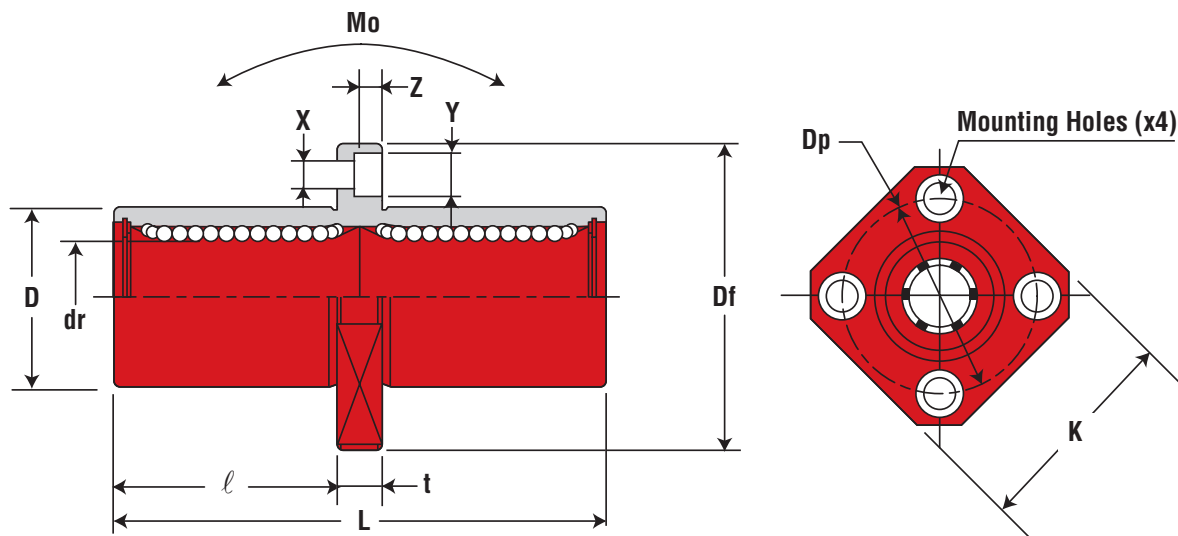


IPFC SERIES - DIMENSIONAL INFORMATION (cont.)

(Standard Steel Finish)

| MAJOR DIMENSIONS & TOLERANCES | | | | | | LOAD RATING | | | | | |
|-------------------------------|--------------------|---------------------|--|---|--|---------------------|------------------------|---------------------|------------------------|--|---|
| Df (inch/ mm) | t (inch/ mm) | Dp (inch/ mm) | X x Y x Z (inch/ mm) | ECCENTRICITY ID to OD (inch/ µm) | PERPENDICULARITY FLANGE FACE to ID (inch/ µm) | DYNAMIC C (N) | DYNAMIC C (lbs.) | STATIC Co (N) | STATIC Co (lbs.) | ALLOWABLE STATIC MOMENT Mo (N-m) | NOMINAL SHAFT DIAMETER (inch/ mm) |
| 1.2500 31.750 | .2190 5.556 | 0.8750 22.225 | .156 x .250 x .141 3.969 x 6.350 x 3.572 | .0006 15 | .0006 15 | 323 | 73 | 530 | 119 | 2.0 | 1/4 6.350 |
| 1.5000 38.100 | .2500 6.350 | 1.0620 26.988 | .1875 x .297 x .172 4.763 x 7.541 x 4.366 | | | 353 | 79 | 630 | 142 | 2.7 | 3/8 9.525 |
| 1.7500 44.450 | .2500 6.350 | 1.3120 33.338 | .1875 x .297 x .172 4.763 x 7.541 x 4.366 | | | 813 | 183 | 1,570 | 353 | 11.5 | 1/2 12.700 |
| 2.0000 50.800 | .2500 6.350 | 1.5620 39.688 | .1875 x .297 x .172 4.763 x 7.541 x 4.366 | | | 1,230 | 277 | 2,350 | 528 | 20.0 | 5/8 15.875 |
| 2.1875 55.563 | .3125 7.938 | 1.7180 43.660 | .219 x .344 x .203 5.556 x 8.731 x 5.159 | .0008 20 | .0008 20 | 1,370 | 308 | 2,740 | 616 | 26.5 | 3/4 19.050 |
| 2.5000 63.500 | .3125 7.938 | 2.0310 51.594 | .219 x .344 x .203 5.556 x 8.731 x 5.159 | | | 1,570 | 353 | 3,140 | 706 | 41.2 | 1 25.400 |
| 3.1250 79.375 | .3750 9.525 | 2.5625 65.088 | .281 x .406 x .266 7.144 x 10.312 x 6.747 | .0010 25 | .0010 25 | 2,500 | 562 | 5,490 | 1,234 | 84.8 | 1-1/4 31.750 |
| 3.7500 95.250 | .5000 12.700 | 3.0625 77.788 | .344 x .500 x .328 8.731 x 12.700 x 8.334 | | | 3,430 | 771 | 8,040 | 1,807 | 143 | 1-1/2 38.100 |
| 4.3750 111.125 | .5000 12.700 | 3.6875 93.662 | .344 x .500 x .328 8.731 x 12.700 x 8.334 | .0012 30 | .0012 30 | 6,080 | 1,367 | 15,900 | 3,574 | 399 | 2 50.800 |

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IPKC SERIES - DIMENSIONAL INFORMATION

| PART NUMBER | | MAJOR DIMENSIONS & TOLERANCES | | | | | | | | | |
|----------------------------------|--------------|-------------------------------|------------|------------------|---------------------------|------------------|---------------------------|-------------------|--------------------------|------------------|-------------------|
| NOMINAL SHAFT DIAMETER (inch/mm) | POLYMER CAGE | BALL CIRCUIT | WEIGHT (g) | dr (inch/mm) | TOLERANCE (inch/ μ m) | D (inch/mm) | TOLERANCE (inch/ μ m) | L (inch/mm) | TOLERANCE (inch/mm) | ℓ (inch/mm) | Df (inch/mm) |
| 1/4 6.350 | IPKC4G | 4 | 33 | 0.2500 6.350 | 0/-0.0004 0/-10 | 0.5000 12.700 | 0/-0.0005 0/-13 | 1.3750 34.925 | ± 0.012 ± 0.3 | 0.5781 14.684 | 1.2500 31.750 |
| 3/8 9.525 | IPKC6G | | 45 | 0.3750 9.525 | | 0.6250 15.875 | 0/-0.00065 0/-16 | 1.5938 40.481 | | 0.6719 17.066 | 1.5000 38.100 |
| 1/2 12.700 | IPKC8G | | 106 | 0.5000 12.700 | | 0.8750 22.225 | | 2.3750 60.235 | | 1.0625 26.988 | 1.7500 44.450 |
| 5/8 15.875 | IPKC10G | 5 | 200 | 0.6250 15.875 | 0/-0.0005 0/-12 | 1.1250 28.575 | 0/-0.00075 0/-19 | 2.8125 71.438 | | 1.2813 32.544 | 2.0000 50.800 |
| 3/4 19.050 | IPKC12G | | 240 | 0.7500 19.050 | | 1.2500 31.750 | | 3.0937 78.581 | | 1.3906 35.322 | 2.1875 55.563 |
| 1 25.400 | IPKC16G | 6 | 470 | 1.0000 25.400 | 0/-0.0006 0/-15 | 1.5625 39.688 | 0/-0.0009 0/-22 | 4.2813 108.744 | | 1.9800 50.403 | 2.5000 63.500 |
| 1-1/4 31.750 | IPKC20G | | 935 | 1.2500 31.750 | | 2.0000 50.800 | | 5.0000 127.000 | | 2.3125 58.738 | 3.1250 79.375 |
| 1-1/2 38.100 | IPKC24G | | 1,460 | 1.5000 38.100 | | 2.3750 60.325 | | 5.6875 144.463 | | 2.5938 65.882 | 3.7500 95.250 |
| 2 50.800 | IPKC32G | | 2,620 | 2.0000 50.800 | | 3.0000 76.200 | | 7.7500 196.850 | | 3.6250 92.075 | 4.3750 111.125 |

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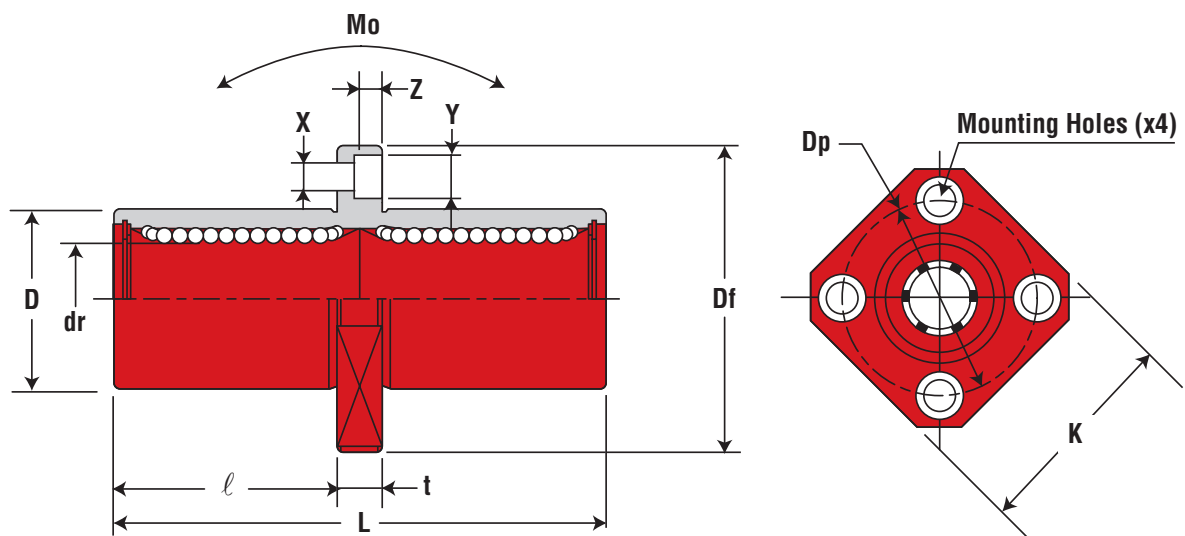


Simplicity® Ball Bearings

Square Flange Center Mount - Inch Series

Linear Motion Systems

Flange Mount



IPKC SERIES - DIMENSIONAL INFORMATION (cont.)

(Standard Steel Finish)

| MAJOR DIMENSIONS & TOLERANCES | | | | | | LOAD RATING | | | | | NOMINAL SHAFT DIAMETER (inch/mm) |
|-------------------------------|-----------------|------------------|--|---------------------------------|--|---------------|------------------|---------------|------------------|----------------------------------|----------------------------------|
| K (inch/mm) | t (inch/mm) | Dp (inch/mm) | X x Y x Z (inch/mm) | ECCENTRICITY ID to OD (inch/μm) | PERPENDICULARITY FLANGE FACE to ID (inch/μm) | DYNAMIC C (N) | DYNAMIC C (lbs.) | STATIC Co (N) | STATIC Co (lbs.) | ALLOWABLE STATIC MOMENT Mo (N-m) | |
| 1.0000 25.400 | .2190 5.556 | 0.8750 22.225 | .156 x .250 x .141 3.969 x 6.350 x 3.572 | .0006 15 | .0006 15 | 323 | 73 | 530 | 119 | 2.0 | 1/4 6.350 |
| 1.2500 31.750 | .2500 6.350 | 1.0620 26.988 | .1875 x .297 x .172 4.763 x 7.541 x 4.366 | | | 353 | 79 | 630 | 142 | 2.7 | 3/8 9.525 |
| 1.3750 34.925 | | 1.3120 33.338 | .1875 x .297 x .172 4.763 x 7.541 x 4.366 | | | 813 | 183 | 1,570 | 353 | 11.5 | 1/2 12.700 |
| 1.5000 38.100 | | 1.5620 39.688 | .1875 x .297 x .172 4.763 x 7.541 x 4.366 | | | 1,230 | 277 | 2,350 | 528 | 20.0 | 5/8 15.875 |
| 1.6875 42.863 | .3125 7.938 | 1.7180 43.660 | .219 x .344 x .203 5.556 x 8.731 x 5.159 | .0008 20 | .0008 20 | 1,370 | 308 | 2,740 | 6162 | 26.5 | 3/4 19.050 |
| 2.0000 50.800 | | 2.0310 51.594 | .219 x .344 x .203 5.556 x 8.731 x 5.159 | | | 1,570 | 353 | 3,140 | 706 | 41.2 | 1 25.400 |
| 2.5000 63.500 | .3750 9.525 | 2.5625 65.088 | .281 x .406 x .266 7.144 x 10.312 x 6.747 | .0010 25 | .0010 25 | 2,500 | 562 | 5,490 | 1,234 | 84.8 | 1-1/4 31.750 |
| 3.0000 76.200 | .5000 12.700 | 3.0625 77.788 | .344 x .500 x .328 8.731 x 12.700 x 8.334 | | | 3,430 | 771 | 8,040 | 1,807 | 143 | 1-1/2 38.100 |
| 3.5000 88.900 | | 3.6875 93.662 | .344 x .500 x .328 8.731 x 12.700 x 8.334 | .0012 30 | .0012 30 | 6,080 | 1,367 | 15,900 | 3,574 | 399 | 2 50.800 |

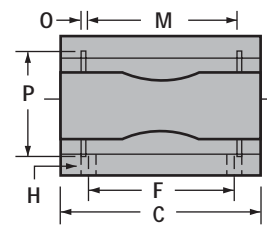
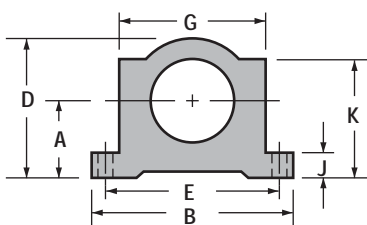
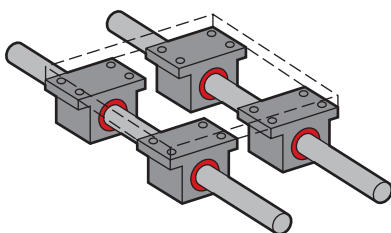
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Simplicity® Ball Bearings

Pillow Blocks - Inch Series

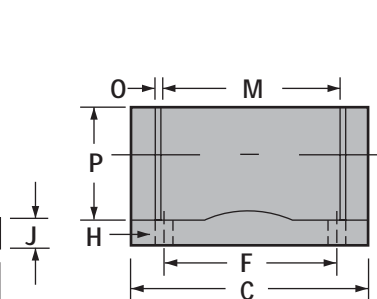
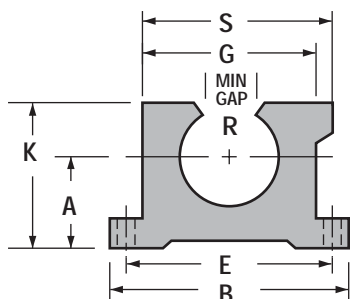
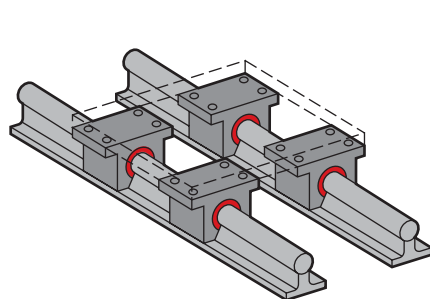
Linear Motion Systems



CLOSED PILLOW BLOCKS

| PART NO. CLOSED | NOM. BRG. I.D. | A | B | C | D | E | F | G | H | | J | K | M | O | P | SMALLEY RET. RING PART NO. | ASSEM. WT. (lbs.) |
|-----------------|----------------|---------------------|-------|--------|--------|----------|----------|------------|------|--------|-------------|-------|------------|------------|-----------|----------------------------|-------------------|
| PRECISION | MIN. | CENTERLINE +/- .001 | WIDTH | LENGTH | HEIGHT | +/- .010 | +/- .010 | BODY WIDTH | BOLT | HOLE | FLNG. THICK | | GRV. SPACE | GRV. WIDTH | GRV. DIA. | | |
| IPP04G | 1/4" | 0.437 | 1.625 | 1.19 | 0.813 | 1.3120 | 0.7500 | 1.000 | #6 | 5/32" | 0.188 | 0.750 | 0.750 | 0.039 | 0.532 | WH-51 | 0.099 |
| IPP06G | 3/8" | 0.500 | 1.750 | 1.31 | 0.938 | 1.4370 | 0.8750 | 1.125 | | | 0.188 | 0.875 | 0.875 | 0.039 | 0.665 | WH-65 | 0.129 |
| IPP08G | 1/2" | 0.687 | 2.000 | 1.69 | 1.250 | 1.6880 | 1.0000 | 1.375 | | | 0.250 | 1.125 | 1.250 | 0.046 | 0.931 | WH-90 | 0.250 |
| IPP10G | 5/8" | 0.875 | 2.500 | 1.94 | 1.625 | 2.1250 | 1.1250 | 1.750 | #8 | 3/16" | 0.281 | 1.438 | 1.500 | 0.056 | 1.197 | WH-115 | 0.500 |
| IPP12G | 3/4" | 0.937 | 2.750 | 2.06 | 1.750 | 2.3750 | 1.2500 | 1.875 | | | 0.313 | 1.563 | 1.625 | 0.056 | 1.330 | WH-128 | 0.580 |
| IPP16G | 1" | 1.187 | 3.250 | 2.81 | 2.188 | 2.8750 | 1.7500 | 2.375 | #10 | 7/32" | 0.375 | 1.938 | 2.250 | 0.068 | 1.671 | WH-156 | 1.000 |
| IPP20G | 1-1/4" | 1.500 | 4.000 | 3.63 | 2.813 | 3.5000 | 2.0000 | 3.000 | | | 0.438 | 2.500 | 2.625 | 0.068 | 2.122 | WH-200 | 2.000 |
| IPP24G | 1-1/2" | 1.750 | 4.750 | 4.00 | 3.250 | 4.1250 | 2.5000 | 3.500 | | | 0.500 | 2.875 | 3.000 | 0.086 | 2.519 | WH-237 | 3.000 |
| IPP32G | 2" | 2.125 | 6.000 | 5.00 | 4.063 | 5.2500 | 3.2500 | 4.500 | 3/8" | 13/32" | 0.625 | 3.625 | 4.000 | 0.103 | 3.182 | WH-300 | 6.500 |

- NOTES: (1) Standard, pre-assembled pillow blocks include self-aligning housing and precision bearing.
 (2) All standard pillow blocks use standard "IP" series bearings found on page 70.
 (3) Straight bore, pre-assembled pillow blocks use standard "IP" series bearing.

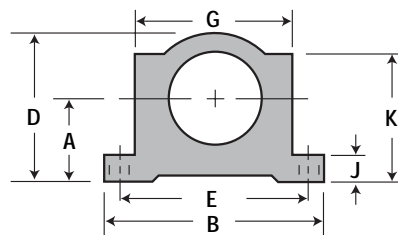
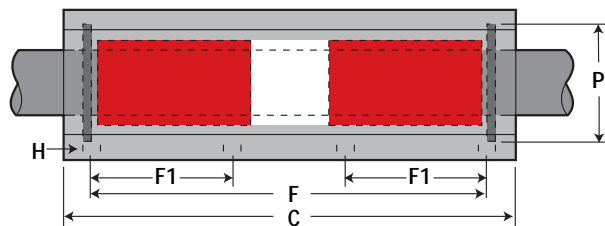


OPEN PILLOW BLOCKS

| PART NO. CLOSED | NOM. BRG. I.D. | A | B | C | E | F | G | H | | J | K | M | O | P | R | EATON RET. RING PART NO. | ASSEM. WT. (lbs.) | S |
|-----------------|----------------|---------------------|----------------|--------|----------|----------|------------|------|-------|------------|--------|------------|------------|-----------|-----------|--------------------------|-------------------|---------------|
| PRECISION | MIN. | CENTERLINE +/- .001 | WIDTH +/- .010 | LENGTH | +/- .010 | +/- .010 | BODY WIDTH | BOLT | HOLE | FLNG THICK | HEIGHT | GRV. SPACE | GRV. WIDTH | GRV. DIA. | MIN. OPEN | | | OVERALL WIDTH |
| IPP08G | 1/2" | 0.687 | 2.000 | 1.50 | 1.6880 | 1.0000 | 1.375 | #6 | 5/32" | 0.250 | 1.125 | 1.250 | 0.046 | 0.931 | 0.313 | MNAN-87 | 0.250 | 1.438 |
| IPP10G | 5/8" | 0.875 | 2.500 | 1.75 | 2.1250 | 1.1250 | 1.750 | | | 0.281 | 1.438 | 1.500 | 0.056 | 1.197 | 0.375 | MNAN-112 | 0.500 | 1.813 |
| IPP12G | 3/4" | 0.937 | 2.750 | 1.88 | 2.3750 | 1.2500 | 1.875 | #8 | 3/16" | 0.313 | 1.563 | 1.625 | 0.056 | 1.330 | 0.438 | MNAN-125 | 0.580 | 1.938 |
| IPP16G | 1" | 1.187 | 3.250 | 2.63 | 2.8750 | 1.7500 | 2.375 | | | 0.375 | 1.938 | 2.250 | 0.068 | 1.671 | 0.563 | MNAN-156 | 1.000 | 2.438 |
| IPP20G | 1-1/4" | 1.500 | 4.000 | 3.38 | 3.5000 | 2.0000 | 3.000 | #10 | 7/32" | 0.438 | 2.500 | 2.625 | 0.068 | 2.122 | 0.625 | MNAN-200 | 2.000 | 3.125 |
| IPP24G | 1-1/2" | 1.750 | 4.750 | 3.75 | 4.1250 | 2.5000 | 3.500 | | | 0.500 | 2.875 | 3.000 | 0.086 | 2.519 | 0.750 | MNAN-237 | 3.000 | 3.625 |
| IPP32G | 2" | 2.125 | 6.000 | 4.75 | 5.2500 | 3.2500 | 4.500 | | | 0.625 | 3.625 | 4.000 | 0.103 | 3.182 | 1.000 | MNAN-300 | 6.500 | 4.688 |

- NOTES: (1) Standard, pre-assembled pillow blocks include self-aligning housing and precision bearing.
 (2) All standard pillow blocks use standard "IP" series bearings found on page 70.
 (3) All open pillow blocks have "notch".

The data and specifications in this publication have been carefully compiled and are believed to be accurate and correct. However, it is the responsibility of the user to determine and ensure the suitability of Pacific Bearing® products for a specific application. Pacific Bearing's only obligation will be to repair or replace without charge, any defective components if returned promptly. No liability is assumed beyond such replacement. *Consult www.pacific-bearing.com for the latest technical updates.

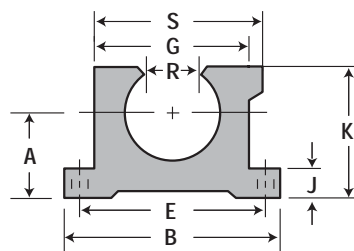
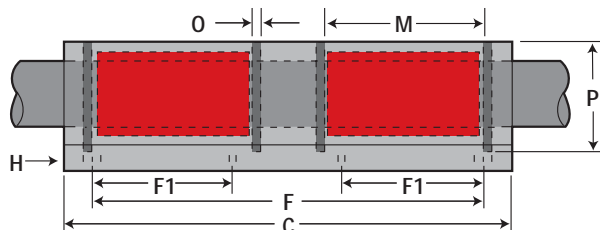


TWIN CLOSED PILLOW BLOCKS

| PART NO. CLOSED | NOM. BRG. I.D. | A CENTERLINE | B | C | D | E | F | F1 | G | H | | J | K | P | SMALLEY RET. RING PART NO. | ASSEM. WT. (lbs.) |
|--------------------|-------------------|-----------------|-------|--------|--------|----------|----------|----------|---------------|------|--------|-------|--------|-------------|-------------------------------------|-------------------------|
| PRECISION | MIN. | +/- .001 | WIDTH | LENGTH | HEIGHT | +/- .010 | +/- .010 | +/- .010 | BODY WIDTH | BOLT | HOLE | THICK | HEIGHT | GRV. DIA | | |
| IPPW04G | 1/4" | 0.437 | 1.625 | 2.500 | 0.813 | 1.3120 | 2.0000 | .750 | 1.000 | #6 | 5/32" | 0.188 | 0.750 | 0.532 | WH-51 | 0.197 |
| IPPW06G | 3/8" | 0.500 | 1.750 | 2.750 | 0.938 | 1.4370 | 2.2500 | .875 | 1.125 | | | 0.188 | 0.875 | 0.665 | WH-65 | 0.258 |
| IPPW08G | 1/2" | 0.687 | 2.000 | 3.500 | 1.250 | 1.6880 | 2.5000 | 1.000 | 1.375 | | | 0.250 | 1.125 | 0.931 | WH-90 | 0.500 |
| IPPW10G | 5/8" | 0.875 | 2.500 | 4.000 | 1.625 | 2.1250 | 3.0000 | 1.125 | 1.750 | #8 | 3/16" | 0.281 | 1.438 | 1.197 | WH-115 | 1.000 |
| IPPW12G | 3/4" | 0.937 | 2.750 | 4.500 | 1.750 | 2.3750 | 3.5000 | 1.250 | 1.875 | | | 0.313 | 1.563 | 1.330 | WH-128 | 1.125 |
| IPPW16G | 1" | 1.187 | 3.250 | 6.000 | 2.188 | 2.8750 | 4.5000 | 1.750 | 2.375 | #10 | 7/32" | 0.375 | 1.938 | 1.671 | WH-156 | 2.188 |
| IPPW20G | 1-1/4" | 1.500 | 4.000 | 7.500 | 2.813 | 3.5000 | 5.5000 | 2.000 | 3.000 | | | 0.438 | 2.500 | 2.122 | WH-200 | 4.250 |
| IPPW24G | 1-1/2" | 1.750 | 4.750 | 9.000 | 3.250 | 4.1250 | 6.5000 | 2.500 | 3.500 | 1/4" | 9/32" | 0.500 | 2.875 | 2.519 | WH-237 | 6.375 |
| IPPW32G | 2" | 2.125 | 6.000 | 10.000 | 4.063 | 5.2500 | 8.2500 | 3.250 | 4.500 | 3/8" | 13/32" | 0.625 | 3.625 | 3.182 | WH-300 | 13.500 |

NOTES: (1) All standard pillow blocks use standard "IP" series bearings found on page 70.

(2) Twin Closed Pillow Blocks are non-self-aligning



TWIN OPEN PILLOW BLOCKS

| PART NO. OPEN | NOM. BRG. I.D. | A CENTERLINE | B | C | E | F | F1 | G | H | | J | K | M | O | P | R | EATON RET. RING PART NO. | ASSEM. WT. (lbs.) | S |
|------------------|-------------------|-----------------|-------|--------|----------|----------|----------|---------------|------|--------|----------------|--------|---------------|--------------|--------------|--------------|-----------------------------------|-------------------------|------------------|
| PRECISION | MIN. | +/- .001 | WIDTH | LENGTH | +/- .010 | +/- .010 | +/- .010 | BODY WIDTH | BOLT | HOLE | FLNG. THICK | HEIGHT | GRV. SPACE | GRV. WIDE | GRV. DIA. | MIN. OPEN | | | OVERALL WIDTH |
| IPPWN08G | 1/2" | 0.687 | 2.000 | 3.500 | 1.6880 | 2.5000 | 1.000 | 1.375 | #6 | 5/32" | 0.250 | 1.125 | 1.250 | 0.046 | 0.931 | 0.313 | MNAN-87 | 0.400 | 1.438 |
| IPPWN10G | 5/8" | 0.875 | 2.500 | 4.000 | 2.1250 | 3.0000 | 1.125 | 1.750 | #8 | 3/16" | 0.281 | 1.438 | 1.500 | 0.056 | 1.197 | 0.375 | MNAN-112 | 0.910 | 1.813 |
| IPPWN12G | 3/4" | 0.937 | 2.750 | 4.500 | 2.3750 | 3.5000 | 1.250 | 1.875 | | | 0.313 | 1.563 | 1.625 | 0.056 | 1.330 | 0.438 | MNAN-125 | 1.060 | 1.938 |
| IPPWN16G | 1" | 1.187 | 3.250 | 6.000 | 2.8750 | 4.5000 | 1.750 | 2.375 | #10 | 7/32" | 0.375 | 1.938 | 2.250 | 0.068 | 1.671 | 0.563 | MNAN-156 | 1.970 | 2.438 |
| IPPWN20G | 1-1/4" | 1.500 | 4.000 | 7.500 | 3.5000 | 5.5000 | 2.000 | 3.000 | | | 0.438 | 2.500 | 2.625 | 0.068 | 2.122 | 0.625 | MNAN-200 | 3.725 | 3.125 |
| IPPWN24G | 1-1/2" | 1.750 | 4.750 | 9.000 | 4.1250 | 6.5000 | 2.500 | 3.500 | 1/4" | 9/32" | 0.500 | 2.875 | 3.000 | 0.086 | 2.519 | 0.750 | MNAN-237 | 5.800 | 3.625 |
| IPPWN32G | 2" | 2.125 | 6.000 | 10.000 | 5.2500 | 8.2500 | 3.250 | 4.500 | 3/8" | 13/32" | 0.625 | 3.625 | 4.000 | 0.103 | 3.182 | 1.000 | MNAN-300 | 12.125 | 4.688 |

NOTES: (1) All standard pillow blocks use standard "IP" series bearings found on page 70.

(2) All open pillow blocks have "notch".

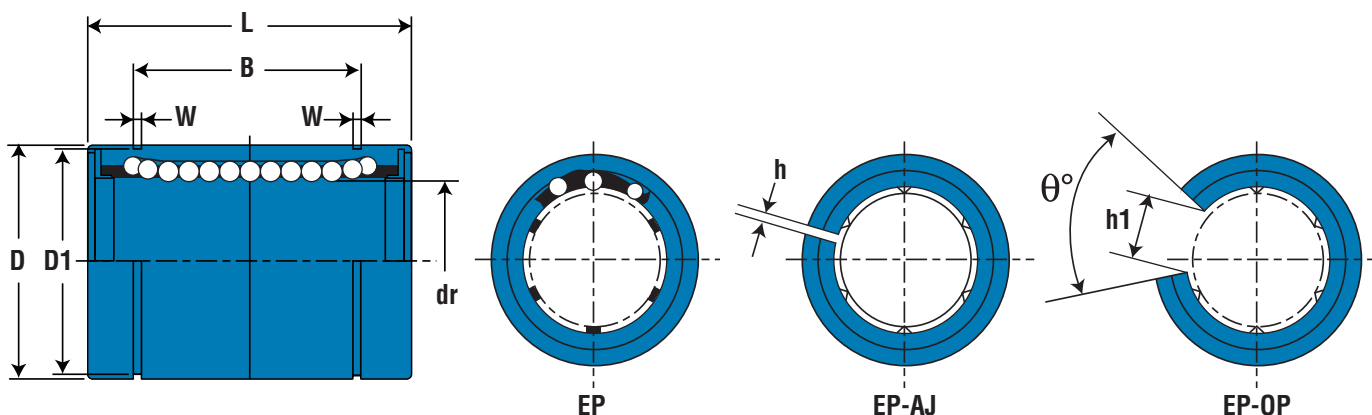
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Simplicity® Ball Bearings

Linear Ball Bearings - ISO Metric

Linear Motion Systems



EP SERIES - DIMENSIONAL INFORMATION

| NOMINAL SHAFT DIAMETER (mm) | PART NUMBER | | | | | MAJOR DIMENSIONS & TOLERANCES | | | | | |
|--------------------------------------|--------------------------------------|-----------------|---------------|-------------------------------------|-------------------------------|-------------------------------|-------------------------|-----------|-------------------------|-----------|-------------------|
| | STANDARD CLOSE POLYMER CAGE | BALL CIRCUIT | WEIGHT (g) | STANDARD OPEN POLYMER CAGE | ADJUSTABLE POLYMER CAGE | dr (mm) | TOLERANCE (μ m) | D (mm) | TOLERANCE (μ m) | L (mm) | TOLERANCE (mm) |
| 5 | EP5G | 4 | 11 | - | - | 5 | +8 0 | 12 | 0 -8 | 22 | 0 -0.2 |
| 8 | EP8G | | 20 | - | - | 8 | | 16 | | 25 | |
| 10 | EP10G | | 36 | - | - | 10 | | 19 | | 29 | |
| 12 | EP12G | | 41 | EP12G-OP | EP12G-AJ | 12 | | 22 | 0 -9 | 32 | |
| 16 | EP16G | 5 | 65 | EP16G-OP | EP16G-AJ | 16 | +9 -1 | 26 | | 36 | |
| 20 | EP20G | | 91 | EP20G-OP | EP20G-AJ | 20 | | 32 | 0 -11 | 45 | |
| 25 | EP25G | 6 | 215 | EP25G-OP | EP25G-AJ | 25 | +11 -1 | 40 | | 58 | 0 -0.3 |
| 30 | EP30G | | 325 | EP30G-OP | EP30G-AJ | 30 | | 47 | | 68 | |
| 40 | EP40G | | 705 | EP40G-OP | EP40G-AJ | 40 | +13 -2 | 62 | 0 -13 | 80 | |
| 50 | EP50G | | 1,130 | EP50G-OP | EP50G-AJ | 50 | | 75 | | 100 | |
| 60 | EP60G | | 2,220 | EP60G-OP | EP60G-AJ | 60 | | 90 | 0 -15 | 125 | 0 -0.4 |

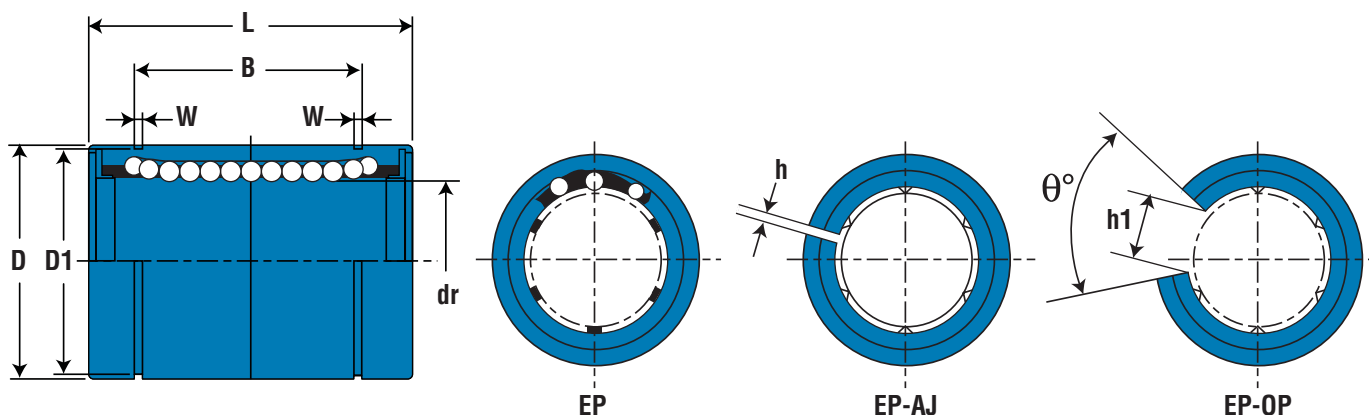
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Simplicity® Ball Bearings

Linear Ball Bearings - ISO Metric

Linear Motion Systems



EP SERIES - DIMENSIONAL INFORMATION (cont.)

(Standard Steel Finish)

| MAJOR DIMENSIONS & TOLERANCES | | | | | | | | | | | LOAD RATING | | |
|-------------------------------|-------------------|-----------|-------------------|------------|-------------------|-----------|------------|----|----------------------|-------------------------------------|---------------------|---------------------|--------------------------------------|
| B (mm) | TOLERANCE (mm) | W (mm) | TOLERANCE (mm) | D1 (mm) | TOLERANCE (mm) | h (mm) | h1 (mm) | θ° | ECCENTRICITY (μm) | MAX RADIAL CLEARANCE (μm) | DYNAMIC C (N) | STATIC Co (N) | NOMINAL SHAFT DIAMETER (mm) |
| 14.5 | 0 -0.3 | 1.1 | +0.14 0 | 11.5 | 0 -0.11 | 1 | - | - | 12 | -5 | 206 | 265 | 5 |
| 16.5 | | 1.1 | | 15.2 | | | - | - | | | 265 | 402 | 8 |
| 22 | | 1.3 | | 18 | | | 6.8 | 80 | | | 372 | 549 | 10 |
| 22.9 | | 1.3 | | 21 | 0 -0.13 | 1.5 | 7.5 | 78 | -7 | 510 | 784 | 12 | |
| 24.9 | | 1.3 | | 24.9 | 0 -0.21 | | 10 | | | 774 | 1,180 | 16 | |
| 31.5 | | 1.6 | | 30.3 | 0 -0.25 | 2 | 10 | 60 | 15 | -9 | 882 | 1,370 | 20 |
| 44.1 | 1.85 | 37.5 | | 12.5 | | | 980 | | | | 1,570 | 25 | |
| 52.1 | 1.85 | 44.5 | | 12.5 | | | 1,570 | | | | 2,740 | 30 | |
| 60.6 | 2.15 | 59 | | 0 -0.30 | | 3 | 16.8 | 50 | 17 | -13 | 2,160 | 4,020 | 40 |
| 77.6 | 2.65 | 72 | | 21 | | | 3,820 | | | | 7,940 | 50 | |
| 101.7 | 3.15 | 86.5 | | 0 -0.35 | | | 27.2 | | | | 54 | 20 | -16 |

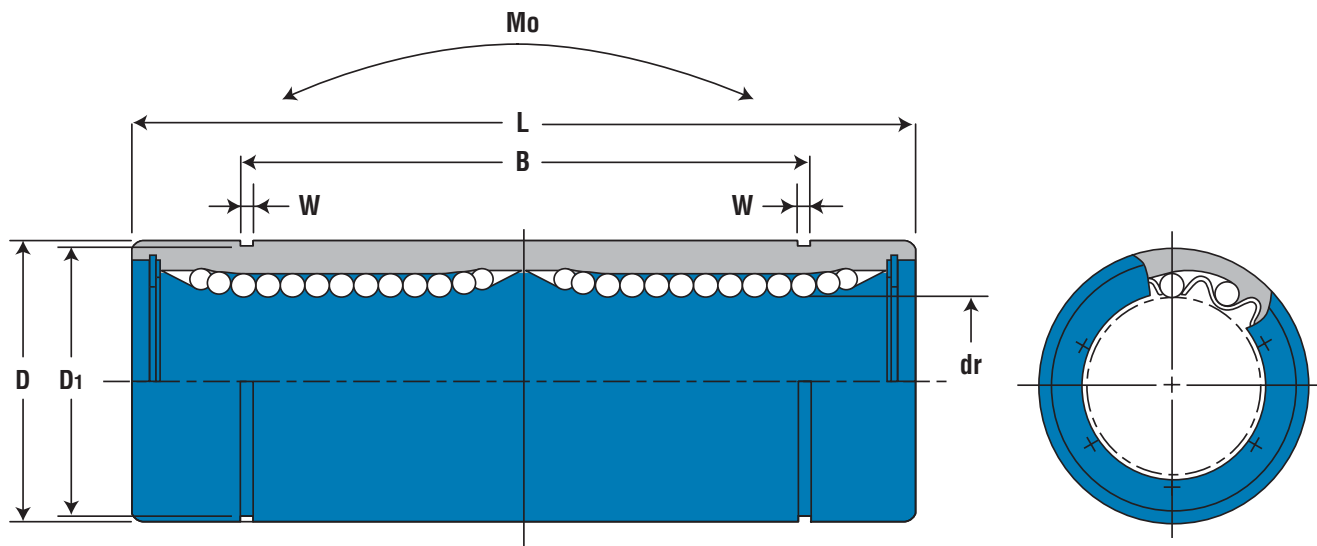
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Simplicity® Ball Bearings

Double Wide Linear Ball Bearings - ISO Metric

Linear Motion Systems



EP-W SERIES - DIMENSIONAL INFORMATION

| PART NUMBER | | MAJOR DIMENSIONS & TOLERANCES | | | | | | | |
|-----------------------------|-----------------------|-------------------------------|------------|---------|----------------|--------|----------------|--------|----------------|
| NOMINAL SHAFT DIAMETER (mm) | STANDARD POLYMER CAGE | BALL CIRCUIT | WEIGHT (g) | dr (mm) | TOLERANCE (μm) | D (mm) | TOLERANCE (μm) | L (mm) | TOLERANCE (mm) |
| 8 | EP8GW | 4 | 40 | 8 | +9 -1 | 16 | 0 -9 | 46 | 0 -0.3 |
| 12 | EP12GW | | 80 | 12 | | 22 | | 61 | |
| 16 | EP16GW | 5 | 115 | 16 | +11 -1 | 26 | 0 -11 | 68 | |
| 20 | EP20GW | | 180 | 20 | | 32 | | 80 | 0 -0.4 |
| 25 | EP25GW | 6 | 430 | 25 | +13 -2 | 40 | 0 -13 | 112 | |
| 30 | EP30GW | | 615 | 30 | | 47 | | 123 | |
| 40 | EP40GW | | 1,400 | 40 | +16 -4 | 62 | 0 -15 | 151 | |
| 50 | EP50GW | | 2,320 | 50 | | 75 | | 192 | |
| 60 | EP60GW | | 3,920 | 60 | | 90 | 0 -20 | 209 | |

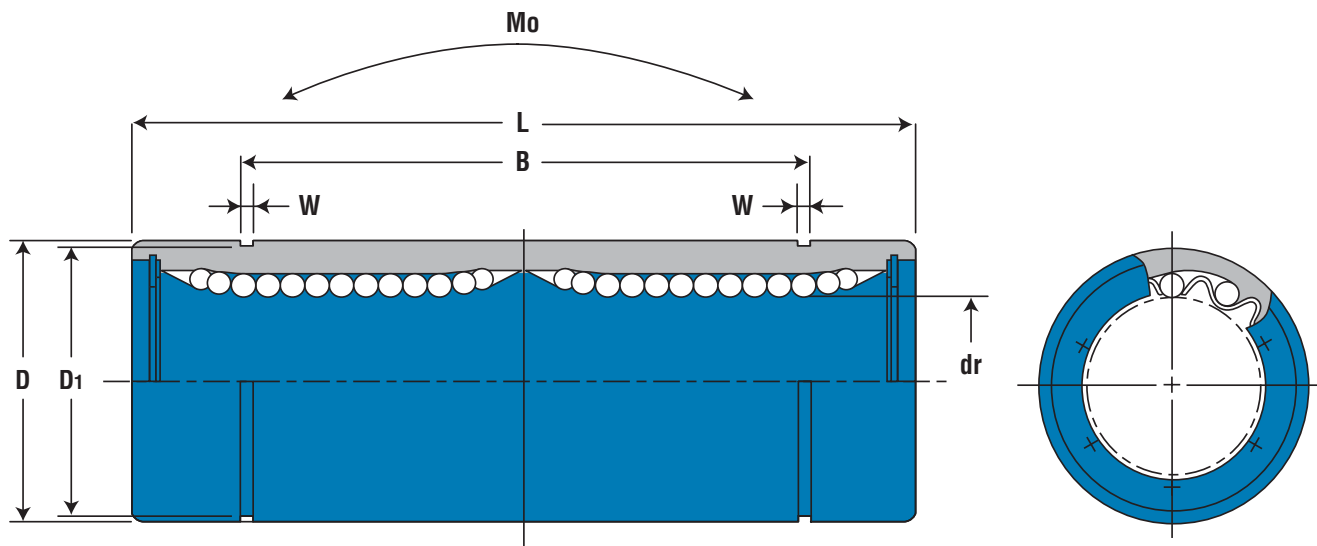
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Simplicity® Ball Bearings

Double Wide Linear Ball Bearings - ISO Metric

Linear Motion Systems



EP-W SERIES - DIMENSIONAL INFORMATION (cont.)

(Standard Steel Finish)

| MAJOR DIMENSIONS & TOLERANCES | | | | | | | LOAD RATING | | | |
|-------------------------------|-------------------|-----------|-------------------|------------|-------------------|----------------------|---------------------|---------------------|--|--------------------------------------|
| B (mm) | TOLERANCE (mm) | W (mm) | TOLERANCE (mm) | D1 (mm) | TOLERANCE (mm) | ECCENTRICITY (μm) | DYNAMIC C (N) | STATIC Co (N) | ALLOWABLE STATIC MOMENT Mo (N-m) | NOMINAL SHAFT DIAMETER (mm) |
| 33 | 0 -0.3 | 1.1 | +0.14 0 | 15.2 | 0 -.11 | 15 | 421 | 804 | 4.3 | 8 |
| 45.8 | | 1.3 | | 21 | 0 -.13 | | 813 | 1,570 | 11.7 | 12 |
| 49.8 | | 1.3 | | 24.9 | 0 -.21 | | 921 | 1,780 | 14.2 | 16 |
| 61 | | 1.6 | | 30.3 | | 17 | 1,370 | 2,740 | 25 | 20 |
| 82 | 0 -0.4 | 1.85 | | 37.5 | 0 -.25 | | 1,570 | 3,140 | 44 | 25 |
| 104.2 | | 1.85 | | 44.5 | | | 2,500 | 5,490 | 78.9 | 30 |
| 121.2 | | 2.15 | | 59 | 0 -.30 | 20 | 3,430 | 8,040 | 147 | 40 |
| 155.2 | | 2.65 | | 72 | | | 6,080 | 15,900 | 396 | 50 |
| 170 | | 3.15 | 86.5 | 0 -.35 | 25 | 7,550 | 20,000 | 487 | 60 | |

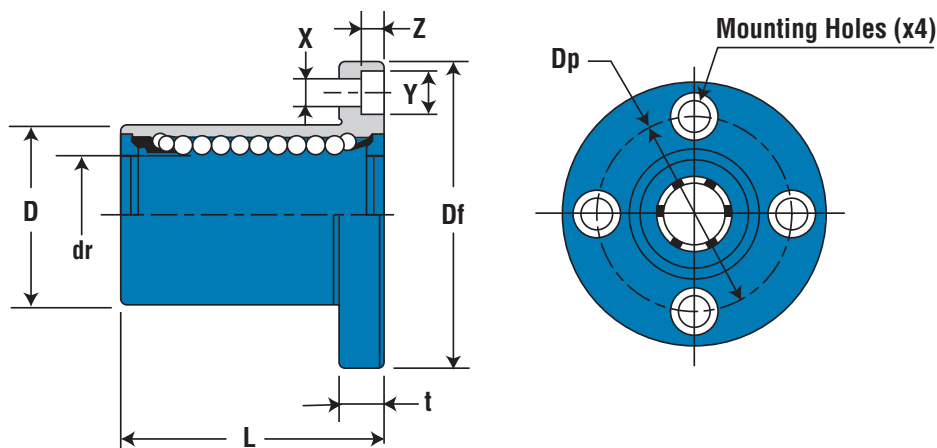
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Simplicity® Ball Bearings

Round Flange Mount - ISO Metric

Linear Motion Systems



EPF SERIES - DIMENSIONAL INFORMATION

| | PART NUMBER | MAJOR DIMENSIONS & TOLERANCES | | | | | | | |
|-----------------------------|-----------------------|-------------------------------|------------|---------|----------------|--------|----------------|--------|----------------|
| NOMINAL SHAFT DIAMETER (mm) | STANDARD POLYMER CAGE | BALL CIRCUIT | WEIGHT (g) | dr (mm) | TOLERANCE (μm) | D (mm) | TOLERANCE (μm) | L (mm) | TOLERANCE (mm) |
| 8 | EPF8G | 4 | 41 | 8 | +8 0 | 16 | 0 -13 | 25 | ± 0.3 |
| 12 | EPF12G | | 80 | 12 | | 22 | 0 -16 | 32 | |
| 16 | EPF16G | 5 | 103 | 16 | +9 -1 | 26 | 0 -19 | 36 | |
| 20 | EPF20G | | 182 | 20 | | 32 | 0 -22 | 45 | |
| 25 | EPF25G | 6 | 335 | 25 | +11 -1 | 40 | 0 -25 | 58 | |
| 30 | EPF30G | | 560 | 30 | | 47 | 0 -25 | 68 | |
| 40 | EPF40G | | 1,175 | 40 | +13 -2 | 62 | 0 -22 | 80 | |
| 50 | EPF50G | | 1,745 | 50 | | 75 | 0 -22 | 100 | |
| 60 | EPF60G | | 3,220 | 60 | | 90 | 0 -25 | 125 | |
| | | | | | | | | | |

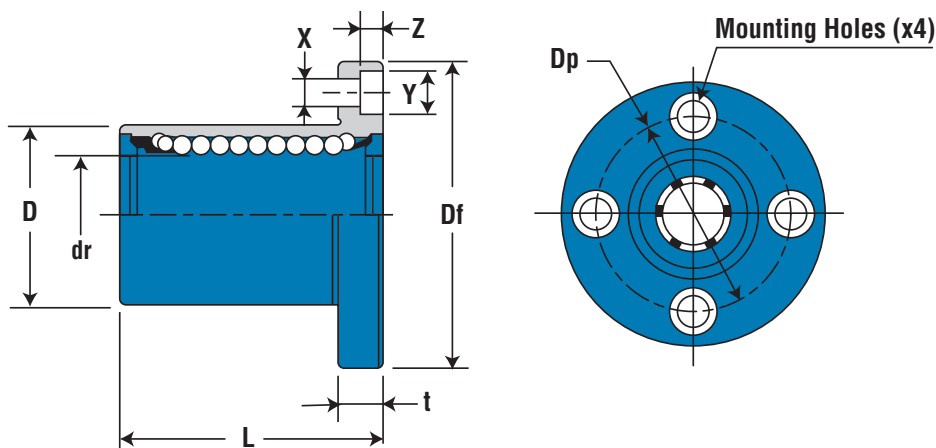
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Simplicity® Ball Bearings

Round Flange Mount - ISO Metric

Linear Motion Systems



EPF SERIES - DIMENSIONAL INFORMATION (cont.)

(Standard Steel Finish)

| MAJOR DIMENSIONS & TOLERANCES | | | | | | LOAD RATING | | NOMINAL SHAFT DIAMETER (mm) |
|-------------------------------|-----------|------------|--------------------|---|--|---------------------|---------------------|--------------------------------------|
| Df (mm) | t (mm) | Dp (mm) | X x Y x Z (mm) | ECCENTRICITY ID to OD (inch/ μm) | PERPENDICULARITY FLANGE FACE to ID (inch/ μm) | DYNAMIC C (N) | STATIC Co (N) | |
| 32 | 5 | 24 | 3.5 x 6.0 x 3.1 | 12 | 12 | 265 | 402 | 8 |
| 42 | 6 | 32 | 4.5 x 7.5 x 4.1 | | | 510 | 784 | 12 |
| 46 | | 36 | 4.5 x 7.5 x 4.1 | | | 578 | 892 | 16 |
| 54 | 8 | 43 | 5.5 x 9.0 x 5.1 | 15 | 15 | 862 | 1,370 | 20 |
| 62 | | 51 | 5.5 x 9.0 x 5.1 | | | 980 | 1,570 | 25 |
| 76 | 10 | 62 | 6.6 x 11.0 x 6.1 | | | 1,570 | 2,740 | 30 |
| 98 | 13 | 80 | 9.0 x 14.0 x 8.1 | 17 | 17 | 2,160 | 4,020 | 40 |
| 112 | | 94 | 9.0 x 14.0 x 8.1 | | | 3,820 | 7,940 | 50 |
| 134 | 18 | 112 | 11.0 x 17.0 x 11.1 | 20 | 20 | 4,700 | 9,800 | 60 |

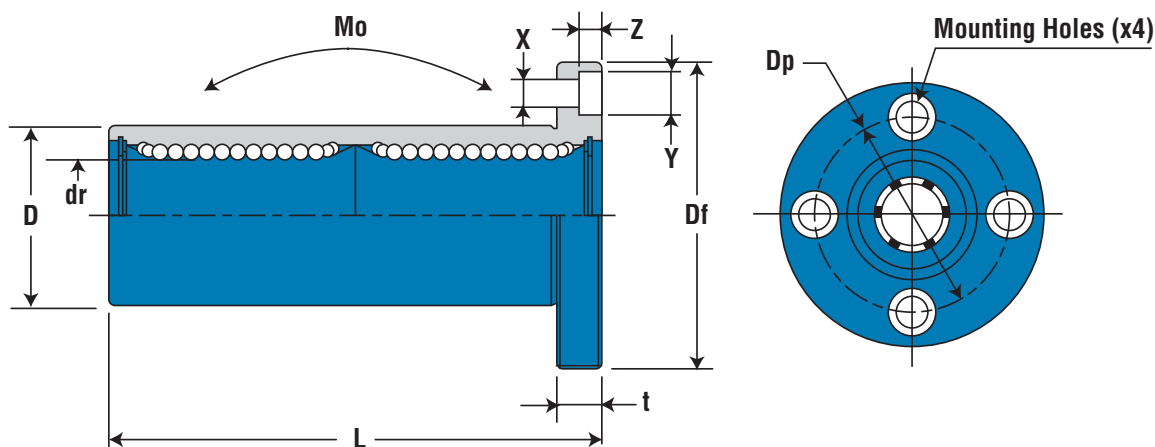
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Simplicity® Ball Bearings

Round Flange Mount Double Wide - ISO Metric

Linear Motion Systems



EPF-W SERIES - DIMENSIONAL INFORMATION

| PART NUMBER | | MAJOR DIMENSIONS & TOLERANCES | | | | | | | |
|-----------------------------|-----------------------|-------------------------------|------------|---------|----------------------|--------|----------------------|--------|----------------|
| NOMINAL SHAFT DIAMETER (mm) | STANDARD POLYMER CAGE | BALL CIRCUIT | WEIGHT (g) | dr (mm) | TOLERANCE (μ m) | D (mm) | TOLERANCE (μ m) | L (mm) | TOLERANCE (mm) |
| 8 | EPF8GW | 4 | 59 | 8 | +9 -1 | 16 | 0 -13 | 46 | ± 0.3 |
| 12 | EPF12GW | | 110 | 12 | | 22 | | 61 | |
| 16 | EPF16GW | 5 | 160 | 16 | +11 -1 | 26 | 0 -16 | 68 | |
| 20 | EPF20GW | | 260 | 20 | | 32 | | 80 | |
| 25 | EPF25GW | 6 | 540 | 25 | +13 -2 | 40 | 0 -19 | 112 | |
| 30 | EPF30GW | | 815 | 30 | | 47 | | 123 | |
| 40 | EPF40GW | | 1,805 | 40 | +16 -4 | 62 | 0 -22 | 151 | |
| 50 | EPF50GW | | 2,820 | 50 | | 75 | | 192 | |
| 60 | EPF60GW | | 4,920 | 60 | | 90 | 0 -25 | 209 | |

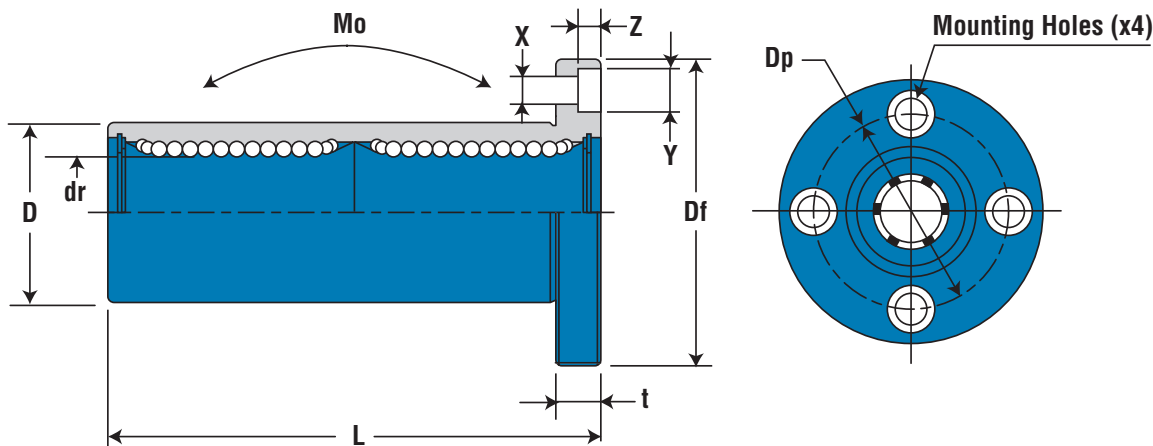
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Simplicity® Ball Bearings

Round Flange Mount Double Wide - ISO Metric

Linear Motion Systems



EPF-W SERIES - DIMENSIONAL INFORMATION (cont.)

(Standard Steel Finish)

| MAJOR DIMENSIONS & TOLERANCES | | | | | | LOAD RATING | | | |
|-------------------------------|-----------|------------|--------------------|--|--|---------------------|---------------------|--|--------------------------------------|
| Df (mm) | t (mm) | Dp (mm) | X x Y x Z (mm) | ECENTRICITY ID to OD (inch/ μm) | PERPENDICULARITY FLANGE FACE to ID (inch/ μm) | DYNAMIC C (N) | STATIC Co (N) | ALLOWABLE STATIC MOMENT Mo (N-m) | NOMINAL SHAFT DIAMETER (mm) |
| 32 | 5 | 24 | 3.5 x 6.0 x 3.1 | 15 | 15 | 421 | 804 | 4.3 | 8 |
| 42 | 6 | 32 | 4.5 x 7.5 x 4.1 | | | 813 | 1,570 | 11.7 | 12 |
| 46 | | 36 | 4.5 x 7.5 x 4.1 | | | 921 | 1,780 | 14.2 | 16 |
| 54 | 8 | 43 | 5.5 x 9.0 x 5.1 | 17 | 17 | 1,370 | 2,740 | 25 | 20 |
| 62 | | 51 | 5.5 x 9.0 x 5.1 | | | 1,570 | 3,140 | 44 | 25 |
| 76 | 10 | 62 | 6.6 x 11.0 x 6.1 | | | 2,500 | 5,490 | 78.9 | 30 |
| 98 | 13 | 80 | 9.0 x 14.0 x 8.1 | 20 | 20 | 3,430 | 8,040 | 147 | 40 |
| 112 | | 94 | 9.0 x 14.0 x 8.1 | | | 6,080 | 15,900 | 396 | 50 |
| 134 | 18 | 112 | 11.0 x 17.0 x 11.1 | 25 | 25 | 7,550 | 20,000 | 487 | 60 |

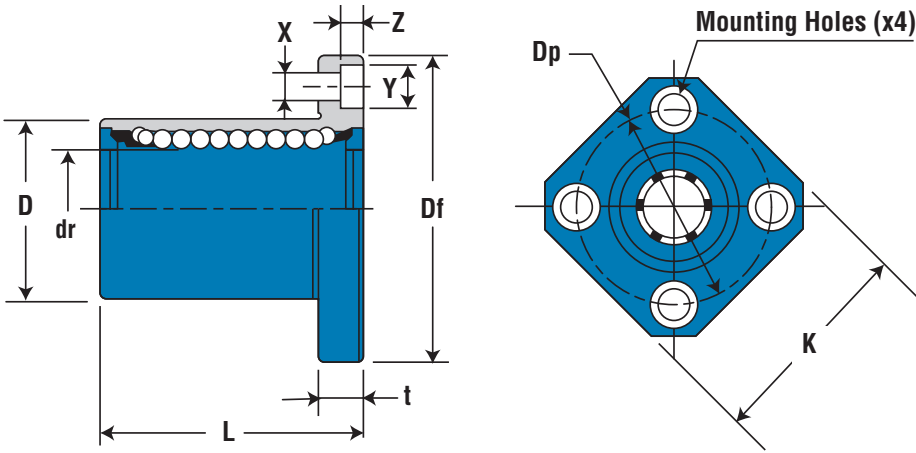
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Simplicity® Ball Bearings

Square Flange Mount - ISO Metric

Linear Motion Systems



Flange Mount

EPK SERIES - DIMENSIONAL INFORMATION

| | PART NUMBER | MAJOR DIMENSIONS & TOLERANCES | | | | | | | |
|-----------------------------|-----------------------|-------------------------------|------------|---------|----------------|--------|----------------|--------|----------------|
| NOMINAL SHAFT DIAMETER (mm) | STANDARD POLYMER CAGE | BALL CIRCUIT | WEIGHT (g) | dr (mm) | TOLERANCE (µm) | D (mm) | TOLERANCE (µm) | L (mm) | TOLERANCE (mm) |
| 8 | EPK8G | 4 | 41 | 8 | +8 0 | 16 | 0 -13 | 25 | ± 0.3 |
| 12 | EPK12G | | 80 | 12 | | 22 | 0 -16 | 32 | |
| 16 | EPK16G | 5 | 103 | 16 | +9 -1 | 26 | | 36 | |
| 20 | EPK20G | | 182 | 20 | | 32 | 0 -19 | 45 | |
| 25 | EPK25G | 6 | 335 | 25 | +11 -1 | 40 | | 58 | |
| 30 | EPK30G | | 560 | 30 | | 47 | | 68 | |
| 40 | EPK40G | | 1,175 | 40 | +13 -2 | 62 | 0 -22 | 80 | |
| 50 | EPK50G | | 1,745 | 50 | | 75 | | 100 | |
| 60 | EPK60G | | 3,220 | 60 | | 90 | 0 -25 | 125 | |

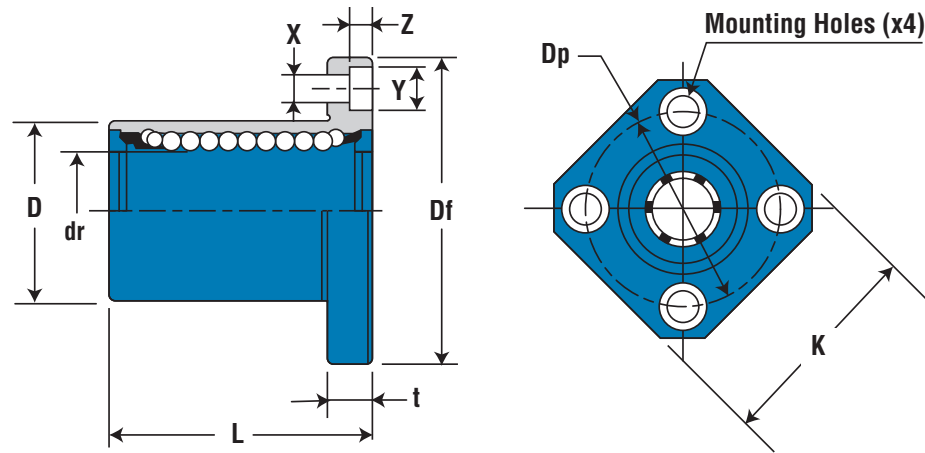
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Simplicity® Ball Bearings

Square Flange Mount - ISO Metric

Linear Motion Systems



EPK SERIES - DIMENSIONAL INFORMATION (cont.)

(Standard Steel Finish)

| MAJOR DIMENSIONS & TOLERANCES | | | | | | | LOAD RATING | | |
|-------------------------------|-----------|-----------|------------|--------------------|---|--|---------------------|---------------------|--------------------------------------|
| Df (mm) | K (mm) | t (mm) | Dp (mm) | X x Y x Z (mm) | ECCENTRICITY ID to OD (inch/ μm) | PERPENDICULARITY FLANGE FACE to ID (inch/ μm) | DYNAMIC C (N) | STATIC Co (N) | NOMINAL SHAFT DIAMETER (mm) |
| 32 | 25 | 5 | 24 | 3.5 x 6.0 x 3.1 | 12 | 12 | 265 | 402 | 8 |
| 42 | 32 | 6 | 32 | 4.5 x 7.5 x 4.1 | | | 510 | 784 | 12 |
| 46 | 35 | | 36 | 4.5 x 7.5 x 4.1 | | | 578 | 892 | 16 |
| 54 | 42 | 8 | 43 | 5.5 x 9.0 x 5.1 | 15 | 15 | 862 | 1,370 | 20 |
| 62 | 50 | | 51 | 5.5 x 9.0 x 5.1 | | | 980 | 1,570 | 25 |
| 76 | 60 | 10 | 62 | 6.6 x 11.0 x 6.1 | | | 1,570 | 2,740 | 30 |
| 98 | 75 | 13 | 80 | 9.0 x 14.0 x 8.1 | 17 | 17 | 2,160 | 4,020 | 40 |
| 112 | 88 | | 94 | 9.0 x 14.0 x 8.1 | | | 3,820 | 7,940 | 50 |
| 134 | 106 | 18 | 112 | 11.0 x 17.0 x 11.1 | 20 | 20 | 4,700 | 9,800 | 60 |

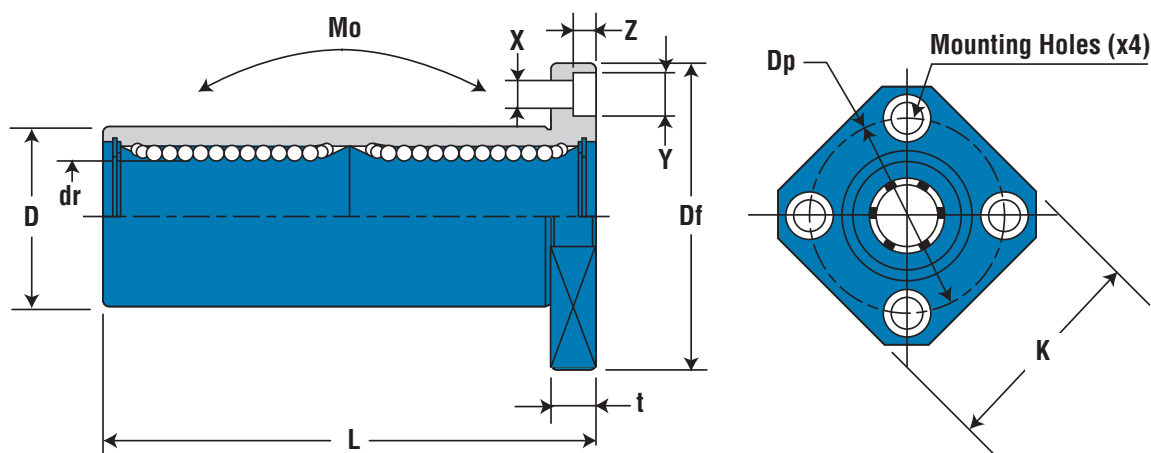
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Simplicity® Ball Bearings

Square Flange Mount Double Wide - ISO Metric

Linear Motion Systems



EPK-W SERIES - DIMENSIONAL INFORMATION

| | PART NUMBER | MAJOR DIMENSIONS & TOLERANCES | | | | | | | |
|-----------------------------|-----------------------|-------------------------------|------------|---------|----------------|--------|----------------|--------|----------------|
| NOMINAL SHAFT DIAMETER (mm) | STANDARD POLYMER CAGE | BALL CIRCUIT | WEIGHT (g) | dr (mm) | TOLERANCE (μm) | D (mm) | TOLERANCE (μm) | L (mm) | TOLERANCE (mm) |
| 8 | EPK8GW | 4 | 51 | 8 | +9 -1 | 16 | 0 -13 | 46 | ± 0.3 |
| 12 | EPK12GW | | 90 | 12 | | 22 | 0 -16 | 61 | |
| 16 | EPK16GW | 5 | 135 | 16 | +11 -1 | 26 | 0 -19 | 68 | |
| 20 | EPK20GW | | 225 | 20 | | 32 | 0 -22 | 80 | |
| 25 | EPK25GW | 6 | 500 | 25 | +13 -2 | 40 | 0 -25 | 112 | |
| 30 | EPK30GW | | 720 | 30 | | 47 | 0 -25 | 123 | |
| 40 | EPK40GW | | 1,600 | 40 | +16 -4 | 62 | 0 -25 | 151 | |
| 50 | EPK50GW | | 2,620 | 50 | | 75 | 0 -25 | 192 | |
| 60 | EPK60GW | | 4,480 | 60 | | 90 | 0 -25 | 209 | |
| | | | | | | | | | |

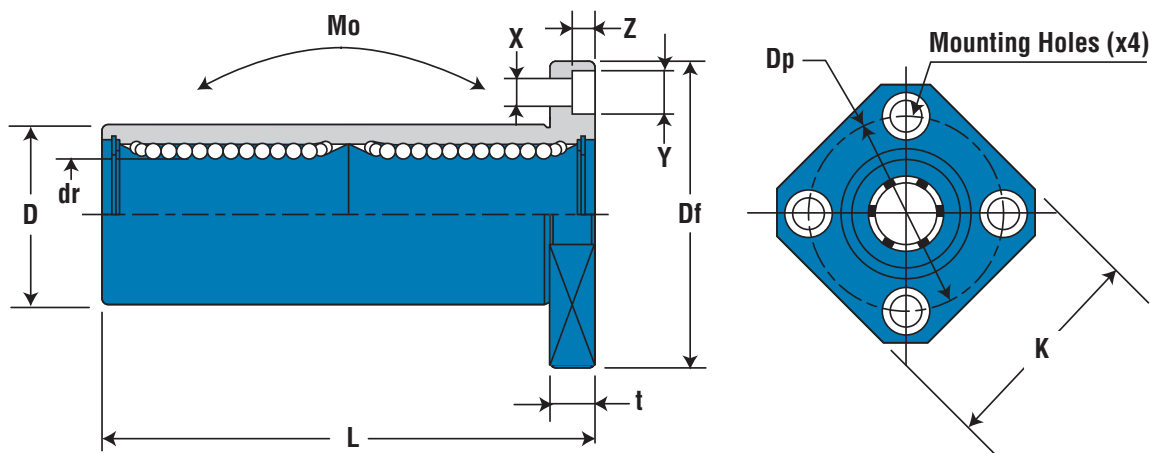
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Simplicity® Ball Bearings

Square Flange Mount Double Wide - ISO Metric

Linear Motion Systems



EPK-W SERIES - DIMENSIONAL INFORMATION (cont.)

(Standard Steel Finish)

| MAJOR DIMENSIONS & TOLERANCES | | | | | | | LOAD RATING | | | |
|-------------------------------|-----------|-----------|------------|--------------------|---|--|---------------------|---------------------|--|--------------------------------------|
| Df (mm) | K (mm) | t (mm) | Dp (mm) | X x Y x Z (mm) | ECCENTRICITY ID to OD (inch/ µm) | PERPENDICULARITY FLANGE FACE to ID (inch/ µm) | DYNAMIC C (N) | STATIC Co (N) | ALLOWABLE STATIC MOMENT Mo (N-m) | NOMINAL SHAFT DIAMETER (mm) |
| 32 | 25 | 5 | 24 | 3.5 x 6.0 x 3.1 | 15 | 15 | 421 | 804 | 4.3 | 8 |
| 42 | 32 | 6 | 32 | 4.5 x 7.5 x 4.1 | | | 813 | 1,570 | 11.7 | 12 |
| 46 | 35 | | 36 | 4.5 x 7.5 x 4.1 | | | 921 | 1,780 | 14.2 | 16 |
| 54 | 42 | 8 | 43 | 5.5 x 9.0 x 5.1 | 17 | 17 | 1,370 | 2,740 | 25 | 20 |
| 62 | 50 | | 51 | 5.5 x 9.0 x 5.1 | | | 1,570 | 3,140 | 44 | 25 |
| 76 | 60 | 10 | 62 | 6.6 x 11.0 x 6.1 | | | 2,500 | 5,490 | 78.9 | 30 |
| 98 | 75 | 13 | 80 | 9.0 x 14.0 x 8.1 | 20 | 20 | 3,430 | 8,040 | 147 | 40 |
| 112 | 88 | | 94 | 9.0 x 14.0 x 8.1 | | | 6,080 | 15,900 | 396 | 50 |
| 134 | 106 | 18 | 112 | 11.0 x 17.0 x 11.1 | 25 | 25 | 7,550 | 20,000 | 487 | 60 |

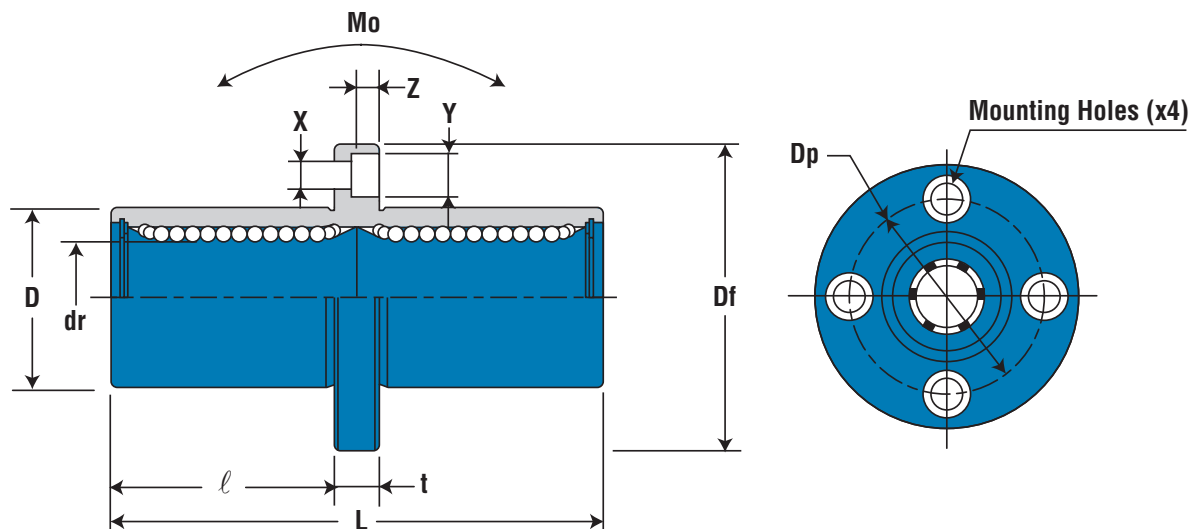
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Simplicity® Ball Bearings

Round Flange Center Mount - ISO Metric

Linear Motion Systems



EPFC SERIES - DIMENSIONAL INFORMATION

| NOMINAL SHAFT DIAMETER (mm) | PART NUMBER | MAJOR DIMENSIONS & TOLERANCES | | | | | | | | |
|--------------------------------------|-----------------------------|-------------------------------|---------------|------------|-------------------------|-----------|-------------------------|-----------|-------------------|----------------|
| | STANDARD POLYMER CAGE | BALL CIRCUIT | WEIGHT (g) | dr (mm) | TOLERANCE (μ m) | D (mm) | TOLERANCE (μ m) | L (mm) | TOLERANCE (mm) | ℓ (mm) |
| 8 | EPFC8G | 4 | 59 | 8 | +9 -1 | 16 | 0 -13 | 46 | ± 0.3 | 20.5 |
| 12 | EPFC12G | | 110 | 12 | | 22 | 0 -16 | 61 | | 27.5 |
| 16 | EPFC16G | 5 | 160 | 16 | +11 -1 | 26 | | 68 | | 31 |
| 20 | EPFC20G | | 260 | 20 | | 32 | 0 -19 | 80 | | 36 |
| 25 | EPFC25G | 6 | 540 | 25 | +13 -2 | 40 | | 112 | | 52 |
| 30 | EPFC30G | | 815 | 30 | | 47 | 0 -22 | 123 | | 56.5 |
| 40 | EPFC40G | | 1,805 | 40 | +16 -4 | 62 | | 151 | | 69 |
| 50 | EPFC50G | | 2,820 | 50 | | 75 | 0 -25 | 192 | | 89.5 |
| 60 | EPFC60G | | 4,920 | 60 | | 90 | | 209 | | 95.5 |

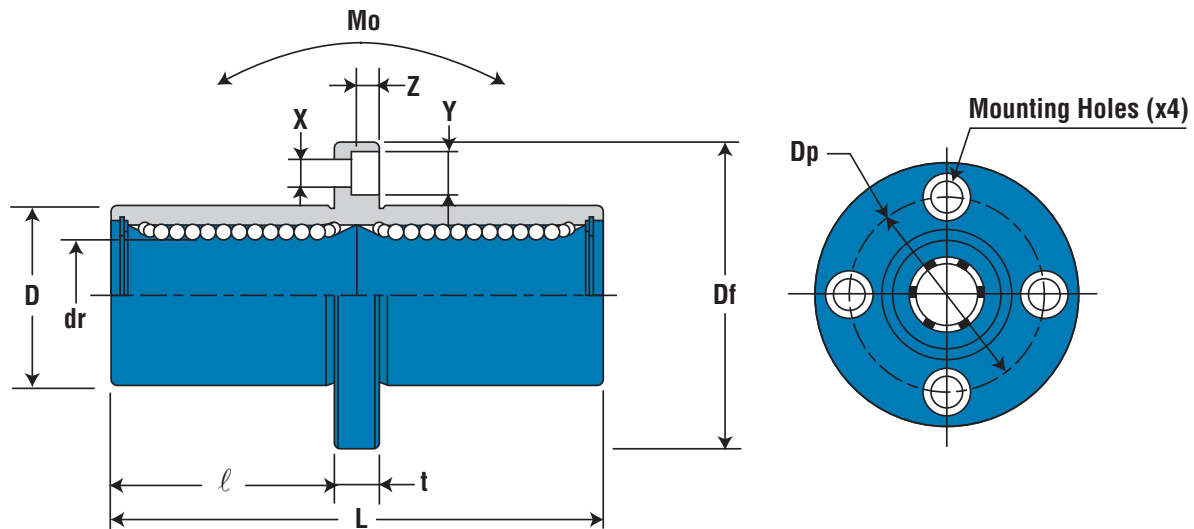
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Simplicity® Ball Bearings

Round Flange Center Mount - ISO Metric

Linear Motion Systems

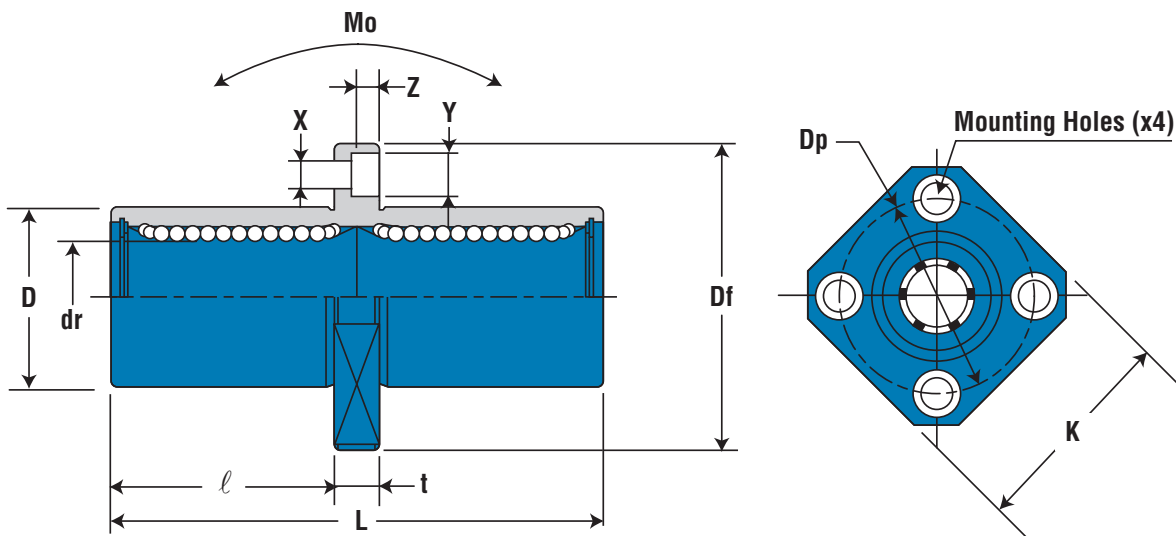


EPFC SERIES - DIMENSIONAL INFORMATION (cont.)

(Standard Steel Finish)

| MAJOR DIMENSIONS & TOLERANCES | | | | | | LOAD RATING | | | NOMINAL SHAFT DIAMETER (mm) |
|-------------------------------|-----------|------------|--------------------|---|--|---------------------|---------------------|--|--------------------------------------|
| Df (mm) | t (mm) | Dp (mm) | X x Y x Z (mm) | ECCENTRICITY ID to OD (inch/ μm) | PERPENDICULARITY FLANGE FACE to ID (inch/ μm) | DYNAMIC C (N) | STATIC Co (N) | ALLOWABLE STATIC MOMENT Mo (N-m) | |
| 32 | 5 | 24 | 3.5 x 6.0 x 3.1 | 15 | 15 | 421 | 804 | 4.3 | 8 |
| 42 | 6 | 32 | 4.5 x 7.5 x 4.1 | | | 913 | 1,570 | 11.7 | 12 |
| 46 | | 36 | 4.5 x 7.5 x 4.1 | | | 921 | 1,780 | 14.2 | 16 |
| 54 | 8 | 43 | 5.5 x 9.0 x 5.1 | 17 | 17 | 1,370 | 2,740 | 25 | 20 |
| 62 | | 51 | 5.5 x 9.0 x 5.1 | | | 1,570 | 3,140 | 44 | 25 |
| 76 | 10 | 62 | 6.6 x 11.0 x 6.1 | | | 2,500 | 5,490 | 78.9 | 30 |
| 98 | 13 | 80 | 9.0 x 14.0 x 8.1 | 20 | 20 | 3,430 | 8,040 | 147 | 40 |
| 112 | | 94 | 9.0 x 14.0 x 8.1 | | | 6,080 | 15,900 | 396 | 50 |
| 134 | 18 | 112 | 11.0 x 17.0 x 11.1 | 25 | 25 | 7,550 | 20,000 | 487 | 60 |

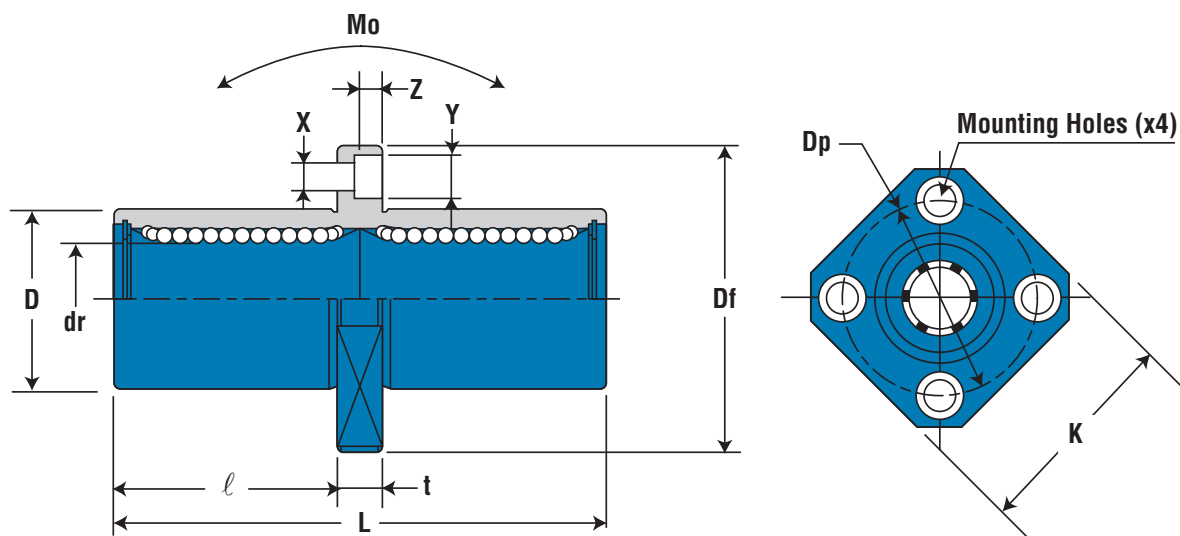
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EPKC SERIES - DIMENSIONAL INFORMATION

| PART NUMBER | | MAJOR DIMENSIONS & TOLERANCES | | | | | | | |
|-----------------------------|-----------------------|-------------------------------|------------|---------|----------------|--------|----------------|--------|----------------|
| NOMINAL SHAFT DIAMETER (mm) | STANDARD POLYMER CAGE | BALL CIRCUIT | WEIGHT (g) | dr (mm) | TOLERANCE (μm) | D (mm) | TOLERANCE (μm) | L (mm) | TOLERANCE (mm) |
| 8 | EPKC8G | 4 | 51 | 8 | +9 -1 | 16 | 0 -13 | 46 | ± 0.3 |
| 12 | EPKC12G | | 90 | 12 | | 22 | | 61 | |
| 16 | EPKC16G | 5 | 135 | 16 | +11 -1 | 26 | 0 -16 | 68 | |
| 20 | EPKC20G | | 225 | 20 | | 32 | | 80 | |
| 25 | EPKC25G | 6 | 500 | 25 | +13 -2 | 40 | 0 -19 | 112 | |
| 30 | EPKC30G | | 720 | 30 | | 47 | | 123 | |
| 40 | EPKC40G | | 1,600 | 40 | +16 -4 | 62 | 0 -22 | 151 | |
| 50 | EPKC50G | | 2,620 | 50 | | 75 | | 192 | |
| 60 | EPKC60G | | 4,480 | 60 | | 90 | | 209 | |
| | | | | | | | | | |

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EPKC SERIES - DIMENSIONAL INFORMATION (cont.)

(Standard Steel Finish)

| MAJOR DIMENSIONS & TOLERANCES | | | | | | | | LOAD RATING | | | |
|-------------------------------|------------|-----------|-----------|------------|--------------------|--|---|---------------------|---------------------|--|--------------------------------------|
| ℓ (mm) | Df (mm) | K (mm) | t (mm) | Dp (mm) | X x Y x Z (mm) | ECCENTRICITY ID to OD (inch/ μ m) | PERPENDICULARITY FLANGE FACE to ID (inch/ μ m) | DYNAMIC C (N) | STATIC Co (N) | ALLOWABLE STATIC MOMENT Mo (N-m) | NOMINAL SHAFT DIAMETER (mm) |
| 20.5 | 32 | 25 | 5 | 24 | 3.5 x 6.0 x 3.1 | 15 | 15 | 421 | 804 | 4.3 | 8 |
| 27.5 | 42 | 32 | 6 | 32 | 4.5 x 7.5 x 4.1 | | | 913 | 1,570 | 11.7 | 12 |
| 31 | 46 | 35 | | 36 | 4.5 x 7.5 x 4.1 | | | 921 | 1,780 | 14.2 | 16 |
| 36 | 54 | 42 | 8 | 43 | 5.5 x 9.0 x 5.1 | 17 | 17 | 1,370 | 2,740 | 25 | 20 |
| 52 | 62 | 50 | | 51 | 5.5 x 9.0 x 5.1 | | | 1,570 | 3,140 | 44 | 25 |
| 56.5 | 76 | 60 | 10 | 62 | 6.6 x 11.0 x 6.1 | | | 2,500 | 5,490 | 78.9 | 30 |
| 69 | 98 | 75 | 13 | 80 | 9.0 x 14.0 x 8.1 | 20 | 20 | 3,430 | 8,040 | 147 | 40 |
| 89.5 | 112 | 88 | | 94 | 9.0 x 14.0 x 8.1 | | | 6,080 | 15,900 | 396 | 50 |
| 95.5 | 134 | 106 | 18 | 112 | 11.0 x 17.0 x 11.1 | 25 | 25 | 7,550 | 20,000 | 487 | 60 |

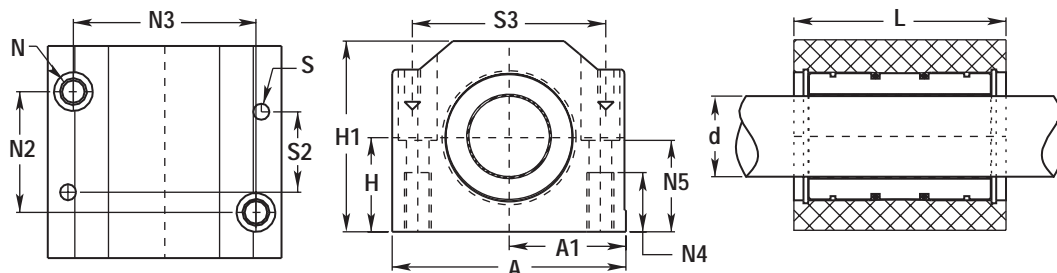
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Simplicity® Ball Bearings

Closed & Open Pillow Blocks - ISO & JIS Metric

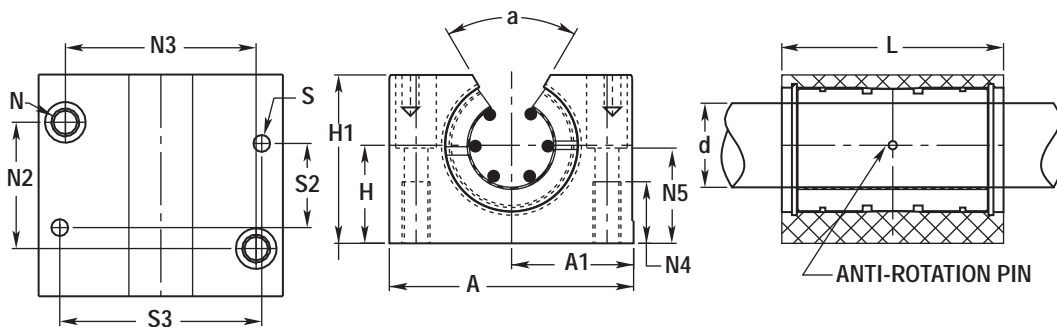
Linear Motion Systems



CLOSED PILLOW BLOCKS

| PART NO. | d NOM. I.D. | H | H1 | A | A1 | L | N | | | | | S | S2 | S3 | ASSEM. WT. |
|-----------|-------------------|--------------------|--------|-------|------|--------|-----------|-------|-------|----|------|-------|-------|-------|---------------|
| PRECISION | MIN. | CENTERLINE .015 | HEIGHT | WIDTH | .013 | LENGTH | BOLT | | | | | | | | (kg.) |
| EPPM08G | 8 | 15 | 28 | 35 | 17.5 | 32 | M4 x 0.7 | 20.15 | 25.15 | 9 | 14.5 | N / A | N / A | N / A | 0.069 |
| EPPM10G | 10 | 16 | 31.5 | 40 | 20 | 36 | M5 x 0.8 | | 29.15 | 11 | 15 | 4 | 29 | 31 | 0.095 |
| EPPM12G | 12 | 18 | 35 | 43 | 21.5 | 39 | M5 x 0.8 | 23.15 | 3.15 | | 16.5 | | 32 | 34 | 0.118 |
| EPPM16G | 16 | 22 | 42 | 53 | 26.5 | 43 | M6 x 1.0 | 26.15 | 40.15 | 13 | 21 | 6 | 35 | 42 | 0.200 |
| EPPM20G | 20 | 25 | 50 | 60 | 30 | 54 | M8 x 1.25 | 32.15 | 45.15 | 18 | 24 | | 5 | 45 | 50 |
| EPPM25G | 25 | 30 | 60 | 78 | 39 | 67 | M10 x 1.5 | 40.15 | 60.15 | 22 | 29 | 6 | 20 | 64 | 0.655 |
| EPPM30G | 30 | 35 | 71 | 87 | 43.5 | 79 | M10 x 1.5 | 45.15 | 68.15 | | 34 | | 30 | 72 | 1.020 |
| EPPM40G | 40 | 45 | 91 | 108 | 54 | 91 | M12 x1.75 | 58.15 | 86.15 | 26 | 44 | 8 | 35 | 90 | 1.846 |
| EPPM50G | 50 | 50 | 105 | 132 | 66 | 113 | M16 x 2.0 | 50.20 | 108.2 | 34 | 49 | 10 | 42 | 108 | 3.169 |

- NOTES:** (1) Standard pillow block assembly includes self-aligning housing and precision bearing.
 (2) All standard metric pillow blocks use standard "EP" series bearings found on page 88-89.
 (3) Straight bore pillow block assembly includes standard O.D. "EP" series bearing in straight bore housing.



OPEN PILLOW BLOCKS

| PART NO. | d NOM. I.D. | H | H1 | A | A1 | L | N | | | | | | | | | ASSEM. WT. |
|-----------|-------------------|--------------------|--------|-------|--------------------|--------|------------|-------|-------|----|------|----|----|-----|----|---------------|
| PRECISION | MIN. | CENTERLINE .015 | HEIGHT | WIDTH | CENTERLINE .013 | LENGTH | BOLT | N2 | N3 | N4 | N5 | S | S2 | S3 | a | (kg.) |
| EPPMN12G | 12 | 18 | 28 | 43 | 21.5 | 39 | M5 x 0.8 | 23.15 | 32.15 | 11 | 16.5 | 4 | 32 | 34 | 66 | 0.096 |
| EPPMN16G | 16 | 22 | 35 | 53 | 26.5 | 43 | M6 x 1.0 | 26.15 | 40.15 | 13 | 21 | 5 | 35 | 42 | 68 | 0.162 |
| EPPMN20G | 20 | 25 | 42 | 60 | 30 | 54 | M8 x 1.25 | 32.15 | 45.15 | 18 | 24 | 6 | 45 | 50 | 60 | 0.267 |
| EPPMN25G | 25 | 30 | 51 | 78 | 39 | 67 | M10 x 1.5 | 40.15 | 60.15 | 22 | 29 | 6 | 20 | 64 | 60 | 0.536 |
| EPPMN30G | 30 | 35 | 60 | 87 | 43.5 | 79 | M10 x 1.5 | 45.15 | 68.15 | 22 | 34 | 6 | 30 | 72 | 60 | 0.831 |
| EPPMN40G | 40 | 45 | 77 | 108 | 54 | 91 | M12 x 1.75 | 58.15 | 86.15 | 26 | 44 | 8 | 35 | 90 | 60 | 1.499 |
| EPPMN50G | 50 | 50 | 88 | 132 | 66 | 113 | M16 x 2.0 | 50.20 | 108.2 | 34 | 49 | 10 | 42 | 108 | 60 | 2.539 |

- NOTES:** (1) Standard pillow block assembly includes self-aligning housing and precision bearing.
 (2) All standard metric pillow blocks use standard "EP" series bearings found on page 88-89.

(For Empty Pillow Block with no bearings included add LBB after the part number.)

