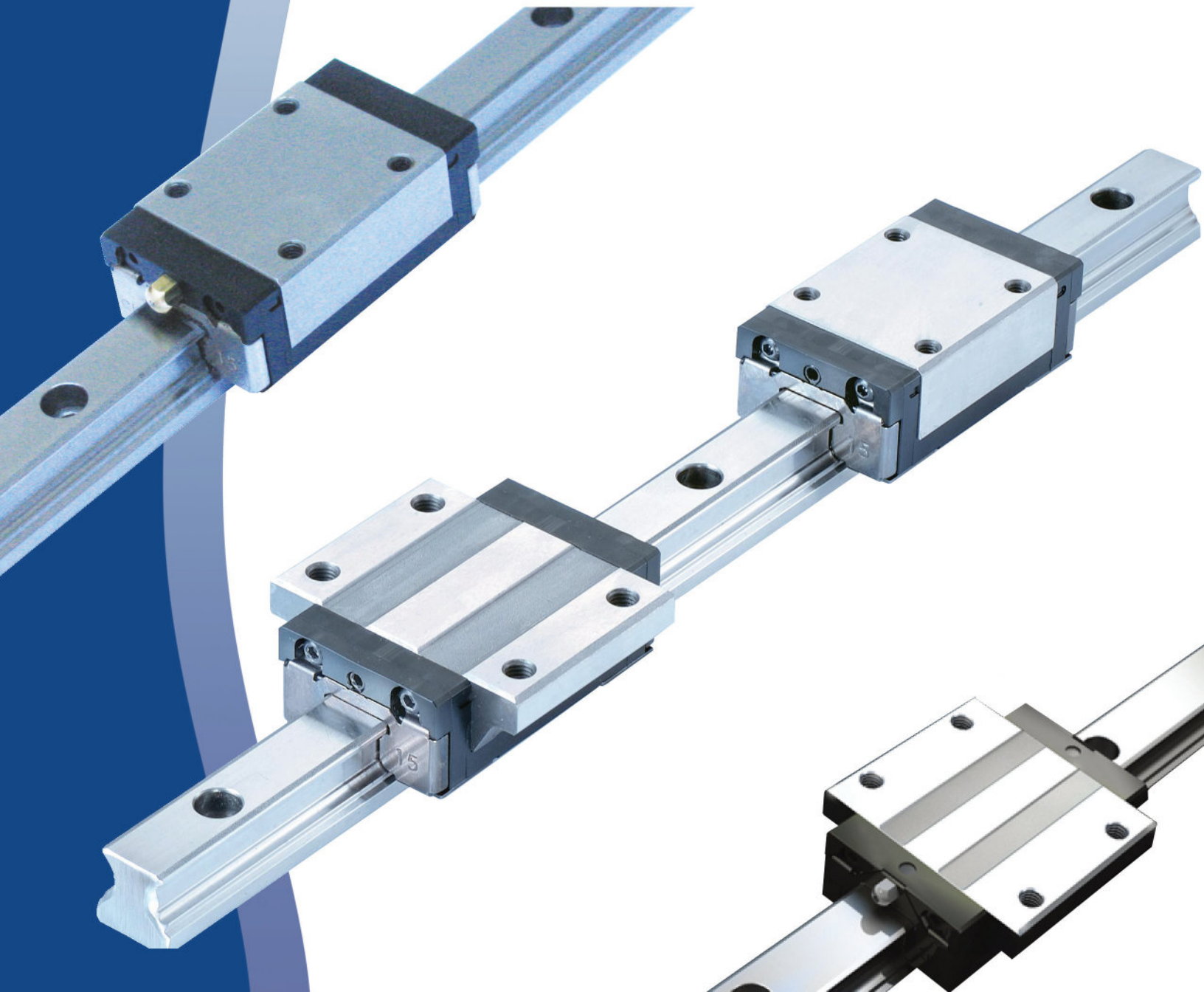




Profile Rail Linear Guides





For over 50 years *LINTECH* has designed, engineered, and manufactured linear positioning components for use in a wide range of applications. Whether it is a standard positioning component or a custom positioning assembly, *LINTECH* takes great pride in manufacturing a quality product.

At *LINTECH* we are proud to provide the motion control user with this product guide. It was developed to assist you with the design, selection, and implementation of mechanical positioning components.

Depending on the requirements, standard positioning components, or systems, can often be assembled and shipped in less than 2 weeks. Custom positioning assemblies require a different approach. We evaluate your special application, use our many years of experience to guide you, and then manufacture a quality product designed to meet your performance specifications.

LINTECH's technical support consists of a well trained inside customer service department, an experienced application engineering staff, and a versatile machining facility.

Our local technical support group consists of Automation Specialists located throughout the World. These Automation Specialists are experienced in the use of electronic and mechanical motion control products. They are well trained on the performance capabilities of *LINTECH* positioning components.

LINTECH is constantly designing new products and improving upon the many options available with our standard products. Whether it is a standard or custom positioning system required, visit our website, call, or e-mail us. We look forward to hearing from you.

Visit our website, or call us for the location of the nearest Automation Specialist in your area:

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1845 Enterprise Way
Monrovia, CA. 91016

Toll Free: (800) 435 - 7494

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Fax: (626) 303 - 2035

Web Site: www.LintechMotion.com

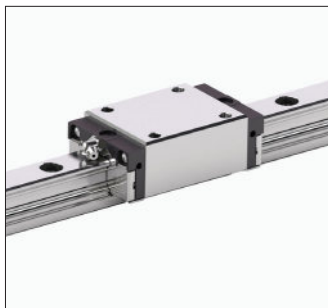
E-Mail: Lintech@LintechMotion.com



version: 01/2021

Table of Contents

| | Pages |
|---------------------------------------|-----------------|
| Technical Reference | 2 to 17 |
| ARC series | 18 to 21 |
| HRC series | 22 to 25 |
| WRC series | 26 to 29 |
| ARR & HRR & LRR series | 30 to 37 |

ARC series


- * Standard profile height bearing blocks
- * Standard and Flanged wide bearing blocks
- * Short, Standard, and Long length bearing blocks
- * 15, 20, 25, 30, 35, 45 and 55 mm rail sizes
- * Alloy steel bearing, rail, and balls
- * 4 rows of re-circulating balls
- * Equal loading in all directions
- * N, H, P, SP and UP accuracy grades
- * Light, Medium, and Heavy preload options
- * Low noise Ball Chain *optional*
- * Self lube reservoir *optional*

HRC series


- * Heavy / High profile height bearing blocks
- * Standard and Flanged wide bearing blocks
- * Standard, and Long length bearing blocks
- * 15, 20, 25, 30, 35, 45 and 55 mm rail sizes
- * Alloy steel bearing, rail, and balls
- * 4 rows of re-circulating balls
- * Equal loading in all directions
- * N, H, P, SP and UP accuracy grades
- * Light, Medium, and Heavy preload options
- * Low noise Ball Chain *optional*
- * Self lube reservoir *optional*

WRC series


- * Wide Rail linear guides
- * Standard and Flanged wide bearing blocks
- * Standard length bearing blocks
- * 21/15 and 27/20 mm rail sizes
- * Alloy steel bearing, rail, and balls
- * 4 rows of re-circulating balls
- * Equal loading in all directions
- * N, H, P, SP and UP accuracy grades
- * Light, Medium, and Heavy preload options
- * Low noise Ball Chain *optional*
- * Self lube reservoir *optional*

ARR series


- * Standard profile height roller bearing blocks
- * Standard and Flanged wide roller bearing blocks
- * Standard, and Long length roller bearing blocks
- * 35 and 45 mm rail size
- * Alloy steel bearing, rail, and rollers
- * 4 rows of re-circulating rollers
- * Equal loading in all directions
- * H, P, SP and UP accuracy grades
- * Light, Medium, and Heavy preload options
- * Low noise Ball Chain *optional*