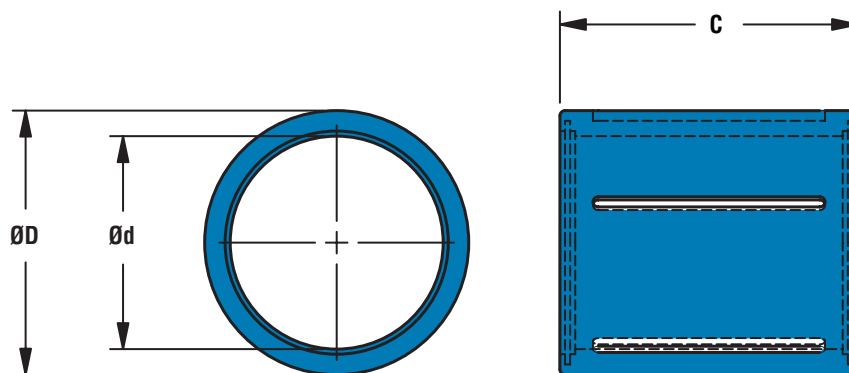
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Simplicity® Ball Bearings

Compact Thin Wall Bearings - ISO Metric

Linear Motion Systems



BASIC DIMENSIONAL INFORMATION

(Standard Steel Finish)

| PART NO. | DIMENSIONS | | | | LOAD RATING | |
|----------|------------|----|----|------------|---------------|---------------|
| | Ød | ØD | B | WEIGHT (g) | DYNAMIC C (N) | STATIC Co (N) |
| KHP6 | 6 | 12 | 22 | 7.0 | 400 | 239 |
| KHP8 | 8 | 15 | 24 | 12.0 | 435 | 280 |
| KHP10 | 10 | 17 | 26 | 14.5 | 500 | 370 |
| KHP12 | 12 | 19 | 28 | 18.5 | 620 | 510 |
| KHP14 | 14 | 21 | | 20.5 | | 520 |
| KHP16 | 16 | 24 | 30 | 27.5 | 800 | 620 |
| KHP20 | 20 | 28 | | 32.5 | 950 | 790 |
| KHP25 | 25 | 35 | 40 | 66.0 | 1,990 | 1,670 |
| KHP30 | 30 | 40 | 50 | 95.0 | 2,880 | 2,700 |
| KHP40 | 40 | 52 | 60 | 182.0 | 4,400 | 4,450 |
| KHP50 | 50 | 62 | 70 | 252.0 | 5,500 | 6,300 |

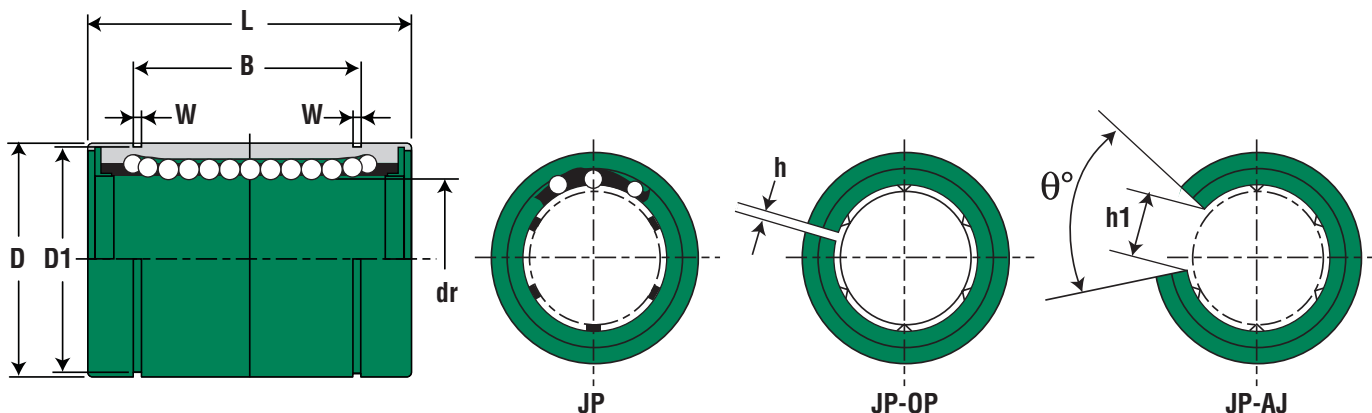
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Simplicity® Ball Bearings

Linear Ball Bearings - JIS Metric

Linear Motion Systems



JP SERIES - DIMENSIONAL INFORMATION

| NOMINAL SHAFT DIAMETER (mm) | PART NUMBER | | | | | MAJOR DIMENSIONS & TOLERANCES | | | | | |
|--------------------------------------|--------------------------------------|-----------------|---------------|-------------------------------------|-------------------------------|-------------------------------|-------------------|-----------|-------------------|-----------|-------------------|
| | STANDARD CLOSE POLYMER CAGE | BALL CIRCUIT | WEIGHT (g) | STANDARD OPEN POLYMER CAGE | ADJUSTABLE POLYMER CAGE | dr (mm) | TOLERANCE (μm) | D (mm) | TOLERANCE (μm) | L (mm) | TOLERANCE (mm) |
| 8 | JP8G | 4 | 16 | - | - | 8 | 0 -9 | 15 | 0 -11 | 24 | 0 -0.2 |
| 10 | JP10G | | 30 | - | - | 10 | | 19 | 0 -13 | 29 | |
| 12 | JP12G | | 32 | JP12G-OP | JP12G-AJ | 12 | | 21 | | 30 | |
| 13 | JP13G | | 43 | JP13G-OP | JP13G-AJ | 13 | | 23 | | 32 | |
| 16 | JP16G | 5 | 69 | JP16G-OP | JP16G-AJ | 16 | | 28 | | 37 | |
| 20 | JP20G | | 87 | JP20G-OP | JP20G-AJ | 20 | 0 -10 | 32 | 0 -16 | 42 | 0 -0.3 |
| 25 | JP25G | 6 | 220 | JP25G-OP | JP25G-AJ | 25 | | 40 | | 59 | |
| 30 | JP30G | | 250 | JP30G-OP | JP30G-AJ | 30 | 0 -12 | 45 | 0 -19 | 64 | |
| 35 | JP35G | | 390 | JP35G-OP | JP35G-AJ | 35 | | 52 | | 70 | |
| 40 | JP40G | | 585 | JP40G-OP | JP40G-AJ | 40 | | 60 | | 80 | |
| 50 | JP50G | | 1,580 | JP50G-OP | JP50G-AJ | 50 | 0 -15 | 80 | 0 -22 | 100 | |
| 60 | JP60G | | 2,000 | JP60G-OP | JP60G-AJ | 60 | | 90 | | 110 | |

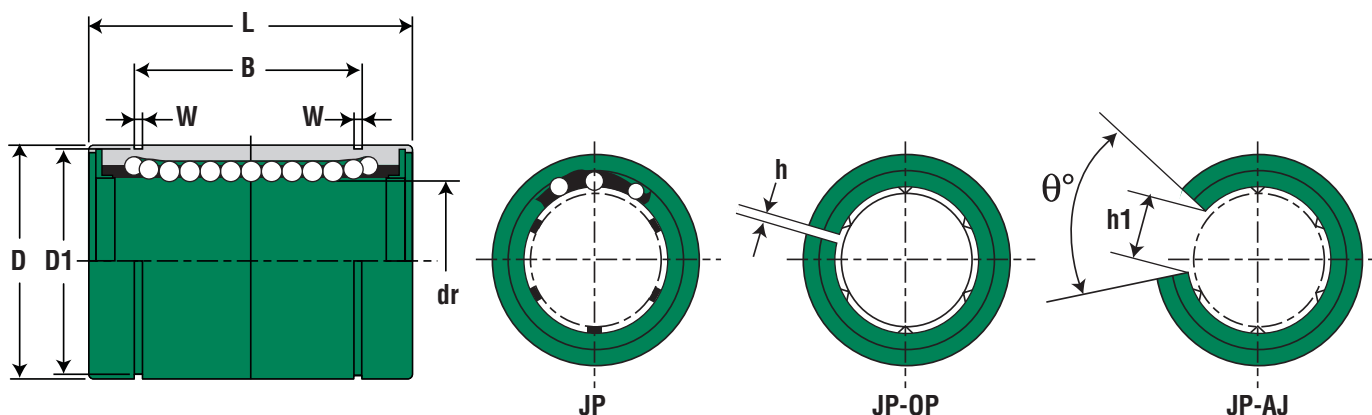
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Simplicity® Ball Bearings

Linear Ball Bearings - JIS Metric

Linear Motion Systems



JP SERIES - DIMENSIONAL INFORMATION (cont.)

(Standard Steel Finish)

| MAJOR DIMENSIONS & TOLERANCES | | | | | | | | | | | LOAD RATING | | |
|-------------------------------|-------------------|-----------|-------------------|------------|-------------------|-----------|------------|----------|----------------------|-------------------------------------|---------------------|---------------------|--------------------------------------|
| B (mm) | TOLERANCE (mm) | W (mm) | TOLERANCE (mm) | D1 (mm) | TOLERANCE (mm) | h (mm) | h1 (mm) | l (°) | ECCENTRICITY (μm) | MAX RADIAL CLEARANCE (μm) | DYNAMIC C (N) | STATIC Co (N) | NOMINAL SHAFT DIAMETER (mm) |
| 17.5 | 0 -0.2 | 1.1 | +0.14 0 | 14.3 | 0 -0.11 | - | - | - | 12 | -3 | 260 | 400 | 8 |
| 22 | | 1.3 | | 18 | | - | - | - | | -4 | 370 | 540 | 10 |
| 23 | | 1.3 | | 20 | 0 -0.13 | 1.5 | 8 | 80 | | | 410 | 590 | 12 |
| 23 | | 1.3 | | 22 | | | 9 | | | | 500 | 770 | 13 |
| 26.5 | | 1.6 | | 27 | 0 -0.21 | | 11 | 60 | -6 | 770 | 1,170 | 16 | |
| 30.5 | | 1.6 | | 30.5 | | | 11 | | | 860 | 1,370 | 20 | |
| 41 | 0 -0.3 | 1.85 | | 38 | 0 -0.25 | 2 | 12 | 50 | | 15 | 980 | 1,560 | 25 |
| 44.5 | | 1.85 | | 43 | | 2.5 | 15 | | -8 | | 1,560 | 2,740 | 30 |
| 49.5 | | 2.1 | | 49 | | | 17 | | | 1,660 | 3,130 | 35 | |
| 60.5 | | 2.1 | | 57 | 0 -0.30 | 20 | 20 | | -10 | 2,150 | 4,010 | 40 | |
| 74 | | 2.6 | | 76.5 | | 25 | | -13 | 3,820 | 7,930 | 50 | | |
| 85 | | 3.15 | | 86.5 | 0 -0.35 | 30 | 25 | | 4,700 | 9,990 | 60 | | |

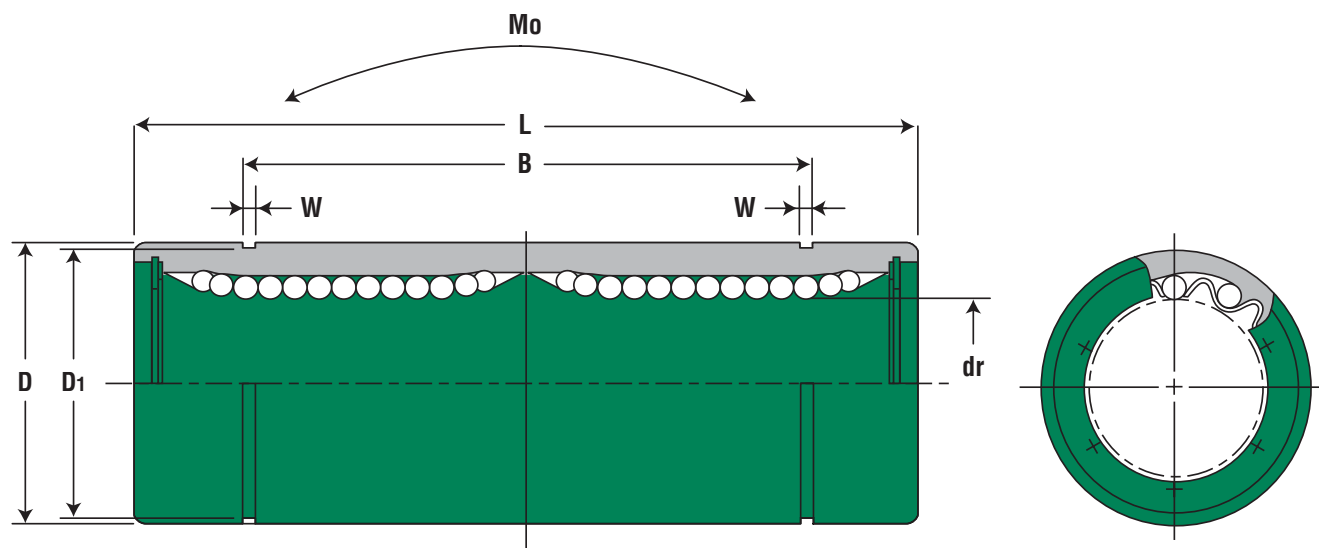
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Simplicity® Ball Bearings

Double Wide Linear Ball Bearings - JIS Metric

Linear Motion Systems



JP-W SERIES - DIMENSIONAL INFORMATION

| | PART NUMBER | MAJOR DIMENSIONS & TOLERANCES | | | | | | | |
|-----------------------------|-----------------------|-------------------------------|------------|---------|----------------|--------|----------------|--------|----------------|
| NOMINAL SHAFT DIAMETER (mm) | STANDARD POLYMER CAGE | BALL CIRCUIT | WEIGHT (g) | dr (mm) | TOLERANCE (μm) | D (mm) | TOLERANCE (μm) | L (mm) | TOLERANCE (mm) |
| 8 | JP8GW | 4 | 31 | 8 | 0 -10 | 15 | 0 -13 | 45 | 0 -0.3 |
| 12 | JP12GW | | 80 | 12 | | 21 | 0 -16 | 57 | |
| 16 | JP16GW | 5 | 145 | 16 | 0 -12 | 28 | | 70 | 0 -0.4 |
| 20 | JP20GW | | 180 | 20 | | 32 | 0 -19 | 80 | |
| 25 | JP25GW | 6 | 440 | 25 | 0 -15 | 40 | | 112 | 0 -0.4 |
| 30 | JP30GW | | 580 | 30 | | 45 | 0 -22 | 123 | |
| 40 | JP40GW | | 1,170 | 40 | 0 -20 | 60 | | 151 | |
| 50 | JP50GW | | 3,100 | 50 | | 80 | 0 -25 | 192 | |
| 60 | JP60GW | | 3,500 | 60 | | 90 | | 209 | |

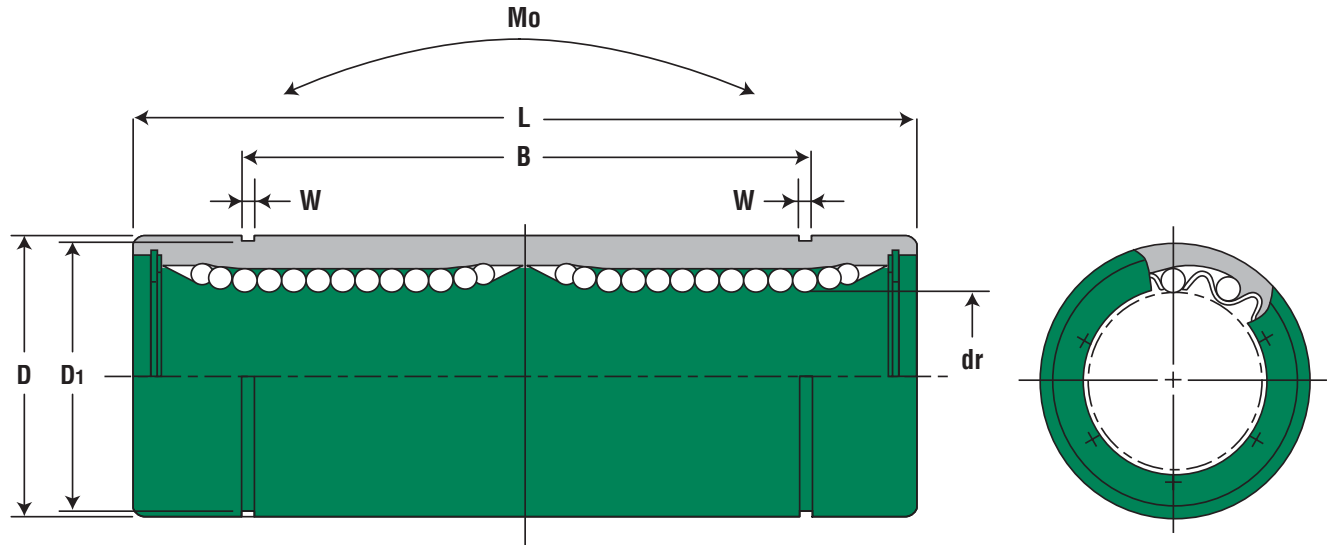
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Simplicity® Ball Bearings

Double Wide Linear Ball Bearings - JIS Metric

Linear Motion Systems



JP-W SERIES - DIMENSIONAL INFORMATION (cont.)

(Standard Steel Finish)

| MAJOR DIMENSIONS & TOLERANCES | | | | | | | LOAD RATING | | | |
|-------------------------------|-------------------|-----------|-------------------|------------|-------------------|----------------------|---------------------|---------------------|--|--------------------------------------|
| B (mm) | TOLERANCE (mm) | W (mm) | TOLERANCE (mm) | D1 (mm) | TOLERANCE (mm) | ECCENTRICITY (μm) | DYNAMIC C (N) | STATIC Co (N) | ALLOWABLE STATIC MOMENT Mo (N-m) | NOMINAL SHAFT DIAMETER (mm) |
| 35 | 0 -0.3 | 1.1 | +0.14 0 | 14.3 | 0 -0.11 | 15 | 431 | 784 | 4.3 | 8 |
| 46 | | 1.3 | | 20 | 0 -0.13 | | 657 | 1,200 | 10.9 | 12 |
| 53 | | 1.6 | | 27 | 0 -0.21 | | 1,230 | 2,350 | 19.7 | 16 |
| 61 | | 1.6 | | 30.5 | | 20 | 1,400 | 2,750 | 26.8 | 20 |
| 82 | 0 -0.4 | 1.85 | 38 | 0 -0.25 | 1,560 | | 3,140 | 43.4 | 25 | |
| 89 | | 1.85 | 43 | | 2,490 | | 5,490 | 82.8 | 30 | |
| 121 | | 2.1 | 57 | 0 -0.30 | 25 | 3,430 | 8,040 | 147 | 40 | |
| 148 | | 2.6 | 76.5 | | | 6,080 | 15,900 | 397 | 50 | |
| 170 | | 3.15 | 86.5 | 0 -0.35 | 30 | 7,650 | 20,000 | 530 | 60 | |

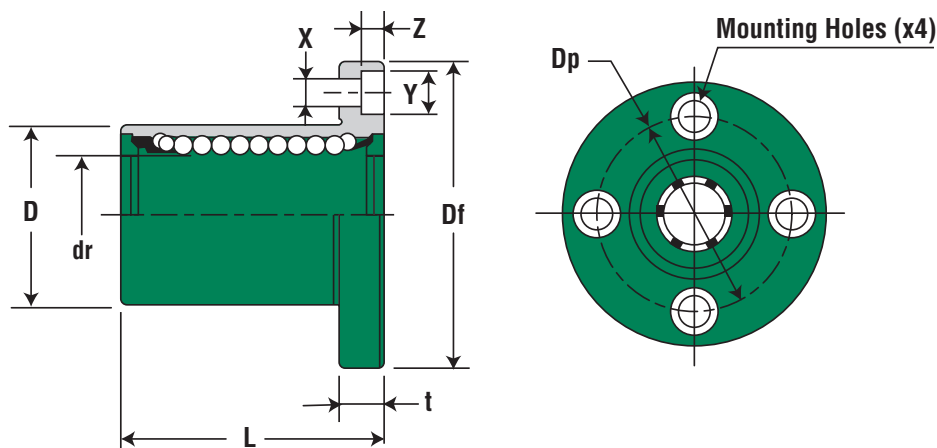
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Simplicity® Ball Bearings

Round Flange Mount - JIS Metric

Linear Motion Systems



JPF SERIES - DIMENSIONAL INFORMATION

| | PART NUMBER | MAJOR DIMENSIONS & TOLERANCES | | | | | | | |
|-----------------------------|-----------------------|-------------------------------|------------|---------|----------------|--------|----------------|--------|----------------|
| NOMINAL SHAFT DIAMETER (mm) | STANDARD POLYMER CAGE | BALL CIRCUIT | WEIGHT (g) | dr (mm) | TOLERANCE (μm) | D (mm) | TOLERANCE (μm) | L (mm) | TOLERANCE (mm) |
| 8 | JPF8G | 4 | 37 | 8 | 0 -9 | 15 | 0 -13 | 24 | ± 0.3 |
| 12 | JPF12G | | 76 | 12 | | 21 | 0 -16 | 30 | |
| 16 | JPF16G | 5 | 120 | 16 | | 28 | | 37 | |
| 20 | JPF20G | | 180 | 20 | 0 -10 | 32 | 0 -19 | 42 | |
| 25 | JPF25G | 6 | 340 | 25 | | 40 | | 59 | |
| 30 | JPF30G | | 470 | 30 | | 45 | | 64 | |
| 40 | JPF40G | | 1,060 | 40 | 0 -12 | 60 | 0 -22 | 80 | |
| 50 | JPF50G | | 2,200 | 50 | | 80 | | 100 | |
| 60 | JPF60G | | 3,000 | 60 | 0 -15 | 90 | 0 -25 | 110 | |

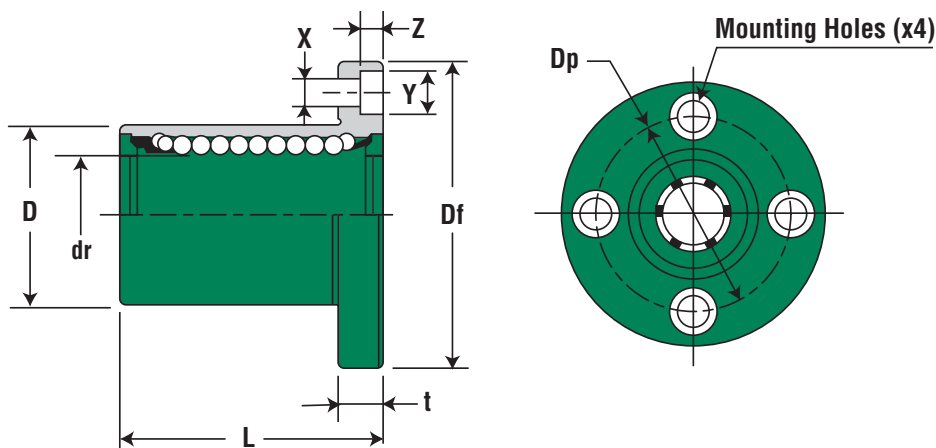
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Simplicity® Ball Bearings

Round Flange Mount - JIS Metric

Linear Motion Systems



JPF SERIES - DIMENSIONAL INFORMATION (cont.)

(Standard Steel Finish)

| MAJOR DIMENSIONS & TOLERANCES | | | | | | LOAD RATING | | |
|-------------------------------|-----------|------------|-------------------|---|--|---------------------|---------------------|--------------------------------------|
| Df (mm) | t (mm) | Dp (mm) | X x Y x Z (mm) | ECCENTRICITY ID to OD (inch/ μm) | PERPENDICULARITY FLANGE FACE to ID (inch/ μm) | DYNAMIC C (N) | STATIC Co (N) | NOMINAL SHAFT DIAMETER (mm) |
| 32 | 5 | 24 | 3.5 x 6 x 3.1 | 12 | 12 | 274 | 392 | 8 |
| 42 | 6 | 32 | 4.5 x 7.5 x 4.1 | | | 510 | 784 | 12 |
| 48 | | 38 | | | | 774 | 1,180 | 16 |
| 54 | 8 | 43 | 5.5 x 9 x 5.1 | 15 | 15 | 882 | 1,370 | 20 |
| 62 | | 51 | | | | 980 | 1,570 | 25 |
| 74 | 10 | 60 | 6.6 x 11 x 6.1 | | | 1,570 | 2,740 | 30 |
| 96 | 13 | 78 | 9 x 14 x 8.1 | 20 | 20 | 2,160 | 4,020 | 40 |
| 116 | | 98 | | | | 3,820 | 7,940 | 50 |
| 134 | 18 | 112 | 11 x 17 x 11.1 | 25 | 25 | 4,700 | 10,000 | 60 |

Flange Mount

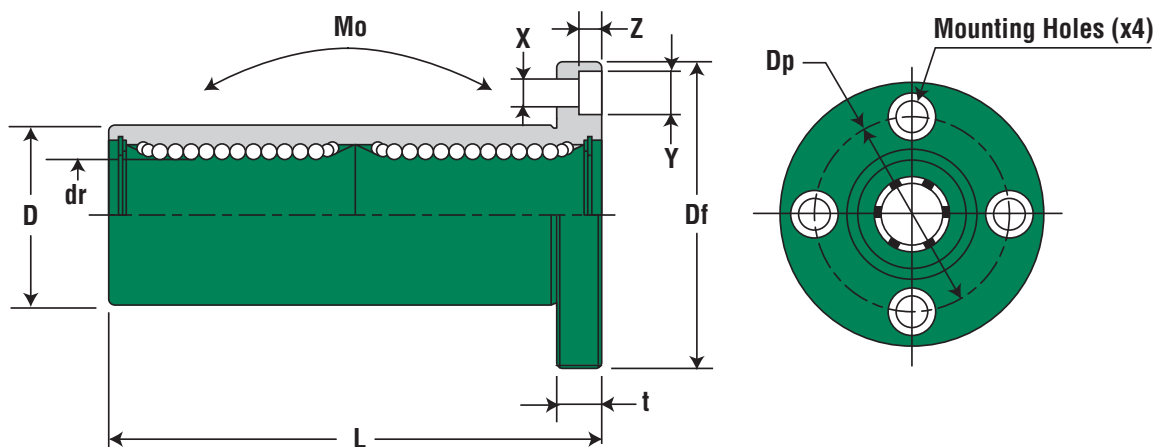
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Simplicity® Ball Bearings

Round Flange Mount Double Wide - JIS Metric

Linear Motion Systems



JPF-W SERIES - DIMENSIONAL INFORMATION

| | PART NUMBER | MAJOR DIMENSIONS & TOLERANCES | | | | | | | |
|-----------------------------|-----------------------|-------------------------------|------------|------------|-----------------------|--------|-----------------------|--------|----------------|
| NOMINAL SHAFT DIAMETER (mm) | STANDARD POLYMER CAGE | BALL CIRCUIT | WEIGHT (g) | d_r (mm) | TOLERANCE (μm) | D (mm) | TOLERANCE (μm) | L (mm) | TOLERANCE (mm) |
| 8 | JPF8GW | 4 | 51 | 8 | 0 -10 | 15 | 0 -13 | 45 | ± 0.3 |
| 12 | JPF12GW | | 110 | 12 | | 21 | 0 -16 | 57 | |
| 16 | JPF16GW | 5 | 190 | 16 | 0 -12 | 28 | | 70 | |
| 20 | JPF20GW | | 260 | 20 | | 32 | 0 -19 | 80 | |
| 25 | JPF25GW | 6 | 540 | 25 | | 40 | | 112 | |
| 30 | JPF30GW | | 680 | 30 | 0 -15 | 45 | | 123 | |
| 40 | JPF40GW | | 1,570 | 40 | | 60 | 0 -22 | 151 | |
| 50 | JPF50GW | | 3,600 | 50 | 0 -20 | 80 | | 192 | |
| 60 | JPF60GW | | 4,500 | 60 | | 90 | 0 -25 | 209 | |

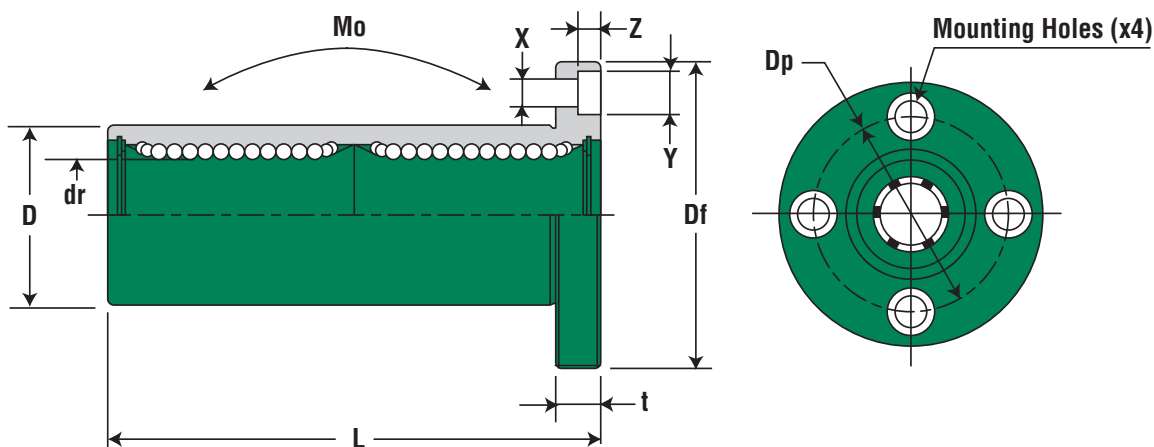
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Simplicity® Ball Bearings

Round Flange Mount Double Wide - JIS Metric

Linear Motion Systems



JPF-W SERIES - DIMENSIONAL INFORMATION (cont.)

(Standard Steel Finish)

| MAJOR DIMENSIONS & TOLERANCES | | | | | | LOAD RATING | | | |
|-------------------------------|-----------|------------|-------------------|---|--|---------------------|---------------------|--|--------------------------------------|
| Df (mm) | t (mm) | Dp (mm) | X x Y x Z (mm) | ECCENTRICITY ID to OD (inch/ µm) | PERPENDICULARITY FLANGE FACE to ID (inch/ µm) | DYNAMIC C (N) | STATIC Co (N) | ALLOWABLE STATIC MOMENT Mo (N-m) | NOMINAL SHAFT DIAMETER (mm) |
| 32 | 5 | 24 | 3.5 x 6 x 3.1 | 15 | 15 | 431 | 784 | 4.3 | 8 |
| 42 | 6 | 32 | 4.5 x 7.5 x 4.1 | | | 813 | 1,570 | 10.9 | 12 |
| 48 | 6 | 38 | | | | 1,230 | 2,350 | 19.7 | 16 |
| 54 | 8 | 43 | 5.5 x 9 x 5.1 | 20 | 20 | 1,400 | 2,740 | 26.8 | 20 |
| 62 | 8 | 51 | | | | 1,560 | 3,140 | 43.4 | 25 |
| 74 | 10 | 60 | 6.6 x 11 x 6.1 | | | 2,490 | 5,490 | 82.8 | 30 |
| 96 | 13 | 78 | 9 x 14 x 8.1 | 25 | 25 | 3,430 | 8,040 | 147 | 40 |
| 116 | 13 | 98 | | | | 6,080 | 15,900 | 397 | 50 |
| 134 | 18 | 112 | 11 x 17 x 11.1 | 30 | 30 | 7,550 | 20,000 | 530 | 60 |

Flange Mount

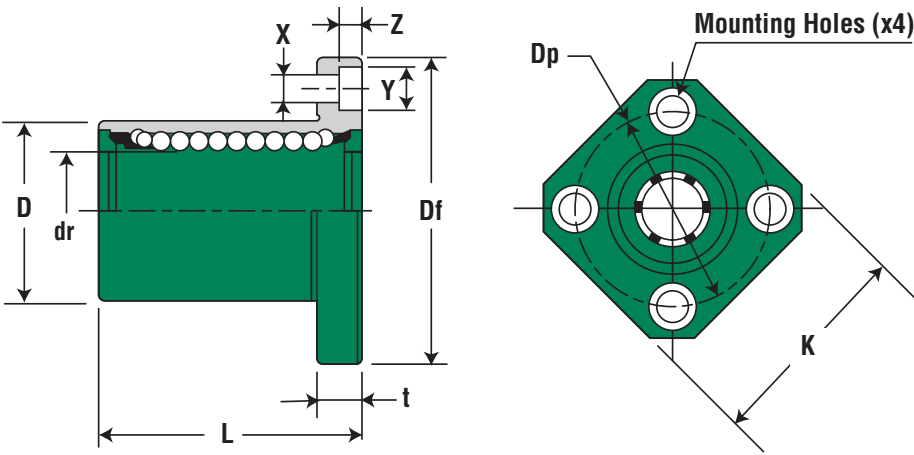
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Simplicity® Ball Bearings

Square Flange Mount - JIS Metric

Linear Motion Systems



JPK SERIES - DIMENSIONAL INFORMATION

| PART NUMBER | | MAJOR DIMENSIONS & TOLERANCES | | | | | | | |
|-----------------------------|-----------------------|-------------------------------|------------|---------|----------------|--------|----------------|--------|----------------|
| NOMINAL SHAFT DIAMETER (mm) | STANDARD POLYMER CAGE | BALL CIRCUIT | WEIGHT (g) | dr (mm) | TOLERANCE (μm) | D (mm) | TOLERANCE (μm) | L (mm) | TOLERANCE (mm) |
| 8 | JPK8G | 4 | 37 | 8 | 0 -9 | 15 | 0 -13 | 24 | ± 0.3 |
| 12 | JPK12G | | 76 | 12 | | 21 | 0 -16 | 30 | |
| 16 | JPK16G | 5 | 120 | 16 | | 28 | | 37 | |
| 20 | JPK20G | | 180 | 20 | 0 -10 | 32 | 0 -19 | 42 | |
| 25 | JPK25G | 6 | 340 | 25 | | 40 | | 59 | |
| 30 | JPK30G | | 470 | 30 | | 45 | | 64 | |
| 40 | JPK40G | | 1,060 | 40 | 0 -12 | 60 | 0 -22 | 80 | |
| 50 | JPK50G | | 2,200 | 50 | | 80 | | 100 | |
| 60 | JPK60G | | 3,000 | 60 | 0 -15 | 90 | 0 -25 | 110 | |

Flange Mount

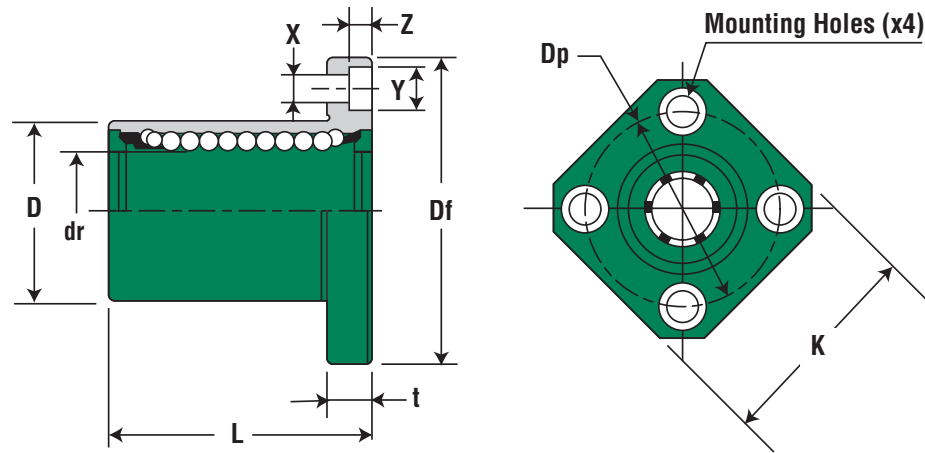
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Simplicity® Ball Bearings

Square Flange Mount - JIS Metric

Linear Motion Systems



JPK SERIES - DIMENSIONAL INFORMATION (cont.)

(Standard Steel Finish)

| MAJOR DIMENSIONS & TOLERANCE | | | | | | | LOAD RATING | | |
|------------------------------|-----------|-----------|------------|-------------------|---|--|---------------------|---------------------|--------------------------------------|
| Df (mm) | K (mm) | t (mm) | Dp (mm) | X x Y x Z (mm) | ECCENTRICITY ID to OD (inch/ µm) | PERPENDICULARITY FLANGE FACE to ID (inch/ µm) | DYNAMIC C (N) | STATIC Co (N) | NOMINAL SHAFT DIAMETER (mm) |
| 32 | 25 | 5 | 24 | 3.5 x 6 x 3.1 | 12 | 12 | 274 | 392 | 8 |
| 42 | 32 | 6 | 32 | 4.5 x 7.5 x 4.1 | | | 510 | 784 | 12 |
| 48 | 37 | | 38 | | | | 774 | 1,180 | 16 |
| 54 | 42 | 8 | 43 | 5.5 x 9 x 5.1 | 15 | 15 | 882 | 1,370 | 20 |
| 62 | 50 | | 51 | | | | 980 | 1,570 | 25 |
| 74 | 58 | 10 | 60 | 6.6 x 11 x 6.1 | | | 1,570 | 2,740 | 30 |
| 96 | 75 | 13 | 78 | 9 x 14 x 8.1 | 20 | 20 | 2,160 | 4,020 | 40 |
| 116 | 92 | | 98 | | | | 3,820 | 7,940 | 50 |
| 134 | 106 | 18 | 112 | 11 x 17 x 11.1 | 25 | 25 | 4,700 | 10,000 | 60 |

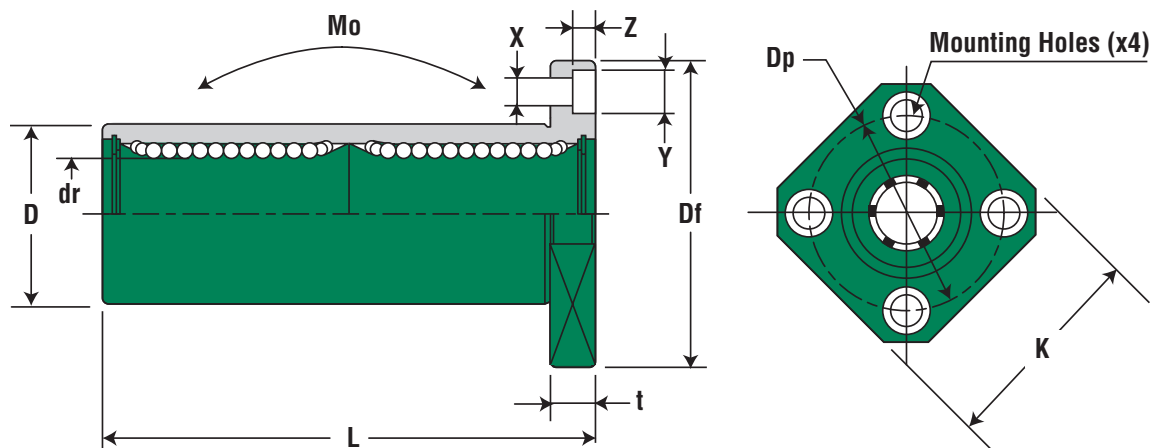
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Simplicity® Ball Bearings

Square Flange Mount Double Wide - JIS Metric

Linear Motion Systems



JPK-W SERIES - DIMENSIONAL INFORMATION

| | PART NUMBER | MAJOR DIMENSIONS & TOLERANCES | | | | | | | |
|-----------------------------|-----------------------|-------------------------------|------------|------------|-----------------------|----------|-----------------------|----------|----------------|
| NOMINAL SHAFT DIAMETER (mm) | STANDARD POLYMER CAGE | BALL CIRCUIT | WEIGHT (g) | d_r (mm) | TOLERANCE (μm) | D (mm) | TOLERANCE (μm) | L (mm) | TOLERANCE (mm) |
| 8 | JPk8GW | 4 | 43 | 8 | 0 -10 | 15 | 0 -13 | 45 | ± 0.3 |
| 12 | JPk12GW | | 90 | 12 | | 21 | 0 -16 | 57 | |
| 16 | JPk16GW | 5 | 165 | 16 | 0 -12 | 28 | | 70 | |
| 20 | JPk20GW | | 225 | 20 | | 32 | 0 -19 | 80 | |
| 25 | JPk25GW | 6 | 500 | 25 | | 40 | | 112 | |
| 30 | JPk30GW | | 590 | 30 | 0 -15 | 45 | 0 -22 | 123 | |
| 40 | JPk40GW | | 1,380 | 40 | | 60 | | 151 | |
| 50 | JPk50GW | | 3,400 | 50 | 0 -20 | 80 | 0 -25 | 192 | |
| 60 | JPk60GW | | 4,060 | 60 | | 90 | | 209 | |

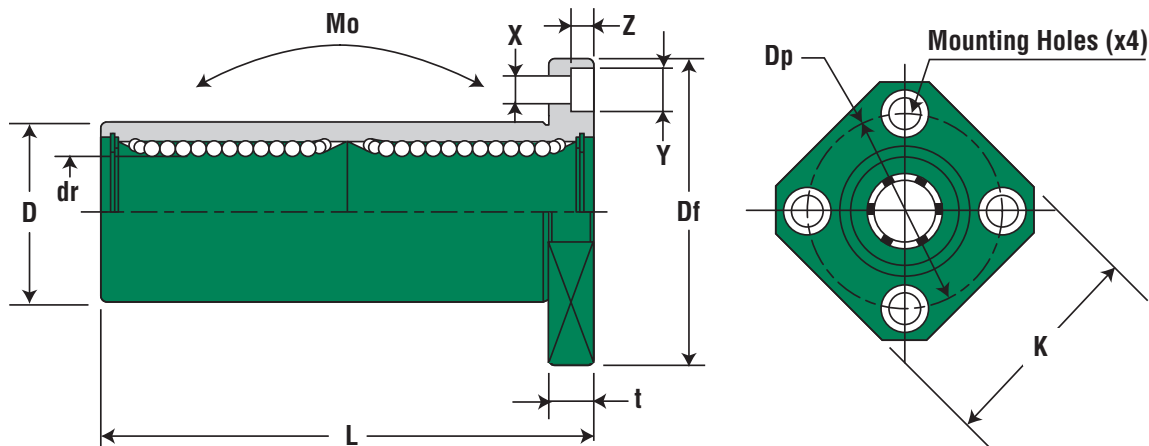
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Simplicity® Ball Bearings

Square Flange Mount Double Wide - JIS Metric

Linear Motion Systems



JPK-W SERIES - DIMENSIONAL INFORMATION (cont.)

(Standard Steel Finish)

| MAJOR DIMENSIONS & TOLERANCE | | | | | | | LOAD RATING | | | |
|------------------------------|-----------|-----------|------------|-------------------|---|--|---------------------|---------------------|--|--------------------------------------|
| Df (mm) | K (mm) | t (mm) | Dp (mm) | X x Y x Z (mm) | ECCENTRICITY ID to OD (inch/ µm) | PERPENDICULARITY FLANGE FACE to ID (inch/ µm) | DYNAMIC C (N) | STATIC Co (N) | ALLOWABLE STATIC MOMENT Mo (N-m) | NOMINAL SHAFT DIAMETER (mm) |
| 32 | 25 | 5 | 24 | 3.5 x 6 x 3.1 | 15 | 15 | 431 | 784 | 4.3 | 8 |
| 42 | 32 | 6 | 32 | 4.5 x 7.5 x 4.1 | | | 813 | 1,570 | 10.9 | 12 |
| 48 | 37 | | 38 | | | | 1,230 | 2,350 | 19.7 | 16 |
| 54 | 42 | 8 | 43 | 5.5 x 9 x 5.1 | 20 | 20 | 1,400 | 2,740 | 26.8 | 20 |
| 62 | 50 | | 51 | | | | 1,560 | 3,140 | 43.4 | 25 |
| 74 | 58 | 10 | 60 | 6.6 x 11 x 6.1 | | | 2,490 | 5,490 | 82.8 | 30 |
| 96 | 75 | 13 | 78 | 9 x 14 x 8.1 | 25 | 25 | 3,430 | 8,040 | 147 | 40 |
| 116 | 92 | | 98 | | | | 6,080 | 15,900 | 397 | 50 |
| 134 | 106 | 18 | 112 | 11 x 17 x 11.1 | 30 | 30 | 7,550 | 20,000 | 530 | 60 |

Flange Mount

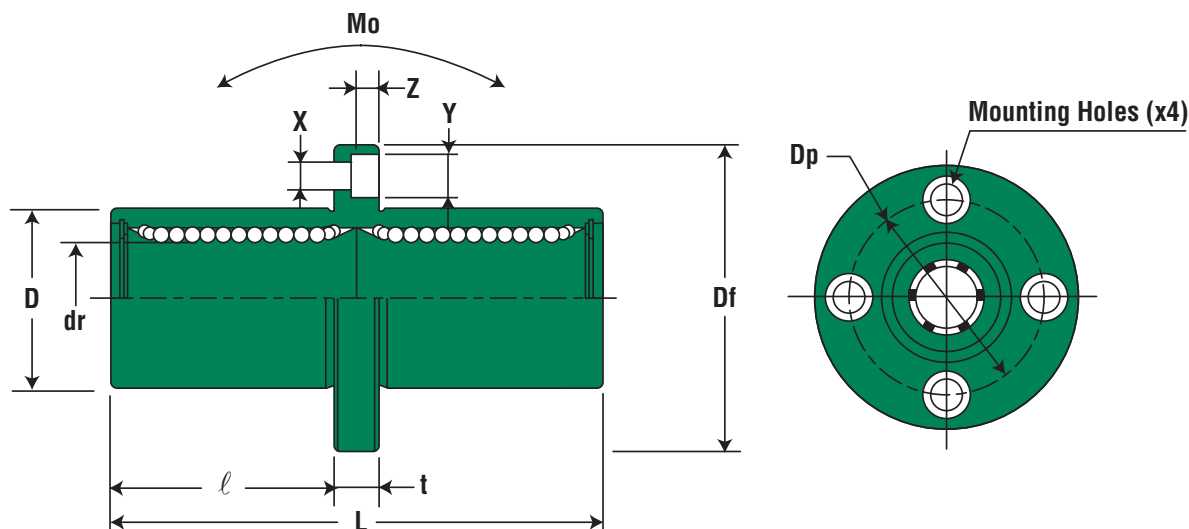
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Simplicity® Ball Bearings

Round Flange Center Mount - JIS Metric

Linear Motion Systems



JPFC SERIES - DIMENSIONAL INFORMATION

| NOMINAL SHAFT DIAMETER (mm) | PART NUMBER | MAJOR DIMENSIONS & TOLERANCES | | | | | | | | |
|--------------------------------------|-----------------------------|-------------------------------|---------------|--------------|-------------------------|-------------|-------------------------|-------------|-------------------|----------------|
| | STANDARD POLYMER CAGE | BALL CIRCUIT | WEIGHT (g) | dr (mm) | TOLERANCE (μ m) | D (mm) | TOLERANCE (μ m) | L (mm) | TOLERANCE (mm) | ℓ (mm) |
| 8 | JPFC8G | 4 | 51 | 8 | 0 -10 | 15 | 0 -13 | 45 | ± 0.3 | 20.0 |
| 12 | JPFC12G | | 110 | 12 | | 21 | 0 -16 | 57 | | 25.5 |
| 16 | JPFC16G | 5 | 190 | 16 | | 28 | | 70 | | 32.0 |
| 20 | JPFC20G | | 260 | 20 | 0 -12 | 32 | 0 -19 | 80 | | 36.0 |
| 25 | JPFC25G | 6 | 540 | 25 | | 40 | | 112 | | 52.0 |
| 30 | JPFC30G | | 680 | 30 | | 45 | | 123 | | 56.5 |
| 40 | JPFC40G | | 1,570 | 40 | 0 -15 | 60 | 0 -22 | 151 | | 69.0 |
| 50 | JPFC50G | | 3,600 | 50 | | 80 | | 192 | | 89.5 |
| 60 | JPFC60G | | 4,500 | 60 | 0 -20 | 90 | 0 -25 | 209 | | 95.5 |

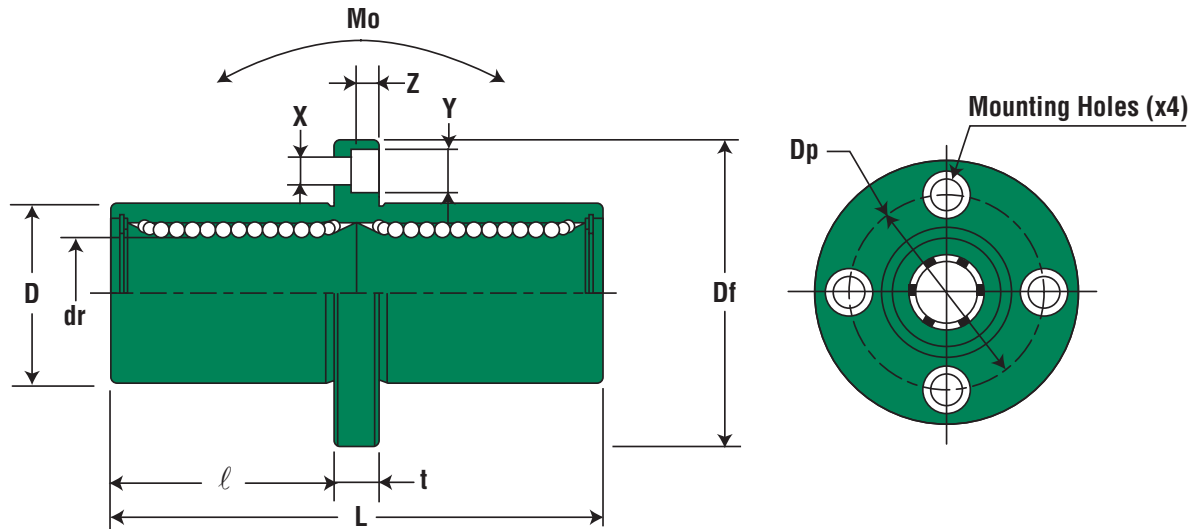
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Simplicity® Ball Bearings

Round Flange Center Mount - JIS Metric

Linear Motion Systems



JPFC SERIES - DIMENSIONAL INFORMATION (cont.)

(Standard Steel Finish)

| MAJOR DIMENSIONS & TOLERANCES | | | | | | LOAD RATING | | | |
|-------------------------------|-----------|------------|-------------------|---|--|---------------------|---------------------|--|--------------------------------------|
| Df (mm) | t (mm) | Dp (mm) | X x Y x Z (mm) | ECCENTRICITY ID to OD (inch/ μm) | PERPENDICULARITY FLANGE FACE to ID (inch/ μm) | DYNAMIC C (N) | STATIC Co (N) | ALLOWABLE STATIC MOMENT Mo (N-m) | NOMINAL SHAFT DIAMETER (mm) |
| 32 | 5 | 24 | 3.5 x 6 x 3.1 | 15 | 15 | 431 | 784 | 4.3 | 8 |
| 42 | 6 | 32 | 4.5 x 7.5 x 4.1 | | | 813 | 1,570 | 10.9 | 12 |
| 48 | | 38 | | | | 1,230 | 2,350 | 19.7 | 16 |
| 54 | 8 | 43 | 5.5 x 9 x 5.1 | 20 | 20 | 1,400 | 2,740 | 26.8 | 20 |
| 62 | | 51 | | | | 1,560 | 3,140 | 43.4 | 25 |
| 74 | 10 | 60 | 6.6 x 11 x 6.1 | | | 2,490 | 5,490 | 82.8 | 30 |
| 96 | 13 | 78 | 9 x 14 x 8.1 | 25 | 25 | 3,430 | 8,040 | 147 | 40 |
| 116 | | 98 | | | | 6,080 | 15,900 | 397 | 50 |
| 134 | 18 | 112 | 11 x 17 x 11.1 | 30 | 30 | 7,550 | 20,000 | 530 | 60 |

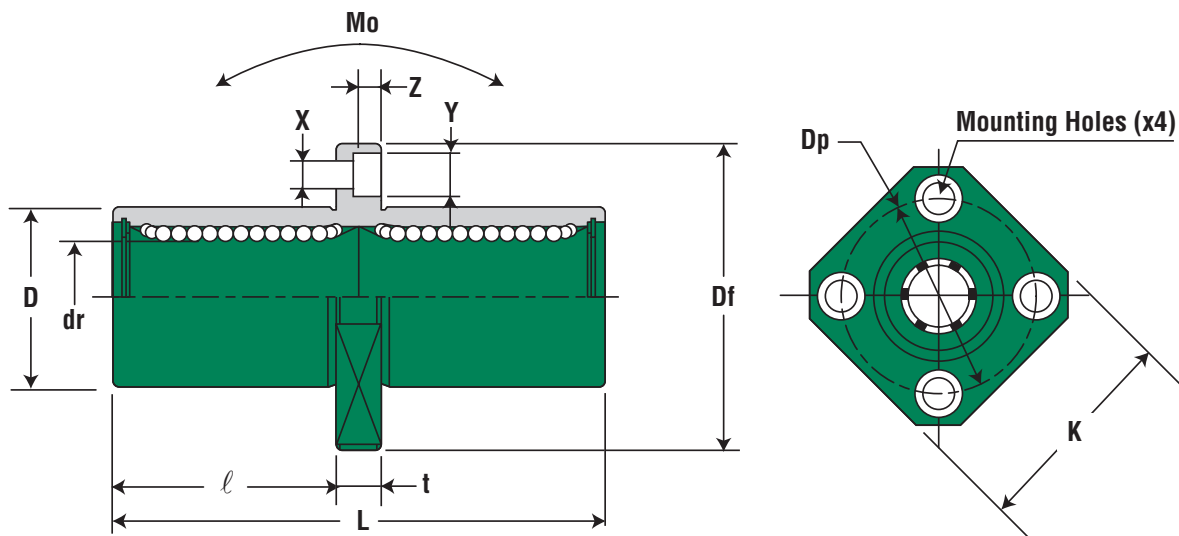
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Simplicity® Ball Bearings

Square Flange Center Mount - JIS Metric

Linear Motion Systems



JPKC SERIES - DIMENSIONAL INFORMATION

| NOMINAL SHAFT DIAMETER (mm) | PART NUMBER | MAJOR DIMENSIONS & TOLERANCES | | | | | | | | |
|--------------------------------------|-------------|-------------------------------|---------------|------------|-------------------------|-----------|-------------------------|-----------|-------------------|----------------|
| | | BALL CIRCUIT | WEIGHT (g) | dr (mm) | TOLERANCE (μ m) | D (mm) | TOLERANCE (μ m) | L (mm) | TOLERANCE (mm) | ℓ (mm) |
| 8 | JPKC8G | 4 | 43 | 8 | 0 -10 | 15 | 0 -13 | 45 | ± 0.3 | 20 |
| 12 | JPKC12G | | 90 | 12 | | 21 | 0 -16 | 57 | | 25.5 |
| 16 | JPKC16G | | 165 | 16 | | 28 | | 70 | | 32 |
| 20 | JPKC20G | 5 | 225 | 20 | 0 -12 | 32 | 0 -19 | 80 | | 36 |
| 25 | JPKC25G | | 500 | 25 | | 40 | | 112 | | 52 |
| 30 | JPKC30G | 6 | 590 | 30 | 0 -15 | 45 | 0 -22 | 123 | | 56.5 |
| 40 | JPKC40G | | 1,380 | 40 | | 60 | | 151 | | 69 |
| 50 | JPKC50G | | 3,400 | 50 | | 80 | | 192 | | 89.5 |
| 60 | JPKC60G | | 4,060 | 60 | 0 -20 | 90 | 0 -25 | 209 | | 95.5 |

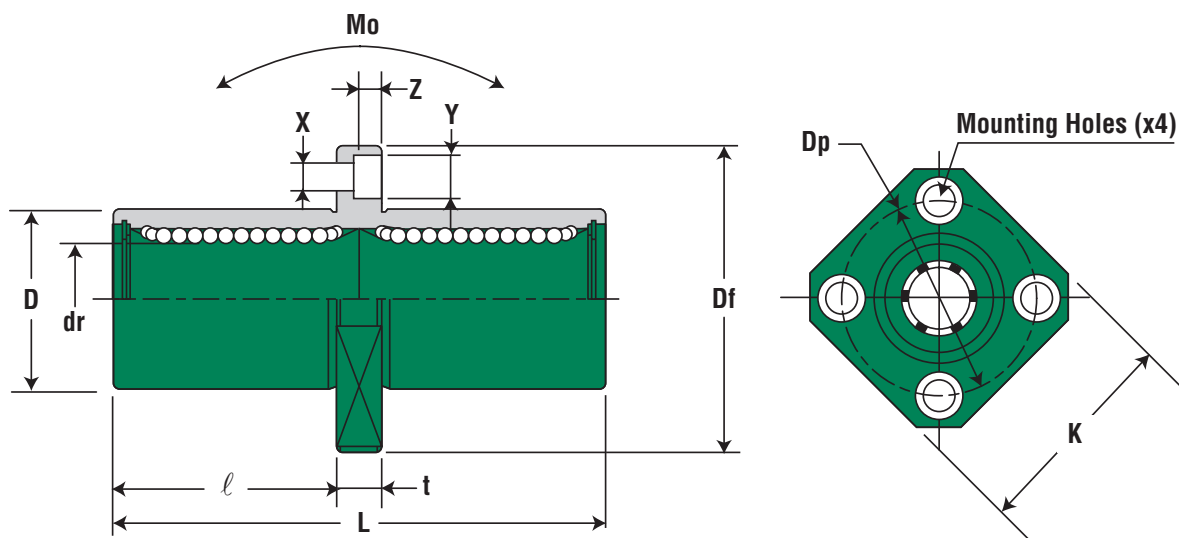
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Simplicity® Ball Bearings

Square Flange Center Mount - JIS Metric

Linear Motion Systems



JPKC SERIES - DIMENSIONAL INFORMATION (cont.)

(Standard Steel Finish)

| MAJOR DIMENSIONS & TOLERANC | | | | | | | LOAD RATING | | | |
|-----------------------------|-----------|-----------|------------|-------------------|---|--|---------------------|---------------------|--|--------------------------------------|
| Df (mm) | K (mm) | t (mm) | Dp (mm) | X x Y x Z (mm) | ECCENTRICITY ID to OD (inch/ μm) | PERPENDICULARITY FLANGE FACE to ID (inch/ μm) | DYNAMIC C (N) | STATIC Co (N) | ALLOWABLE STATIC MOMENT Mo (N-m) | NOMINAL SHAFT DIAMETER (mm) |
| 32 | 25 | 5 | 24 | 3.5 x 6 x 3.1 | 15 | 15 | 431 | 784 | 4.3 | 8 |
| 42 | 32 | 6 | 32 | 4.5 x 7.5 x 4.1 | | | 813 | 1,570 | 10.9 | 12 |
| 48 | 37 | | 38 | | | | 1,230 | 2,350 | 19.7 | 16 |
| 54 | 42 | 8 | 43 | 5.5 x 9 x 5.1 | 20 | 20 | 1,400 | 2,740 | 26.8 | 20 |
| 62 | 50 | | 51 | | | | 1,560 | 3,140 | 43.4 | 25 |
| 74 | 58 | 10 | 60 | 6.6 x 11 x 6.1 | | | 2,490 | 5,490 | 82.8 | 30 |
| 96 | 75 | 13 | 78 | 9 x 14 x 8.1 | 25 | 25 | 3,430 | 8,040 | 147 | 40 |
| 116 | 92 | | 98 | | | | 6,080 | 15,900 | 397 | 50 |
| 134 | 106 | 18 | 112 | 11 x 17 x 11.1 | 30 | 30 | 7,550 | 20,000 | 530 | 60 |

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PRODUCT OVERVIEW



- The Simplicity® ball bearing consists of an outer cylinder, ball retainer, balls and two end rings. The ball retainer which holds the balls in the recirculating tracks is held inside the outer cylinder by end rings.
- Those parts are assembled to optimize their required functions.
- The outer shell is heat treated to ensure long life.
- The ball retainer is molded from a durable polymer to ensure smooth motion.

FEATURES

High Precision and Rigidity -

The Simplicity® ball bearing is produced from a solid steel outer cylinder and incorporates an industrial strength polymer retainer.

Ease of Assembly -

The standard type of Simplicity® ball bearing can be loaded from any direction. Precision control is possible using only the shaft supporter, and the mounting surface can be machined easily.

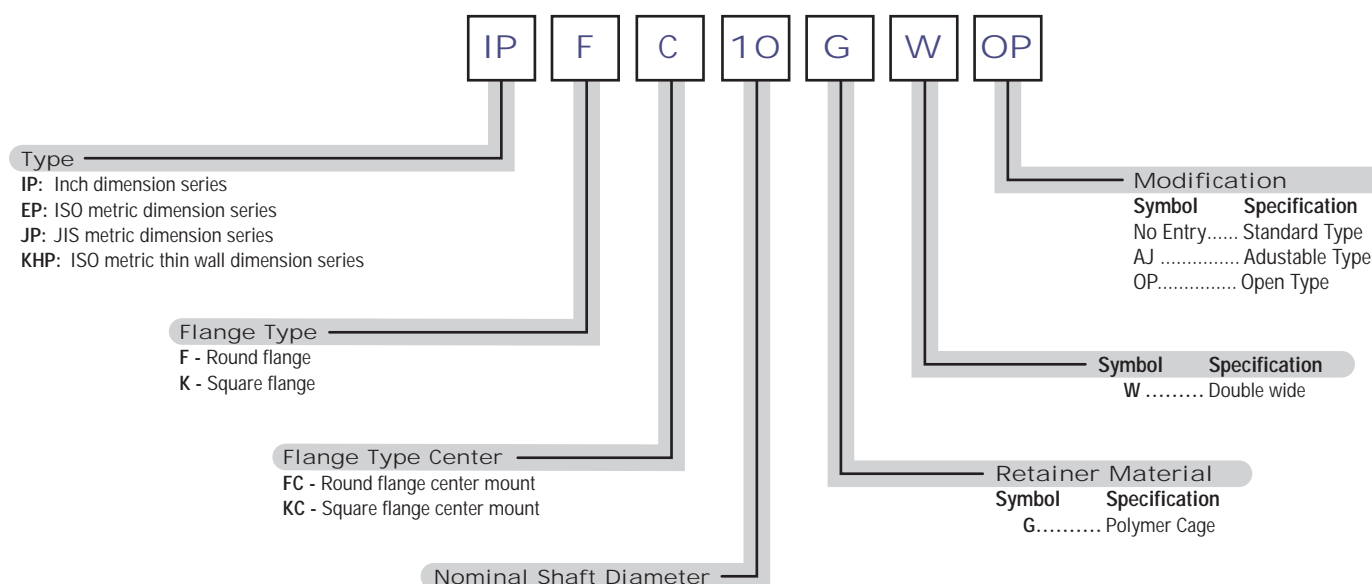
Ease of Replacement -

Simplicity® ball bearing of each type are completely interchangeable because of their standardized dimensions and strict precision control. Replacement because of wear or damage is therefore easy and accurate.

Variety of Types -

PBC offers a full line of Simplicity® ball bearings: the standard, integral single-retainer closed type, the clearance adjustable type and the open types. The user can choose from among these according to the application requirements to be met.

ORDERING INFORMATION



NOTE: Precision of inscribed circle diameters and outside diameters for the clearance adjustable type (...-AJ) and the open type (...-OP) indicates the value obtained before the corresponding type is subjected to cutting process.

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LOAD RATING AND LIFE EXPECTANCY

The life (L) of a linear bushing can be obtained from the following equation with the basic dynamic load rating and the load applied to the bush:

$$L = \left(\frac{f_H \cdot f_T \cdot f_C \cdot C}{f_W \cdot P} \right)^3 \cdot 50 \text{ ————— } 1$$

L : Rated life (km/in.)

C : Basic dynamic load rating (N/#)

P : Working load (N/#)

f_W : Load coefficient

f_H : Hardness factor (see page ???)

f_T : Temperature coefficient (see page ???)

f_C : Contact coefficient (see page ???)

The lifespan (L_h) of a linear ball bushing in hours can be obtained by calculating the traveling distance per unit time. The lifespan can be obtained from the following equation if the stroke length and the number of strokes are constant:

$$L_h = \left(\frac{L \cdot 10^3}{2 \cdot s \cdot n_1 \cdot 60} \right) \text{ ————— } (2)$$

L_h : Lifespan (hr)

L : Rated life (km/in.)

s : Stroke length (m/in.)

n_1 : Number of strokes per minute (cpm)

LOAD RATING

Basic Dynamic Load Rating (C) -

This term is arrived at based on an evaluation of a number of identical linear systems individually run in the same conditions, if 90% of them can run with the load (with a constant value in a constant direction) for a distance of 50 km without damage caused by rolling fatigue. This is the basis of the rating.

Allowable Static Moment (M) -

This term defines the allowable limit value of static moment load, with reference to the amount of permanent deformation similar to that used for evaluation of basic rated load (C_0).

Static Safety Factor (f_s) -

This factor is used based on the application condition as shown in Table 1.

TABLE 1 - STATIC SAFETY FACTORS

| CONDITION OF USE | LOW LIMIT OF f_s |
|---|--------------------|
| When the shaft has less deflection and shock | 1 to 2 |
| When elastic deformation should be considered with respect to cantilever load | 2 to 4 |
| When the equipment is subject to vibration and impacts | 3 to 5 |

Basic Static Load Rating (C_0) -

This term defines a static load such that, at the contacting position where the maximum stress is exercised, the sum of the permanent deformation of the rolling elements and that of the rolling plane is 0.0001 time of the diameter of the rolling elements.

RELATION BETWEEN BALL CIRCUITS AND LOAD RATING

The Simplicity® linear ball bearings are constructed so that the ball circuits are spaced equally. The load rating varies according to the loaded position. The load ratings of the linear ball bearings from the dimensional tables are per track and increased loading can be achieved by equally sharing the load between the tracks.

The following table shows the increased value by the number of ball circuits in such cases:

| Number of Rows | 4 | 5 | 6 |
|--|-------|-------|-------|
| C_0 Load Rating Specified on the Tables | | | |
| C_{0max} Maximum Load Rating | | | |
| Load Ratio C_{0max}/C_0 | 1.414 | 1.463 | 1.280 |

NOTES: 3 track bearing is equal.

Open bearing load is de-rated by 50% if going against the opening.

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CLEARANCE & FIT

Standard-type Simplicity® linear ball bearings matched to a shaft that provides inadequate clearance may result in early bearing failure and/or rough linear motion. The clearance adjustable linear ball bearings and open linear ball bearings can be adjusted when assembled in the housing by controlling the housing bore. However, too much clearance will increase

the deformation of the linear ball bearing, which will affect its precision and life. Therefore, the appropriate clearance between the ball bearing and shaft, and the appropriate linear ball bearing housing bore are required based on application. Table 2 shows recommended fit of the linear ball bearing:

TABLE 2

| MODEL | DIVISION | SHAFT | | HOUSING | |
|-------|----------------|------------|--------------|-----------|-----------|
| | | NORMAL FIT | TRANSITIONAL | LOOSE FIT | TIGHT FIT |
| JP | High Precision | g6 | h6 | H7 | J7 |
| EP | High Precision | g6 | h6 | H7 | J7 |
| IP | High Precision | h6 | j6 | H7 | J7 |

SHAFT & HOUSING

To optimize performance of the Simplicity® linear ball bearing it is recommended that a high precision shaft and pillow block are required.

Shaft -

The rolling balls in the Simplicity® linear ball bearing are in line contact with the shaft surface. Therefore, the shaft dimensions, tolerance, surface finish, and hardness greatly affect the performance of the linear ball bearing. The shaft should be manufactured to the following tolerances:

- 1) Surface finish critically affects the smooth rolling of balls;
Shaft surface finish should be 6-8 micro (RA# 7.2 to 10.8 a 1.11 to 1 ratio).

- 2) Shaft hardness should be HRC 60 to 64. Hardness less than HRC 60 will decrease the life/load, see page 126.
- 3) Preload increases the frictional resistance slightly. If the preload is too tight, the deformation of the bearing sleeve will shorten the linear ball bearing's life.

Housing -

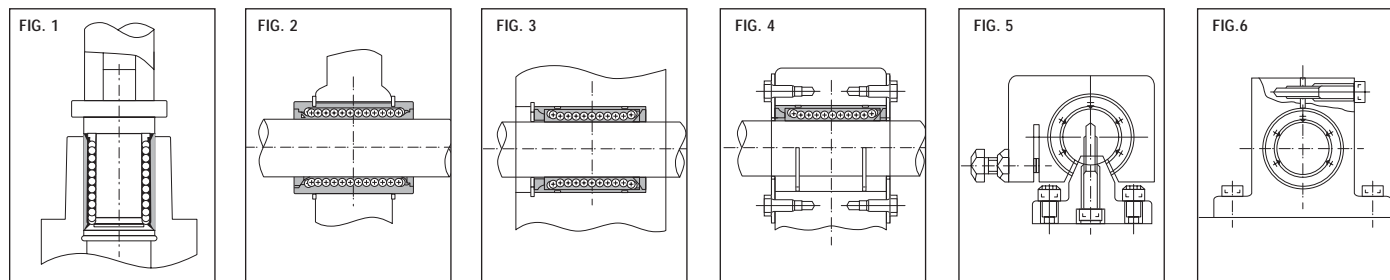
There are a wide variety of housings differing in design, machining, and mounting. See Table 2 (above) and the following section on mounting requirements.

MOUNTING

When inserting the linear ball bearing into the housing, do not hit the linear ball bearing on the end-retaining ring, but apply pressure either by hand or arbor on the linear ball bearing sleeve (See Fig.1) To insert the shaft into the mounted linear ball bearing, make sure the shaft is chamfered and be careful not to push on the balls by inserting the shaft at an angle. Note that if two shafts are used in parallel, the parallelism is an important factor to assure smooth linear movement and not damage the linear ball bearings.

Examples of Mounting -

The popular way to mount linear ball bearings is with a slight preload. Pacific Bearing recommends a slight clearance fit-up to ensure proper life. The examples, Figs. 2 to 6, show the inserted linear ball bearing using a variety of retention methods.



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RATING LIFE

Rating Life of the Linear System -

As long as the linear system reciprocates while being loaded, continuous stress acts on the linear system to cause flaking on the rolling bodies and planes because of material fatigue. The traveling distance of linear system until the first flaking occurs is called the life of the systems. The life of the system varies even for the systems of the same dimensions, structure, material, heat treatment and processing method, when used in the same conditions. This variation is brought about from the essential variations in the material fatigue itself. The rating life defined below is used as an index for the life expectancy of the linear system.

Rating Life (L) -

Rating life is the total travelling distance that 90% of a group of systems of the same size can reach without causing any flaking when they operate under the same conditions. The rating life can be obtained from the following equation with the basic dynamic load rating and the load on the linear system:

$$\text{For ball type: } L = \left(\frac{C}{P} \right)^3 \cdot 50 \quad (1)$$

L : Rating life (km)

C : Basic dynamic load rating (N)

P : load (N)

Consideration and influence of vibration impact loads and distribution of load should be taken into account when designing a linear motion system. It is difficult to calculate

the actual load. The rating life is also affected by the operating temperature. In these conditions, the expression (1) is arranged as follows:

For ball type:

$$L = \left(\frac{f_H \cdot f_T \cdot f_C \cdot C}{f_W \cdot P} \right)^3 \cdot 50$$

L : Rating life (km)

f_H : Hardness factor (See Fig.1)

C : Basic dynamic load rating (N)

f_T : Temperature coefficient (See Fig.2)

P : Load (N)

f_C : Contact coefficient (See Table 2)

f_W : Load coefficient (See Table 3)

The rating life in hours can be calculated by obtaining the travelling distance per unit time. The rating life in hours can be obtained from the following expression when the stroke length and the number of strokes are constant:

$$L_h = \left(\frac{L \cdot 10^3}{2\ell_s \cdot n_1 \cdot 60} \right)$$

L_h : Rating life in hours (hr)

ℓ_s : Stroke length (m)

L : Rating life (km)

n₁ : No. of strokes per minute (cpm)

SAMPLE CALCULATIONS

1. Obtaining the rated life L and lifespan L_h of the Simplicity® linear ball bearing used in the following conditions:

Linear ball bearingEP20G
Stroke length50mm
Number of strokes per minute50cpm
Load per bush490N

The basic dynamic load rating of the linear ball bearing is 882N from the dimension tables. From equation (1), therefore, the rated life L is obtained as follows:

$$L = \left(\frac{f_H \cdot f_T \cdot f_C \cdot C}{f_W \cdot P} \right)^3 \cdot 50 \quad f_H = f_T = f_C = f_W = 1.0$$

$$= \left(\frac{882}{490} \right)^3 \cdot 50 = 292\text{km}$$

From equation (2), the lifespan L_h is obtained as follows:

$$L_h = \frac{L \cdot 10^3}{2 \cdot \ell_s \cdot n_1 \cdot 60} = \frac{292 \cdot 10^3}{2 \cdot 0.05 \cdot 50 \cdot 60} = 973\text{hr}$$

2. Select the linear ball bearing type by satisfying the following conditions:

Number of linear bushing used4
Stroke length1m
Traveling speed10m/min.
Number of strokes per minute5spm
Lifespan10,000hr
Total load980N

From equation (2), the traveling distance within the lifespan is obtained as follows:

$$L = 2 \cdot \ell_s \cdot n_1 \cdot 60 \cdot L_h = 6,000\text{km}$$

From equation (1), the basic dynamic load rating is obtained as follows:

$$C = \sqrt[3]{\frac{L}{50} \cdot \left(\frac{f_W}{f_H \cdot f_T \cdot f_C} \right) \cdot P} = 1492\text{N}$$

Assume the following with a pair of shafts each with two linear ball bearings: f_C = 0.81 f_W = f_T = f_H = 1

As a result, EP20G is selected from the dimension table as the Simplicity® linear ball bearing type satisfying the value of C.

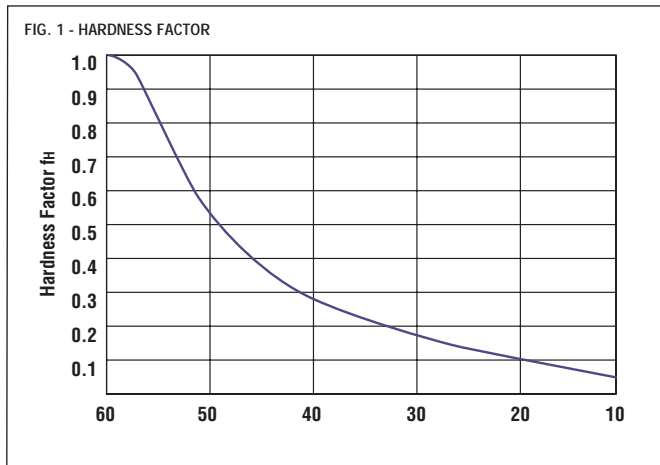
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RATING LIFE (cont.)

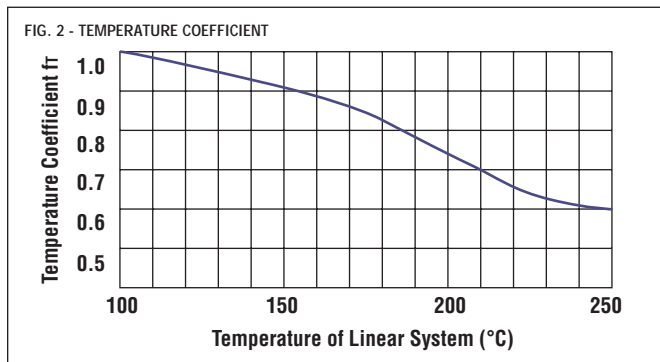
Hardness Factor (f_H) -

The shaft must be sufficiently hardened when a linear bushing is used. If not properly hardened, permissible load is lowered and the life of the linear ball bearings will be shortened.



Temperature Coefficient (f_T) -

If the temperature of the linear system exceeds 100°C, hardness of the linear system and the shaft lowers to decrease the permissible load compared to that of the linear system used at room temperature. As a result, the abnormal temperature rise shortens the rating life.



NOTES: Maximum temperature of plastic retainer 212°F or 100°C.
Maximum temperature 176° per Table 6.

Contact Coefficient (f_C) -

Generally two or more linear bearings are used on one shaft. Thus, the load on each linear system differs depending on each processing accuracy. Because the linear bushings are not loaded equally, the number of linear bushings per shaft changes the permissible load off the system.

TABLE 2 - CONTACT COEFFICIENT

| NUMBER OF LINEAR SYSTEMS PER SHAFT | CONTACT COEFFICIENT f_C |
|------------------------------------|---------------------------|
| 1 | 1.00 |
| 2 | 0.81 |
| 3 | 0.72 |
| 4 | 0.66 |
| 5 | 0.61 |

Load Coefficient (f_W) -

When calculating the load on the linear system, it is necessary to accurately obtain object weight, inertial force based on motion speed, moment load, and each transition as time passes. However, it is difficult to calculate those values accurately because reciprocating motion involves the repetition of start and stop as well as vibration and impact. A more practical approach is to obtain the load coefficient by taking the actual operating conditions into account.

TABLE 3 - LOAD COEFFICIENT

| OPERATING CONDITIONS | f_W |
|--|-------------|
| Operation at low speed (15m/min. or less) without impulsive shock from outside | 1.0 to 01.5 |
| Operation at intermediate speed (60m/min. or less) without impulsive shock | 1.5 to 2.0 |
| Operation at high speed (over 60m/min.) with impulsive shock from outside | 2.0 to 3.5 |

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FRICTIONAL RESISTANCE

The static frictional resistance of the Simplicity® linear system is so low that it is only slightly different from the kinetic frictional resistance, enabling smooth linear movement from low to high speeds. In general, the frictional resistance is expressed by the following equation.

$$F = \mu \cdot W + f$$

F : Frictional resistance μ : Coefficient of friction

W : Load weight f : Sealing resistance

The frictional resistance of each PBC linear system depends on the model, load weight, speed, and lubricant. The sealing resistance depends on the lip interference and lubricant, regardless of the load weight. The sealing resistance of one linear system is about 200 to 500 gf. The coefficient of friction depends on the load weight, moment load, and preload.

| TABLE 5 - COEFFICIENT OF LINEAR SYSTEM FRICTIONS (μ) | | |
|--|------------|-----------------------------------|
| LINEAR SYSTEM TYPE | MODELS | COEFFICIENT OF FRICTION (μ) |
| Linear Bearing | JP, EP, IP | 0.002 to 0.003 |

AMBIENT WORKING TEMPERATURE

The ambient working temperature range for each PBC linear system depends on the model. Consult PBC on use outside the recommended temperature range.

Temperature conversion equation:

$$C = \frac{5}{9}(F - 32) \quad F = 32 + \frac{9}{5}C$$

| TABLE 6 - AMBIENT WORKING TEMPERATURE | | |
|---------------------------------------|------------|-----------------------------|
| LINEAR SYSTEM TYPE | MODELS | AMBIENT WORKING TEMPERATURE |
| Linear Bushing | JP, EP, IP | -20 to 80°C, 176°F |

LUBRICATION AND DUST PREVENTION

Using PBC linear systems without lubrication increases the abrasion of the rolling elements, shortening the life span. The PBC linear systems therefore require appropriate lubrication. For lubrication PBC recommends turbine oil conforming to ISO Standards G32 to G68 or lithium base soap grease No.2. Some PBC linear systems are sealed to block dust out and seal lubricant in. If used in a harsh or corrosive environment a protective cover should be used.



PRODUCT OVERVIEW



Pacific Bearing is a worldwide supplier of innovative linear and rotary motion solutions. Since our founding in 1982, when Pacific Bearing pioneered the first two-piece bonded Simplicity® linear bearing, we have built a solid reputation for providing innovative application solutions solving the toughest linear and rotary problems. The success and continued demand for the Simplicity® self-lubricated linear and rotary bearings, has broadened our market opportunities and fostered new product introductions. The Simplicity® product family has expanded to include thrust and sleeve bearings, die set bushings, square bearings, pillow blocks, and a complete line of European and Japanese metric bearings.

Today, Pacific Bearing's design innovation extends beyond plane bearings. The introduction of FrelonGOLD® bearing liner material in 1998, created the opportunity to introduce Feather Shafting - a new lightweight ceramic coated roundway shaft that is approximately 1/3 the weight of steel shafting plus, providing the smoothest and quietest linear and rotary motion. Combining both Simplicity® and Feather Shaft® technologies, Pacific Bearing created Dolphin Guides® and Mini Rail® Linear Guides. They feature our simple, cost effective, two-piece linear guides that afford the design engineer, integration, flexibility, and direct compatibility with competitive Linear Guide technologies.

Redi-Rail® was created to meet the industry demand for faster, lighter and quieter linear motion applications. Combining lightweight structural components, precision steel inner raceways, and high-speed self lubricated roller bearings; Redi-Rail delivers high-speed performance (8 meters/second), with continuous rail lengths available up to 19 feet (6m). Redi-Rail® Linear guides are also configured in V-Guide Systems to provide high speed, in moderate load capacity in harsh environments.

Hevi-Rail®, heavy-duty Linear Bearing Systems provide high load capacity and simple installation. Hevi-Rail is a sealed, self-lubricated bearing that is capable of addressing both radial and axial loads up to 41 KN. Utilizing Hevi-Rail combination bearings, coupled with our complete line of accessories; eliminates components, reduces installation time, and subsequently lowers costs.

Pacific Bearing now offers its linear motion components completely assembled in pre-engineered Systems, Slides and Stages. We also offer ball screw, lead screw, and belt drives in addition to linear motors, and cylinders. Catalogue systems are available in a few days and custom systems are also quickly available.

Pacific Bearing is proud to introduce its light-weight polymer sleeve and flange bearings to their product family. Polymer bearings are used in a variety of applications with specially formulated compounds with the following advantages:

Main advantages of plane polymer bearings:

- Absorb vibrations
- Anti-corrosive
- Chemically resistant
- Lightweight
- Provide additional functions (integral seals, grease retention pockets etc.)
- Highly economic because of:
 - Lower unit costs
 - Fewer components
 - No maintenance costs

Additional advantages of compound plane bearings:

- Modified for various applications
- Low density
- Adjustability with electric insulation and conductivity
- Suitable for dry runs
- Friendly to edge loading
- Can show magnetic properties
- Resistant to ionizing radiation

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MAIN ADVANTAGES

Maintenance-free self-lubricated:

PBC compounds lubricants in balanced ratios into the polymer matrix and ensure through fiberate micro-wear during running in for clean and continuous auto lubrication. During micro-wear a transfer coating is built enabling optimal sliding performance. The basic polymers and their additives already own good tribological properties.

Long service life:

The homogeneous structure of the compound plane bearings prevent thin run or wear layers which would shorten service life right from the beginning. The basic polymer with its mainly synthetic reinforcement additives forms an intimate matrix for other additives. There is no abrasive wear of the shafts because the commonly used glass fibers have been removed.

Low friction:

Static and dynamic coefficients of friction are close to each other due to the high amount of PTFE and other special additives in the compounds. Thus, we ensure stick-slip-free running at lower speeds. The plane bearing also runs with much less noise. The frictional behavior of the compound plane bearings depends mainly on temperature, sliding speeds, types of movement and loads. Surface structure and the circumstances of dry running or greasing standards substantially influence frictional behavior. Through the appropriate lubrication the coefficient of friction can be reduced even further.

High dimensional stability:

All compound plane bearings take in virtually no water, which can be disregarded to dimensional accuracy in connection with the installation. Fiber strengthening reduces thermal expansion/contraction and improves the press-fit at higher temperatures.

Minimal wear:

Compound plane bearings are extremely wear resistant in rotating and axial bearings as well as in hinge movements under high loads.



High loading capacity:

Our compound plane bearings can withstand immense forces and pressures. As well as edge loads, which do not cause problems in contrast to common plane bearings made of non-ferrous metals or composite materials. Depending on the compound chosen, high pressures are also permissible.

Broad temperature range:

Depending on the material temperatures of -200°C/-328°F up to +250 °C can be withstood during application. Always check the compound specifications in each application with regard to temperature tolerances.

Improved thermal conductivity:

Polymer compound plane bearings show an improved thermal conductivity. Higher rpm/sfm during continuous operation are possible thanks to a better press-fit of the plane bearing in its housing. This is achieved through fiber strengthening.

PLANE BEARINGS FOR ALL APPLICATIONS

Pacific Bearing produces compound plane bearings through an injection molding process.

We can help you select a suitable material for a specific application from our wide range of materials. Our technical staff will support you at every step of the way. PBC will find the best compound for your application – with regard to costs as well as effectiveness/performance.

Whether you are looking for standard parts or custom/proprietary components we can provide standard plane bearings. Special components and seals are available as well.

Standard Plane Bearings:

Standard bearings are stocked in compounds A and E:

- Bushings
- Flanged bushings
- Thrust washers
- Bushings with integral seals

You can select exact dimensions from the separate dimension table.

Plane Bearings with Integral Seals:

Plane bearings with integral seals have proven superior in sustaining the basic advantages of our compound plane bearings even in tough environments.

The advantages:

- Integral seals keep away dirt and water from the bearing
- Initial lubrication is suggested
- Safe from corrosion

As a standard we provide bearings with double-sided integral seals.

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HIGH PERFORMANCE PLANE BEARINGS

High performance plane bearings are a specialty of Pacific Bearing, which is distinguished by a quality-analytic separation of the bearing function. We manufacture them by multi cavity injection molding process. These are high filled and form a stable basic body and a sliding layer with the most favorable wear and friction values. Additionally, we include specially arrayed grease retention pockets. Integrated elastomer integral seals complement these bearings.

The layers of our high performance plane bearings are built up as follows:

- **Outer layer:** A high-filled basic body guarantees press-fit and pressure capacity with high temperatures as well as with high stress
- **Inner layer:** Tribologically modified sliding layer for optimal wear and friction characteristics

They show the particular qualities of:

- Increased application possibilities
- Corrosion resistance
- Low weight
- Optimized performance
- Optimal adaptation to your requirements through suitable combinations of materials and design

SPECIAL PARTS

We can deliver special forms and dimensions of parts under wear and friction demands, which we design, and manufacture individually along your requirements. Our service covers the material side as well as dimensional interpretation of the component.

Other special components are, for example:

- Gearwheels, tooth racks
- Plane bearings with integrated grease retention pockets and integral seals
- Slide ring seals
- Half sockets, ball sockets
- Spherical plane bearings/ components
- Split bushings
- High performance plane bearings
- Thrust washers
- Multi-component parts

Our compound plane bearings markets:

- Automotive
- Agricultural machinery
- Mechanical engineering
- Hydraulics
- Light engineering
- Valves
- Chemical apparatus
- Pneumatics
- Oven construction
- Semiconductor production lines
- Electric motors
- Textile machinery
- Medical and laboratory technology
- Pumps
- Printing presses
- Paper making machines
- Household appliances
- Food industry
- Sliding elements
- Casters
- Calotte bearings
- Spindle nuts
- Wipers
- Furniture
- Industrial engineering
- Pharmaceutical industry
- Conveyor technology
- Galvanization equipment
- Office equipment
- Automation



HOW TO CHOOSE THE BEST MATERIAL

The optimal application of a plane bearing in a system essentially depends on temperature, sliding speed, the occurring loads and environmental influences. We offer a wide spectrum of materials for the most varied applications. The technical data should give you an orientation and simplify the choice. In general, testing is advised.

With only few exceptions we dispense with the use of glass fibers, which considerably enhances sliding performance and increases service life. Nevertheless, with synthetic fiber reinforcement the press-fit in housing shows increased temperature dependence. Hence, continuous use temperature should as a rule not exceed 60% of the maximum sliding surface temperature if special fixation offered or safety in the mounting arrangement is relinquished.

Our technical staff not only offer you a wide choice of materials but we can provide additional more detailed technical data. Apart from the material offered we also have access to all the other commonly used polymers or we can use some suitable material from our own Value Added Polymer series of compounds. Furthermore, we can design the optimal material for your demands in our in-house developing department and then produce the new material.

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| COMPOUND | | A | E | B | C | D | F | G |
|----------------------------------|----------------------|--|-------------------------------------|--|------------------------------|---|---|--|
| BASIS POLYMER | | PEEK | PBT | PAI | PBT | PBT | POM | PPS |
| Additives | | carbon fibers, graphite, PTFE | bronze, PTFE | graphite, PTFE, additives | aramide fibers, bronze, PTFE | long glass fibers, PTFE bronze, MoS ₂ | PTFE | glass fibers, graphite, PTFE |
| color | | black | brown | dark grey | olive | grey | white | light brown |
| density | g/cm ³ | 1.48 | 1.65 | 1.5 | 1.48 | 1.60 | 1.52 | 1.73 |
| water vapor RT/50% rF | % | 0.10 | 0.10 | 0.3 | 0.15 | 0.30 | 0.2 | 0.05 |
| MECHANICAL PROPERTIES | | | | | | | | |
| tensile strength | MPa | 150 | 65 | 164 | 100 | 100 | 50 | 155 |
| modulus of elasticity | GPa | 6.5 | 2.8 | 6.6 | 4.2 | 6.4 | 2.5 | 13 |
| specific load, static | MPa | 150 | 70 | 150 | 80 | 90 | 60 | 120 |
| THERMAL PROPERTIES | | | | | | | | |
| thermal conductivity | W/mK | 0.60 | 0.26 | 0.53 | 0.27 | 0.26 | 0.32 | 0.34 |
| coefficient of thermal expansion | 10 ⁻⁶ 1/K | 30 | 14 | 25 | 13 | 25 | 120 | 30 |
| max. sliding surface temperature | °C | -100 +250 | -40 +100 | -120 +240 | -40 +120 | -50 +130 | -40 +80 | -40 +200 |
| max. temperature, unloaded | °C | +300 | +150 | +280 | +200 | +200 | +140 | +250 |
| TRIBOLOGICAL PROPERTIES | | | | | | | | |
| max. sliding speed, rotating | m/s | 1.5 | 1.0 | 2.5 | 1.0 | 1.2 | 1.0 | 1.2 |
| max. sliding speed, linear | m/s | 5.0 | 3.0 | 4.5 | 4.0 | 4.5 | 4.0 | 4.5 |
| max. pv-value | MPa • m/s | 3.5 | 0.8 | 4.0 | 1.0 | 1.1 | 0.6 | 2.6 |
| abstract | | 0.10 - 0.20 | 0.10 - 0.20 | 0.10 - 0.40 | 0.10 - 0.20 | 0.10 - 0.20 | 0.07 - 0.20 | 0.15 - 0.30 |
| short description | | Suitable for heavy loads Universal chemical resistance High temperatures | High loads Strong Machineable | Inexpensive material High temperature Special additives to improve the tribological properties | High loads Strong | High loads Strong Stable at high temperatures | This material is suitable mainly for the contact with food or applications in medical technology. The Compound is physiologically safe, corresponds to appropriate BGA/FDA recommendations. | High loads Strong Press-fit High temperatures |
| | | STOCKED | | PRODUCED TO ORDER | | | | |

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| CHEMICAL | A | E | B | C | D | F | G |
|-------------------------|---------|---|-------------------|---|---|---|---|
| Acetic acid, 5 % | + | + | + | + | + | + | + |
| Acetone | + | + | | - | + | + | + |
| Ammonia, 10 % | - | - | - | - | - | + | + |
| Carbon tetrachloride | + | + | + | + | + | + | + |
| Caustic soda, 5 % | + | + | + | + | + | + | - |
| Diesel | + | + | + | + | + | + | + |
| Formic acid, 5 % | + | + | + | - | + | + | + |
| Gas | + | + | + | + | + | + | + |
| HFC-Water-Glycol, 70 °C | + | + | + | + | + | + | + |
| Hydrochloric acid, 5 % | + | - | + | - | - | - | - |
| Kerosene | + | + | + | + | + | + | + |
| Mineral oil, 70 °C | + | + | + | + | + | + | + |
| Nitric acid, 5 % | + | - | + | - | - | - | - |
| Paraffin | + | + | + | + | + | + | + |
| Seawater | + | + | + | + | + | + | + |
| Sulfuric acid, 5 % | + | + | + | + | + | - | + |
| Water | + | + | + | + | + | + | + |
| | STOCKED | | PRODUCED TO ORDER | | | | |

+ Usage trouble-free, no corrosion expected

- Usage not recommended (chemical pit the compound and it is expected to react in a negative way)

On inquiry we will give you a detailed chemicals resistance list.



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These PBC materials (maintenance free) are standardized compounds for our plane bearings. Upon request we can also provide other standard and special bearings and sliding elements made of different materials or with divergent dimensions.

We solve a variety of problems and produce special forms as well as special dimensions according to your application needs even if they are not included in our tables.

Pacific Bearing® is always extending its standard mold family and adding proprietary features to custom molds as well.

COMPOUND A

Characteristics:

- Thermoplastic compound made of PEEK polymer matrix reinforced with synthetic fibers and modified with triboadditives
- Highly efficient high temperature material with high chemical and good wear resistance
- Recommended tolerance for press fit bushings: housing H7, shaft h7 - h9
- Color: black

Applications:

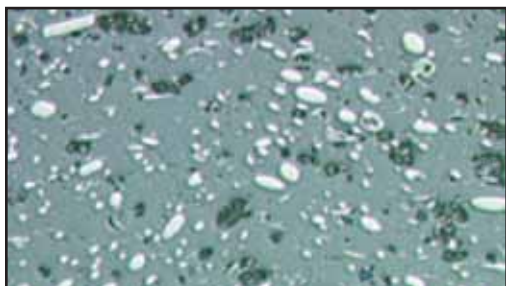
Industry – textile and knitting machinery, baking machinery, relay and control valves, powder coating equipment, chemical plants, armatures

Availability:

In stock – bearings, flanged bearings. Production to order – thrust washers, special parts of all kinds

Material structure:

PEEK + carbon fibers + PTFE + graphite



Grinding pattern A

Operation conditions:

Dry good
Oil lubricated. optimum
Grease lubricated optimum
Water lubricated optimum
Medium lubricated optimum

COMPOUND E

Characteristics:

- Filled thermoplastic compound made of PBT polymer matrix and triboadditives
- Good sliding performance under moderate operational conditions
- The E standard program is interchangeable with bushings according to DIN1494/ISO3547
- Very cost-effective sliding material
- Recommended tolerance for press fit bushings: housing H7, shaft h7 - h9
- Color: brown

Applications:

Industry – medical equipment, textile machinery, transport devices, apparatus engineering, furniture, materials handling technology, electronics, valve technology, agricultural machinery

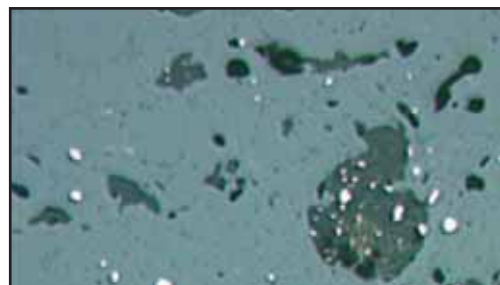
Availability:

In stock - bushings, flanged bushings, bushings with integrated sealings, thrust washers.

Production to order - special parts of all kinds

Material structure:

PBT + powdered bronze + PTFE



Grinding pattern E

Operational conditions:

Dry good good
Oil lubricated good
Grease lubricated good
Water lubricated less good
Medium lubricated less good

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COMPOUND B

Characteristics:

- Injection-molded polyamidimide modified with special additives
- Irreversible cross-linking through by thermal treatment
- High temperature material for demanding components with low thermal expansion
- High toughness and mechanical consistency
- High wear resistance against vibrating oscillations
- Good chemical resistance
- Recommended tolerance for press fit bushings: housing H7, shaft h7 - h9
- Color: dark grey

Applications:

Automobile industry – automatic transmission, pumps, labyrinth seal in turbo blowers, piston rings, valve seats, integral seals

Industry – continuous furnace, cockles for coating, textile machinery

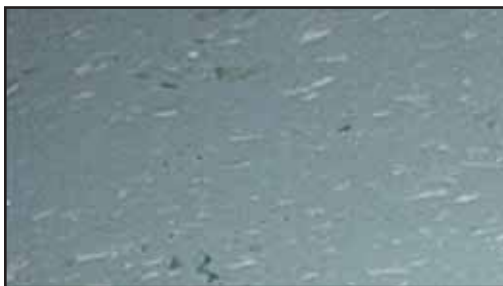
Other – aviation and astronautics, extreme high- and low-level temperature operations

Availability:

Production to order – bearings and special parts of all kinds

Material structure:

PAI + graphite + PTFE + additive



Grinding pattern B

Operational conditions:

Drygood
 Oil lubricatedvery good
 Grease lubricatedgood
 Water lubricated.....good
 Medium.....good

COMPOUND C

Characteristics:

- Thermoplastic compound made of PBT polymer matrix reinforced with long glass fibers and modified with triboadditives
- Improved performance compared to E, as well as lower wear rate and less shrinkage
- Excellent press-fit by long glass fibers
- Recommended tolerance for press fit bushings: housing H7, shaft h7 - h9
- Color: olive

Applications:

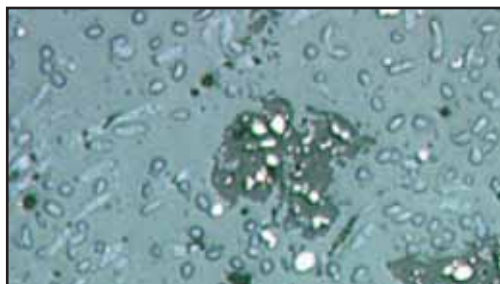
Industry – medical equipment, textile machinery, transport devices, apparatus engineering, furniture, materials handling technology, electronics, valve technology, agricultural machinery

Availability:

Production to order – bushings, flanged bushings, bushings with integrated sealings, thrust washers special parts of all kinds.

Material structure:

PBT + powdered bronze + PTFE + aramid fibers



Grinding pattern C

Operational conditions:

Drygood
 Oil lubricated.....good
 Grease lubricatedgood
 Water lubricated.....good
 Medium lubricatedless good



COMPOUND D

Characteristics:

- Thermoplastic compound made of PBT polymer matrix reinforced with long glass fibers and modified with triboadditives
- Good sliding performance under moderate operational conditions
- Recommended tolerance for press fit bushings: housing H7, shaft h7 - h9
- Color: grey

Applications:

Automobile industry – hinges, guides for sliding and lifting covers

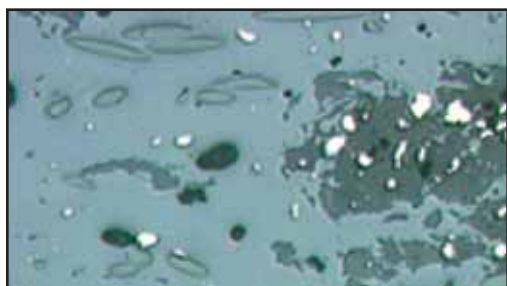
Industry – formed parts for machinery and apparatus engineering, adjustment devices

Availability:

Production to order – bushings, flanged bushings, thrust washers, special parts of all kinds

Material structure:

PBT + long glass fibers + powdered bronze + PTFE



Grinding pattern D

Operational conditions:

Drygood
Oil lubricatedgood
Grease lubricatedgood
Water lubricatedless good
Medium lubricatedless good

COMPOUND F

Characteristics:

- Thermoplastic compound made of made of POM polymer matrix with PTFE
- Corresponds to BGA/FDA recommendations. Suitable for contact with food.
- Recommended tolerance for press fit bushings: housing H7, shaft h7 - h9
- Color: white

Applications:

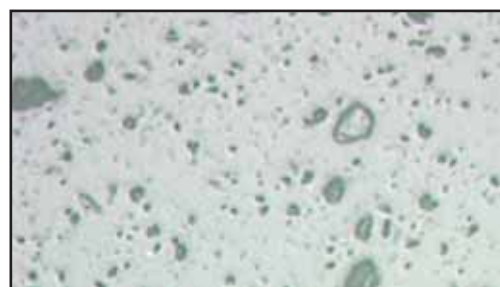
Industry – racks and packaging machines, pumps, butcher's shop equipment, medical equipment

Availability:

Production to order – bushings, flanged bushings, thrust washers, bushings with integrated seals, special parts of all kinds

Material structure:

POM + PTFE



Grinding pattern F

Operational conditions:

Dry goodgood
Oil lubricatedgood
Grease lubricatedgood
Water lubricatedless good
Medium lubricatedless good



COMPOUND G

Characteristics:

- Thermoplastic compound made of PPS polymer matrix reinforced with glass fibers and triboadditives
- High hydrolysis and temperature resistance
- Good sliding performance under moderate operational conditions
- Recommended tolerance for press fit bushings: housing H7, shaft h7 - h9
- Color: beige

Applications:

Industry – various outdoor applications

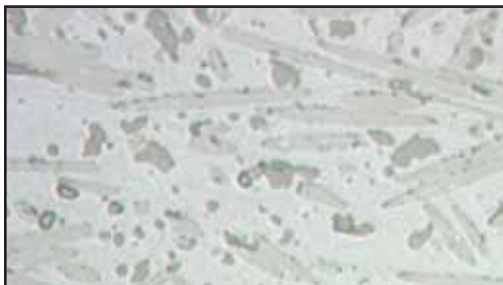
Automobile industry – rear windscreen wiper, pump bearing

Availability:

Production to order – bushings, flanged bushings, thrust washer, special parts of all kinds

Material structure:

PPS + glass fibers + PTFE



Grinding pattern G

Operational conditions:

Dryless good
Oil lubricatedgood
Grease lubricatedgood
Water lubricatedgood
Medium lubricatedgood

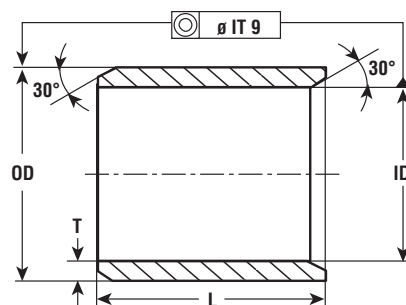
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Simplicity® Plane Bearings

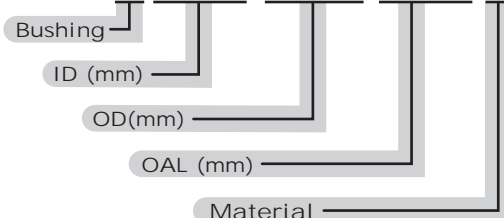
E - Polymer Series

Linear Motion Systems



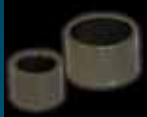
ORDERING INFORMATION

B-XXX.X-XXX.X-XXX.X-E



| PART NUMBER | DIMENSIONS | | | WEIGHT | FITTING TOLERANCE | | |
|-----------------------|------------|------------|-----------|--------|--------------------|-------------------------------|-------------|
| | ID [mm] | OD [mm] | L [mm] | [g] | HOUSING H7 [mm] | ID AFTER FITTING: F10 [mm] | |
| B-002.0-003.5-003.0-E | 2.0 | 3.5 | 3.0 | 0.03 | +0.012 0 | +0.046 +0.006 | |
| B-003.0-004.5-004.0-E | 3.0 | 4.5 | 4.0 | 0.06 | | | |
| B-003.0-004.5-006.0-E | 3.0 | 4.5 | 6.0 | 0.09 | | | |
| B-003.5-007.8-005.0-E | 3.5 | 7.8 | 5.0 | 0.31 | +0.015 0 | +0.058 +0.010 | |
| B-004.0-005.5-004.0-E | 4.0 | 5.5 | 4.0 | 0.07 | +0.012 0 | | |
| B-004.0-005.5-006.0-E | 4.0 | 5.5 | 6.0 | 0.11 | | | |
| B-005.0-007.0-004.8-E | 5.0 | 7.0 | 4.8 | 0.15 | +0.015 0 | | |
| B-005.0-007.0-005.0-E | 5.0 | 7.0 | 5.0 | 0.16 | | | |
| B-005.0-007.0-008.0-E | 5.0 | 7.0 | 8.0 | 0.25 | | | |
| B-005.0-007.0-010.0-E | 5.0 | 7.0 | 10.0 | 0.31 | | | |
| B-006.0-008.0-006.0-E | 6.0 | 8.0 | 6.0 | 0.22 | | | |
| B-006.0-008.0-008.0-E | 6.0 | 8.0 | 8.0 | 0.29 | | | |
| B-006.0-008.0-010.0-E | 6.0 | 8.0 | 10.0 | 0.36 | | | |
| B-008.0-010.0-005.0-E | 8.0 | 10.0 | 5.0 | 0.23 | | | |
| B-008.0-010.0-006.0-E | 8.0 | 10.0 | 6.0 | 0.28 | | | |
| B-008.0-010.0-008.0-E | 8.0 | 10.0 | 8.0 | 0.37 | | | |
| B-008.0-010.0-010.0-E | 8.0 | 10.0 | 10.0 | 0.47 | | | |
| B-008.0-010.0-012.0-E | 8.0 | 10.0 | 12.0 | 0.56 | | | |
| B-008.0-010.0-015.0-E | 8.0 | 10.0 | 15.0 | 0.70 | | | |
| B-008.0-012.0-007.0-E | 8.0 | 12.0 | 7.0 | 0.73 | | | +0.018 0 |
| B-008.0-012.0-010.0-E | 8.0 | 12.0 | 10.0 | 1.04 | | | |
| B-010.0-012.0-008.0-E | 10.0 | 12.0 | 8.0 | 0.46 | | | |
| B-010.0-012.0-009.0-E | 10.0 | 12.0 | 9.0 | 0.51 | | | |
| B-010.0-012.0-010.0-E | 10.0 | 12.0 | 10.0 | 0.57 | | | |
| B-010.0-012.0-012.1-E | 10.0 | 12.0 | 12.1 | 0.69 | | | |
| B-010.0-012.0-015.0-E | 10.0 | 12.0 | 15.0 | 0.86 | | | |
| B-010.0-012.0-020.0-E | 10.0 | 12.0 | 20.0 | 1.14 | | | |
| B-010.0-012.0-025.0-E | 10.0 | 12.0 | 25.0 | 1.43 | | | |
| B-010.0-014.0-008.0-E | 10.0 | 14.0 | 8.0 | 1.00 | | | |
| B-010.0-014.0-010.0-E | 10.0 | 14.0 | 10.0 | 1.24 | | | |
| B-010.0-014.0-012.0-E | 10.0 | 14.0 | 12.0 | 1.49 | | | |
| B-010.0-014.0-028.0-E | 10.0 | 14.0 | 28.0 | 3.48 | | | |
| B-012.0-014.0-008.0-E | 12.0 | 14.0 | 8.0 | 0.54 | | | |
| B-012.0-014.0-010.0-E | 12.0 | 14.0 | 10.0 | 0.67 | | | |
| B-012.0-014.0-012.0-E | 12.0 | 14.0 | 12.0 | 0.81 | | | |
| B-012.0-014.0-014.0-E | 12.0 | 14.0 | 14.0 | 0.94 | | | |
| B-012.0-014.0-015.0-E | 12.0 | 14.0 | 15.0 | 1.01 | | | |
| B-012.0-014.0-020.0-E | 12.0 | 14.0 | 20.0 | 1.35 | | | |
| B-012.0-014.0-030.0-E | 12.0 | 14.0 | 30.0 | 2.02 | | | |

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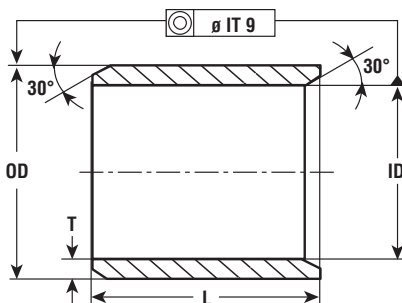


Simplicity® Plane Bearings

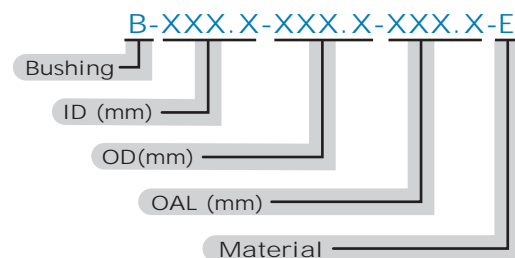
E - Polymer Series

Linear Motion Systems

E



ORDERING INFORMATION



| PART NUMBER | DIMENSIONS | | | WEIGHT [g] | FITTING TOLERANCE | |
|-----------------------|------------|------------|-----------|---------------|--------------------|-------------------------------|
| | ID [mm] | OD [mm] | L [mm] | | HOUSING H7 [mm] | ID AFTER FITTING: F10 [mm] |
| B-012.0-016.0-012.0-E | 12.0 | 16.0 | 12.0 | 1.74 | +0.018 0 | +0.086 +0.016 |
| B-012.0-016.0-020.0-E | 12.0 | 16.0 | 20.0 | 2.90 | | |
| B-012.0-017.0-020.0-E | 12.0 | 17.0 | 20.0 | 3.76 | | |
| B-012.0-018.0-010.0-E | 12.0 | 18.0 | 10.0 | 2.33 | | |
| B-013.0-015.0-010.0-E | 13.0 | 15.0 | 10.0 | 0.73 | | |
| B-013.0-015.0-020.0-E | 13.0 | 15.0 | 20.0 | 1.45 | | |
| B-014.0-016.0-010.0-E | 14.0 | 16.0 | 10.0 | 0.78 | | |
| B-014.0-016.0-015.0-E | 14.0 | 16.0 | 15.0 | 1.17 | | |
| B-014.0-016.0-020.0-E | 14.0 | 16.0 | 20.0 | 1.56 | | |
| B-014.0-016.0-025.0-E | 14.0 | 16.0 | 25.0 | 1.94 | | |
| B-014.0-018.0-014.0-E | 14.0 | 18.0 | 14.0 | 2.32 | | |
| B-014.0-018.0-020.0-E | 14.0 | 18.0 | 20.0 | 3.32 | | |
| B-015.0-017.0-010.0-E | 15.0 | 17.0 | 10.0 | 0.83 | | |
| B-015.0-017.0-015.0-E | 15.0 | 17.0 | 15.0 | 1.24 | | |
| B-015.0-017.0-020.0-E | 15.0 | 17.0 | 20.0 | 1.66 | | |
| B-015.0-017.0-025.0-E | 15.0 | 17.0 | 25.0 | 2.07 | | |
| B-016.0-018.0-007.0-E | 16.0 | 18.0 | 7.0 | 0.62 | | |
| B-016.0-018.0-010.0-E | 16.0 | 18.0 | 10.0 | 0.88 | | |
| B-016.0-018.0-012.0-E | 16.0 | 18.0 | 12.0 | 1.06 | | |
| B-016.0-018.0-015.0-E | 16.0 | 18.0 | 15.0 | 1.32 | | |
| B-016.0-018.0-020.0-E | 16.0 | 18.0 | 20.0 | 1.76 | | |
| B-016.0-018.0-025.0-E | 16.0 | 18.0 | 25.0 | 2.20 | | |
| B-016.0-020.0-020.0-E | 16.0 | 20.0 | 20.0 | 3.73 | +0.021 0 | +0.104 +0.020 |
| B-018.0-020.0-015.0-E | 18.0 | 20.0 | 15.0 | 1.48 | | |
| B-018.0-020.0-020.0-E | 18.0 | 20.0 | 20.0 | 1.97 | | |
| B-018.0-020.0-025.0-E | 18.0 | 20.0 | 25.0 | 2.46 | | |
| B-018.0-021.0-020.0-E | 18.0 | 21.0 | 20.0 | 3.03 | | |
| B-018.0-022.0-018.0-E | 18.0 | 22.0 | 18.0 | 3.73 | | |
| B-018.0-024.0-018.0-E | 18.0 | 24.0 | 18.0 | 5.88 | | |
| B-018.0-024.0-028.0-E | 18.0 | 24.0 | 28.0 | 9.14 | | |
| B-020.0-023.0-010.0-E | 20.0 | 23.0 | 10.0 | 1.67 | | |
| B-020.0-023.0-015.0-E | 20.0 | 23.0 | 15.0 | 2.51 | | |
| B-020.0-023.0-020.0-E | 20.0 | 23.0 | 20.0 | 3.34 | | |
| B-020.0-023.0-025.0-E | 20.0 | 23.0 | 25.0 | 4.18 | | |
| B-020.0-023.0-030.0-E | 20.0 | 23.0 | 30.0 | 5.02 | | |
| B-020.0-024.0-020.0-E | 20.0 | 24.0 | 20.0 | 4.56 | | |
| B-020.0-025.0-015.0-E | 20.0 | 25.0 | 15.0 | 4.37 | | |
| B-020.0-025.0-020.0-E | 20.0 | 25.0 | 20.0 | 5.83 | | |
| B-020.0-029.0-030.0-E | 20.0 | 29.0 | 30.0 | 17.14 | | |
| B-022.0-024.0-010.0-E | 22.0 | 24.0 | 10.0 | 1.19 | | |

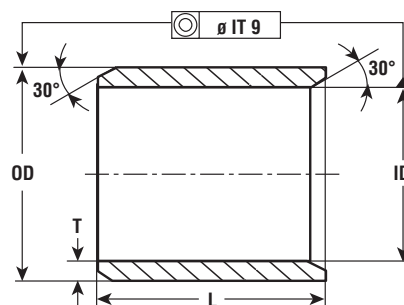
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Simplicity® Plane Bearings

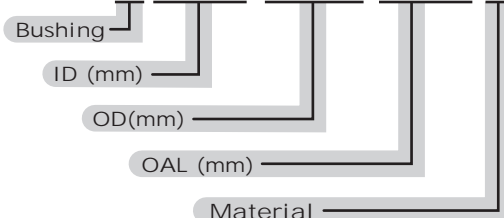
E - Polymer Series

Linear Motion Systems



ORDERING INFORMATION

B-XXX.X-XXX.X-XXX.X-E



| PART NUMBER | DIMENSIONS | | | WEIGHT | FITTING TOLERANCE | |
|-----------------------|------------|------------|-----------|--------|--------------------|-------------------------------|
| | ID [mm] | OD [mm] | L [mm] | | HOUSING H7 [mm] | ID AFTER FITTING: F10 [mm] |
| B-022.0-025.0-015.0-E | 22.0 | 25.0 | 15.0 | 2.74 | +0.021 0 | +0.104 +0.020 |
| B-022.0-025.0-020.0-E | 22.0 | 25.0 | 20.0 | 3.65 | | |
| B-022.0-025.0-025.0-E | 22.0 | 25.0 | 25.0 | 4.57 | | |
| B-022.0-025.0-030.0-E | 22.0 | 25.0 | 30.0 | 5.48 | | |
| B-022.0-027.0-020.0-E | 22.0 | 27.0 | 20.0 | 6.35 | | |
| B-022.0-028.0-020.0-E | 22.0 | 28.0 | 20.0 | 7.78 | | |
| B-024.0-027.0-015.0-E | 24.0 | 27.0 | 15.0 | 2.97 | | |
| B-024.0-027.0-020.0-E | 24.0 | 27.0 | 20.0 | 3.97 | | |
| B-024.0-027.0-030.0-E | 24.0 | 27.0 | 30.0 | 5.95 | | |
| B-025.0-028.0-015.0-E | 25.0 | 28.0 | 15.0 | 3.09 | | |
| B-025.0-028.0-020.0-E | 25.0 | 28.0 | 20.0 | 4.12 | | |
| B-025.0-028.0-025.0-E | 25.0 | 28.0 | 25.0 | 5.15 | | |
| B-025.0-028.0-030.0-E | 25.0 | 28.0 | 30.0 | 6.18 | | |
| B-025.0-028.0-035.0-E | 25.0 | 28.0 | 35.0 | 7.21 | | |
| B-025.0-028.0-050.0-E | 25.0 | 28.0 | 50.0 | 10.30 | | |
| B-025.0-030.0-018.0-E | 25.0 | 30.0 | 18.0 | 6.41 | | |
| B-025.0-030.0-020.0-E | 25.0 | 30.0 | 20.0 | 7.13 | | |
| B-025.0-030.0-022.0-E | 25.0 | 30.0 | 22.0 | 7.84 | | |
| B-025.0-030.0-023.0-E | 25.0 | 30.0 | 23.0 | 8.20 | | |
| B-025.0-030.0-025.0-E | 25.0 | 30.0 | 25.0 | 8.91 | +0.025 0 | +0.125 +0.025 |
| B-025.0-030.0-030.0-E | 25.0 | 30.0 | 30.0 | 10.69 | | |
| B-025.0-032.0-025.0-E | 25.0 | 32.0 | 25.0 | 12.93 | | |
| B-028.0-031.0-030.0-E | 28.0 | 31.0 | 30.0 | 6.88 | | |
| B-028.0-032.0-015.0-E | 28.0 | 32.0 | 15.0 | 4.67 | | |
| B-028.0-032.0-020.0-E | 28.0 | 32.0 | 20.0 | 6.22 | | |
| B-028.0-032.0-025.0-E | 28.0 | 32.0 | 25.0 | 7.78 | | |
| B-028.0-032.0-028.0-E | 28.0 | 32.0 | 28.0 | 8.71 | | |
| B-028.0-032.0-030.0-E | 28.0 | 32.0 | 30.0 | 9.33 | | |
| B-030.0-032.0-020.0-E | 30.0 | 32.0 | 20.0 | 3.21 | | |
| B-030.0-034.0-020.0-E | 30.0 | 34.0 | 20.0 | 6.64 | | |
| B-030.0-034.0-025.0-E | 30.0 | 34.0 | 25.0 | 8.29 | | |
| B-030.0-034.0-030.0-E | 30.0 | 34.0 | 30.0 | 9.95 | | |
| B-030.0-034.0-040.0-E | 30.0 | 34.0 | 40.0 | 13.27 | | |
| B-030.0-035.0-014.0-E | 30.0 | 35.0 | 14.0 | 5.90 | | |
| B-030.0-035.0-030.0-E | 30.0 | 35.0 | 30.0 | 12.64 | | |
| B-030.0-037.0-040.0-E | 30.0 | 37.0 | 40.0 | 24.31 | | |
| B-032.0-036.0-020.0-E | 32.0 | 36.0 | 20.0 | 7.05 | | |
| B-032.0-036.0-025.0-E | 32.0 | 36.0 | 25.0 | 8.81 | | |
| B-032.0-036.0-030.0-E | 32.0 | 36.0 | 30.0 | 10.57 | | |
| B-032.0-036.0-040.0-E | 32.0 | 36.0 | 40.0 | 14.10 | | |

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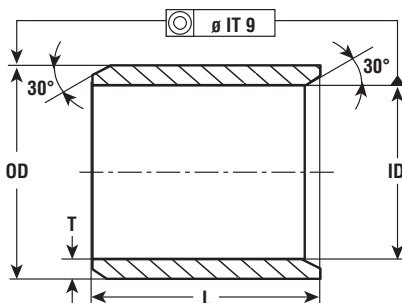


Simplicity® Plane Bearings

E - Polymer Series

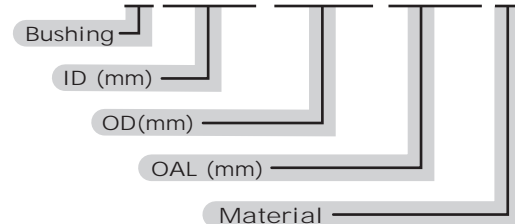
Linear Motion Systems

E



ORDERING INFORMATION

B-XXX.X-XXX.X-XXX.X-E



| PART NUMBER | DIMENSION | | | WEIGHT [g] | FITTING TOLERANCE | |
|-----------------------|------------|------------|-----------|---------------|--------------------|-------------------------------|
| | ID [mm] | OD [mm] | L [mm] | | HOUSING H7 [mm] | ID AFTER FITTING: F10 [mm] |
| B-032.0-036.0-050.0-E | 32.0 | 36.0 | 50.0 | 17.62 | +0.025 0 | +0.125 +0.025 |
| B-032.0-036.0-054.0-E | 32.0 | 36.0 | 54.0 | 19.03 | | |
| B-032.0-038.0-042.0-E | 32.0 | 38.0 | 42.0 | 22.86 | | |
| B-032.0-040.0-025.0-E | 32.0 | 40.0 | 25.0 | 18.66 | | |
| B-035.0-039.0-010.0-E | 35.0 | 39.0 | 10.0 | 3.84 | | |
| B-035.0-039.0-020.0-E | 35.0 | 39.0 | 20.0 | 7.67 | | |
| B-035.0-039.0-025.0-E | 35.0 | 39.0 | 25.0 | 9.59 | | |
| B-035.0-039.0-030.0-E | 35.0 | 39.0 | 30.0 | 11.51 | | |
| B-035.0-039.0-040.0-E | 35.0 | 39.0 | 40.0 | 15.34 | | |
| B-035.0-039.0-050.0-E | 35.0 | 39.0 | 50.0 | 19.18 | | |
| B-036.0-040.0-025.0-E | 36.0 | 40.0 | 25.0 | 9.85 | | |
| B-036.0-040.0-040.0-E | 36.0 | 40.0 | 40.0 | 15.76 | | |
| B-036.0-040.0-050.0-E | 36.0 | 40.0 | 50.0 | 19.70 | | |
| B-036.0-042.0-030.0-E | 36.0 | 42.0 | 30.0 | 18.19 | | |
| B-038.0-042.0-025.0-E | 38.0 | 42.0 | 25.0 | 10.37 | | |
| B-040.0-042.0-025.0-E | 40.0 | 42.0 | 25.0 | 5.31 | | |
| B-040.0-044.0-020.0-E | 40.0 | 44.0 | 20.0 | 8.71 | | |
| B-040.0-044.0-025.0-E | 40.0 | 44.0 | 25.0 | 10.89 | | |
| B-040.0-044.0-030.0-E | 40.0 | 44.0 | 30.0 | 13.06 | | |
| B-040.0-044.0-040.0-E | 40.0 | 44.0 | 40.0 | 17.42 | | |
| B-040.0-044.0-050.0-E | 40.0 | 44.0 | 50.0 | 21.77 | | |
| B-040.0-045.0-040.0-E | 40.0 | 45.0 | 40.0 | 22.03 | | |
| B-043.0-046.0-030.0-E | 43.0 | 46.0 | 30.0 | 10.38 | | |
| B-045.0-050.0-020.0-E | 45.0 | 50.0 | 20.0 | 12.31 | | |
| B-045.0-050.0-025.0-E | 45.0 | 50.0 | 25.0 | 15.39 | | |
| B-045.0-050.0-030.0-E | 45.0 | 50.0 | 30.0 | 18.47 | | |
| B-045.0-050.0-040.0-E | 45.0 | 50.0 | 40.0 | 24.62 | | |
| B-045.0-050.0-045.0-E | 45.0 | 50.0 | 45.0 | 27.70 | | |
| B-045.0-050.0-050.0-E | 45.0 | 50.0 | 50.0 | 30.78 | | |
| B-045.0-050.0-060.0-E | 45.0 | 50.0 | 60.0 | 36.93 | | |
| B-050.0-055.0-020.0-E | 50.0 | 55.0 | 20.0 | 13.61 | +0.030 0 | +0.150 +0.030 |
| B-050.0-055.0-025.0-E | 50.0 | 55.0 | 25.0 | 17.01 | | |
| B-050.0-055.0-030.0-E | 50.0 | 55.0 | 30.0 | 20.41 | | |
| B-050.0-055.0-040.0-E | 50.0 | 55.0 | 40.0 | 27.21 | | |
| B-050.0-055.0-050.0-E | 50.0 | 55.0 | 50.0 | 34.02 | | |
| B-050.0-055.0-060.0-E | 50.0 | 55.0 | 60.0 | 40.82 | | |
| B-050.0-055.0-070.0-E | 50.0 | 55.0 | 70.0 | 47.62 | | |
| B-050.0-058.0-040.0-E | 50.0 | 58.0 | 40.0 | 44.79 | | |
| B-055.0-060.0-040.0-E | 55.0 | 60.0 | 40.0 | 29.81 | | |
| B-055.0-060.0-060.0-E | 55.0 | 60.0 | 60.0 | 44.71 | | |

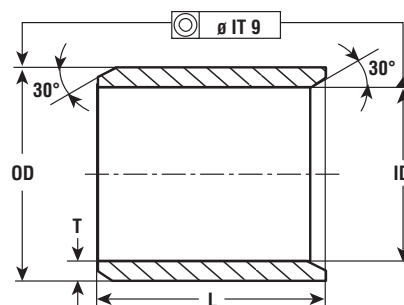
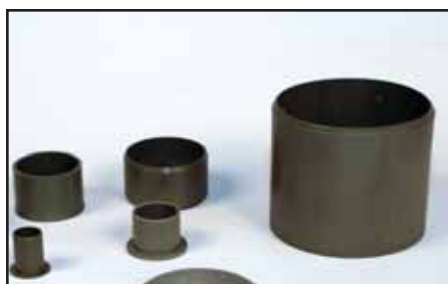
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Simplicity® Plane Bearings

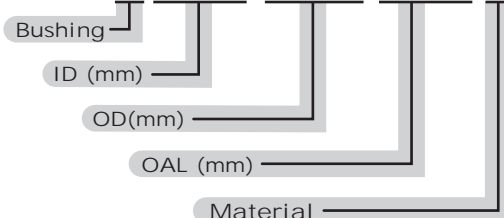
E - Polymer Series

Linear Motion Systems



ORDERING INFORMATION

B-XXX.X-XXX.X-XXX.X-E



| PART NUMBER | DIMENSION | | | WEIGHT [g] | FITTING TOLERANCE | |
|-----------------------|------------|------------|-----------|---------------|--------------------|-------------------------------|
| | ID [mm] | OD [mm] | L [mm] | | HOUSING H7 [mm] | ID AFTER FITTING: F10 [mm] |
| B-055.0-065.0-040.0-E | 55.0 | 65.0 | 40.0 | 62.20 | +0.030 0 | +0.150 +0.030 |
| B-060.0-065.0-030.0-E | 60.0 | 65.0 | 30.0 | 24.30 | | |
| B-060.0-065.0-040.0-E | 60.0 | 65.0 | 40.0 | 32.40 | | |
| B-060.0-065.0-060.0-E | 60.0 | 65.0 | 60.0 | 48.60 | | |
| B-060.0-065.0-070.0-E | 60.0 | 65.0 | 70.0 | 56.70 | | |
| B-064.0-068.0-052.5-E | 64.0 | 68.0 | 52.5 | 35.92 | | |
| B-065.0-070.0-040.0-E | 65.0 | 70.0 | 40.0 | 34.99 | | |
| B-065.0-070.0-060.0-E | 65.0 | 70.0 | 60.0 | 52.48 | | |
| B-068.0-072.0-010.0-E | 68.0 | 72.0 | 10.0 | 7.26 | | |
| B-070.0-075.0-040.0-E | 70.0 | 75.0 | 40.0 | 37.58 | | |
| B-070.0-075.0-060.0-E | 70.0 | 75.0 | 60.0 | 56.37 | | |
| B-070.0-075.0-070.0-E | 70.0 | 75.0 | 70.0 | 65.77 | | |
| B-070.0-075.0-080.0-E | 70.0 | 75.0 | 80.0 | 75.16 | | |
| B-075.0-080.0-025.0-E | 75.0 | 80.0 | 25.0 | 25.11 | | |
| B-075.0-080.0-032.0-E | 75.0 | 80.0 | 32.0 | 32.14 | | |
| B-075.0-080.0-040.0-E | 75.0 | 80.0 | 40.0 | 40.17 | +0.035 0 | +0.176 +0.036 |
| B-080.0-085.0-040.0-E | 80.0 | 85.0 | 40.0 | 42.76 | | |
| B-080.0-085.0-050.0-E | 80.0 | 85.0 | 50.0 | 53.46 | | |
| B-080.0-085.0-060.0-E | 80.0 | 85.0 | 60.0 | 64.15 | | |
| B-080.0-085.0-080.0-E | 80.0 | 85.0 | 80.0 | 85.53 | | |
| B-080.0-085.0-100.0-E | 80.0 | 85.0 | 100.0 | 106.91 | | |
| B-085.0-090.0-040.0-E | 85.0 | 90.0 | 40.0 | 45.36 | | |
| B-085.0-090.0-080.0-E | 85.0 | 90.0 | 80.0 | 90.71 | | |
| B-089.0-094.0-020.0-E | 89.0 | 94.0 | 20.0 | 23.72 | | |
| B-090.0-095.0-050.0-E | 90.0 | 95.0 | 50.0 | 59.94 | | |
| B-090.0-095.0-090.0-E | 90.0 | 95.0 | 90.0 | 107.88 | +0.040 0 | +0.203 +0.043 |
| B-100.0-105.0-050.0-E | 100.0 | 105.0 | 50.0 | 66.42 | | |
| B-100.0-105.0-095.0-E | 100.0 | 105.0 | 95.0 | 126.19 | | |
| B-100.0-105.0-100.0-E | 100.0 | 105.0 | 100.0 | 132.83 | | |
| B-120.0-125.0-050.0-E | 120.0 | 125.0 | 50.0 | 79.37 | | |
| B-120.0-125.0-150.0-E | 120.0 | 125.0 | 150.0 | 238.12 | | |
| B-125.0-130.0-030.0-E | 125.0 | 130.0 | 30.0 | 49.57 | | |
| B-125.0-130.0-060.0-E | 125.0 | 130.0 | 60.0 | 99.14 | | |
| B-130.0-135.0-050.0-E | 130.0 | 135.0 | 50.0 | 85.85 | +0.046 0 | +0.235 +0.050 |
| B-130.0-135.0-060.0-E | 130.0 | 135.0 | 60.0 | 103.02 | | |
| B-150.0-155.0-060.0-E | 150.0 | 155.0 | 60.0 | 118.58 | | |
| B-195.0-200.0-014.0-E | 195.0 | 200.0 | 14.0 | 35.83 | | |

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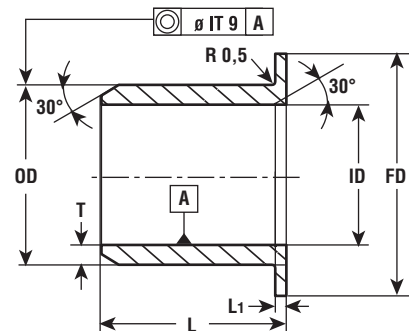


Simplicity® Plane Bearings

Flanged E - Polymer Series

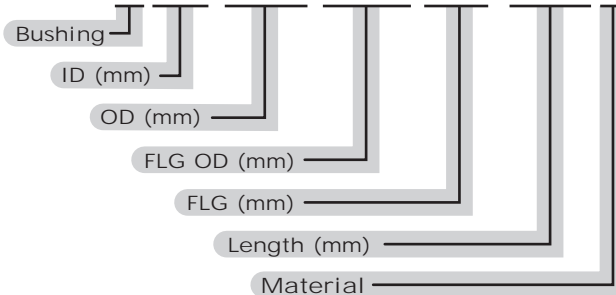
Linear Motion Systems

Flanged E



ORDERING INFORMATION

F-XXX-XXX.X-XXX.X-X.XX-XXX.X-E



| PART NUMBER | DIMENSION | | | | | WEIGHT [g] | FITTING TOLERANCE | |
|--------------------------------|------------|------------|------------|------------|-----------|---------------|--------------------|-------------------------------|
| | ID [mm] | OD [mm] | FD [mm] | L1 [mm] | L [mm] | | HOUSING H7 [mm] | ID AFTER FITTING: F10 [mm] |
| F-003-004.5-007.0-0.75-003.0-E | 3.0 | 4.5 | 7.0 | 0.75 | 3.0 | 0.07 | +0.012 0 | +0.046 +0.006 |
| F-003-004.5-007.0-0.75-005.0-E | 3.0 | 4.5 | 7.0 | 0.75 | 5.0 | 0.10 | | |
| F-004-005.5-009.0-0.75-003.0-E | 4.0 | 5.5 | 9.0 | 0.75 | 3.0 | 0.10 | | |
| F-004-005.5-009.0-0.75-004.0-E | 4.0 | 5.5 | 9.0 | 0.75 | 4.0 | 0.12 | | |
| F-004-005.5-009.0-0.75-006.0-E | 4.0 | 5.5 | 9.0 | 0.75 | 6.0 | 0.16 | | |
| F-005-007.0-010.0-1.00-004.0-E | 5.0 | 7.0 | 10.0 | 1.00 | 4.0 | 0.19 | +0.015 0 | +0.058 +0.010 |
| F-005-007.0-010.0-1.00-006.0-E | 5.0 | 7.0 | 10.0 | 1.00 | 6.0 | 0.25 | | |
| F-006-008.0-012.0-1.00-004.0-E | 6.0 | 8.0 | 12.0 | 1.00 | 4.0 | 0.25 | | |
| F-006-008.0-012.0-2.50-005.5-E | 6.0 | 8.0 | 12.0 | 2.50 | 5.5 | 0.46 | | |
| F-006-008.0-012.0-1.00-006.0-E | 6.0 | 8.0 | 12.0 | 1.00 | 6.0 | 0.32 | | |
| F-006-008.0-012.0-1.00-008.0-E | 6.0 | 8.0 | 12.0 | 1.00 | 8.0 | 0.39 | | |
| F-006-008.0-012.0-1.00-010.0-E | 6.0 | 8.0 | 12.0 | 1.00 | 10.0 | 0.47 | +0.021 0 | |
| F-006-019.5-025.0-2.00-005.0-E | 6.0 | 19.5 | 25.0 | 2.00 | 5.0 | 2.86 | | |
| F-008-010.0-015.0-1.00-004.5-E | 8.0 | 10.0 | 15.0 | 1.00 | 4.5 | 0.37 | +0.015 0 | |
| F-008-010.0-015.0-1.00-005.5-E | 8.0 | 10.0 | 15.0 | 1.00 | 5.5 | 0.42 | | |
| F-008-010.0-014.0-1.00-008.0-E | 8.0 | 10.0 | 14.0 | 1.00 | 8.0 | 0.50 | | |
| F-008-010.0-015.0-1.00-009.5-E | 8.0 | 10.0 | 15.0 | 1.00 | 9.5 | 0.61 | | |
| F-008-010.0-014.0-1.00-010.0-E | 8.0 | 10.0 | 14.0 | 1.00 | 10.0 | 0.59 | | |
| F-008-010.0-014.0-2.00-012.0-E | 8.0 | 10.0 | 14.0 | 2.00 | 12.0 | 0.81 | | |
| F-008-012.0-018.0-2.00-008.0-E | 8.0 | 12.0 | 18.0 | 2.00 | 8.0 | 1.30 | +0.018 0 | +0.071 +0.013 |
| F-008-012.0-021.0-2.00-008.0-E | 8.0 | 12.0 | 21.0 | 2.00 | 8.0 | 1.60 | | |
| F-008-012.0-016.0-2.00-010.0-E | 8.0 | 12.0 | 16.0 | 2.00 | 10.0 | 1.33 | | |
| F-010-012.0-016.0-1.00-006.0-E | 10.0 | 12.0 | 16.0 | 1.00 | 6.0 | 0.49 | | |
| F-010-012.0-018.0-1.00-007.0-E | 10.0 | 12.0 | 18.0 | 1.00 | 7.0 | 0.63 | | |
| F-010-012.0-022.0-1.00-007.0-E | 10.0 | 12.0 | 22.0 | 1.00 | 7.0 | 0.84 | | |
| F-010-012.0-016.0-2.00-012.0-E | 10.0 | 12.0 | 16.0 | 2.00 | 12.0 | 0.97 | | |
| F-010-012.0-019.0-2.00-016.0-E | 10.0 | 12.0 | 19.0 | 2.00 | 16.0 | 1.47 | | |
| F-010-012.0-018.0-1.00-017.0-E | 10.0 | 12.0 | 18.0 | 1.00 | 17.0 | 1.20 | | |
| F-010-014.0-018.0-2.00-010.0-E | 10.0 | 14.0 | 18.0 | 2.00 | 10.0 | 1.58 | | |
| F-010-016.0-020.5-2.00-011.0-E | 10.0 | 16.0 | 20.5 | 2.00 | 11.0 | 2.65 | | |
| F-010-017.0-031.0-2.00-025.0-E | 10.0 | 17.0 | 31.0 | 2.00 | 25.0 | 7.86 | | |
| F-011-014.0-017.0-1.50-006.5-E | 11.0 | 14.0 | 17.0 | 1.50 | 6.5 | 0.81 | | |
| F-012-014.0-018.0-1.00-010.0-E | 12.0 | 14.0 | 18.0 | 1.00 | 10.0 | 0.84 | | +0.086 +0.016 |
| F-012-014.0-018.0-1.00-012.0-E | 12.0 | 14.0 | 18.0 | 1.00 | 12.0 | 0.97 | | |
| F-012-014.0-018.0-2.00-012.0-E | 12.0 | 14.0 | 18.0 | 2.00 | 12.0 | 1.14 | | |
| F-012-014.0-017.0-0.50-004.0-E | 12.0 | 14.0 | 17.0 | 0.50 | 4.0 | 1.68 | | |

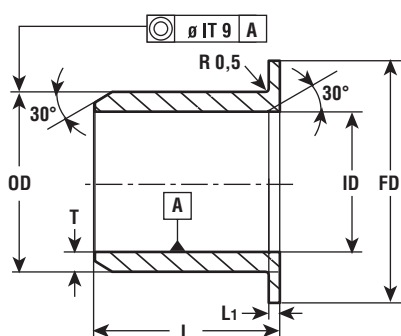
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Simplicity® Plane Bearings

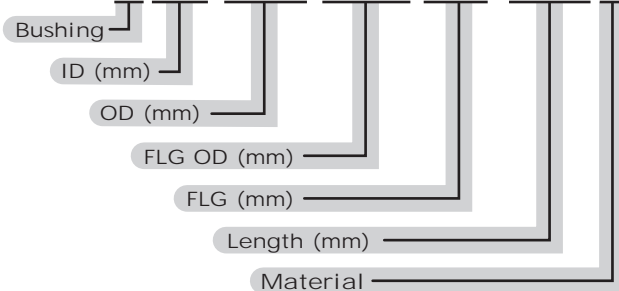
Flanged E - Polymer Series

Linear Motion Systems



ORDERING INFORMATION

F-XXX-XXX.X-XXX.X-X.XX-XXX.X-E



Flanged E

| PART NUMBER | DIMENSION | | | | | WEIGHT [g] | FITTING TOLERANCE | |
|--------------------------------|------------|------------|------------|------------|-----------|---------------|--------------------|-------------------------------|
| | ID [mm] | OD [mm] | FD [mm] | L1 [mm] | L [mm] | | HOUSING H7 [mm] | ID AFTER FITTING: F10 [mm] |
| F-012-015.0-022.0-1.00-006.0-E | 12.0 | 15.0 | 22.0 | 1.00 | 6.0 | 0.97 | +0.018 0 | +0.086 +0.016 |
| F-012-016.0-020.0-2.00-008.0-E | 12.0 | 16.0 | 20.0 | 2.00 | 8.0 | 1.53 | | |
| F-012-016.0-020.0-2.00-010.0-E | 12.0 | 16.0 | 20.0 | 2.00 | 10.0 | 1.82 | | |
| F-012-016.0-020.0-2.00-012.0-E | 12.0 | 16.0 | 20.0 | 2.00 | 12.0 | 2.11 | | |
| F-012-016.0-020.0-2.00-015.0-E | 12.0 | 16.0 | 20.0 | 2.00 | 15.0 | 2.55 | | |
| F-012-016.0-020.0-2.00-019.0-E | 12.0 | 16.0 | 20.0 | 2.00 | 19.0 | 3.13 | | |
| F-014-016.0-020.0-1.00-009.0-E | 14.0 | 16.0 | 20.0 | 1.00 | 9.0 | 0.89 | | |
| F-014-016.0-022.0-1.00-012.0-E | 14.0 | 16.0 | 22.0 | 1.00 | 12.0 | 1.23 | | |
| F-014-016.0-020.0-2.00-014.0-E | 14.0 | 16.0 | 20.0 | 2.00 | 14.0 | 1.46 | | |
| F-014-016.0-020.0-2.00-015.0-E | 14.0 | 16.0 | 20.0 | 2.00 | 15.0 | 1.54 | | |
| F-014-018.0-022.0-2.00-009.5-E | 14.0 | 18.0 | 22.0 | 2.00 | 9.5 | 1.99 | | |
| F-014-018.0-022.0-2.00-014.0-E | 14.0 | 18.0 | 22.0 | 2.00 | 14.0 | 2.74 | | |
| F-015-017.0-023.0-1.00-017.0-E | 15.0 | 17.0 | 23.0 | 1.00 | 17.0 | 1.72 | | |
| F-016-018.0-024.0-1.00-012.0-E | 16.0 | 18.0 | 24.0 | 1.00 | 12.0 | 1.38 | | |
| F-016-018.0-024.0-1.00-017.0-E | 16.0 | 18.0 | 24.0 | 1.00 | 17.0 | 1.82 | | |
| F-016-018.0-032.0-1.50-021.0-E | 16.0 | 18.0 | 32.0 | 1.50 | 21.0 | 3.21 | +0.021 0 | +0.104 +0.020 |
| F-016-018.0-022.0-2.00-022.0-E | 16.0 | 18.0 | 22.0 | 2.00 | 22.0 | 2.35 | | |
| F-016-020.0-028.0-2.00-015.0-E | 16.0 | 20.0 | 28.0 | 2.00 | 15.0 | 3.79 | | |
| F-016-020.0-024.0-2.00-016.0-E | 16.0 | 20.0 | 24.0 | 2.00 | 16.0 | 3.44 | | |
| F-016-020.0-024.0-2.00-022.0-E | 16.0 | 20.0 | 24.0 | 2.00 | 22.0 | 4.56 | | |
| F-017-021.0-025.0-2.00-022.0-E | 17.0 | 21.0 | 25.0 | 2.00 | 22.0 | 4.81 | | |
| F-018-020.0-026.0-1.00-012.0-E | 18.0 | 20.0 | 26.0 | 1.00 | 12.0 | 1.54 | | |
| F-018-020.0-026.0-1.00-017.0-E | 18.0 | 20.0 | 26.0 | 1.00 | 17.0 | 2.03 | | |
| F-018-020.0-024.0-2.00-022.0-E | 18.0 | 20.0 | 24.0 | 2.00 | 22.0 | 2.62 | | |
| F-018-020.0-026.0-1.00-022.0-E | 18.0 | 20.0 | 26.0 | 1.00 | 22.0 | 2.52 | | |
| F-018-022.0-026.0-2.00-006.8-E | 18.0 | 22.0 | 26.0 | 2.00 | 6.8 | 1.91 | | |
| F-018-022.0-026.0-2.00-018.0-E | 18.0 | 22.0 | 26.0 | 2.00 | 18.0 | 4.23 | | |
| F-019-021.0-024.0-0.50-015.0-E | 19.0 | 21.0 | 24.0 | 0.50 | 15.0 | 1.64 | | |
| F-020-023.0-030.0-1.50-012.0-E | 20.0 | 23.0 | 30.0 | 1.50 | 12.0 | 2.73 | | |
| F-020-023.0-030.0-2.00-012.0-E | 20.0 | 23.0 | 30.0 | 2.00 | 12.0 | 2.97 | | |
| F-020-023.0-030.0-2.00-015.0-E | 20.0 | 23.0 | 30.0 | 2.00 | 15.0 | 3.47 | | |
| F-020-023.0-030.0-2.00-020.0-E | 20.0 | 23.0 | 30.0 | 2.00 | 20.0 | 4.30 | | |
| F-020-023.0-030.0-2.00-022.0-E | 20.0 | 23.0 | 30.0 | 2.00 | 22.0 | 4.64 | | |
| F-020-023.0-030.0-2.00-025.0-E | 20.0 | 23.0 | 30.0 | 2.00 | 25.0 | 5.14 | | |
| F-020-023.0-035.0-2.00-025.0-E | 20.0 | 23.0 | 35.0 | 2.00 | 25.0 | 5.98 | | |
| F-020-024.0-030.0-2.00-015.0-E | 20.0 | 24.0 | 30.0 | 2.00 | 15.0 | 4.26 | | |
| F-020-024.0-024.6-3.00-020.0-E | 20.0 | 24.0 | 24.6 | 3.00 | 20.0 | 4.67 | | |

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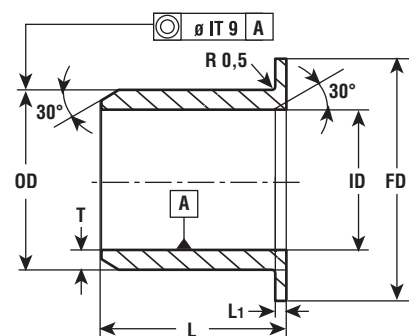


Simplicity® Plane Bearings

Flanged E - Polymer Series

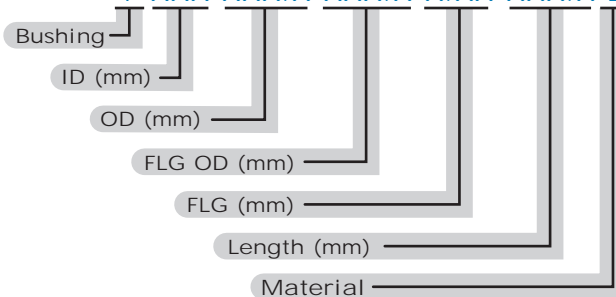
Linear Motion Systems

Flanged E



ORDERING INFORMATION

F-XXX-XXX.X-XXX.X-X.XX-XXX.X-E



| PART NUMBER | DIMENSION | | | | | WEIGHT | FITTING TOLERANCE | |
|--------------------------------|------------|------------|------------|------------|-----------|--------|--------------------|-------------------------------|
| | ID [mm] | OD [mm] | FD [mm] | L1 [mm] | L [mm] | [g] | HOUSING H7 [mm] | ID AFTER FITTING: F10 [mm] |
| F-020-024.0-030.0-2.00-020.0-E | 20.0 | 24.0 | 30.0 | 2.00 | 20.0 | 5.40 | +0.021 0 | +0.104 +0.020 |
| F-020-025.0-030.0-2.00-015.0-E | 20.0 | 25.0 | 30.0 | 2.00 | 15.0 | 5.09 | | |
| F-022-025.0-033.0-1.50-023.5-E | 22.0 | 25.0 | 33.0 | 1.50 | 23.5 | 5.20 | | |
| F-022-028.0-033.0-2.00-020.0-E | 22.0 | 28.0 | 33.0 | 2.00 | 20.0 | 8.57 | | |
| F-024-027.0-032.5-2.00-022.0-E | 24.0 | 27.0 | 32.5 | 2.00 | 22.0 | 5.21 | | |
| F-025-028.0-035.0-2.00-022.0-E | 25.0 | 28.0 | 35.0 | 2.00 | 22.0 | 5.68 | | |
| F-025-028.0-035.0-2.00-025.0-E | 25.0 | 28.0 | 35.0 | 2.00 | 25.0 | 6.29 | | |
| F-025-028.0-035.0-2.00-032.0-E | 25.0 | 28.0 | 35.0 | 2.00 | 32.0 | 7.74 | | |
| F-025-030.0-035.0-2.50-020.0-E | 25.0 | 30.0 | 35.0 | 2.50 | 20.0 | 8.18 | | |
| F-025-030.0-033.0-2.00-023.0-E | 25.0 | 30.0 | 33.0 | 2.00 | 23.0 | 8.69 | | |
| F-025-030.0-035.0-2.50-025.0-E | 25.0 | 30.0 | 35.0 | 2.50 | 25.0 | 9.96 | | |
| F-025-030.0-033.0-2.00-027.0-E | 25.0 | 30.0 | 33.0 | 2.00 | 27.0 | 10.11 | | |
| F-025-030.0-033.0-2.00-032.0-E | 25.0 | 30.0 | 33.0 | 2.00 | 32.0 | 11.89 | | |
| F-025-032.0-038.0-2.50-018.5-E | 25.0 | 32.0 | 38.0 | 2.50 | 18.5 | 10.93 | +0.025 0 | |
| F-025-034.0-040.0-3.50-040.0-E | 25.0 | 34.0 | 40.0 | 3.50 | 40.0 | 29.54 | +0.021 0 | |
| F-026-029.0-031.0-2.00-007.0-E | 26.0 | 29.0 | 31.0 | 2.00 | 7.0 | 1.81 | +0.025 0 | +0.125 +0.025 |
| F-028-032.0-038.0-2.00-017.0-E | 28.0 | 32.0 | 38.0 | 2.00 | 17.0 | 6.38 | | |
| F-028-032.0-038.0-2.00-028.0-E | 28.0 | 32.0 | 38.0 | 2.00 | 28.0 | 9.80 | | |
| F-030-034.0-045.0-2.00-018.0-E | 30.0 | 34.0 | 45.0 | 2.00 | 18.0 | 8.22 | | |
| F-030-034.0-045.0-2.00-022.0-E | 30.0 | 34.0 | 45.0 | 2.00 | 22.0 | 9.55 | | |
| F-030-034.0-045.0-2.00-032.0-E | 30.0 | 34.0 | 45.0 | 2.00 | 32.0 | 12.87 | | |
| F-030-035.0-038.0-2.00-015.5-E | 30.0 | 35.0 | 38.0 | 2.00 | 15.5 | 7.10 | | |
| F-030-035.0-042.0-2.50-030.0-E | 30.0 | 35.0 | 42.0 | 2.50 | 30.0 | 14.38 | | |
| F-030-036.0-050.0-3.00-020.0-E | 30.0 | 36.0 | 50.0 | 3.00 | 20.0 | 14.94 | | |
| F-030-038.0-042.0-5.00-025.0-E | 30.0 | 38.0 | 42.0 | 5.00 | 25.0 | 19.70 | | |
| F-032-036.0-036.8-3.00-025.0-E | 32.0 | 36.0 | 36.8 | 3.00 | 25.0 | 9.04 | | |
| F-032-036.0-042.0-2.00-032.0-E | 32.0 | 36.0 | 42.0 | 2.00 | 32.0 | 12.49 | | |
| F-035-039.0-048.0-2.00-010.0-E | 35.0 | 39.0 | 48.0 | 2.00 | 10.0 | 5.87 | | |
| F-035-039.0-050.0-2.00-012.0-E | 35.0 | 39.0 | 50.0 | 2.00 | 12.0 | 7.14 | | |
| F-035-039.0-048.0-2.00-013.0-E | 35.0 | 39.0 | 48.0 | 2.00 | 13.0 | 7.02 | | |
| F-035-039.0-047.0-2.00-016.0-E | 35.0 | 39.0 | 47.0 | 2.00 | 16.0 | 7.92 | | |
| F-035-039.0-050.0-2.00-022.0-E | 35.0 | 39.0 | 50.0 | 2.00 | 22.0 | 10.98 | | |
| F-035-039.0-050.0-2.00-032.0-E | 35.0 | 39.0 | 50.0 | 2.00 | 32.0 | 14.81 | | |
| F-035-039.0-050.0-2.00-040.0-E | 35.0 | 39.0 | 50.0 | 2.00 | 40.0 | 17.88 | | |
| F-035-039.0-050.0-2.00-050.0-E | 35.0 | 39.0 | 50.0 | 2.00 | 50.0 | 21.72 | | |
| F-040-044.0-055.0-2.00-025.0-E | 40.0 | 44.0 | 55.0 | 2.00 | 25.0 | 13.71 | | |

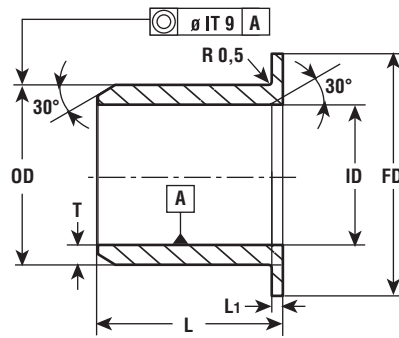
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Simplicity® Plane Bearings

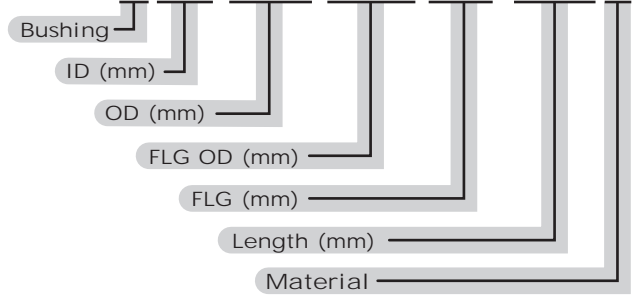
Flanged E - Polymer Series

Linear Motion Systems



ORDERING INFORMATION

F-XXX-XXX.X-XXX.X-X.XX-XXX.X-E



Flanged E

| PART NUMBER | DIMENSION | | | | | WEIGHT | FITTING TOLERANCE | | |
|--------------------------------|------------|------------|------------|------------|-----------|--------|--------------------|-------------------------------|------------------|
| | ID [mm] | OD [mm] | FD [mm] | L1 [mm] | L [mm] | [g] | HOUSING H7 [mm] | ID AFTER FITTING: F10 [mm] | |
| F-040-044.0-052.0-2.50-040.0-E | 40.0 | 44.0 | 52.0 | 2.50 | 40.0 | 19.91 | +0.025 0 | +0.125 +0.025 | |
| F-040-044.0-055.0-2.00-040.0-E | 40.0 | 44.0 | 55.0 | 2.00 | 40.0 | 20.24 | | | |
| F-040-045.0-052.0-2.50-040.0-E | 40.0 | 45.0 | 52.0 | 2.50 | 40.0 | 24.23 | | | |
| F-045-050.0-060.0-2.50-032.0-E | 45.0 | 50.0 | 60.0 | 2.50 | 32.0 | 23.26 | | | |
| F-045-050.0-060.0-2.50-038.0-E | 45.0 | 50.0 | 60.0 | 2.50 | 38.0 | 26.95 | | | |
| F-045-050.0-062.0-2.00-038.0-E | 45.0 | 50.0 | 62.0 | 2.00 | 38.0 | 26.87 | | | |
| F-045-050.0-060.0-2.50-045.0-E | 45.0 | 50.0 | 60.0 | 2.50 | 45.0 | 31.26 | | | |
| F-045-050.0-060.0-2.50-050.0-E | 45.0 | 50.0 | 60.0 | 2.50 | 50.0 | 34.34 | | | |
| F-050-055.0-063.0-2.00-010.0-E | 50.0 | 55.0 | 63.0 | 2.00 | 10.0 | 9.25 | +0.030 0 | | +0.150 +0.030 |
| F-050-055.0-065.0-2.00-020.0-E | 50.0 | 55.0 | 65.0 | 2.00 | 20.0 | 16.72 | | | |
| F-050-055.0-065.0-2.50-020.5-E | 50.0 | 55.0 | 65.0 | 2.50 | 20.5 | 17.83 | | | |
| F-050-055.0-065.0-2.50-024.0-E | 50.0 | 55.0 | 65.0 | 2.50 | 24.0 | 20.22 | | | |
| F-050-055.0-065.0-2.50-032.0-E | 50.0 | 55.0 | 65.0 | 2.50 | 32.0 | 25.66 | | | |
| F-050-055.0-065.0-2.50-050.0-E | 50.0 | 55.0 | 65.0 | 2.50 | 50.0 | 37.91 | | | |
| F-050-056.0-070.0-3.00-025.0-E | 50.0 | 56.0 | 70.0 | 3.00 | 25.0 | 27.46 | | | |
| F-055-060.0-070.0-2.50-040.0-E | 55.0 | 60.0 | 70.0 | 2.50 | 40.0 | 34.02 | | | |
| F-055-060.0-070.0-2.50-060.0-E | 55.0 | 60.0 | 70.0 | 2.50 | 60.0 | 48.92 | | | |
| F-060-064.0-075.0-2.50-060.0-E | 60.0 | 64.0 | 75.0 | 2.50 | 60.0 | 43.52 | | | |
| F-060-065.0-075.0-2.50-040.0-E | 60.0 | 65.0 | 75.0 | 2.50 | 40.0 | 36.93 | | | |
| F-060-065.0-075.0-2.50-060.0-E | 60.0 | 65.0 | 75.0 | 2.50 | 60.0 | 53.13 | | | |
| F-065-070.0-080.0-2.50-040.0-E | 65.0 | 70.0 | 80.0 | 2.50 | 40.0 | 39.85 | | | |
| F-065-070.0-080.0-2.50-060.0-E | 65.0 | 70.0 | 80.0 | 2.50 | 60.0 | 57.34 | | | |
| F-070-075.0-085.0-2.50-040.0-E | 70.0 | 75.0 | 85.0 | 2.50 | 40.0 | 42.76 | | | |
| F-070-075.0-085.0-2.50-070.0-E | 70.0 | 75.0 | 85.0 | 2.50 | 70.0 | 70.95 | | | |
| F-075-080.0-090.0-2.50-040.0-E | 75.0 | 80.0 | 90.0 | 2.50 | 40.0 | 45.68 | | | |
| F-075-080.0-090.0-2.50-070.0-E | 75.0 | 80.0 | 90.0 | 2.50 | 70.0 | 75.81 | | | |
| F-080-085.0-095.0-2.50-040.0-E | 80.0 | 85.0 | 95.0 | 2.50 | 40.0 | 48.60 | +0.035 0 | +0.176 +0.036 | |
| F-080-085.0-095.0-2.50-080.0-E | 80.0 | 85.0 | 95.0 | 2.50 | 80.0 | 91.36 | | | |
| F-090-095.0-110.0-2.50-050.0-E | 90.0 | 95.0 | 110.0 | 2.50 | 50.0 | 69.90 | | | |
| F-090-095.0-110.0-2.50-090.0-E | 90.0 | 95.0 | 110.0 | 2.50 | 90.0 | 117.85 | | | |
| F-100-105.0-120.0-2.50-050.0-E | 100.0 | 105.0 | 120.0 | 2.50 | 50.0 | 77.35 | | | |
| F-100-105.0-120.0-2.50-090.0-E | 100.0 | 105.0 | 120.0 | 2.50 | 90.0 | 130.48 | | | |
| F-110-115.0-130.0-2.50-090.0-E | 110.0 | 115.0 | 130.0 | 2.50 | 90.0 | 143.12 | +0.040 0 | +0.203 +0.043 | |
| F-140-145.0-160.0-2.50-040.0-E | 140.0 | 145.0 | 160.0 | 2.50 | 40.0 | 88.69 | | | |
| F-140-145.0-165.0-2.50-060.0-E | 140.0 | 145.0 | 165.0 | 2.50 | 60.0 | 130.89 | | | |

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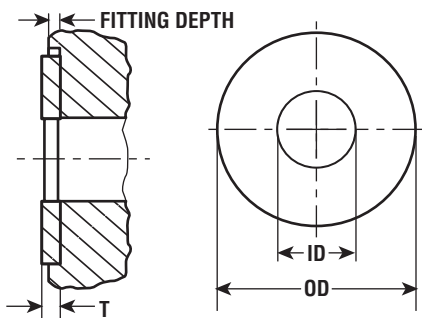


Simplicity® Plane Bearings

Thrust Washers E - Polymer Series

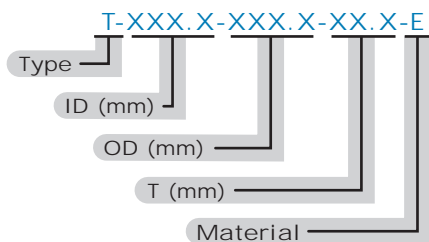
Linear Motion Systems

THRUST WASHERS WITHOUT MOUNTING HOLE

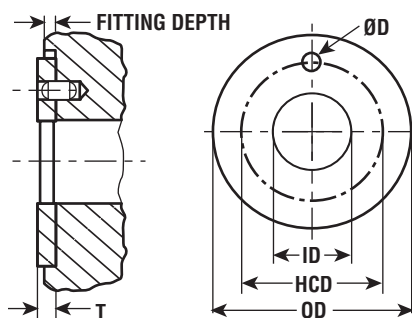


| PART NUMBER | ID [mm] | OD [mm] | T [mm] | FITTING DEPTH [mm] | WEIGHT [g] |
|----------------------|---------|---------|--------|--------------------|------------|
| T-010.0-020.0-01.5-E | 10.0 | 20.0 | 1.5 | 0.95 - 1.20 | 0.58 |
| T-010.0-022.0-01.5-E | 10.0 | 22.0 | 1.5 | 0.95 - 1.20 | 0.75 |
| T-011.2-015.0-01.5-E | 11.2 | 15.0 | 1.5 | 0.95 - 1.20 | 0.19 |
| T-012.0-020.0-02.0-E | 12.0 | 20.0 | 2.0 | 1.25 - 1.60 | 0.66 |
| T-015.0-030.0-02.0-E | 15.0 | 30.0 | 2.0 | 1.25 - 1.60 | 1.75 |
| T-016.0-032.0-02.5-E | 16.0 | 32.0 | 2.5 | 1.60 - 2.00 | 2.49 |
| T-018.5-031.8-01.5-E | 18.5 | 31.8 | 1.5 | 0.95 - 1.20 | 1.30 |
| T-026.0-044.0-01.5-E | 26.0 | 44.0 | 1.5 | 0.95 - 1.20 | 2.45 |
| T-028.5-042.0-01.5-E | 28.5 | 42.0 | 1.5 | 0.95 - 1.20 | 1.85 |
| T-037.0-052.0-02.0-E | 37.0 | 52.0 | 2.0 | 1.25 - 1.60 | 3.46 |
| T-038.0-062.0-01.5-E | 38.0 | 62.0 | 1.5 | 0.95 - 1.20 | 4.67 |
| T-068.0-080.0-02.0-E | 68.0 | 80.0 | 2.0 | 1.25 - 1.60 | 4.60 |
| T-075.0-093.0-01.0-E | 75.0 | 93.0 | 1.0 | 0.60 - 0.80 | 3.92 |
| T-080.5-093.0-01.5-E | 80.5 | 93.0 | 1.5 | 0.95 - 1.20 | 4.22 |
| T-080.5-114.0-01.5-E | 80.5 | 114.0 | 1.5 | 0.95 - 1.20 | 12.67 |
| T-104.0-126.0-01.5-E | 104.0 | 126.0 | 1.5 | 0.95 - 1.20 | 9.84 |
| T-120.0-140.0-02.5-E | 120.0 | 140.0 | 2.5 | 1.60 - 2.00 | 16.85 |
| T-140.0-160.0-03.0-E | 140.0 | 160.0 | 3.0 | 1.90 - 2.40 | 23.33 |
| T-141.0-164.0-03.0-E | 141.0 | 164.0 | 3.0 | 1.90 - 2.40 | 27.27 |
| T-160.0-190.0-02.0-E | 160.0 | 190.0 | 2.0 | 1.25 - 1.60 | 27.21 |
| T-160.0-200.0-02.0-E | 160.0 | 200.0 | 2.0 | 1.25 - 1.60 | 37.32 |

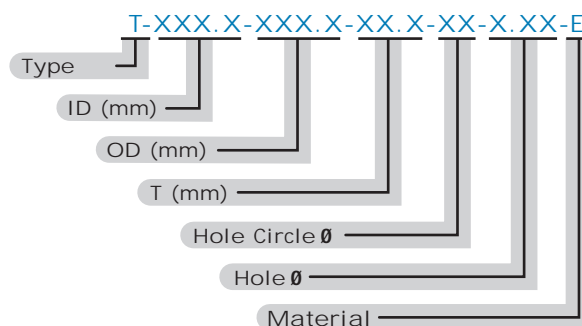
ORDERING INFORMATION



THRUST WASHERS WITH MOUNTING HOLE



ORDERING INFORMATION



| PART NUMBER | ID [mm] | OD [mm] | T [mm] | FITTING DEPTH [mm] | HOLE CIRCLE D [mm] | PIN HOLE D [mm] | WEIGHT [g] |
|------------------------------|---------|---------|--------|--------------------|--------------------|-----------------|------------|
| T-024.0-001.5-18.0-02-1.75-E | 12.0 | 24.0 | 1.5 | 0.95 - 1.20 | 18.0 | 1.75 | 1.75 |
| T-026.0-001.5-20.0-02-2.25-E | 14.0 | 26.0 | 1.5 | 0.95 - 1.20 | 20.0 | 2.25 | 2.25 |
| T-030.0-001.5-22.0-02-2.25-E | 16.0 | 30.0 | 1.5 | 0.95 - 1.20 | 22.0 | 2.25 | 1.24 |
| T-032.0-001.5-25.0-02-2.25-E | 18.0 | 32.0 | 1.5 | 0.95 - 1.20 | 25.0 | 2.25 | 1.35 |
| T-036.0-001.5-28.0-03-3.25-E | 20.0 | 36.0 | 1.5 | 0.95 - 1.20 | 28.0 | 3.25 | 1.73 |
| T-038.0-001.5-30.0-03-3.25-E | 22.0 | 38.0 | 1.5 | 0.95 - 1.20 | 30.0 | 3.25 | 1.85 |

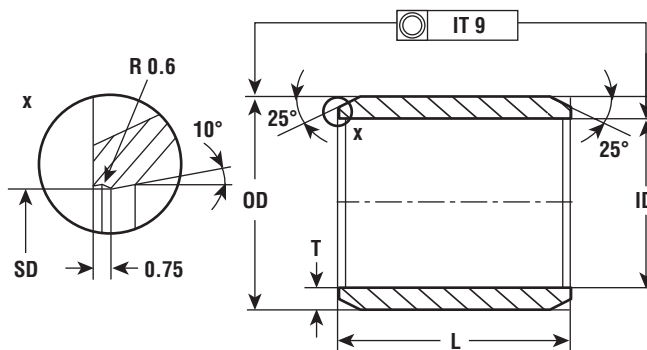
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Simplicity® Plane Bearings

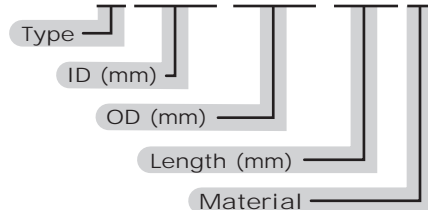
With Seals E - Polymer Series

Linear Motion Systems



ORDERING INFORMATION

S-XXX.X-XXX.X-XX.X-E



Seals E

| PART NUMBER | DIMENSION | | | WEIGHT | FITTING TOLERANCE | | |
|-----------------------|------------|------------|-----------|--------|--------------------|-------------------------------|------------------|
| | ID [mm] | OD [mm] | L [mm] | [g] | HOUSING H7 [mm] | ID AFTER FITTING: F10 [mm] | |
| S-040.0-044.0-025.0-E | 40.0 | 44.0 | 25.0 | 10.9 | +0.025 0 | +0.125 +0.025 | |
| S-040.0-044.0-040.0-E | 40.0 | 44.0 | 40.0 | 17.4 | | | |
| S-045.0-050.0-030.0-E | 45.0 | 50.0 | 30.0 | 18.5 | | | |
| S-045.0-050.0-050.0-E | 45.0 | 50.0 | 50.0 | 30.8 | | | |
| S-045.0-050.0-060.0-E | 45.0 | 50.0 | 60.0 | 36.9 | | | |
| S-050.0-055.0-040.0-E | 50.0 | 55.0 | 40.0 | 27.2 | +0.030 0 | | +0.150 +0.030 |
| S-050.0-055.0-050.0-E | 50.0 | 55.0 | 50.0 | 34.0 | | | |
| S-050.0-055.0-060.0-E | 50.0 | 55.0 | 60.0 | 40.8 | | | |
| S-050.0-058.0-040.0-E | 50.0 | 58.0 | 40.0 | 44.8 | | | |
| S-050.0-066.0-060.0-E | 50.0 | 66.0 | 60.0 | 144.3 | | | |
| S-060.0-065.0-050.0-E | 60.0 | 65.0 | 50.0 | 40.5 | | | |
| S-060.0-065.0-060.0-E | 60.0 | 65.0 | 60.0 | 48.6 | | | |
| S-070.0-075.0-050.0-E | 70.0 | 75.0 | 50.0 | 47.0 | | | |
| S-070.0-075.0-060.0-E | 70.0 | 75.0 | 60.0 | 56.4 | | | |
| S-072.0-077.0-065.0-E | 72.0 | 77.0 | 65.0 | 62.8 | | | |
| S-075.0-080.0-080.0-E | 75.0 | 80.0 | 80.0 | 80.3 | +0.035 0 | | |
| S-080.0-085.0-060.0-E | 80.0 | 85.0 | 60.0 | 64.1 | | | |
| S-080.0-085.0-095.0-E | 80.0 | 85.0 | 95.0 | 101.6 | | | |

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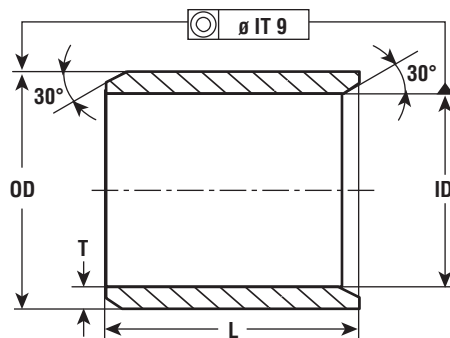


Simplicity® Plane Bearings

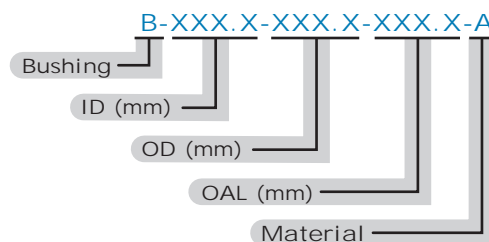
Ultra High Temperature Resistant A - Polymer Series

Linear Motion Systems

A



ORDERING INFORMATION



| PART NUMBER | DIMENSION | | | WEIGHT [g] | FITTING TOLERANCE | |
|-----------------------|------------|------------|-----------|---------------|--------------------|-------------------------------|
| | ID [mm] | OD [mm] | L [mm] | | HOUSING H7 [mm] | ID AFTER FITTING: F10 [mm] |
| B-003.0-004.5-006.0-A | 3.0 | 4.5 | 6.0 | 0.08 | +0.012 0 | +0.046 +0.006 |
| B-004.0-005.5-008.0-A | 4.0 | 5.5 | 8.0 | 0.13 | | |
| B-005.0-007.0-005.0-A | 5.0 | 7.0 | 5.0 | 0.14 | +0.015 0 | +0.058 +0.010 |
| B-005.0-007.0-015.0-A | 5.0 | 7.0 | 15.0 | 0.42 | | |
| B-006.0-008.0-020.0-A | 6.0 | 8.0 | 20.0 | 0.65 | | |
| B-008.0-010.0-015.0-A | 8.0 | 10.0 | 15.0 | 0.63 | +0.018 0 | +0.071 +0.013 |
| B-008.0-012.0-012.0-A | 8.0 | 12.0 | 12.0 | 1.12 | | |
| B-010.0-012.0-012.0-A | 10.0 | 12.0 | 12.0 | 0.61 | | |
| B-010.0-012.0-020.0-A | 10.0 | 12.0 | 20.0 | 1.02 | | |
| B-012.0-014.0-020.0-A | 12.0 | 14.0 | 20.0 | 1.21 | | |
| B-014.0-016.0-012.0-A | 14.0 | 16.0 | 12.0 | 0.84 | | +0.086 +0.016 |
| B-014.0-016.0-025.0-A | 14.0 | 16.0 | 25.0 | 1.74 | | |
| B-015.0-017.0-025.0-A | 15.0 | 17.0 | 25.0 | 1.86 | +0.021 0 | |
| B-016.0-018.0-020.0-A | 16.0 | 18.0 | 20.0 | 1.58 | | |
| B-020.0-023.0-010.0-A | 20.0 | 23.0 | 10.0 | 1.50 | | |
| B-020.0-023.0-015.0-A | 20.0 | 23.0 | 15.0 | 2.25 | | |
| B-020.0-023.0-020.0-A | 20.0 | 23.0 | 20.0 | 3.00 | | +0.104 +0.020 |
| B-020.0-023.0-030.0-A | 20.0 | 23.0 | 30.0 | 4.50 | +0.025 0 | |
| B-025.0-028.0-030.0-A | 25.0 | 28.0 | 30.0 | 5.54 | | |
| B-030.0-034.0-015.0-A | 30.0 | 34.0 | 15.0 | 4.46 | | |
| B-030.0-034.0-040.0-A | 30.0 | 34.0 | 40.0 | 11.90 | | |
| B-035.0-039.0-050.0-A | 35.0 | 39.0 | 50.0 | 17.20 | | |
| B-040.0-044.0-050.0-A | 40.0 | 44.0 | 50.0 | 19.53 | +0.030 0 | +0.125 |
| B-045.0-050.0-050.0-A | 45.0 | 50.0 | 50.0 | 27.61 | | |
| B-050.0-055.0-060.0-A | 50.0 | 55.0 | 60.0 | 36.62 | | |
| B-060.0-065.0-070.0-A | 60.0 | 65.0 | 70.0 | 50.85 | +0.035 0 | +0.150 +0.030 |
| B-070.0-075.0-040.0-A | 70.0 | 75.0 | 40.0 | 33.71 | | |
| B-070.0-075.0-080.0-A | 70.0 | 75.0 | 80.0 | 67.42 | | |
| B-075.0-080.0-060.0-A | 75.0 | 80.0 | 60.0 | 54.05 | | |
| B-080.0-085.0-080.0-A | 80.0 | 85.0 | 80.0 | 76.72 | | |
| B-090.0-095.0-090.0-A | 90.0 | 95.0 | 90.0 | 96.77 | | +0.176 +0.036 |
| B-100.0-105.0-090.0-A | 100.0 | 105.0 | 90.0 | 107.23 | | |

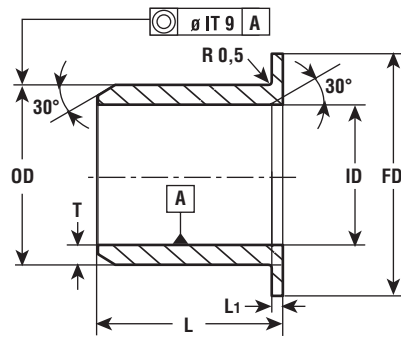
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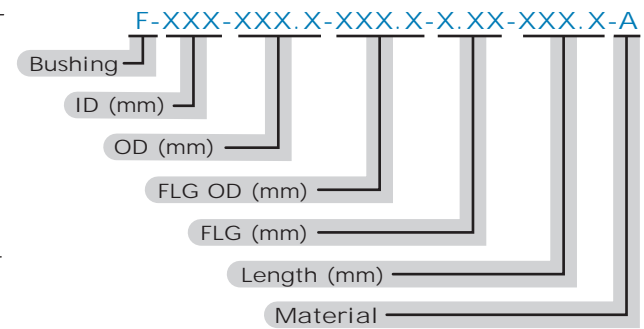
Simplicity® Plane Bearings

Ultra High Temperature Resistant A - Polymer Series

Linear Motion Systems



ORDERING INFORMATION



| PART NUMBER | DIMENSION | | | | | WEIGHT | FITTING TOLERANCE | | |
|--------------------------------|------------|------------|-----------------|------------|-----------|--------|--------------------|-------------------------------|------------------|
| | ID [mm] | OD [mm] | FD [MM] [mm] | L1 [mm] | L [mm] | [g] | HOUSING H7 [mm] | ID AFTER FITTING: F10 [mm] | |
| F-002-003.5-004.8-0.50-004.0-A | 2.0 | 3.5 | 4.8 | 0.50 | 4.0 | 0.04 | +0.012 0 | +0.046 +0.006 | |
| F-004-005.5-009.5-0.75-004.0-A | 4.0 | 5.5 | 9.5 | 0.75 | 4.0 | 0.12 | | +0.015 0 | +0.058 +0.010 |
| F-005-007.0-011.0-1.00-005.0-A | 5.0 | 7.0 | 11.0 | 1.00 | 5.0 | 0.22 | | | |
| F-006-008.0-012.0-1.00-010.0-A | 6.0 | 8.0 | 12.0 | 1.00 | 10.0 | 0.42 | | | |
| F-008-010.0-015.0-1.00-009.5-A | 8.0 | 10.0 | 15.0 | 1.00 | 9.5 | 0.54 | +0.071 +0.013 | | |
| F-010-012.0-018.0-1.00-012.0-A | 10.0 | 12.0 | 18.0 | 1.00 | 12.0 | 0.82 | | | |
| F-010-012.0-018.0-1.00-017.0-A | 10.0 | 12.0 | 18.0 | 1.00 | 17.0 | 1.08 | +0.018 0 | +0.086 +0.016 | |
| F-010-012.0-018.0-1.00-020.0-A | 10.0 | 12.0 | 18.0 | 1.00 | 20.0 | 1.23 | | | |
| F-012-014.0-020.0-1.00-020.0-A | 12.0 | 14.0 | 20.0 | 1.00 | 20.0 | 1.45 | | | |
| F-014-016.0-022.0-1.00-017.0-A | 14.0 | 16.0 | 22.0 | 1.00 | 17.0 | 1.45 | | | |
| F-015-017.0-023.0-1.00-020.0-A | 15.0 | 17.0 | 23.0 | 1.00 | 20.0 | 1.77 | | | |
| F-016-018.0-024.0-1.00-012.0-A | 16.0 | 18.0 | 24.0 | 1.00 | 12.0 | 1.24 | | | |
| F-016-018.0-024.0-1.00-020.0-A | 16.0 | 18.0 | 24.0 | 1.00 | 20.0 | 1.87 | | +0.021 0 | +0.104 +0.020 |
| F-018-020.0-026.0-1.00-014.0-A | 18.0 | 20.0 | 26.0 | 1.00 | 14.0 | 1.56 | | | |
| F-018-020.0-026.0-1.00-020.0-A | 18.0 | 20.0 | 26.0 | 1.00 | 20.0 | 2.09 | | | |
| F-018-020.0-024.0-2.00-022.0-A | 18.0 | 20.0 | 24.0 | 2.00 | 22.0 | 2.35 | | | |
| F-020-023.0-030.0-1.50-016.5-A | 20.0 | 23.0 | 30.0 | 1.50 | 16.5 | 3.12 | | | |
| F-020-023.0-030.0-2.00-020.0-A | 20.0 | 23.0 | 30.0 | 2.00 | 20.0 | 3.86 | | | |
| F-020-023.0-030.0-1.50-021.5-A | 20.0 | 23.0 | 30.0 | 1.50 | 21.5 | 3.87 | | | |
| F-025-028.0-035.0-1.50-021.5-A | 25.0 | 28.0 | 35.0 | 1.50 | 21.5 | 4.74 | | | |
| F-028-030.0-034.0-1.00-006.0-A | 28.0 | 30.0 | 34.0 | 1.00 | 6.0 | 1.11 | | | |

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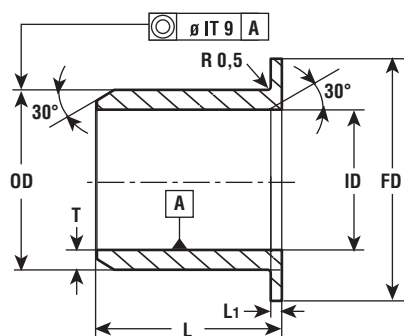


Simplicity® Plane Bearings

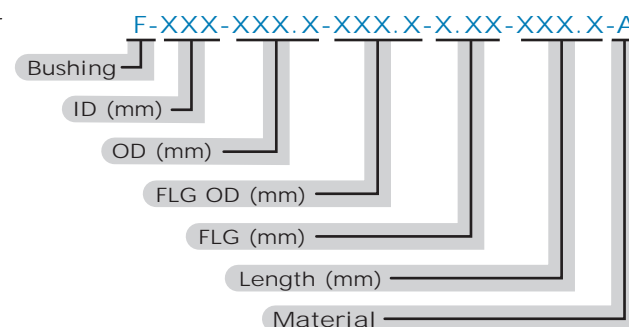
Ultra High Temperature Resistant A - Polymer Series

Linear Motion Systems

A



ORDERING INFORMATION



| PART NUMBER | DIMENSION | | | | | WEIGHT [g] | FITTING TOLERANCE | |
|--------------------------------|------------|------------|------------|------------|-----------|---------------|--------------------|-------------------------------|
| | ID [mm] | OD [mm] | FD [mm] | L1 [mm] | L [mm] | | HOUSING H7 [mm] | ID AFTER FITTING: F10 [mm] |
| F-030-034.0-042.0-2.00-026.0-A | 30.0 | 34.0 | 42.0 | 2.00 | 26.0 | 9.15 | +0.025 0 | +0.104 +0.020 |
| F-030-034.0-045.0-2.00-037.0-A | 30.0 | 34.0 | 45.0 | 2.00 | 37.0 | 13.03 | | |
| F-035-039.0-050.0-2.00-040.0-A | 35.0 | 39.0 | 50.0 | 2.00 | 40.0 | 16.04 | | +0.125 +0.025 |
| F-035-039.0-050.0-2.00-050.0-A | 35.0 | 39.0 | 50.0 | 2.00 | 50.0 | 19.48 | | |
| F-040-044.0-055.0-2.00-016.0-A | 40.0 | 44.0 | 55.0 | 2.00 | 16.0 | 8.78 | | |
| F-040-044.0-052.0-2.00-030.0-A | 40.0 | 44.0 | 52.0 | 2.00 | 30.0 | 13.50 | | |
| F-040-044.0-055.0-2.00-040.0-A | 40.0 | 44.0 | 55.0 | 2.00 | 40.0 | 18.15 | | |
| F-045-050.0-058.0-2.50-026.0-A | 45.0 | 50.0 | 58.0 | 2.50 | 26.0 | 16.87 | | |
| F-045-050.0-058.0-2.40-050.0-A | 45.0 | 50.0 | 58.0 | 2.40 | 50.0 | 30.02 | +0.030 0 | +0.150 +0.030 |
| F-050-055.0-065.0-2.50-050.0-A | 50.0 | 55.0 | 65.0 | 2.50 | 50.0 | 34.00 | | |
| F-050-057.5-063.0-2.50-012.0-A | 50.0 | 57.5 | 63.0 | 2.50 | 12.0 | 13.17 | | |
| F-055-060.0-070.0-2.50-060.0-A | 55.0 | 60.0 | 70.0 | 2.50 | 60.0 | 43.88 | | |
| F-060-065.0-075.0-2.50-040.0-A | 60.0 | 65.0 | 75.0 | 2.50 | 40.0 | 33.13 | | |
| F-060-065.0-075.0-2.50-070.0-A | 60.0 | 65.0 | 75.0 | 2.50 | 70.0 | 54.92 | | |
| F-065-070.0-080.0-2.50-060.0-A | 65.0 | 70.0 | 80.0 | 2.50 | 60.0 | 51.44 | | |
| F-070-075.0-085.0-2.50-070.0-A | 70.0 | 75.0 | 85.0 | 2.50 | 70.0 | 63.64 | | |
| F-070-075.0-085.0-2.50-080.0-A | 70.0 | 75.0 | 85.0 | 2.50 | 80.0 | 72.07 | +0.035 0 | +0.176 +0.036 |
| F-080-085.0-095.0-2.50-080.0-A | 80.0 | 85.0 | 95.0 | 2.50 | 80.0 | 81.95 | | |
| F-090-095.0-110.0-2.50-090.0-A | 90.0 | 95.0 | 110.0 | 2.50 | 90.0 | 105.70 | | |
| F-100-105.0-130.0-2.50-090.0-A | 100.0 | 105.0 | 130.0 | 2.50 | 90.0 | 124.30 | | |

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TOLERANCE

Polymer plane bearings are suitable as press-in bushing, preferably used in housings with tolerance H7. The press fit oversize depends on the nominal diameter and the respective material. The press fit oversize is about 0.5 - 1.5% according to the chosen diameter.

After assembly in the inside diameter adjusts itself to the nominal value. A certain clearance in the bearing is necessary to guarantee faultless operation under all operational conditions. Inside diameter lies in the range of tolerance F10 according to compound.

Shafts are mainly in tolerance h9 - h7. The ideal sliding counterpart is steel with a ground surface (surface roughness value with parameter Ra 0.4 to 0.8 µm) and a minimum hardness of 50 HRC. Apart from hardened steel nearly all other common shaft materials can be used: stainless steel, carbon steel, non-ferrous metals and plastics. Special compounds are available for soft shafts made for example out of non-ferrous metals or aluminum alloys. Thus, we can achieve very low to no wear in the sliding counterpart.

For special applications please contact us. We are able to formulate service life on the basis of our tests for and experience from a huge number of applications.

MACHINING

Polymer plane bearings can be reworked without problem.

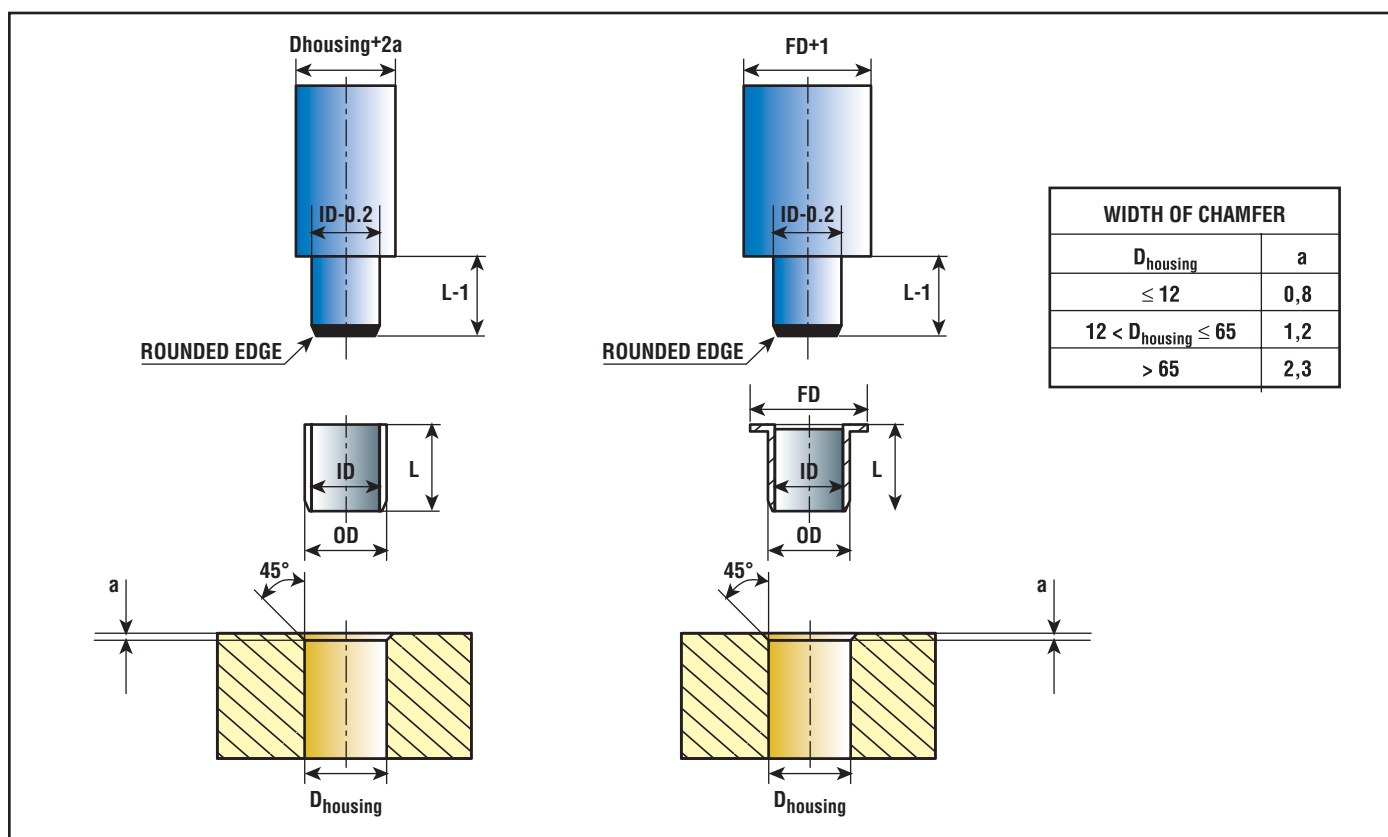
Milling, turning on a lathe, sawing or cutting can be done, however, please do not alter I.D.

LUBRICATION

Compound plane bearings are self-lubricating and therefore maintenance-free. Nevertheless, initial lubrication during assembly or cooling by environmental media can multiply loading capacity and service life. The compounds are resistant against most of the common greases and oils. Detailed information can be obtained from the chemicals resistance list in this catalog or you can receive a detailed list on request.

ASSEMBLY

It is preferable to press polymer plane bearings into the housing with an arbor parallel to the axis. The one-sided chamfer on the bearing simplifies assembly. A similar chamfer should also be part of the housing.



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HOW THE SURROUNDINGS INFLUENCE PLANE BEARINGS

Polymer plane bearings made of specially modified compounds for the best operating results in maintenance-poor or maintenance-free surroundings. Through many years of experiences we have continuously improved our materials. Today, we are able to cover a large segment of applications with our products.

Many factors have an influence on the successful operation of plane bearings. Temperature is a determining factor. Polymers change their properties more radically at different temperatures than conventional metal-polymer bearings.

Approximate values and orientation cannot replace a test under real everyday conditions of a system. Check operational temperature, loads, life, safety and the insertion tolerance and lubrication edge pressures or unwanted inclusion of dirt particles.

NOMENCLATURE

The following parameters and variables are being used:

| TERM | FORMULA TYPE | UNIT |
|----------------------------------|--------------------|-------|
| radial bearing load | F | N |
| inner diameter | d | mm |
| bushing width | L | mm |
| wall thickness | s | mm |
| sliding speed | v | m/s |
| coefficient of friction | ϑ | |
| environment temperature | ϑ_U | °C |
| max. sliding surface temperature | ϑ_{\max} | °C |
| specific load | p | MPa |
| revolutions per minute | n | U/min |
| rotation angle | φ | ° |
| compensation constant PV-value | k_1, k_2 | |
| thermal conductivity compound | λ_c | W/mK |
| thermal conductivity shaft | λ_w | W/mK |

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AVERAGE LOAD

The active radial force affecting the plane bearing and the projected supporting surface combine to the average load. The value results from this formula:

$$\bar{p} = \frac{F}{d \cdot L} [N/mm^2]$$

SLIDING SPEED

Sliding speed is either the direct result of the linear speed or with rotating movements results from the revs:

$$v = \frac{n \cdot d \cdot \pi}{1000 \cdot 60} [m/s]$$

or with oscillator movements result in:

$$v = \frac{d \cdot \pi}{60 \cdot 100} \cdot \frac{2\varphi \cdot n}{360} [m/s]$$

PERMISSIBLE PV VALUE

The permissible PV value is the product of sliding speed and the corresponding load allowance. With polymer plane bearings the PV value can be determined via the following formula:

$$\bar{p}v_{\max} = \frac{\pi \cdot \Delta\vartheta}{\mu} \left(\frac{k_1 \cdot \lambda_c}{s} + \frac{k_2 \cdot \lambda_w}{2L} \right) \cdot 10^{-3} [MPa \cdot \frac{m}{s}]$$

and

$$\Delta\vartheta = \vartheta_{\max} - \vartheta_u$$

The permissible PV value should be greater or equal to the PV value formulated from speed and load data for the final application!

LIFE EXPECTANCY OF A PLANE BEARING

To calculate the service life the complete group of possible strains must be taken into consideration. If in doubt, talk to a member of our skilled and experienced technical staff. They will help you interpreting and calculating the length of service life.

The following correction factors apply:

| BUSHING WALL THICKNESS s | k_1 | k_2 |
|----------------------------|-------|-------|
| ≤ 2 mm | 0.50 | 0.042 |
| > 2 mm | 0.75 | 0.058 |

The following thermal conductivities have to be applied to the shaft material:

| MATERIAL | SHAFT THERMAL CONDUCTIVITY λ [W/mK] |
|-----------------|---|
| Aluminum bronze | 120 |
| Aluminum alloy | 156 |
| Brass | 80 |
| Bronze | 46 |
| Carbon Steel | 46 |
| Cast iron | 60 |
| Low alloy steel | 55 |
| Phosphor bronze | 75 |
| Stainless steel | 15 |

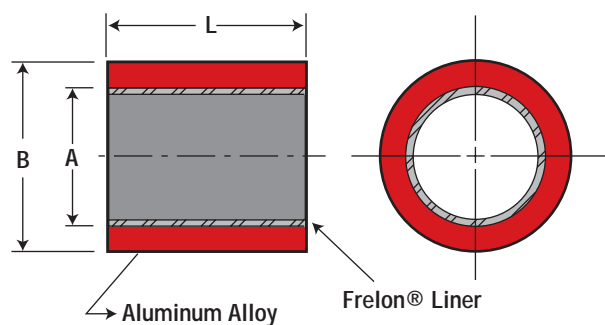


Simplicity® Plane Bearings

Sleeve Bearings - Inch Series

Linear Motion Systems

PS SLEEVE BEARINGS



BASIC DIMENSIONAL INFORMATION

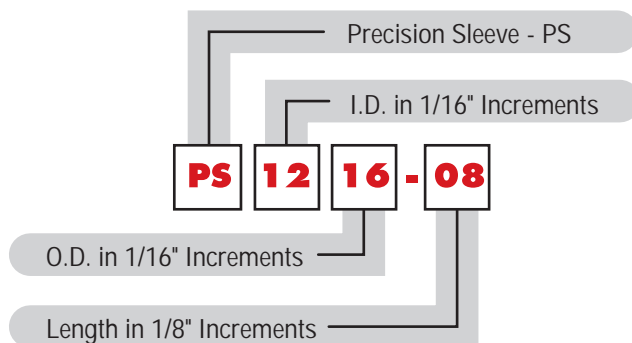
| PART NO. | NOMINAL BEARING SIZE | | | A BEARING I.D. | | B O.D. | | L LENGTH | | MAX. STATIC LOAD (lbs.) FRELON | | BEARING WEIGHT (oz.) | RECOMMENDED HOUSING BORE | | | |
|-----------|----------------------|--------|--------|-------------------|--------|-----------|--------|-------------|-------|--------------------------------------|-------|----------------------------|--------------------------|--------|-----------|--------|
| | | | | | | | | | | | | | SLIP FIT & EPOXY | | PRESS FIT | |
| | I.D. | O.D. | LENGTH | MIN. | MAX. | MIN. | MAX. | MIN. | MAX. | GOLD | J | | MIN. | MAX. | MIN. | MAX. |
| PS0305-02 | 3/16" | 5/16" | 1/4" | 0.1890 | 0.1900 | 0.3135 | 0.3145 | 0.230 | 0.250 | 130 | 65 | 0.02 | 0.3145 | 0.3155 | 0.3125 | 0.3130 |
| PS0305-04 | 3/16" | 5/16" | 1/2" | 0.1890 | 0.1900 | 0.3135 | 0.3145 | 0.480 | 0.500 | 272 | 136 | 0.04 | 0.3145 | 0.3155 | 0.3125 | 0.3130 |
| PS0406-02 | 1/4" | 3/8" | 1/4" | 0.2515 | 0.2525 | 0.3760 | 0.3770 | 0.230 | 0.250 | 174 | 87 | 0.03 | 0.3770 | 0.3780 | 0.3750 | 0.3755 |
| PS0406-03 | 1/4" | 3/8" | 3/8" | 0.2515 | 0.2525 | 0.3760 | 0.3770 | 0.355 | 0.375 | 268 | 134 | 0.04 | 0.3770 | 0.3780 | 0.3750 | 0.3755 |
| PS0406-04 | 1/4" | 3/8" | 1/2" | 0.2515 | 0.2525 | 0.3760 | 0.3770 | 0.480 | 0.500 | 362 | 181 | 0.05 | 0.3770 | 0.3780 | 0.3750 | 0.3755 |
| PS0610-04 | 3/8" | 5/8" | 1/2" | 0.3765 | 0.3775 | 0.6260 | 0.6270 | 0.480 | 0.500 | 542 | 271 | 0.14 | 0.6270 | 0.6280 | 0.6250 | 0.6255 |
| PS0610-06 | 3/8" | 5/8" | 3/4" | 0.3765 | 0.3775 | 0.6260 | 0.6270 | 0.730 | 0.750 | 824 | 412 | 0.20 | 0.6270 | 0.6280 | 0.6250 | 0.6255 |
| PS0710-06 | 7/16" | 5/8" | 3/4" | 0.4390 | 0.4400 | 0.6260 | 0.6270 | 0.730 | 0.750 | 962 | 481 | 0.23 | 0.6270 | 0.6280 | 0.6250 | 0.6255 |
| PS0812-04 | 1/2" | 3/4" | 1/2" | 0.5015 | 0.5025 | 0.7510 | 0.7520 | 0.480 | 0.500 | 722 | 361 | 0.15 | 0.7520 | 0.7530 | 0.7500 | 0.7505 |
| PS0812-06 | 1/2" | 3/4" | 3/4" | 0.5015 | 0.5025 | 0.7510 | 0.7520 | 0.730 | 0.750 | 1098 | 549 | 0.25 | 0.7520 | 0.7530 | 0.7500 | 0.7505 |
| PS0812-08 | 1/2" | 3/4" | 1" | 0.5015 | 0.5025 | 0.7510 | 0.7520 | 0.980 | 1.000 | 1474 | 737 | 0.35 | 0.7520 | 0.7530 | 0.7500 | 0.7505 |
| PS1014-06 | 5/8" | 7/8" | 3/4" | 0.6265 | 0.6275 | 0.8760 | 0.8770 | 0.730 | 0.750 | 1372 | 686 | 0.30 | 0.8770 | 0.8780 | 0.8750 | 0.8755 |
| PS1014-08 | 5/8" | 7/8" | 1" | 0.6265 | 0.6275 | 0.8760 | 0.8770 | 0.980 | 1.000 | 1842 | 921 | 0.45 | 0.8770 | 0.8780 | 0.8750 | 0.8755 |
| PS1216-08 | 3/4" | 1" | 1" | 0.7515 | 0.7525 | 1.0010 | 1.0020 | 0.980 | 1.000 | 2210 | 1105 | 0.50 | 1.0020 | 1.0030 | 0.9995 | 1.0000 |
| PS1620-12 | 1" | 1-1/4" | 1-1/2" | 1.0015 | 1.0025 | 1.2510 | 1.2520 | 1.480 | 1.500 | 4446 | 2223 | 0.95 | 1.2520 | 1.2530 | 1.2490 | 1.2500 |
| PS2024-16 | 1-1/4" | 1-1/2" | 2" | 1.2515 | 1.2525 | 1.5010 | 1.5020 | 1.980 | 2.000 | 7434 | 3717 | 1.55 | 1.5020 | 1.5030 | 1.4990 | 1.5000 |
| PS2428-16 | 1-1/2" | 1-3/4" | 2" | 1.5015 | 1.5025 | 1.7510 | 1.7520 | 1.980 | 2.000 | 8918 | 4459 | 1.80 | 1.7520 | 1.7530 | 1.7490 | 1.7500 |
| PS2832-24 | 1-3/4" | 2" | 3" | 1.7515 | 1.7525 | 2.0010 | 2.0020 | 2.980 | 3.000 | 15658 | 7829 | 3.15 | 2.0020 | 2.0030 | 1.9990 | 2.0000 |
| PS3236-24 | 2" | 2-1/4" | 3" | 2.0015 | 2.0025 | 2.2510 | 2.2520 | 2.980 | 3.000 | 17894 | 8947 | 3.55 | 2.2520 | 2.2530 | 2.2490 | 2.2500 |
| PS4044-24 | 2-1/2" | 2-3/4" | 3" | 2.5015 | 2.5025 | 2.7510 | 2.7520 | 2.980 | 3.000 | 22364 | 11182 | 4.85 | 2.7520 | 2.7530 | 2.7490 | 2.7500 |
| PS4852-28 | 3" | 3-1/4" | 3-1/2" | 3.0015 | 3.0025 | 3.2510 | 3.2520 | 3.480 | 3.500 | 31336 | 15668 | 6.10 | 3.2520 | 3.2530 | 3.2485 | 3.2495 |

INSTALLATION INSTRUCTIONS

- Slip the bearing sleeve into the housing and epoxy into place with Loctite® or similar type bonding agent.
CAUTION: Do NOT let any of the adhesive touch the bearing liner. It will harden and interfere with the running clearance.
- Freeze the bearings at 0°F (-17.75°C) for 30-45 minutes. Using gloves, remove the bearings from the freezer and slip them into the housing. As they heat to room temperature, full contact between the bearing and housing will be achieved. The greatest advantage to this technique over traditional pressing is greater accuracy in alignment.