HRR series

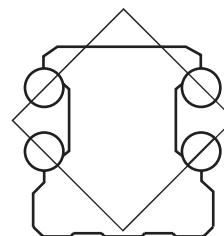

- * High profile height roller bearing blocks
- * Standard and Flanged wide roller bearing blocks
- * Standard, Long and Extra Long length roller bearing blocks
- * 35 and 45 mm rail size
- * Alloy steel bearing, rail, and rollers
- * 4 rows of re-circulating rollers
- * Equal loading in all directions
- * H, P, SP and UP accuracy grades
- * Light, Medium, and Heavy preload options
- * Low noise Ball Chain *optional*

LRR series

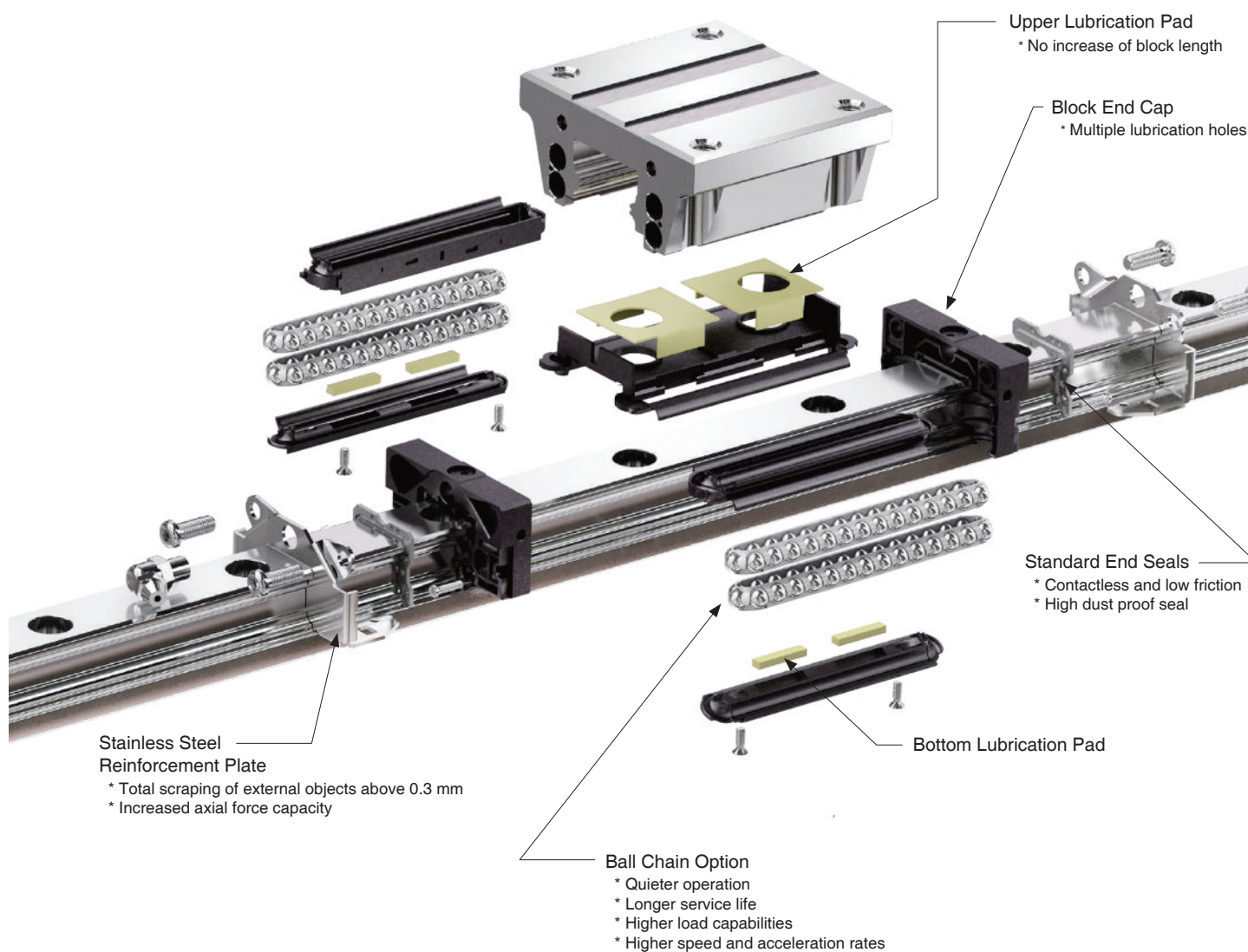

- * Low profile height roller bearing blocks
- * Standard and Flanged wide roller bearing blocks
- * Standard, Long and Extra Long length roller bearing blocks
- * 35 and 45 mm rail size
- * Alloy steel bearing, rail, and rollers
- * 4 rows of re-circulating rollers
- * Equal loading in all directions
- * H, P, SP and UP accuracy grades
- * Light, Medium, and Heavy preload options
- * Low noise Ball Chain *optional*

Product Characteristics

The ARC, HRC, and WRC linear guide series use the O-type arrangement for its four row ball circulation design. This 45 degree contact angle between the rail and the block's recirculating balls allow for a four directional load effect. Also, the use of larger ball diameter, and greater quantity of recirculating balls in our blocks, allows for a 10-30% greater load capacity than similarly sized competitor bearing block products. This and other characteristics are the source of our product's high load capacity, moment load ratings, and stiffness features.



O-type recirculating balls on rail arrangement



Lubrication

The recirculating balls in the block and the linear guide race-way will be separated at the contact zone by a micron-thick layer of oil. This lubrication reduces friction, helps prevent oxidation, reduces wear, dissipates heat, and increases overall service life. While every application is different, lubrication frequency should be based on load, acceleration, speed, and environment.