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ORDERING INFORMATION



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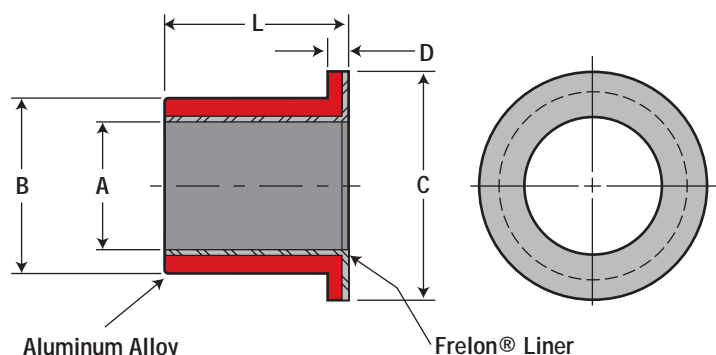


Simplicity® Plane Bearings

Sleeve Bearings - Inch Series

Linear Motion Systems

PSF SLEEVE BEARINGS



BASIC DIMENSIONAL INFORMATION

| PART NO. | NOMINAL BEARING SIZE | | | A BEARING I.D. | | B O.D. | | C FLANGE O.D. | D FLANGE WIDTH | L LENGTH | | MAX. STATIC LOAD (lbs.) FRELON | | BEARING WEIGHT | RECOMMENDED HOUSING BORE | | | |
|------------|----------------------|--------|--------|-------------------|--------|-----------|--------|---------------------|----------------------|-------------|-------|--------------------------------------|-------|-------------------|--------------------------|--------|-----------|--------|
| | I.D. | O.D. | LENGTH | MIN. | MAX. | MIN. | MAX. | MIN. | MAX. | MIN. | MAX. | GOLD | J | (oz.) | SLIP FIT & EPOXY | | PRESS FIT | |
| PSF0305-02 | 3/16" | 5/16" | 1/4" | 0.1890 | 0.1900 | 0.3135 | 0.3145 | 0.4370 | 0.0625 | 0.230 | 0.250 | 130 | 65 | 0.023 | 0.3145 | 0.3155 | 0.3125 | 0.3130 |
| PSF0305-04 | 3/16" | 5/16" | 1/2" | 0.1890 | 0.1900 | 0.3135 | 0.3145 | 0.4370 | 0.0625 | 0.480 | 0.500 | 272 | 136 | 0.044 | 0.3145 | 0.3155 | 0.3125 | 0.3130 |
| PSF0406-02 | 1/4" | 3/8" | 1/4" | 0.2515 | 0.2525 | 0.3760 | 0.3770 | 0.5000 | 0.0625 | 0.230 | 0.250 | 174 | 87 | 0.031 | 0.3770 | 0.3780 | 0.3750 | 0.3755 |
| PSF0406-03 | 1/4" | 3/8" | 3/8" | 0.2515 | 0.2525 | 0.3760 | 0.3770 | 0.5000 | 0.0625 | 0.355 | 0.375 | 268 | 134 | 0.044 | 0.3770 | 0.3780 | 0.3750 | 0.3755 |
| PSF0406-04 | 1/4" | 3/8" | 1/2" | 0.2515 | 0.2525 | 0.3760 | 0.3770 | 0.5000 | 0.0625 | 0.480 | 0.500 | 362 | 181 | 0.055 | 0.3770 | 0.3780 | 0.3750 | 0.3755 |
| PSF0610-04 | 3/8" | 5/8" | 1/2" | 0.3765 | 0.3775 | 0.6260 | 0.6270 | 0.8750 | 0.1250 | 0.480 | 0.500 | 542 | 271 | 0.20 | 0.6270 | 0.6280 | 0.6250 | 0.6255 |
| PSF0610-06 | 3/8" | 5/8" | 3/4" | 0.3765 | 0.3775 | 0.6260 | 0.6270 | 0.8750 | 0.1250 | 0.730 | 0.750 | 824 | 412 | 0.25 | 0.6270 | 0.6280 | 0.6250 | 0.6255 |
| PSF0710-06 | 7/16" | 5/8" | 3/4" | 0.4390 | 0.4400 | 0.6260 | 0.6270 | 0.9375 | 0.1250 | 0.730 | 0.750 | 962 | 481 | 0.20 | 0.6270 | 0.6280 | 0.6250 | 0.6255 |
| PSF0812-04 | 1/2" | 3/4" | 1/2" | 0.5015 | 0.5025 | 0.7510 | 0.7520 | 1.0000 | 0.1250 | 0.480 | 0.500 | 722 | 361 | 0.25 | 0.7520 | 0.7530 | 0.7500 | 0.7505 |
| PSF0812-06 | 1/2" | 3/4" | 3/4" | 0.5015 | 0.5025 | 0.7510 | 0.7520 | 1.0000 | 0.1250 | 0.730 | 0.750 | 1098 | 549 | 0.30 | 0.7520 | 0.7530 | 0.7500 | 0.7505 |
| PSF0812-08 | 1/2" | 3/4" | 1" | 0.5015 | 0.5025 | 0.7510 | 0.7520 | 1.0000 | 0.1250 | 0.980 | 1.000 | 1474 | 737 | 0.40 | 0.7520 | 0.7530 | 0.7500 | 0.7505 |
| PSF1014-06 | 5/8" | 7/8" | 3/4" | 0.6265 | 0.6275 | 0.8760 | 0.8770 | 1.0000 | 0.1250 | 0.730 | 0.750 | 1372 | 686 | 0.35 | 0.8770 | 0.8780 | 0.8750 | 0.8755 |
| PSF1014-08 | 5/8" | 7/8" | 1" | 0.6265 | 0.6275 | 0.8760 | 0.8770 | 1.0000 | 0.1250 | 0.980 | 1.000 | 1842 | 921 | 0.45 | 0.8770 | 0.8780 | 0.8750 | 0.8755 |
| PSF1216-08 | 3/4" | 1" | 1" | 0.7515 | 0.7525 | 1.0010 | 1.0020 | 1.2500 | 0.1250 | 0.980 | 1.000 | 2210 | 1105 | 0.55 | 1.0020 | 1.0030 | 0.9995 | 1.0000 |
| PSF1620-12 | 1" | 1-1/4" | 1-1/2" | 1.0015 | 1.0025 | 1.2510 | 1.2520 | 1.5000 | 0.1250 | 1.480 | 1.500 | 4446 | 2223 | 1.05 | 1.2520 | 1.2530 | 1.2490 | 1.2500 |
| PSF2024-16 | 1-1/4" | 1-1/2" | 2" | 1.2515 | 1.2525 | 1.5010 | 1.5020 | 1.7500 | 0.1250 | 1.980 | 2.000 | 7434 | 3717 | 1.80 | 1.5020 | 1.5030 | 1.4990 | 1.5000 |
| PSF2428-16 | 1-1/2" | 1-3/4" | 2" | 1.5015 | 1.5025 | 1.7510 | 1.7520 | 2.0000 | 0.1250 | 1.980 | 2.000 | 8918 | 4459 | 2.16 | 1.7520 | 1.7530 | 1.7490 | 1.7500 |
| PSF2832-24 | 1-3/4" | 2" | 3" | 1.7515 | 1.7525 | 2.0010 | 2.0020 | 2.2500 | 0.1250 | 2.980 | 3.000 | 15658 | 7829 | 3.30 | 2.0020 | 2.0030 | 1.9990 | 2.0000 |
| PSF3236-24 | 2" | 2-1/4" | 3" | 2.0015 | 2.0025 | 2.2510 | 2.2520 | 2.5000 | 0.1250 | 2.980 | 3.000 | 17894 | 8947 | 3.75 | 2.2520 | 2.2530 | 2.2490 | 2.2500 |
| PSF4044-24 | 2-1/2" | 2-3/4" | 3" | 2.5015 | 2.5025 | 2.7510 | 2.7520 | 3.0000 | 0.1250 | 2.980 | 3.000 | 22364 | 11182 | 4.60 | 2.7520 | 2.7530 | 2.7490 | 2.7500 |
| PSF4852-28 | 3" | 3-1/4" | 3-1/2" | 3.0015 | 3.0025 | 3.2510 | 3.2520 | 3.5000 | 0.1250 | 3.480 | 3.500 | 31336 | 15668 | 6.30 | 3.2520 | 3.2530 | 3.2485 | 3.2495 |

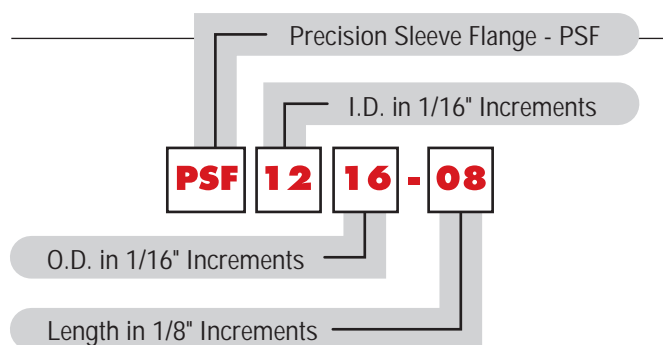
INSTALLATION INSTRUCTIONS

- Slip the bearing sleeve into the housing and epoxy into place with Loctite® or similar type bonding agent.
CAUTION: Do NOT let any of the adhesive touch the bearing liner. It will harden and interfere with the running clearance.
- Freeze the bearings at 0°F (-17.75°C) for 30-45 minutes. Using gloves, remove the bearings from the freezer and slip them into the housing. As they heat to room temperature, full contact between the bearing and housing will be achieved. The greatest advantage to this technique over traditional pressing is greater accuracy in alignment.

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ORDERING INFORMATION



NOTE: Lengths not listed above must be specially quoted.

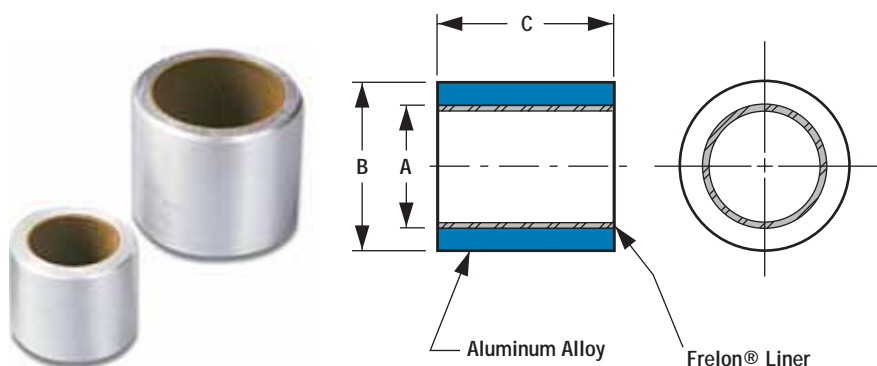


Simplicity® Plane Bearings

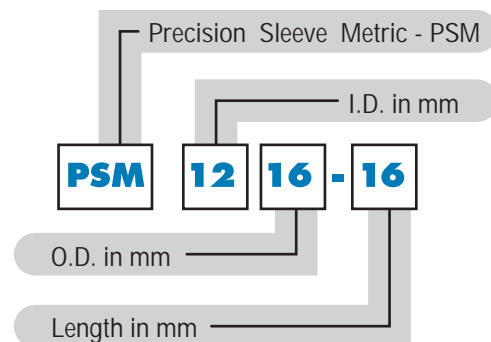
Sleeve Bearings - ISO Metric

Linear Motion Systems

PSM SLEEVE BEARINGS



ORDERING INFORMATION



BASIC DIMENSIONAL INFORMATION

NOTE: Lengths not listed below must be quoted.

| PART NO. | NOMINAL BEARING SIZE | | | A BEARING I.D. | | B O.D. (S7) | | C LENGTH | | MAX. STATIC LOAD (kg.) FRELON | | MAX. STATIC LOAD (N) FRELON | | BEARING WEIGHT (kg.) | RECOMMENDED HOUSING BORE | | | |
|------------|----------------------|------|--------|----------------|--------|-------------|--------|----------|------|-------------------------------|------|-----------------------------|-------|----------------------|--------------------------|--------|--------|-----------|
| | I.D. | O.D. | LENGTH | MIN. | MAX. | MIN. | MAX. | MIN. | MAX. | GOLD | J | GOLD | J | | SLIP FIT & EPOXY | MIN. | MAX. | PRESS FIT |
| PSM0610-06 | 6 | 10 | 6 | 6.028 | 6.058 | 10.023 | 10.038 | 5.75 | 6 | 76 | 38 | 745 | 373 | 0.00084 | 10.038 | 10.063 | 10.000 | 10.015 |
| PSM0610-10 | 6 | 10 | 10 | 6.028 | 6.058 | 10.023 | 10.038 | 9.75 | 10 | 126 | 63 | 1236 | 618 | 0.00140 | 10.038 | 10.063 | 10.000 | 10.015 |
| PSM0812-08 | 8 | 12 | 8 | 8.033 | 8.066 | 12.028 | 12.046 | 7.75 | 8 | 134 | 67 | 1314 | 657 | 0.00140 | 12.046 | 12.071 | 12.000 | 12.018 |
| PSM0812-12 | 8 | 12 | 12 | 8.033 | 8.066 | 12.028 | 12.046 | 11.75 | 12 | 202 | 101 | 1981 | 990 | 0.00210 | 12.046 | 12.071 | 12.000 | 12.018 |
| PSM0814-08 | 8 | 14 | 8 | 8.033 | 8.066 | 14.028 | 14.046 | 7.75 | 8 | 134 | 67 | 1314 | 657 | 0.00231 | 14.046 | 14.071 | 14.000 | 14.018 |
| PSM0814-12 | 8 | 14 | 12 | 8.033 | 8.066 | 14.028 | 14.046 | 11.75 | 12 | 202 | 101 | 1981 | 990 | 0.00347 | 14.046 | 14.071 | 14.000 | 14.018 |
| PSM1014-10 | 10 | 14 | 10 | 10.033 | 10.066 | 14.028 | 14.046 | 9.75 | 10 | 210 | 105 | 2059 | 1030 | 0.00210 | 14.046 | 14.071 | 14.000 | 14.018 |
| PSM1014-16 | 10 | 14 | 16 | 10.033 | 10.066 | 14.028 | 14.046 | 15.75 | 16 | 336 | 168 | 3295 | 1647 | 0.00336 | 14.046 | 14.071 | 14.000 | 14.018 |
| PSM1216-12 | 12 | 16 | 12 | 12.034 | 12.070 | 16.028 | 16.046 | 11.75 | 12 | 302 | 151 | 2961 | 1481 | 0.00294 | 16.046 | 16.071 | 16.000 | 16.018 |
| PSM1216-16 | 12 | 16 | 16 | 12.034 | 12.070 | 16.028 | 16.046 | 15.75 | 16 | 404 | 202 | 3962 | 1981 | 0.00392 | 16.046 | 16.071 | 16.000 | 16.018 |
| PSM1519-16 | 15 | 19 | 16 | 15.034 | 15.070 | 19.035 | 19.056 | 15.75 | 16 | 504 | 252 | 4942 | 2471 | 0.00476 | 19.046 | 19.071 | 19.000 | 19.018 |
| PSM1620-12 | 16 | 20 | 12 | 16.041 | 16.080 | 20.035 | 20.056 | 11.50 | 12 | 404 | 202 | 3962 | 1981 | 0.00378 | 20.056 | 20.081 | 20.000 | 20.021 |
| PSM1620-16 | 16 | 20 | 16 | 16.041 | 16.080 | 20.035 | 20.056 | 15.50 | 16 | 538 | 269 | 5276 | 2638 | 0.00505 | 20.056 | 20.081 | 20.000 | 20.021 |
| PSM1620-25 | 16 | 20 | 25 | 16.041 | 16.080 | 20.035 | 20.056 | 24.50 | 25 | 840 | 420 | 8237 | 4119 | 0.00788 | 20.056 | 20.081 | 20.000 | 20.021 |
| PSM2025-16 | 20 | 25 | 16 | 20.042 | 20.084 | 20.035 | 20.056 | 15.50 | 16 | 672 | 336 | 6590 | 3295 | 0.00787 | 20.056 | 25.081 | 25.000 | 25.021 |
| PSM2025-20 | 20 | 25 | 20 | 20.042 | 20.084 | 20.035 | 20.056 | 19.50 | 20 | 840 | 420 | 8237 | 4119 | 0.00984 | 20.056 | 25.081 | 25.000 | 25.021 |
| PSM2025-25 | 20 | 25 | 25 | 20.042 | 20.084 | 20.035 | 20.056 | 24.50 | 25 | 1050 | 525 | 10296 | 5148 | 0.01230 | 20.056 | 25.081 | 25.000 | 25.021 |
| PSM2025-30 | 20 | 25 | 30 | 20.042 | 20.084 | 20.035 | 20.056 | 29.50 | 30 | 1260 | 630 | 12356 | 6178 | 0.01476 | 20.056 | 25.081 | 25.000 | 25.021 |
| PSM2530-20 | 25 | 30 | 20 | 20.042 | 25.084 | 30.035 | 30.056 | 19.50 | 20 | 1050 | 525 | 10296 | 5148 | 0.01202 | 30.056 | 30.081 | 30.000 | 30.021 |
| PSM2530-25 | 25 | 30 | 25 | 20.042 | 25.084 | 30.035 | 30.056 | 24.50 | 25 | 1312 | 656 | 12865 | 6433 | 0.01503 | 30.056 | 30.081 | 30.000 | 30.021 |
| PSM2530-30 | 25 | 30 | 30 | 20.042 | 25.084 | 30.035 | 30.056 | 29.50 | 30 | 1576 | 788 | 15454 | 7727 | 0.01803 | 30.056 | 30.081 | 30.000 | 30.021 |
| PSM2535-25 | 25 | 35 | 25 | 25.050 | 25.096 | 35.043 | 35.068 | 24.50 | 25 | 1312 | 656 | 12865 | 6433 | 0.03276 | 35.068 | 35.093 | 35.000 | 30.021 |
| PSM2535-35 | 25 | 35 | 35 | 25.050 | 25.096 | 35.043 | 35.068 | 34.50 | 35 | 1838 | 919 | 18023 | 9012 | 0.04586 | 35.068 | 35.093 | 35.000 | 30.021 |
| PSM3035-25 | 30 | 35 | 25 | 30.050 | 30.096 | 35.043 | 35.068 | 24.50 | 25 | 1576 | 788 | 15454 | 7727 | 0.01777 | 35.068 | 35.093 | 35.000 | 30.021 |
| PSM3035-30 | 30 | 35 | 30 | 30.050 | 30.096 | 35.043 | 35.068 | 29.50 | 30 | 1890 | 945 | 18533 | 9267 | 0.02133 | 35.068 | 35.093 | 35.000 | 30.021 |
| PSM3040-35 | 30 | 40 | 35 | 30.050 | 30.096 | 40.043 | 40.068 | 34.50 | 35 | 2206 | 1103 | 21632 | 10816 | 0.05349 | 40.068 | 40.093 | 40.000 | 40.025 |
| PSM3040-50 | 30 | 40 | 50 | 30.050 | 30.096 | 40.043 | 40.068 | 49.50 | 50 | 3150 | 1575 | 30889 | 15444 | 0.07641 | 40.068 | 40.093 | 40.000 | 40.025 |
| PSM3545-25 | 35 | 45 | 25 | 35.052 | 35.102 | 40.043 | 40.068 | 24.50 | 25 | 1838 | 919 | 18023 | 9012 | 0.04365 | 45.068 | 45.093 | 45.000 | 45.025 |
| PSM3545-40 | 35 | 45 | 40 | 35.052 | 35.102 | 40.043 | 40.068 | 39.50 | 40 | 2940 | 1470 | 28830 | 14415 | 0.06983 | 45.068 | 45.093 | 45.000 | 45.025 |
| PSM3545-50 | 35 | 45 | 50 | 35.052 | 35.102 | 40.043 | 40.068 | 49.50 | 50 | 3676 | 1838 | 36047 | 18023 | 0.08729 | 45.068 | 45.093 | 45.000 | 45.025 |
| PSM4050-30 | 40 | 50 | 30 | 40.052 | 40.102 | 50.043 | 50.068 | 29.50 | 30 | 2520 | 1260 | 24711 | 12356 | 0.05891 | 50.068 | 50.093 | 50.000 | 50.025 |
| PSM4050-40 | 40 | 50 | 40 | 40.052 | 40.102 | 50.043 | 50.068 | 39.50 | 40 | 3360 | 1680 | 32948 | 16474 | 0.07855 | 50.068 | 50.093 | 50.000 | 50.025 |
| PSM5060-35 | 50 | 60 | 35 | 50.062 | 50.133 | 60.053 | 60.099 | 34.50 | 35 | 3676 | 1838 | 36047 | 18023 | 0.08419 | 60.099 | 60.124 | 60.000 | 60.030 |
| PSM5060-50 | 50 | 60 | 50 | 50.062 | 50.133 | 60.053 | 60.099 | 49.50 | 50 | 5250 | 2625 | 51482 | 25741 | 0.12027 | 60.099 | 60.124 | 60.000 | 60.030 |
| PSM6070-60 | 60 | 70 | 60 | 60.063 | 60.139 | 70.053 | 70.099 | 59.50 | 60 | 7560 | 3780 | 74133 | 37067 | 0.17052 | 70.099 | 70.124 | 70.000 | 70.030 |

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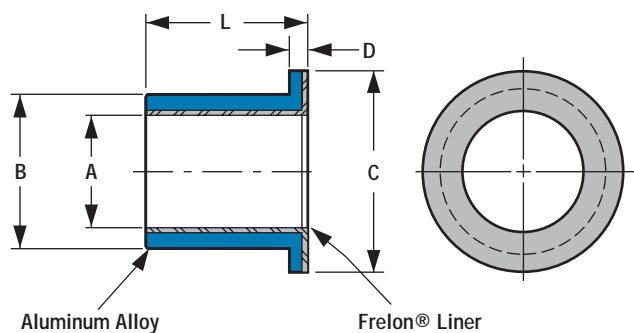


Simplicity® Plane Bearings

Sleeve Bearings - ISO Metric

Linear Motion Systems

PSFM SLEEVE BEARINGS



BASIC DIMENSIONAL INFORMATION

| PART NO. | NOMINAL BEARING SIZE | | | A BEARING I.D. | | B O.D. (S7) | | C FLANGE O.D. | D FLANGE WIDTH | | L LENGTH | | MAX. STATIC LOAD (kg.) FRELON | | MAX. STATIC LOAD (N) FRELON | | BEARING WEIGHT | RECOMMENDED HOUSING BORE | | | |
|-------------|----------------------|------|--------|----------------|--------|-------------|--------|---------------|----------------|-------|----------|------|-------------------------------|-------|-----------------------------|---------|----------------|--------------------------|--------|-----------|--|
| | | | | | | | | | | | | | | | | | | SLIP FIT & EPOXY | | PRESS FIT | |
| | I.D. | O.D. | LENGTH | MIN. | MAX. | MIN. | MAX. | MIN. | MAX. | MIN. | MAX. | GOLD | J | GOLD | J | (kg.) | MIN. | MAX. | MIN. | MAX. | |
| PSFM0610-06 | 6 | 10 | 6 | 6.028 | 6.058 | 10.023 | 10.038 | 14 | 2 | 5.75 | 6 | 76 | 38 | 745 | 373 | 0.00126 | 10.038 | 10.063 | 10.000 | 10.015 | |
| PSFM0610-10 | 6 | 10 | 10 | 6.028 | 6.058 | 10.023 | 10.038 | 14 | 2 | 9.75 | 10 | 126 | 63 | 1236 | 618 | 0.00182 | 10.038 | 10.063 | 10.000 | 10.015 | |
| PSFM0812-06 | 8 | 12 | 6 | 8.033 | 8.066 | 12.028 | 12.046 | 16 | 2 | 5.75 | 6 | 100 | 50 | 981 | 490 | 0.00153 | 12.046 | 12.071 | 12.000 | 12.018 | |
| PSFM0812-08 | 8 | 12 | 8 | 8.033 | 8.066 | 12.028 | 12.046 | 16 | 2 | 7.75 | 8 | 134 | 67 | 1314 | 657 | 0.00189 | 12.046 | 12.071 | 12.000 | 12.018 | |
| PSFM0812-12 | 8 | 12 | 12 | 8.033 | 8.066 | 12.028 | 12.046 | 16 | 2 | 11.75 | 12 | 202 | 101 | 1981 | 990 | 0.00259 | 12.046 | 12.071 | 12.000 | 12.018 | |
| PSFM1016-08 | 10 | 16 | 8 | 10.033 | 10.066 | 16.028 | 16.046 | 22 | 3 | 7.75 | 8 | 168 | 84 | 1647 | 824 | 0.00421 | 16.046 | 16.071 | 16.000 | 16.018 | |
| PSFM1016-10 | 10 | 16 | 10 | 10.033 | 10.066 | 16.028 | 16.046 | 22 | 3 | 9.75 | 10 | 210 | 105 | 2059 | 1030 | 0.00489 | 16.046 | 16.071 | 16.000 | 16.018 | |
| PSFM1016-16 | 10 | 16 | 16 | 10.033 | 10.066 | 16.028 | 16.046 | 22 | 3 | 15.75 | 16 | 336 | 168 | 3295 | 1647 | 0.00694 | 16.046 | 16.071 | 16.000 | 16.018 | |
| PSFM1218-08 | 12 | 18 | 8 | 12.034 | 12.070 | 18.028 | 18.046 | 24 | 3 | 7.75 | 8 | 202 | 101 | 1981 | 990 | 0.00478 | 18.046 | 18.071 | 18.000 | 18.018 | |
| PSFM1218-12 | 12 | 18 | 12 | 12.034 | 12.070 | 18.028 | 18.046 | 24 | 3 | 11.75 | 12 | 302 | 151 | 2961 | 1481 | 0.00636 | 18.046 | 18.071 | 18.000 | 18.018 | |
| PSFM1519-16 | 15 | 19 | 16 | 15.034 | 15.070 | 19.028 | 19.046 | 25 | 3 | 15.50 | 16 | 504 | 252 | 4942 | 2471 | 0.00647 | 19.046 | 19.071 | 19.000 | 19.018 | |
| PSFM1620-16 | 16 | 20 | 16 | 16.041 | 16.080 | 20.035 | 20.056 | 27 | 3 | 15.55 | 16 | 538 | 269 | 5276 | 2638 | 0.00718 | 20.056 | 20.081 | 20.000 | 20.021 | |
| PSFM1620-20 | 16 | 20 | 20 | 16.041 | 16.080 | 20.035 | 20.056 | 27 | 3 | 19.50 | 20 | 672 | 336 | 6590 | 3295 | 0.00844 | 20.056 | 20.081 | 20.000 | 20.021 | |
| PSFM1620-25 | 16 | 20 | 25 | 16.041 | 16.080 | 20.035 | 20.056 | 27 | 3 | 24.50 | 25 | 840 | 420 | 8237 | 4119 | 0.01002 | 20.056 | 20.081 | 20.000 | 20.021 | |
| PSFM2026-20 | 20 | 26 | 20 | 20.042 | 20.084 | 26.035 | 26.056 | 32 | 3 | 19.50 | 20 | 840 | 420 | 8237 | 4119 | 0.01432 | 26.056 | 26.081 | 26.000 | 26.021 | |
| PSFM2026-30 | 20 | 26 | 30 | 20.042 | 20.084 | 26.035 | 26.056 | 32 | 3 | 29.50 | 30 | 1260 | 630 | 12356 | 6178 | 0.02035 | 26.056 | 26.081 | 26.000 | 26.021 | |
| PSFM2530-20 | 25 | 30 | 20 | 25.042 | 25.084 | 30.035 | 30.056 | 39 | 3.5 | 19.50 | 20 | 1050 | 525 | 10296 | 5148 | 0.01672 | 30.056 | 30.081 | 30.000 | 30.021 | |
| PSFM2530-25 | 25 | 30 | 25 | 25.042 | 25.084 | 30.035 | 30.056 | 39 | 3.5 | 24.50 | 25 | 1312 | 656 | 12865 | 6433 | 0.01973 | 30.056 | 30.081 | 30.000 | 30.021 | |
| PSFM2530-32 | 25 | 30 | 32 | 25.042 | 25.084 | 30.035 | 30.056 | 39 | 3.5 | 31.50 | 32 | 1680 | 840 | 16474 | 8237 | 0.02394 | 30.056 | 30.081 | 30.000 | 30.021 | |
| PSFM3038-30 | 30 | 38 | 30 | 30.050 | 30.096 | 38.043 | 38.068 | 46 | 4 | 29.50 | 30 | 1890 | 945 | 18533 | 9267 | 0.04145 | 38.068 | 38.093 | 38.000 | 38.021 | |
| PSFM3545-35 | 35 | 45 | 35 | 35.052 | 35.102 | 45.043 | 45.068 | 55 | 5 | 34.50 | 35 | 2572 | 1286 | 25221 | 12611 | 0.07192 | 45.068 | 45.093 | 45.000 | 45.025 | |
| PSFM4050-40 | 40 | 50 | 40 | 40.052 | 40.102 | 50.043 | 50.068 | 60 | 5 | 39.50 | 40 | 3360 | 1680 | 32948 | 16474 | 0.09044 | 50.068 | 50.093 | 50.000 | 50.025 | |
| PSFM5060-50 | 50 | 60 | 50 | 50.062 | 50.133 | 60.053 | 60.099 | 70 | 5 | 49.50 | 50 | 5250 | 2625 | 51482 | 25741 | 0.13429 | 60.099 | 60.124 | 60.000 | 60.030 | |

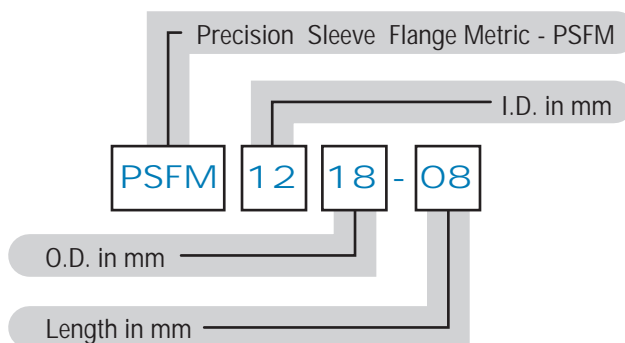
INSTALLATION INSTRUCTIONS

- Slip the bearing sleeve into the housing and epoxy into place with Loctite™ or similar type bonding agent.

CAUTION: Do NOT let any of the adhesive touch the bearing liner. It will harden and interfere with the running clearance.

- Freeze the bearings at 0°F (-17.75°C) for 30-45 minutes. Using gloves, remove the bearings from the freezer and slip them into the housing. As they heat to room temperature, full contact between the bearing and housing will be achieved. The greatest advantage to this technique over traditional pressing is greater accuracy in alignment.

ORDERING INFORMATION



NOTE: Lengths not listed above must be quoted.

FrelonGOLD® and FrelonJ® are registered trademarks of Pacific Bearing.

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SIMPLICITY LINEAR SLIDES WILL EXCEL IN HARSH, CONTAMINATED ENVIRONMENTS

Simplicity slides are working effectively today in some of the toughest environments industry has to offer:

- Fiberglass manufacturing and processing plants
- Stone cutters and other quarry applications
- Auto manufacturing facilities
- Welding and assembly lines
- Foundries
- Machine Tools

THREE BASIC DESIGNS FOR SIMPLICITY® LINEAR SLIDES

NOTE: All slides come standard with mounting plate, four pillow block assemblies, two steel shafts with corrosion resistant finish, two aluminum support rails.

HIGH PROFILE:

RS - comes with standard components

RPS - comes with standard components and includes bottom support plate with precision alignment

2RPS - same as "RPS" with ball screw and two ends supported with end plates

LOW PROFILE:

LRPS - low profile support rail version of a standard RPS

2LRPS - low profile support rail version of a standard 2RPS

MODULAR COMPONENTS:

SRB2 - support rail, guide bar, and two standard Simplicity pillow blocks

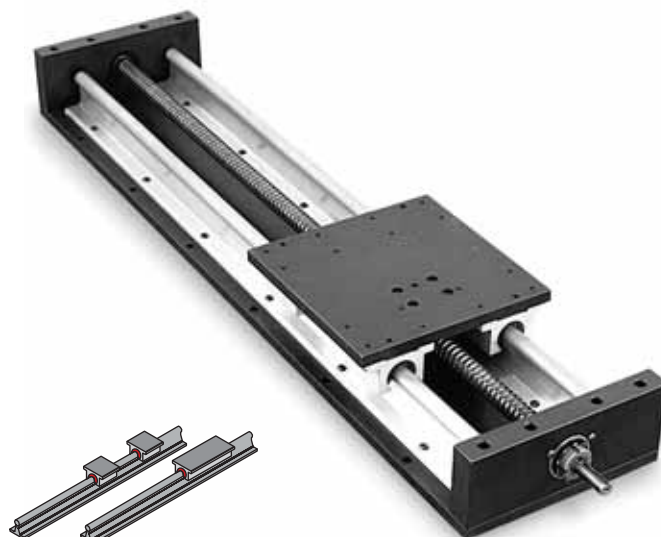
SRBT - support rail, guide bar, and one standard Simplicity pillow block

ACCESSORIES AVAILABLE:

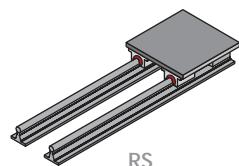
Hand crank with ball screw lock, direct drive NEMA 23 & 34 motor bracket with constant velocity coupling, etc.

Call for more information. Special quotation requests for your specific application are welcome!

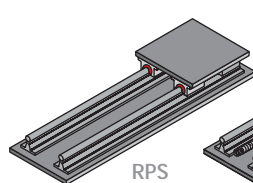
Many of the toughest applications and environments do not use standard off-the-shelf components. We excel at these challenges. Call our application engineers for an evaluation and quotation on a slide for your needs.



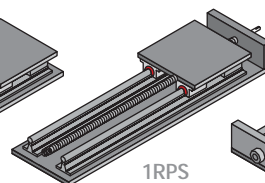
SRB



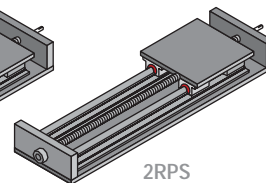
RS



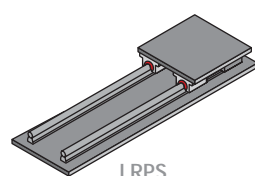
RPS



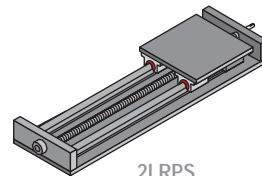
1RPS



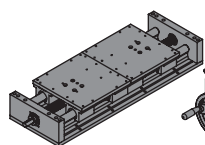
2RPS



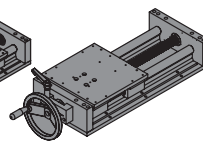
LRPS



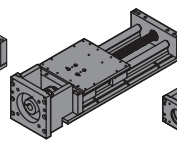
2LRPS



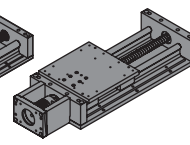
SC2RPS



2HCR-2HWL



2N42, 56, 143



2N34

NOTE: Miniature and unitized Stages and Slides can be found on page 190-191.

Full product specifications are available at www.pacific-bearing.com

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SLIDE SELECTION INFORMATION

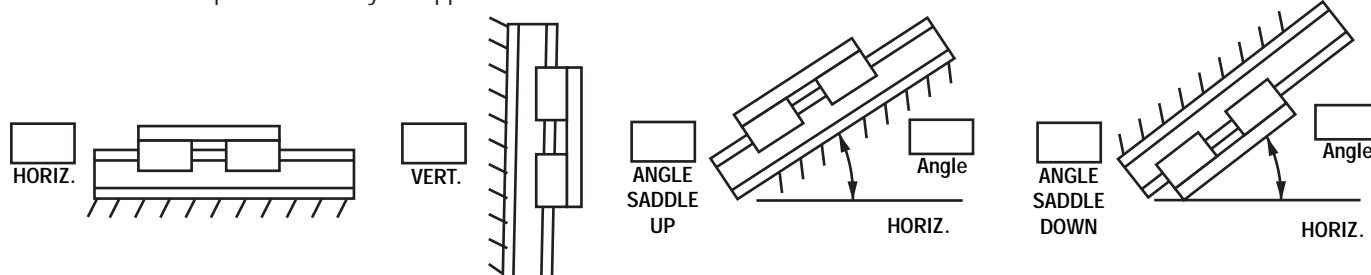
1. Determine the size and stroke of slide.
2. Is a lube system required?
3. Please furnish the following to the factory:
 - a. Model designation
 - b. Lube system requirements
 - c. Mounting orientation, saddle position if mounted at an angle
 - d. Load to be carried and approximate center of gravity from saddle center
 - e. Location and magnitude of any force which resists the motion of the slide
 - f. Acceleration rate and maximum velocity of the saddle
 - g. Deceleration rate
 - h. Service life requirements
 - i. Type of environment the slide will operate in

MODEL NUMBER

| Series Code | Size Code | Length Code | Ball Screw Lead Code |
|-------------|-----------|-------------|----------------------|
|-------------|-----------|-------------|----------------------|

MOUNTING ORIENTATION

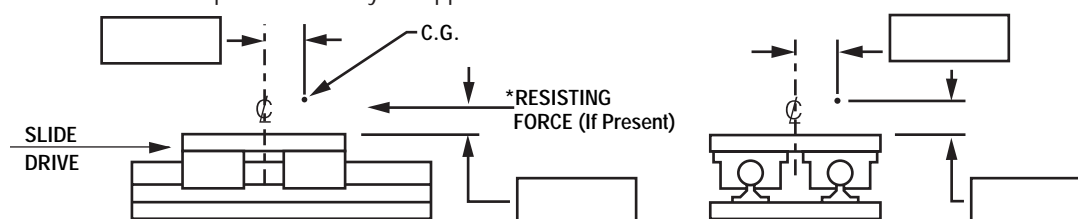
Please indicate the parameters of your application in the boxes below.



| | | | | | |
|-----------------------|----------------------|------------------------------|----------------------|-------------|----------------------|
| Cycle Rate: | <input type="text"/> | Per Hour: | <input type="text"/> | Per Minute: | <input type="text"/> |
| Max. Saddle Velocity: | <input type="text"/> | Inch/Second: | <input type="text"/> | | |
| Acceleration Rate: | <input type="text"/> | Inches/Second ² : | <input type="text"/> | | |
| Deceleration Rate: | <input type="text"/> | Inches/Second ² : | <input type="text"/> | | |
| Load: | <input type="text"/> | lbs. | <input type="text"/> | | |

LOCATION OF CENTER OF GRAVITY FROM SADDLE CENTER

Please indicate the parameters of your application in the boxes below.



*Example of "Resisting Force" would be tool thrust for a drill head mounted on slide.

| | | | | |
|-------------------|----------------------|---------|----------------------|-------|
| Resisting Force: | <input type="text"/> | lbs. | | |
| Life Requirement: | <input type="text"/> | Strokes | <input type="text"/> | Hours |

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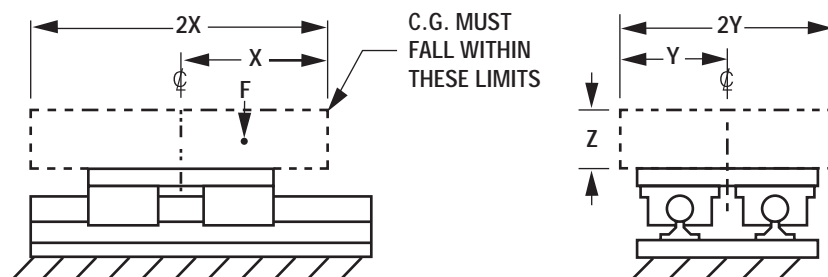


LOAD CAPACITIES

For non-lubricated slide applications where speeds are less than 90 feet/minute (18 inches/seconds).

All slides are to be fully supported and rigidly mounted.

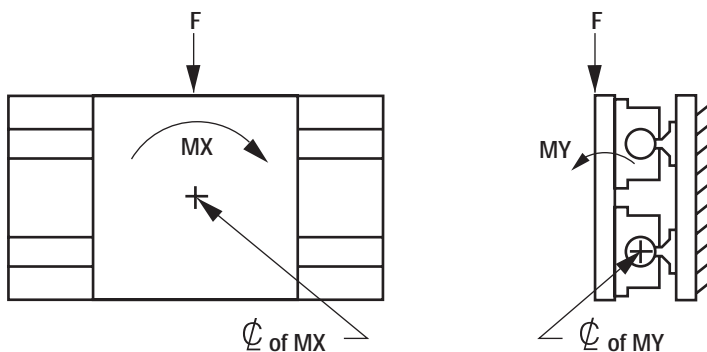
STANDARD MOUNTING



Recommended Safe Loading

| SIZE | F MAX. (lbs.) | F MAX. (N) | X (in.) | Y (in.) | Z (in.) |
|------|---------------------|------------------|------------|------------|------------|
| 08 | 1450 | 2402 | 4.00 | 2.37 | 3.00 |
| 10 | 2200 | 3381 | 4.75 | 2.76 | 3.50 |
| 12 | 2850 | 3737 | 5.00 | 2.85 | 4.00 |
| 16 | 5275 | 4671 | 5.50 | 3.37 | 4.50 |
| 20 | 7750 | 7784 | 6.75 | 4.05 | 5.50 |
| 24 | 10600 | 9341 | 7.86 | 4.90 | 6.50 |
| 32 | 18750 | 14679 | 10.75 | 6.00 | 9.00 |

SIDE MOUNTING



Recommended Safe Loading

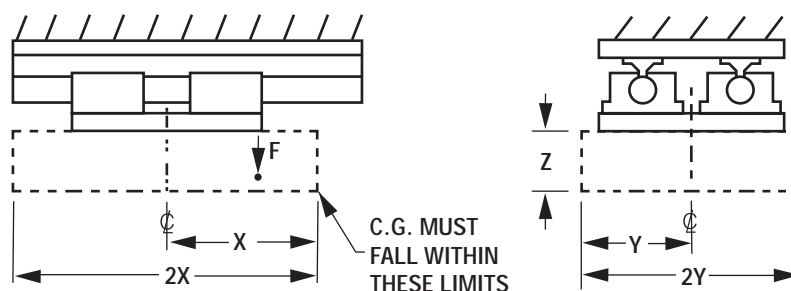
| SIZE | F MAX. (lbs.) | Mx (in.-lbs.) | My (in.-lbs.) | F MAX. (N) | Mx (Nm) | My (Nm) |
|------|---------------------|------------------|------------------|------------------|------------|------------|
| 08 | 540 | 910 | 1500 | 2402 | 103 | 169 |
| 10 | 760 | 1680 | 2750 | 3381 | 190 | 311 |
| 12 | 840 | 1710 | 2875 | 3737 | 193 | 325 |
| 16 | 1050 | 3300 | 4430 | 4671 | 373 | 501 |
| 20 | 1750 | 6175 | 8750 | 7784 | 698 | 989 |
| 24 | 2100 | 9600 | 12600 | 9341 | 1085 | 1424 |
| 32 | 3300 | 19000 | 28050 | 14679 | 2147 | 3169 |

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LOAD CAPACITIES (cont.)

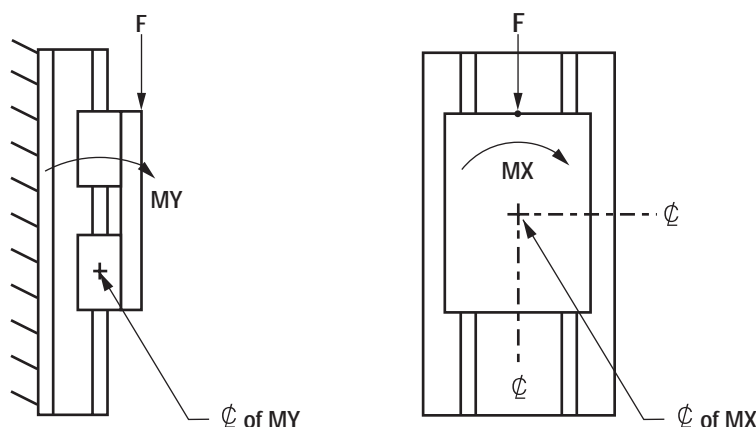
INVERTED MOUNTING



Recommended Safe Loading

| SIZE | F MAX. (lbs.) | F MAX. (N) | X (in.) | Y (in.) | Z (in.) |
|------|---------------------|------------------|------------|------------|------------|
| 08 | 195 | 867 | 4.85 | 2.91 | 3.00 |
| 10 | 285 | 1268 | 5.69 | 3.33 | 3.50 |
| 12 | 315 | 1401 | 6.52 | 3.75 | 4.00 |
| 16 | 450 | 2002 | 7.31 | 4.58 | 4.50 |
| 20 | 712 | 3167 | 8.84 | 5.42 | 5.50 |
| 24 | 900 | 4003 | 10.50 | 6.67 | 6.50 |
| 32 | 1425 | 6339 | 14.67 | 8.33 | 9.00 |

VERTICAL MOUNTING



Recommended Safe Loading

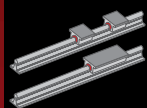
| SIZE | F MAX. (lbs.) ^{1,2} | Mx (in.-lbs.) | My (in.-lbs.) | F MAX. (N) | Mx (Nm) | My (Nm) |
|------|---------------------------------|------------------|------------------|---------------|------------|------------|
| 08 | 260 | 1445 | 1500 | 1157 | 163 | 169 |
| 10 | 300 | 2750 | 2750 | 1334 | 311 | 311 |
| 12 | 300 | 2875 | 2875 | 1334 | 325 | 325 |
| 16 | 600 | 5000 | 4430 | 2669 | 565 | 501 |
| 20 | 675 | 9500 | 8750 | 3003 | 1073 | 989 |
| 24 | 710 | 14400 | 12600 | 3158 | 1627 | 1424 |
| 32 | 900 | 32300 | 28050 | 4003 | 3649 | 3169 |

¹ Applies only when using 2RPS & 2LRPS slides

² If "F" is exceeded consult factory.

Footnote: w/RPS, FMAX is dependent upon customer's method of moving the slide.

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SRB - Preassembled Shaft, Rail, & Bearing

PART NUMBER

DIMENSIONS

| SERIES | | SIZE | | | | L | SHAFT DIA. | A | B | C | D | E _T | F _T | E ₂ | F ₂ | G | H | J | K | M | N | P | R | S |
|--------|---|------|---|----|---|-----|------------|-------|------|-------|------|----------------|----------------|----------------|----------------|------|-------|-------|------|-------|------|------|-------|------|
| SRBXY | X | 08 | - | XX | - | XXX | .500 | 1.125 | 2.00 | 1.688 | 1.50 | 2.500 | 3.500 | 1.000 | 1.687 | .250 | 1.812 | 4.000 | 2.00 | 1.125 | .156 | .169 | 1.000 | .188 |
| SRBXY | X | 10 | - | XX | - | XXX | .625 | 1.125 | 2.50 | 2.125 | 1.62 | 3.000 | 4.000 | 1.125 | 1.937 | .281 | 2.000 | 4.000 | 2.00 | 1.437 | .188 | .193 | 1.125 | .250 |
| SRBXY | X | 12 | - | XX | - | XXX | .750 | 1.500 | 2.75 | 2.375 | 1.75 | 3.500 | 4.500 | 1.250 | 2.062 | .312 | 2.438 | 6.000 | 3.00 | 1.562 | .188 | .221 | 1.250 | .250 |
| SRBXY | X | 16 | - | XX | - | XXX | 1.000 | 1.750 | 3.25 | 2.875 | 2.12 | 4.500 | 6.000 | 1.750 | 2.812 | .375 | 2.938 | 6.000 | 3.00 | 1.937 | .219 | .281 | 1.500 | .250 |
| SRBXY | X | 20 | - | XX | - | XXX | 1.250 | 2.125 | 4.00 | 3.500 | 2.50 | 5.500 | 7.500 | 2.000 | 3.625 | .437 | 3.625 | 6.000 | 3.00 | 2.500 | .219 | .343 | 1.875 | .312 |
| SRBXY | X | 24 | - | XX | - | XXX | 1.500 | 2.500 | 4.75 | 4.125 | 3.00 | 6.500 | 9.000 | 2.500 | 4.000 | .500 | 4.250 | 8.000 | 4.00 | 2.875 | .281 | .343 | 2.250 | .375 |
| SRBXY | X | 32 | - | XX | - | XXX | 2.000 | 3.250 | 6.00 | 5.250 | 3.75 | 8.250 | 10.000 | 3.250 | 5.000 | .625 | 5.375 | 8.000 | 4.00 | 3.625 | .406 | .406 | 2.750 | .500 |

- Substitute "L" from standard length table for "XXX"
- *Substitute "00" - Alloy Steel, "SS" - 440 Stainless Steel, or "CR" - Chrome Plated 303 SST for "XX"
- Shaft diameter dimension in 1/16" increments
- Enter "S" for single seals or "D" for double seals or leave blank for no seals
- Substitute "X" for "B" - Ball Bearing
- Pillow block style - substitute "2" for two single PN bearings or "T" for one twin PWN bearing for "Y"

All tabulated dimensions are in inches.

MATERIAL:

T-Rail supports - aluminum alloy

***Shafting** - Hardened steel alloy, SS 440 stainless steel and CR 303 SST

Simplicity Bearings - composite teflon and aluminum alloy

Simplicity Pillow Blocks - aluminum alloy

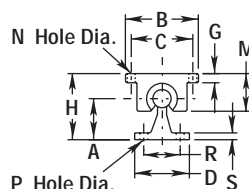
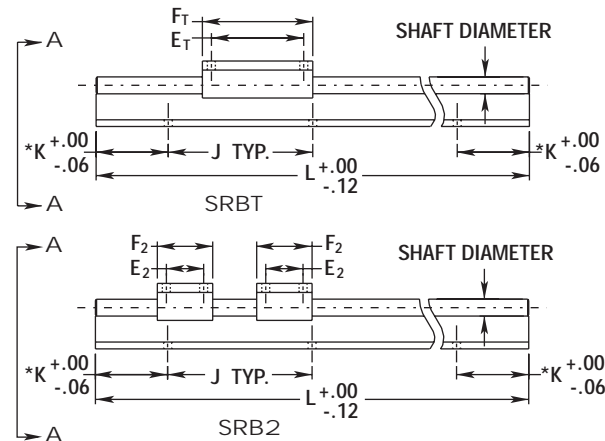
Screws, retaining rings, spring pins - steel alloy

NOTE: For lengths over 48", guide bars will be continuous, but rail supports will have a minimum of one break every 48".

STANDARD LENGTH TABLE (Inches)

| SIZE | AVAILABLE LENGTHS - L* (in inches) | | | | | | | | | | | | | | | | | | | | | | | | |
|------|------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 08 | 008 | 012 | 016 | | 020 | 024 | 028 | | 032 | 036 | 040 | | 044 | 048 | 052 | | 056 | 060 | 064 | | 068 | 072 | 076 | | 080 |
| 10 | 008 | 012 | 016 | | 020 | 024 | 028 | | 032 | 036 | 040 | | 044 | 048 | 052 | | 056 | 060 | 064 | | 068 | 072 | 076 | | 080 |
| 12 | | 012 | | 018 | | 024 | | 030 | | 036 | | 042 | | 048 | | 054 | | 060 | | 066 | | 072 | | 078 | |
| 16 | | 012 | | 018 | | 024 | | 030 | | 036 | | 042 | | 048 | | 054 | | 060 | | 066 | | 072 | | 078 | |
| 20 | | 012 | | 018 | | 024 | | 030 | | 036 | | 042 | | 048 | | 054 | | 060 | | 066 | | 072 | | 078 | |
| 24 | | | 016 | | | 024 | | | 032 | | 040 | | | 048 | | | 056 | | 064 | | | 072 | | | 080 |
| 32 | | | | | | 024 | | | 032 | | 040 | | | 048 | | | 056 | | 064 | | | 072 | | | 080 |

*Non-standard lengths are also available - see non-standard lengths ordering example.



VIEW A-A

*For standard length dimensions consult chart for "K" dimension.

*For non-standard length dimensions "K" can be calculated with the following formula (in all cases equal on both ends).

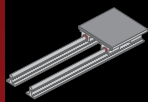
$$K(\text{non-std}) = (K(\text{from chart}) - (\Delta L/2)).$$

Where ΔL = next longer standard length - desired length.

NOTES: Longer lengths are available - Consult Factory.

For Full Slide Assemblies, refer to www.pacific-bearing.com

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RS - Rail Mounted Slide Assembly

PART NUMBER

DIMENSIONS

| SERIES | | | SIZE | | | | SHAFT DIA. | W | H | A | B | C | D | E | G | J | R | TAP | HOLE DIA. |
|--------|---|---|------|---|----|-------|------------|--------|-------|-------|------|--------|-------|-------|--------|-------|-------|---------|-----------|
| RS | X | - | 08 | - | XX | - XXX | .500 | 6.000 | 2.188 | 1.125 | 2.00 | 3.500 | 1.500 | .375 | 5.500 | 4.000 | 1.000 | 10-24 | .17 |
| RS | X | - | 10 | - | XX | - XXX | .625 | 7.000 | 2.375 | 1.125 | 2.50 | 4.000 | 1.625 | .375 | 6.312 | 4.000 | 1.125 | 1/4-20 | .19 |
| RS | X | - | 12 | - | XX | - XXX | .750 | 8.000 | 2.938 | 1.500 | 2.75 | 4.500 | 1.750 | .500 | 7.125 | 6.000 | 1.250 | 1/4-20 | .22 |
| RS | X | - | 16 | - | XX | - XXX | 1.000 | 9.000 | 3.438 | 1.750 | 3.25 | 5.500 | 2.125 | .500 | 8.312 | 6.000 | 1.500 | 1/4-20 | .28 |
| RS | X | - | 20 | - | XX | - XXX | 1.250 | 11.000 | 4.375 | 2.125 | 4.00 | 6.500 | 2.500 | .750 | 10.000 | 6.000 | 1.875 | 5/16-18 | .34 |
| RS | X | - | 24 | - | XX | - XXX | 1.500 | 13.000 | 5.000 | 2.500 | 4.75 | 8.000 | 3.000 | .750 | 12.000 | 8.000 | 2.250 | 5/16-18 | .34 |
| RS | X | - | 32 | - | XX | - XXX | 2.000 | 18.000 | 6.375 | 3.250 | 6.00 | 10.000 | 3.750 | 1.000 | 15.880 | 8.000 | 2.750 | 3/8-16 | .41 |

- Substitute "L" from standard length table for "XXX"
- *Substitute "00" - Alloy Steel, "SS" - 440 Stainless Steel, or "CR" - Chrome Plated 303 SST for "XX"
- Shaft diameter dimension in 1/16" in increments
- Substitute "X" for "B" - Ball Bearing

Lengths and mounting provisions to your specifications are available - consult factory.

All tabulated dimensions are in inches.

MATERIAL:

Aluminum Alloy - Top Plate, Rail Supports, Pillow Blocks

***Shafting** - Hardened steel alloy, SS 440 stainless steel and CR 303 SST

NOTE: For lengths over 48", guide bars will be continuous, but rail supports will have a minimum of one break every 48".

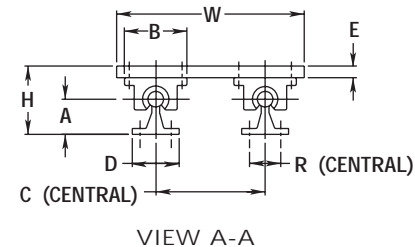
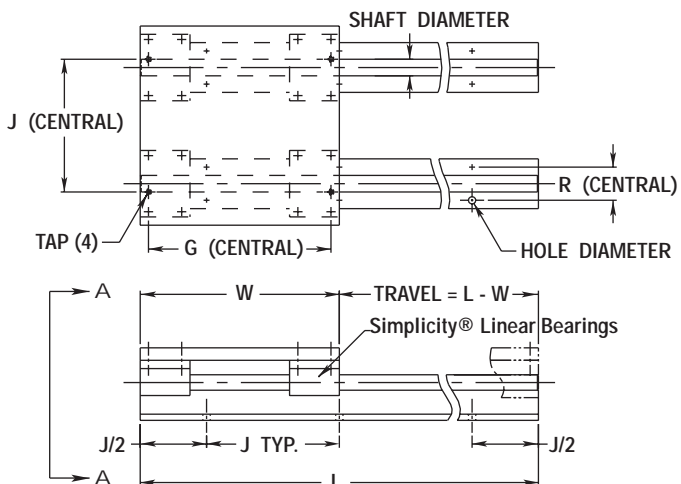
ORDERING EXAMPLE:

To order a slide with a .625 diameter shaft, and 28" travel, specify part number RS-10-028.

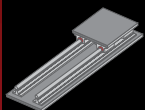
STANDARD LENGTH TABLE (Inches)

| SIZE | AVAILABLE LENGTHS - L * (in inches) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------|-------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 08 | 008 | 012 | 016 | | 020 | 024 | 028 | | 032 | 036 | 040 | | 044 | 048 | 052 | | 056 | 060 | 064 | | 068 | 072 | 076 | | 080 | 084 | 088 | | 092 | 096 |
| 10 | 008 | 012 | 016 | | 020 | 024 | 028 | | 032 | 036 | 040 | | 044 | 048 | 052 | | 056 | 060 | 064 | | 068 | 072 | 076 | | 080 | 084 | 088 | | 092 | 096 |
| 12 | | 012 | | 018 | | 024 | | 030 | | 036 | | 042 | | 048 | | 054 | | 060 | | 066 | | 072 | | 078 | | 084 | | 090 | | 096 |
| 16 | | 012 | | 018 | | 024 | | 030 | | 036 | | 042 | | 048 | | 054 | | 060 | | 066 | | 072 | | 078 | | 084 | | 090 | | 096 |
| 20 | | 012 | | 018 | | 024 | | 030 | | 036 | | 042 | | 048 | | 054 | | 060 | | 066 | | 072 | | 078 | | 084 | | 090 | | 096 |
| 24 | | | 016 | | | 024 | | | 032 | | 040 | | | 048 | | | 056 | | 064 | | | 072 | | | 080 | | 088 | | | 096 |
| 32 | | | | | | 024 | | | 032 | | 040 | | | 048 | | | 056 | | 064 | | | 072 | | | 080 | | 088 | | | 096 |

*NOTE: Longer lengths are available - consult factory.



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RPS - Rail Mounted & Plate Supported Slide Assembly

PART NUMBER

DIMENSIONS

| SERIES | | | SIZE | | | L | SHAFT DIA. | W | H | A | B | C | D | E | F | G | J | TAP | HOLE |
|--------|---|---|------|---|----|---|------------|--------|-------|-------|------|--------|-------|-------|------|--------|-------|---------|------|
| RPS | X | - | 08 | - | XX | - | .500 | 6.000 | 2.562 | 1.125 | 2.00 | 3.500 | 1.500 | .375 | 1.00 | 5.500 | 4.000 | 10-24 | .22 |
| RPS | X | - | 10 | - | XX | - | .625 | 7.000 | 2.750 | 1.125 | 2.50 | 4.000 | 1.625 | .375 | 1.00 | 6.312 | 4.000 | 1/4-20 | .28 |
| RPS | X | - | 12 | - | XX | - | .750 | 8.000 | 3.438 | 1.500 | 2.75 | 4.500 | 1.750 | .500 | 1.25 | 7.125 | 6.000 | 1/4-20 | .28 |
| RPS | X | - | 16 | - | XX | - | 1.000 | 9.000 | 3.938 | 1.750 | 3.25 | 5.500 | 2.125 | .500 | 1.25 | 8.312 | 6.000 | 1/4-20 | .28 |
| RPS | X | - | 20 | - | XX | - | 1.250 | 11.000 | 5.125 | 2.125 | 4.00 | 6.500 | 2.500 | .750 | 1.50 | 10.000 | 6.000 | 5/16-18 | .34 |
| RPS | X | - | 24 | - | XX | - | 1.500 | 13.000 | 5.750 | 2.500 | 4.75 | 8.000 | 3.000 | .750 | 1.50 | 12.000 | 8.000 | 5/16-18 | .34 |
| RPS | X | - | 32 | - | XX | - | 2.000 | 18.000 | 7.375 | 3.250 | 6.00 | 10.000 | 3.750 | 1.000 | 1.75 | 15.875 | 8.000 | 3/8-16 | .41 |

- ... Substitute "L" from standard length table for "XXX"
- ... Substitute "00" - Alloy Steel, "SS" - 440 Stainless Steel, or "CR" - Chrome Plated 303 SST for "XX"
- ... Shaft diameter dimension in 1/16" increments
- ... Substitute "X" for "B" - Ball Bearing

Lengths and mounting provisions to your specifications are available - consult factory.

All tabulated dimensions are in inches.

MATERIAL:

Aluminum Alloy - Top Plate, Bottom Plate, Rail Supports, Pillow Blocks.

Steel Alloy - Shafts with proprietary low friction corrosion resistant surface treatment.

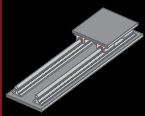
ORDERING EXAMPLE:

To order a slide with a .625 diameter shaft, and 28" travel, specify part number RPS-10-028.

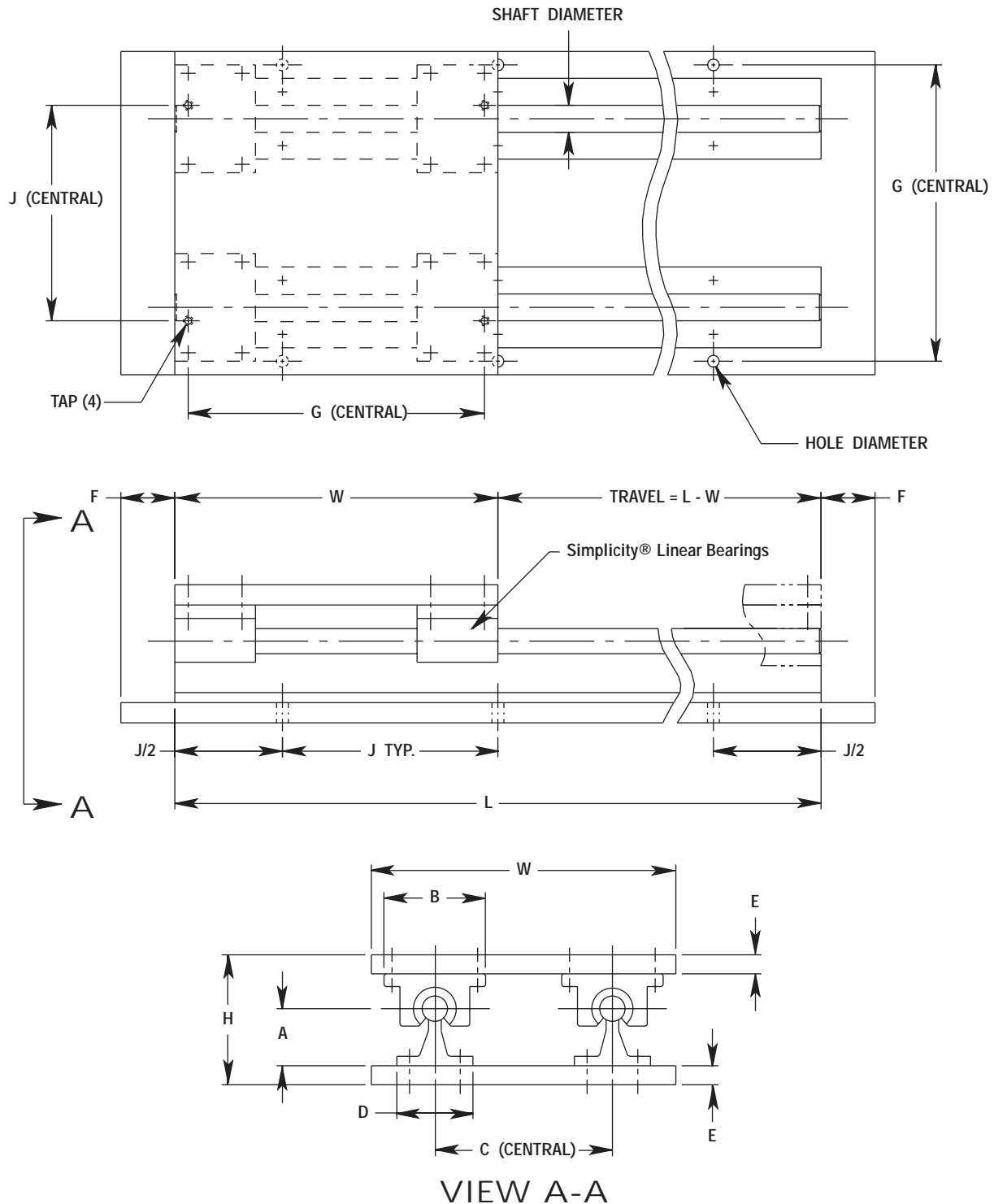
STANDARD LENGTH TABLE (Inches)

| SIZE | AVAILABLE LENGTHS - L * (in inches) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------|-------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 08 | 008 | 012 | 016 | | 020 | 024 | 028 | | 032 | 036 | 040 | | 044 | 048 | 052 | | 056 | 060 | 064 | | 068 | 072 | 076 | | 080 | 084 | 088 | | 092 | 096 |
| 10 | 008 | 012 | 016 | | 020 | 024 | 028 | | 032 | 036 | 040 | | 044 | 048 | 052 | | 056 | 060 | 064 | | 068 | 072 | 076 | | 080 | 084 | 088 | | 092 | 096 |
| 12 | | 012 | | 018 | | 024 | | 030 | | 036 | | 042 | | 048 | | 054 | | 060 | | 066 | | 072 | | 078 | | 084 | | 090 | | 096 |
| 16 | | 012 | | 018 | | 024 | | 030 | | 036 | | 042 | | 048 | | 054 | | 060 | | 066 | | 072 | | 078 | | 084 | | 090 | | 096 |
| 20 | | 012 | | 018 | | 024 | | 030 | | 036 | | 042 | | 048 | | 054 | | 060 | | 066 | | 072 | | 078 | | 084 | | 090 | | 096 |
| 24 | | | 016 | | | 024 | | | 032 | | 040 | | | 048 | | | 056 | | 064 | | | 072 | | | 080 | | 088 | | | 096 |
| 32 | | | | | | 024 | | | 032 | | 040 | | | 048 | | | 056 | | 064 | | | 072 | | | 080 | | 088 | | | 096 |

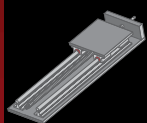
*NOTE: Longer lengths are available - consult factory.



RPS - Rail Mounted & Plate Supported Slide Assembly



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Simplicity® Linear Slides

Inch Series - 1RPS

Linear Motion Systems

1 RPS – Rail Mounted & Plate Supported Ball Screw Driven Slide Assembly (Supported on one end)

DIMENSIONAL INFORMATION

| SHAFT DIA. | W | H | A | B | C | D | E | F | G | J | K | M | N | O | TAP | HOLE | KEY |
|------------|--------|-------|-------|------|--------|-------|-------|------|--------|-------|-------|-------|------|------|---------|------|------------------|
| .500 | 6.000 | 2.562 | 1.125 | 2.00 | 3.500 | 1.500 | .375 | 1.00 | 5.500 | 4.000 | 1.375 | .375 | 1.45 | .63 | 10-24 | .22 | 3/32 sq X 5/8 lg |
| .625 | 7.000 | 2.750 | 1.125 | 2.50 | 4.000 | 1.625 | .375 | 1.00 | 6.312 | 4.000 | 1.375 | .375 | 1.45 | .63 | 1/4-20 | .28 | 3/32 sq X 5/8 lg |
| .750 | 8.000 | 3.438 | 1.500 | 2.75 | 4.500 | 1.750 | .500 | 1.25 | 7.125 | 6.000 | 1.500 | .375 | 1.45 | .63 | 1/4-20 | .28 | 3/32 sq X 5/8 lg |
| 1.000 | 9.000 | 3.938 | 1.750 | 3.25 | 5.500 | 2.125 | .500 | 1.25 | 8.312 | 6.000 | 2.125 | .625 | 1.76 | 1.00 | 1/4-20 | .28 | 3/16 sq X 1" lg |
| 1.250 | 11.000 | 5.125 | 2.125 | 4.00 | 6.500 | 2.500 | .750 | 1.50 | 10.000 | 6.000 | 2.375 | .625 | 1.76 | 1.00 | 5/16-18 | .34 | 3/16 sq X 1" lg |
| 1.500 | 13.000 | 5.750 | 2.500 | 4.75 | 8.000 | 3.000 | .750 | 1.50 | 12.000 | 8.000 | 2.875 | 1.000 | 2.31 | 1.50 | 5/16-18 | .34 | 1/4 sq X 1.62 lg |
| 2.000 | 18.000 | 7.375 | 3.250 | 6.00 | 10.000 | 3.750 | 1.000 | 1.75 | 15.875 | 8.000 | 3.875 | 1.000 | 2.31 | 1.50 | 3/8-16 | .41 | 1/4 sq X 1.62 lg |

PART NUMBER

| PART NUMBER | | | | | | | |
|-------------|---|---|------|---|-----|---|------|
| SERIES | | | SIZE | | L | | LEAD |
| 1RPS | X | - | 08 | - | XXX | - | YYY |
| 1RPS | X | - | 10 | - | XXX | - | YYY |
| 1RPS | X | - | 12 | - | XXX | - | YYY |
| 1RPS | X | - | 16 | - | XXX | - | YYY |
| 1RPS | X | - | 20 | - | XXX | - | YYY |
| 1RPS | X | - | 24 | - | XXX | - | YYY |
| 1RPS | X | - | 32 | - | XXX | - | YYY |

MATERIAL:

Aluminum Alloy - Top Plate, Bottom Plate, Rail Supports, Pillow Blocks.

Alloy Steel - Shafting with proprietary low friction corrosion resistant surface treatment.

ORDERING EXAMPLE:

To order a slide with a Ø.625 diameter shaft, 21.00" travel, .200" right hand select ball screw, specify part number 1RPS-10-028-AR1.

- Substitute standard or select lead code from table for "YYY"
- Substitute "L" from standard length table for "XXX"
- Shaft diameter dimension in 1/16" increments
- Substitute "X" for "B" - Ball Bearing

STANDARD LEAD TABLE

| SIZE | AVAILABLE LEAD CODES | | | | | | | | LEAD CODES |
|------|----------------------|-----|-----|-----|-----|-----|-----|-----|------------------------|
| 08 | ARO | ALO | | | | | | | ARO = .200 Right Hand |
| 10 | ARO | ALO | | | | | | | ALO = .200 Left Hand |
| 12 | ARO | ALO | | | | | | | BRO = .250 Right Hand |
| 16 | | | BRO | BLO | CRO | DRO | | | BLO = .250 Left Hand |
| 20 | | | BRO | BLO | CRO | DRO | | | CRO = .500 Right Hand |
| 24 | | | BRO | BLO | CRO | DRO | DLO | ERO | DRO = 1.000 Right Hand |
| 32 | | | BRO | BLO | CRO | DRO | DLO | ERO | DLO = 1.000 Left Hand |
| | | | | | | | | | ERO = 1.875 Right Hand |

NOTE: Standard leads are accurate to less than .007" per foot accumulative.

SELECT LEAD TABLE

| SIZE | AVAILABLE LEAD CODES | | | | | | | | LEAD CODES |
|------|----------------------|-----|-----|-----|-----|-----|-----|-----|------------------------|
| 08 | AR1 | AL1 | | | | | | | AR1 = .200 Right Hand |
| 10 | AR1 | AL1 | | | | | | | AL1 = .200 Left Hand |
| 12 | AR1 | AL1 | | | | | | | BR1 = .250 Right Hand |
| 16 | | | BR1 | BL1 | CR1 | DR1 | | | BL1 = .250 Left Hand |
| 20 | | | BR1 | BL1 | CR1 | DR1 | | | CR1 = .500 Right Hand |
| 24 | | | BR1 | BL1 | CR1 | DR1 | DL1 | ER1 | DR1 = 1.000 Right Hand |
| 32 | | | BR1 | BL1 | CR1 | DR1 | DL1 | ER1 | DL1 = 1.000 Left Hand |
| | | | | | | | | | ER1 = 1.875 Right Hand |

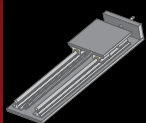
NOTE: Select leads are accurate to less than .003" per foot accumulative.

STANDARD LENGTH TABLE (Inches)

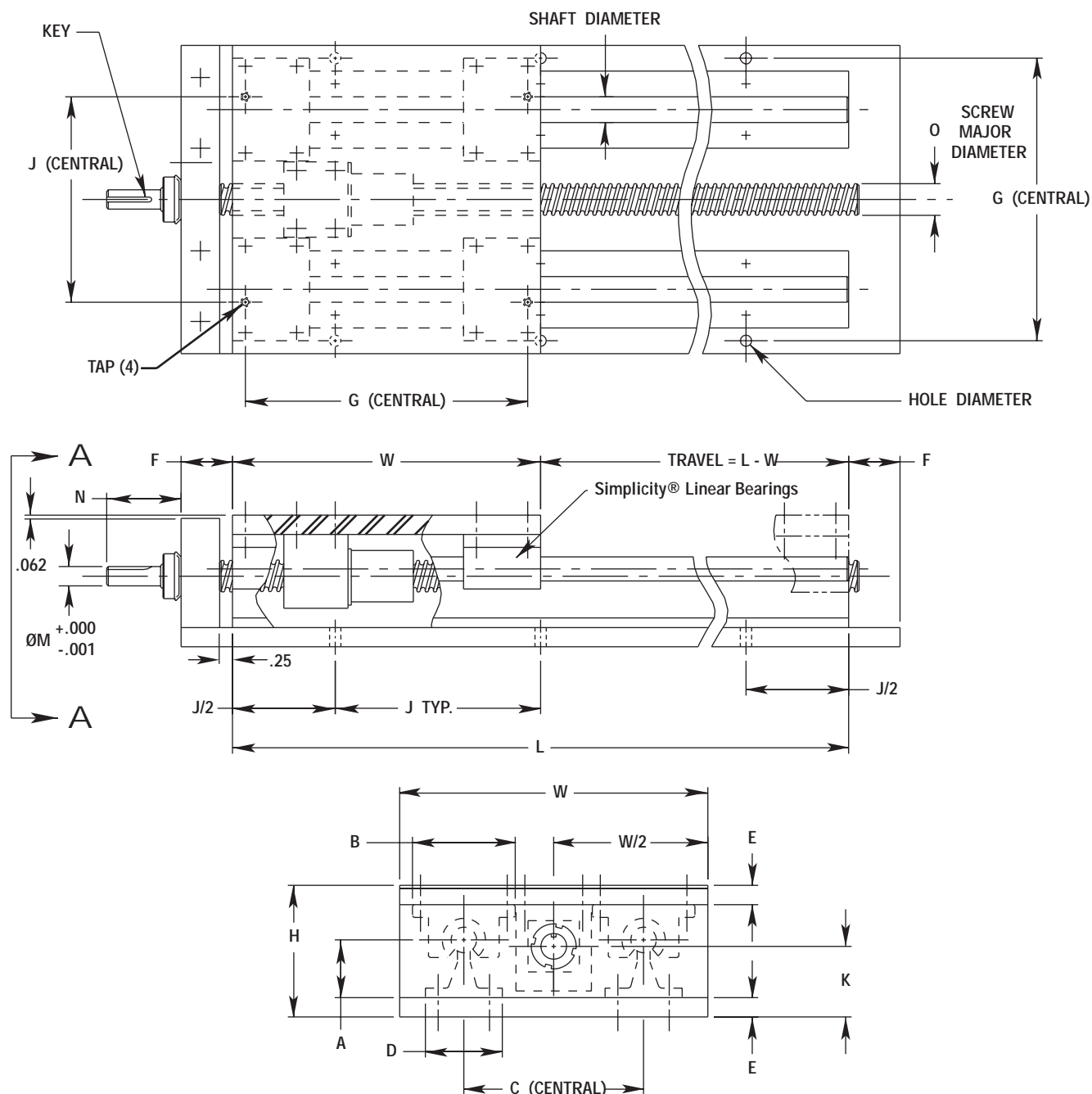
| SIZE | AVAILABLE LENGTHS - L* (in inches) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------|------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| 08 | 008 | 012 | 016 | | 020 | 024 | 028 | | 032 | | | | | | | | | | | | | | | | | | | |
| 10 | 008 | 012 | 016 | | 020 | 024 | 028 | | 032 | | | | | | | | | | | | | | | | | | | |
| 12 | | 012 | | 018 | | 024 | | 030 | | 036 | | 042 | | | | | | | | | | | | | | | | |
| 16 | | 012 | | 018 | | 024 | | 030 | | 036 | | 042 | | | | | | | | | | | | | | | | |
| 20 | | 012 | | 018 | | 024 | | 030 | | 036 | | 042 | | 048 | | | | | | | | | | | | | | |
| 24 | | | 016 | | | 024 | | | 032 | | 040 | | | 048 | | | | | | | | | | | | | | |
| 32 | | | | | | 024 | | | 032 | | 040 | | | 048 | | | | | | | | | | | | | | |

*NOTE: Longer lengths are available - consult factory.

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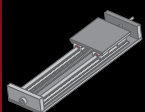


1 RPS – Rail Mounted & Plate Supported Ball Screw Driven Slide Assembly (Supported on one end)



VIEW A-A

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Simplicity® Linear Slides

Inch Series - 2RPS

Linear Motion Systems

2RPS – Rail Mounted & Plate Supported Ball Screw Driven Slide Assembly (Supported on one end)

DIMENSIONAL INFORMATION

| SHAFT DIA. | HOLE W | H | A | B | C | D | E | F | G | J | K | M | N | O | TAP | DIA. | KEY |
|------------|--------|-------|-------|------|--------|-------|-------|------|--------|-------|-------|-------|------|------|---------|------|------------------|
| .500 | 6.000 | 2.562 | 1.125 | 2.00 | 3.500 | 1.500 | .375 | 1.00 | 5.500 | 4.000 | 1.375 | .375 | 1.45 | .63 | 10-24 | .22 | 3/32 sq X 5/8 lg |
| .625 | 7.000 | 2.750 | 1.125 | 2.50 | 4.000 | 1.625 | .375 | 1.00 | 6.312 | 4.000 | 1.375 | .375 | 1.45 | .63 | 1/4-20 | .28 | 3/32 sq X 5/8 lg |
| .750 | 8.000 | 3.438 | 1.500 | 2.75 | 4.500 | 1.750 | .500 | 1.25 | 7.125 | 6.000 | 1.500 | .375 | 1.45 | .63 | 1/4-20 | .28 | 3/32 sq X 5/8 lg |
| 1.000 | 9.000 | 3.938 | 1.750 | 3.25 | 5.500 | 2.125 | .500 | 1.25 | 8.312 | 6.000 | 2.125 | .625 | 1.76 | 1.00 | 1/4-20 | .28 | 3/16 sq X 1" lg |
| 1.250 | 11.000 | 5.125 | 2.125 | 4.00 | 6.500 | 2.500 | .750 | 1.50 | 10.000 | 6.000 | 2.375 | .625 | 1.76 | 1.00 | 5/16-18 | .34 | 3/16 sq X 1" lg |
| 1.500 | 13.000 | 5.750 | 2.500 | 4.75 | 8.000 | 3.000 | .750 | 1.50 | 12.000 | 8.000 | 2.875 | 1.000 | 2.31 | 1.50 | 5/16-18 | .34 | 1/4 sq X 1.62 lg |
| 2.000 | 18.000 | 7.375 | 3.250 | 6.00 | 10.000 | 3.750 | 1.000 | 1.75 | 15.875 | 8.000 | 3.875 | 1.000 | 2.31 | 1.50 | 3/8-16 | .41 | 1/4 sq X 1.62 lg |

PART NUMBER

| SERIES | | SIZE | | L | LEAD |
|--------|---|------|------|-------|-------|
| 2RPS | X | - 08 | - XX | - XXX | - YYY |
| 2RPS | X | - 10 | - XX | - XXX | - YYY |
| 2RPS | X | - 12 | - XX | - XXX | - YYY |
| 2RPS | X | - 16 | - XX | - XXX | - YYY |
| 2RPS | X | - 20 | - XX | - XXX | - YYY |
| 2RPS | X | - 24 | - XX | - XXX | - YYY |
| 2RPS | X | - 32 | - XX | - XXX | - YYY |

MATERIAL:

Aluminum Alloy - Top Plate, Bottom Plate, Rail Supports, Pillow Blocks.

Alloy Steel - Shafting with proprietary low friction corrosion resistant surface treatment.

ORDERING EXAMPLE:

To order a slide with a Ø.625 diameter shaft, 21.00" travel, .200" right hand select ball screw - specify part number, 2RPS-10-028-AR1.

Substitute standard or select lead code from table for "YYY"

Substitute "L" from standard length table for "XXX"

Substitute "00"- Alloy Steel, "SS"- 440 Stainless Steel, "CR"- Chrome Plated 303 SST for "XX"

Shaft diameter dimension in 1/16" increments

Substitute "X" for "B" - Ball Bearing

STANDARD LEAD TABLE

| SIZE | AVAILABLE LEAD CODES | | | | | | | LEAD CODES | |
|------|----------------------|-----|-----|-----|-----|-----|-----|------------|------------------------|
| 08 | ARO | ALO | | | | | | ARO | = .200 Right Hand |
| 10 | ARO | ALO | | | | | | ALO | = .200 Left Hand |
| 12 | ARO | ALO | | | | | | BRO | = .250 Right Hand |
| 16 | | | BRO | BLO | CRO | DRO | | BLO | = .250 Left Hand |
| 20 | | | BRO | BLO | CRO | DRO | | CRO | = .500 Right Hand |
| 24 | | | BRO | BLO | CRO | DRO | DLO | ERO | DRO = 1.000 Right Hand |
| 32 | | | BRO | BLO | CRO | DRO | DLO | ERO | DLO = 1.000 Left Hand |
| | | | | | | | | ERO | = 1.875 Right Hand |

NOTE: Standard leads are accurate to less than .007" per foot accumulative.

SELECT LEAD TABLE

| SIZE | AVAILABLE LEAD CODES | | | | | | | LEAD CODES | |
|------|----------------------|-----|-----|-----|-----|-----|-----|------------|------------------------|
| 08 | AR1 | AL1 | | | | | | AR1 | = .200 Right Hand |
| 10 | AR1 | AL1 | | | | | | AL1 | = .200 Left Hand |
| 12 | AR1 | AL1 | | | | | | BR1 | = .250 Right Hand |
| 16 | | | BR1 | BL1 | CR1 | DR1 | | BL1 | = .250 Left Hand |
| 20 | | | BR1 | BL1 | CR1 | DR1 | | CR1 | = .500 Right Hand |
| 24 | | | BR1 | BL1 | CR1 | DR1 | DL1 | ER1 | DR1 = 1.000 Right Hand |
| 32 | | | BR1 | BL1 | CR1 | DR1 | DL1 | ER1 | DL1 = 1.000 Left Hand |
| | | | | | | | | ER1 | = 1.875 Right Hand |

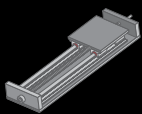
NOTE: Select leads are accurate to less than .003" per foot accumulative.

STANDARD LENGTH TABLE (Inches)

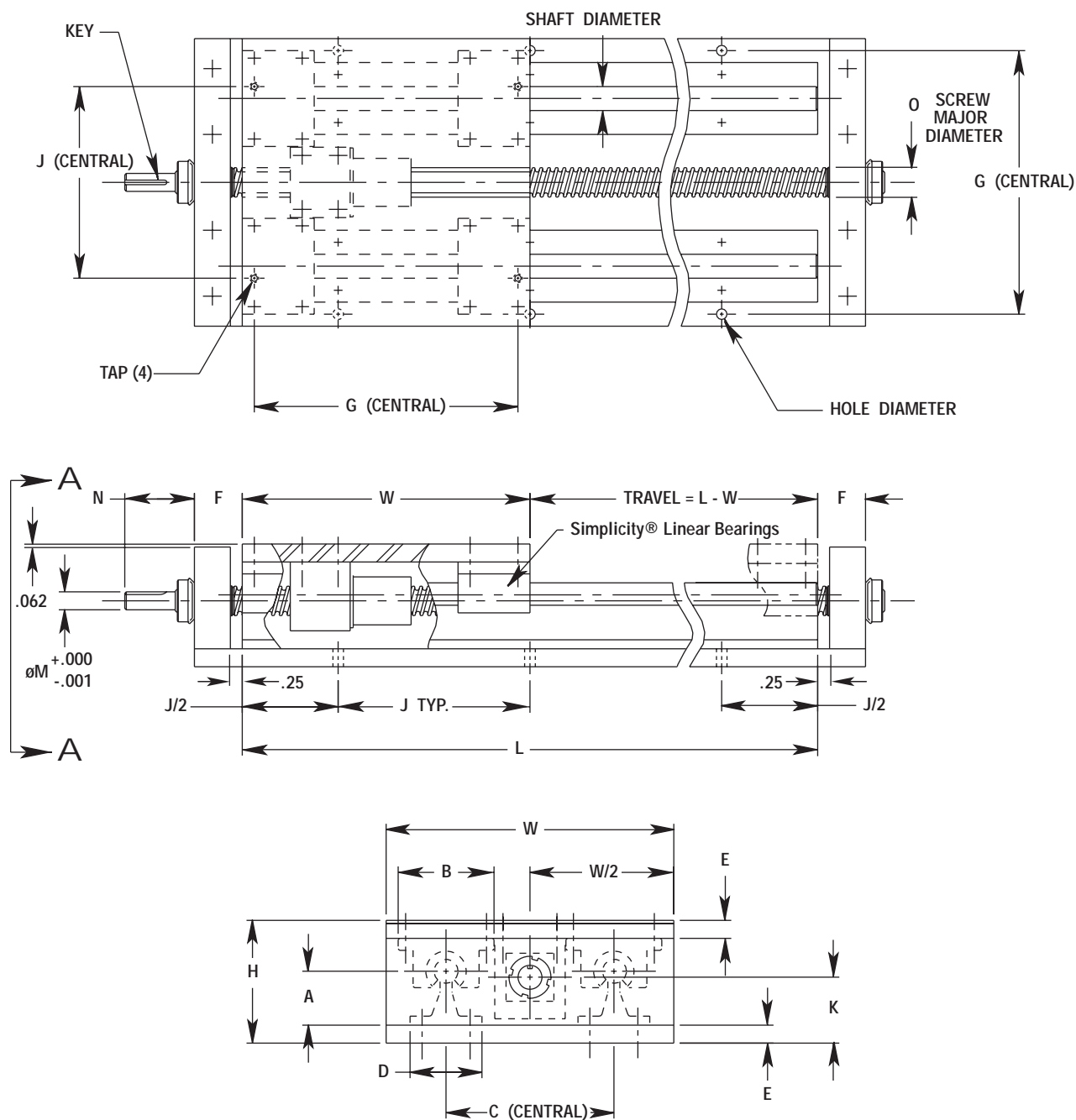
| SIZE | AVAILABLE LENGTHS - L* (in inches) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------|------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 08 | 008 | 012 | 016 | | 020 | 024 | 028 | | 032 | 036 | 040 | | 044 | 048 | 052 | | 056 | 060 | 064 | | 068 | 072 | 076 | | 080 | 084 | 088 | | 092 | 096 |
| 10 | 008 | 012 | 016 | | 020 | 024 | 028 | | 032 | 036 | 040 | | 044 | 048 | 052 | | 056 | 060 | 064 | | 068 | 072 | 076 | | 080 | 084 | 088 | | 092 | 096 |
| 12 | | 012 | | 018 | | 024 | | 030 | | 036 | | 042 | | 048 | | 054 | | 060 | | 066 | | 072 | | 078 | | 084 | | 090 | | 096 |
| 16 | | 012 | | 018 | | 024 | | 030 | | 036 | | 042 | | 048 | | 054 | | 060 | | 066 | | 072 | | 078 | | 084 | | 090 | | 096 |
| 20 | | 012 | | 018 | | 024 | | 030 | | 036 | | 042 | | 048 | | 054 | | 060 | | 066 | | 072 | | 078 | | 084 | | 090 | | 096 |
| 24 | | | 016 | | | 024 | | | 032 | | 040 | | | 048 | | | 056 | | 064 | | | 072 | | | 080 | | 088 | | | 096 |
| 32 | | | | | | 024 | | | 032 | | 040 | | | 048 | | | 056 | | 064 | | | 072 | | | 080 | | 088 | | | 096 |

*NOTE: Longer lengths are available - consult factory.

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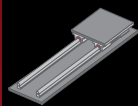


2RPS – Rail Mounted & Plate Supported Ball Screw Driven Slide Assembly (Supported on one end)



VIEW A-A

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LRPS - Low Profile Rail Mounted & Plate Supported Slide Assembly

PART NUMBER

DIMENSIONS

| SERIES | | SIZE | | L | SHAFT DIA. | W | H | A | B | C | D | E | F | G | J | TAP | HOLE DIA. |
|--------|---|------|------|-------|------------|--------|-------|-------|------|--------|------|-------|------|--------|-------|---------|-----------|
| LRPS | X | - 08 | - XX | - XXX | .500 | 6.000 | 2.000 | .563 | 2.00 | 3.500 | .37 | .375 | 1.00 | 5.500 | 4.000 | 10-24 | .22 |
| LRPS | X | - 10 | - XX | - XXX | .625 | 7.000 | 2.313 | .688 | 2.50 | 4.000 | .45 | .375 | 1.00 | 6.312 | 4.000 | 1/4-20 | .28 |
| LRPS | X | - 12 | - XX | - XXX | .750 | 8.000 | 2.688 | .750 | 2.75 | 4.500 | .51 | .500 | 1.25 | 7.125 | 6.000 | 1/4-20 | .28 |
| LRPS | X | - 16 | - XX | - XXX | 1.000 | 9.000 | 3.188 | 1.000 | 3.25 | 5.500 | .69 | .500 | 1.25 | 8.312 | 6.000 | 1/4-20 | .28 |
| LRPS | X | - 20 | - XX | - XXX | 1.250 | 11.000 | 4.188 | 1.188 | 4.00 | 6.500 | .78 | .750 | 1.50 | 10.000 | 6.000 | 5/16-18 | .34 |
| LRPS | X | - 24 | - XX | - XXX | 1.500 | 13.000 | 4.625 | 1.375 | 4.75 | 8.000 | .93 | .750 | 1.50 | 12.000 | 8.000 | 5/16-18 | .34 |
| LRPS | X | - 32 | - XX | - XXX | 2.000 | 18.000 | 5.875 | 1.750 | 6.00 | 10.000 | 1.18 | 1.000 | 1.75 | 15.875 | 8.000 | 3/8-16 | .41 |

- Substitute "L" from standard length table for "XXX"
- Substitute "00"- Alloy Steel, "SS" - 440 Stainless Steel, or "CR"- Chrome Plated 303 SST for "XX"
- Shaft diameter dimension in 1/16" increments
- Substitute "X" for "B" - Ball Bearing

Lengths and mounting provisions to your specifications are available - consult factory.

All tabulated dimensions are in inches.

MATERIAL:

Aluminum Alloy - Top Plate, Bottom Plate, Rail Supports, Pillow Blocks.

Steel Alloy - Shafting with proprietary low friction corrosion resistant surface treatment.

ORDERING EXAMPLE:

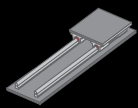
To order a slide with a .625 diameter shaft, and 28" travel, specify part number LRPS-10-028.

STANDARD LENGTH TABLE (Inches)

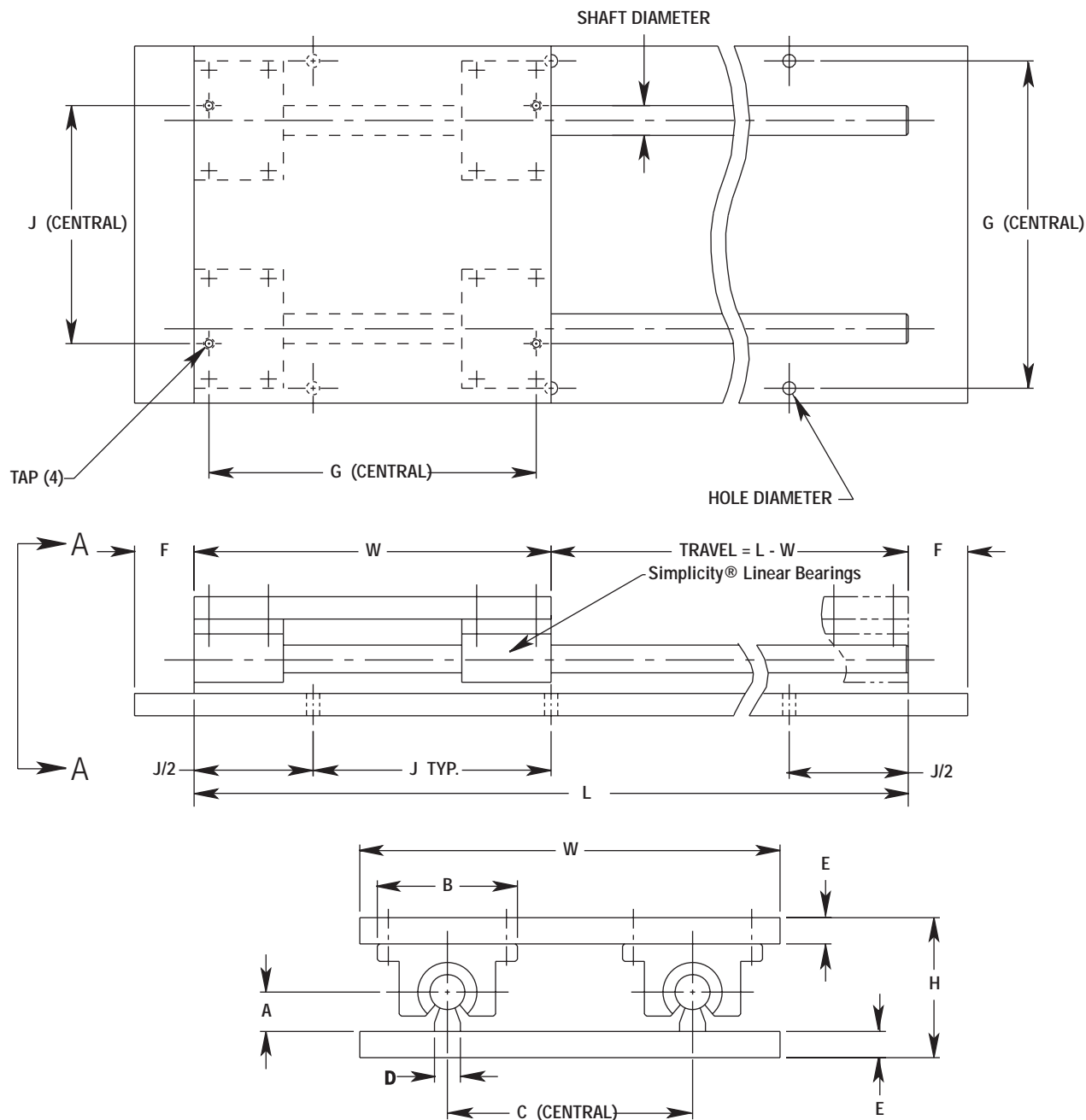
| SIZE | AVAILABLE LENGTHS - L * (in inches) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------|-------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 08 | 008 | 012 | 016 | | 020 | 024 | 028 | | 032 | 036 | 040 | | 044 | 048 | 052 | | 056 | 060 | 064 | | 068 | 072 | 076 | | 080 | 084 | 088 | | 092 | 096 |
| 10 | 008 | 012 | 016 | | 020 | 024 | 028 | | 032 | 036 | 040 | | 044 | 048 | 052 | | 056 | 060 | 064 | | 068 | 072 | 076 | | 080 | 084 | 088 | | 092 | 096 |
| 12 | | 012 | | 018 | | 024 | | 030 | | 036 | | 042 | | 048 | | 054 | | 060 | | 066 | | 072 | | 078 | | 084 | | 090 | | 096 |
| 16 | | 012 | | 018 | | 024 | | 030 | | 036 | | 042 | | 048 | | 054 | | 060 | | 066 | | 072 | | 078 | | 084 | | 090 | | 096 |
| 20 | | 012 | | 018 | | 024 | | 030 | | 036 | | 042 | | 048 | | 054 | | 060 | | 066 | | 072 | | 078 | | 084 | | 090 | | 096 |
| 24 | | | 016 | | | 024 | | | 032 | | 040 | | | 048 | | | 056 | | 064 | | | 072 | | | 080 | | 088 | | | 096 |
| 32 | | | | | | 024 | | | 032 | | 040 | | | 048 | | | 056 | | 064 | | | 072 | | | 080 | | 088 | | | 096 |

*NOTE: Longer lengths are available - consult factory.

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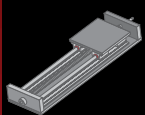


LRPS - Low Profile Rail Mounted & Plate Supported Slide Assembly



VIEW A-A

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Simplicity® Linear Slides

Inch Series - 2LRPS

Linear Motion Systems

2LRPS - Low Profile Rail Mounted & Plate Supported Ball Screw Driven Slide Assembly (Supported on Both Ends)

DIMENSIONAL INFORMATION

| SHAFT DIA. | HOLE W | H | A | B | C | D | E | F | G | J | K | M | N | O | P | TAP | DIA. | KEY |
|------------|--------|-------|-------|------|------|------|-------|------|-------|-----|-------|------|------|------|-------|---------|------|------------------|
| 0.500 | 6.0 | 2.000 | 0.563 | 2.00 | 3.5 | 0.37 | 0.375 | 1.00 | 5.50 | 4.0 | 1.000 | 0.38 | 1.45 | 0.63 | 0.031 | 10-24 | .22 | 3/32 sq X 5/8 lg |
| 0.625 | 7.0 | 2.313 | 0.688 | 2.50 | 4.0 | 0.45 | 0.375 | 1.00 | 6.31 | 4.0 | 1.156 | 0.38 | 1.45 | 0.63 | 0.031 | 1/4-20 | .28 | 3/32 sq X 5/8 lg |
| 0.750 | 8.0 | 2.688 | 0.750 | 2.75 | 4.5 | 0.51 | 0.500 | 1.25 | 7.13 | 6.0 | 1.344 | 0.38 | 1.45 | 0.63 | 0.031 | 1/4-20 | .28 | 3/32 sq X 5/8 lg |
| 1.000 | 9.0 | 3.188 | 1.000 | 3.25 | 5.5 | 0.69 | 0.500 | 1.25 | 8.31 | 6.0 | 1.594 | 0.63 | 1.76 | 1.00 | 0.062 | 1/4-20 | .28 | 3/16 sq X 1" lg |
| 1.250 | 11.0 | 4.188 | 1.188 | 4.00 | 6.5 | 0.78 | 0.750 | 1.50 | 10.00 | 6.0 | 2.094 | 0.63 | 1.76 | 1.00 | 0.062 | 5/16-18 | .34 | 3/16 sq X 1" lg |
| 1.500 | 13.0 | 4.625 | 1.375 | 4.75 | 8.0 | 0.93 | 0.750 | 1.50 | 12.00 | 8.0 | 2.312 | 1.00 | 2.31 | 1.50 | 0.062 | 5/16-18 | .34 | 1/4 sq X 1.62 lg |
| 2.000 | 18.0 | 5.875 | 1.750 | 6.00 | 10.0 | 1.18 | 1.000 | 1.75 | 15.88 | 8.0 | 2.937 | 1.00 | 2.31 | 1.50 | 0.062 | 3/8-16 | .41 | 1/4 sq X 1.62 lg |

PART NUMBER

| SERIES | | SIZE | | | L | LEAD |
|--------|---|------|------|-------|-------|------|
| 2LRPS | X | - 08 | - XX | - XXX | - YYY | |
| 2LRPS | X | - 10 | - XX | - XXX | - YYY | |
| 2LRPS | X | - 12 | - XX | - XXX | - YYY | |
| 2LRPS | X | - 16 | - XX | - XXX | - YYY | |
| 2LRPS | X | - 20 | - XX | - XXX | - YYY | |
| 2LRPS | X | - 24 | - XX | - XXX | - YYY | |
| 2LRPS | X | - 32 | - XX | - XXX | - YYY | |

MATERIAL:

Aluminum Alloy - Top Plate, Bottom Plate, Rail Supports, Pillow Blocks.

Alloy Steel - Shafting with proprietary low friction corrosion resistant surface treatment.

ORDERING EXAMPLE:

To order a slide with a Ø.625 diameter shaft, 28" travel, .200" right hand select ball screw - specify part number, 2LRPS-10-028-AR1.

Substitute standard or select lead code from table for "YYY"

Substitute "L" from standard length table for "XXX"

Substitute "00" - Alloy Steel, "SS" - 440 Stainless Steel, or "CR" - Chrome Plated 303 SST for "XX"

Shaft diameter dimension in 1/16" increments

Substitute "X" for "B" - Ball Bearing

STANDARD LEAD TABLE

| SIZE | AVAILABLE LEAD CODES | | | | | | | LEAD CODES | |
|------|----------------------|-----|-----|-----|-----|-----|-----|------------|------------------------|
| 08 | ARO | ALO | | | | | | ARO = | .200 Right Hand |
| 10 | ARO | ALO | | | | | | ALO = | .200 Left Hand |
| 12 | ARO | ALO | | | | | | BRO = | .250 Right Hand |
| 16 | | | BRO | BLO | CRO | DRO | | BLO = | .250 Left Hand |
| 20 | | | BRO | BLO | CRO | DRO | | CRO = | .500 Right Hand |
| 24 | | | BRO | BLO | CRO | DRO | DLO | ERO | DRO = 1.000 Right Hand |
| 32 | | | BRO | BLO | CRO | DRO | DLO | ERO | DLO = 1.000 Left Hand |
| | | | | | | | | | ERO = 1.875 Right Hand |

NOTE: Standard leads are accurate to less than .007" per foot accumulative.

SELECT LEAD TABLE

| SIZE | AVAILABLE LEAD CODES | | | | | | | LEAD CODES | |
|------|----------------------|-----|-----|-----|-----|-----|-----|------------|------------------------|
| 08 | AR1 | AL1 | | | | | | AR1 = | .200 Right Hand |
| 10 | AR1 | AL1 | | | | | | AL1 = | .200 Left Hand |
| 12 | AR1 | AL1 | | | | | | BR1 = | .250 Right Hand |
| 16 | | | BR1 | BL1 | CR1 | DR1 | | BL1 = | .250 Left Hand |
| 20 | | | BR1 | BL1 | CR1 | DR1 | | CR1 = | .500 Right Hand |
| 24 | | | BR1 | BL1 | CR1 | DR1 | DL1 | ER1 | DR1 = 1.000 Right Hand |
| 32 | | | BR1 | BL1 | CR1 | DR1 | DL1 | ER1 | DL1 = 1.000 Left Hand |
| | | | | | | | | | ER1 = 1.875 Right Hand |

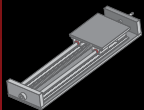
NOTE: Select leads are accurate to less than .003" per foot accumulative.

STANDARD LENGTH TABLE (Inches)

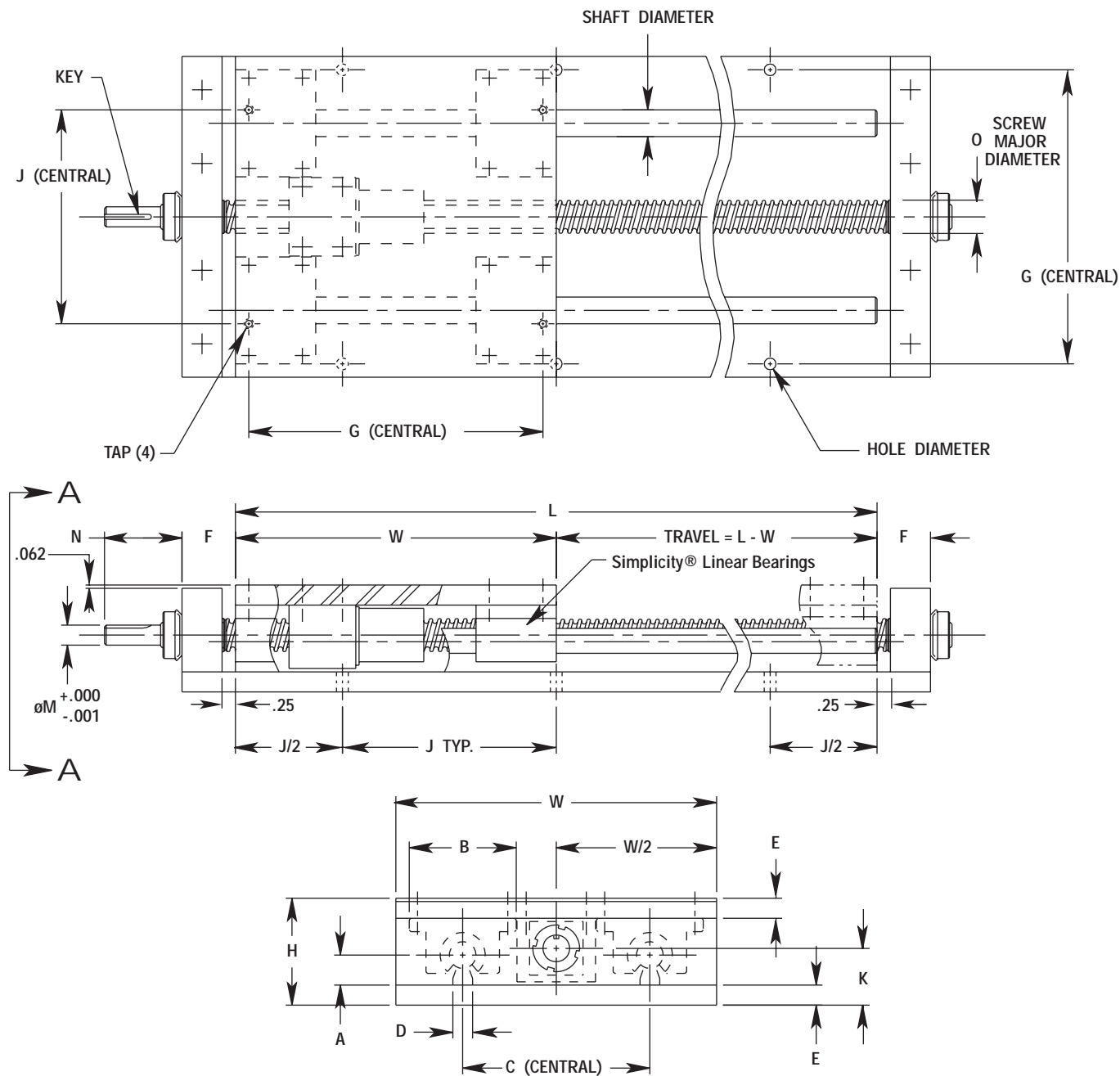
| SIZE | AVAILABLE LENGTHS - L * (in inches) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------|-------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 08 | 008 | 012 | 016 | | 020 | 024 | 028 | | 032 | 036 | 040 | | 044 | 048 | 052 | | 056 | 060 | 064 | | 068 | 072 | 076 | | 080 | 084 | 088 | | 092 | 096 |
| 10 | 008 | 012 | 016 | | 020 | 024 | 028 | | 032 | 036 | 040 | | 044 | 048 | 052 | | 056 | 060 | 064 | | 068 | 072 | 076 | | 080 | 084 | 088 | | 092 | 096 |
| 12 | | 012 | | 018 | | 024 | | 030 | | 036 | | 042 | | 048 | | 054 | | 060 | | 066 | | 072 | | 078 | | 084 | | 090 | | 096 |
| 16 | | 012 | | 018 | | 024 | | 030 | | 036 | | 042 | | 048 | | 054 | | 060 | | 066 | | 072 | | 078 | | 084 | | 090 | | 096 |
| 20 | | 012 | | 018 | | 024 | | 030 | | 036 | | 042 | | 048 | | 054 | | 060 | | 066 | | 072 | | 078 | | 084 | | 090 | | 096 |
| 24 | | | 016 | | | 024 | | | 032 | | 040 | | | 048 | | | 056 | | 064 | | | 072 | | | 080 | | 088 | | | 096 |
| 32 | | | | | | 024 | | | 032 | | 040 | | | 048 | | | 056 | | 064 | | | 072 | | | 080 | | 088 | | | 096 |

* Longer lengths are available - consult factory.

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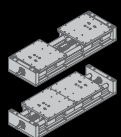


2LRPS - Low Profile Rail Mounted & Plate Supported Ball Screw Driven Slide Assembly (Supported on Both Ends)



VIEW A-A

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Simplicity® Linear Slides

Inch Series - SC2RPS

Linear Motion Systems

SC2RPS – Self-Centering Slide Assembly

DIMENSIONAL INFORMATION

| SHAFT DIA. | W | H | A | B | C | D | E | F | G | J | K | M | N | O | TAP | HOLE | KEY |
|------------|--------|-------|-------|------|--------|-------|-------|------|--------|-------|-------|-------|------|------|---------|------|------------------|
| .500 | 6.000 | 2.562 | 1.125 | 2.00 | 3.500 | 1.500 | .375 | 1.00 | 5.500 | 4.000 | 1.375 | .375 | 1.45 | .63 | 10-24 | .22 | 3/32 sq X 5/8 lg |
| .625 | 7.000 | 2.750 | 1.125 | 2.50 | 4.000 | 1.625 | .375 | 1.00 | 6.312 | 4.000 | 1.375 | .375 | 1.45 | .63 | 1/4-20 | .28 | 3/32 sq X 5/8 lg |
| .750 | 8.000 | 3.438 | 1.500 | 2.75 | 4.500 | 1.750 | .500 | 1.25 | 7.125 | 6.000 | 1.500 | .375 | 1.45 | .63 | 1/4-20 | .28 | 3/32 sq X 5/8 lg |
| 1.000 | 9.000 | 3.938 | 1.750 | 3.25 | 5.500 | 2.125 | .500 | 1.25 | 8.312 | 6.000 | 2.125 | .625 | 1.76 | 1.00 | 1/4-20 | .28 | 3/16 sq X 1" lg |
| 1.250 | 11.000 | 5.125 | 2.125 | 4.00 | 6.500 | 2.500 | .750 | 1.50 | 10.000 | 6.000 | 2.375 | .625 | 1.76 | 1.00 | 5/16-18 | .34 | 3/16 sq X 1" lg |
| 1.500 | 13.000 | 5.750 | 2.500 | 4.75 | 8.000 | 3.000 | .750 | 1.50 | 12.000 | 8.000 | 2.875 | 1.000 | 2.31 | 1.50 | 5/16-18 | .34 | 1/4 sq X 1.62 lg |
| 2.000 | 18.000 | 7.375 | 3.250 | 6.00 | 10.000 | 3.750 | 1.000 | 1.75 | 15.875 | 8.000 | 3.875 | 1.000 | 2.31 | 1.50 | 3/8-16 | .41 | 1/4 sq X 1.62 lg |

PART NUMBER

| SERIES | | SIZE | | L | LEAD |
|--------|---|------|------|-------|-------|
| SC2RPS | X | - 08 | - XX | - XXX | - XXX |
| SC2RPS | X | - 10 | - XX | - XXX | - XXX |
| SC2RPS | X | - 12 | - XX | - XXX | - XXX |
| SC2RPS | X | - 16 | - XX | - XXX | - XXX |
| SC2RPS | X | - 20 | - XX | - XXX | - XXX |
| SC2RPS | X | - 24 | - XX | - XXX | - XXX |
| SC2RPS | X | - 32 | - XX | - XXX | - XXX |

Substitute "X" for "B" - Ball Bearing

ORDERING EXAMPLE: SC2RPS-10-O56-ALR1

MATERIAL:

Aluminum Alloy - Top and bottom plates, rail supports, and pillow blocks.

Alloy Steel - Shafting with proprietary low friction corrosion resistant surface treatment. Rolled ball screw, ball nut assembly, and rigid coupling.

Substitute "00" - Alloy Steel, "SS" - 440 Stainless Steel, or "CR" - Chrome Plated 303 SST for "XX"

STANDARD & SELECT - BALL SCREW LEAD CODE TABLE

| SIZE | AVAILABLE LEAD CODE | | | LEAD CODES |
|------|---------------------|------|------|---|
| 08 | ALR? | | | ALR? = .200 Leads |
| 10 | ALR? | | | BLR? = .250 Leads |
| 12 | ALR? | | | DLR? = 1.000 Leads |
| 16 | | BLR? | | One left and one right hand lead ballscrew on each self-centering slide assembly. |
| 20 | | BLR? | | |
| 24 | | BLR? | DLR? | |
| 32 | | BLR? | DLR? | |
| | | | | |

Replace ? with 0 for standard lead accurate to less than .007" per foot accumulative

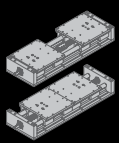
Replace ? with 1 for standard lead accurate to less than .003" per foot accumulative

STANDARD LENGTH TABLE (Inches)

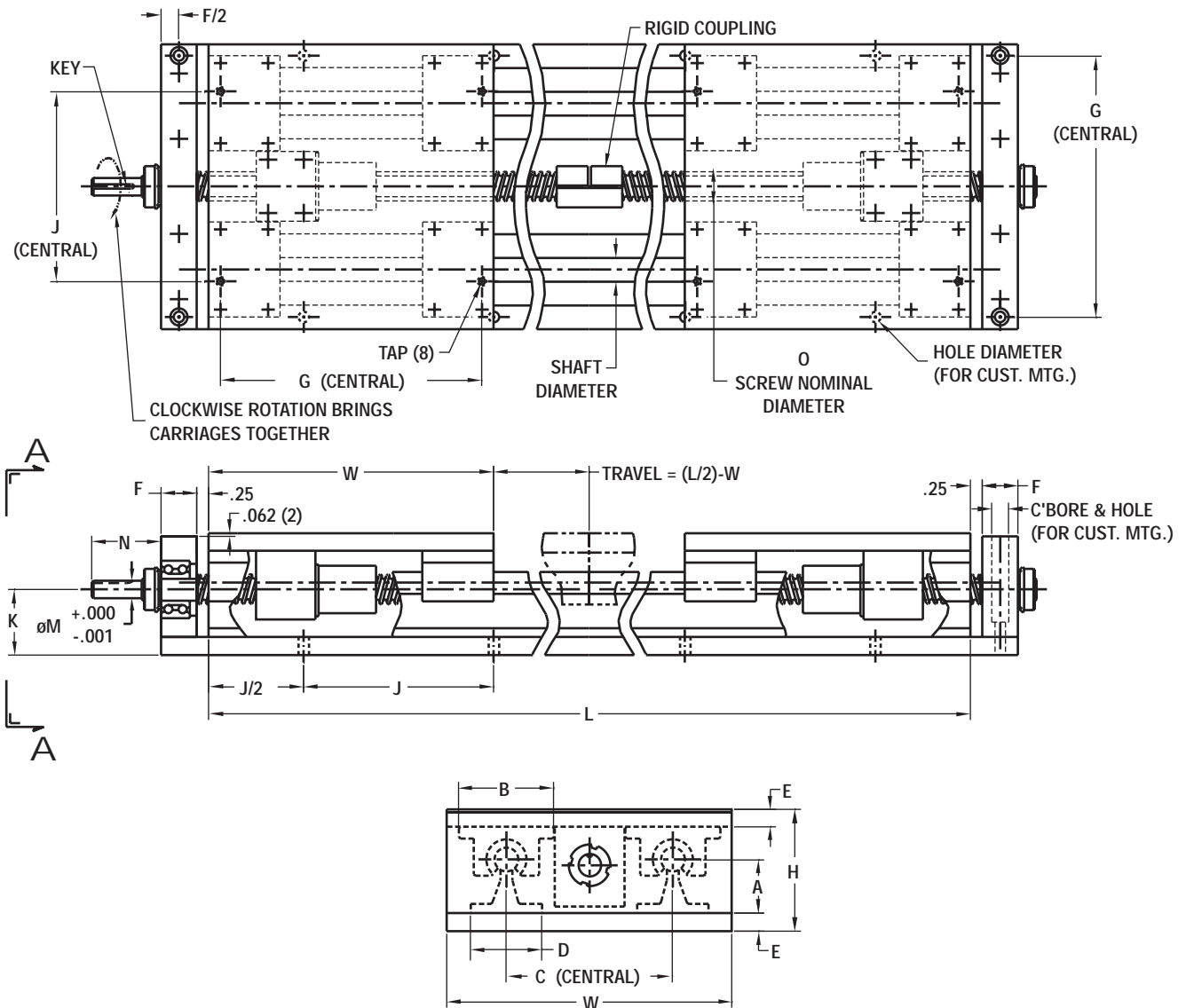
| SIZES | AVAILABLE LENGTHS - L* (in inches) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------|------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 08 | 016 | | 020 | 024 | 028 | | 032 | 036 | 040 | | 044 | 048 | 052 | | 056 | 060 | 064 | | 068 | 072 | 076 | | 080 | 084 | 088 | | 092 | 096 |
| 10 | 016 | | 020 | 024 | 028 | | 032 | 036 | 040 | | 044 | 048 | 052 | | 056 | 060 | 064 | | 068 | 072 | 076 | | 080 | 084 | 088 | | 092 | 096 |
| 12 | | 018 | | 024 | | 030 | | 036 | | 042 | | 048 | | 054 | | 060 | | 066 | | 072 | | 078 | | 084 | | 090 | | 096 |
| 16 | | | | 024 | | 030 | | 036 | | 042 | | 048 | | 054 | | 060 | | 066 | | 072 | | 078 | | 084 | | 090 | | 096 |
| 20 | | | | 024 | | 030 | | 036 | | 042 | | 048 | | 054 | | 060 | | 066 | | 072 | | 078 | | 084 | | 090 | | 096 |
| 24 | | | | | | | 032 | | 040 | | | 048 | | | 056 | | 064 | | | 072 | | | 080 | | 088 | | | 096 |
| 32 | | | | | | | | | 040 | | | 048 | | | 056 | | 064 | | | 072 | | | 080 | | 088 | | | 096 |

*NOTE: Longer lengths are available - consult factory.

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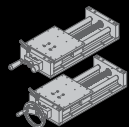


SC2RPS – Self-Centering Slide Assembly



VIEW A-A

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Simplicity® Linear Slides

Inch Series - 2HCR/2HWL

Linear Motion Systems

2HCR/2HWL – Slide Assembly with Handcrank & Ball Screw Rotational Lock

PART NUMBER

| SERIES | | SIZE | | L | | LEAD |
|--------|---|------|---|-----|---|------|
| 2HXXX | - | 08 | - | XXX | - | YYY |
| 2HXXX | - | 10 | - | XXX | - | YYY |
| 2HXXX | - | 12 | - | XXX | - | YYY |
| 2HXXX | - | 16 | - | XXX | - | YYY |
| 2HXXX | - | 20 | - | XXX | - | YYY |
| 2HXXX | - | 24 | - | XXX | - | YYY |
| 2HXXX | - | 32 | - | XXX | - | YYY |

DIMENSIONS

| SHAFT DIA. | W | H | A | B | C | D | E | F | G | J |
|------------|--------|-------|-------|------|--------|------|-------|------|--------|-------|
| .500 | 6.000 | 2.562 | 1.125 | 2.00 | 3.500 | 1.50 | .375 | .75 | 5.500 | 4.000 |
| .625 | 7.000 | 2.750 | 1.125 | 2.50 | 4.000 | 1.62 | .375 | .75 | 6.312 | 4.000 |
| .750 | 8.000 | 3.438 | 1.500 | 2.75 | 4.500 | 1.75 | .500 | 1.00 | 7.125 | 6.000 |
| 1.000 | 9.000 | 3.938 | 1.750 | 3.25 | 5.500 | 2.12 | .500 | 1.00 | 8.312 | 6.000 |
| 1.250 | 11.000 | 5.125 | 2.125 | 4.00 | 6.500 | 2.50 | .750 | 1.25 | 10.000 | 6.000 |
| 1.500 | 13.000 | 5.750 | 2.500 | 4.75 | 8.000 | 3.00 | .750 | 1.25 | 12.000 | 8.000 |
| 2.000 | 18.000 | 7.375 | 3.250 | 6.00 | 10.000 | 3.75 | 1.000 | 1.50 | 15.875 | 8.000 |

MATERIAL:

Aluminum Alloy - Top and bottom plates, rail supports, and pillow blocks.

Alloy Steel - Shafting with proprietary low friction corrosion resistant surface treatment. Rolled ball screw and ball nut assembly.

Substitute "X" for "B" - Ball Bearing

ORDERING EXAMPLE: 2HWL-10-056-AR1

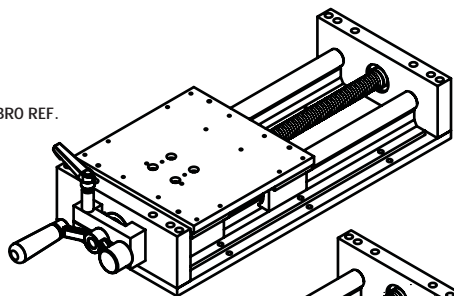
Shaft diameter in 1/16" increments (10/16 = .625")

SERIES

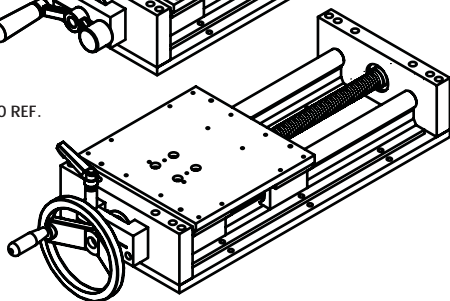
HANDLE DISCRIPTION

| | |
|----|--|
| CR | Standard Model Cast Aluminum Counterbalanced Hand Crank 24 and 32 (ONLY) Spoked Cast Iron Handwheel with Rigid, Revolving Crank Handle |
| WL | Deluxe Model Aluminum Handwheel with Fold-Away Composite Handle |

2HCR-16-018-BRO REF.



2HWL-16-018-BRO REF.



STANDARD & SELECT - BALL SCREW LEAD CODE TABLE

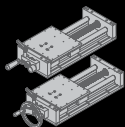
| SIZE | AVAILABLE LEAD CODE | | | | | | | | LEAD CODES | |
|------|---------------------|-----|-----|-----|-----|-----|-----|-----|------------------------|--|
| 08 | ARX | ALX | | | | | | | ARX = .200 Right Hand | |
| 10 | ARX | ALX | | | | | | | ALX = .200 Left Hand | |
| 12 | ARX | ALX | | | | | | | BRX = .250 Right Hand | |
| 16 | | | BRX | BLX | CRX | DRX | | | BLX = .250 Left Hand | |
| 20 | | | BRX | BLX | CRX | DRX | | | CRX = .500 Right Hand | |
| 24 | | | BRX | BLX | CRX | DRX | DLX | ERX | DRX = 1.000 Right Hand | |
| 32 | | | BRX | BLX | CRX | DRX | DLX | ERX | DLX = 1.000 Left Hand | |
| | | | | | | | | | ERX = 1.875 Right Hand | |

Replace X with 0 for standard lead accurate to less than .007" per foot accumulative
Replace X with 1 for standard lead accurate to less than .003" per foot accumulative

STANDARD LENGTH TABLE (Inches)

| SIZE | AVAILABLE LENGTHS - L* (in inches) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------|------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 08 | 008 | 012 | 016 | | 020 | 024 | 028 | | 032 | 036 | 040 | | 044 | 048 | 052 | | 056 | 060 | 064 | | 068 | 072 | 076 | | 080 | 084 | 088 | | 092 | 096 |
| 10 | 008 | 012 | 016 | | 020 | 024 | 028 | | 032 | 036 | 040 | | 044 | 048 | 052 | | 056 | 060 | 064 | | 068 | 072 | 076 | | 080 | 084 | 088 | | 092 | 096 |
| 12 | | 012 | | 018 | | 024 | | 030 | | 036 | | 042 | | 048 | | 054 | | 060 | | 066 | | 072 | | 078 | | 084 | | 090 | | 096 |
| 16 | | 012 | | 018 | | 024 | | 030 | | 036 | | 042 | | 048 | | 054 | | 060 | | 066 | | 072 | | 078 | | 084 | | 090 | | 096 |
| 20 | | 012 | | 018 | | 024 | | 030 | | 036 | | 042 | | 048 | | 054 | | 060 | | 066 | | 072 | | 078 | | 084 | | 090 | | 096 |
| 24 | | | 016 | | | 024 | | | 032 | | 040 | | | 048 | | | 056 | | 064 | | | 072 | | | 080 | | 088 | | | 096 |
| 32 | | | | | | 024 | | | 032 | | 040 | | | 048 | | | 056 | | 064 | | | 072 | | | 080 | | 088 | | | 096 |

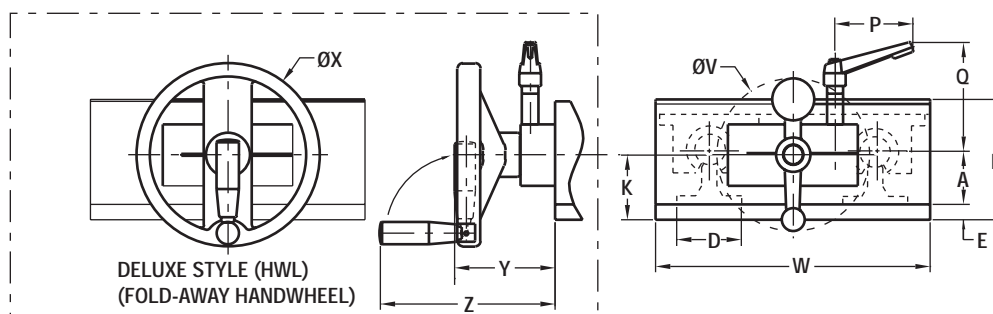
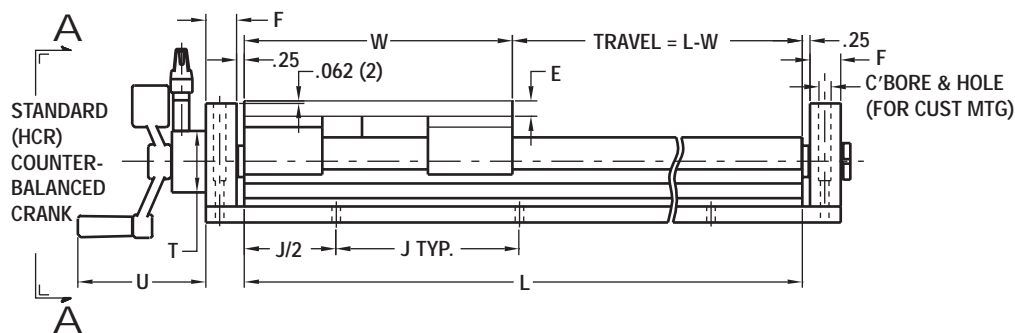
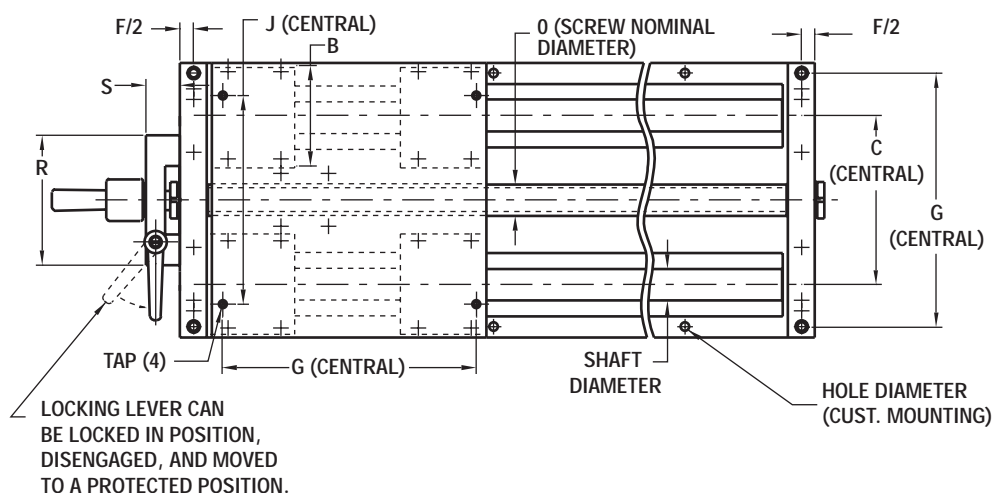
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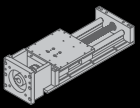
2HCR/2HWL – Slide Assembly with Handcrank & Ball Screw Rotational Lock

DIMENSIONS (Continued)

| K | O | P | Q | R | S | T | U | V | X | Y | Z | TAP | HOLE DIA. | SIZE |
|------|-------|------|------|-------|-------|-------|-------|-------|------|-------|-------|---------|-----------|------|
| 1.38 | .631 | 2.56 | 3.85 | 3.000 | .875 | 1.312 | 4.000 | 4.000 | 4.00 | 2.655 | 4.855 | 10-24 | .22 | 08 |
| 1.38 | .631 | 2.56 | 3.85 | 3.000 | .875 | 1.312 | 4.000 | 4.000 | 4.00 | 2.655 | 4.855 | 1/4-20 | .28 | 10 |
| 1.50 | .631 | 2.56 | 3.85 | 3.000 | .875 | 1.312 | 4.000 | 4.000 | 4.00 | 2.655 | 4.855 | 1/4-20 | .28 | 12 |
| 2.12 | 1.000 | 2.56 | 3.69 | 4.250 | 1.125 | 2.000 | 4.250 | 5.000 | 6.00 | 3.185 | 5.745 | 1/4-20 | .28 | 16 |
| 2.38 | 1.000 | 2.56 | 3.69 | 4.250 | 1.125 | 2.000 | 4.250 | 5.000 | 6.00 | 3.185 | 5.745 | 5/16-18 | .34 | 20 |
| 2.88 | 1.500 | 3.15 | 5.81 | 6.500 | 1.500 | 3.000 | 6.900 | 8.000 | 8.00 | 4.310 | 7.460 | 5/16-18 | .34 | 24 |
| 3.88 | 1.500 | 3.15 | 5.81 | 6.500 | 1.500 | 3.000 | 6.900 | 8.000 | 8.00 | 4.310 | 7.460 | 3/8-16 | .41 | 32 |



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Simplicity® Linear Slides

Inch Series - 2N42, 56, 143

Linear Motion Systems

2N42, 56, 143 - Slide Assembly/NEMA Drive Kit

PART NUMBER

| SERIES | | SIZE | | L | | LEAD |
|--------|---|------|---|-----|---|------|
| 2NXXX | - | 16 | - | XXX | - | XXX |
| 2NXXX | - | 20 | - | XXX | - | XXX |
| 2NXXX | - | 24 | - | XXX | - | XXX |
| 2NXXX | - | 32 | - | XXX | - | XXX |

DIMENSIONS

| SHAFT DIA. | W | H | A | B | C | D | E |
|------------|--------|-------|-------|------|--------|------|-------|
| 1.000 | 9.000 | 3.938 | 1.750 | 3.25 | 5.500 | 2.12 | .500 |
| 1.250 | 11.000 | 5.125 | 2.125 | 4.00 | 6.500 | 2.50 | .750 |
| 1.500 | 13.000 | 5.750 | 2.500 | 4.75 | 8.000 | 3.00 | .750 |
| 2.000 | 18.000 | 7.375 | 3.250 | 6.00 | 10.000 | 3.75 | 1.000 |

Substitute "X" for "B" - Ball Bearing

ORDERING EXAMPLE: 2N56-16-054-BR1

MATERIAL:

Aluminum Alloy - Top and bottom plates, rail supports, pillow blocks, and coupling.

Alloy Steel - Shafting with proprietary low friction corrosion resistant surface treatment. Rolled ball screw and ball nut assembly.

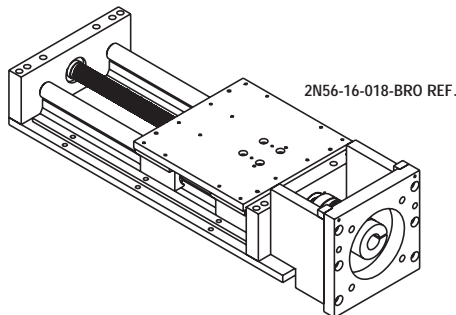
Shaft diameter in 1/16" increments (12/16 = .750")

MOTOR MOUNTING DIMENSIONS

| SERIES | DRIVE | R | S | V | X | Y | Z | COUPLING ² MAX DYNAMIC TORQUE CAPACITY |
|--------|-----------------|-------|------|-------|---------|-------|-------|---|
| 42A | NEMA 42 | 3.000 | .375 | 5.000 | .28 | 3.750 | 2.652 | 200 in-lbs |
| 42B | NEMA 42 | 2.188 | .625 | 5.000 | 5/16-18 | 4.950 | 3.500 | 200 in-lbs |
| 56 | NEMA 56 | 4.500 | .625 | 7.000 | .41 | 5.875 | 4.154 | 200 in-lbs |
| 143 | NEMA 143 or 145 | 4.500 | .875 | 7.000 | .41 | 5.875 | 4.154 | 200 in-lbs |

NOTE: International drives and low profile slide assemblies are available - consult factory.

² Due to ball screw and nut life/torque capacities for 16 and 20 size slides, do not exceed 100 in-lbs. of input torque without consulting factory.



STANDARD & SELECT - BALL SCREW LEAD CODE TABLE

| SIZE | AVAILABLE LEAD CODE | | | | | | LEAD CODES |
|------|---------------------|--|-----|-----|-----|-----|------------------------|
| 16 | | | BR? | BL? | CR? | DR? | BR? = .250 Right Hand |
| 20 | | | BR? | BL? | CR? | DR? | BL? = .250 Left Hand |
| 24 | | | BR? | BL? | CR? | DR? | CR? = .500 Right Hand |
| 32 | | | BR? | BL? | CR? | DR? | DR? = 1.000 Right Hand |
| | | | | | | DL? | DL? = 1.000 Left Hand |
| | | | | | | ER? | ER? = 1.875 Right Hand |

Replace ? with 0 for standard lead accurate to less than .007" per foot accumulative

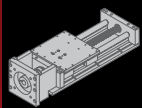
Replace ? with 1 for standard lead accurate to less than .003" per foot accumulative

STANDARD LENGTH TABLE (Inches)

| SIZE | AVAILABLE LENGTHS - L* (in inches) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------|------------------------------------|-----|-----|-----|--|-----|--|-----|-----|-----|-----|-----|--|-----|--|-----|-----|-----|-----|-----|--|-----|--|-----|-----|-----|-----|-----|--|-----|
| 16 | | 012 | | 018 | | 024 | | 030 | | 036 | | 042 | | 048 | | 054 | | 060 | | 066 | | 072 | | 078 | | 084 | | 090 | | 096 |
| 20 | | 012 | | 018 | | 024 | | 030 | | 036 | | 042 | | 048 | | 054 | | 060 | | 066 | | 072 | | 078 | | 084 | | 090 | | 096 |
| 24 | | | 016 | | | 024 | | | 032 | | 040 | | | 048 | | | 056 | | 064 | | | 072 | | | 080 | | 088 | | | 096 |
| 32 | | | | | | 024 | | | 032 | | 040 | | | 048 | | | 056 | | 064 | | | 072 | | | 080 | | 088 | | | 096 |

*NOTE: Longer lengths are available - consult factory.

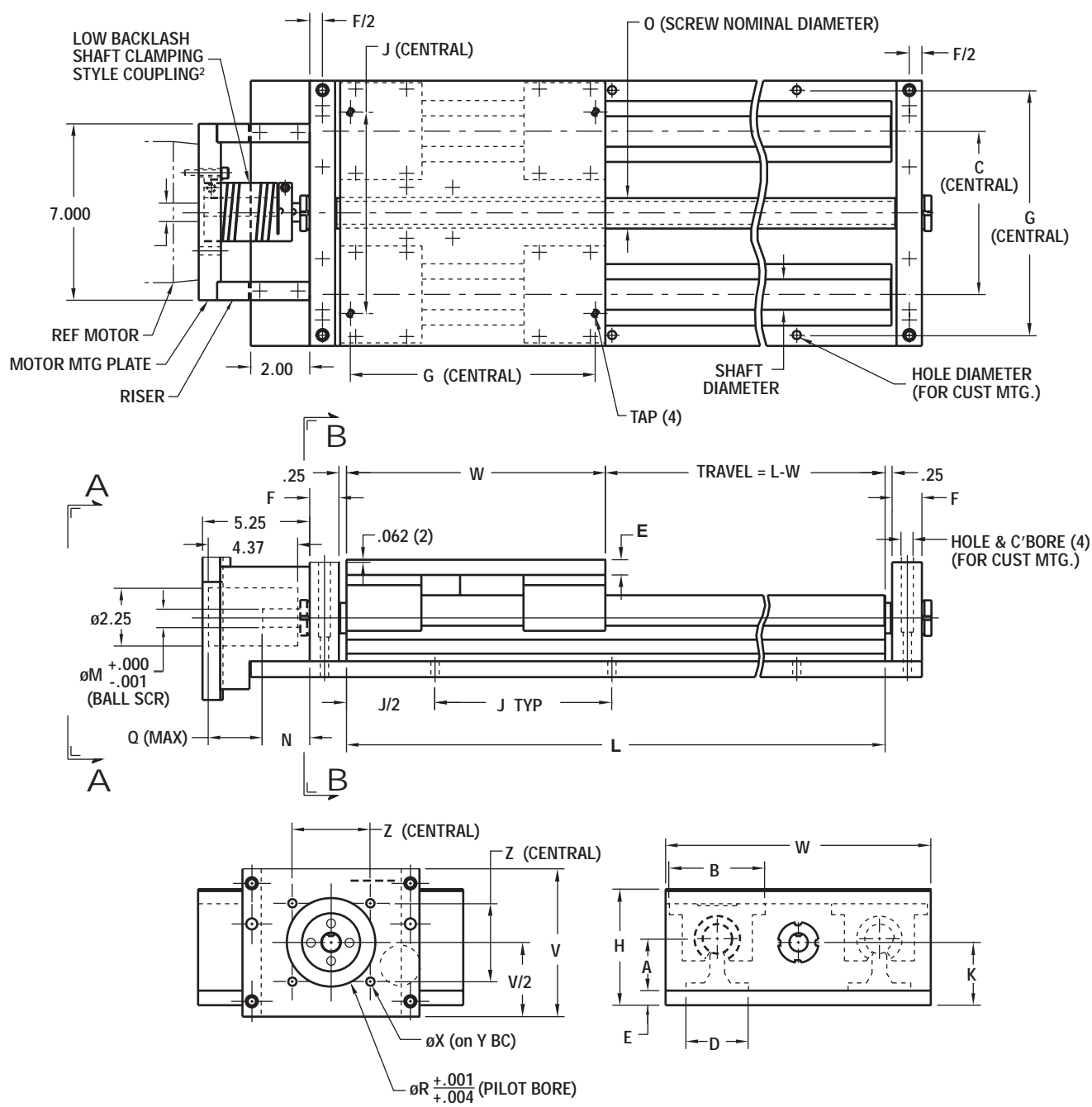
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2N42, 56, 143 - Slide Assembly/NEMA Drive Kit

DIMENSIONS (Continued)

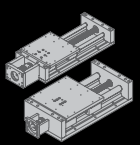
| F | G | J | K | M | N | O | Q | TAP | HOLE | SIZE |
|------|--------|-------|-------|-------|------|-------|------|---------|------|------|
| 1.00 | 8.312 | 6.000 | 2.125 | .625 | 1.76 | 1.000 | 3.00 | 1/4-20 | .28 | 16 |
| 1.25 | 10.000 | 6.000 | 2.375 | .625 | 1.76 | 1.000 | 3.00 | 5/16-18 | .34 | 20 |
| 1.25 | 12.000 | 8.000 | 2.875 | 1.000 | 2.31 | 1.500 | 2.62 | 5/16-18 | .34 | 24 |
| 1.50 | 15.875 | 8.000 | 3.875 | 1.000 | 2.31 | 1.500 | 2.62 | 3/8-16 | .41 | 32 |



VIEW A-A

VIEW B-B

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Simplicity® Linear Slides

Inch Series - 2N23 & 2N34

Linear Motion Systems

2N23 & 2N34 - Slide Assembly/NEMA Drive Kit

PART NUMBER

| SERIES | | SIZE | | L | | LEAD |
|--------|---|------|---|-----|---|------|
| 2NXXX | - | 08 | - | XXX | - | XXX |
| 2NXXX | - | 10 | - | XXX | - | XXX |
| 2NXXX | - | 12 | - | XXX | - | XXX |
| 2NXXX | - | 16 | - | XXX | - | XXX |
| 2NXXX | - | 20 | - | XXX | - | XXX |

DIMENSIONS

| SHAFT DIA. | W | H | A | B | C | D | E |
|------------|--------|-------|-------|------|-------|------|------|
| .500 | 6.000 | 2.562 | 1.125 | 2.00 | 3.500 | 1.50 | .375 |
| .625 | 7.000 | 2.750 | 1.125 | 2.50 | 4.000 | 1.62 | .375 |
| .750 | 8.000 | 3.438 | 1.500 | 2.75 | 4.500 | 1.75 | .500 |
| 1.000 | 9.000 | 3.938 | 1.750 | 3.25 | 5.500 | 2.12 | .500 |
| 1.250 | 11.000 | 5.125 | 2.125 | 4.00 | 6.500 | 2.50 | .750 |

MATERIAL:

Aluminum Alloy - Top & bottom plates, rail supports, and pillow blocks, coupling, and motor mounts.

Alloy Steel - Shafting with proprietary low friction corrosion resistant surface treatment. Rolled ball screw & ball nut assembly.

Substitute "X" for "B" - Ball Bearing

ORDERING EXAMPLE: 2N23A-10-056-AR1

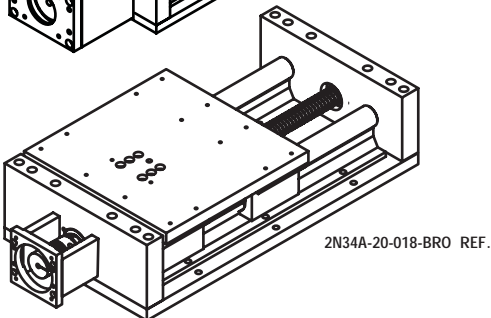
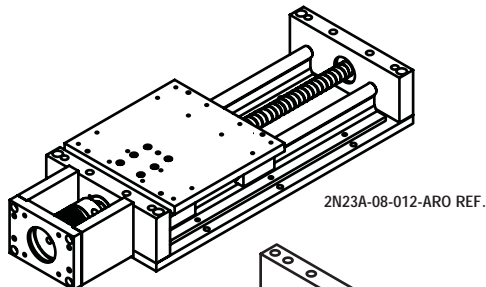
Shaft diameter in 1/16" increments (10/16 = .625")

MOTOR MOUNTING DIMENSIONS

| SERIES | DRIVE | R | S | V | X | Y | Z | COUPLING ² MAX DYNAMIC TORQUE CAPACITY |
|--------|---------|-------|------|-------|-------|-------|-------|---|
| 23A | NEMA 23 | 1.502 | .250 | 2.500 | 10-32 | 2.625 | 1.856 | 50 in-lbs |
| 23B | NEMA 23 | 1.502 | .375 | 2.500 | 10-32 | 2.625 | 1.856 | 50 in-lbs |
| 34A | NEMA 34 | 1.880 | .375 | 3.500 | 10-32 | 3.875 | 2.740 | 50 in-lbs |
| 34B | NEMA 34 | 1.880 | .500 | 3.500 | 10-32 | 3.875 | 2.740 | 50 in-lbs |

NOTE: International drive configurations and low profile slide assemblies are available - consult factory

²Due to ball screw & nut life/torque capacities for sizes 08, 10, or 12 do not exceed 30 in-lbs. of input torque.



STANDARD & SELECT - BALL SCREW LEAD CODE TABLE

| SIZE | AVAILABLE LEAD CODE | | | | | | LEAD CODES |
|------|---------------------|-----|-----|-----|-----|-----|------------------------|
| 08 | AR? | AL? | | | | | AR? = .200 Right Hand |
| 10 | AR? | AL? | | | | | AL? = .200 Left Hand |
| 12 | AR? | AL? | | | | | BR? = .250 Right Hand |
| 16 | | | BR? | BL? | CR? | DR? | BL? = .250 Left Hand |
| 20 | | | BR? | BL? | CR? | DR? | CR? = .500 Right Hand |
| | | | | | | | DR? = 1.000 Right Hand |

Replace ? with 0 for standard lead accurate to less than .007" per foot accumulative

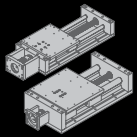
Replace ? with 1 for standard lead accurate to less than .003" per foot accumulative

STANDARD LENGTH TABLE (Inches)

| SIZE | AVAILABLE LENGTHS - L * (in inches) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------|-------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 08 | 008 | 012 | 016 | | 020 | 024 | 028 | | 032 | 036 | 040 | | 044 | 048 | 052 | | 056 | 060 | 064 | | 068 | 072 | 076 | | 080 | 084 | 088 | | 092 | 096 |
| 10 | 008 | 012 | 016 | | 020 | 024 | 028 | | 032 | 036 | 040 | | 044 | 048 | 052 | | 056 | 060 | 064 | | 068 | 072 | 076 | | 080 | 084 | 088 | | 092 | 096 |
| 12 | | 012 | | 018 | | 024 | | 030 | | 036 | | 042 | | 048 | | 054 | | 060 | | 066 | | 072 | | 078 | | 084 | | 090 | | 096 |
| 16 | | 012 | | 018 | | 024 | | 030 | | 036 | | 042 | | 048 | | 054 | | 060 | | 066 | | 072 | | 078 | | 084 | | 090 | | 096 |
| 20 | | 012 | | 018 | | 024 | | 030 | | 036 | | 042 | | 048 | | 054 | | 060 | | 066 | | 072 | | 078 | | 084 | | 090 | | 096 |

*NOTE: Longer lengths are available - consult factory

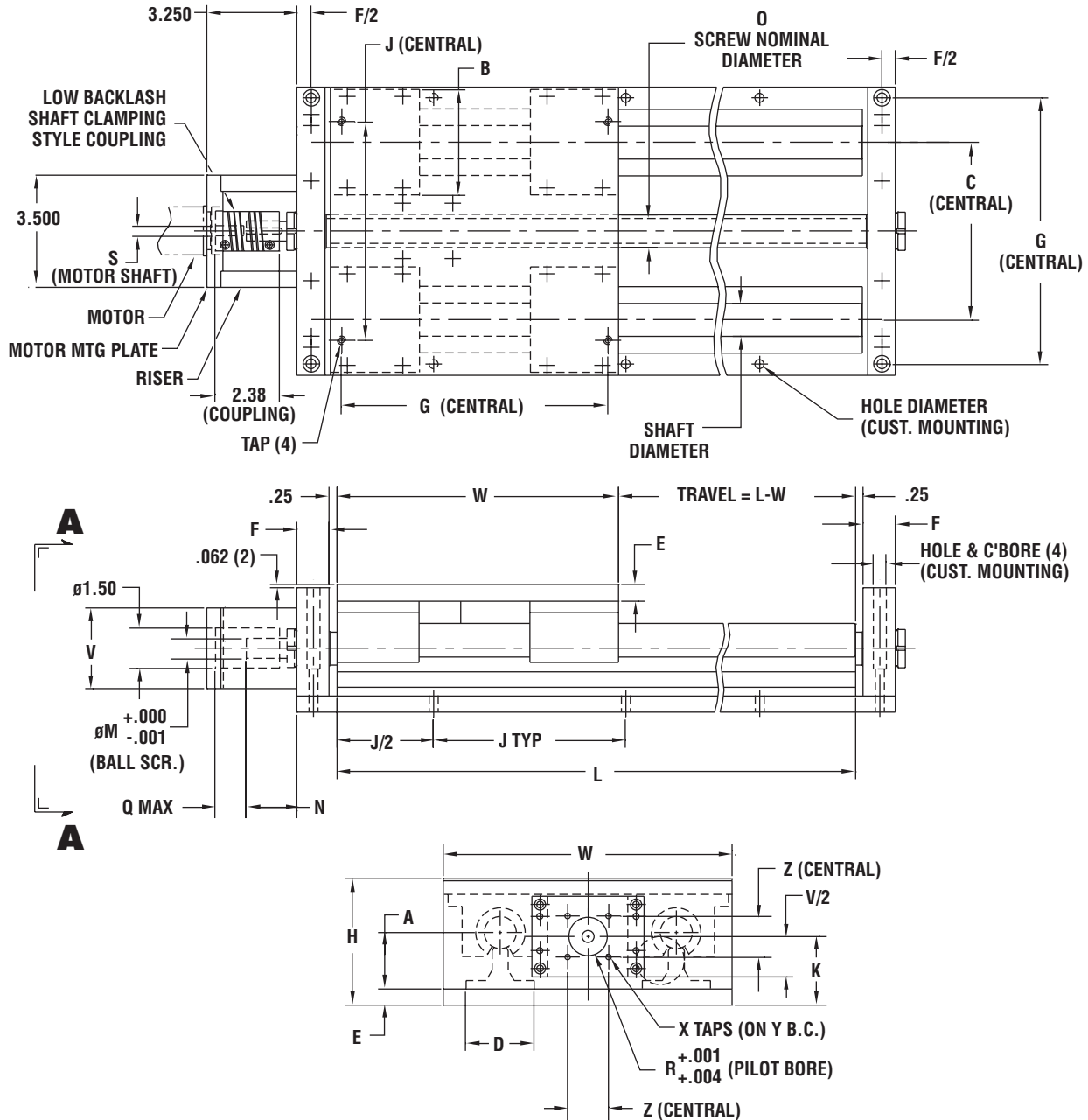
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2N23 & 2N34 - Slide Assembly/NEMA Drive Kit

DIMENSIONS (Continued)

| F | G | J | K | M | N | O | Q | TAP | HOLE | SIZE |
|------|--------|-------|-------|------|------|-------|------|---------|------|------|
| .75 | 5.500 | 4.000 | 1.375 | .375 | 1.45 | .631 | 1.31 | 10-24 | .22 | 08 |
| .75 | 6.312 | 4.000 | 1.375 | .375 | 1.45 | .631 | 1.31 | 1/4-20 | .28 | 10 |
| 1.00 | 7.125 | 6.000 | 1.500 | .375 | 1.45 | .631 | 1.31 | 1/4-20 | .28 | 12 |
| 1.00 | 8.312 | 6.000 | 2.125 | .625 | 1.76 | 1.000 | 1.19 | 1/4-20 | .28 | 16 |
| 1.25 | 10.000 | 6.000 | 2.375 | .625 | 1.76 | 1.000 | 1.19 | 5/16-18 | .34 | 20 |



VIEW A-A

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COLUMN LOAD CHART (Ball Screw)

COMPRESSION (COLUMN) LOAD: A load that tends to buckle or compress the screw shaft.

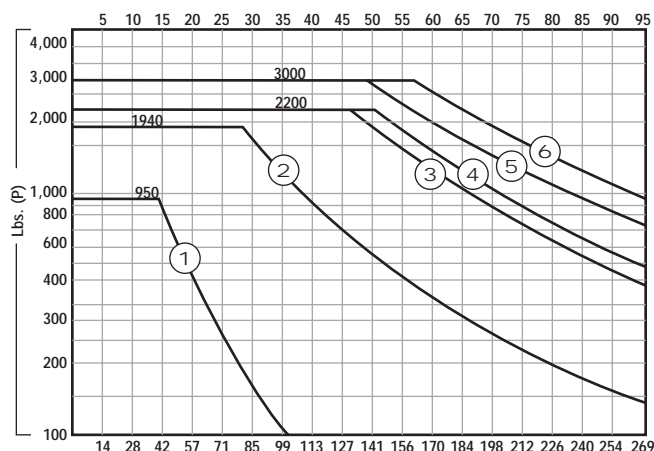
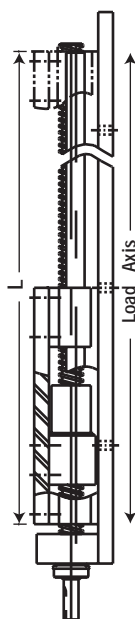
HOW TO USE CHART:

1. Determine maximum compression load (lbs.)
2. Determine slide length. ("L" dimension)
3. Determine end fixity and slide designation (2RPS & 2LRPS).
4. Find the point at which load and length intersect.
5. Select a slide above or to the right of the intersecting point.

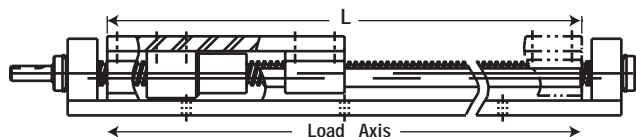
Applies Primarily to Vertical Application

***NOTE:** Chart figures at 80% of actual load.

DO NOT EXCEED THESE FIGURES.



2RPS & 2LRPS (See Chart on pages 168, 169, 172 and 173)-(L)



| CURVE NUMBER | SLICE SERIES SIZE, LEAD |
|--------------|--|
| 1 | 2RPS-08-(AR OR AL) 2LRPS-08-(AR OR AL) 2RPS-10-(AR OR AL) 2LRPS-10-(AR OR AL) 2RPS-12-(AR OR AL) 2LRPS-12-(AR OR AL) D = .500 |
| 2 | 2RPS-16-(BR OR BL) 2LRPS-16-(BR OR BL) 2RPS-20-(BR OR BL) 2LRPS-20-(BR OR BL) 2RPS-16-DR 2LRPS-16-DR 2RPS-20-DR 2LRPS-20-DR D = .840 2RPS-16-CR 2LRPS-16-CR 2RPS-20-CR 2LRPS-20-CR D = .870 |
| 3 | 2RPS-24-(DR OR DL) 2LRPS-24-(DR OR DL) 2RPS-32-(DR OR DL) 2LRPS-32-(DR OR DL) D = 1.140 |
| 4 | 2RPS-24-ER 2LRPS-24-ER 2RPS-32-ER 2LRPS-32-ER D = 1.190 |
| 5 | 2RPS-24-CR 2LRPS-24-CR 2RPS-32-CR 2LRPS-32-CR D = 1.260 |
| 6 | 2RPS-24-(BR OR BL) 2LRPS-24-(BR OR BL) 2RPS-32-(BR OR BL) 2LRPS-32-(BR OR BL) D = 1.375 |

COLUMN LOAD FORMULAS*:

$$P = C_c \cdot 14.03 \times 10^6 \cdot \left(\frac{D^4}{L^2}\right)$$

P = Critical column load (lbs.)

D = Root diameter of screw (in.) (See chart)

L = Slide length (in.)

C_c = End fixity factor

C_c = 2.0 2RPS & 2LRPS

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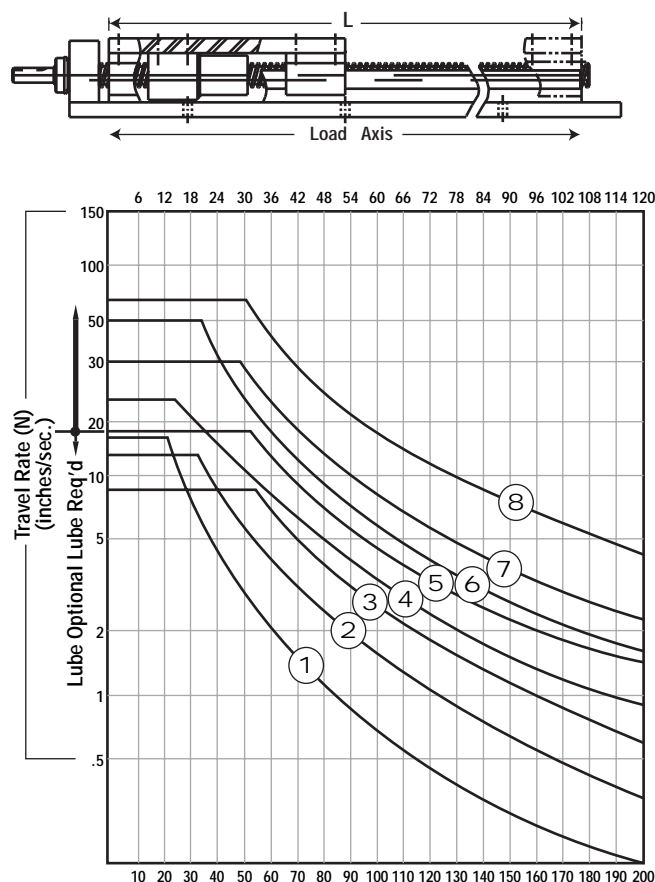


CRITICAL SPEED CHART (Ball Screw)

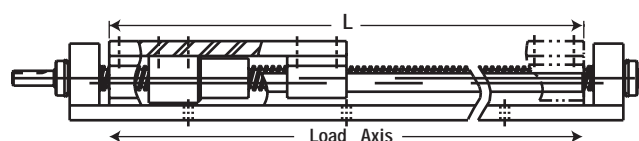
CRITICAL SPEED: The maximum speed at which a ball screw or ball nut can rotate without producing destructive resonant vibrations. The critical speed is a function of the ball screw diameter, the unsupported length of screw, rigidity of bearing supports, and RPM.

HOW TO USE CHART:

1. Determine end fixity. How many ends are fixed?
(Slide designation, 2RPS & 2LRPS)
2. Determine slide length. ("L" dimension)
3. Find the length – fixity vertical line, read up to find the intersecting, at the required travel rate.
4. Select a slide above or to the right of the intersection point.
5. Higher speeds and/or longer lengths are available as cost effective specials, having a larger ball screw and bearings.
(Consult Pacific Bearing)



2RPS & 2LRPS (See Chart on pages 168, 169, 172 and 173)-(L)



| CURVE NUMBER | SLICE SERIES SIZE, LEAD | |
|--------------|--|--|
| 1 | 2RPS-08-(AR or AL) 2LPS-08-(AR or AL) 2RPS-10-(AR or AL) 2LPS-10-(AR or AL) D = .500 H = .200 | 2RPS-12-(AR or AL) 2LPS-12-(AR or AL) |
| 2 | 2RPS-16-(BR or BL) 2LPS-16-(BR or BL) D = .840 H = .250 | 2RPS-20-(BR or BL) 2LPS-20-(BR or BL) |
| 3 | 2RPS-24-(BR or BL) 2LPS-24-(BR or BL) D = 1.375 H = .250 | 2RPS-32-(BR or BL) 2LPS-32-(BR or BL) |
| 4 | 2RPS-16-(CR) 2LPS-16-(CR) D = .870 H = .500 | 2RPS-20-(CR) 2LPS-20-(CR) |
| 5 | 2RPS-24-(CR) 2LPS-24-(CR) D = 1.260 H = .500 | 2RPS-32-(CR) 2LPS-32-(CR) |
| 6 | 2RPS-16-(DR) 2LPS-16-(DR) D = .840 H = 1.000 | 2RPS-20-(DR) 2LPS-20-(DR) |
| 7 | 2RPS-24-(DR or DL) 2LPS-24-(DR or DL) D = 1.140 H = 1.000 | 2RPS-32-(DR or DL) 2LPS-32-(DR or DL) |
| 8 | 2RPS-24-(ER) 2LPS-24-(ER) D = 1.190 H = 1.875 | 2RPS-32-(ER) 2LPS-32-(ER) |

CRITICAL SPEED FORMULAS*:

N = Critical speed (Maximum) (expressed in inches/sec.)

D = Root diameter of screw (in./Rev.) (See chart)

H = Lead of screw (in.) (See chart)

$$N = C_s \cdot 14.03 \times 10^6 \cdot \left(\frac{D^4}{L^2} \right)$$

L = Slide length (in.)

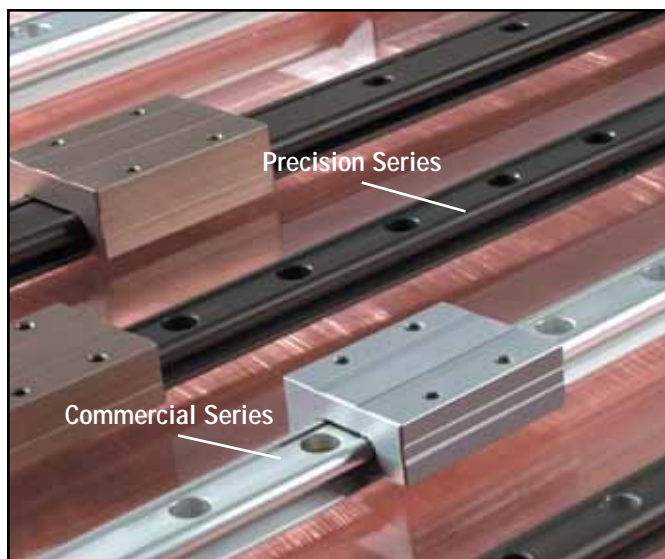
C_s = End fixity factor

C_s = 1.47 2RPS & 2LRPS

*NOTE: Chart figures at 80% of actual load.

DO NOT EXCEED THESE FIGURES.

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PRODUCT OVERVIEW

Based on Pacific Bearing Company's proven Simplicity technology, Mini-Rail miniature linear guides provide smooth and quiet linear motion. The self-lubricating design requires no sealing, emits virtually no particulates, tolerates high temperature extremes and has no rolling elements that can cause catastrophic failure.

Mini-Rail miniature linear guides are available in five sizes: 7, 9, 12, 15 and 20mm - in lengths up to 3600mm, meaning no cumbersome butt joints. These guides are precision manufactured out of lightweight aluminum alloys to ensure long life and corrosion resistance.

An economical alternative to conventional miniature linear guides, Mini-Rail requires no maintenance, is fully interchangeable with industry standard sizes and is maintained in stock for quick delivery.

TECHNICAL DATA

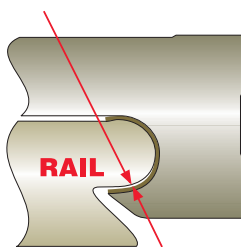
Mini-Rail is offered in three design configurations:

Precision Series: Ceramic coated rails and carriages are corrosion resistant. FrelonGold® self-lubricating liner delivers the best overall performance, the highest loads, the best wear life, and speeds. Most precise running clearance for high precision applications.

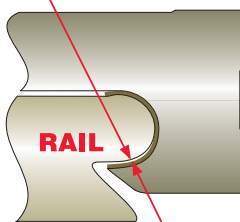
Compensated Precision Series: Same as Precision Series (above) except with additional clearance provided to tolerate misalignment.

Commercial Series: Best value for less demanding applications. Clear anodized coating provides a measure of corrosion resistance. FrelonJ® self-lubricating liner is great for washdown applications.

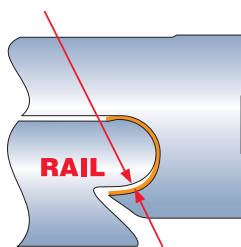
Precision Series
.025 - .051mm
Running Clearance
(CERAMIC COATED)



Compensated Precision Series
.064 - .089mm
Running Clearance
(CERAMIC COATED)



Commercial Series
.038 - .089mm
Running Clearance
(CLEAR ANODIZED)





Mini-Rail® Miniature Linear Guides

Technical Information

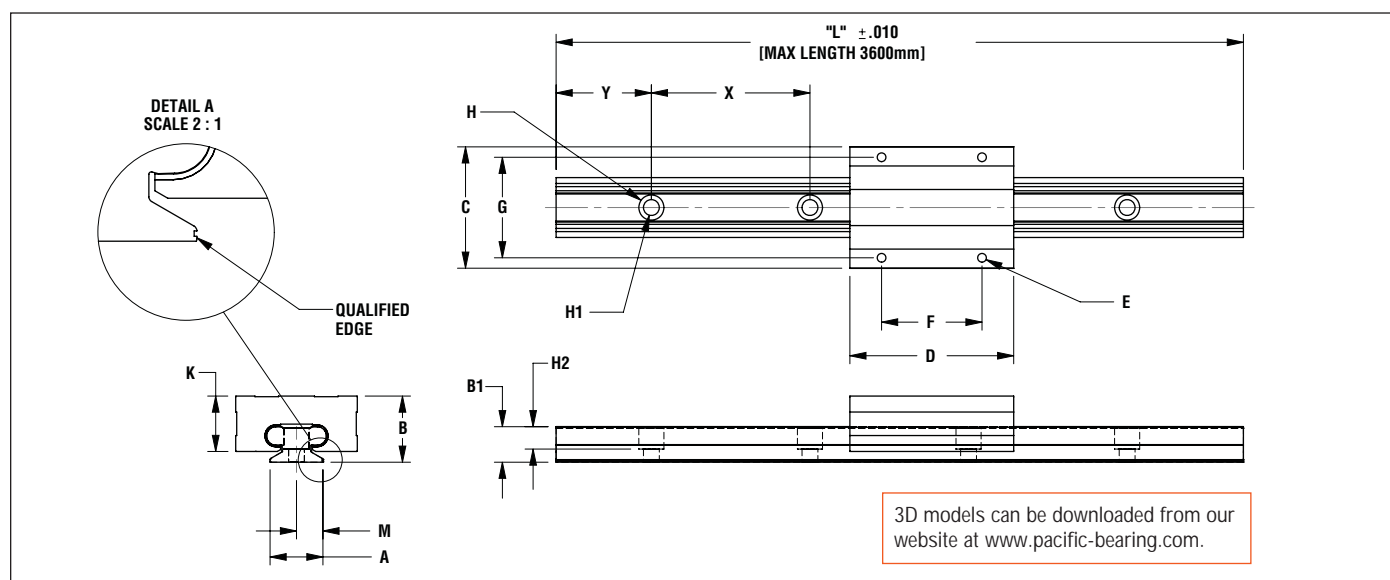
Linear Motion Systems

(Maximum Length 3600mm)

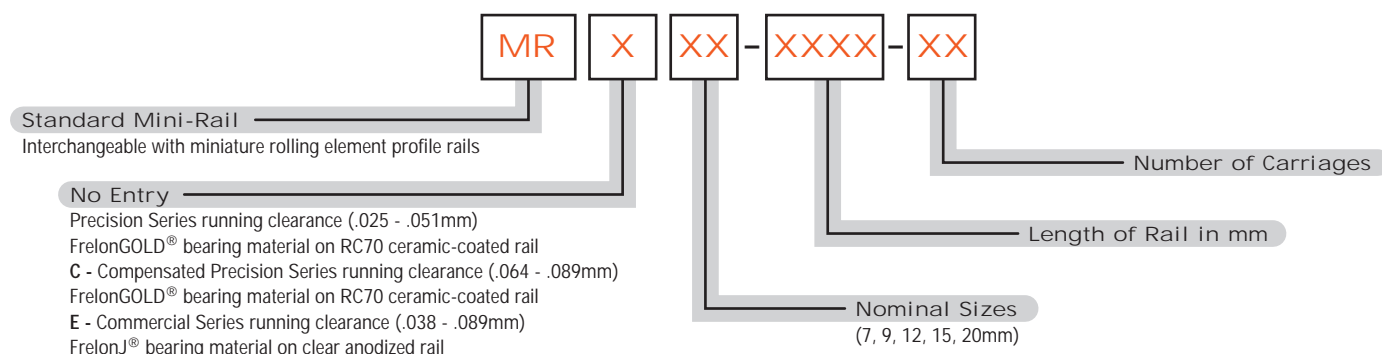
| PART NUMBER | RUNNING CLEARANCE | A | B | B1 | C | D | E | | F | G | H | H ₁ | H ₂ | K | M | Y | X | RAIL WT. (gram/mm) | CARRIAGE WT. (gram) |
|-------------|-------------------|-----------------|----------------|-------------|----------------|-----------------|-------------------------|--------------------------|---------------------------------|----------------|-----|----------------|----------------|----------------------------------|------------------|------------------------|------|-----------------------|------------------------|
| | | BASE WIDTH (mm) | OVERALL HEIGHT | RAIL HEIGHT | CARRIAGE WIDTH | CARRIAGE LENGTH | CARRIAGE MTG. HOLE SIZE | CARRIAGE MTG. HOLE DEPTH | CARRIAGE MTG. HOLE CTR. TO CTR. | RAIL HOLE SIZE | | | CARRIGE HEIGHT | RAIL MTG. HOLE TO QUALIFIED EDGE | RAIL HOLE TO END | RAIL HOLE CTR. TO CTR. | | | |
| MR7-XXX | .025 - .051 | 7 | 8 | 6.1 | 17 | 24 | M2 x 0.4 | THRU | 8 | 12 | 4.2 | 2.4 | 2.3 | 6.2 | 3.5 | 5 | 15 | 0.10 | 5.7 |
| MRC7-XXX | .064 - .089 | | | | | | | | | | | | | | | | | | |
| MRE7-XXX | .038 - .089 | | | | | | | | | | | | | | | | | | |
| MR9-XXX | .025 - .051 | 9 | 10 | 7.1 | 20 | 30 | M3 x 0.5 | | 13 | 15 | 4.5 | 2.6 | 3 | 8.0 | 4.5 | 7.5 | 20 | 0.16 | 8.5 |
| MRC9-XXX | .064 - .089 | | | | | | | | | | | | | | | | | | |
| MRE9-XXX | .038 - .089 | | | | | | | | | | | | | | | | | | |
| MR12-XXX | .025 - .051 | 12 | 13 | 8.0 | 27 | 34 | M3 x 0.5 | | 15 | 20 | 6 | 3.5 | 10.7 | 6 | 10 | 25 | 0.22 | 20.0 | |
| MRC12-XXX | .064 - .089 | | | | | | | | | | | | | | | | | | |
| MRE12-XXX | .038 - .089 | | | | | | | | | | | | | | | | | | |
| MR15-XXX | .025 - .051 | 15 | 16 | 9.2 | 32 | 42 | M3 x 0.5 | | 20 | 25 | 4.5 | 14.1 | 7.5 | 15 | 40 | 0.38 | 34.0 | | |
| MRC15-XXX | .064 - .089 | | | | | | | | | | | | | | | | | | |
| MRE15-XXX | .038 - .089 | | | | | | | | | | | | | | | | | | |
| MR20-XXX | .025 - .051 | 20 | 25 | 13.4 | 46 | 62 | M4 x 0.7 | 12.5 | 38 | 38 | 9.5 | 6 | 8.5 | 21.2 | 10 | 20 | 60 | 0.48 | 127.9 |
| MRC20-XXX | .064 - .089 | | | | | | | | | | | | | | | | | | |
| MRE20-XXX | .038 - .089 | | | | | | | | | | | | | | | | | | |

NOTES: Add the overall length of the rail to the part number,
EXAMPLE "MR12-220" for a Precision Series assembly with a 220mm long rail.
Cut-to-length rails are available up to 3600mm.
The "S" dimension will remain constant at one end unless requested otherwise.

Standard and cut-to-length rail ends are NOT coated. Fully coated rails are available upon request.
All carriage mounting holes are through tapped except MR20 12.5mm of thread.



ORDERING INFORMATION



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STATIC LOAD DATA

The numbers below are for rails in a static condition. Refer to the calculations below to establish dynamic parameters.

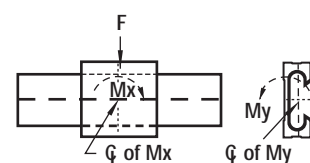
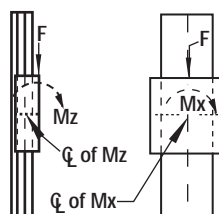
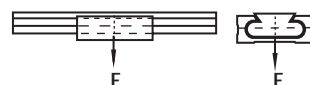
| SIZE | F (N) | MSL (N)* |
|------|-------|----------|
| 7 | 445 | 734 |
| 9 | 667 | 1557 |
| 12 | 1334 | 1957 |
| 15 | 2224 | 3114 |
| 20 | 3559 | 6005 |

*Max static load in Newtons.

| SIZE | F (N) |
|------|-------|
| 7 | 89 |
| 9 | 125 |
| 12 | 222 |
| 15 | 356 |
| 20 | 578 |

| SIZE | Mx (N-m) | My (N-m) | Mz (N-m) |
|------|----------|----------|----------|
| 7 | 2.3 | 1.8 | 1.8 |
| 9 | 5.0 | 3.2 | 3.2 |
| 12 | 9.0 | 5.6 | 5.6 |
| 15 | 15.1 | 9.0 | 9.0 |
| 20 | 24.9 | 14.7 | 14.7 |

| SIZE | F (N) | Mx (N-m) | My (N-m) | Mz (N-m) |
|------|-------|----------|----------|----------|
| 7 | 133 | 2.3 | 1.8 | 1.8 |
| 9 | 222 | 5.0 | 3.2 | 3.2 |
| 12 | 400 | 9.0 | 5.6 | 5.6 |
| 15 | 667 | 15.1 | 9.0 | 9.0 |
| 20 | 1112 | 24.9 | 14.7 | 14.7 |



PERFORMANCE RATINGS FOR LINEAR MOTION

Plane bearings are rated by their limiting PV, which is a combination of load over a given surface area and the velocity.

| BEARING MATERIAL | MAX. "PV" | MAX. "P" | MAX. "V" (NO LUBRICATION) |
|------------------|--|---|----------------------------|
| FrelonGold® | 20,000 (psi x ft./min.) or 0.7 N/m ² x m/s | 3000 psi or 20.68 N/mm ² | 300 sfm or 1.524 m/s |
| FrelonJ® | 10,000 (psi x ft./min.) or 0.35 N/m ² x m/s | 1500 psi or 10.34 N/mm ² | 140 sfm or 0.711 m/s |

PV = The performance measurement of plane bearings.

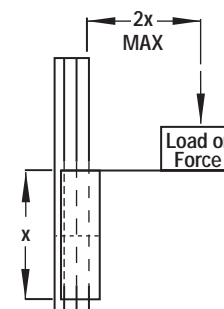
PV = P x V, where P = pressure (load) in psi (kgf/cm²)

V = velocity (speed) in sfm (m/min.)

NOTE: All three parameters must be met by an application for the bearing to perform properly.

CANTILEVERED LOADS

Binding of the carriage will occur if the 2:1 ratio for cantilevered loads and drive forces is exceeded. This principle is not load or force dependent. It is a product of the coefficient of frictions associated with plane bearings. Contact factory or website for additional information.



LOAD/MOMENT CONVERSION

N = 4.45 x (lbs.)

N-m = 0.113 x (in.-lbs.)



Mini-Rail® MTR Series

Miniature Guide/Slide Motion Systems

Linear Motion Systems

MTR SERIES

- Miniature profile rail alternative
- Interchangeable with industry standards
- SimGlide™ Polymer inserts
- LaZer Straight™ rail



MTR Series

Materials:

LaZer Straight™ rail

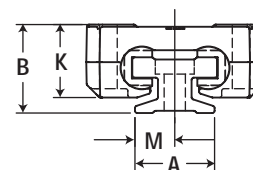
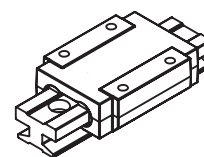
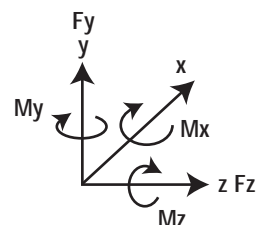
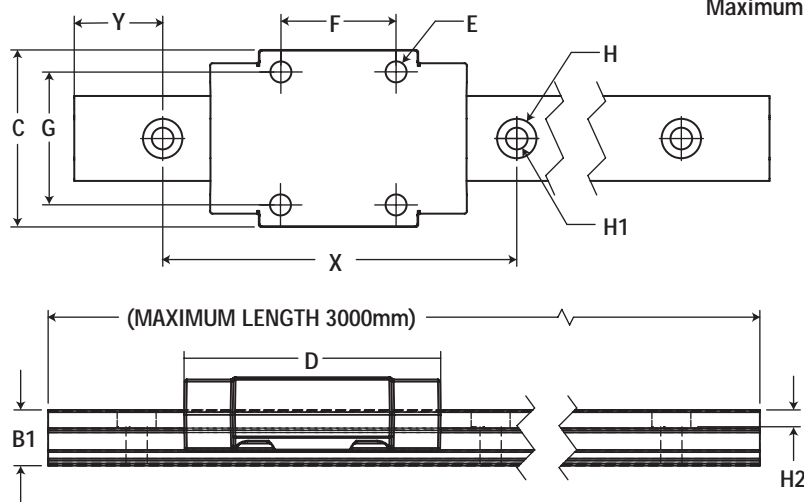
SimGlide™ Polymer Inserts

Working Temperatures: -40C to 90C (-40F to 195F)

Coefficient of Friction: 0.1- 0.2

Maximum Velocity: 10 m/s (2000 fpm) for intermediate application and 8 m/s (1600 fpm) for continuous application

Maximum PV Value: 10,000 psi - fpm

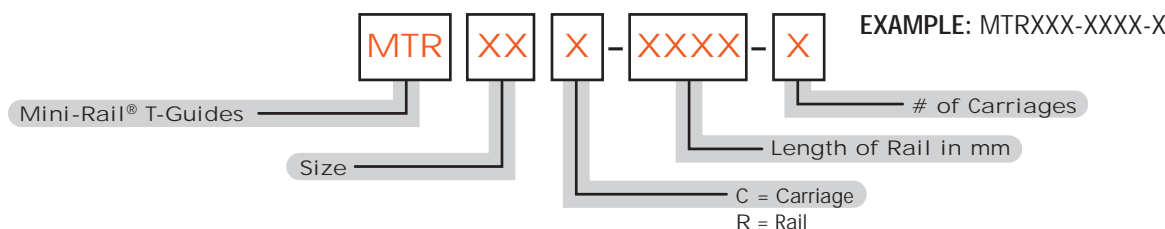


3D models can be downloaded from our website at www.pacific-bearing.com.

| PART NUMBER | A (mm) | B (mm) | B1 (mm) | C (mm) | D (mm) | E (mm) | F (mm) | G (mm) | H (mm) | H1 (mm) | H2 (mm) | K (mm) | M (mm) | X (mm) | Y (mm) | CARRIAGE WT. (G) | RAIL UNIT WT. (G/mm) | LOAD CAPACITY | | | | | | | | | |
|-------------|--------|--------|---------|--------|--------|----------|--------|--------|--------|---------|---------|--------|--------|--------|--------|------------------|----------------------|---------------|-----------|--------|-----------|----------|---------------|----------|---------------|----------|---------------|
| | | | | | | | | | | | | | | | | | | Fy (N) | Fy (lbs.) | Fz (N) | Fz (lbs.) | Mx (N-m) | Mx (lbs.-in.) | My (N-m) | My (lbs.-in.) | Mz (N-m) | Mz (lbs.-in.) |
| MTR09 | 9 | 10 | 6.3 | 20 | 29 | M2 X 0.4 | 13 | 15 | 4.4 | 2.4 | 2 | 8.3 | 4.5 | 20 | 5 | 17.6 | 0.11 | 590 | 130 | 295 | 65 | 2.4 | 20 | 1.2 | 11 | 1.2 | 11 |
| MTR12 | 12 | 13 | 6.6 | 27 | 34 | M3 X 0.5 | 15 | 20 | 6.5 | 3.4 | 3 | 11 | 6 | 25 | 5 | 37.3 | 0.19 | 995 | 225 | 500 | 110 | 5 | 50 | 2.5 | 24 | 2.5 | 24 |
| MTR15 | 15 | 17 | 10.8 | 32 | 42 | M3 X 0.5 | 20 | 25 | 6.5 | 3.4 | 4 | 13 | 7.5 | 40 | 10 | 64.9 | 0.32 | 1620 | 360 | 810 | 180 | 11 | 100 | 6 | 50 | 6 | 50 |

NOTE: Apply a load reduction factor 0.25 on Fy rating if the system is used inverted.

ORDERING INFORMATION



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Mini-Rail® Low Profile Mini-Slide

Miniature Guide/Slide Motion Systems

Linear Motion Systems

LPM SERIES

- Low cost
- 4 sizes
- Low profile linear guide
- Industry Standard Interchange
- Fool proof Polymer Slider



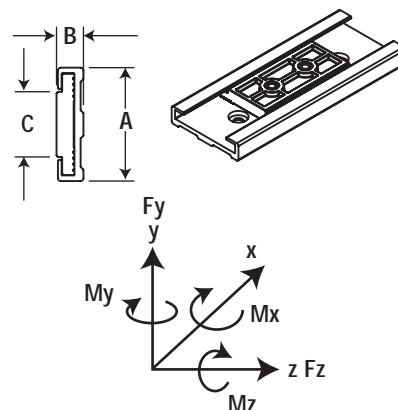
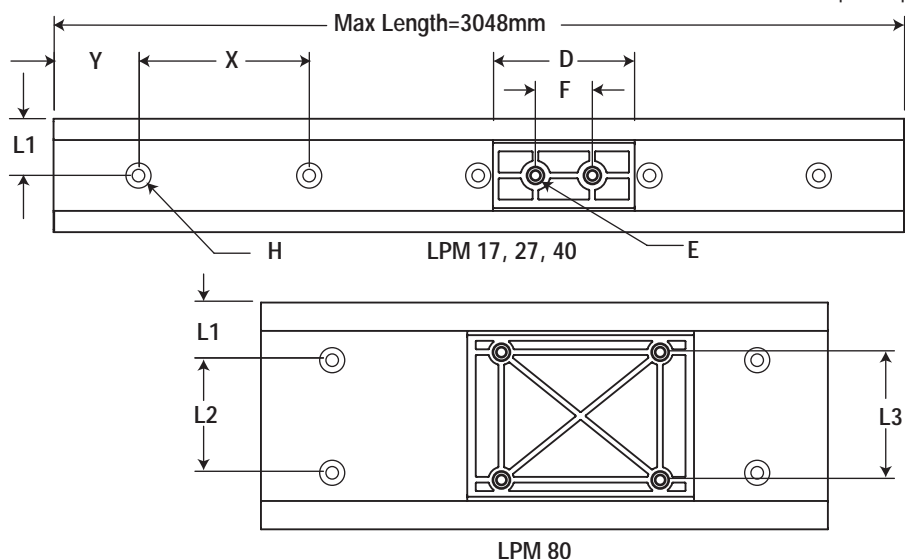
Materials: SimGlide™-J Polymer slider (UL 94 HB flammability rating)
Molded-in stainless steel thread inserts
Anodized aluminum rails

Operating Temperatures: -35C to 65C (-30F to 150F)

Chemical Resistance: Resistant to lubricants, fuels, dyes, weak acids

Maximum Velocity: 10 m/s

Load Reduction Factor: 0.7-1.0 for low speed application; 0.4-0.7 for medium speed application; 0.1-0.4 for high speed application

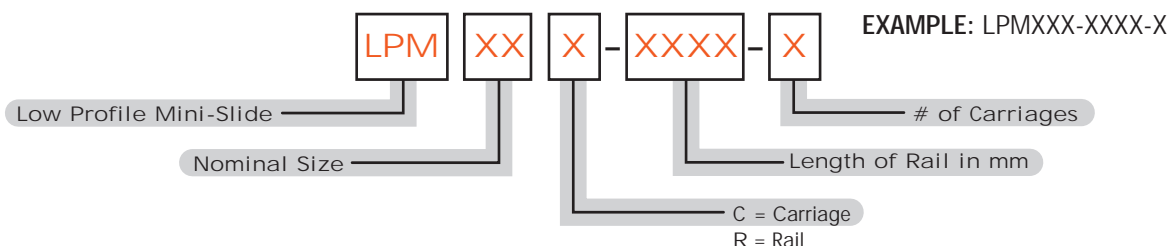


3D models can be downloaded from our website at www.pacific-bearing.com.

| PART NUMBER | A (mm) | B (mm) | C (mm) | D (mm) | E (mm) | F (mm) | H (C'BORE) (mm) | L1 (mm) | L2 (mm) | L3 (mm) | Y (mm) | X (mm) | CARRIAGE WT. (G) | RAIL UNIT WT. (G/mm) | LOAD CAPACITY | | | | | | | | | |
|-------------|--------|--------|--------|--------|--------|--------|-----------------|---------|---------|---------|--------|--------|------------------|----------------------|---------------|-----------|--------|-----------|----------|---------------|----------|---------------|----------|---------------|
| | | | | | | | | | | | | | | | Fy (N) | Fy (lbs.) | Fz (N) | Fz (lbs.) | Mx (N-m) | Mx (lbs.-in.) | My (N-m) | My (lbs.-in.) | Mz (N-m) | Mz (lbs.-in.) |
| LPM17 | 17 | 6 | 9.6 | 20 | M3 | 14 | M3 SBHCS | 8.5 | N/A | N/A | 20 | 60 | 1.1 | 0.15 | 35 | 8 | 10 | 2.5 | 0.2 | 1.5 | 0.3 | 2.5 | 0.2 | 1.5 |
| LPM27 | 27 | 9.5 | 14 | 40 | M4 | 20 | M4 SBHCS | 13.5 | N/A | N/A | 20 | 60 | 4.8 | 0.33 | 130 | 30 | 85 | 20 | 1 | 10 | 2.5 | 20 | 1 | 10 |
| LPM40 | 40 | 9.5 | 23 | 50 | M4 | 20 | M4 SBHCS | 20 | N/A | N/A | 20 | 60 | 9.8 | 0.38 | 270 | 60 | 150 | 35 | 2.5 | 25 | 5 | 50 | 2.5 | 25 |
| LPM80 | 80 | 12.0 | 57 | 80 | M4 | 56 | M4 SBHCS | 20 | 40 | 45 | 25 | 150 | 32.3 | 1.07 | 515 | 120 | 250 | 55 | 7 | 60 | 14 | 125 | 7 | 60 |

NOTE: Apply a load reduction factor 0.25 on Fy rating if the system is used inverted.

ORDERING INFORMATION



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Mini-Rail® Roller Carriage MRR Series

Miniature Guide/Slide Motion Systems

Linear Motion Systems

MRR Series

MRR SERIES

- Durable polymer rollers ensure quiet operation
- Factory adjusted
- Rails can be butt-jointed for unlimited travel
- Pre-lubricated for long life
- Low cost
- Smooth operation
- Corrosion resistant
- Light loads



Materials: POM based polymer coated rollers
LaZer Straight™ ceramic coated aluminum rails
300 series stainless steel roller shafts

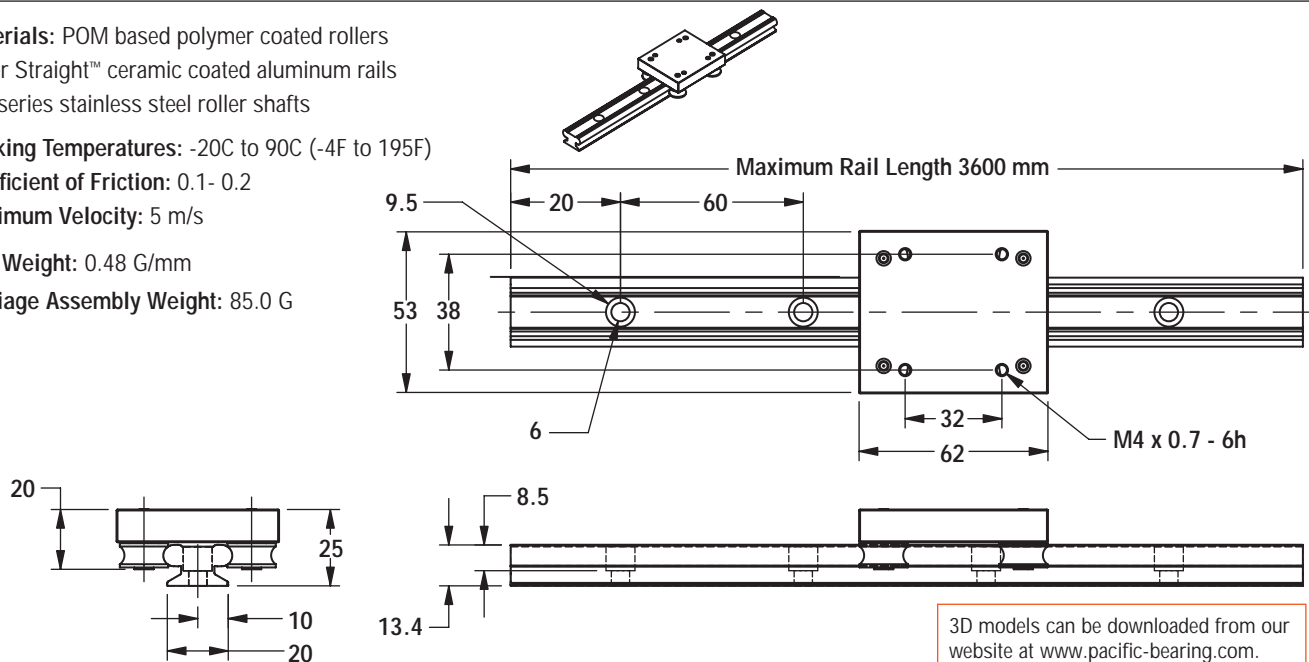
Working Temperatures: -20C to 90C (-4F to 195F)

Coefficient of Friction: 0.1- 0.2

Maximum Velocity: 5 m/s

Rail Weight: 0.48 G/mm

Carriage Assembly Weight: 85.0 G



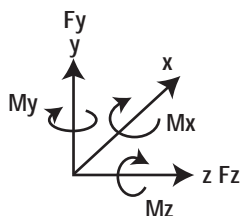
3D models can be downloaded from our website at www.pacific-bearing.com.

NOTES: Add the overall length of the rail "L" to the part number.
EXAMPLE "MRR20-220" for a 220mm long rail.

Cut-to-length rails are available up to 3600mm.

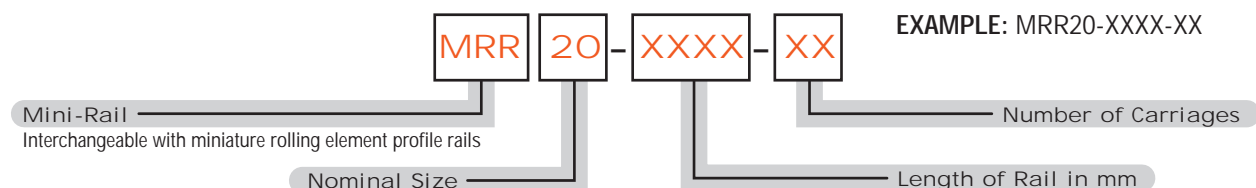
"Y" dimension will remain constant at one end unless requested otherwise.

LOAD CAPACITY



| PART NUMBER | LOAD CAPACITY | | | | | | | | | |
|-------------|---------------|-----|--------|-----|------------|-------|------------|-------|------------|-------|
| | Fy | | Fz | | Mx | | My | | Mz | |
| | (lbs.) | (N) | (lbs.) | (N) | (lbs.-in.) | (N-m) | (lbs.-in.) | (N-m) | (lbs.-in.) | (N-m) |
| MRR20 | 25 | 110 | 45 | 205 | 10 | 1.2 | 83 | 9.4 | 21 | 2.4 |

ORDERING INFORMATION



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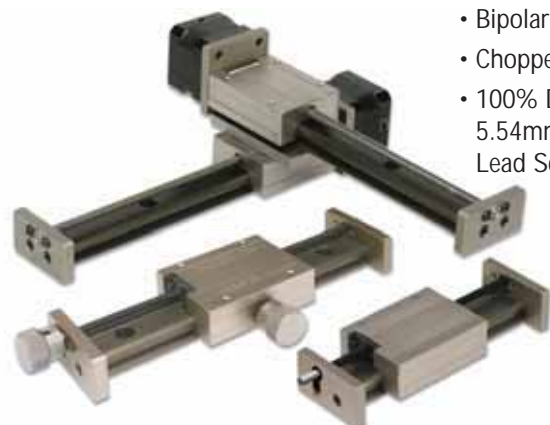
Mini-Rail® LS/MS Series

Miniature Lead Screw - Driven Slides

Linear Motion Systems

Technical Information

MINI RAIL® LS/MS SPECIFICATIONS

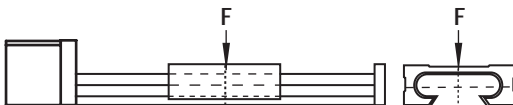


- Bipolar
- Chopper Drive
- 100% Duty Cycle
- 5.54mm (0.218") Lead Screw

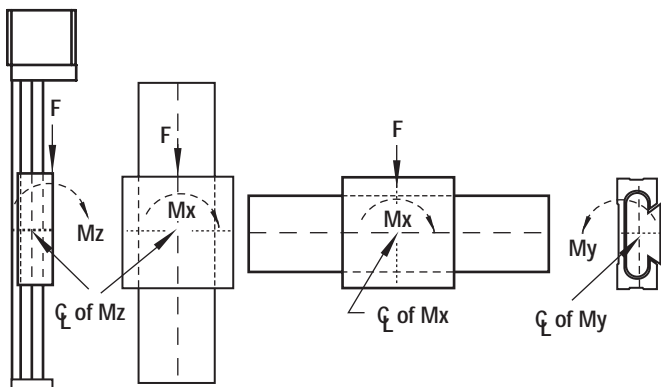
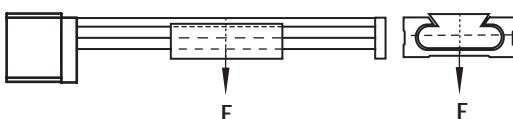
STATIC LOAD DATA

The numbers below are for rails in a static condition. Refer to the calculations below to establish dynamic parameters.

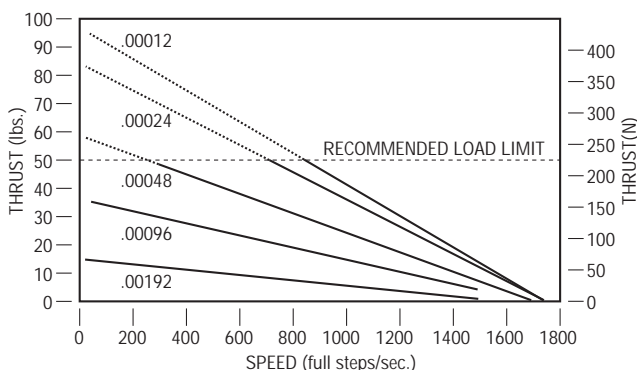
| F (N) | MSL (N)* |
|-------|----------|
| 3559 | 6005 |



| F (N) |
|-------|
| 578 |



| F (N) | Mx (N-m) | My (N-m) | Mz (N-m) |
|-------|----------|----------|----------|
| 1112 | 24.9 | 14.7 | 14.7 |



Size 17 Stepper Motor with 5.54mm (0.218") Screw

| LINEAR TRAVEL PER STEP |
|------------------------|
| .001524 mm (.00006") |
| .003048 mm (.00012") |
| .006096 mm (.00024") |
| .012192 mm (.00048") |
| .024384 mm (.00096") |
| .048768 mm (.00192") |

NOTES: Rail ends are NOT coated. Fully coated rails are available upon request.

PERFORMANCE RATINGS FOR LINEAR MOTION

Plane bearings are rated by their limiting PV, which is a combination of load over a given surface area and the velocity.

| BEARING MATERIAL | MAX. "PV" | MAX. "P" | MAX. "V" (NO LUBRICATION) |
|------------------|---|---|----------------------------|
| FrelonGold® | 20,000 (psi x ft./min.) or 0.7 N/m ² x m/s | 3000 psi or 20.68 N/mm ² | 300 sfm or 1.524 m/s |

PV = The performance measurement of plane bearings

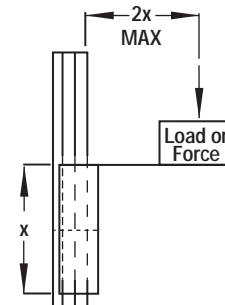
PV = P x V where P = pressure (load) in psi (kgf/cm²)

V = velocity (speed) in sfm (m/min.)

NOTE: All three parameters must be met by an application for the bearing to perform properly.

CANTILEVERED LOADS

Binding of the carriage will occur if the 2:1 ratio for cantilevered loads and drive forces is exceeded. This principle is not load or force dependent. It is a product of the coefficient of frictions associated with plane bearings. Contact factory or website for additional information.



LOAD/MOMENT CONVERSION

N = 4.45 x (lbs.)

N-m = 0.113 x (in-lbs.)

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Mini-Rail® LS Series

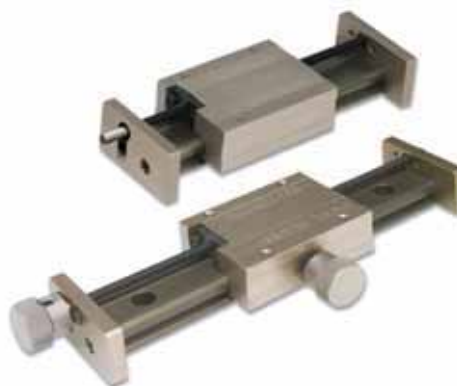
Miniature Lead Screw - Driven Slides

Linear Motion Systems

LS Series

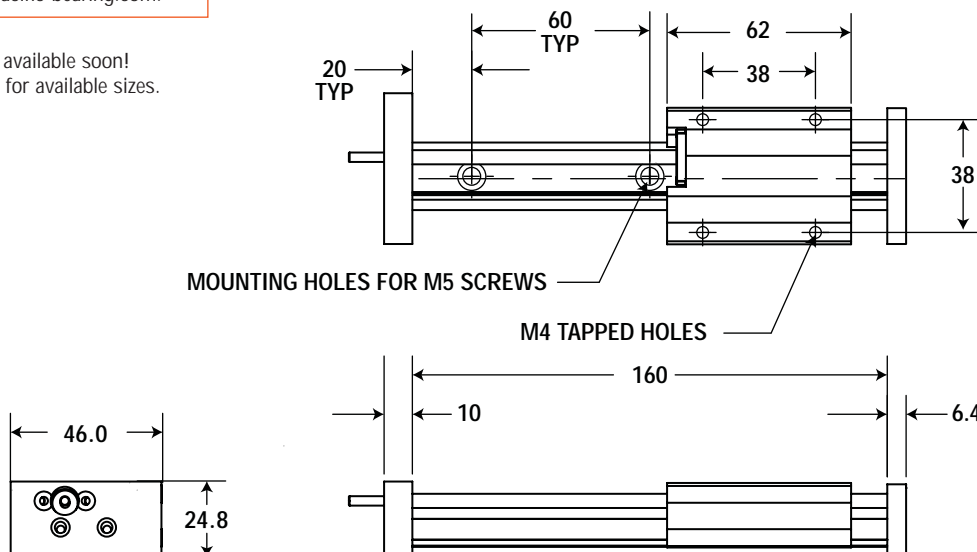
LS SERIES

- Right hand rolled thread
- 303 stainless steel screw with TFE coating
- Self-lubricating Polyacetal, anti-backlash nut
- Lengths up to 640mm
- Three (3) leads available
- Optional hand brake



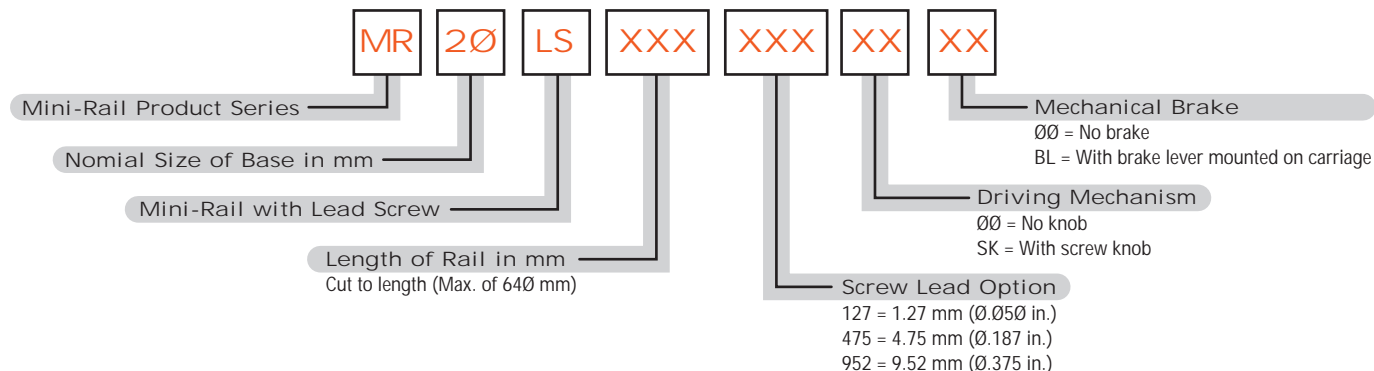
3D models can be downloaded from our website at www.pacific-bearing.com.

NOTE: Other sizes available soon!
Check our website for available sizes.



NOTES: Maximum length for lead screw driven MR is 640mm.
Standard and cut-to-length rail ends are NOT coated. Fully coated rails are available upon request.

ORDERING INFORMATION



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Mini-Rail® MS Series

Miniature Lead Screw - Driven Slides

Linear Motion Systems

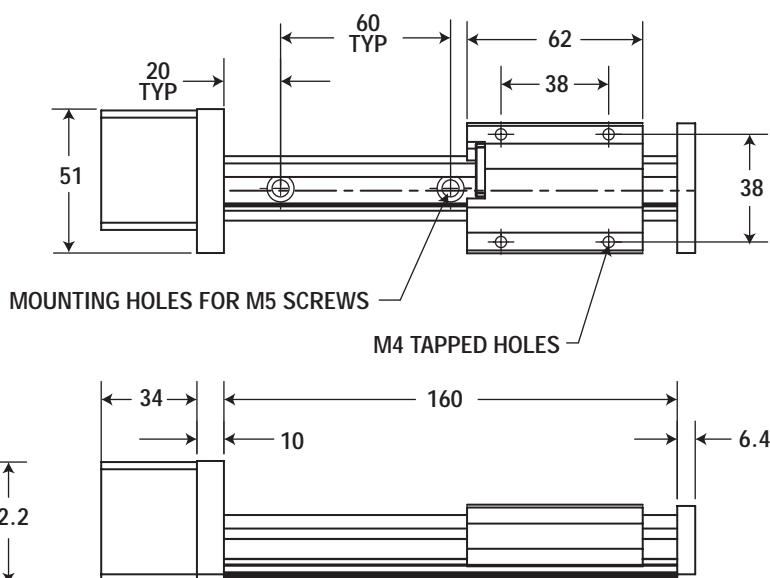
MS SERIES

- Robust design - outstanding reliability
- Fewer parts - less maintenance
- Preloaded drive nut - eliminates backlash
- High torque stepper motor (NEMA 17)
- Low cost
- Lengths up to 640 mm
- Ball bearing supports
- Integral screw
- Three (3) leads available



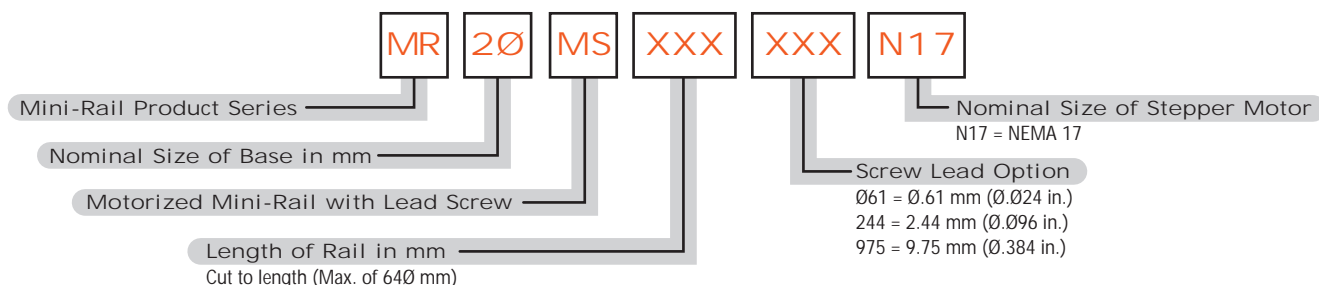
3D models can be downloaded from our website at www.pacific-bearing.com.

NOTE: Other sizes available soon!
Check our website for available sizes.



NOTES: Maximum length for lead screw driven MR is 640mm.
Standard and cut-to-length rail ends are NOT coated. Fully coated rails are available upon request.

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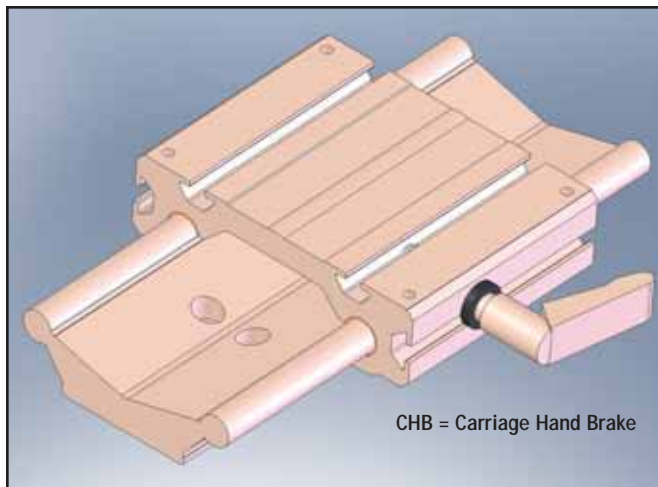


PRODUCT OVERVIEW

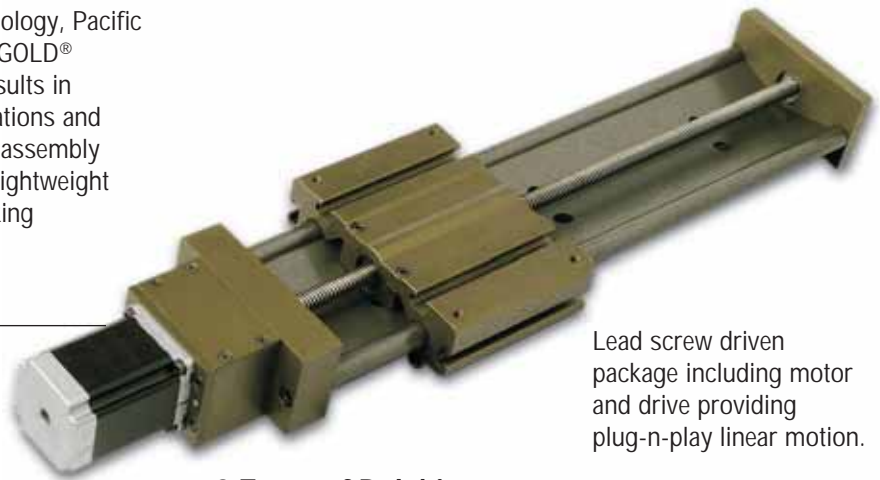
Based on proven Simplicity® linear bearing technology, Pacific Mechatronics™ Dolphin Guides® contains FrelonGOLD® self-lubricating bearing material. This material results in no metal to metal contact, while dampening vibrations and shock loads. Dolphin Guides® unique two-piece assembly eliminates tolerance stack up and the integrated lightweight packages can drop into existing applications making installation easy.

FEATURES & BENEFITS

- Smooth & Quiet
- Standard lead screw specifications from D075, D100, and D125
- Plug and Play controls available
- Mounting Flexibility - Rails are pre-drilled for mounting ease. The carriage provides side or top mounting.
- Carriage has T-slots & mounting holes
- Drive Options - Choose from ball or lead screws, belt drives, etc. Integrate your own or consult the factory for assistance.
- FrelonGOLD® Liner - 60% less friction, 60% less wear, 100% increased load capacity, 110% increased speed limits, 100% increased PV limits
- Optional brake
- Optional Hand crank
- Clean room compatible
- Corrosion resistant
- Lightweight
- Pre-engineered, ready to use
- No bellows necessary, but are an option
- Contaminated environments, not a problem



CHB = Carriage Hand Brake

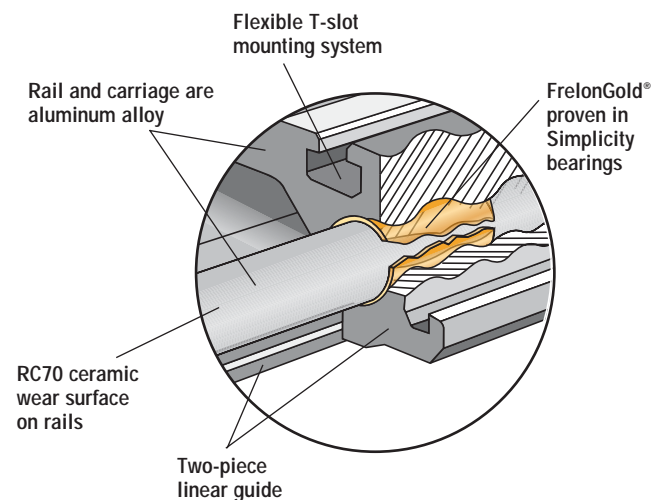


Lead screw driven package including motor and drive providing plug-n-play linear motion.

3 Types of Dolphins

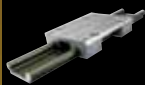
- Lead Screw
- Ball Screw
- Pneumatic

TECHNICAL DRAWING



Optional configurations and special carriages are available.

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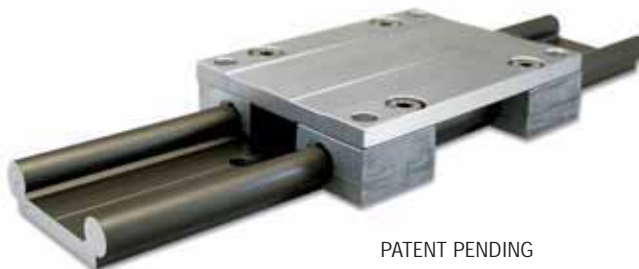
Precision Positioning

Dolphin Flex Linear Guide - DFG Series

Linear Motion Systems

PRODUCT OVERVIEW

- LaZER Straight™ Rail
- Modular Construction
- Industry Standard Interchange



PATENT PENDING

Materials:

SimGlide™-E Polymer insert

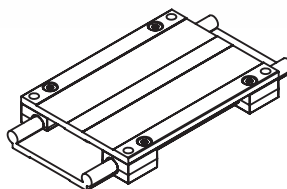
LaZER Straight™ aluminum rails

Working Temperatures: -40C to 90C (-40F to 195F)

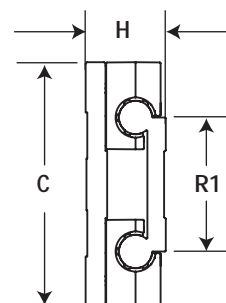
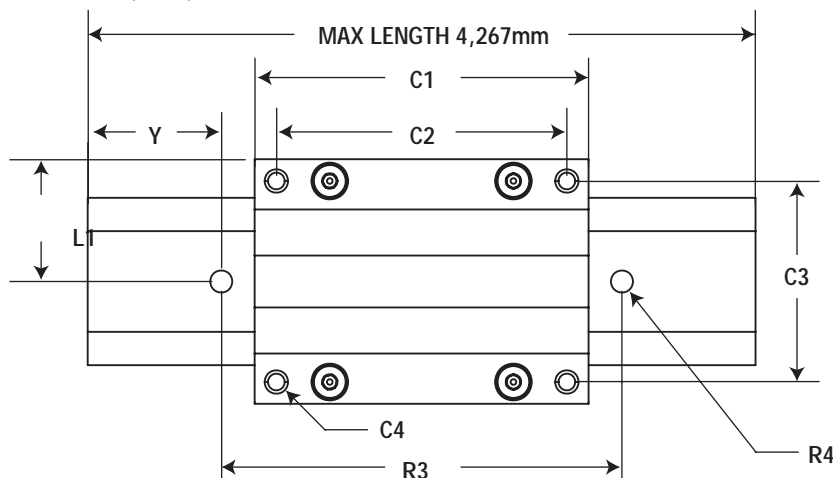
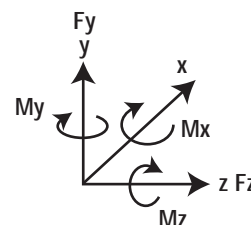
Coefficient of Friction: 0.1- 0.2

Maximum Velocity: 10 m/s (2000 fpm) for intermediate application
and 8 m/s (1600 fpm) for continuous application

Maximum PV Value: 10,000 psi - fpm



3D models can be downloaded from our website at www.pacific-bearing.com.



| PART NUMBER | DIMENSIONAL INFORMATION | | | | | | | | | | | RAIL WEIGHT | LOAD DATA | | | | | | | | | |
|-------------|-------------------------|------|------|------|------|------|------|------|------|------|------|-------------|-----------|--------|------|--------|-------|------------|-------|------------|-------|------------|
| | C | C1 | C2 | C3 | C4 | H | L1 | R1 | R3 | R4 | Y | | Fy | | Fz | | Mx | | My | | Mz | |
| | (mm) | (mm) | (mm) | (mm) | (mm) | (mm) | (mm) | (mm) | (mm) | (mm) | (mm) | (G) | (N) | (lbs.) | (N) | (lbs.) | (N-m) | (lbs.-in.) | (N-m) | (lbs.-in.) | (N-m) | (lbs.-in.) |
| DFG10CA-40A | 73 | 100 | 87 | 60 | M6 | 24 | 36.5 | 40 | 120 | 6.6 | 20 | 310 | 5053 | 1150 | 4050 | 1020 | 100 | 75 | 180 | 135 | 180 | 135 |
| DFG10CA-40B | 73 | 150 | 137 | 60 | M6 | 24 | 36.5 | 40 | 120 | 6.6 | 20 | 370 | 5053 | 1150 | 4050 | 1020 | 100 | 75 | 305 | 225 | 305 | 225 |
| DFG10CA-40C | 107 | 200 | 187 | 60 | M6 | 24 | 36.5 | 40 | 120 | 6.6 | 20 | 430 | 5053 | 1150 | 4050 | 1020 | 100 | 75 | 430 | 320 | 430 | 320 |
| DFG10CA-80A | 107 | 100 | 87 | 94 | M6 | 24 | 53.5 | 80 | 120 | 6.6 | 20 | 360 | 5053 | 1150 | 4050 | 1020 | 184 | 136 | 180 | 135 | 180 | 135 |
| DFG10CA-80B | 107 | 150 | 137 | 94 | M6 | 24 | 53.5 | 80 | 120 | 6.6 | 20 | 450 | 5053 | 1150 | 4050 | 1020 | 184 | 136 | 305 | 225 | 305 | 225 |
| DFG10CA-80C | 107 | 200 | 187 | 94 | M6 | 24 | 53.5 | 80 | 120 | 6.6 | 20 | 530 | 5053 | 1150 | 4050 | 1020 | 184 | 136 | 430 | 320 | 430 | 320 |

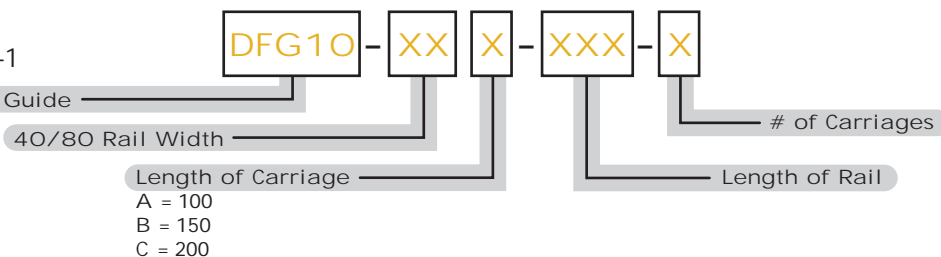
NOTE: Apply a load reduction factor 0.25 on Fy rating if the system is used inverted.

ORDERING INFORMATION

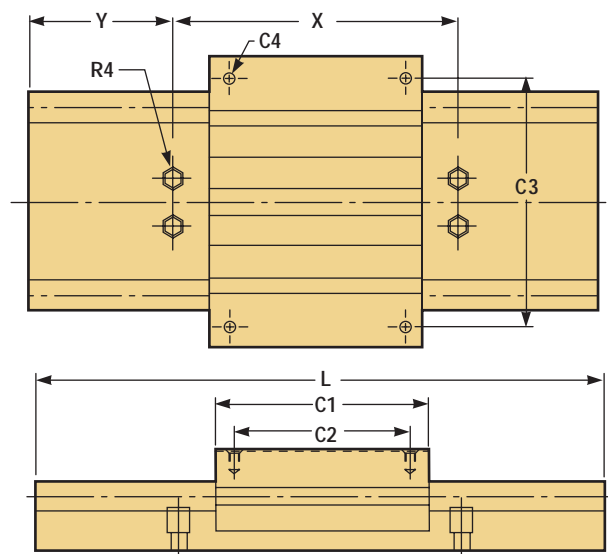
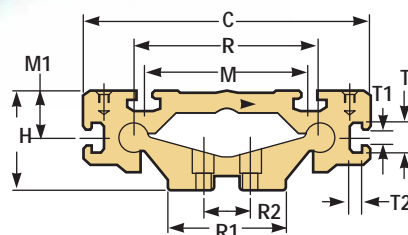
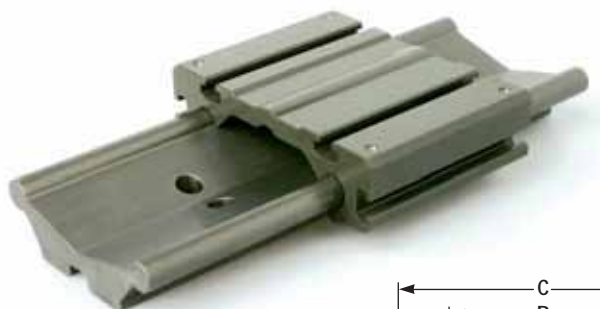
EXAMPLE:

DFG10-40A-500-1

Dolphin® Flex Guide
10 mm System



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STANDARD INCH SERIES DOLPHIN GUIDE WITH NO DRIVE MECHANISM (Dimensions in Inches)

| PART NUMBER | R | R1 | R2 | X | R4 | Y | H | C | C1 | C2 | C1 | C2 | C3 | C4 | M | M1 | L |
|-------------|------|-----|------|---|-----------|---|-------|-----|----------|----------|----------|----------|------|-----------|------|------|----------|
| | | | | | BOLT SIZE | | | | STANDARD | STANDARD | EXTENDED | EXTENDED | | BOLT SIZE | | | MAX-FEET |
| | | | | | | | | | | | | | | | | | |
| D075-xxx | 2.95 | 2 | 0.75 | 4 | 1/4 | 2 | 1.625 | 4.6 | 3.5 | 3 | 4.5 | 4 | 4 | 10-32 | 2.6 | .819 | 12 |
| D100-xxx | 3.94 | 2.6 | 1 | 6 | 5/16 | 3 | 2.125 | 6.1 | 4.5 | 3.75 | 6 | 5.25 | 5.25 | 1/4-20 | 3.5 | 1.02 | |
| D125-xxx | 4.92 | 3.3 | 1.25 | | 3/8 | 3 | 2.625 | 7.6 | 6 | 5.25 | 7.5 | 6.75 | 6.75 | 5/16-18 | 4.33 | 1.30 | |

CARRIAGE TYPES

| PART NO. | DRILL | DEPTH | TAP | DEPTH |
|----------|-------|-------|---------|-------|
| D075-xxx | .159 | .534 | 10-32 | .440 |
| D100-xxx | .201 | .750 | 1/4-20 | .500 |
| D125-xxx | .257 | | 5/16-18 | .625 |

T-SLOT INFORMATION (Inches)

| PART NO. | T | T1 | T2 |
|----------|------|------|------|
| D075-xxx | .590 | .256 | .236 |
| D100-xxx | .661 | .319 | .268 |
| D125-xxx | | | |

METRIC SERIES DOLPHIN GUIDE WITH NO DRIVE MECHANISM (Dimensions in mm)

| PART NUMBER | R | R1 | R2 | X | R4 | Y | H | C | C1 | C2 | C1 | C2 | C3 | C4 | M | M1 | L |
|-------------|-----|----|----|-----|-----------|-----|------|-----|----------|----------|----------|----------|-----|-----------|-----|------|---------|
| | | | | | BOLT SIZE | | | | STANDARD | STANDARD | EXTENDED | EXTENDED | | BOLT SIZE | | | MAX-FEE |
| DM075-xxx | 75 | 51 | 20 | 120 | M 6 | 60 | 41.3 | 117 | 85 | 73 | 110 | 98 | 105 | M 5 | 66 | 16.5 | 3.66m |
| DM100-xxx | 100 | 66 | 25 | 150 | M 8 | 75 | 54 | 155 | 115 | 95 | 150 | 130 | 135 | M 6 | 89 | 26 | |
| DM125-xxx | 125 | 84 | 30 | 200 | M 10 | 100 | 66.7 | 193 | 150 | 130 | 190 | 170 | 175 | M 8 | 110 | 33 | |

T-SLOT INFORMATION (mm)

| PART NO. | T | T1 | T2 |
|-----------|------|-----|-----|
| DM075-xxx | 15.0 | 6.5 | 6.0 |
| DM100-xxx | 16.8 | 8.1 | 6.8 |
| DM125-xxx | | | |

STANDARD LENGTHS CHART (Dimensions in Inches)

| PART NO. | 8" | 12" | 16" | 18" | 20" | 24" | 28" | 30" | 32" | 36" | 40" | 42" | 48" |
|----------|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| D075-xxx | X | | X | | X | | X | | X | | X | | |
| D100-xxx | | X | | X | | X | | X | | X | | X | X |
| D125-xxx | | | | | | | | | | | | | |

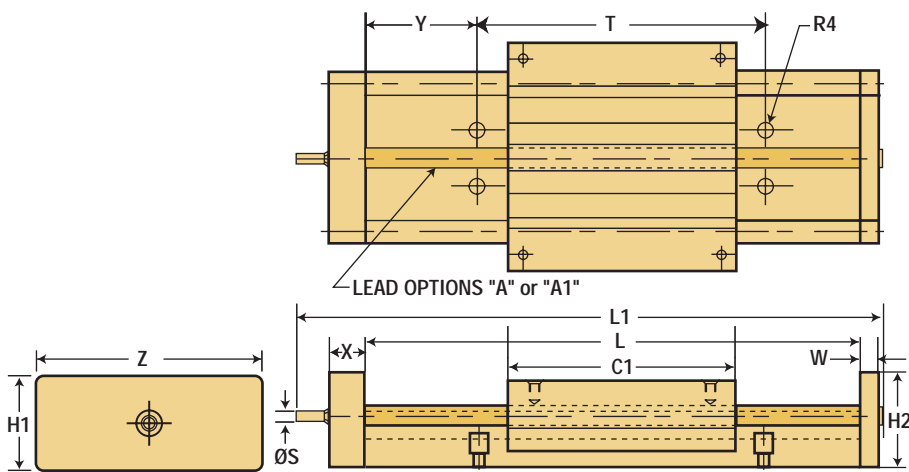
WEIGHTS

| PART NO. | RAIL PER INCH | STANDARD CARRIAGE | EXTENDED CARRIAGE |
|----------|---------------|-------------------|-------------------|
| | (lbs.) | (lbs.) | (lbs.) |
| D075-xxx | 0.19 | 0.98 | 1.26 |
| D100-xxx | 0.32 | 2.12 | 2.82 |
| D125-xxx | 0.48 | 4.56 | 5.7 |

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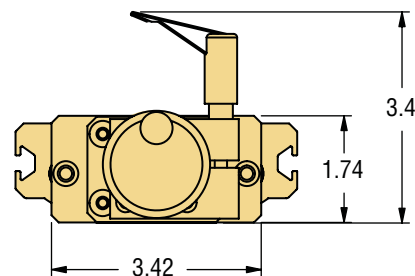


D075



OPTIONAL HAND BRAKE

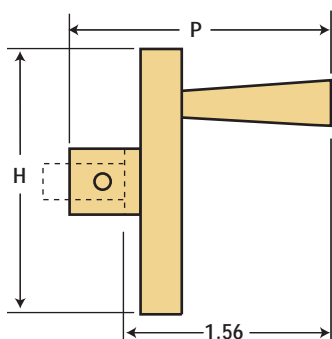
NOTE: available only with optional hand crank



| PART NO. | P | H |
|----------|------|------|
| D075AHB | 2.31 | 1.75 |

| PART NO. | STROKE (L-C1) | L | L1 | C1 | NOMINAL SCREW DIA. | STANDARD LEAD A | OPTIONAL LEAD A1 | S | Y | T | R4 | W | X | Z | H1 | H2 |
|-----------|------------------|----|-------|-----|--------------------------|-----------------------|------------------------|-------|---|---|-----|-------|-------|------|------|-------|
| D075xx-12 | 8.5 | 12 | 13.93 | 3.5 | 3/8" | 0.250 | 0.500 | 0.187 | 2 | 4 | 1/4 | 0.375 | 0.625 | 3.42 | 1.75 | 1.625 |
| D075xx-16 | 12.5 | 16 | 17.93 | | | | | | | | | | | | | |
| D075xx-20 | 16.5 | 20 | 21.93 | | | | | | | | | | | | | |
| D075xx-24 | 20.5 | 24 | 25.93 | | | | | | | | | | | | | |

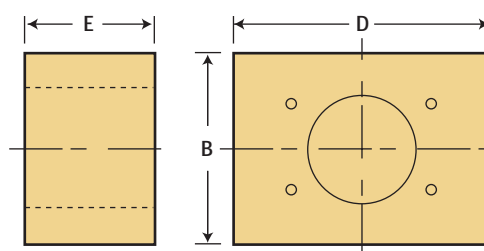
OPTIONAL HAND CRANK



| PART NO. | P | H |
|----------|------|------|
| 75H | 2.31 | 1.75 |

*See order codes on page 199 to integrate.

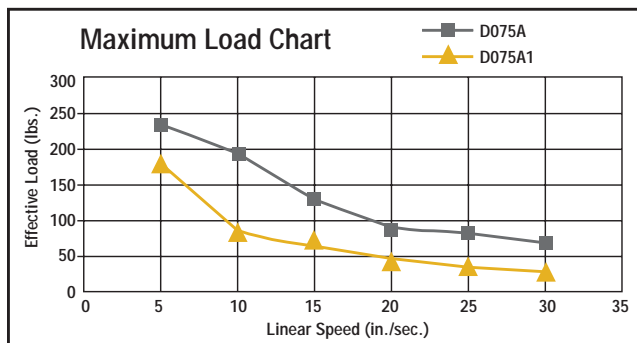
OPTIONAL MOTOR MOUNT ATTACHMENT



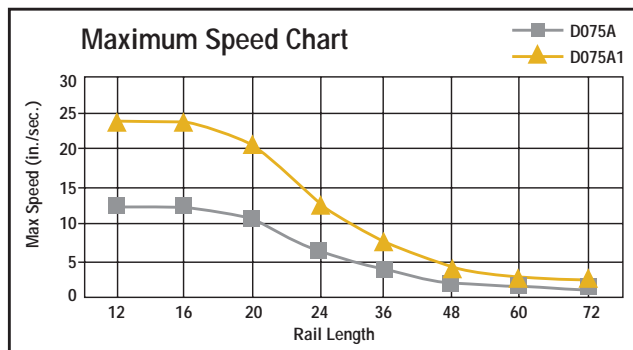
| PART NO. | MOTOR MOUNT | B | E | D |
|----------|-------------|---|------|------|
| 75N | NEMA 17 | 2 | 1.81 | 3.25 |

LOAD & SPEED DATA FOR STANDARD LEAD SCREW DRIVEN DOLPHIN GUIDES (HORIZONTAL ORIENTATION)

D075A-xxx



D075A-xxx

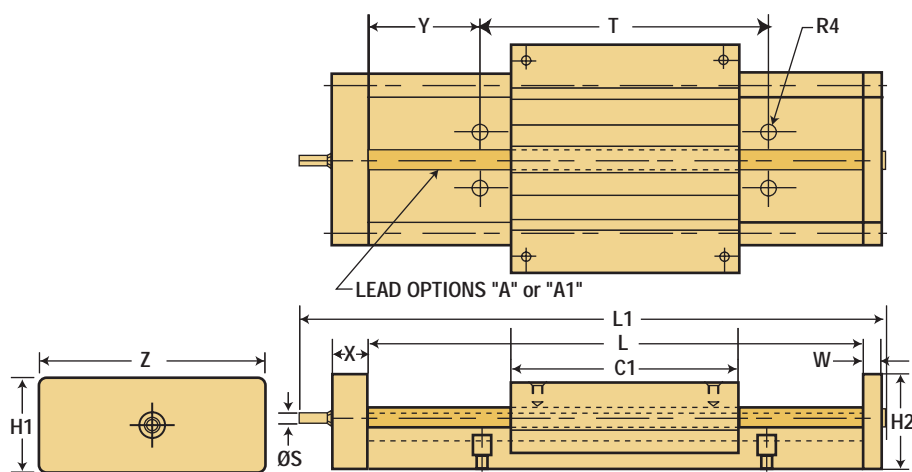


NOTE: Optional drives are available: ball screws, cylinders, linear motors, and belt drives.

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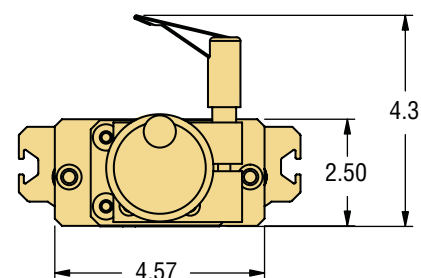


D100



OPTIONAL HAND BRAKE

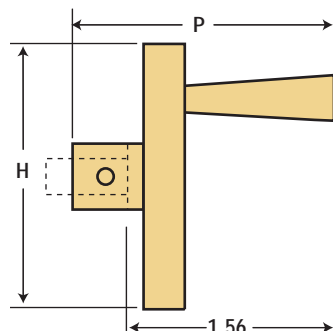
NOTE: available only with optional hand crank



| PART NO. | P | H |
|----------|------|------|
| DO100AHB | 2.31 | 1.75 |

| PART NO. | STROKE (L-C1) | L | L1 | C1 | NOMINAL SCREW DIA. | STANDARD LEAD A | OPTIONAL LEAD A1 | S | Y | T | R4 | W | X | Z | H1 | H2 |
|-----------|------------------|----|-------|-----|--------------------------|-----------------------|------------------------|-------|---|---|------|-----|---|------|-----|-------|
| D100xx-12 | 7.5 | 12 | 14.61 | 4.5 | 1/2 | 0.250 | 0.500 | 0.314 | 3 | 6 | 5/16 | 0.5 | 1 | 4.56 | 2.5 | 2.500 |
| D100xx-18 | 13.5 | 18 | 20.61 | | | | | | | | | | | | | |
| D100xx-24 | 19.5 | 24 | 26.61 | | | | | | | | | | | | | |
| D100xx-30 | 25.5 | 30 | 32.61 | | | | | | | | | | | | | |
| D100xx-48 | 25.5 | 30 | 32.61 | | | | | | | | | | | | | |

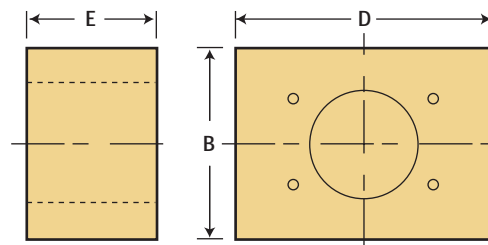
OPTIONAL HAND CRANK



| PART NO. | P | H |
|----------|------|------|
| 100H | 2.31 | 2.25 |

*See order codes on page 199 to integrate.

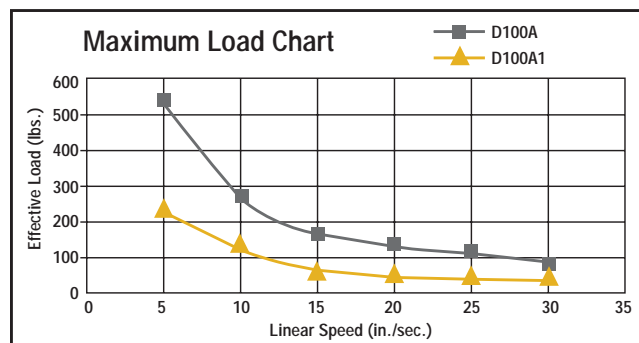
OPTIONAL MOTOR MOUNT ATTACHMENT



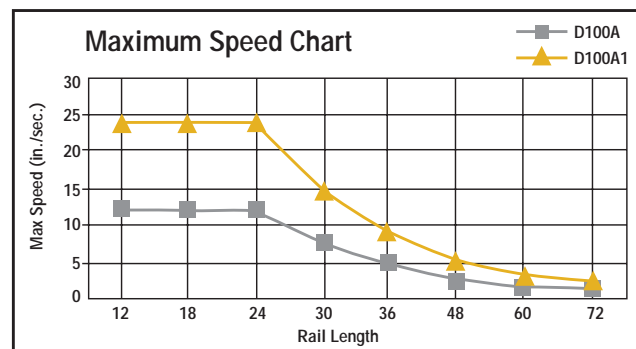
| PART NO. | MOTOR MOUNT | B | E | D |
|----------|-------------|-----|------|------|
| 100N | NEMA 23 | 2.5 | 1.81 | 3.25 |

LOAD & SPEED DATA FOR STANDARD LEAD SCREW DRIVEN DOLPHIN GUIDES (HORIZONTAL ORIENTATION)

D100A-xxx



D100A-xxx

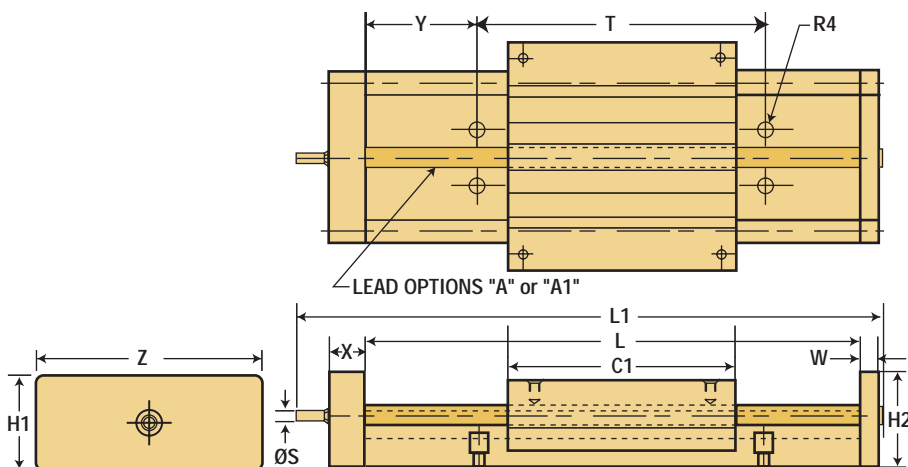


NOTE: Optional drives are available: ball screws, cylinders, linear motors, and belt drives.

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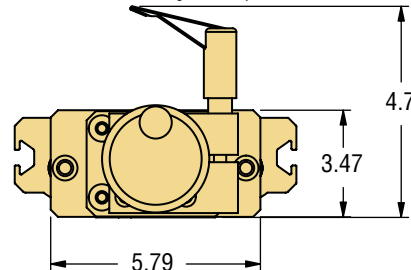


D125



OPTIONAL HAND BRAKE

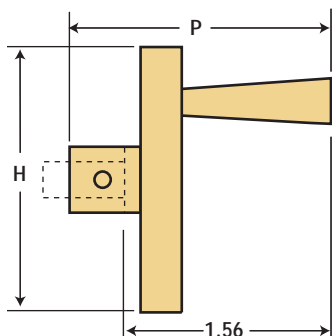
NOTE: available only with optional hand crank



| PART NO. | P | H |
|----------|------|------|
| DO125AHB | 2.31 | 1.75 |

| PART NO. | STROKE | L | L1 | C1 | NOMINAL SCREW DIA. | STANDARD LEAD | OPTIONAL LEAD | S | Y | T | R4 | W | X | Z | H1 | H2 |
|-----------|--------|----|-------|----|--------------------------|------------------|------------------|-------|---|---|-----|-----|---|------|-----|-------|
| | (L-C1) | | | | | A | A1 | | | | | | | | | |
| D125xx-12 | 6 | 12 | 14.85 | 6 | 5/8 | 0.200 | 0.500 | 0.314 | 3 | 6 | 3/8 | 0.5 | 1 | 5.78 | 3.5 | 2.500 |
| D125xx-18 | 12 | 18 | 20.85 | | | | | | | | | | | | | |
| D125xx-24 | 18 | 24 | 26.85 | | | | | | | | | | | | | |
| D125xx-30 | 24 | 30 | 32.85 | | | | | | | | | | | | | |
| D125xx-36 | 30 | 36 | 38.85 | | | | | | | | | | | | | |
| D125xx-48 | 30 | 48 | 38.85 | | | | | | | | | | | | | |
| D125xx-60 | 30 | 60 | 38.85 | | | | | | | | | | | | | |

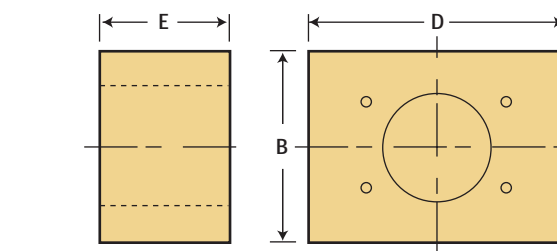
OPTIONAL HAND CRANK



| PART NO. | P | H |
|----------|------|------|
| 125H | 2.31 | 3.25 |

*See order codes on page 199 to integrate.

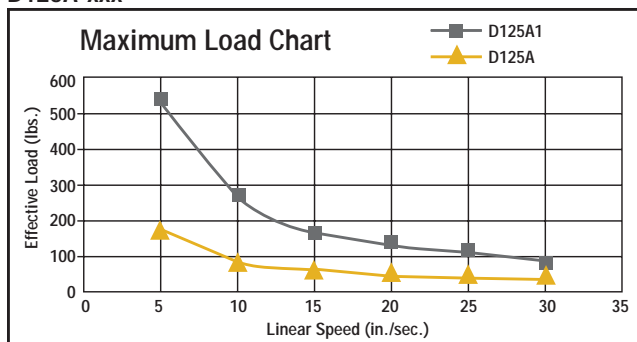
OPTIONAL MOTOR MOUNT ATTACHMENT



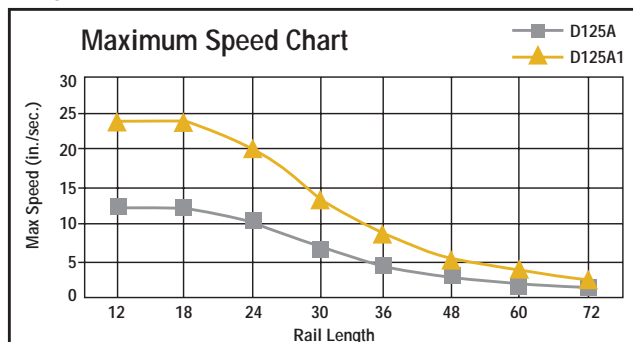
| PART NO. | MOTOR MOUNT | B | E | D |
|----------|-------------|-----|-----|------|
| 125N | NEMA 34 | 3.5 | 2.3 | 4.25 |

LOAD & SPEED DATA FOR STANDARD LEAD SCREW DRIVEN DOLPHIN GUIDES (HORIZONTAL ORIENTATION)

D125A-xxx



D125A-xxx



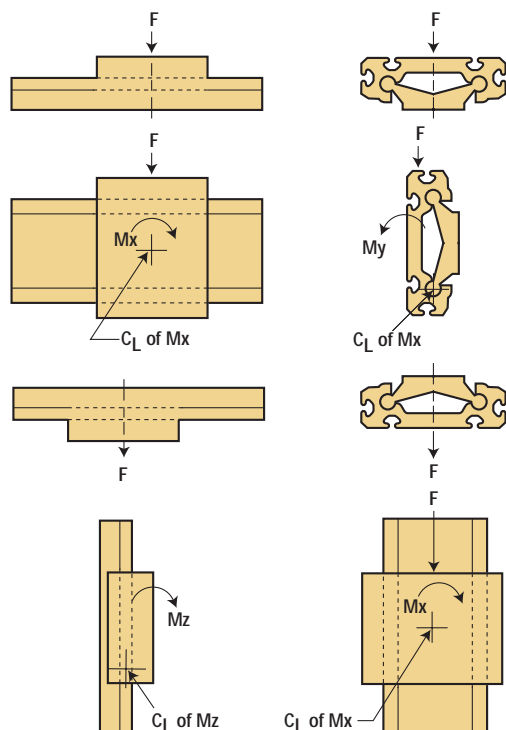
NOTE: Optional drives are available: ball screws, cylinders, linear motors, and belt drives.

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STATIC LOADS WITH NO DRIVE MECHANISM

The numbers below are for guides only in a static condition. The drive mechanism selected (lead screw, ball screw, cylinder, etc.) becomes the limiting factor when calculating maximum load and speed capacities. The user is responsible for determining the maximum capacity for the complete system based on the manufacturer's data for their drive configuration.



Designs must also operate within the following dynamic parameters:

- Maximum Loads (P) = from charts above
- Maximum Speed Dry (V) = 300 ft./min. (1.524 m/s)
- Maximum PV (pressure x velocity) = 20,000 (0.70 N/mm² x m/s)
- PV Example: Load = 85 psi
Speed = 180 ft./min.
PV = 85 x 180 = 15,300 PV

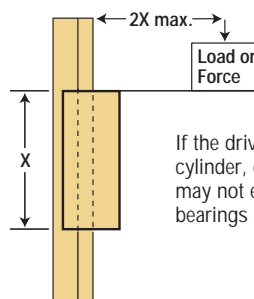
NOTE: FrelonGold® bearing material coefficient of friction is 0.125.

| SIZE | F MAX LOAD (lbs.) | F MAX LOAD (N) |
|------|-------------------------|----------------------|
| D075 | 500 | 2,224 |
| D100 | 750 | 3,336 |
| D125 | 1,000 | 4,448 |

| SIZE | F MAX LOAD (lbs.) | Mx (in./lbs.) | My (in./lbs.) | F MAX LOAD (N) | Mx (Nm) | My (Nm) |
|------|-------------------------|------------------|------------------|----------------------|------------|------------|
| D075 | 250 | 340 | 350 | 1,112 | 38 | 40 |
| D100 | 375 | 650 | 730 | 1,668 | 73 | 82 |
| D125 | 500 | 1,200 | 1,225 | 2,224 | 136 | 138 |

| SIZE | F MAX LOAD (lbs.) | F MAX LOAD (N) |
|------|-------------------------|----------------------|
| D075 | 125 | 556 |
| D100 | 190 | 845 |
| D125 | 250 | 1,112 |

| SIZE | Mx (in./lbs.) | My (in./lbs.) | Mx (Nm) | My (Nm) |
|------|------------------|------------------|------------|------------|
| D075 | 340 | 350 | 38 | 40 |
| D100 | 650 | 730 | 73 | 82 |
| D125 | 1,200 | 1,225 | 136 | 138 |



If the drive mechanism (lead screw, ball screw, cylinder, etc.) is centered on the carriage, the load may not exceed a 2:1 ratio to the length of the bearings or binding will occur.

ORDERING INFORMATION

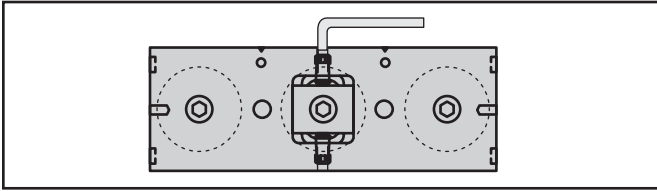
| | | | | | | | | | |
|--|----------|----------|------------|----------|------------|-------------|----------|----------|-----------|
| D | L | M | 100 | A | CHB | -xxx | P | M | -X |
| <p>Series D - Standard Dolphin Guides</p> <p>Carriage Options No Entry - Standard Dolphin Carriage L - Extended Length Carriage</p> <p>Mounting Hole Options No Entry - Standard Inch Sizes M - Metric Size Mounting Holes</p> <p>Nominal Size 75mm, 100mm, 125mm Based on mm from shaft center-to-center</p> <p>Drive Options No Entry - No Drive Mechanism A - Right Hand Lead Screw with Standard Pitch A1 - Right Hand Lead Screw with Optional Pitch (See pages 196, 197 & 198 for specifications.) Notes: Screw options require attaching collar. Call the factory for other optional drive mechanisms.</p> <p>Number of Carriages</p> <p>Data Entry Option No Entry - No Options M - Optional MMI Keypad (Man-to-Machine Interface)</p> <p>Power and Control Options No Entry - No Power Options P - Standard Motor with Motor Mount, Programmable Drive, Cables and Software (must have "N" in Drive Mounting Option). Note: Kits available for NEMA motor</p> <p>Overall Rail Length "D" Series - Enter Length of Rail in Inches "DM" Series - Enter Length of Rail in mm</p> <p>Drive Mounting Options No Entry - No Drive Mounting Options H - Hand Crank N - NEMA Standard Motor Mount (See pages 196, 197 & 198 for specifications.) HB - Handbrake (requires handcrank and screw) CHB - Carriage Handbrake (not offered with screw driven options)</p> | | | | | | | | | |

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ADJUSTING SLIDE PRELOAD

The preload of a slide should be properly set from the factory, but if you must adjust it yourself, here are some simple steps to follow.

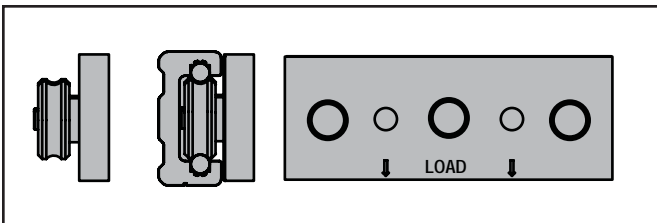


Metric Series

1. To loosen the eccentric (center) roller, use an Allen wrench to loosen the screw that is on the side of the mounting block. Be sure to loosen the screw that is on the side of the direction you want the roller to move.
2. When it is loose, tighten the set screw on the opposite side of the block. This will move the roller and mounting stud.
3. Make a very small change, retighten the first set screw, and try it out. If the preload is too loose, you will feel the slider rock and you will hear a slight "clunk." If it is too tight, the slider will roll rough, like riding a bicycle on a gravel road.
4. Move the slide along the length of the rail by hand. Adjust it so that it does not feel loose anywhere. It may take you several times to get the proper adjustment.
5. Make sure the rollers are tightened with the proper adjustment prior to operation.

SLIDER ORIENTATION

The 3-Roller slide should be installed in the rail so the load is shared on the two outside rollers. The orientation marks indicate how to align the slider with the load direction.



LUBRICATION - RAILS & BEARINGS

The rollers are internally lubricated for life, but the rails must always have a layer of grease. As a guideline, reapply fresh grease every 50,000 cycles.

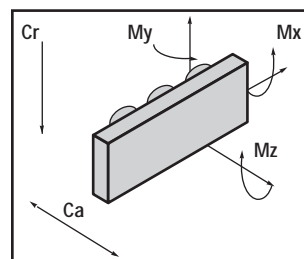
MOUNTING SLIDER BODY & MAX CAPACITY

Below are recommended bolt tightening torques for mounting to the slide body. Be sure to use bolts that are long enough to obtain full thread engagement.

MOUNTING TORQUES

| PART NUMBER | IN-LBS. TORQUE | NM TORQUE |
|----------------|----------------|-----------|
| RRS14 RRS30 | 25 | 3 |
| RRS18 RRS45 | 70 | 8 |
| RRS65 | 150 | 24 |

LIFE CALCULATIONS



Cd = Dynamic capacity (LC)
Cr = Radial capacity
Ca = Axial capacity
Mx, My, Mz = Moment capacities

Conversions

newton (N) x 0.2248 = lbs.
(lbf) meter x 0.0397 = inch
newton - meter (Nm) x 8.851 = in.-lbs.

INCH SERIES

| PART NUMBER | Cr (lbs.) | Ca (lbs.) | Mx (in.-lbs.) | My (in.-lbs.) | Mz (in.-lbs.) |
|-------------|--------------|--------------|------------------|------------------|------------------|
| RRS14 | 336 | 79 | 21 | 54 | 201 |
| RRS18 | 847 | 168 | 67 | 153 | 677 |

METRIC SERIES

| PART NUMBER | Cr (N) | Ca (N) | M (Nm) | My (Nm) | Mz (Nm) |
|-------------|-----------|-----------|-----------|------------|------------|
| RRS30 | 1,002 | 330 | 1.8 | 5.5 | 12.5 |
| RRS45 | 2,660 | 827 | 6.6 | 19.9 | 47.9 |
| RRS65 | 5,950 | 1,678 | 19.0 | 58.2 | 154.7 |

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LIFE CALCULATIONS (cont.)

To calculate an approximate life for redi-rail sliders, use the following equation.

Inch Series

The value of L_{RR} is in meters

$$L_{RR} = 10^7 \cdot (Cd / (Load_{Equiv} \cdot RF))^{3.0} \text{ (inches)}$$

LC_{RRS} = Slider Life Capacity which is found in the table

$Load_{Equiv}$ = Equivalent Radial Load found from the following equation:

$$Load_{Equiv} = Cr \cdot \left(\frac{Load_{Axial}}{Ca} + \frac{M_x}{M_{x \text{ Max}}} + \frac{M_y}{M_{y \text{ Max}}} + \frac{M_z}{M_{z \text{ Max}}} \right) + Load_{Radial}$$

INCH SERIES

| PART NUMBER | MAX SPEED (fpm) | MAX SPEED (ipm) | Cd |
|-------------|-----------------|-----------------|-------|
| RRS14 | 500 | 6000 | 421 |
| RRS18 | 800 | 9,600 | 1,032 |

Metric Series

The value of L_{RR} is in meters

$$L_{RR} = (Cd / Load_{Equiv} \cdot RF)^{3.0} \times 100,000 \text{ meters}$$

Cd = Slider Life Capacity which is found in the table

$Load_{Equiv}$ = Equivalent Radial Load found from the following equation:

$$Load_{Equiv} = Cr \cdot \left(\frac{Load_{Axial}}{Ca} + \frac{M_x}{M_{x \text{ Max}}} + \frac{M_y}{M_{y \text{ Max}}} + \frac{M_z}{M_{z \text{ Max}}} \right) + Load_{Radial}$$

METRIC SERIES

| PART NUMBER | MAX SPEED (m/min) | MAX SPEED (m/s) | Cd (N) |
|-------------|-------------------|-----------------|--------|
| RR30 | 300 | 5.0 | 1,440 |
| RR45 | 420 | 7.0 | 4,404 |
| RR65 | 480 | 8.0 | 10,200 |

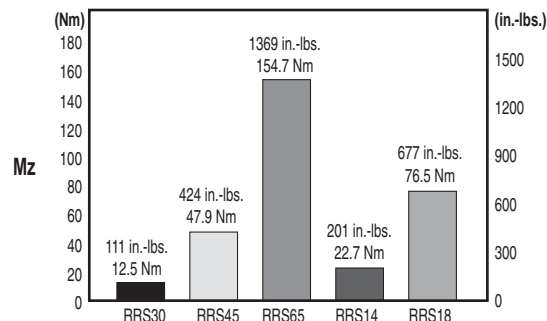
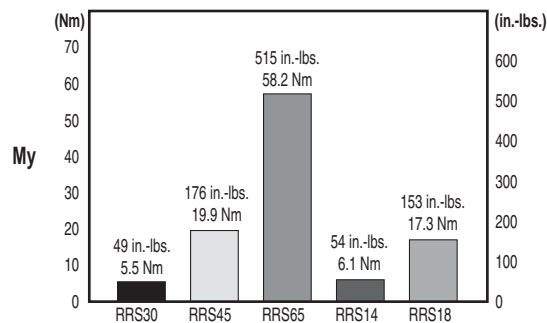
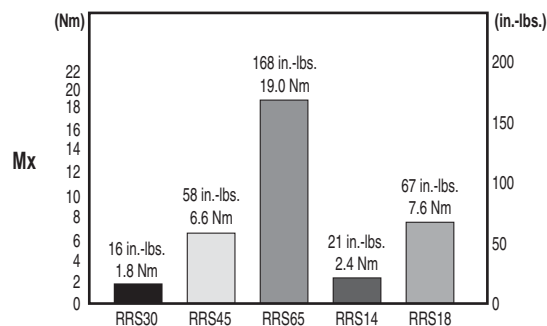
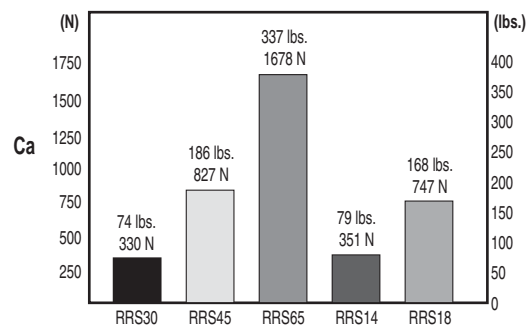
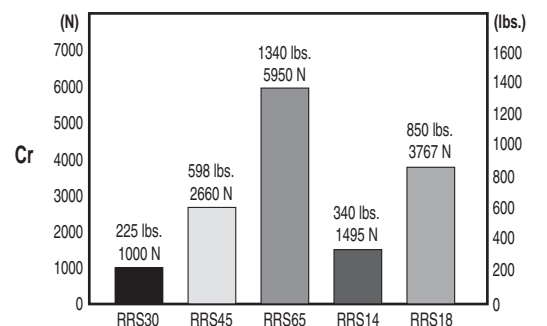
REDUCTION FACTOR

NOTE: Reduction factors apply to both inch and metric series

RF = Reduction Factor of the Application or Environment

- = 1.0 to 1.5 for very clean, low speed (<30% Max), low shocks
- = 1.5 to 2.0 for some dirtiness, moderate speed (30% Max to 75% Max), medium shocks and vibration
- = 2.0 to 3.0 for heavy dirt & dust, high speeds (>75% Max) and heavy shocks & vibrations

LOAD COMPARISON GRAPHS



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Redi-Rail® Linear Guides

RRS14 Slides (Inch)

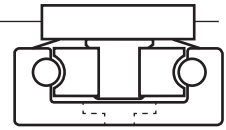
Linear Motion Systems

RRS14



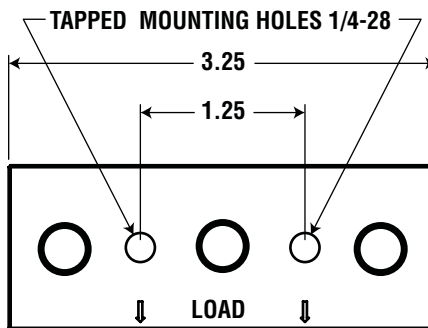
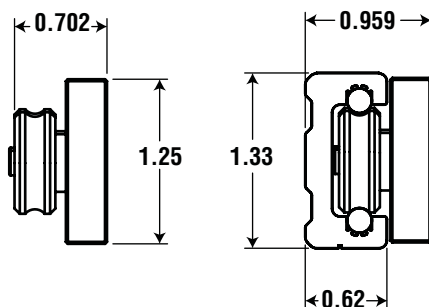
CHARACTERISTICS

- Low Cost Precision
- Factory Adjusted
- Sealed Bearings
- Solid Bearing Mounting System
- 5.79m Lengths
- Gothic Arch Rollers
- Off the Shelf Delivery



FEATURES

- Body is aluminum alloy.
- Rollers are 52100 steel, sealed against contamination, and are mounted with hardened steel mounting accessories.
- Not available with seals.
- Maximum temperature approximately 180°F.
- **NEW** coated Redi-Rail FDA compliant, call 800-962-8979 for details.



NOTE: Slide weight 0.25 lbs./ea.

ORDER INFORMATION



EXAMPLE:
RRS14 - Redi-Rail Slider size 14

REDI-RAIL Slide

Nominal Size

14 = Dimension

18 = Dimension (page 204)

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Redi-Rail® Linear Guides

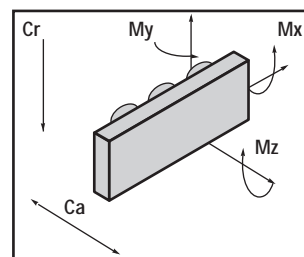
RR14 Rails (Inch) - Load Capacity to 340 lbs.

Linear Motion Systems

RR14



LIFE CALCULATIONS



Cd = Dynamic capacity (LC)
 Cr = Radial capacity
 Ca = Axial capacity
 Mx, My, Mz = Moment capacities

Conversions

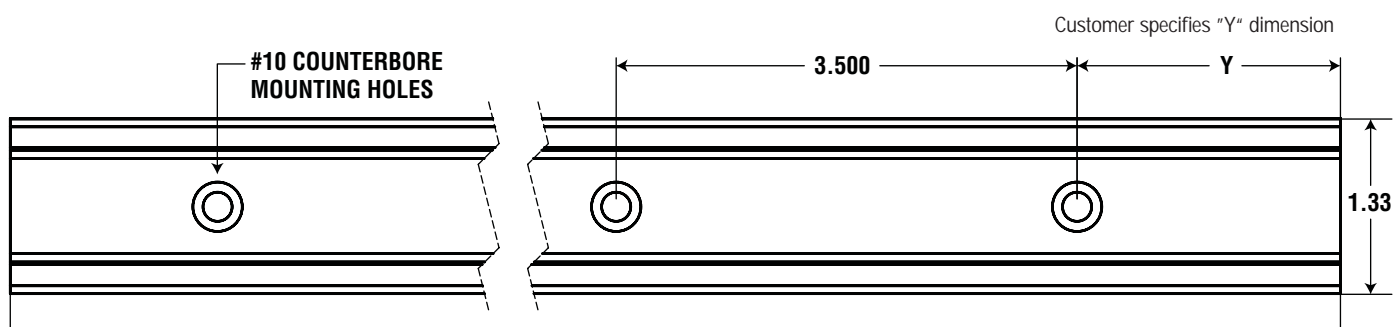
newton (N) x 0.2248 = lbs.
 (lbf) meter x 0.0397 = inch
 newton - meter (Nm) x 8.851 = in.-lbs.

| PART NUMBER | Cd (lbs.) | Cr (lbs.) | Ca (lbs.) | Mx (in.-lbs.) | My (in.-lbs.) | Mz (in.-lbs.) |
|-------------|-----------|-----------|-----------|---------------|---------------|---------------|
| RRS14 | 421 | 340 | 79 | 21 | 54 | 201 |

SUGGESTED RAIL LENGTHS & DIMENSIONS (Inches)

| PART NUMBER | LENGTH | HOLES | Y | WT. (lbs./ft.) |
|-------------|--------|-------|------|----------------|
| RR14-12 | 12 | 4 | 0.75 | 0.64 |
| RR14-24 | 24 | 7 | 1.50 | |
| RR14-36 | 36 | 11 | 0.50 | |
| RR14-48 | 48 | 14 | 1.25 | |
| RR14-60 | 60 | 17 | 2.00 | |
| RR14-72 | 72 | 21 | 1.00 | |
| RR14-84 | 84 | 24 | 1.75 | |
| RR14-96 | 96 | 28 | 0.75 | |

NOTE: Suggested lengths can be cut and are available up to 19' (6m).



ORDER INFORMATION

EXAMPLE: RR14-36
 Redi-Rail size 14 cut to 36" long

RR 14 XX CR

REDI-RAIL ——— Nominal Size ——— Corrosion Resistance
 14 = Dimension 18 = Dimension (page 205)
 Lengths
 Suggested lengths can be cut up to 19'

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Redi-Rail® Linear Guides

RRS18 Slides (Inch)

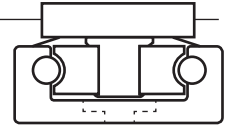
Linear Motion Systems

RRS18



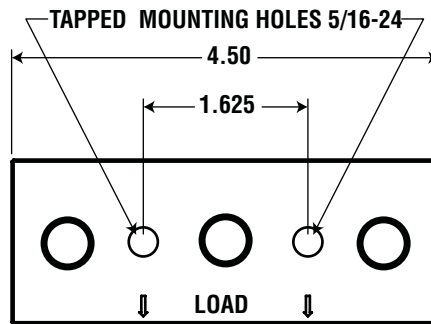
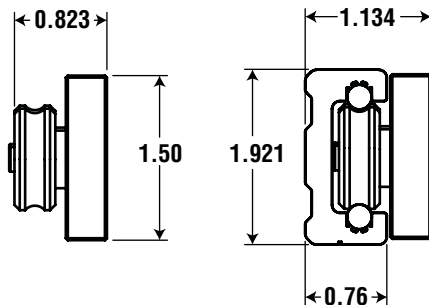
CHARACTERISTICS

- Low Cost Precision
- Factory Adjusted
- Sealed Bearings
- Solid Bearing Mounting System
- 5.79m Lengths
- Gothic Arch Rollers
- Off the Shelf Delivery



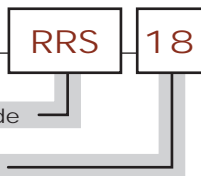
FEATURES

- Body is aluminum alloy.
- Rollers are 52100 steel, sealed against contamination, and are mounted with hardened steel mounting accessories.
- Not available with seals.
- Maximum temperature approximately 180°F.
- **NEW** coated Redi-Rail FDA compliant, call 800-962-8979 for details.



NOTE: Slide weight 0.50 lbs./ea.

ORDER INFORMATION



EXAMPLE:

RRS18 - Redi-Rail Slider size 18

14 = Dimension (page 202)
18 = Dimension

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Redi-Rail® Linear Guides

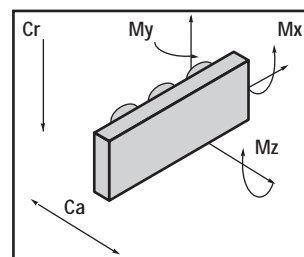
RR18 Rails (Inch) - Load Capacity to 850 lbs.

Linear Motion Systems

RR18



LIFE CALCULATIONS



Cd = Dynamic capacity (LC)
 Cr = Radial capacity
 Ca = Axial capacity
 Mx, My, Mz = Moment capacities

Conversions

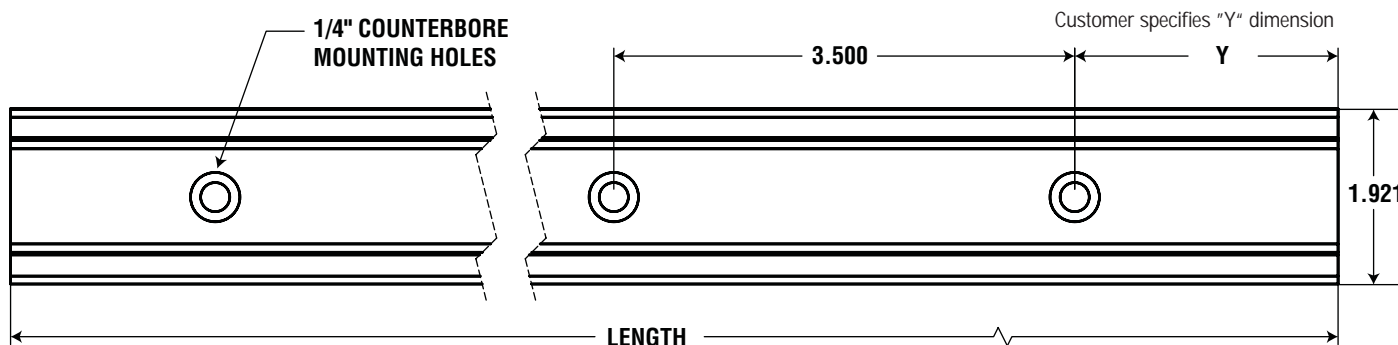
newton (N) x 0.2248 = lbs.
 (lbf) meter x 0.0397 = inch
 newton - meter (Nm) x 8.851 = in.-lbs.

| PART NUMBER | Cd (lbs.) | Cr (lbs.) | Ca (lbs.) | Mx (in.-lbs.) | My (in.-lbs.) | Mz (in.-lbs.) |
|-------------|-----------|-----------|-----------|---------------|---------------|---------------|
| RRS18 | 1,032 | 850 | 168 | 67 | 153 | 677 |

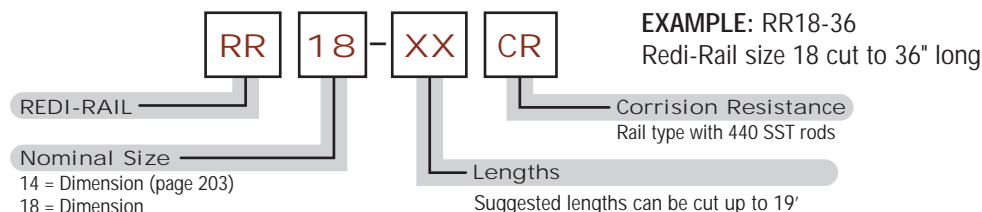
SUGGESTED RAIL LENGTHS & DIMENSIONS (Inches)

| PART NUMBER | LENGTH | HOLES | Y | WT. (lbs./ft.) |
|-------------|--------|-------|------|----------------|
| RR18-12 | 12 | 4 | 0.75 | 1.11 |
| RR18-24 | 24 | 7 | 1.50 | |
| RR18-36 | 36 | 11 | 0.50 | |
| RR18-48 | 48 | 14 | 1.25 | |
| RR18-60 | 60 | 17 | 2.00 | |
| RR18-72 | 72 | 21 | 1.00 | |
| RR18-84 | 84 | 24 | 1.75 | |
| RR18-96 | 96 | 28 | 0.75 | |

NOTE: Suggested lengths can be cut and are available up to 19' (6m).



ORDER INFORMATION



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Redi-Rail® Linear Guides

RRS30 Slides (Metric)

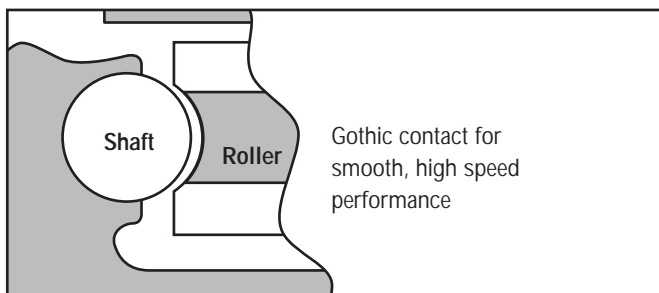
Linear Motion Systems

RRS30



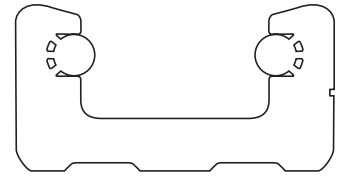
- Integral Seals
- Easy Adjusting

ROLLER/SHAFT INTERFACE



CHARACTERISTICS

- 5.79 Meter Lengths
- Sealed Bearings
- Off Shelf Delivery
- Gothic Arch Rollers
- Solid Roller Mounting

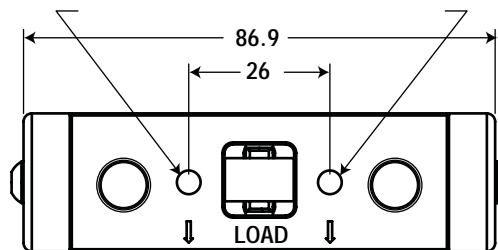
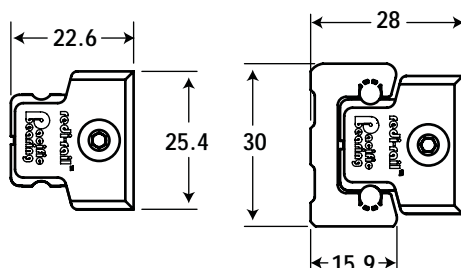


APPLICATIONS

- Automation
- Assembly
- Material Handling
- Packaging

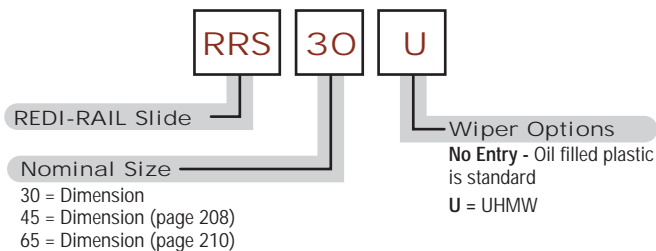
FEATURES

- Slider body is aluminum alloy.
- Maximum temperature approximately 80°C.
- Gothic rollers are 52100 steel, hardened and ground, lubricated for life and sealed against contamination.
- Oil-filled plastic or UHMW spring loaded seals keep contamination clear of the rollers.
- Custom roller configurations can be designed, engineered, and manufactured to meet your specific requirements.
- Patented pre-load adjustment eliminates eccentrics.
- **NEW** coated Redi-Rail FDA compliant, call 800-962-8979 for details.



NOTE: Slide weight .09 Kg

ORDER INFORMATION



EXAMPLE: RRS30U

Redi-Rail Slider size 30 with UHMW seals

NOTES: Felt wipers have been replaced by low friction oil impregnated plastic wipers.
No entry in the part # results in use of oil impregnated wiper.

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Redi-Rail® Linear Guides

RR30 Rails (Metric) - Load Capacity to 1000 N

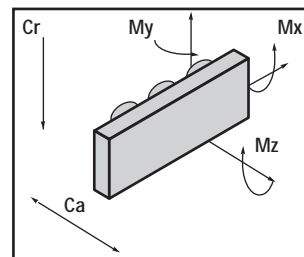
Linear Motion Systems

RR30



- Rail is aluminum alloy with hardened and ground steel raceways inserted.
- Custom solutions can be designed, engineered, and manufactured to meet your specific requirements.
- Maximum lengths up to 5800mm are available.
- Patented preload adjustment
- Joinable for even longer runs.
- Cut-to-length

LIFE CALCULATIONS

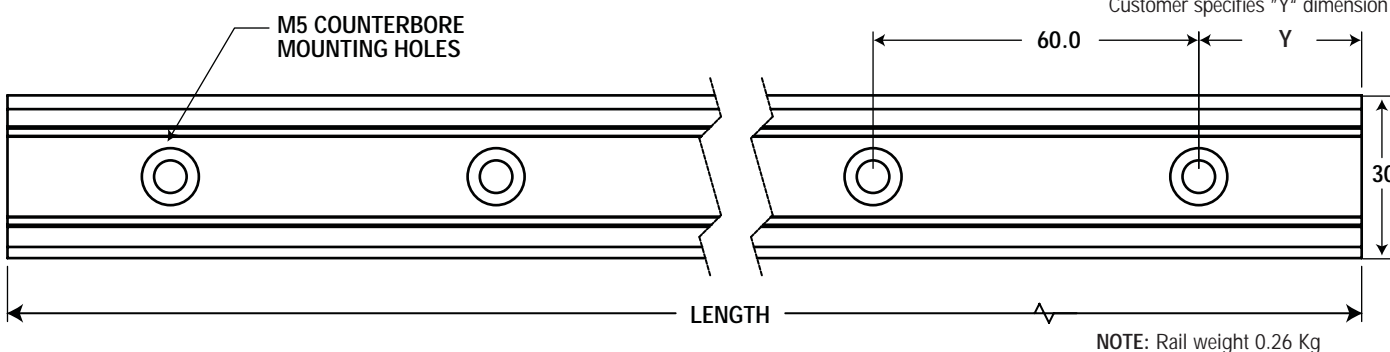


Cd = Dynamic capacity (LC)
Cr = Radial capacity
Ca = Axial capacity
Mx, My, Mz = Moment capacities

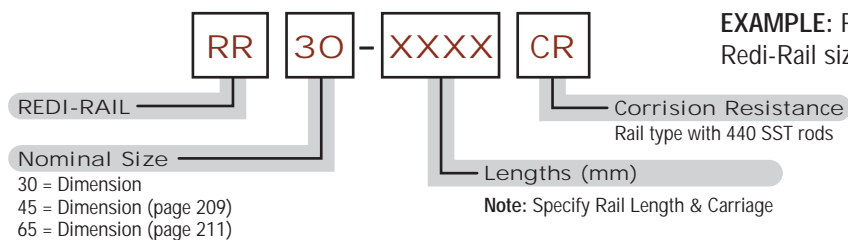
Conversions

newton (N) x 0.2248 = lbs.
(lbf) meter x 0.0397 = inch
newton - meter (Nm) x 8.851 = in.-lbs.

| PART NUMBER | Cd (N) | Cr (N) | Ca (N) | Mx (Nm) | My (Nm) | Mz (Nm) |
|-------------|--------|--------|--------|---------|---------|---------|
| RRS30 | 1,440 | 1,000 | 330 | 1.8 | 5.5 | 12.5 |



ORDER INFORMATION



EXAMPLE: RR30-1200
Redi-Rail size 30 cut to 1200mm long

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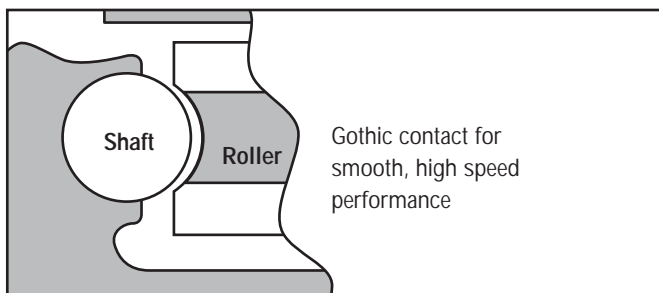


RRS45



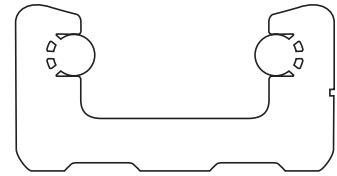
- Integral Seals
- Easy Adjusting

ROLLER/SHAFT INTERFACE



CHARACTERISTICS

- 5.79 Meter Lengths
- Sealed Bearings
- Off Shelf Delivery
- Gothic Arch Rollers
- Solid Roller Mounting

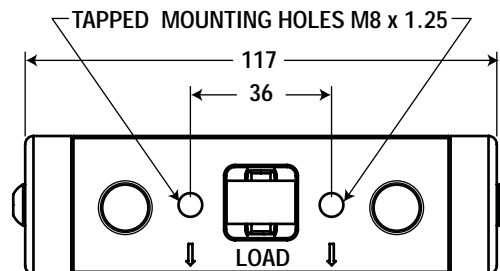
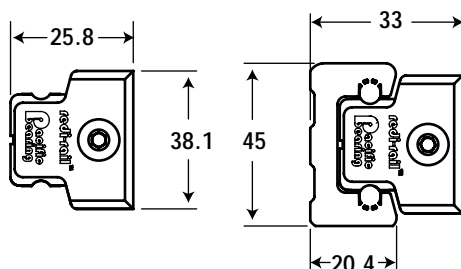


APPLICATIONS

- Automation
- Assembly
- Material Handling
- Packaging

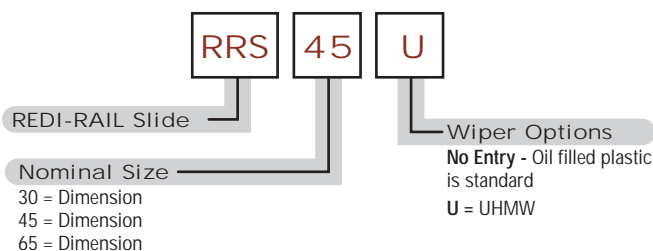
FEATURES

- Slider body is aluminum alloy.
- Maximum temperature approximately 80°C.
- Gothic rollers are 52100 steel, hardened and ground, lubricated for life and sealed against contamination.
- Oil-filled plastic or UHMW spring loaded seals keep contamination clear of the rollers.
- Custom roller configurations can be designed, engineered, and manufactured to meet your specific requirements.
- Patented pre-load adjustment eliminates eccentrics.
- **NEW** coated Redi-Rail FDA compliant, call 800-962-8979 for details.



NOTE: Slide weight .23 Kg

ORDER INFORMATION



EXAMPLE: RRS45U

Redi-Rail Slider size 45 with UHMW seals

NOTES: Felt wipers have been replaced by low friction oil impregnated plastic wipers.
 No entry in the part # results in use of oil impregnated wiper.

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Redi-Rail® Linear Guides

RR45 Rails (Metric) Load Capacity to 2660 N

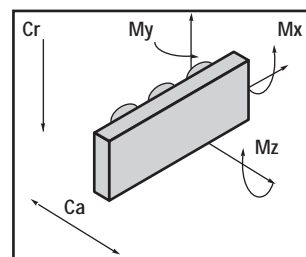
Linear Motion Systems

RR45



- Rail is aluminum alloy with hardened and ground steel raceways inserted.
- Custom solutions can be designed, engineered, and manufactured to meet your specific requirements.
- Maximum lengths up to 5800mm are available.
- Patented preload adjustment
- Joinable for even longer runs.
- Cut-to-length

LIFE CALCULATIONS

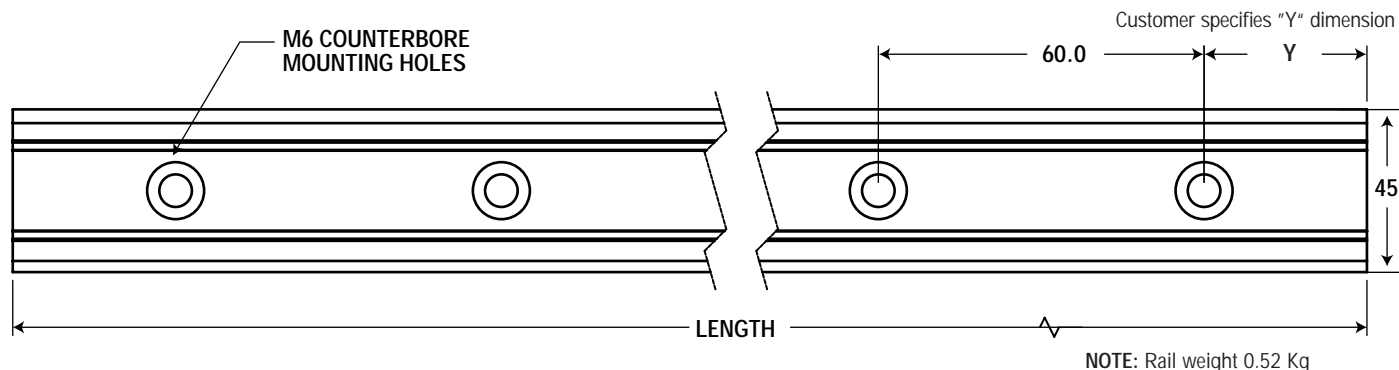


Cd = Dynamic capacity (LC)
Cr = Radial capacity
Ca = Axial capacity
Mx, My, Mz = Moment capacities

Conversions

newton (N) x 0.2248 = lbs.
(lbf) meter x 0.0397 = inch
newton - meter (Nm) x 8.851 = in.-lbs.

| PART NUMBER | Cd (N) | Cr (N) | Ca (N) | Mx (Nm) | My (Nm) | Mz (Nm) |
|-------------|--------|--------|--------|---------|---------|---------|
| RRS45 | 4404 | 2660 | 827 | 6.6 | 19.9 | 47.9 |



ORDER INFORMATION

EXAMPLE: RR45-1200
Redi-Rail size 45 cut to 1200mm long

RR 45 - XXXX CR

REDI-RAIL ————

Nominal Size ————

30 = Dimension
45 = Dimension
65 = Dimension

Corrosion Resistance
Rail type with 440 SST rods

Lengths (mm)

Note: Specify Rail Length & Carriage

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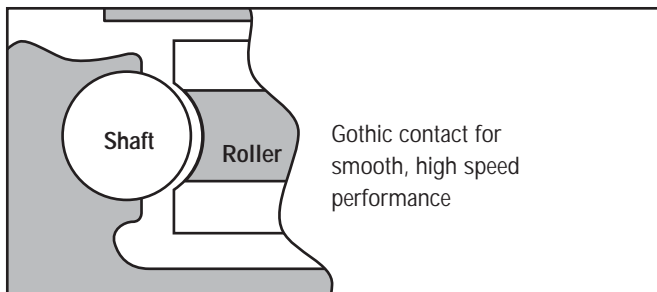


RRS65



- Integral Seals
- Easy Adjusting

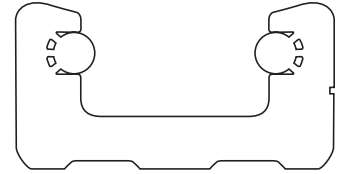
ROLLER/SHAFT INTERFACE



Gothic contact for smooth, high speed performance

CHARACTERISTICS

- 5.79 Meter Lengths
- Sealed Bearings
- Off Shelf Delivery
- Gothic Arch Rollers
- Solid Roller Mounting

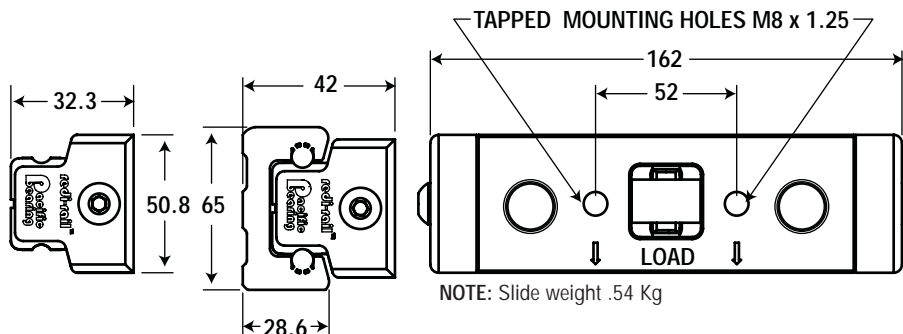


APPLICATIONS

- Automation
- Assembly
- Material Handling
- Packaging

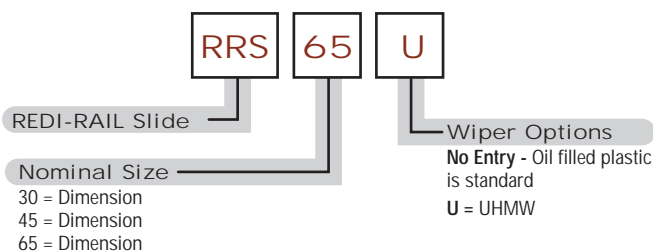
FEATURES

- Slider body is aluminum alloy.
- Maximum temperature approximately 80°C.
- Gothic rollers are 52100 steel, hardened and ground, lubricated for life and sealed against contamination.
- Oil-filled plastic or UHMW spring loaded seals keep contamination clear of the rollers.
- Custom roller configurations can be designed, engineered, and manufactured to meet your specific requirements.
- Patented pre-load adjustment eliminates eccentrics.
- **NEW** coated Redi-Rail FDA compliant, call 800-962-8979 for details.



NOTE: Slide weight .54 Kg

ORDER INFORMATION



EXAMPLE: RRS65U

Redi-Rail Slider size 65 with UHMW seals

NOTES: Felt wipers have been replaced by low friction oil impregnated plastic wipers.
No entry in the part # results in use of oil impregnated wiper.

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Redi-Rail® Linear Guides

RR65 Rails (Metric) - Load Capacity up to 5,950 N

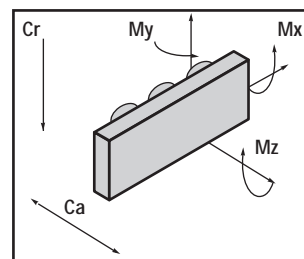
Linear Motion Systems

RR65



- Rail is aluminum alloy with hardened and ground steel raceways inserted.
- Custom solutions can be designed, engineered, and manufactured to meet your specific requirements.
- Maximum lengths up to 5800mm are available.
- Patented preload adjustment
- Joinable for even longer runs.
- Cut-to-length

LIFE CALCULATIONS

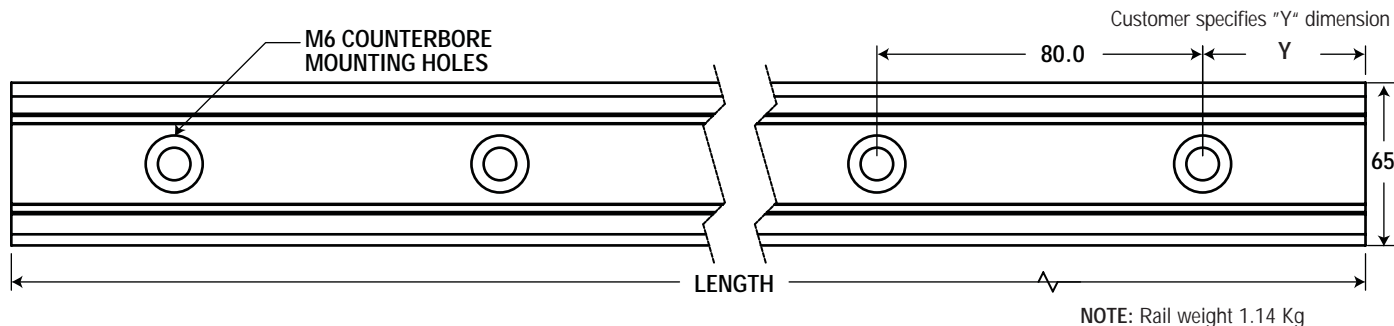


Cd = Dynamic capacity (LC)
 Cr = Radial capacity
 Ca = Axial capacity
 Mx, My, Mz = Moment capacities

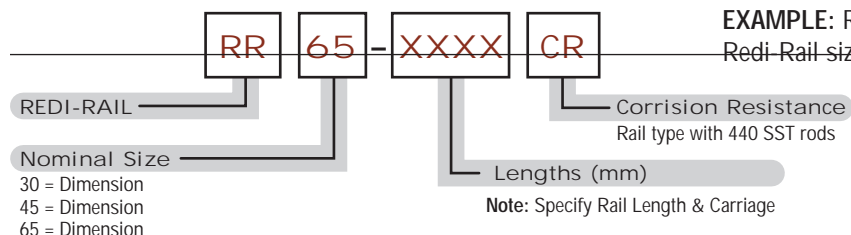
Conversions

newton (N) x 0.2248 = lbs.
 (lbf) meter x 0.0397 = inch
 newton - meter (Nm) x 8.851 = in.-lbs.

| PART NUMBER | Cd (N) | Cr (N) | Ca (N) | Mx (Nm) | My (Nm) | Mz (Nm) |
|-------------|--------|--------|--------|---------|---------|---------|
| RRS65 | 10200 | 5950 | 1678 | 19.0 | 58.2 | 154.7 |



ORDER INFORMATION



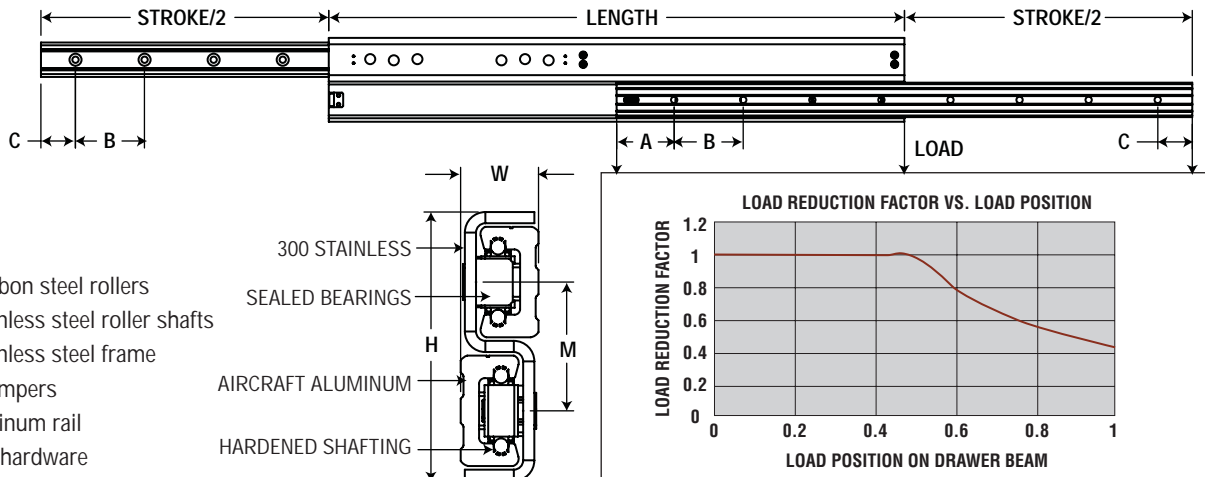
EXAMPLE: RR65-1200
 Redi Rail size 65 cut to 1200mm long

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PRODUCT OVERVIEW & APPLICATION



- Strokes range from 16" to 48"
- S shape stainless steel frame ensures heavy duty telescoping application
- Preloaded Redi-Rail assures precision movement
- Follow instructions on how to mount left-handed or right-handed section

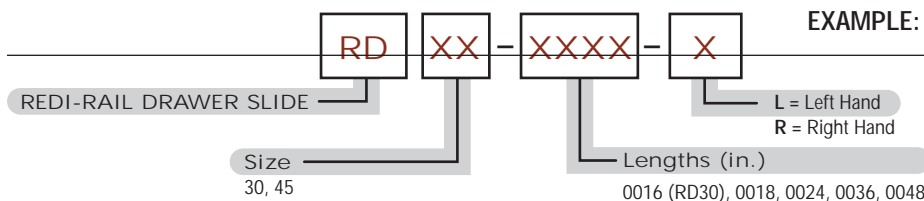


NOTE: Load rated for a pair of slides when the load is applied on the middle of drawer beams. A load reduction factor shall be used if the load is applied toward the front of drawers.

| PART NUMBER | LENGTH (in.) | STROKE (in.) | CAPACITY PER PAIR | | MOUNTING DATA | | | | SCREW SIZE FOR MOUNTING | H (in.) | W (in.) | M (in.) | WEIGHT (lbs.) |
|-------------|-----------------|-----------------|-------------------|-----|---------------|------------|------------|-------|-------------------------------|------------|------------|------------|------------------|
| | | | | | A (in.) | B (in.) | C (in.) | QTY. | | | | | |
| RD30-0016 | 16.00 | 16.00 | 1,150 | 259 | 1.25 | 2.36 | 0.58 | 7.00 | (#10) M5 | 3.1 | .83 | 1.39 | 4.85 |
| RD30-0018 | 18.00 | 18.00 | 1,265 | 285 | 1.10 | 2.36 | 0.37 | 8.00 | (#10) M5 | 3.1 | .83 | 1.39 | 5.32 |
| RD30-0024 | 24.00 | 24.00 | 1,391 | 313 | 1.25 | 2.36 | 1.49 | 12.00 | (#10) M5 | 3.1 | .83 | 1.39 | 7.27 |
| RD30-0036 | 36.00 | 36.00 | 1,489 | 335 | 1.25 | 2.36 | 1.68 | 17.00 | (#10) M5 | 3.1 | .83 | 1.39 | 9.70 |
| RD30-0048 | 48.00 | 48.00 | 1,542 | 347 | 1.25 | 2.36 | 1.87 | 21.00 | (#10) M5 | 3.1 | .83 | 1.39 | 12.13 |
| RD45-0018 | 18.00 | 18.00 | 3,158 | 710 | 1.75 | 2.36 | 2.08 | 7.00 | (1/4") M6 | 4.3 | 1.12 | 2.05 | 9.68 |
| RD45-0024 | 24.00 | 24.00 | 3,673 | 826 | 1.38 | 2.36 | 1.36 | 12.00 | (1/4") M6 | 4.3 | 1.12 | 2.05 | 13.23 |
| RD45-0036 | 36.00 | 36.00 | 3,919 | 881 | 1.38 | 2.36 | 1.55 | 17.00 | (1/4") M6 | 4.3 | 1.12 | 2.05 | 17.64 |
| RD45-0048 | 48.00 | 48.00 | 4,061 | 913 | 1.38 | 2.36 | 1.74 | 21.00 | (1/4") M6 | 4.3 | 1.12 | 2.05 | 22.05 |

ORDER INFORMATION

EXAMPLE: RDXX-XXXX-X



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Redi-Rail® Drawer Slides

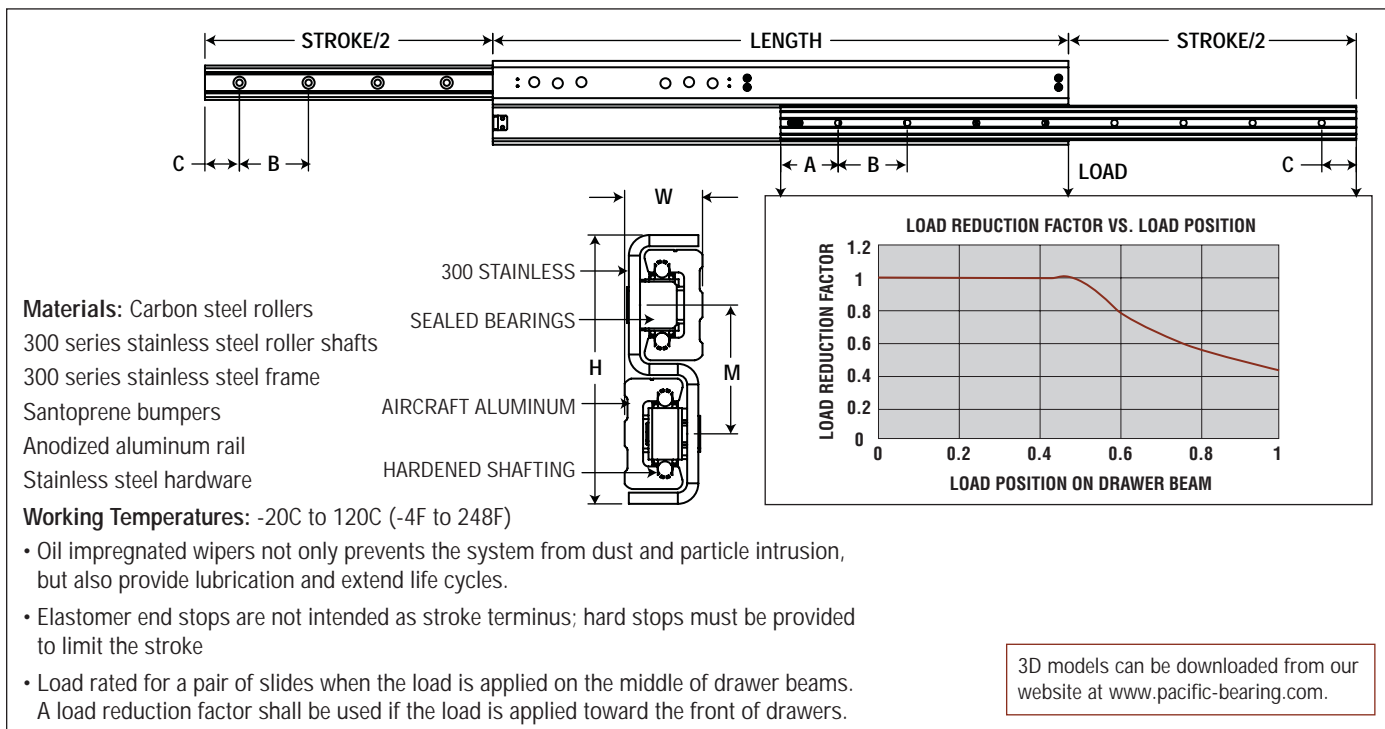
Metric Series - Product Overview & Application

Linear Motion Systems

PRODUCT OVERVIEW & APPLICATION



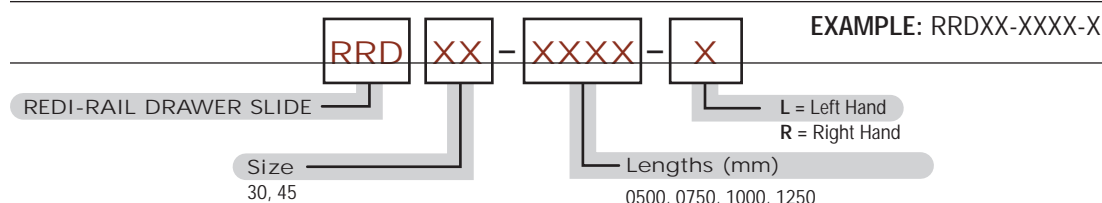
- Strokes range from 500mm to 1250mm
- S shape stainless steel frame ensures heavy duty telescoping application
- Preloaded Redi-Rail assures precision movement
- Follow instructions on how to mount left-handed or right-handed section



NOTE: Load rated for a pair of slides when the load is applied on the middle of drawer beams. A load reduction factor shall be used if the load is applied toward the front of drawers.

| PART NUMBER | LENGTH (mm) | STROKE (mm) | CAPACITY PER PAIR | | MOUNTING DATA | | | | SCREW SIZE FOR MOUNTING | H (mm) | W (mm) | M (mm) | WEIGHT (kg) |
|-------------|----------------|----------------|-------------------|-----|---------------|-----------|-----------|------|-------------------------------|-----------|-----------|-----------|----------------|
| | | | | | A (mm) | B (mm) | C (mm) | QTY. | | | | | |
| RRD30-0500 | 500 | 500 | 1,150 | 259 | 50 | 60 | 30 | 8 | M5 | 79 | 21.1 | 35.3 | 2.2 |
| RRD30-0750 | 750 | 750 | 1,391 | 313 | 40 | 60 | 50 | 12 | M5 | 79 | 21.1 | 35.3 | 3.3 |
| RRD30-1000 | 1000 | 1000 | 1,489 | 335 | 30 | 60 | 10 | 17 | M5 | 79 | 21.1 | 35.3 | 4.4 |
| RRD30-1250 | 1,250 | 1,250 | 1,542 | 347 | 30 | 60 | 20 | 21 | M5 | 79 | 21.1 | 35.3 | 5.5 |
| RRD45-0500 | 500 | 500 | 2,871 | 645 | 50 | 60 | 30 | 8 | M6 | 109 | 28.4 | 52.1 | 4.0 |
| RRD45-0750 | 750 | 750 | 3,673 | 826 | 40 | 60 | 50 | 12 | M6 | 109 | 28.4 | 52.1 | 6.0 |
| RRD45-1000 | 1000 | 1000 | 3,919 | 881 | 30 | 60 | 10 | 17 | M6 | 109 | 28.4 | 52.1 | 8.0 |
| RRD45-1250 | 1,250 | 1,250 | 4,061 | 913 | 30 | 60 | 20 | 21 | M6 | 109 | 28.4 | 52.1 | 10.0 |

ORDER INFORMATION



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Redi-Rail® Steel Linear Guides

Innovation in Roller-Based Linear Systems

Linear Motion Systems

IMPROVED LOAD CAPACITY

- double row precision ball-bearing rollers
- high load capacity, both radial and axial
- hardened and honed raceways

IMPROVED STIFFNESS

- optimised rail design
- roller bearings preloaded for stiffness

INCREASED SPEED AND LOWER NOISE

- high precision rollers
- super finished raceways
- low noise

EASY ASSEMBLY

- self-aligning and self-adjusting components, compensating for assembly/structural errors

GREAT DESIGN

- innovative and attractive look
- unique black finish



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IMPROVED LIFE TIME OF ALL COMPONENTS

- innovative materials
- innovative black surface hardening technology
- innovative wear resistance



IMPROVED CORROSION-RESISTANCE

- overall corrosion resistance, due to surface treatment, including raceways
- improved corrosion resistance compared traditional zinc plating

IMPROVED PROTECTION

- dust protection for the entire product range



LOW MAINTENANCE REQUIREMENTS

- self-lubricating system on all sliders and telescopic rails
- rollers lubricated for life



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SYSTEM LIFE



The actual lifetime of the system (rails, slides, and rollers) depends on the applied load, but is also influenced by factors such as: correct lubrication, environmental conditions, assembly precision to avoid uncalculated component stress/wear and total cycle length.

In order to estimate the expected system lifetime in km of operation, the following equation must be solved:

$$L(Km) = 100 \times (Co/P)^3 \times fc/n \times fa$$

Where:

Co = dynamic load coefficient of roller or slide

P = is the equivalent load applied on the heaviest loaded roller or slide.

For each single roller: $P = P_{rad} + (P_{ax} / Co_{ax}) \times Co_{rad}$

For the slide: $P = P_{rad} + (P_{ax} / Co_{ax} + M_x / Mo_x + M_y / Mo_y + M_z / Mo_z) \times Co_{rad}$

LINEAR PRECISION

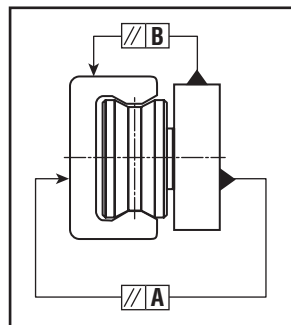
The linear precision of the running slide depends on the rail and, specifically, on the longitudinal parallelism between the raceways and precision of the surface to which they are mounted.

As a result, two slide precision values are determined, one referring to the surface the rails is fixed to (A) and the other (B) to the precision of supporting rail.

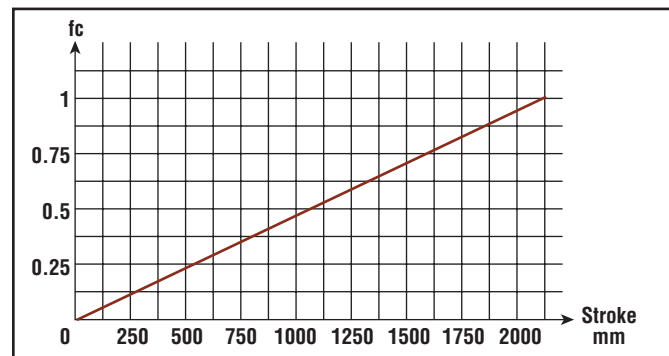
Precision is achieved when the surfaces are aligned.

When all screws are correctly tightened, the RRT rail aligns with the fixing surface, and this adds up to the construction linear precision of the same rail.

When the RRT-rail is loose, it may result slightly curved. However, this does not give rise to any problem of alignment, once the rail is properly fixed.



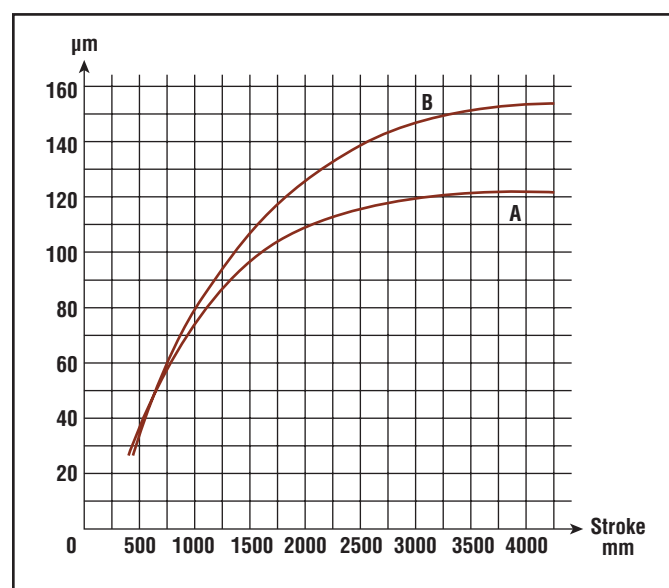
Fc = coefficient depending on the actual length of the stroke. This is an important factor in the case of applications with short stroke and high frequency. In these cases total lifetime in km is much shorter, than if application with long strokes. The factor is equal to 1 for stroke longer than 2 meter, while for shorter than 2 meter, the value is derived from the graph shown below:



n = number of slides running on the same rail

fa = coefficient depending on lubrication and environmental conditions. Recommended values are shown in the table below:

| fa | APPLICATION CONDITIONS |
|-----------|--|
| 0.7 - 1 | Good lubrication, availability of self-lubricating rail wiper system, no dust accumulation and no pollutants, precise assembly |
| 0.5 - 0.7 | Random lubrication, environmental dust, thermal fluctuations, vibrations |
| 0.5 - 0.1 | Low lubrication, high environmental pollution, strong thermal fluctuations, high vibrations |



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SIZING CONTROL

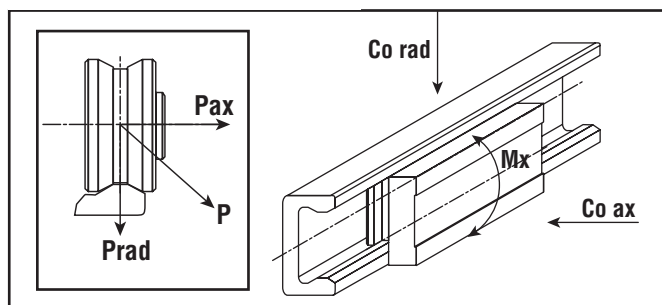
When the positioning and configuration of rails and slides or rollers is determined, it is necessary to verify the correct sizing of system components, for both static and dynamic function. With regard to the static verification, it is necessary to determine the load applied onto each single slide. When the heaviest loaded slide is identified, the safety coefficient must be calculated on that slide and the result must be compared with the maximum static load capacity.

When the load applied is the result of a sum of radial and axial loads as well as moments, it is necessary to calculate the value of each component and verify the following:

$$\frac{P_{ax}}{Co\ ax} + \frac{P_{rad}}{Co\ rad} + \frac{M_x}{Mox} + \frac{M_y}{Moy} + \frac{M_z}{Moz} \leq \frac{1}{Z}$$

For system sizing of Steel Linear Slides, only the axial (Pax) and radial (Prad) load components must be taken into consideration. As a result, it is sufficient to calculate the following:

$$\frac{P_{ax}}{Co\ ax} + \frac{P_{rad}}{Co\ rad} \leq \frac{1}{Z}$$



Where:

Pax = axial load component

Prad = radial load component

Mx, My, Mz = applied moments

Co ax = axial load capacity

Co rad = radial load capacity

Mox, Moy, Moz = resistance capacity to moments

Z = safety coefficient ≥ 1

It is recommended to apply the following values to safety coefficient Z:

| Z | APPLICATION CONDITIONS |
|---------|--|
| 1 - 1.5 | Accurate determination of static and dynamic loads. Precise assembly, tight structure. |
| 1.5 - 2 | Average conditions |
| 2 - 3.5 | Insufficient determination of applied loads. Vibrations, loose structure. Imprecise assembly. Unfavourable environmental conditions. |

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MAINTENANCE

The roller's internal elements are lubricated and protected by double lip seals (2RS). As a result, they are maintenance free.

The sliders of the Steel Linear Guide systems are equipped with lateral seals and a system of strong rail wipers, which incorporate a lubrication system, assuring a release of lubricating oil on the raceways overtime. This gives a maintenance free system for the entire lifetime, under normal clean operational environment.

A similar rail wiper and lubrication system is also standard assembled on the entire system of Drawer Slides of the Precision/RDR series.

In case the wipers with integrated lubrication system is disassembled, it is necessary to provide a periodic manual lubrication of the raceways, to assure a sufficient lubrication on the contact areas. In addition, it is also necessary to regularly clean the raceways for impurities or other residues.

For lubrication we recommend to apply standard lithium grease lubrication, specific for ball bearings.

CORROSION RESISTANCE

All Steel and Flexible rails have a surface treatment, which ensures the hardness and offers a high resistance to corrosion. As the surface treatment is carried out after working the raceways, the complete surface has a high corrosion protection also on the raceways. The treatment gives the rails an overall black finish.

In comparison to traditional electrolytic galvanization zinc plating, this surface treatment offer a much better corrosion resistance protection of the rails, which usually are more exposed to corrosion than the sliders.

All sliders and intermediate plate in RDR drawer slides have an electrolytic zinc plating surface treatment.

ADDITIONAL TECHNICAL INFORMATION

Any further technical product information or questions about their correct installation, may be requested from our Application Engineers.

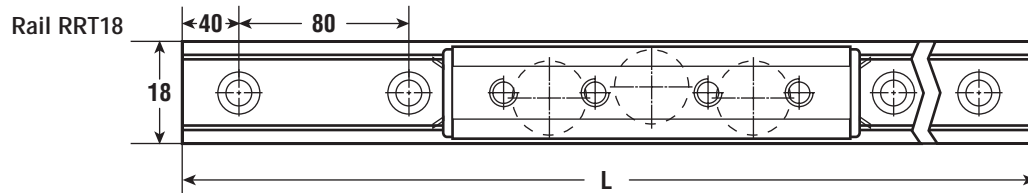


Redi-Rail® Steel Linear Guides

RSS18 Slides & RRT18 Rails

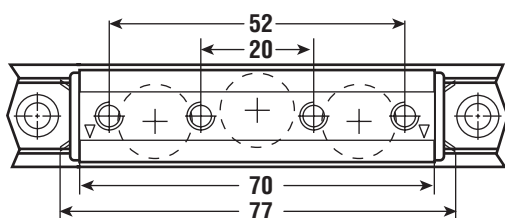
Linear Motion Systems

RSS18 & RRT18

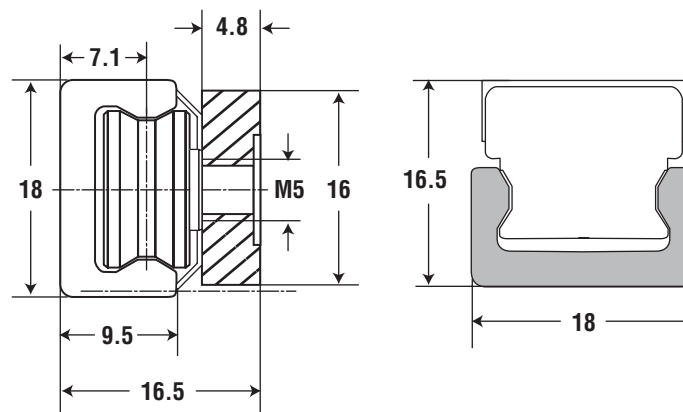
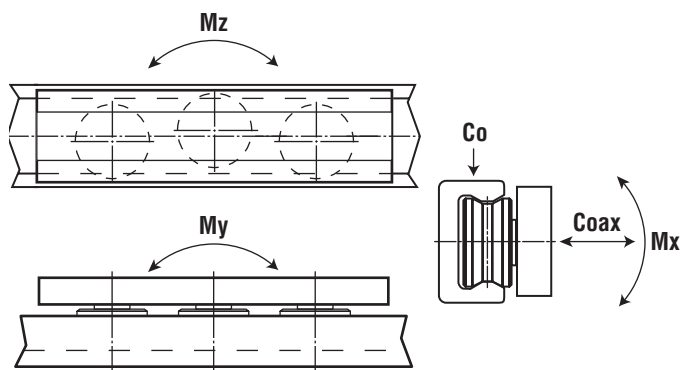
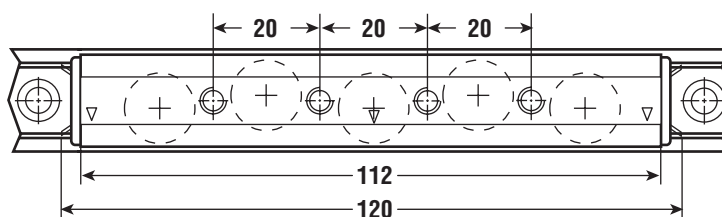


| RAIL RRT18 LENGTHS | | | | | | | | | | | | | | | | |
|--------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--|
| 160 | 240 | 320 | 400 | 480 | 560 | 640 | 720 | 800 | 880 | 960 | 1040 | 1120 | 1200 | 1280 | 1360 | |
| 1440 | 1520 | 1600 | 1680 | 1760 | 1840 | 1920 | 2000 | 2080 | 2160 | 2240 | 2320 | 2400 | 2480 | 2560 | 2640 | |
| 2720 | 2800 | 2880 | 2960 | | | | | | | | | | | | | |

Slides RSSV18-3



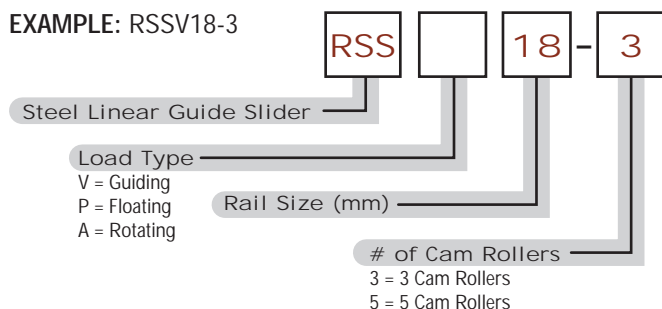
Slides RSSV18-5



| SLIDE TYPE | C (N) | RADIAL Co (N) | AXIAL Co (N) | Mx (Nm) | My (Nm) | Mz (Nm) |
|------------|-------|---------------|--------------|---------|---------|---------|
| RSSX18-3 | 4,000 | 1,600 | 1,000 | 5.2 | 16.5 | 20 |
| RSSX18-5 | 6,000 | 2,400 | 1,500 | 9.3 | 46.1 | 50.3 |

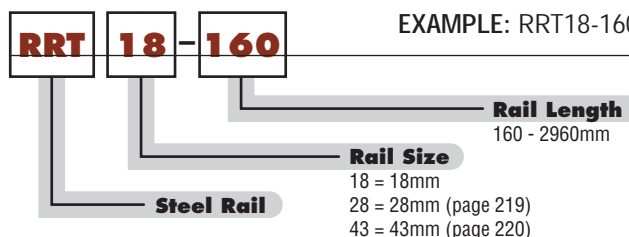
ORDER INFORMATION (SLIDE)

EXAMPLE: RSSV18-3



ORDER INFORMATION (RAIL)

EXAMPLE: RRT18-160



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Redi-Rail® Steel Linear Guides

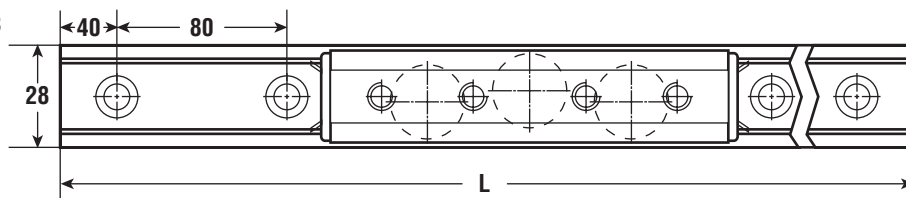
RSS28 Slides & RRT28 Rails

Linear Motion Systems

RSS28 & RRT28

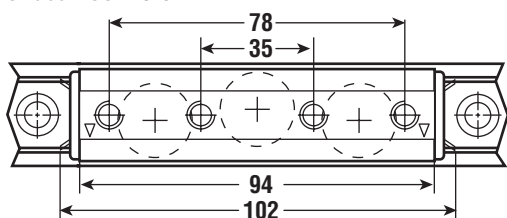


Rail RRT28

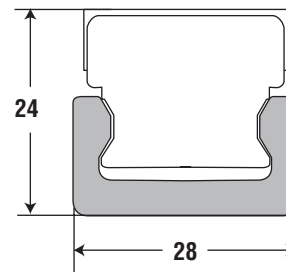
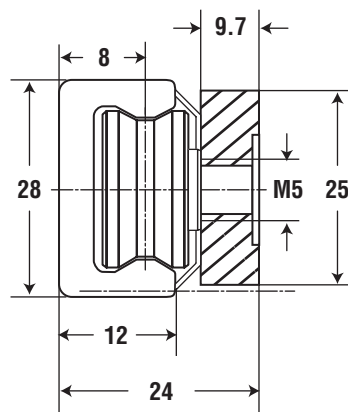
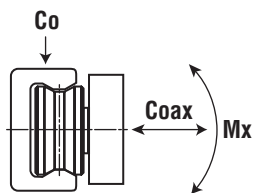
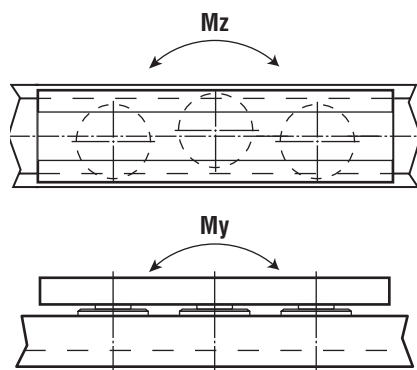
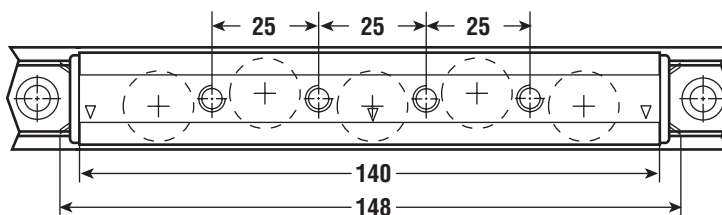


| RAIL RRT28 LENGTHS | | | | | | | | | | | | | | | |
|--------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 240 | 320 | 400 | 480 | 560 | 640 | 720 | 800 | 880 | 960 | 1040 | 1120 | 1200 | 1280 | 1360 | 1440 |
| 1520 | 1600 | 1680 | 1760 | 1840 | 1920 | 2000 | 2080 | 2160 | 2240 | 2320 | 2400 | 2480 | 2560 | 2640 | 2720 |
| 2800 | 2880 | 2960 | 3040 | 3120 | 3200 | 3280 | 3360 | 3440 | 3520 | 3600 | 3680 | 3760 | 3840 | 3920 | 4000 |

Slides RSSV28-3



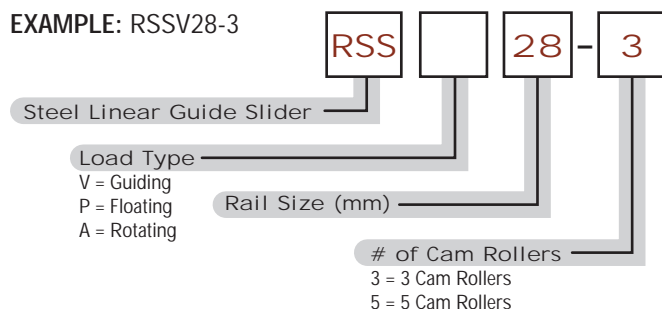
Slides RSSV28-5



| SLIDE TYPE | C (N) | RADIAL Co (N) | AXIAL Co (N) | Mx (Nm) | My (Nm) | Mz (Nm) |
|------------|-------|---------------|--------------|---------|---------|---------|
| RSSX28-3 | 6,600 | 3,200 | 2,000 | 15.3 | 43.5 | 48 |
| RSSX28-5 | 9,900 | 4,800 | 3,000 | 31.1 | 115.2 | 120 |

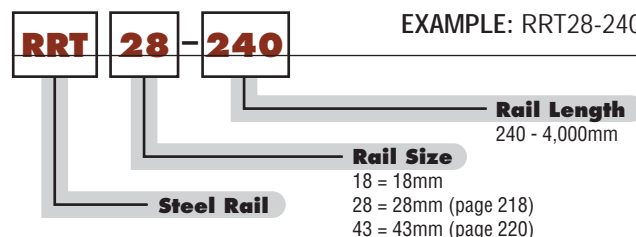
ORDER INFORMATION (SLIDE)

EXAMPLE: RSSV28-3



ORDER INFORMATION (RAIL)

EXAMPLE: RRT28-240



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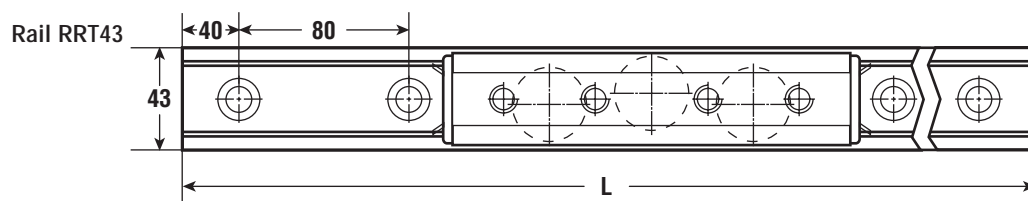


Redi-Rail® Steel Linear Guides

RSS43 Slides & RRT43 Rails

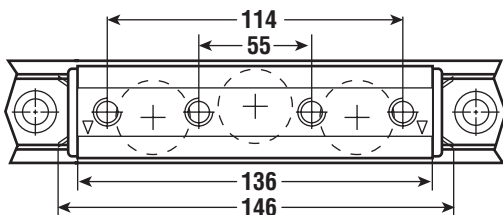
Linear Motion Systems

RSS43 & RRT43

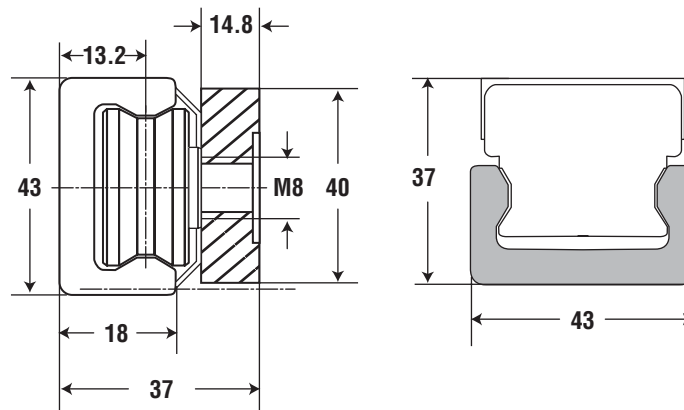
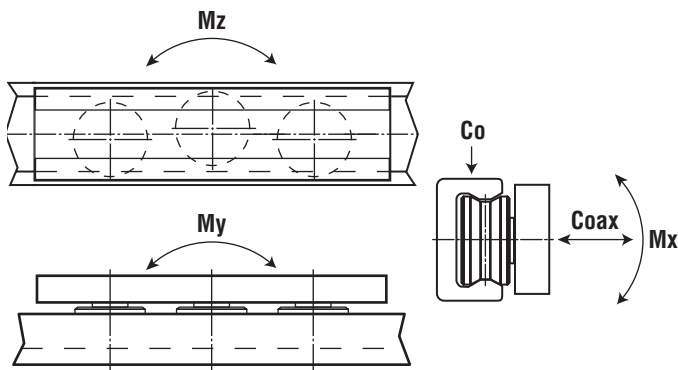
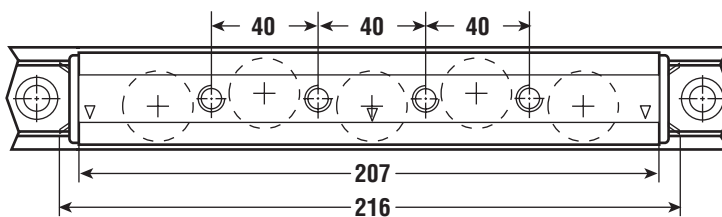


| RAIL RRT43 LENGTHS | | | | | | | | | | | | | | | |
|--------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 400 | 480 | 560 | 640 | 720 | 800 | 880 | 960 | 1040 | 1120 | 1200 | 1280 | 1360 | 1440 | 1520 | 1600 |
| 1680 | 1760 | 1840 | 1920 | 2000 | 2080 | 2160 | 2240 | 2320 | 2400 | 2480 | 2560 | 2640 | 2720 | 2800 | 2880 |
| 2960 | 3040 | 3120 | 3200 | 3280 | 3360 | 3440 | 3520 | 3600 | 3680 | 3760 | 3840 | 3920 | 4000 | | |

Slides RSSV43-3



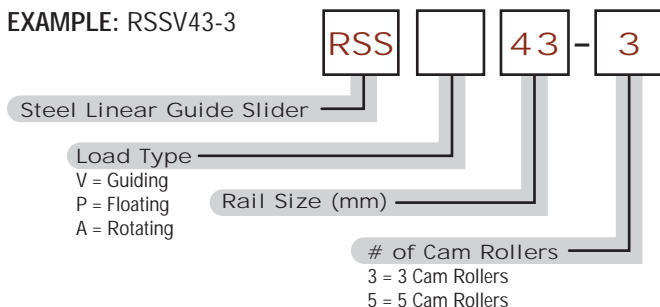
Slides RSSV43-5



| SLIDE TYPE | C (N) | RADIAL Co (N) | AXIAL Co (N) | Mx (Nm) | My (Nm) | Mz (Nm) |
|------------|--------|---------------|--------------|---------|---------|---------|
| RSSX43-3 | 18,000 | 7,200 | 4,500 | 50.1 | 157.3 | 165 |
| RSSX43-5 | 27,000 | 10,800 | 6,700 | 107.2 | 394 | 410 |

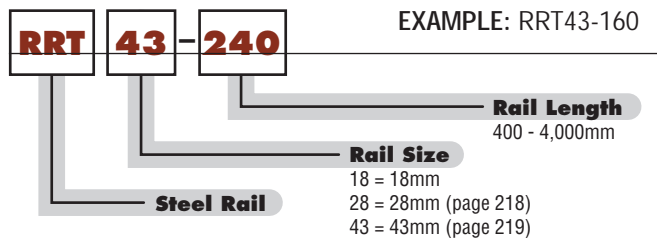
ORDER INFORMATION (SLIDE)

EXAMPLE: RSSV43-3



ORDER INFORMATION (RAIL)

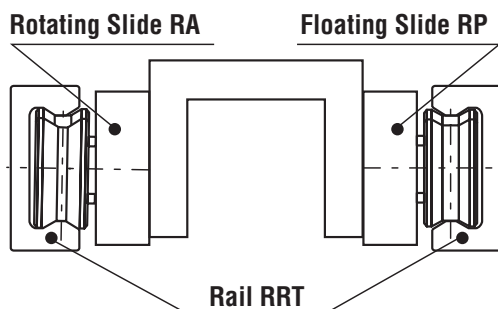
EXAMPLE: RRT43-160



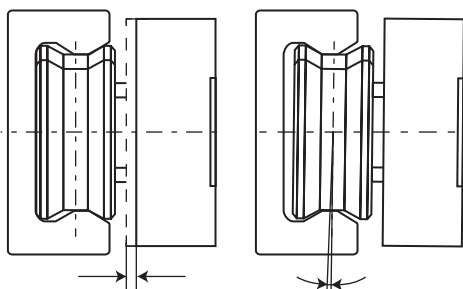
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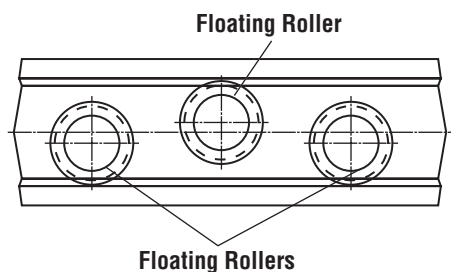
APPLICATIONS



RAIL WITH FLOATING SLIDE RP SERIES

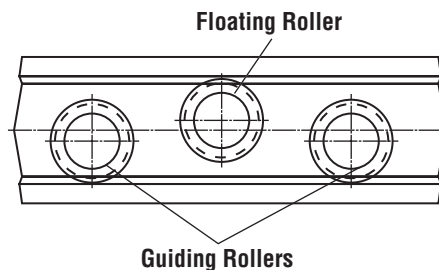


FLOATING SLIDE RP SERIES



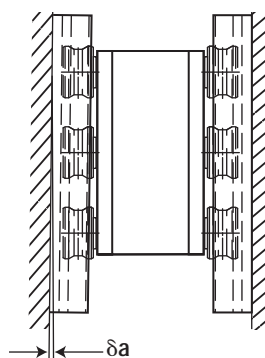
The "Floating" slides contain only floating rollers, three or five in total. The contact areas with the raceways only provide for radial load and M_z capacities, thus allowing for axial movement and a simultaneous slight rotation of the slide to offer axial and longitudinal compensation, while maintaining original preload and same precise and smooth straightline movement.

ROTATING SLIDE RA SERIES



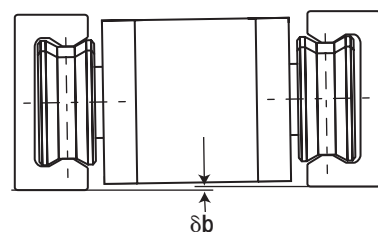
The "Rotating" slides are mounted with two or three guiding V-rollers (depending if slide has 3 or 5 rollers in total), which are aligned against the same lower raceway for max. radial load capacity. While one or two (depending if slide has three or five rollers in total) floating P rollers are mounted against the upper raceway. This configuration allows the A slide a minor rotation, around the contact points of the lower raceway. This compensates for axial misalignment, while maintaining its original preload and same straight, precision motion.

LONGITUDINAL PARALLELISM ERROR



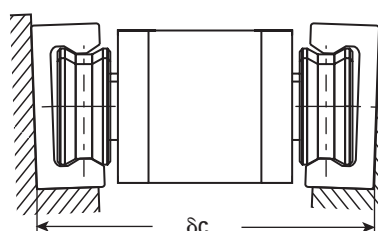
| SIZE | δa |
|------|------------|
| 18 | 1mm |
| 28 | 1.2mm |
| 43 | 2mm |

HORIZONTAL NON-ALIGNMENT ERROR



| SIZE | δb |
|------|------------|
| 18 | 2° |
| 28 | 2° |
| 43 | 2° |

HORIZONTAL PARALLELISM ERROR

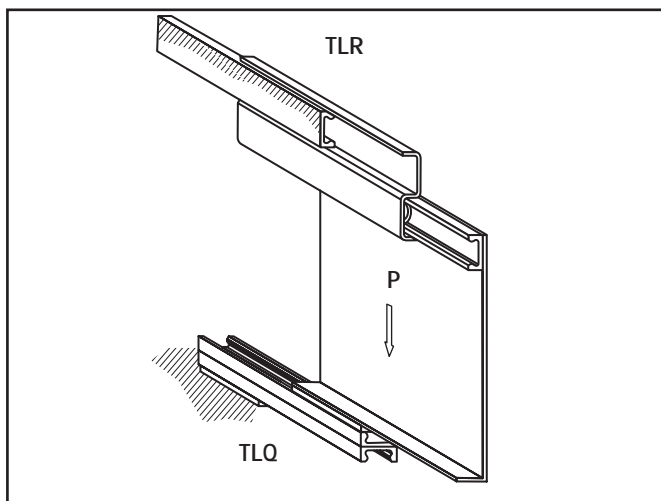


| SIZE | δc |
|------|------------|
| 18 | 3° |
| 28 | 3° |
| 43 | 3° |

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PRODUCT OVERVIEW



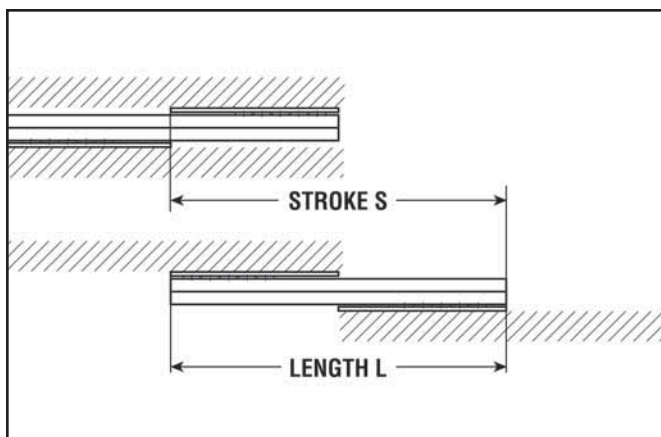
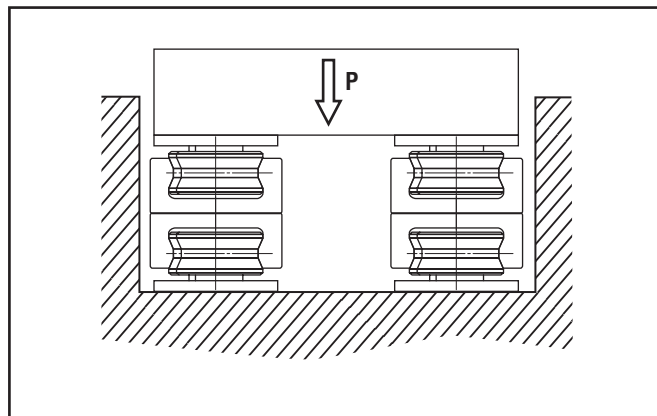
The Redi-Rail® Precision Drawer Slides & Redi-Rail® Compact Precision Drawer Slides systems are the world's only telescopic rail system for complete extension, based on precision rollers and hardened raceways and with incorporate self-aligning feature (RDR series).

The system offers unique possibilities for all kinds of automation applications, where smooth and precise telescopic movement is required. Optimal movement with no play for High-Tech telescopic applications, or for even heavy load and high frequency applications.

To guarantee high load capacities and low deflexion, the RDR drawer slides are fixed to an intermediate S-shaped steel plate.

The RDQ drawer slides have the RRT-rails functioning as the intermediate element, offering good radial and axial load capacities, with very compact overall dimensions.

the RDR and RDQ rails are the only drawer slide system which incorporates self-aligning feature to absorb parallelism errors of the mounting surfaces.



The Precision and Compact Precision systems are composed of exactly the same components as the Redi-Rail® Steel Rail system, except that the slider bodies are different, as longer and with more rollers. All drawer slides feature strong raceway wipers and greasing system for low maintenance.

The RDR drawer slides offer unique self-aligning capability, when used in pair. As the right telescopic rail RDRD, allows the sliders to rotate in the lower rail-element, to compensate assembling or surface misalignment errors, while maintaining the same precise, preloaded extension.

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PRODUCT OVERVIEW

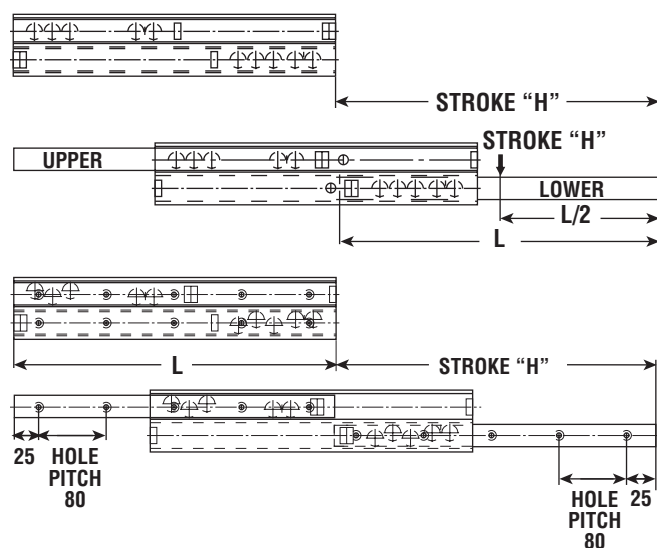


The RDR Redi-Rail® Precision Drawer Slides are designed for heavy duty High-Tech telescopic applications, with precise motorized movement, requiring constant smooth sliding performance with no play.

The special smooth operating performance is due to double-row precision bearings strong rails with hardened and honed raceways, fixed to a rigid intermediate S-shaped steel plate, assuring high load capacities and low deflexion at even fully extended position.

The PBC drawer slides assure unique self-aligning capability, when used in pairs.

The right drawer slide RDRD, allows the slides to rotate with no play, in the lower rail-element to compensate for surface misalignments, while the rigid left RDRS drawer slide, maintains a stable and precise extension. The RDR or Redi-Rail® Precision drawer slide system offers unique



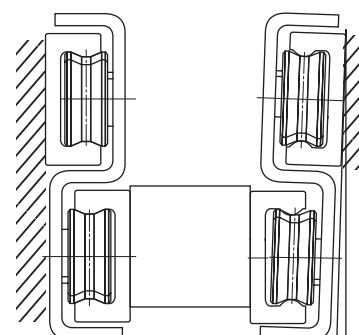
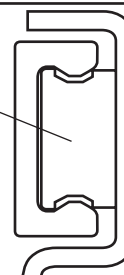
possibilities and benefits for all kind of automation applications with variable telescopic strokes, which until now have been troubled by common friction and breakdown problems, during the ball-cage rephasing when using of old-type ball-cage drawer slides. To assure maximum load

capacity the drawer slides must be correctly positioned according to the rollers' positioning, which are non-symmetric and with different position in upper – lower rail element.

Therefore the extended part must always be fixed to the lower rail. All Redi-Rail® Drawer Slides guarantee maintenance free operation, thanks to strong raceway wipers and longitudinal seals for dust and impurity protection, and an integrated lube for-life greasing system, assuring a constant thin layer of lubrication on the raceway surfaces.

All Redi-Rail® Precision Drawer Slides are equipped with internal end-stops, only designed to drag the intermediate element. It is therefore highly recommended not to use these internal ends- of stroke travel limits as functional terminals; strong external end-stops must be added. The Redi-Rail®

Lubrication system for full life-time.



Version S = Left side Version D = Right side

Precision Drawer Slides load capacities are intended at half extension ($L/2$) as indicated in by letter "P" in below drawing. Unlike ball-cages drawer slides, the Redi-Rail® Drawer Slides maximum load capacities are based on continuously non-stop operation.

Therefore a straight load comparison with other drawer slides isn't possible, as these load capacities are merely a static load capacity, based on low daily frequency. To offer a wide range of load capacities and extensions, the Redi-Rail® Drawer Slides come in 2 dimensions. The RDR80, based on 28mm rails with outer height of 80mm and RDR116, based on 43mm rails, with outer height of 116mm. Both rails come with an overall black finish.

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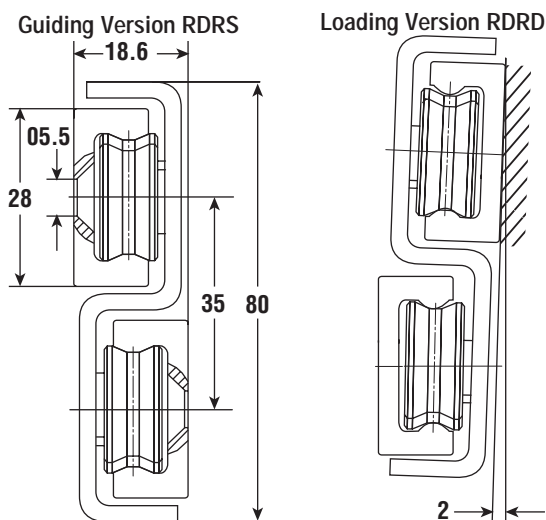


Redi-Rail® Precision Drawer Slides

RDRX80 & RDRX116

Linear Motion Systems

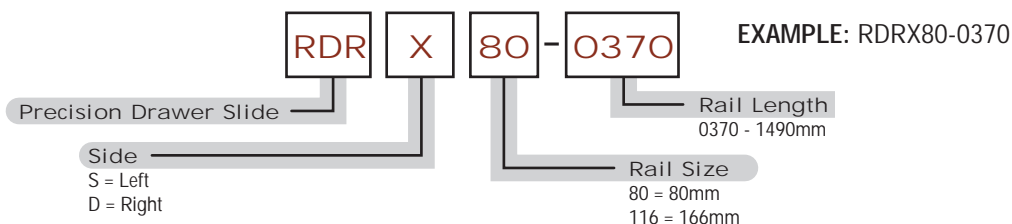
RDRX80



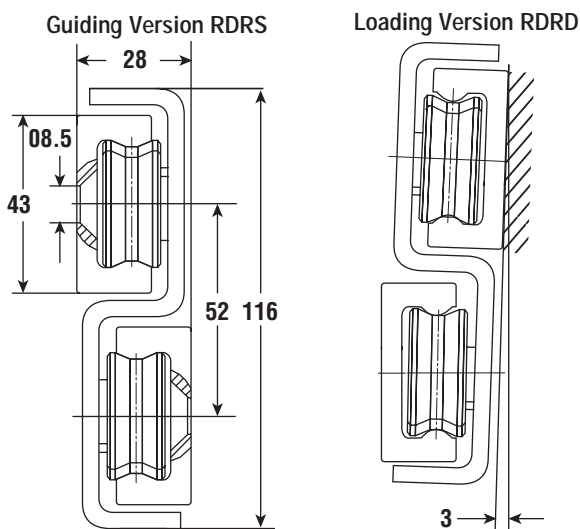
| TYPE | STROKE H | LENGTH L | CO RAD (N) | (kg.) |
|-------------|----------|----------|------------|-------|
| RDRX80-0380 | 380 | 0370 | 753 | 2.1 |
| RDRX80-0460 | 460 | 0450 | 817 | 2.5 |
| RDRX80-0540 | 540 | 0530 | 1207 | 2.9 |
| RDRX80-0620 | 620 | 0610 | 1495 | 3.3 |
| RDRX80-0700 | 700 | 0690 | 1673 | 3.7 |
| RDRX80-0780 | 780 | 0770 | 1771 | 4.1 |
| RDRX80-0860 | 860 | 0850 | 1755 | 4.5 |
| RDRX80-0940 | 940 | 0930 | 1623 | 4.9 |
| RDRX80-1020 | 1020 | 1010 | 1510 | 5.3 |
| RDRX80-1180 | 1180 | 1170 | 1325 | 6.1 |
| RDRX80-1340 | 1340 | 1330 | 1180 | 6.9 |
| RDRX80-1500 | 1500 | 1490 | 1064 | 7.7 |

NOTE: S = Left Side
D = Right Side

ORDER INFORMATION



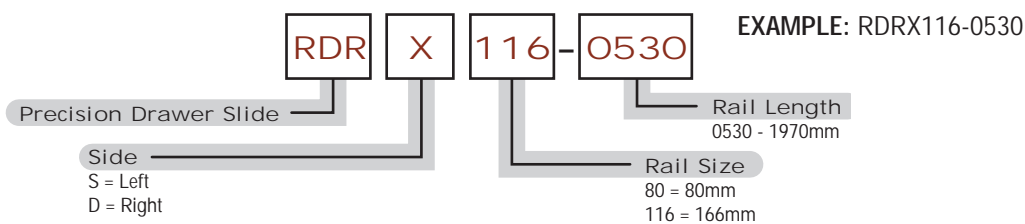
RDRX116



| TYPE | STROKE H | LENGTH L | CO RAD (N) | (kg.) |
|--------------|----------|----------|------------|-------|
| RDRX116-0540 | 540 | 0530 | 1829 | 6.4 |
| RDRX116-0620 | 620 | 0610 | 2040 | 7.3 |
| RDRX116-0700 | 700 | 0690 | 2870 | 8.2 |
| RDRX116-0780 | 780 | 0770 | 3033 | 9.1 |
| RDRX116-0860 | 860 | 0850 | 3780 | 10.1 |
| RDRX116-0940 | 940 | 0930 | 3978 | 11 |
| RDRX116-1020 | 1020 | 1010 | 4122 | 11.8 |
| RDRX116-1180 | 1180 | 1170 | 4080 | 13.6 |
| RDRX116-1340 | 1340 | 1330 | 3648 | 15.4 |
| RDRX116-1500 | 1500 | 1490 | 3298 | 17.1 |
| RDRX116-1660 | 1660 | 1650 | 3010 | 18.9 |
| RDRX116-1820 | 1820 | 1810 | 2768 | 20.7 |
| RDRX116-1980 | 1980 | 1970 | 2562 | 22.4 |

NOTE: S = Left Side
D = Right Side

ORDER INFORMATION



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PRODUCT OVERVIEW



The very compact RDQ drawer slides are designed for High-Tech telescopic applications with precise motorized movement, requiring constant smooth sliding performance with no play.

The squared design is obtained by using two RRT-rails with hardened honed raceways, as the rigid intermediate element, into which the slides are assembled. The RDQ drawer slides offer both high radial and axial load capacities.

The rail/slide configuration allows the RDQ drawer slides to be mounted not only at the side, but also underneath the moving part, when there are space limitations at the sides, or to be used in typical vertical applications. See below tables and figures.

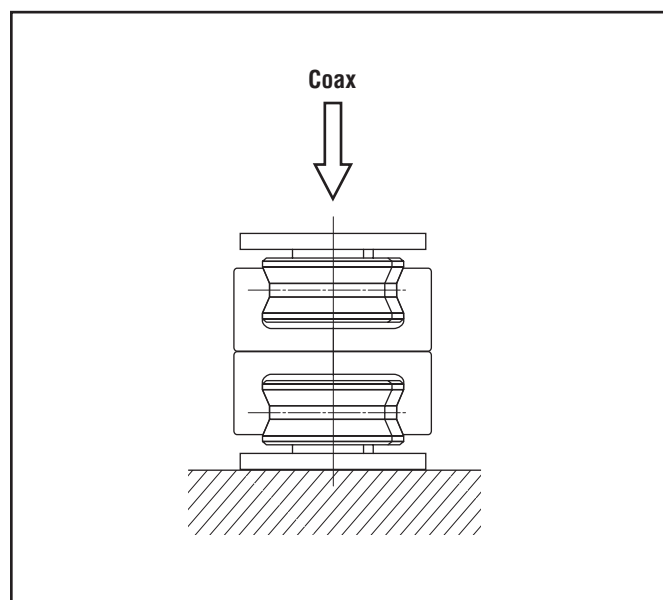
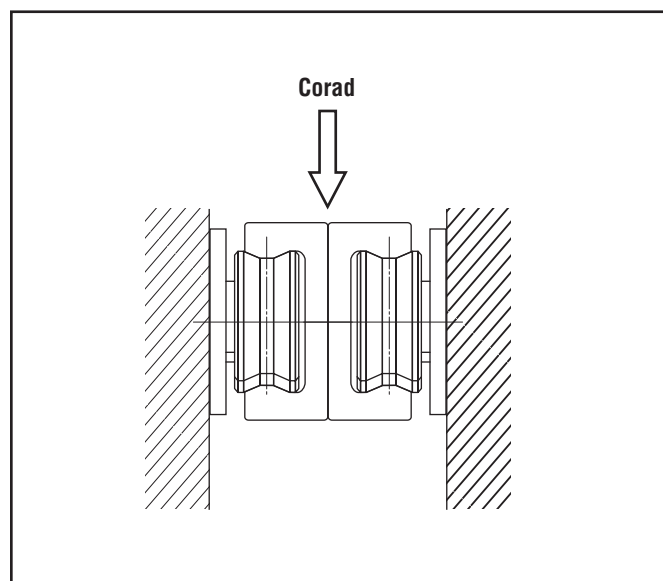
In the case of horizontal panel extension, we recommend the use of a pair of RDR and RDQ, as the RDR can absorb some lateral structural misalignments on the vertical axis.

RDQ system assures smooth extension for all kinds of automation applications with variable telescopic strokes, which until now have been troubled by common friction breakdown problems, during the ball-cage rephasing, when using typical drawer slides. Same rephase problem or even deformation of the ball-cages, occurs for all vertical applications, as the ball-cage in such drawer slides, constantly tend to move downwards, so extra friction is generated with each stroke, during the repositioning of the ball-cages.

To assure maximum load capacity the drawer slides must be correctly orientation, assembled. The extended part must always be fixed to the shortest slide.

All Redi-Rail® Steel Rails guarantee maintenance free operation, thanks to strong raceway wipers and longitudinal seals for dust and impurity protection, and an integrated lubed for-life greasing system, assuring a constant thin layer of lubrication on the raceway surfaces.

All Redi-Rail® Compact Precision Drawer Slides are equipped with internal end-stops, only designed to drag the intermediate element. It is therefore highly recommended not to use these internal end of stroke travel limits as functional terminals; strong external end-stops must be added. Similarly to the RDR series, the RDQ's stroke goes slightly beyond the overall length of the rail in closed position. The rails come with an overall black finish.



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Redi-Rail® Compact Precision Drawer Slides RDQD37

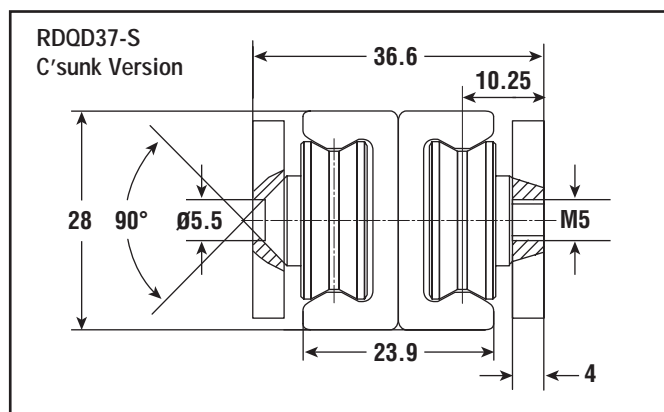
Linear Motion Systems

RDQD37

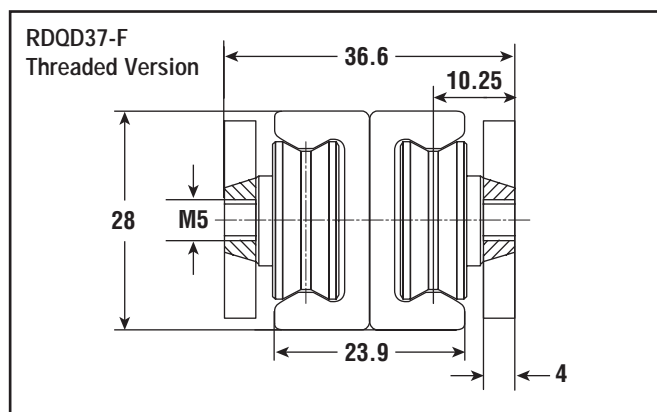
All Redi-Rail Compact Precision rails guarantee maintenance free operation, thanks to strong raceway wipers and longitudinal seals for dust and impurity protection, and an integrated lubed for-life greasing system, assuring a constant thin layer of lubrication on the raceway surfaces.

All Redi-Rail Compact Precision rails are equipped with internal end-stops, only designed to drag the intermediate

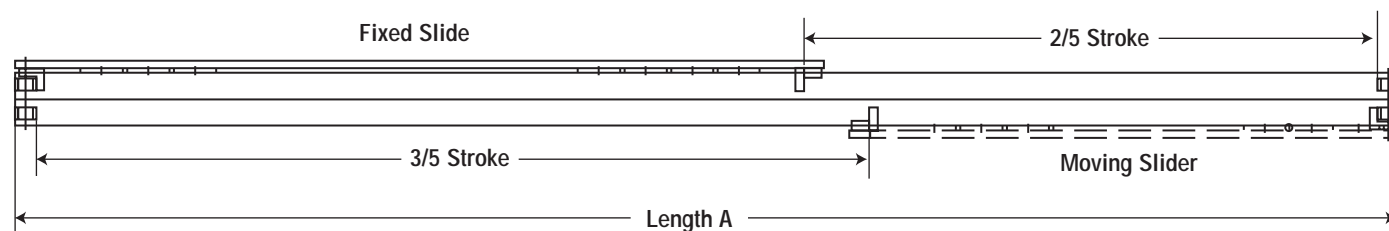
element. It is therefore highly recommended not to use these internal end of stroke travel limits as functional terminals; strong external end-stops must be added. Similarly to the RDR series, the RDQ's stroke goes slightly beyond the overall length of the rail in closed position. The rails come with an overall black finish.



NOTE: To be used when fixing support (for fixed slide) is with threaded holes.



NOTE: To be used when fixing support (for fixed slide) is without threaded holes.



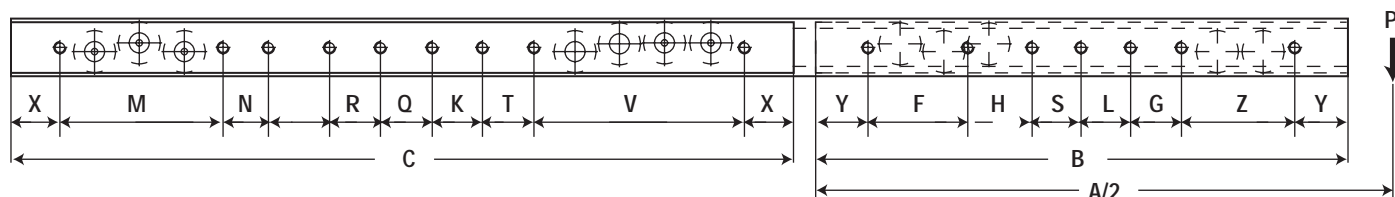
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Redi-Rail® Compact Precision Drawer Slides RDQX37

Linear Motion Systems

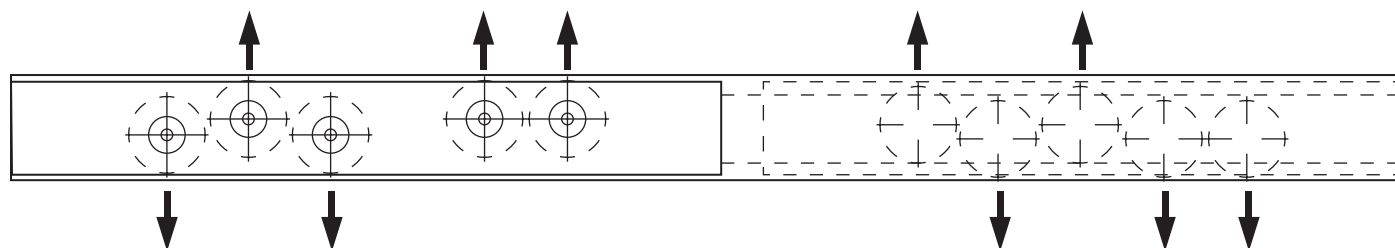
RDQX37



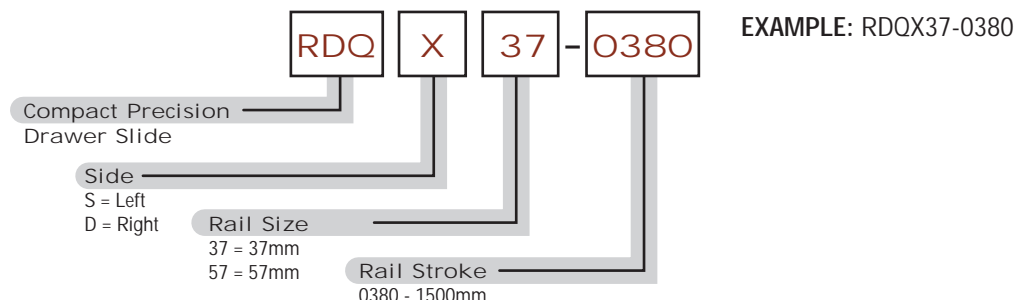
| TYPE | STROKE | A | B | C | X | M | N | P | R | Q | K | T | Y | F | H | S | L | Z | CORAD (N) | COAX (N) | (kg.) |
|-------------|--------|------|-----|-----|----|-----|-----|-----|-----|-----|-----|---|------|-----|-----|-----|-----|-----|--------------|-------------|-------|
| RDQX37-0380 | 380 | 370 | 170 | 201 | 53 | 70 | 70 | x | x | x | x | x | 25 | 70 | 50 | x | x | 50 | 707 | 441 | 1.5 |
| RDQX37-0460 | 460 | 450 | 175 | 276 | | 72 | 72 | 72 | | | | | 25 | 70 | 55 | | | 55 | 1003 | 655 | 1.7 |
| RDQX37-0540 | 540 | 530 | 207 | 324 | | 88 | 88 | 88 | | | | | 23.5 | 80 | 80 | | | 80 | 1128 | 721 | 2.0 |
| RDQX37-0620 | 620 | 610 | 239 | 372 | | 104 | 104 | 104 | | | | | 24.5 | 95 | 95 | | | 95 | 1116 | 689 | 2.3 |
| RDQX37-0700 | 700 | 690 | 271 | 420 | | 120 | 120 | 120 | 102 | 96 | 100 | x | 25.5 | 110 | 110 | 85 | 85 | 110 | 1012 | 623 | 2.6 |
| RDQX37-0780 | 780 | 770 | 303 | 468 | | 102 | 102 | 102 | | | | | 24 | 85 | 85 | | | 85 | 926 | 569 | 2.8 |
| RDQX37-0860 | 860 | 850 | 335 | 516 | | 90 | 90 | 90 | 100 | 100 | 108 | x | 25 | 95 | 95 | 105 | 87 | 95 | 853 | 523 | 3.1 |
| RDQX37-0940 | 940 | 930 | 367 | 564 | | 100 | 100 | 100 | | | | | 26 | 105 | 105 | | | 106 | 791 | 484 | 3.4 |
| RDQX37-1020 | 1020 | 1010 | 399 | 612 | | 110 | 110 | 110 | 108 | 108 | 124 | x | 25.5 | 87 | 87 | 103 | 103 | 87 | 738 | 451 | 3.6 |
| RDQX37-1180 | 1180 | 1170 | 463 | 708 | | 108 | 108 | 108 | | | | | 25.5 | 103 | 103 | | | 103 | 650 | 396 | 4.2 |
| RDQX37-1340 | 1340 | 1330 | 527 | 804 | | 124 | 124 | 124 | 120 | 120 | 120 | x | 23.5 | 120 | 120 | 108 | 108 | 120 | 580 | 353 | 4.7 |
| RDQX37-1500 | 1500 | 1490 | 591 | 900 | | 120 | 120 | 120 | | | | | 25.5 | 108 | 108 | | | 108 | 524 | 319 | 5.2 |

NOTE: S = Left Side
D = Right Side

Roller Positions: Ex. RDQX37 - 0380



ORDER INFORMATION



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Redi-Rail® Compact Precision Drawer Slides

RDQS57

Linear Motion Systems

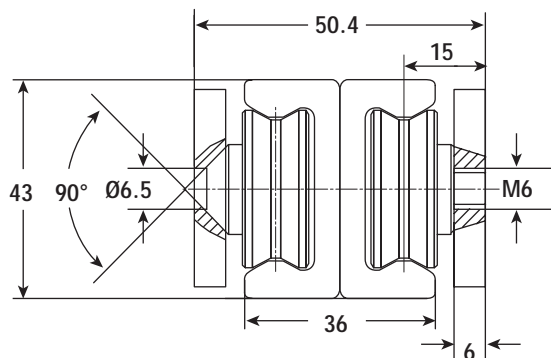
RDQS57

All Redi-Rail Compact Precision rails guarantee maintenance free operation, thanks to strong raceway wipers and longitudinal seals for dust and impurity protection, and an integrated lubed for-life greasing system, assuring a constant thin layer of lubrication on the raceway surfaces.

All Redi-Rail Compact Precision rails are equipped with internal end-stops, only designed to drag the intermediate

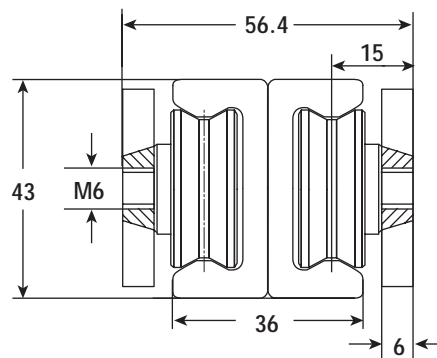
element. It is therefore highly recommended not to use these internal end of stroke travel limits as functional terminals; strong external end-stops must be added. Similarly to the RDR series, the RDQ's stroke goes slightly beyond the overall length of the rail in closed position. The rails come with an overall black finish.

RDQS57-S C'sunk Version

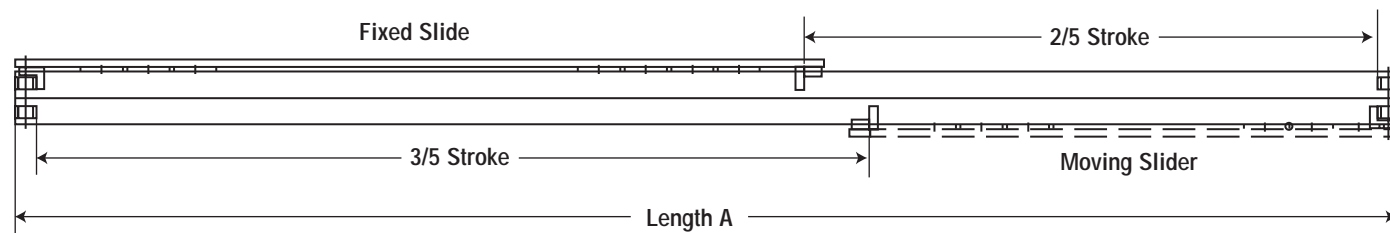


NOTE: To be used when fixing support (for fixed slide) is with threaded holes

RDQS57-F Threaded Version



NOTE: To be used when fixing support (for fixed slide) is without threaded holes



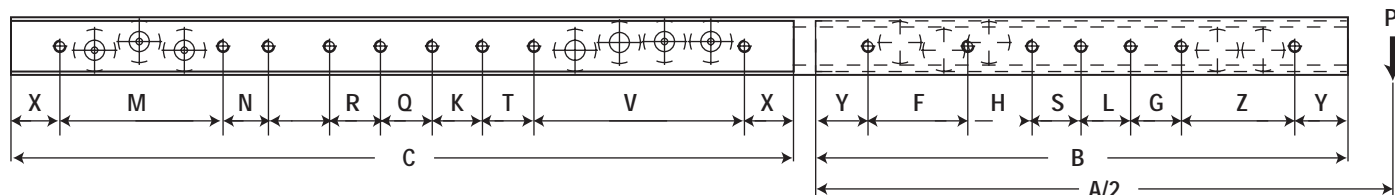
The data and specifications in this publication have been carefully compiled and are believed to be accurate and correct. However, it is the responsibility of the user to determine and ensure the suitability of Pacific Bearing® products for a specific application. Pacific Bearing's only obligation will be to repair or replace without charge, any defective components if returned promptly. No liability is assumed beyond such replacement. *Consult www.pacific-bearing.com for the latest technical updates.



Redi-Rail® Compact Precision Drawer Slides RDQX57

Linear Motion Systems

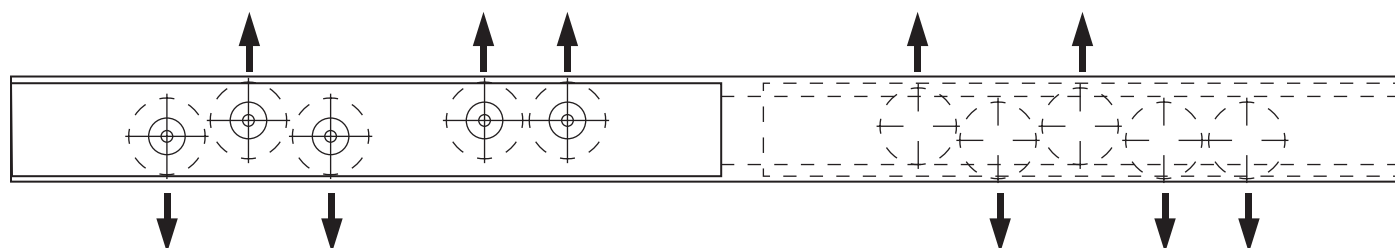
RDQX57



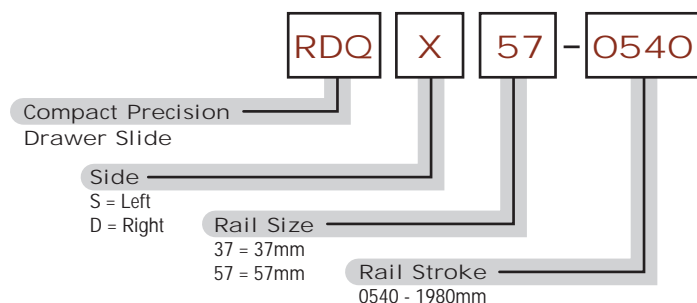
| TYPE | STROKE | A | B | C | X | M | P | N | R | Q | K | T | Y | F | H | S | L | Z | CORAD (N) | COAX (N) | (kg.) |
|-------------|--------|------|-----|------|----|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|--------------|-------------|-------|
| RDQX57-0540 | 540 | 530 | 227 | 306 | 61 | 118 | x | 118 | x | | | | 28,5 | 100 | 70 | x | | 70 | 2160 | 1728 | 4.8 |
| RDQX57-0620 | 620 | 610 | 238 | 375 | | 105 | 100 | 100 | | | | | 28 | 102 | 80 | | | 80 | 2610 | 2138 | 5.4 |
| RDQX57-0700 | 700 | 690 | 270 | 423 | | 118 | 118 | 118 | | | | | 28 | 107 | 107 | | | 107 | 2799 | 2280 | 6.0 |
| RDQX57-0780 | 780 | 770 | 302 | 471 | | 100 | 100 | 100 | 100 | x | x | | 28 | 123 | 123 | | x | 123 | 2943 | 2390 | 6.7 |
| RDQX57-0860 | 860 | 850 | 334 | 519 | | 116 | 116 | 116 | 102 | | | x | 28 | 102 | 88 | 88 | | 88 | 2647 | 2173 | 7.4 |
| RDQX57-0940 | 940 | 930 | 366 | 567 | | 120 | 120 | 120 | 136 | | | | 28,5 | 103 | 103 | 103 | | 103 | 2460 | 2016 | 8.1 |
| RDQX57-1020 | 1020 | 1010 | 398 | 615 | | 102 | 102 | 102 | 136 | | | | 28 | 114 | 114 | 114 | | 114 | 2297 | 1912 | 8.7 |
| RDQX57-1180 | 1180 | 1170 | 462 | 711 | | 126 | 126 | 126 | 126 | 136 | x | | 28 | 102 | 102 | 102 | 100 | 100 | 2028 | 1655 | 10.0 |
| RDQX57-1340 | 1340 | 1330 | 526 | 807 | | 120 | 120 | 120 | 120 | 120 | 136 | | 28 | 120 | 120 | 120 | 110 | 110 | 1816 | 1478 | 11.3 |
| RDQX57-1500 | 1500 | 1490 | 590 | 903 | | 116 | 116 | 116 | 116 | 116 | 116 | 136 | 27,5 | 107 | 107 | 107 | 107 | 107 | 1644 | 1336 | 12.5 |
| RDQX57-1660 | 1660 | 1650 | 654 | 999 | | 132 | 132 | 132 | 132 | 132 | 132 | 136 | 27,5 | 120 | 120 | 120 | 120 | 119 | 1501 | 1219 | 13.8 |
| RDQX57-1820 | 1820 | 1810 | 718 | 1095 | | 137 | 125 | 125 | 125 | 125 | 125 | 125 | 28 | 112 | 110 | 110 | 110 | 110 | 1382 | 1120 | 15.0 |
| RDQX57-1980 | 1980 | 1970 | 782 | 1191 | | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 28 | 121 | 121 | 121 | 121 | 121 | 1280 | 1036 | 16.4 |

NOTE: S = Left Side
D = Right Side

Roller Positions: Ex. RDQX57 - 0540



ORDER INFORMATION



EXAMPLE: RDQX57-0540

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Redi-Rail® Flexible Guide System

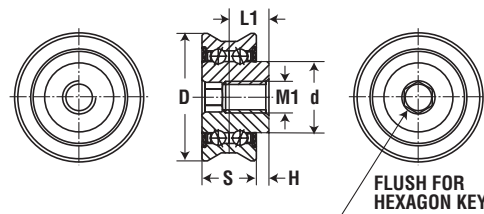
43 Rollers & Rails - Radial Loads to 3,600 N

Linear Motion Systems

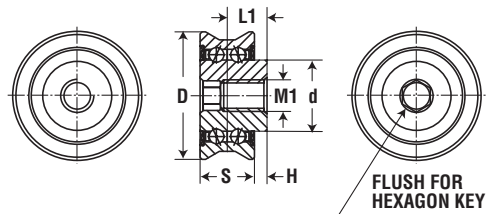
ROLLERS - 43



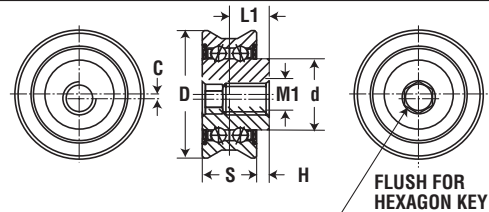
FLOATING ROLLER / CONCENTRIC PIVOT - FCP



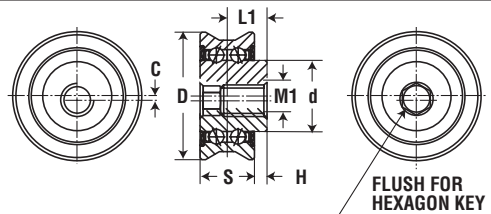
GUIDING ROLLER / ECCENTRIC PIVOT - FEV



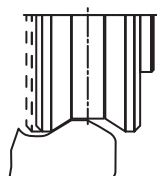
FLOATING ROLLER / ECCENTRIC PIVOT - FEP



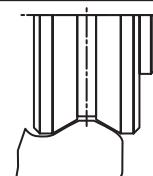
GUIDING ROLLER / CONCENTRIC PIVOT - FCV



FLOATING ROLLER FEP-FCP LATERAL DISPLACEMENT



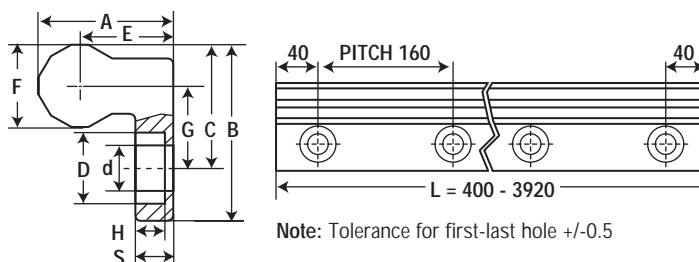
GUIDING ROLLER FCV- FEV



| LATERAL DISPLACEMENT | ROLLER TYPE | D | S | H | L1 | d | M1 | Ch | c | C (N) | CORAD (N) | COAX (N) | WEIGHT (G) |
|-------------------------|----------------|------|----|---|----|----|----|----|---|----------|--------------|-------------|---------------|
| 2 | FCV43 | 30.8 | 14 | 2 | 9 | 15 | M8 | 6 | 0 | 9,000 | 3,600 | 2,160 | 50 |
| | FEV43 | 0.8 | | | | | | | | | | | |
| | FCP43 | 0 | | | | | | | | | | | |
| | FEP43 | 0.8 | | | | | | | | | | | |
| | | 30.4 | | | | | | | | | | | |

RAILS - FR43

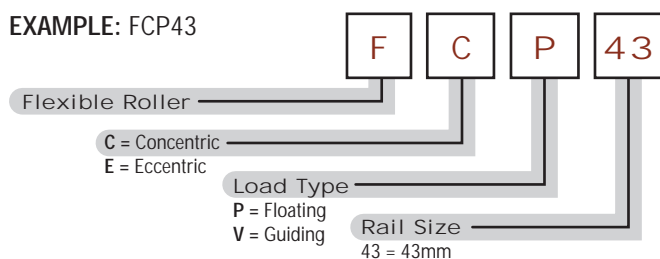
The FXR-rails have a unique design as its rail offers three protruding raceways, angled at 90° intervals. Providing an extremely versatile linear system. The stronger FXR-rails have a 160mm hole pitch for easy assembling.



| RAIL TYPE | Kg/m | A | B | C | D | d | E | F | G | H | S | L | SCREW TYPE |
|-----------|------|-------|----|------|------|-----|------|------|------|-----|-----|-------------|-------------|
| FR43 | 2.09 | 19.36 | 25 | 18.3 | 10.5 | 6.5 | 13.2 | 12.3 | 12.2 | 4.4 | 5.6 | 400 - 3,920 | M6 DIN 6912 |

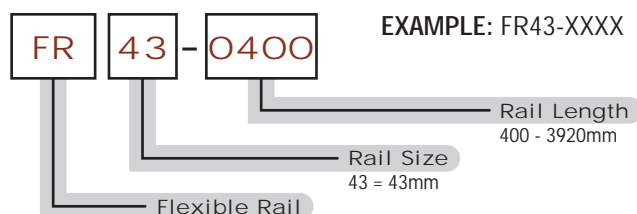
ORDER INFORMATION - (ROLLERS)

EXAMPLE: FCP43



ORDER INFORMATION - (RAILS)

EXAMPLE: FR43-XXXX



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PRODUCT OVERVIEW



Redi-Rail® V-Guide System components provide an excellent alternative for linear motion applications in harsh environments with medium accuracy requirements, and high speed capabilities.

FEATURES & BENEFITS

Redi-Rail V-Guide systems are an industry standard for linear motion, and offer features that make them an ideal solution for a wide range of motion control applications.

V-Guide System:

- Excellent for harsh environments
- High speed capabilities
- Low noise operation

V-Guide Rail:

- Has shoulder for simple mounting and alignment
- Available in long lengths
- Induction hardened way surface

V-Guide Wheels:

- Permanently lubricated
- Precision dual row bearing construction
- Available in 52100 Bearing Steel or 440 Stainless Steel construction

Wheel Bushings:

- 303 Stainless Steel
- Available for English or metric hardware

APPLICATIONS

- Machine tool doors
- Vending machines
- Woodworking machinery
- Carpet and textile machinery
- Laboratory automation
- Paper converting equipment
- Packaging machinery

TECHNICAL SPECIFICATIONS

Linear Bearing for Axial & Radial Loads

Wheels:

Redi-Rail V-Guide Wheels are precision ground dual row angular contact ball bearings with hardened outer way surfaces that provide low friction guidance for linear motion applications. V-Guide wheels can be used with internal or external 90-degree ways, or used with round shafts.

- Available in four sizes
- 52100 Bearing Steel or 440 Stainless Steel construction
- Permanently grease lubricated
- Available with 304 Stainless Steel shields, or nitrile rubber seals

Rails:

Redi-Rail V-Rails are available in four sizes, which are designed for the corresponding size wheels. The V-Ways are induction hardened and polished, while the track body is left soft for easy drilling of mounting holes.

- Available in 1045 Carbon Steel or 400 Stainless Steel
- Optional black oxide finish
- Choose predrilled rail from stock, or custom cut and drilled to your specification

Bushings:

Bushings allow for the wheels to be mounted with the appropriate fastener for the specific application.

- Fixed bushings are used in the primary radial load direction
- Adjustable bushings allow adjustable fit and preload
- Stainless Steel construction



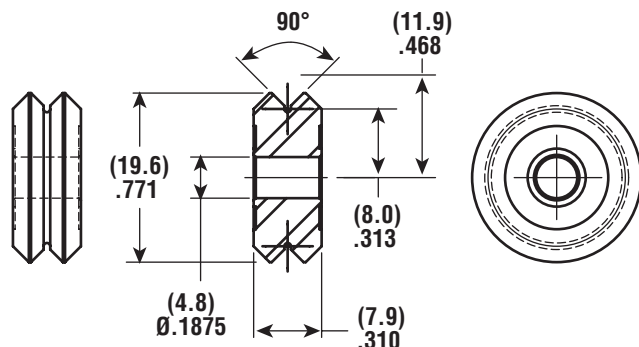
Redi-Rail® V-Guide System

Radial Loads to 283 lbs. (1,260 N) per Wheel

Linear Motion Systems

V-GUIDE WHEELS

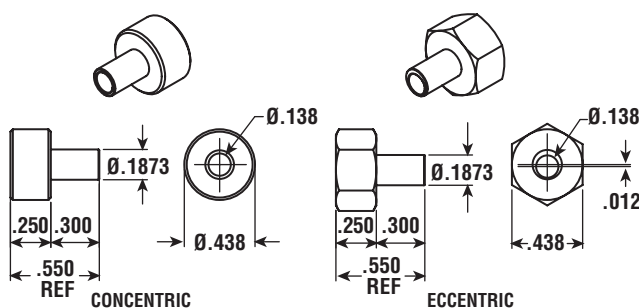
| | |
|-------|--------------------------|
| VW1 | Shielded Bearing |
| VWS1 | Sealed Bearing |
| VWSS1 | Sealed Stainless Bearing |



WEIGHT: .42 oz. (12 g)

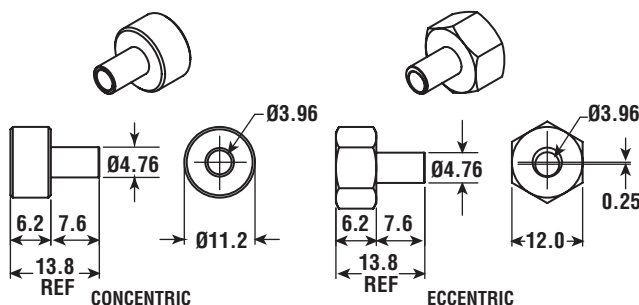
WHEEL BUSHINGS

| | |
|------|--------------------|
| VB1 | Fixed Bushing |
| VBA1 | Adjustable Bushing |



METRIC WHEEL BUSHINGS

| | |
|-------|---------------------------|
| MVB1 | Metric Fixed Bushing |
| MVBA1 | Metric Adjustable Bushing |



Rated for:

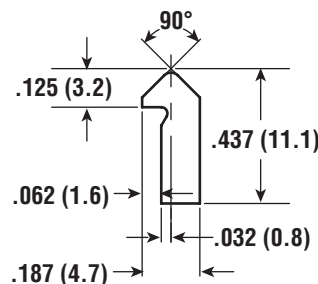
Radial loads to 283 lbs. (1,260 N) per wheel

Axial loads to 67 lbs. (297 N) per wheel

V-GUIDE RAIL

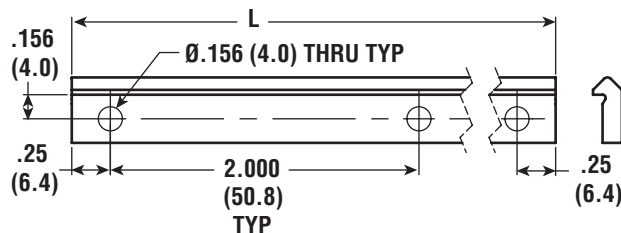
| Carbon Steel | |
|-----------------|---|
| VR1-xxx | undrilled rail max. length 21' (6400 mm) |
| VRD1-xxx | drilled rail, see table |
| Stainless Steel | |
| VRS1-xxx | undrilled rail, max. length 21' (6400 mm) |
| VRSD1-xxx | drilled rail, see table |

NOTE: Non-heat treated rails available in all all sizes, contact factory.



STANDARD DRILLED RAILS

| PART NUMBER | LENGTH | NO. OF HOLES |
|-----------------|-------------------|--------------|
| CARBON STEEL | | |
| VRD1-1250 | 12.5" (317.5 mm) | 7 |
| VRD1-2450 | 24.5" (622.3 mm) | 13 |
| VRD1-3650 | 36.5" (927.1 mm) | 19 |
| VRD1-4850 | 48.5" (1231.9 mm) | 25 |
| VRD1-6050 | 60.5" (1536.7 mm) | 31 |
| VRD1-7250 | 72.5" (1841.5 mm) | 37 |
| STAINLESS STEEL | | |
| VRSD1-1250 | 12.5" (317.5 mm) | 7 |
| VRSD1-2450 | 24.5" (622.3 mm) | 13 |
| VRSD1-3650 | 36.5" (927.1 mm) | 19 |
| VRSD1-4850 | 48.5" (1231.9 mm) | 25 |
| VRSD1-6050 | 60.5" (1536.7 mm) | 31 |
| VRSD1-7250 | 72.5" (1841.5 mm) | 37 |



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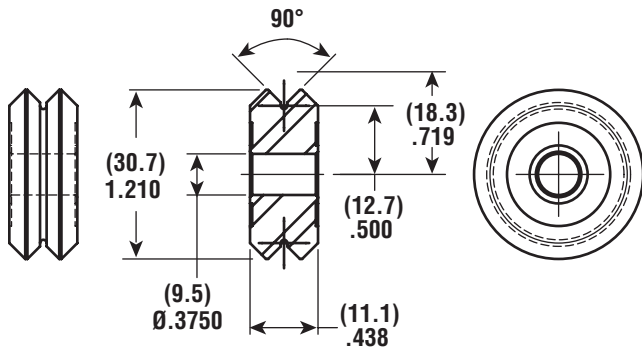
Redi-Rail® V-Guide System

Radial Loads to 614 lbs. (2,730 N) per Wheel

Linear Motion Systems

V-GUIDE WHEELS

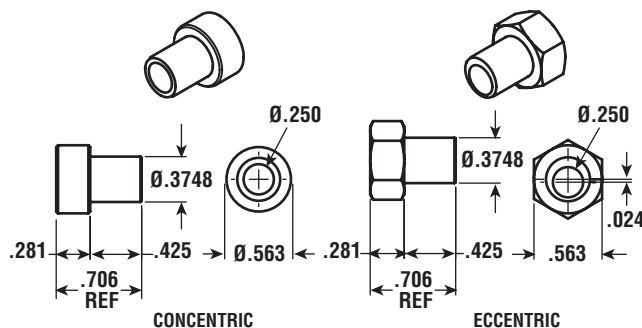
| | |
|-------|--------------------------|
| VW2 | Shielded Bearing |
| VWS2 | Sealed Bearing |
| VWSS2 | Sealed Stainless Bearing |



WEIGHT: 1.41 oz. (40 g)

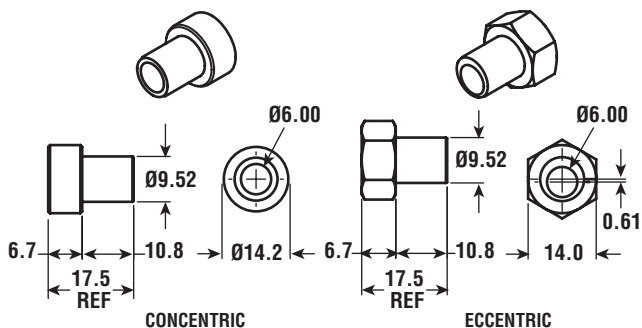
WHEEL BUSHINGS

| | |
|------|--------------------|
| VB2 | Fixed Bushing |
| VBA2 | Adjustable Bushing |



METRIC WHEEL BUSHINGS

| | |
|-------|---------------------------|
| MVB2 | Metric Fixed Bushing |
| MVBA2 | Metric Adjustable Bushing |



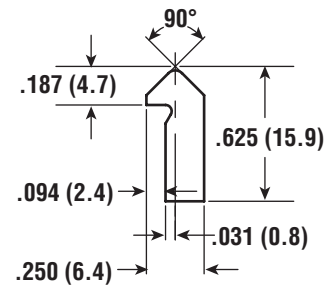
Rated for:

Radial loads to 614 lbs. (2,730 N) per wheel
Axial loads to 142 lbs. (632 N) per wheel

V-GUIDE RAIL

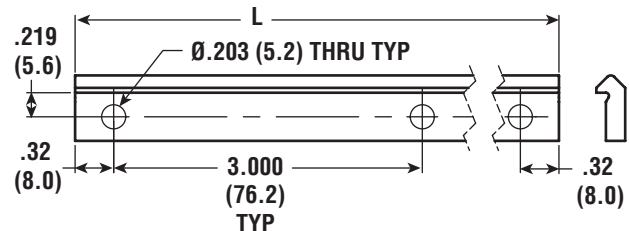
| Carbon Steel | |
|-----------------|---|
| VR2-xxx | undrilled rail max. length 21' (6400 mm) |
| VRD2-xxx | drilled rail, see table |
| Stainless Steel | |
| VRSD2-xxx | undrilled rail, max. length 21' (6400 mm) |
| VRSD2-xxx | drilled rail, see table |

NOTE: Non-heat treated rails available in all all sizes, contact factory.



STANDARD DRILLED RAILS

| PART NUMBER | LENGTH | # OF HOLES |
|-----------------|--------------------|------------|
| Carbon Steel | | |
| VRD2-1263 | 12.63" (320.8 mm) | 5 |
| VRD2-2463 | 24.63" (625.6 mm) | 9 |
| VRD2-3663 | 36.63" (930.4 mm) | 13 |
| VRD2-4863 | 48.63" (1235.2 mm) | 17 |
| VRD2-6063 | 60.63" (1540 mm) | 21 |
| VRD2-7263 | 72.63" (1844.8 mm) | 25 |
| Stainless Steel | | |
| VRSD2-1263 | 12.63" (320.8 mm) | 5 |
| VRSD2-2463 | 24.63" (625.6 mm) | 9 |
| VRSD2-3663 | 36.63" (930.4 mm) | 13 |
| VRSD2-4863 | 48.63" (1235.2 mm) | 17 |
| VRSD2-6063 | 60.63" (1540 mm) | 21 |
| VRSD2-7263 | 72.63" (1844.8 mm) | 25 |



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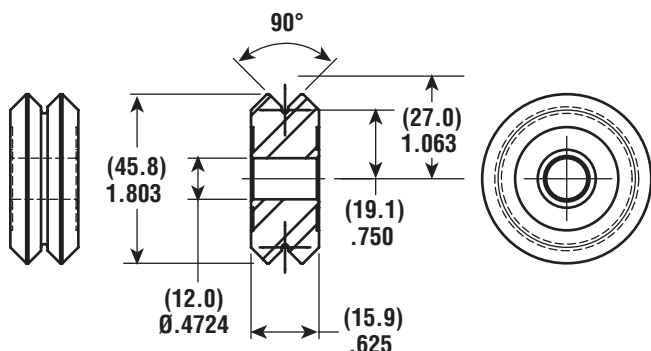
Redi-Rail® V-Guide System

Radial Loads to 1,386 lbs. (6,166 N) per Wheel

Linear Motion Systems

V-GUIDE WHEELS

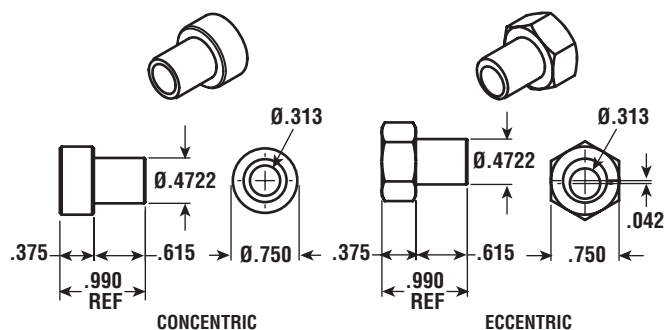
| | |
|-------|--------------------------|
| VW3 | Shielded Bearing |
| VWS3 | Sealed Bearing |
| VWSS3 | Sealed Stainless Bearing |



WEIGHT: 4.79 oz. (136 g)

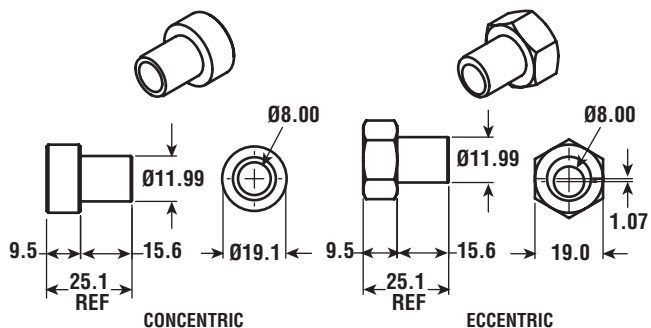
WHEEL BUSHINGS

| | |
|------|--------------------|
| VB3 | Fixed Bushing |
| VBA3 | Adjustable Bushing |



METRIC WHEEL BUSHINGS

| | |
|-------|---------------------------|
| MVB3 | Metric Fixed Bushing |
| MVBA3 | Metric Adjustable Bushing |



Rated for:

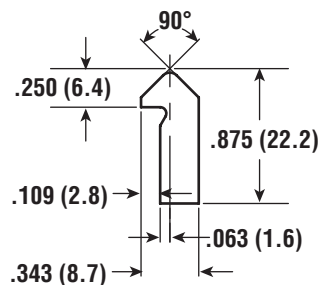
Radial loads to 1,386 lbs. (6,166 N) per wheel

Axial loads to 326 lbs. (1,448 N) per wheel

V-GUIDE RAIL

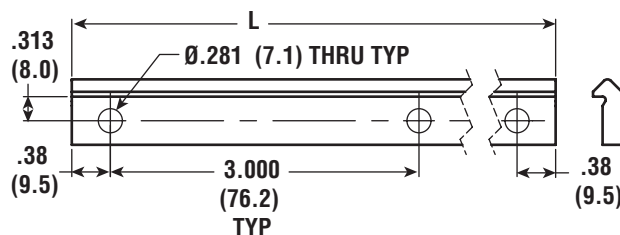
| Carbon Steel | |
|-----------------|---|
| VR3-xxx | undrilled rail max. length 21' (6400 mm) |
| VRD3-xxx | drilled rail, see table |
| Stainless Steel | |
| VRS3-xxx | undrilled rail, max. length 21' (6400 mm) |
| VRSD3-xxx | drilled rail, see table |

NOTE: Non-heat treated rails available in all all sizes, contact factory.



STANDARD DRILLED RAILS

| PART NUMBER | LENGTH | # OF HOLES |
|-----------------|--------------------|------------|
| CARBON STEEL | | |
| VRD3-1275 | 12.75" (323.9 mm) | 5 |
| VRD3-2475 | 24.75" (628.7 mm) | 9 |
| VRD3-3675 | 36.75" (933.5 mm) | 13 |
| VRD3-4875 | 48.75" (1238.3 mm) | 17 |
| VRD3-6075 | 60.75" (1543.1 mm) | 21 |
| VRD3-7275 | 72.75" (1847.9 mm) | 25 |
| STAINLESS STEEL | | |
| VRSD3-1275 | 12.75" (323.9 mm) | 5 |
| VRSD3-2475 | 24.75" (628.7 mm) | 9 |
| VRSD3-3675 | 36.75" (933.5 mm) | 13 |
| VRSD3-4875 | 48.75" (1238.3 mm) | 17 |
| VRSD3-6075 | 60.75" (1543.1 mm) | 21 |
| VRSD3-7275 | 72.75" (1847.9 mm) | 25 |



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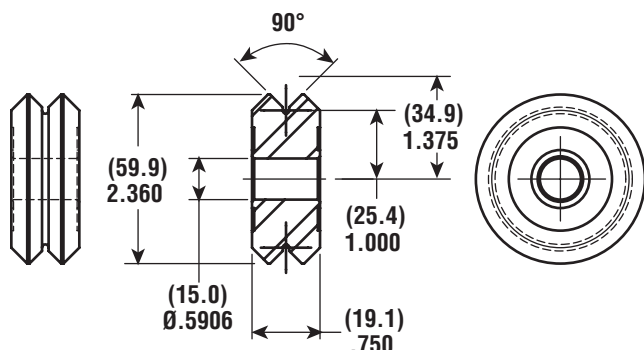
Redi-Rail® V-Guide System

Radial Loads to 2,246 lbs. (9,991 N) per Wheel

Linear Motion Systems

V-GUIDE WHEELS

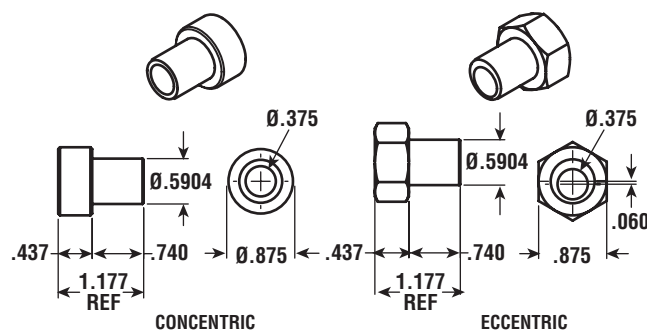
| | |
|-------|--------------------------|
| VW4 | Shielded Bearing |
| VWS4 | Sealed Bearing |
| VWSS4 | Sealed Stainless Bearing |



WEIGHT: 10 oz. (285 g)

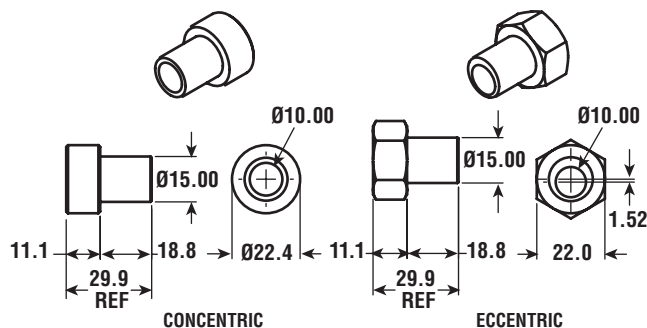
WHEEL BUSHINGS

| | |
|------|--------------------|
| VB4 | Fixed Bushing |
| VBA4 | Adjustable Bushing |



METRIC WHEEL BUSHINGS

| | |
|-------|---------------------------|
| MVB4 | Metric Fixed Bushing |
| MVBA4 | Metric Adjustable Bushing |



Rated for:

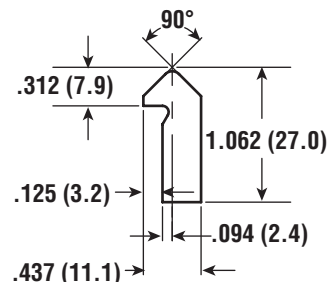
Radial loads to 2,246 lbs. (9,991 N) per wheel

Axial loads to 520 lbs. (2,313 N) per wheel

V-GUIDE RAIL

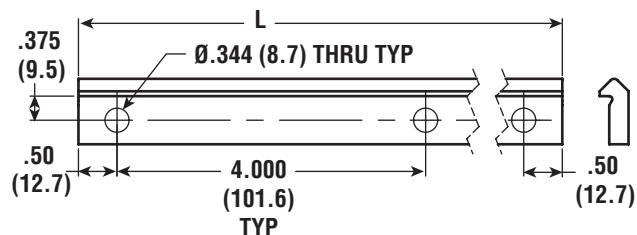
| Carbon Steel | |
|-----------------|---|
| VR4-xxx | undrilled rail max. length 21' (6400 mm) |
| VRD4-xxx | drilled rail, see table |
| Stainless Steel | |
| VRS4-xxx | undrilled rail, max. length 21' (6400 mm) |
| VRSD4-xxx | drilled rail, see table |

NOTE: Non-heat treated rails available in all all sizes, contact factory.



STANDARD DRILLED RAILS

| PART NUMBER | LENGTH | # OF HOLES |
|------------------------|--------------------|------------|
| CARBON STEEL | | |
| VRD4-1300 | 13.00" (330.2 mm) | 4 |
| VRD4-2500 | 25.00" (635 mm) | 7 |
| VRD4-3700 | 37.00" (939.8 mm) | 10 |
| VRD4-4900 | 49.00" (1244.6 mm) | 13 |
| VRD4-6100 | 61.00" (1549.4 mm) | 16 |
| Stainless Steel | | |
| VRSD4-1300 | 13.00" (330.2 mm) | 4 |
| VRSD4-2500 | 25.00" (635 mm) | 7 |
| VRSD4-3700 | 37.00" (939.8 mm) | 10 |
| VRSD4-4900 | 49.00" (1244.6 mm) | 13 |
| VRSD4-6100 | 61.00" (1549.4 mm) | 16 |



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LOAD CALCULATIONS

L = applied load / number of wheel pairs

L_R = wheel radial load

L_O = wheel load from moment

A = load offset dimension

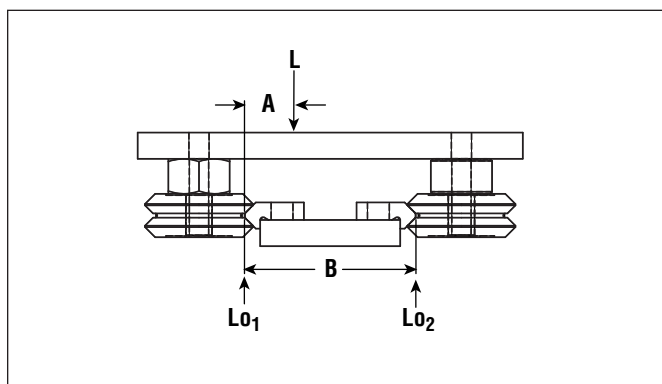
B = track width dimension

F_A = .5 for light duty, well lubricated use

F_A = 1 for normal lubricated use

F_A = 2 for dry, or harsh environments

LOAD CONDITION A



$$Lo_1 = \frac{L \times (B - A) \times F_A}{B}$$

$$Lo_2 = (L \times F_A) - Lo_1$$

Compare the greater of these loads to the rated moment and radial load capacities.

Example:

Load is 100 lbs on 4 wheel carriage,

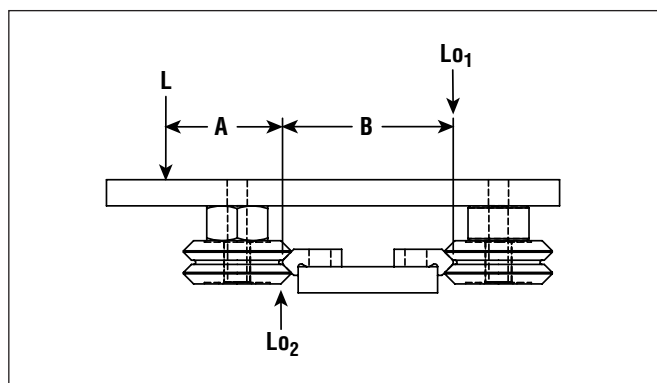
$L = 100 / 2$ pair wheels = 50 lbs.

$A = 4"$, $B = 10"$, $F_A = 1$

$$Lo_1 = \frac{50 \times (10 - 4) \times 1}{10} = 30 \text{ lbs.}$$

$$Lo_2 = 50 - 30 = 20 \text{ lbs.}$$

LOAD CONDITION B



$$Lo_1 = \frac{L \times A}{B} \times F_A$$

$$Lo_2 = (L \times F_A) + Lo_1$$

Compare the greater of these loads to the rated moment and radial load capacities.

Example:

Load is 100 lbs. on 4 wheel carriage,

$L = 100 / 2$ pair wheels = 50 lbs.

$A = 4"$, $B = 6"$, $F_A = 1$

$$Lo_1 = \frac{50 \times 4 \times 1}{6} = 33 \text{ lbs.}$$

$$Lo_2 = 50 + 33 = 83 \text{ lbs.}$$

LOAD CONDITION C

$$Lo_1 = \frac{L \times A \times F_A}{B}$$

$$L_R = (L \times F_A) + Lo_1$$

$$Lo_1 = Lo_2$$

Compare the greater of these loads to the rated moment and radial load capacities.

Example:

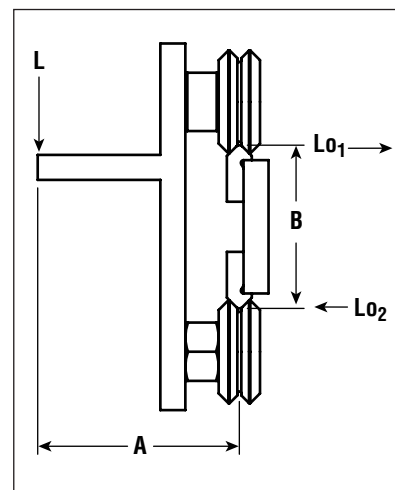
Load is 100 lbs. on 4 wheel carriage,

$L = 100 / 2$ pair wheels = 50 lbs.

$A = 4"$, $B = 6"$, $F_A = 1$

$$Lo_1 = \frac{50 \times 4 \times 1}{6} = 33 \text{ lbs.}$$

$$L_R = (50 \times 1) + 33 = 83 \text{ lbs.}$$



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MOUNTING AND ADJUSTMENT

Use the recommended fasteners for the specified track and wheel bushings.

Use the following table, and the center distance formulas in the next column, to configure the appropriate wheel mounting dimensions.

| V-RAIL SIZE | IV (in.) | OV (in.) | IV (mm) | OV (mm) |
|-------------|-------------|-------------|------------|------------|
| 1 | 0.874 | 0.934 | 22.2 | 23.7 |
| 2 | 1.374 | 1.436 | 34.9 | 36.5 |
| 3 | 2 | 2.124 | 50.8 | 53.9 |
| 4 | 2.624 | 2.75 | 66.6 | 69.9 |

The fixed bushing should be used to carry the heaviest loading. Preload the adjustable bushing so that the wheel can just be turned by hand. Over-tightening the preload will cause premature wear of the components.

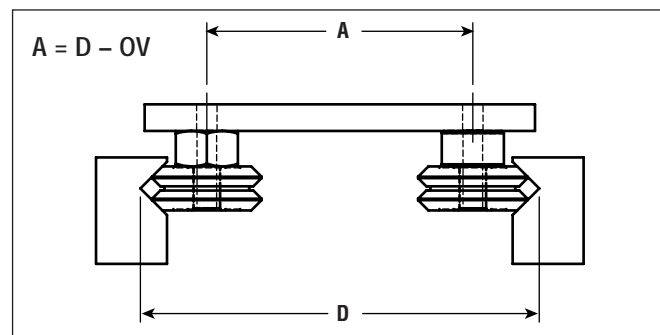
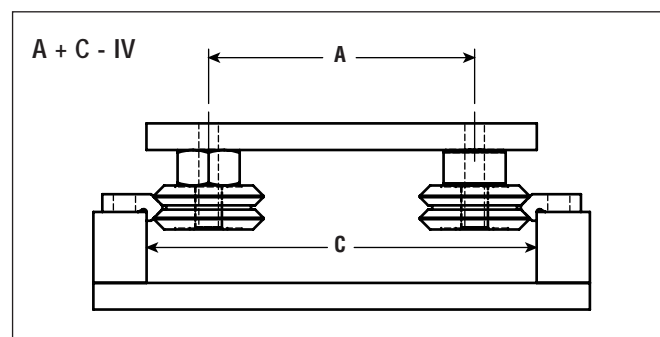
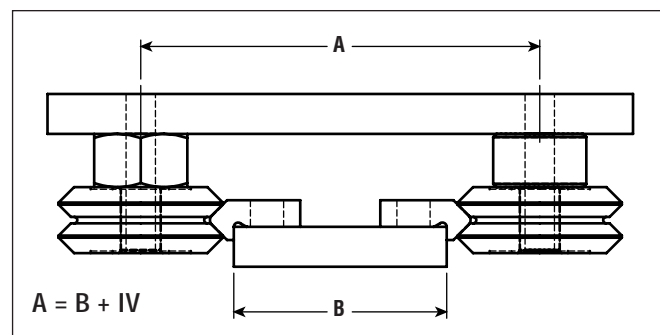
LUBRICATION

The V-Guide wheels are grease lubricated, and will not require any additional lube. The track should be lubricated for optimum performance and service life. Suggested lubricants are Mobil Vactra #2 Way Oil, or Mobil Polyrex EP 2 Extreme Pressure Grease.

SUGGESTED FASTENERS

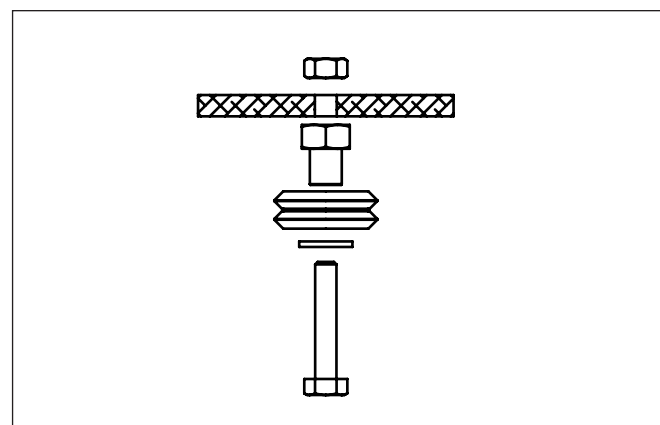
| BUSHINGS | | | |
|----------|---------|--------|-----------|
| ENGLISH | | METRIC | |
| VB1 | #6 | MVB1 | M4 |
| VB2 | 1/4" | MVB2 | M6 |
| VB3 | 5/16" | MVB3 | M8 |
| VB4 | 3/8" | MVB4 | M10 |
| V-RAIL | | | |
| VR1 | #6, M3 | VR3 | 1/4", M6 |
| VR2 | #10, M6 | VR4 | 5/16", M8 |

CENTER DISTANCE FORMULA



WHEEL / BUSHING ASSEMBLY

Use SAE series N flat washers and lock washers to secure the wheel bushing assemblies.



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PRODUCT OVERVIEW

The Redi-Rail® Commercial Rail is a simple and cost effective linear motion solution with high load capacity and corrosion resistance. The Commercial Rail is used in various applications such as: Automation, packaging, material handling, environmental, energy, HVAC, medical, office equipment and many others.



FEATURES

- Roll formed rails made of steel/stainless steel sheet for low cost and corrosion resistance application
- Zinc plated rail length up to 6000mm
- Machined slider body made of aluminum alloy and anodized for corrosion resistance
- Steel rollers are made of 52100 chrome steel, hardened and ground, lubricated for life and sealed against contamination
- Stainless steel rollers made of 440C stainless steel for better corrosion resistance, lubricated for life and sealed against contamination
- Rollers made with thread integrated inner ring for ease of assembly and adjustment of pre-load
- Custom polymer wipers can be designed and manufactured to improve the smoothness of motion and service life
- Maximum operating temperature 100°C or 212°F
- Consult with factory for special hole spacing
- Speed up to 1.5 m/s
- Moment loads should be carried by two slides or two parallel rollers

APPLICATIONS

- Automation
- Packaging, material handling, etc
- Environmental, energy, HVAC, etc.
- Medical
- Office equipment

SLIDE ORIENTATION

The 3-roller slide should be installed in the rail so that the load is shared among the two outside rollers. The orientation marks indicate how to align the slider with the load direction

LUBRICATION – RAILS & BEARINGS

The rollers are internally lubricated for life, but the rails must always have a layer of grease. As a guideline, reapply fresh grease every 50,000 cycles.

PRELOAD ADJUSTMENT

- To loosen the center roller, use an Allen wrench to un-tighten the screw while holding the roller still with an open-end wrench
- Turn the center roller to a position to achieve the desired pre-load
- Move the slide along the length of the rail by hand. Adjust it so that it does not feel loose anywhere.
- Tighten the screw while holding the roller flat with an open-end wrench

| | CR20/CRSS20 | CR30/CRSS30 | CR45/CRSS45 |
|----------------------|-------------|-------------|-------------|
| Wrench flat sq. (mm) | 6 | 10 | 14 |

MATERIAL & FINISH SPECIFICATIONS

| | CR SERIES | SS SERIES |
|----------|---------------------------------|---------------------------|
| Rail | Carbon steel sheet, Zinc plated | Stainless steel 304 sheet |
| Slide | Aluminum alloy anodized | Aluminum alloy anodized |
| Rollers | Chrome steel | Stainless steel |
| Hardware | Steel zinc plated | Stainless steel 18-8 |

Rail Mount

| | CR20/SS20 | CR30/SS30 | CR45/SS45 |
|------------------------------------|-----------|-----------|-----------|
| Rail mount screw (Button head cap) | M4 | M5 | M8 |

Slide Mount

| | CR20/CRSS20 | CR30/CRSS30 | CR45/CRSS45 |
|--------------------------------------|-------------|-------------|-------------|
| Slide mount screws (Socket head cap) | M5 | M6 | M8 |
| Tightening torque (lbs-in) | 25 | 43 | 103 |
| Tightening torque (N-m) | 3 | 5 | 12 |

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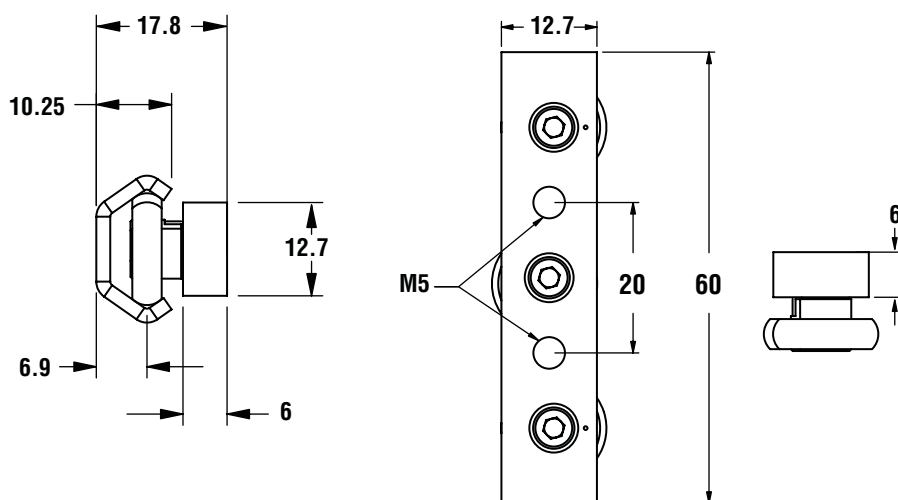


Redi-Rail® Commercial Rail

CR20 Slide & Rail - Dynamic Radial Cr280 N

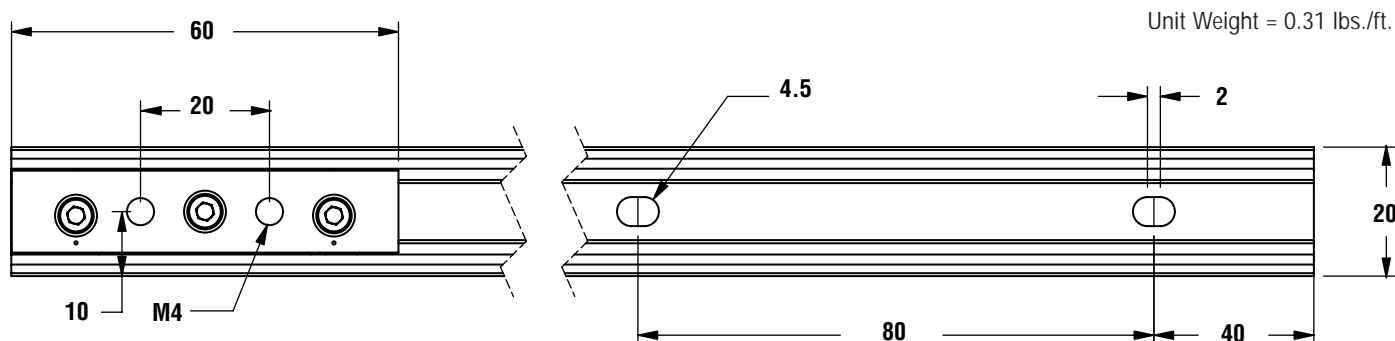
Linear Motion Systems

SLIDE CR20



| DIMS | LOAD RATINGS | | |
|----------------|--------------------------------------|--------------------------------------|--------------------------------------|
| | STATIC RADIAL C _{or} (N) | STATIC RADIAL C _{oa} (N) | DYNAMIC RADIAL C _r (N) |
| CR20 CRSS20 | 210 | 160 | 280 |
| CRP20 | 30 | 20 | 40 |

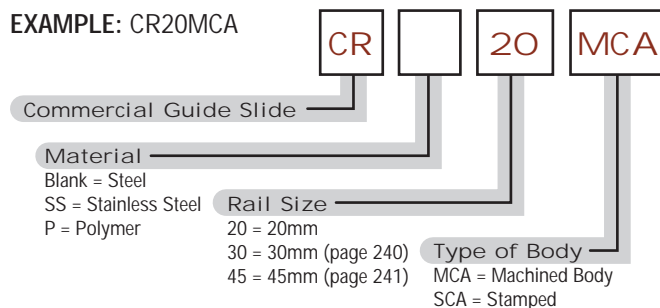
RAIL CR20



Unit Weight = 0.31 lbs./ft.

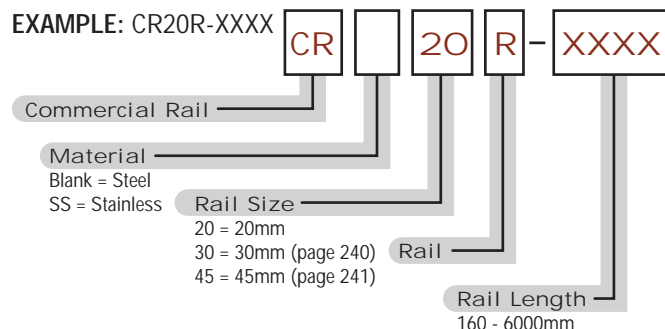
ORDER INFORMATION (SLIDE)

EXAMPLE: CR20MCA



ORDER INFORMATION (RAIL)

EXAMPLE: CR20R-XXXX



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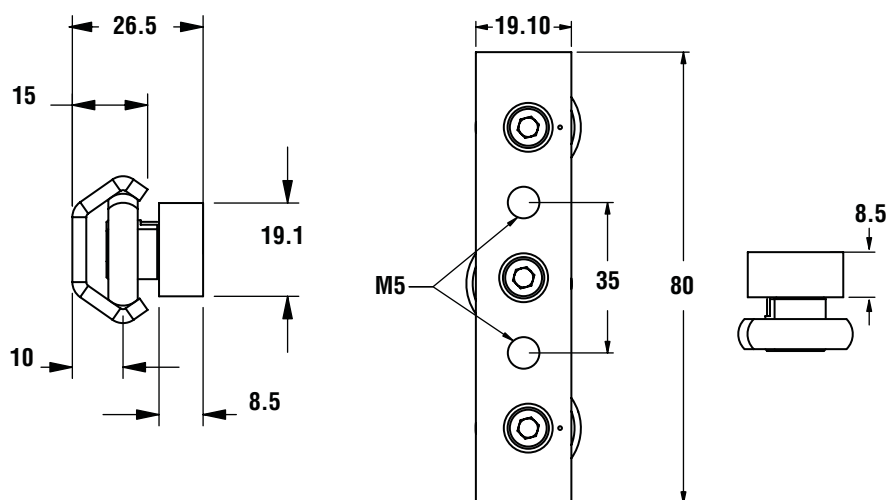


Redi-Rail® Commercial Rail

CR30 Slide & Rail - Dynamic Radial Cr800 N

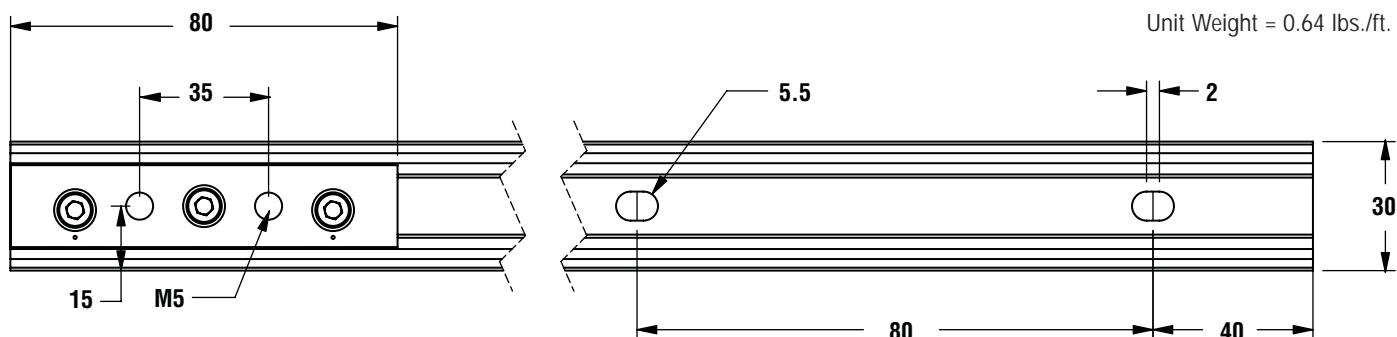
Linear Motion Systems

SLIDE CR30



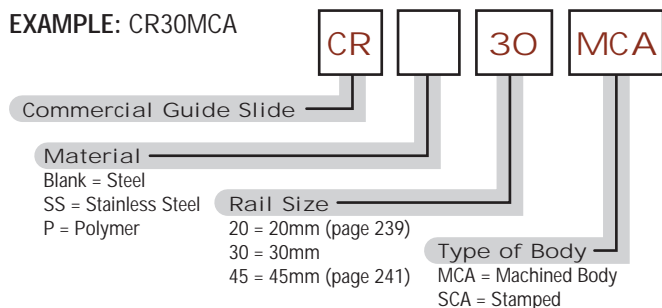
| DIMS | LOAD RATINGS | | |
|--------|---------------------------|--|--------------------------|
| | STATIC RADIAL Cor. (N) | STATIC RADIAL C _{0a} . (N) | DYNAMIC RADIAL Cr (N) |
| CR30 | 610 | 420 | 800 |
| CRSS30 | 610 | 420 | 800 |
| CRP30 | 90 | 60 | 120 |

RAIL CR30



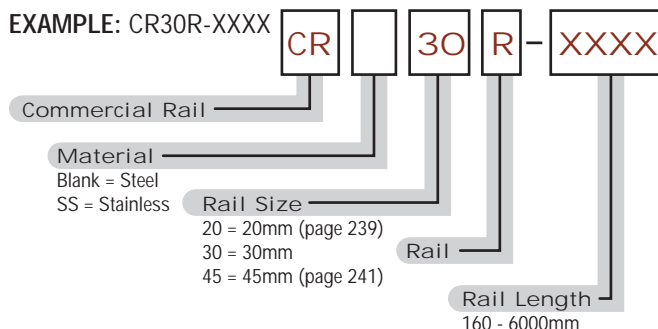
ORDER INFORMATION (SLIDE)

EXAMPLE: CR30MCA



ORDER INFORMATION (RAIL)

EXAMPLE: CR30R-XXXX



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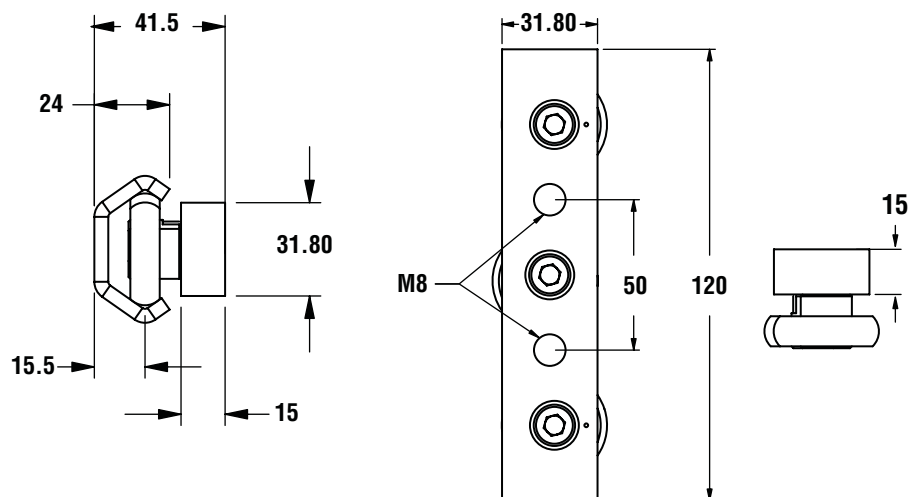


Redi-Rail® Commercial Rail

CR45 Slide & Rail - Dynamic Radial Cr1,740 N

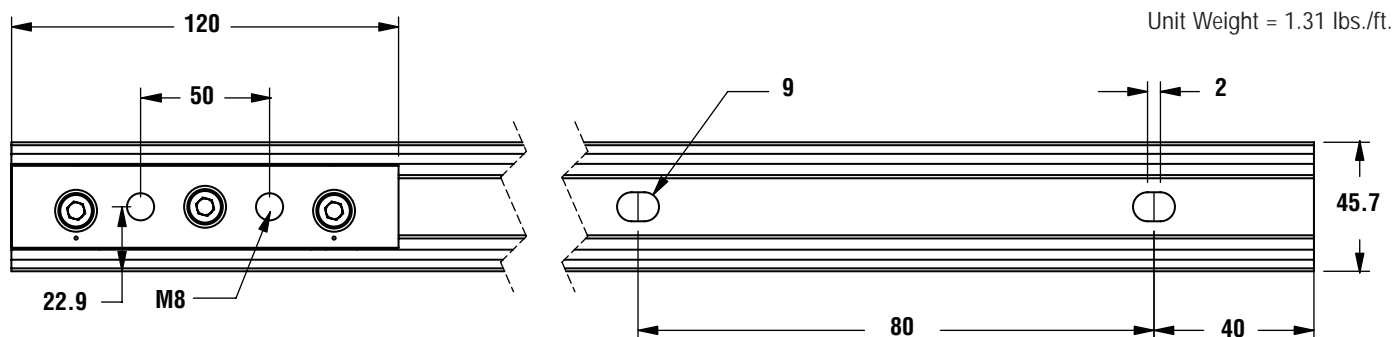
Linear Motion Systems

SLIDE CR45



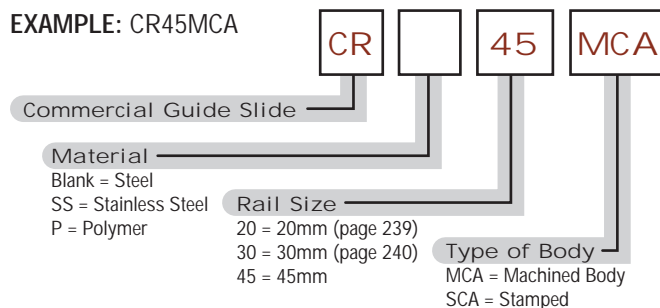
| DIMS | LOAD RATINGS | | |
|--------|---------------------------|---------------------------|--------------------------|
| | STATIC RADIAL Cor. (N) | STATIC RADIAL Coa. (N) | DYNAMIC RADIAL Cr (N) |
| CR45 | | | |
| CRSS45 | 1330 | 930 | 1740 |
| CRP45 | 190 | 150 | 260 |

RAIL CR45



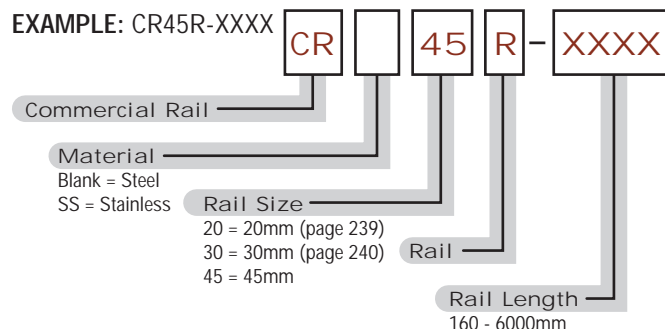
ORDER INFORMATION (SLIDE)

EXAMPLE: CR45MCA



ORDER INFORMATION (RAIL)

EXAMPLE: CR45R-XXXX



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Redi-Rail® Hardened Crown Rollers

Linear Motion Systems



- Low cost linear motion solution
- Precision rolling element bearing riding in a Unistrut™ type rail
- 9/16" Hex head for easier mounting
- Simple solution and setup for point-to-point applications
- Hardened crown provides self-alignment, good strength, and long life
- MAX. bearing load - 300 lbs.
- MAX. bearing speed - 150 ft./ min. (30 in./sec.)
- Rails available in lengths up to 10'

RAILS AVAILABLE WITH TWO FINISHES:

- Bare steel
- Powder coated

ACCESSORIES AVAILABLE:

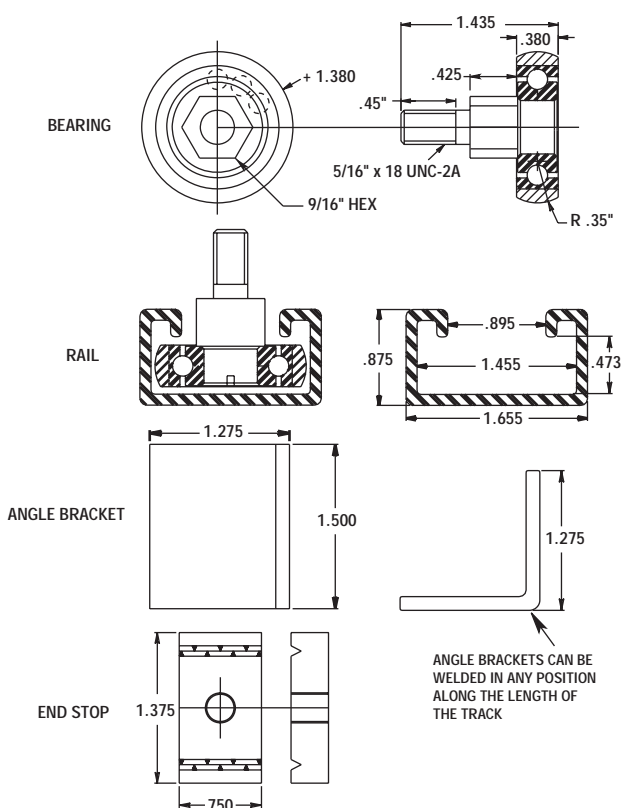
- Angle brackets (for welding to mounting rail)
- End stops

™ Unistrut is a trademark of Unistrut, Inc.

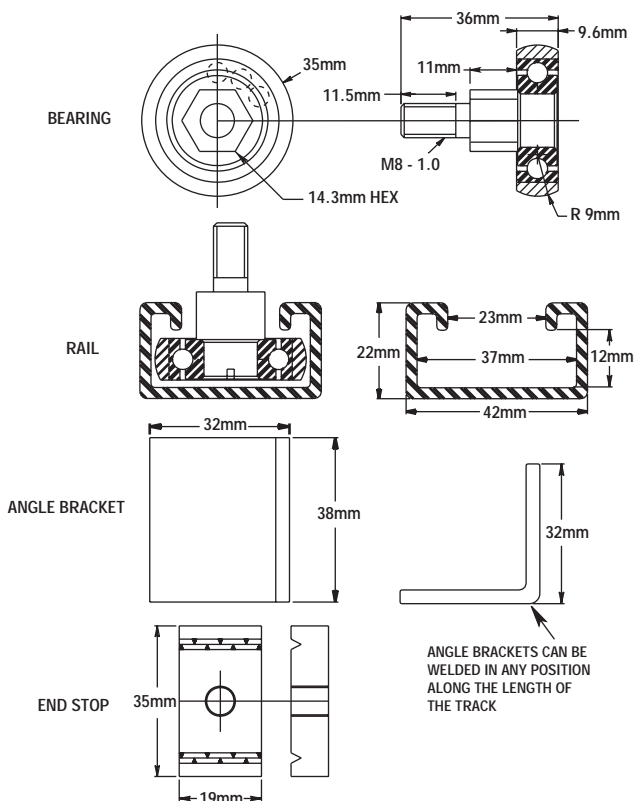
ORDERING INFORMATION

| PART NO. | DESCRIPTION |
|----------|---|
| PAC3016 | Hardened Crown Roller Bearing |
| PAC3016M | Hardened Crown Roller Bearing with metric thread |
| PAC2245 | Rail System - unpainted (specify length - priced per foot) |
| PAC2247 | Rail System - black powder coat finish (specify length- price per foot) |
| PAC2244 | Angle Brackets - 1" Steel |
| PAC2246 | End Stops for Rail System (bolt included) |

INCH



METRIC



NOTE: All metric dimensions are conversions from inch dimensions all parts are manufactured to inch standards.

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The Hevi-Rail® high load capacity linear bearing guide systems from Pacific Bearing provide high axial and radial load capacity for material handling, packaging, automotive, aerospace, steel, paper processing and many more industries and applications with medium to low precision requirements.

FEATURES & BENEFITS

The economical Hevi-Rail® guide systems offer a lifetime of durability under continuous use. The easily interchangeable bearing components provide even dispersion of forces in the profile rails for longer system life and stability.

Linear Bearings:

- Outer ring made of case-hardened steel
- Handles very high axial and radial loads
- Easily interchangeable components for less down-time

Profile Rails:

- Standard length up to 6 meters
- Available sand blasted and lightly oiled
- U-channel and I-channel available

Flange Plates:

- Simple mounting for bearings
- Can be ordered pre-welded to bearing

Ordering example: HVB-054/HVPO-1

Clamp Flanges:

- Adjustable
- Eliminates need for welding and straightening
- Easily adjustable parallelism

APPLICATIONS

Some application examples:

- Telescoping applications (ex. overhead extending jib crane)
- Warehouse handling systems / other material handling
- Custom and standard lift units
- Large Shrink-wrap machinery
- Steel and coil handling
- Large variety of material handling

TECHNICAL SPECIFICATIONS

Linear Bearing for Axial & Radial Loads

Prior to welding, disassemble bearing components. To avoid cracks in welded joints, please use welding electrodes and core weld for unalloyed steel.

Materials:

Outer ring - Case-hardened steel UNI 20 MnCr 5 hardened at 60+2 HRC

Inner ring - Hardened steel En 31 - SAE 52100 hardened at 62-2 HRC

Cylindrical rollers - Flat ground heads are hardened steel, En 31 - SAE 52100, hardened at 59-64 HRC

Welding bolts - Low carbon steel

Bolt tolerance = 0.05 mm

Seals:

Bearings with fixed axial bearing (HVB-053 to HVB-063) - radial bearing has steel labyrinth and side guide roller with rubber seals

Bearings with eccentric adjustable axial bearing (HVBEA-454 to HVBEA-463) - Both radial and axial bearings utilize rubber seals (RS type)

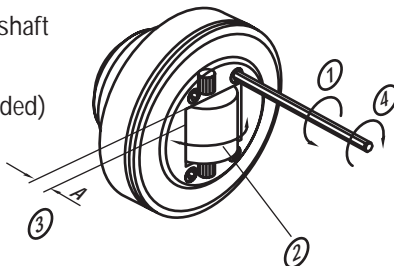
Lubrication:

Bearings are supplied lubricated with grease grade 3. Bearings from HVB-055 to HVB-063 can be relubricated with grease zerk. Adjustable bearings are not available with zerk.

Temperature: Resistant from -10°C to 80°C (14°F to 176°F)

Adjusting Axial Bearing (HVBEA-454 to HVBEA-463)

1. Remove front screws. Heat or tap sharply to break Loctite®.
2. Rotate axial bearing shaft
3. Check dimension A (repeat step 2, if needed)
4. Re-install front screws with Loctite®



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TECHNICAL SPECIFICATIONS (cont.)

PROFILE RAILS

Materials: High quality steel, UNI FE 510.C. Standard length (1024/1524 steel) of 6 m (19.7 ft.). Optional sand blasted and/or lightly oiled.

Rails are not hardened but have a Brinell hardness of 145-185.

The guide ways in the rails should be lightly greased and not painted.

CLAMP FLANGE

Material: Low carbon steel, Adjustable clamp

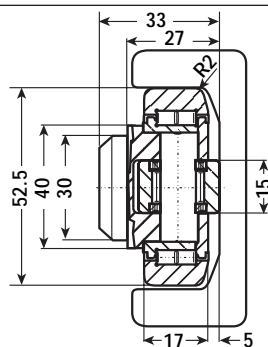
LINEAR BEARING SYSTEM SELECTION (when used with Profile Rails HVR-S to HVR-6)

Use the following chart to select the bearings (fixed or adjustable), rails, flange plates and clamp flanges according to your system's maximum static radial and axial loading. A "system" is defined as a bearing in the corresponding rail. For dimensional and detailed specifications for the system selected, simply refer to the corresponding page.

| F (KN) MAX STAT RADIAL | F (KN) MAX STAT AXIAL | COMBINED BEARING AXIAL BEARING FIXED | COMBINED BEARNG AXIAL BEARING ADJUSTABLE | MPROFILE RAILS | CLAP FLANGE | FLANGE PLATE | PAGE NO. |
|---------------------------|--------------------------|---|---|----------------|-------------|--------------|----------|
| 5.2 | 1.7 | HVB-053 | – | HVR-S | – | HVPS-1 | 244 |
| 7.2 | 2.4 | HVB-054 | HVBEA-454 | HVR-0 | HVC-0 | HVPO-1 | 245 |
| 8.6 | 2.8 | HVB-055 | HVBEA-455 | HVR-1, HVRI-07 | HVC-1 | HVP1-1 | 246 |
| 8.9 | 3.0 | HVB-056 | HVBEA-456 | HVR-2 | HVC-2 | HVP2-1 | 247 |
| 8.9 | 3.0 | HVB-057 | HVBEA-457 | HVRI-08 | – | HVP2-1 | 248 |
| 15.6 | 5.2 | HVB-058 | HVBEA-458 | HVR-3, HVRI-09 | HVC-3 | HVP3-1 | 249 |
| 15.5 | 5.1 | HVB-059 | HVBEA-459 | HVRI-10 | – | – | 250 |
| 16.5 | 5.5 | HVB-060 | HVBEA-460 | HVRI-11 | – | – | 250 |
| 16.5 | 5.5 | HVB-061 | HVBEA-461 | HVR-4 | HVC-4 | HVP4-1 | 251 |
| 23.5 | 7.8 | HVB-062 | - | HVR-5 | – | HVP4-1 | 252 |
| 41.1 | 13.7 | HVB-063 | HVBEA-463 | HVR-6 | – | HVP6-1 | 253 |

NOTE: For cantilevered loads, static verification calculations can be found on page 254.

LINEAR BEARING WITH FIXED AXIAL BEARING HVB-O53



WEIGHT = 0.36 Kg

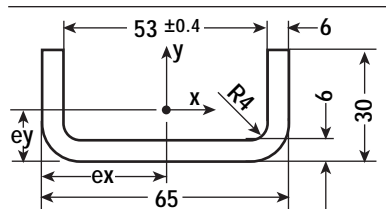
BEARING RADIAL LOAD

Max. dynamic load = 24 kN
Max. static load = 33 kN

BEARING AXIAL LOAD

Max. dynamic load = 10 kN
Max. static load = 14 kN

PROFILE RAIL U-CHANNEL HVR-S



WEIGHT = 5.3 Kq/m

MOMENT OF INERTIA

$$I_x = 5.2 \text{ cm}^4, I_y = 38.8 \text{ cm}^4$$

MOMENT OF RESISTANCE

$$W_x = 2.50 \text{ cm}^3, W_y = 11.90 \text{ cm}^3$$

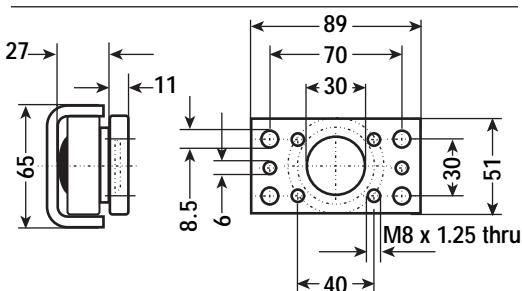
RADIUS OF INERTIA

$$i_x = 0.80 \text{ cm}, i_y = 2.40 \text{ cm}$$

DIST. TO CENTER OF GRAVITY

$$e_y = 0.94 \text{ cm}, e_x = 32.50 \text{ cm}$$

FLANGE PLATE HVPS-1



NOTE: Above loads achievable when used with a hardened rail 55 RC minimum 2.54mm deep.

WHEN USED WITH SHOWN PROFILE RAILS, System Max. Static Radial Load = 5.2 kN / 0.6 US Ton-Force
System Max. Static Axial Load = 1.7 kN / 0.2 US Ton-Force

*All dimensions in mm,
unless otherwise specified.

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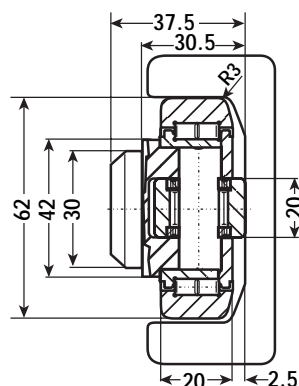


Hevi-Rail® Linear Bearing Systems

0.8 US Ton-Force

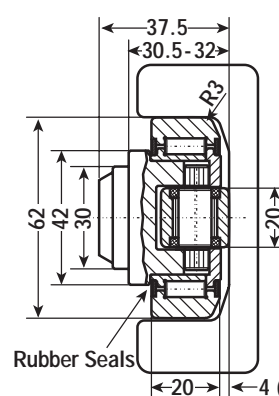
Linear Motion Systems

LINEAR BEARING WITH FIXED AXIAL BEARING HVB-O54



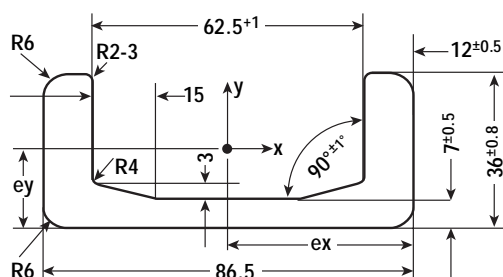
WEIGHT = 0.53 Kg
BEARING RADIAL LOAD
 Max. dynamic load = 39 KN
 Max. static load = 65 KN
BEARING AXIAL LOAD
 Max. dynamic load = 15 KN
 Max. static load = 22 KN
NOTE: Above loads achievable when used with a hardened rail 55 RC minimum 2.54mm deep.

LINEAR BEARING WITH ECCENTRIC ADJUSTABLE AXIAL BEARING HVBEA-454



WEIGHT = 0.53 Kg
BEARING RADIAL LOAD
 Max. dynamic load = 39 KN
 Max. static load = 65 KN
BEARING AXIAL LOAD
 Max. dynamic load = 16 KN
 Max. static load = 25 KN
NOTE: Above loads achievable when used with a hardened rail 55 RC minimum 2.54mm deep.

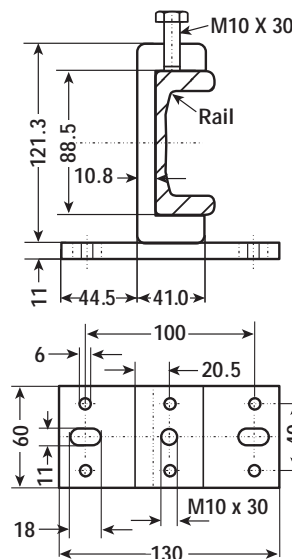
PROFILE RAIL U-CHANNEL HVR-O



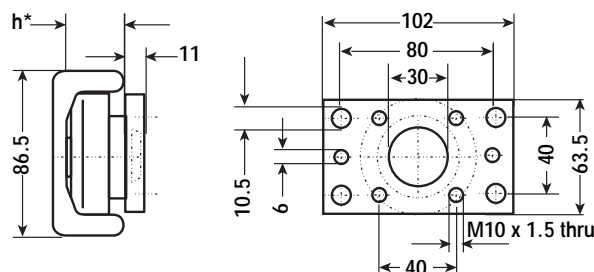
WEIGHT = 10.5 Kg/m
MOMENT OF INERTIA
 $I_x = 15.35 \text{ cm}^4$, $I_y = 137.05 \text{ cm}^4$
DIST. TO CENTER OF GRAVITY
 $e_y = 1.29 \text{ cm}$, $e_x = 4.33 \text{ cm}$

RADIUS OF INERTIA
 $i_x = 1.07 \text{ cm}$, $i_y = 3.20 \text{ cm}$
MOMENT OF RESISTANCE
 $W_{x_{min}} = 6.64 \text{ cm}^3$
 $W_{x_{max}} = 11.93 \text{ cm}^3$
 $W_y = 31.69 \text{ cm}^3$

CLAMP FLANGE HVC-O



FLANGE PLATE HVPO-1



* "h" refers to the depth of the axial bearing, so "h" depends on choice of HVB-O54 or HVBEA-454.

WHEN USED WITH SHOWN PROFILE RAILS, **System Max. Static Radial Load = 7.2 KN / 0.8 US Ton-Force**
System Max. Static Axial Load = 2.4 KN / 0.3 US Ton-Force

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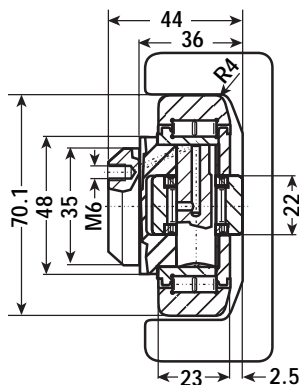


Hevi-Rail® Linear Bearing Systems

0.9 US Ton-Force

Linear Motion Systems

LINEAR BEARING WITH FIXED AXIAL BEARING HVB-O55



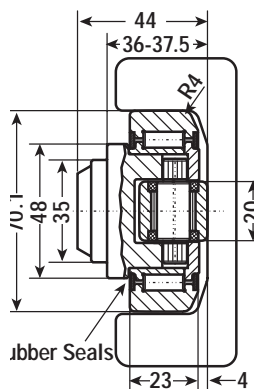
WEIGHT = 0.80 Kg

BEARING AXIAL LOAD

Max. dynamic load = 18 KN
Max. static load = 26 KN

NOTE: Above loads achievable when used with a hardened rail 55 RC minimum 2.54mm deep.

LINEAR BEARING WITH ECCENTRIC ADJUSTABLE AXIAL BEARING HVBEA-455



WEIGHT = 0.80 Kg

BEARING RADIAL LOAD

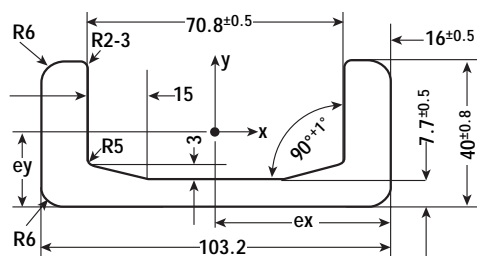
Max. dynamic load = 56 KN
Max. static load = 93 KN

BEARING AXIAL LOAD

Max. dynamic load = 16 KN
Max. static load = 25 KN

NOTE: Above loads achievable when used with a hardened rail 55 RC minimum 2.54mm deep.

PROFILE RAIL U-CHANNEL HVR-1



WEIGHT = 14.8 Kg/m

MOMENT OF INERTIA

$I_x = 27.29 \text{ cm}^4$, $I_y = 273.50 \text{ cm}^4$

DIST. TO CENTER OF GRAVITY

$e_y = 1.50 \text{ cm}$, $e_x = 5.16 \text{ cm}$

RADIUS OF INERTIA

$i_x = 1.20 \text{ cm}$, $i_y = 3.81 \text{ cm}$

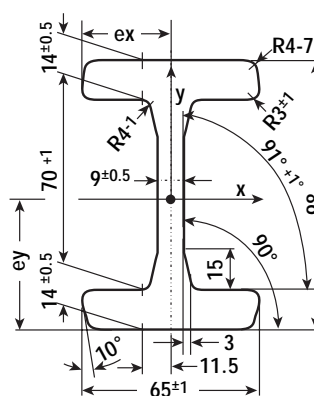
MOMENT OF RESISTANCE

$W_{x_{min}} = 10.91 \text{ cm}^3$

$W_{x_{max}} = 18.20 \text{ cm}^3$

$W_y = 53.00 \text{ cm}^3$

PROFILE RAIL I-CHANNEL HVRI-O7



WEIGHT = 19.4 Kg/m

MOMENT OF INERTIA

$I_x = 344.29 \text{ cm}^4$, $I_y = 57.63 \text{ cm}^4$

DIST. TO CENTER OF GRAVITY

$e_y = 4.90 \text{ cm}$, $e_x = 3.25 \text{ cm}$

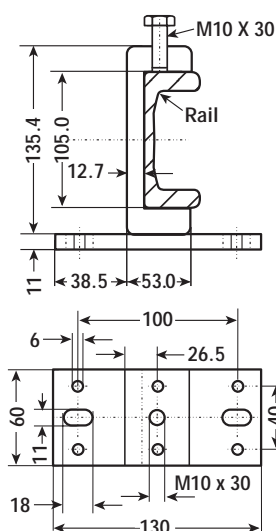
RADIUS OF INERTIA

$i_x = 3.73 \text{ cm}$, $i_y = 1.52 \text{ cm}$

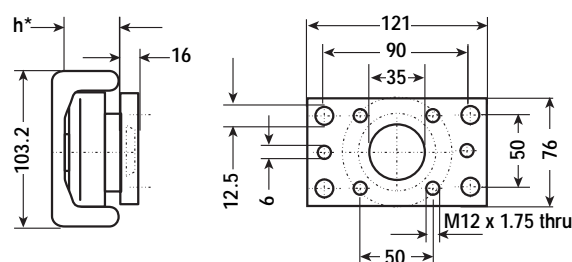
MOMENT OF RESISTANCE

$W_x = 70.26 \text{ cm}^3$, $W_y = 17.73 \text{ cm}^3$

CLAMP FLANGE HVC-1



FLANGE PLATE HVP1-1



* "h" refers to the depth of the axial bearing, so "h" depends on choice of HVB-055 or HVBEA-455.

WHEN USED WITH
SHOWN PROFILE RAILS,

System Max. Static Radial Load = 8.6 KN / 0.9 US Ton-Force
System Max. Static Axial Load = 2.8 KN / 0.3 US Ton-Force

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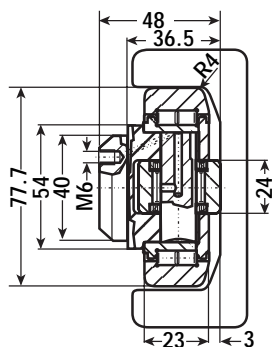


Hevi-Rail® Linear Bearing Systems

1.0 US Ton-Force

Linear Motion Systems

LINEAR BEARING WITH FIXED AXIAL BEARING HVB-O56



WEIGHT = 1.00 Kg

BEARING RADIAL LOAD

Max. dynamic load = 59 KN

Max. static load = 102 KN

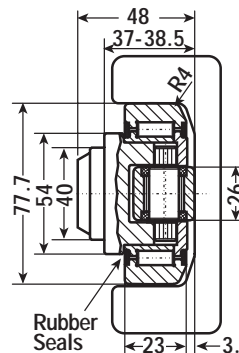
BEARING AXIAL LOAD

Max. dynamic load = 20 KN

Max. static load = 32 KN

NOTE: Above loads achievable when used with a hardened rail 55 RC minimum 2.54mm deep.

LINEAR BEARING WITH ECCENTRIC ADJUSTABLE AXIAL BEARING HVBEA-456



WEIGHT = 1.00 Kg

BEARING RADIAL LOAD

Max. dynamic load = 59 KN

Max. static load = 102 KN

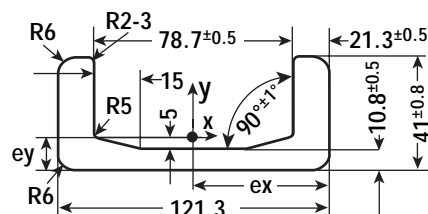
BEARING AXIAL LOAD

Max. dynamic load = 23 KN

Max. static load = 36 KN

NOTE: Above loads achievable when used with a hardened rail 55 RC minimum 2.54mm deep.

PROFILE RAIL U-CHANNEL HVR-2



WEIGHT = 20.9 Kg/m

MOMENT OF INERTIA

$I_x = 37.92 \text{ cm}^4$, $I_y = 493.58 \text{ cm}^4$

DIST. TO CENTER OF GRAVITY

$e_y = 1.54 \text{ cm}$, $e_x = 6.07 \text{ cm}$

RADIUS OF INERTIA

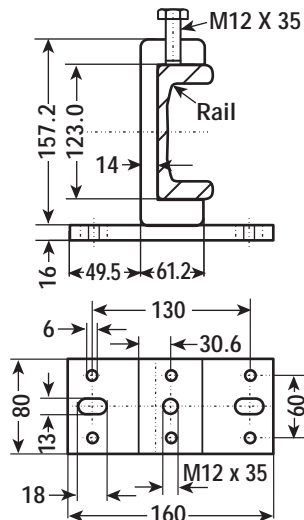
$i_x = 1.19 \text{ cm}$, $i_y = 4.30 \text{ cm}$

MOMENT OF RESISTANCE

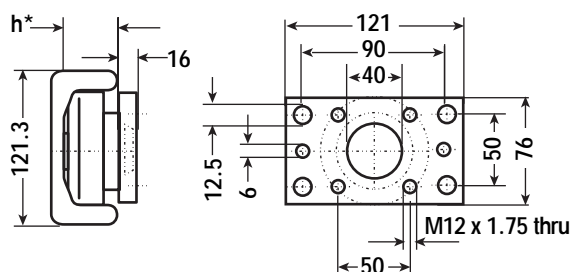
$W_{x_{min}} = 14.83 \text{ cm}^3$, $W_{x_{max}} = 24.58 \text{ cm}^3$,

$W_y = 81.38 \text{ cm}^3$

CLAMP FLANGE HVC-2



FLANGE PLATE HVP2-1



* "h" refers to the depth of the axial bearing,
so "h" depends on choice of HVB-O56 or HVBEA-456.

WHEN USED WITH SHOWN PROFILE RAILS, System Max. Static Radial Load = 8.9 KN / 1.0 US Ton-Force
System Max. Static Axial Load = 3.0 KN / 0.3 US Ton-Force

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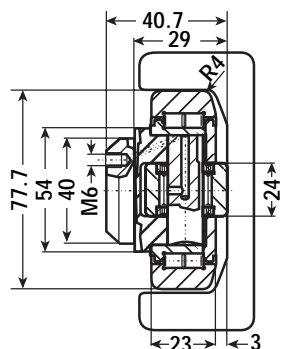


Hevi-Rail® Linear Bearing Systems

1.0 US Ton-Force

Linear Motion Systems

LINEAR BEARING WITH FIXED AXIAL BEARING HVB-O57



WEIGHT = 0.90 Kg

BEARING RADIAL LOAD

Max. dynamic load = 59 KN

Max. static load = 102 KN

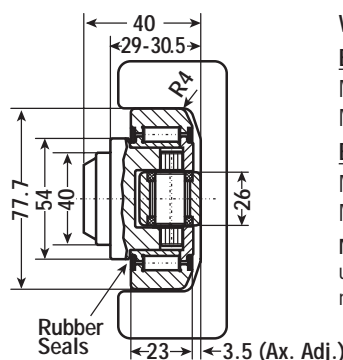
BEARING AXIAL LOAD

Max. dynamic load = 20 KN

Max. static load = 32 KN

NOTE: Above loads achievable when used with a hardened rail 55 RC minimum 2.54mm deep.

LINEAR BEARING WITH ECCENTRIC ADJUSTABLE AXIAL BEARING HVBEA-457



WEIGHT = 0.87 Kg

BEARING RADIAL LOAD

Max. dynamic load = 59 KN

Max. static load = 102 KN

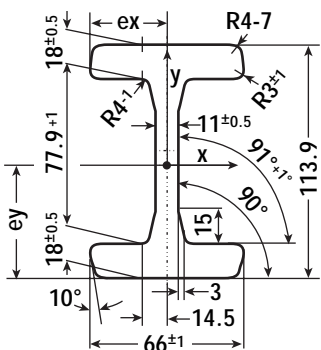
BEARING AXIAL LOAD

Max. dynamic load = 23 KN

Max. static load = 36 KN

NOTE: Above loads achievable when used with a hardened rail 55 RC minimum 2.54mm deep.

PROFILE RAIL I-CHANNEL HVR1-O8



WEIGHT = 25.3 Kg/m

MOMENT OF INERTIA

$I_x = 597.54 \text{ cm}^4$, $I_y = 76.79 \text{ cm}^4$

DIST. TO CENTER OF GRAVITY

$e_y = 5.70 \text{ cm}$, $e_x = 3.30 \text{ cm}$

RADIUS OF INERTIA

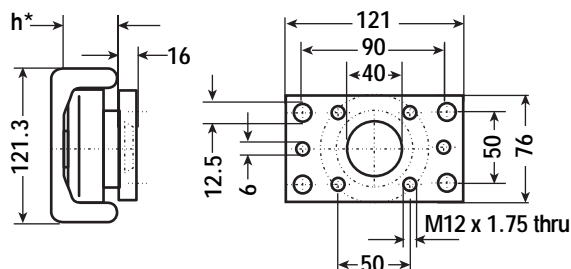
$i_x = 4.24 \text{ cm}$, $i_y = 1.54 \text{ cm}$

MOMENT OF RESISTANCE

$W_x = 104.92 \text{ cm}^3$,

$W_y = 23.27 \text{ cm}^3$

FLANGE PLATE HVP2-1



* "h" refers to the depth of the axial bearing,
so "h" depends on choice of HVB-O57 or HVBEA-457.

WHEN USED WITH SHOWN PROFILE RAILS, System Max. Static Radial Load = 8.9 KN / 1.0 US Ton-Force
System Max. Static Axial Load = 3.0 KN / 0.3 US Ton-Force

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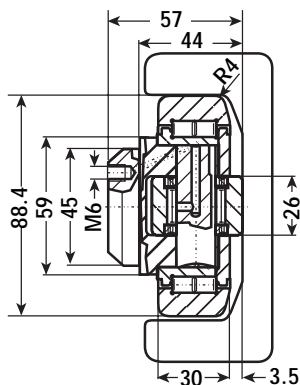


Hevi-Rail® Linear Bearing Systems

1.7 US Ton-Force

Linear Motion Systems

LINEAR BEARING WITH FIXED AXIAL BEARING HVB-O58



WEIGHT = 1.62 Kg

BEARING RADIAL LOAD

Max. dynamic load = 85 KN

Max. static load = 134 KN

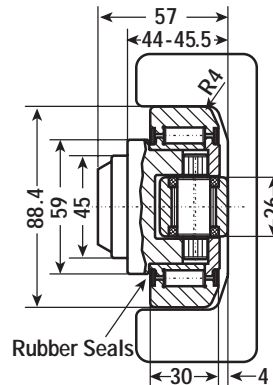
BEARING AXIAL LOAD

Max. dynamic load = 27 KN

Max. static load = 44 KN

NOTE: Above loads achievable when used with a hardened rail 55 RC minimum 2.54mm deep.

LINEAR BEARING WITH ECCENTRIC ADJUSTABLE AXIAL BEARING HVBEA-458



WEIGHT = 1.62 Kg

BEARING RADIAL LOAD

Max. dynamic load = 85 KN

Max. static load = 134 KN

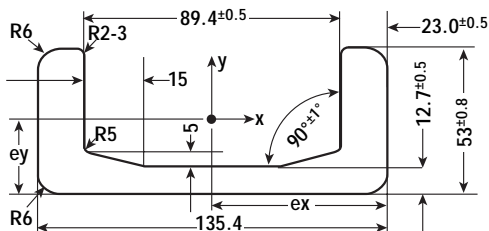
BEARING AXIAL LOAD

Max. dynamic load = 23 KN

Max. static load = 36 KN

NOTE: Above loads achievable when used with a hardened rail 55 RC minimum 2.54mm deep.

PROFILE RAIL U-CHANNEL HVR-3



WEIGHT = 28.6 Kg/m

MOMENT OF INERTIA

$I_x = 89.47 \text{ cm}^4$, $I_y = 865.23 \text{ cm}^4$

DIST. TO CENTER OF GRAVITY

$e_y = 1.99 \text{ cm}$, $e_x = 6.77 \text{ cm}$

RADIUS OF INERTIA

$i_x = 1.57 \text{ cm}$, $i_y = 4.87 \text{ cm}$

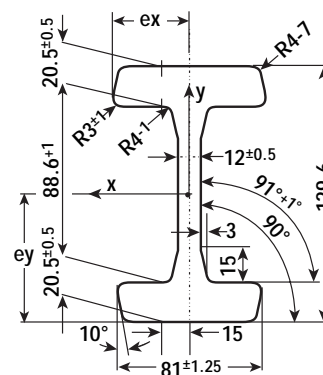
MOMENT OF RESISTANCE

$W_{x_{min}} = 27.03 \text{ cm}^3$

$W_{x_{max}} = 44.96 \text{ cm}^3$

$W_y = 127.80 \text{ cm}^3$

PROFILE RAIL I-CHANNEL HVRI-O9



WEIGHT = 34.1 Kg/m

MOMENT OF INERTIA

$I_x = 1037.22 \text{ cm}^4$, $I_y = 161.89 \text{ cm}^4$

DIST. TO CENTER OF GRAVITY

$e_y = 6.48 \text{ cm}$, $e_x = 4.05 \text{ cm}$

RADIUS OF INERTIA

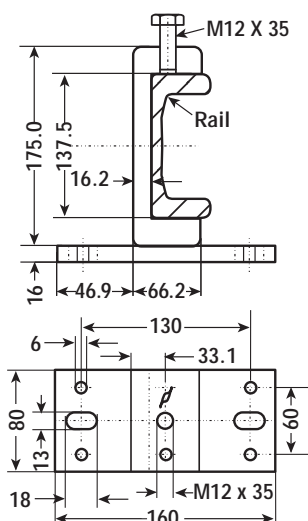
$i_x = 4.89 \text{ cm}$, $i_y = 1.93 \text{ cm}$

MOMENT OF RESISTANCE

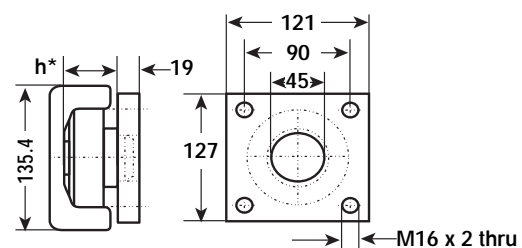
$W_x = 160.07 \text{ cm}^3$

$W_y = 39.97 \text{ cm}^3$

CLAMP FLANGE HVC-3



FLANGE PLATE HVP3-1



* "h" refers to the depth of the axial bearing, so "h" depends on choice of HVB-O58 or HVBEA-458.

WHEN USED WITH
SHOWN PROFILE RAILS,

System Max. Static Radial Load = 15.6 KN / 1.7 US Ton-Force

System Max. Static Axial Load = 5.2 KN / 0.6 US Ton-Force

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unless otherwise specified.

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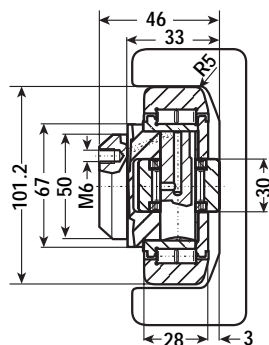


Hevi-Rail® Linear Bearing Systems

1.8 US Ton-Force

Linear Motion Systems

LINEAR BEARING WITH FIXED AXIAL BEARING HVB-O59



WEIGHT = 1.80 Kg

BEARING RADIAL LOAD

Max. dynamic load = 92 KN

Max. static load = 153 KN

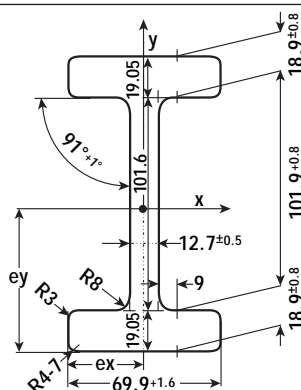
BEARING AXIAL LOAD

Max. dynamic load = 32 KN

Max. static load = 50 KN

NOTE: Above loads achievable when used with a hardened rail 55 RC minimum 2.54mm deep.

PROFILE RAIL I-CHANNEL HVRI-10



WEIGHT = 30.9 Kg/m

MOMENT OF INERTIA

$I_x = 1078.01 \text{ cm}^4$, $I_y = 104.38 \text{ cm}^4$

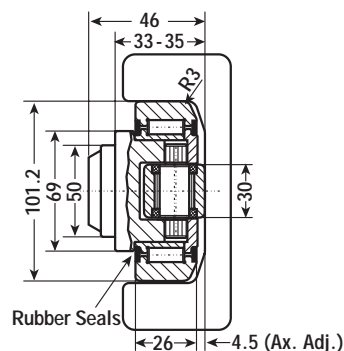
DIST. TO CENTER OF GRAVITY

$e_y = 6.99 \text{ cm}$, $e_x = 3.49 \text{ cm}$

MOMENT OF RESISTANCE

$W_x = 154.33 \text{ cm}^3$, $W_y = 29.89 \text{ cm}^3$

LINEAR BEARING WITH ECCENTRIC ADJUSTABLE AXIAL BEARING HVBEA-459



WEIGHT = 1.74 Kg

BEARING RADIAL LOAD

Max. dynamic load = 91 KN

Max. static load = 140 KN

BEARING AXIAL LOAD

Max. dynamic load = 32 KN

Max. static load = 50 KN

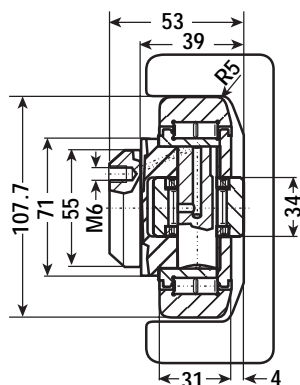
NOTE: Above loads achievable when used with a hardened rail 55 RC minimum 2.54mm deep.

WHEN USED WITH
SHOWN PROFILE RAILS,

System Max. Static Radial Load = 15.5 KN / 1.7 US Ton-Force
System Max. Static Axial Load = 5.1 KN / 0.6 US Ton-Force

*All dimensions in mm,
unless otherwise specified.

LINEAR BEARING WITH FIXED AXIAL BEARING HVB-O60



WEIGHT = 2.30 Kg

BEARING RADIAL LOAD

Max. dynamic load = 100 KN

Max. static load = 174 KN

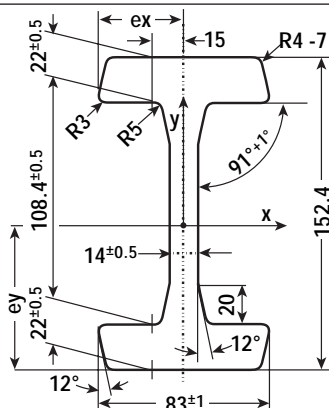
BEARING AXIAL LOAD

Max. dynamic load = 39 KN

Max. static load = 66 KN

NOTE: Above loads achievable when used with a hardened rail 55 RC minimum 2.54mm deep.

PROFILE RAIL I-CHANNEL HVRI-11



WEIGHT = 40.5 Kg/m

MOMENT OF INERTIA

$I_x = 1670.08 \text{ cm}^4$, $I_y = 184.52 \text{ cm}^4$

DIST. TO CENTER OF GRAVITY

$e_y = 7.62 \text{ cm}$, $e_x = 4.15 \text{ cm}$

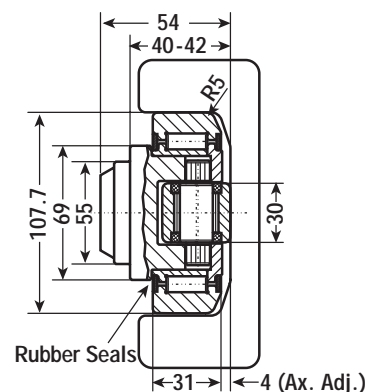
RADIUS OF INERTIA

$i_x = 5.69 \text{ cm}$, $i_y = 1.91 \text{ cm}$

MOMENT OF RESISTANCE

$W_x = 219.17 \text{ cm}^3$, $W_y = 44.46 \text{ cm}^3$

LINEAR BEARING WITH ECCENTRIC ADJUSTABLE AXIAL BEARING HVBEA-460



WEIGHT = 2.27 Kg

BEARING RADIAL LOAD

Max. dynamic load = 100 KN

Max. static load = 174 KN

BEARING AXIAL LOAD

Max. dynamic load = 32 KN

Max. static load = 50 KN

NOTE: Above loads achievable when used with a hardened rail 55 RC minimum 2.54mm deep.

WHEN USED WITH
SHOWN PROFILE RAILS,

System Max. Static Radial Load = 16.5 KN / 1.8 US Ton-Force
System Max. Static Axial Load = 5.5 KN / 0.6 US Ton-Force

*All dimensions in mm,
unless otherwise specified.

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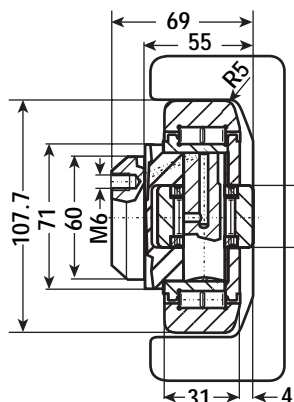


Hevi-Rail® Linear Bearing Systems

1.8 US Ton-Force

Linear Motion Systems

LINEAR BEARING WITH FIXED AXIAL BEARING HVB-061



WEIGHT = 2.82 Kg

BEARING RADIAL LOAD

Max. dynamic load = 100 KN

Max. static load = 174 KN

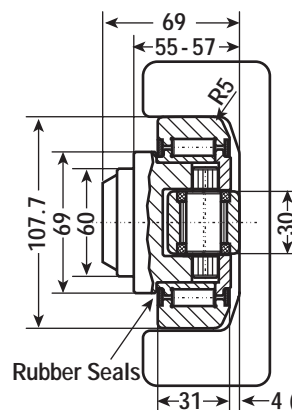
BEARING AXIAL LOAD

Max. dynamic load = 39 KN

Max. static load = 66 KN

NOTE: Above loads achievable when used with a hardened rail 55 RC minimum 2.54mm deep.

LINEAR BEARING WITH ECCENTRIC ADJUSTABLE AXIAL BEARING HVBEA-461



WEIGHT = 2.82 Kg

BEARING RADIAL LOAD

Max. dynamic load = 100 KN

Max. static load = 174 KN

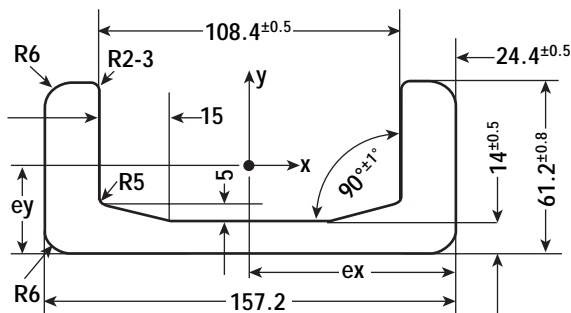
BEARING AXIAL LOAD

Max. dynamic load = 32 KN

Max. static load = 50 KN

NOTE: Above loads achievable when used with a hardened rail 55 RC minimum 2.54mm deep.

PROFILE RAIL U-CHANNEL HVR-4



WEIGHT = 35.9 Kg/m

MOMENT OF INERTIA

$I_x = 150.98 \text{ cm}^4$,

$I_y = 1,494.32 \text{ cm}^4$

DIST. TO CENTER OF GRAVITY

$e_y = 2.25 \text{ cm}$, $e_x = 7.86 \text{ cm}$

RADIUS OF INERTIA

$i_x = 1.82 \text{ cm}$, $i_y = 5.72 \text{ cm}$

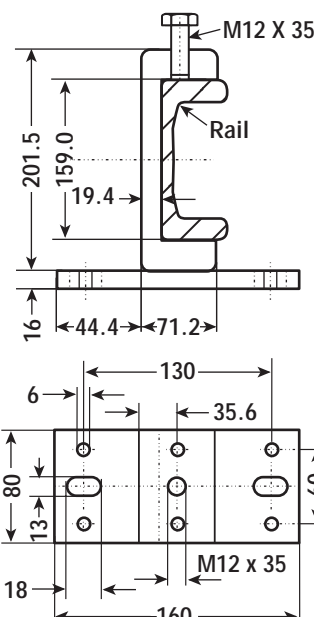
MOMENT OF RESISTANCE

$W_{x_{min}} = 39.00 \text{ cm}^3$

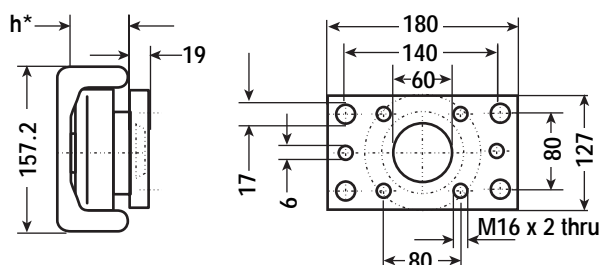
$W_{x_{max}} = 67.13 \text{ cm}^3$

$W_y = 190.12 \text{ cm}^3$

CLAMP FLANGE HVC-4



FLANGE PLATE HVP4-1



* "h" refers to the depth of the axial bearing, so "h" depends on choice of HVB-061 or HVBEA-461.

WHEN USED WITH
SHOWN PROFILE RAILS,

System Max. Static Radial Load = 16.5 KN / 1.8 US Ton-Force

System Max. Static Axial Load = 5.5 KN / 0.6 US Ton-Force

*All dimensions in mm,
unless otherwise specified.

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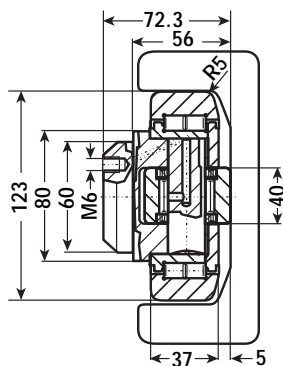


Hevi-Rail® Linear Bearing Systems

2.6 US Ton-Force

Linear Motion Systems

LINEAR BEARING WITH FIXED AXIAL BEARING HVB-O62



WEIGHT = 4.50 Kg

BEARING RADIAL LOAD

Max. dynamic load = 135 KN

Max. static load = 242 KN

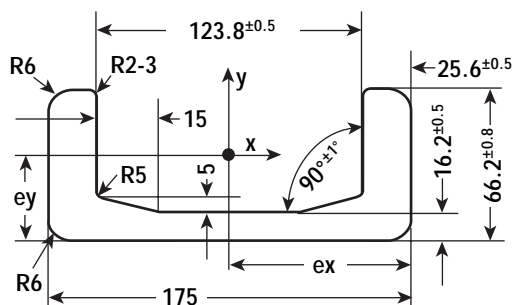
BEARING AXIAL LOAD

Max. dynamic load = 47 KN

Max. static load = 90 KN

NOTE: Above loads achievable when used with a hardened rail 55 RC minimum 2.54mm deep.

PROFILE RAIL HVR-5



WEIGHT = 42.9 Kg/m

MOMENT OF INERTIA

$I_x = 205.84 \text{ cm}^4$,

$I_y = 2,185.32 \text{ cm}^4$

DIST. TO CENTER OF GRAVITY

$e_y = 2.37 \text{ cm}$, $e_x = 8.75 \text{ cm}$

RADIUS OF INERTIA

$i_x = 1.94 \text{ cm}$, $i_y = 6.32 \text{ cm}$

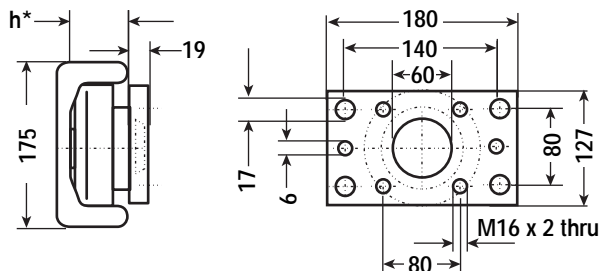
MOMENT OF RESISTANCE

$W_{x_{min}} = 48.42 \text{ cm}^3$

$W_{x_{max}} = 86.89 \text{ cm}^3$

$W_y = 249.75 \text{ cm}^3$

FLANGE PLATE HVP4-1



* "h" refers to the depth of the axial bearing, so "h" depends on choice of HVB-O62 or HVBEA-462.

WHEN USED WITH
SHOWN PROFILE RAILS,

System Max. Static Radial Load = 23.5 KN / 2.6 US Ton-Force

System Max. Static Axial Load = 7.8 KN / 0.9 US Ton-Force

*All dimensions in mm,
unless otherwise specified.

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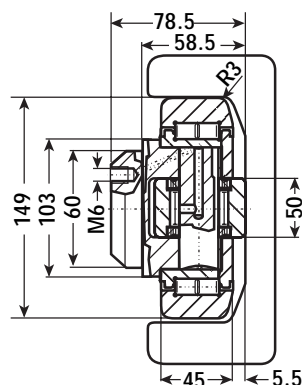


Hevi-Rail® Linear Bearing Systems

4.6 US Ton-Force

Linear Motion Systems

LINEAR BEARING WITH FIXED AXIAL BEARING HVB-063



WEIGHT = 6.52 Kg

BEARING RADIAL LOAD

Max. dynamic load = 183 KN

Max. static load = 353 KN

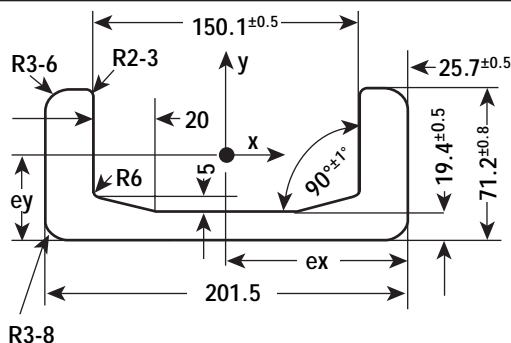
BEARING AXIAL LOAD

Max. dynamic load = 82 KN

Max. static load = 131 KN

NOTE: Above loads achievable when used with a hardened rail 55 RC minimum 2.54mm deep.

PROFILE RAIL HVR-6



WEIGHT = 52.3 Kg/m

MOMENT OF INERTIA

$I_x = 269.52 \text{ cm}^4$,

$I_y = 3,423.08 \text{ cm}^4$

DIST. TO CENTER OF GRAVITY

$e_y = 2.40 \text{ cm}$, $e_x = 10.08 \text{ cm}$

RADIUS OF INERTIA

$i_x = 2.01 \text{ cm}$, $i_y = 7.17 \text{ cm}$

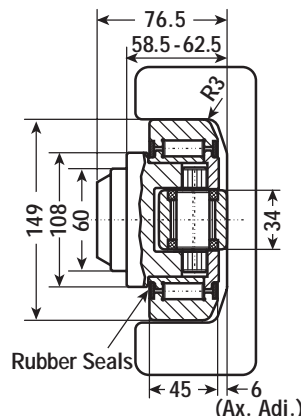
MOMENT OF RESISTANCE

$W_{x_{min}} = 57.15 \text{ cm}^3$

$W_{x_{max}} = 112.11 \text{ cm}^3$

$W_y = 339.76 \text{ cm}^3$

LINEAR BEARING WITH ECCENTRIC ADJUSTABLE AXIAL BEARING HVBEA-463



WEIGHT = 6.50 Kg

BEARING RADIAL LOAD

Max. dynamic load = 183 KN

Max. static load = 353 KN

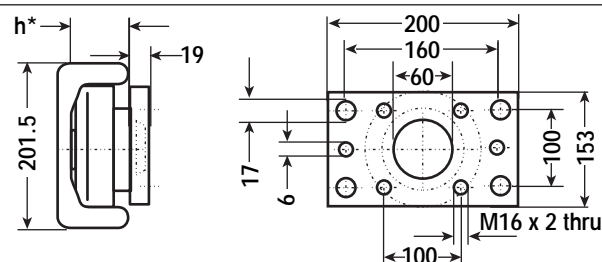
BEARING AXIAL LOAD

Max. dynamic load = 41 KN

Max. static load = 72 KN

NOTE: Above loads achievable when used with a hardened rail 55 RC minimum 2.54mm deep.

FLANGE PLATE HVP6-1



* "h" refers to the depth of the axial bearing, so "h" depends on choice of HVB-063 or HVBEA-463.

WHEN USED WITH
SHOWN PROFILE RAILS,

System Max. Static Radial Load = 41.1 KN / 4.6 US Ton-Force

System Max. Static Axial Load = 13.7 KN / 1.5 US Ton-Force

*All dimensions in mm,
unless otherwise specified.

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CALCULATION OF FMAX FOR CANTILEVERED LOADS

Q = Load capacity (N)

L = Load distance to suspension point (mm)

P = Suspension point

A = Bearing distance (mm) recommended 500–1000 mm

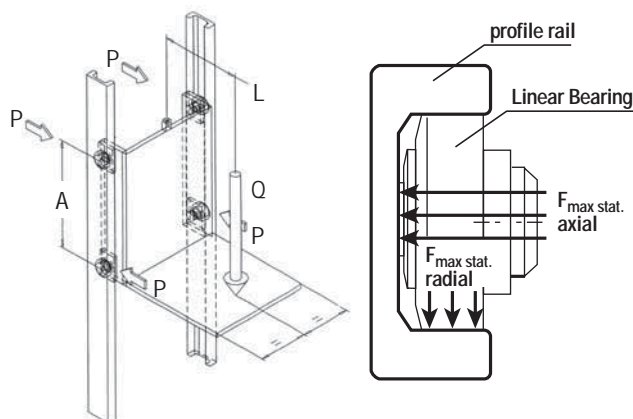
$$\text{Formula: } F_{\max}[\text{N}] = \frac{Q \cdot L}{2 \cdot A}$$

To avoid wearout in the rail, which is not hardened, the pressure between bearing and rail should be max.

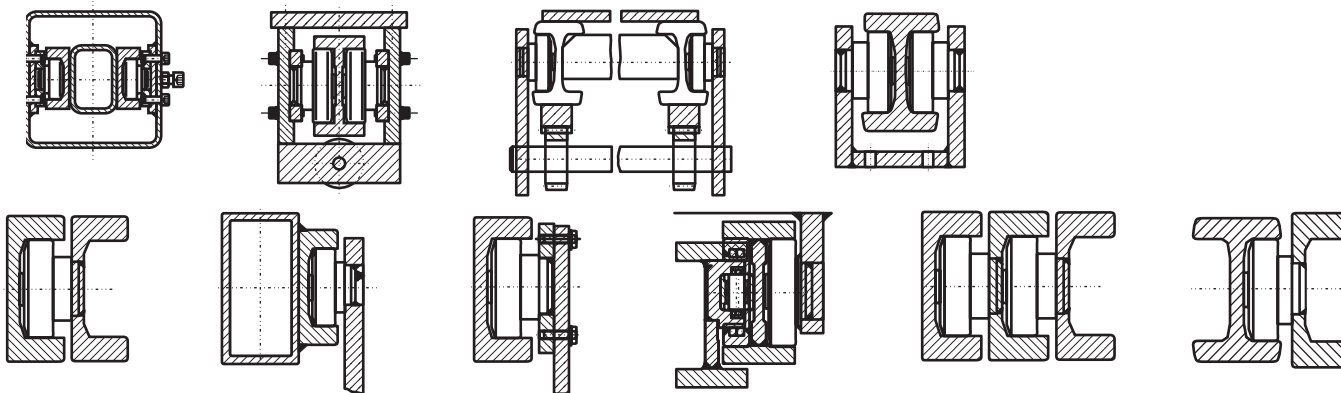
$P_{\text{zul}} = 860 \text{ N/mm}^2$ for Profile Rails HVB-0 to HVB-6.

$P_{\text{zul}} = 750 \text{ N/mm}^2$ for all profile rails. Indicated here are

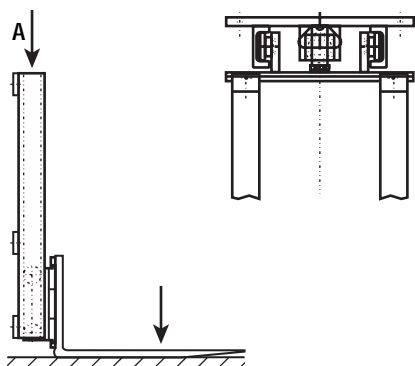
F_{\max} stat radial + axial for each bearing.



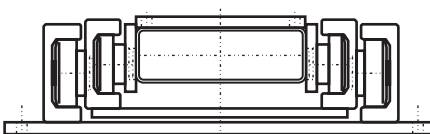
POSSIBLE MOUNTING CONFIGURATIONS



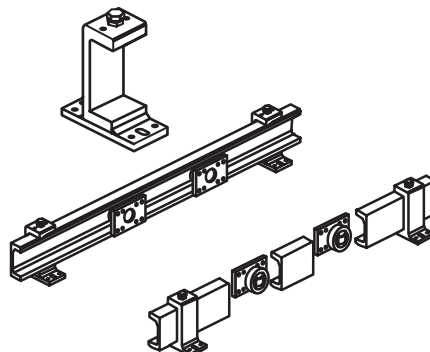
LIFTING UNITS



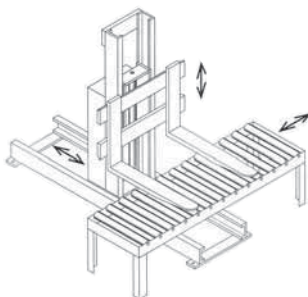
HORIZONTAL TELESCOPE



ADJUSTABLE CLAMP SYSTEM

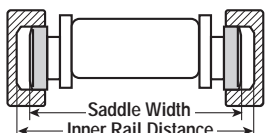


HANDLING UNITS



SYSTEM DESIGN SUGGESTIONS

1. The overall system clearance should be 1.524 mm to 3.048 mm



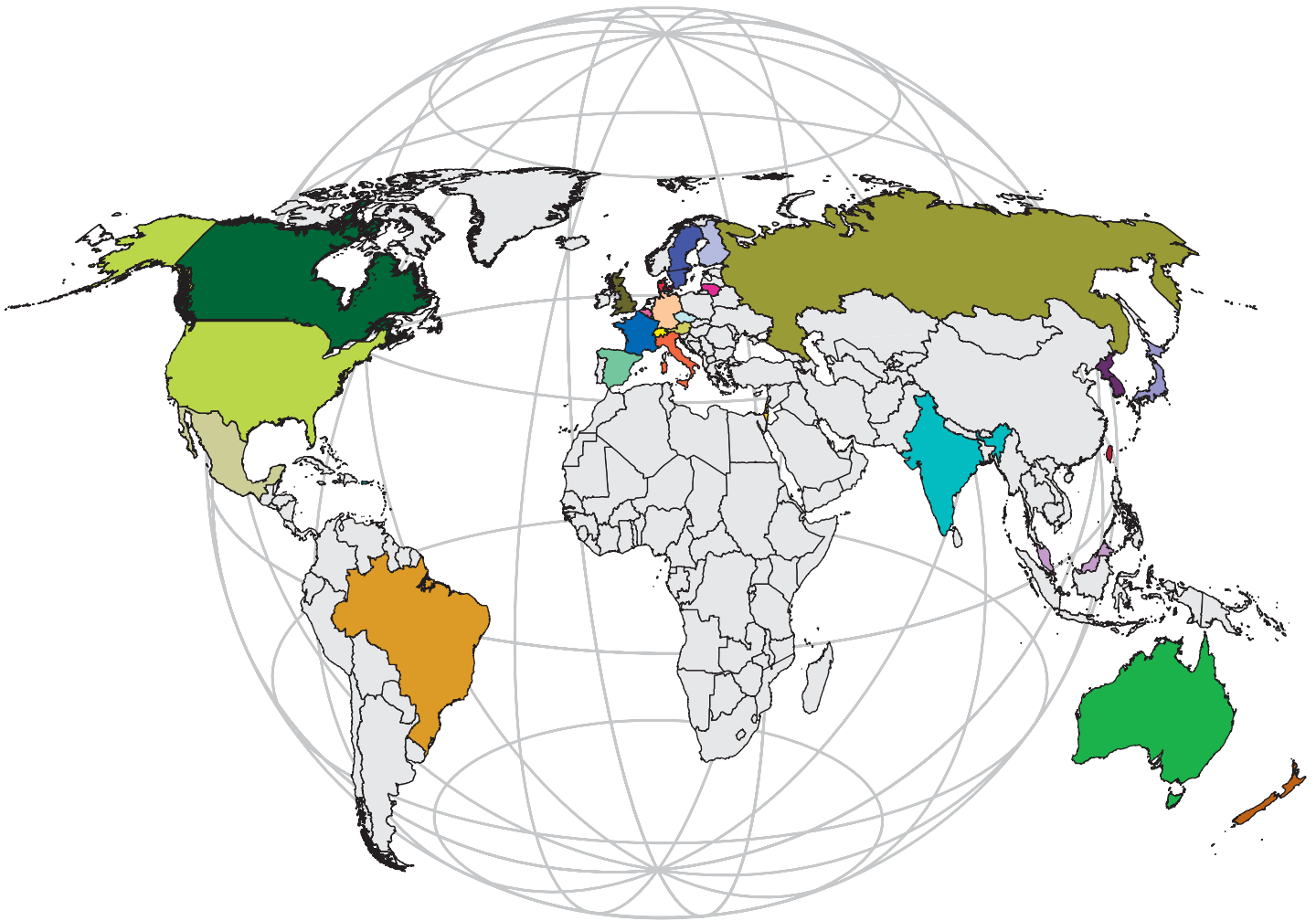
Inner Rail Distance =
Saddle Width + (1.524
mm to 3.048 mm)

2. Verify that the Axial bearing is aligned parallel to the rail; especially in vertical operations.



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Self-lubricating Linear Plane Bearings with engineered-to-match steel and ceramic coated shafting, pillow blocks, pre-drilled support rails, and integrated 1-piece rail and shaft.

- No lubrication required
- Fully interchangeable
- Tolerates temperature extremes
- Cannot catastrophically fail

simplicity®



Self-lubricating miniature linear guides

- Fully size interchangeable with industry standard sizes
- Lengths up to 3600 mm (12 ft.)
- No lubrication required
- Tolerates temperature extremes

mini-rail®



Combination axial and radial load heavy-duty rolling element bearings and rails

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- Longer service life for bearings and profiles
- Unlimited rail lengths available

Hevi-Rail®
Heavy Duty Bearing Systems



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- Precision tolerances +/- .025 mm over entire rail length
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- No lubrication required
- Tolerates temperature extremes

dolphin guides®



An entrepreneurial mechanical engineer, Bob Schroeder, founded Pacific Bearing in 1983 with Simplicity®, the world's first self-lubricating plane bearing. Mr. Schroeder's vision was then, and still is today, to simplify linear motion applications and reduce costs for industrial motion control consumers worldwide. This ideal has been realized and embraced today by Pacific Bearing's employees that engineer, manufacture, market and sell innovative linear guide systems and components. In addition, Pacific Bearing has over 1,200 distributors and sales agents worldwide.



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