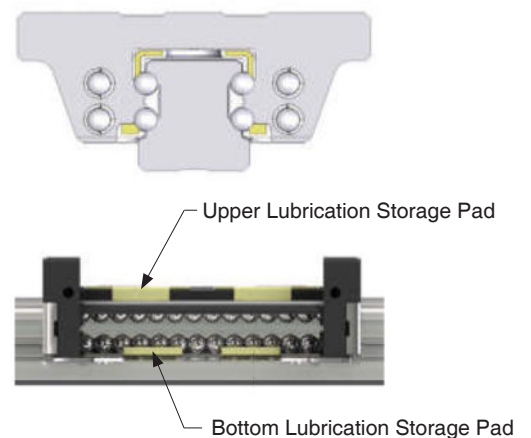
Multi-Directional (All-Direction) Lubrication Nozzles

The ARC, HRC, and WRC block features lubrication ports on the top, bottom, and sides, allowing for installation of optional grease nipples for relubrication. The top port comes standard with a O-ring to allow for easy relubrication. The internal comprehensive lubrication injection design allows for lubrication to both sides of the bearing block.



Block Lubrication Pad - Z Option

The inner **Z option** Lubrication Storage pad design does not increase the overall length of the bearing block and can effectively lubricate all the recirculating balls in the bearing block. Lubrication oil can be injected directly into any of the bearing block's ports to ensure a sufficient lubricant storage in the inner pads. This not only enables long term lubrication effects, but also a higher degree of ease at conforming to environment protection needs and lowering maintenance costs. For short stroke movements, this lubrication storage pad option allows for highly effective lubrication of the bearing block.



Block Seals

The ARC, HRC, and WRC block seals are comprised of a uniquely designed Inner seal, Bottom seal, and End seal design that is enhanced by the addition of a stainless steel reinforcement plate. This comprehensive sealing design significantly reduces re-lubrication needs and also prolongs the service life of the bearing block.

The **Inner Seals** protect the rail from external foreign particles and keep the lubrication inside the block, all while maintaining a low friction profile.

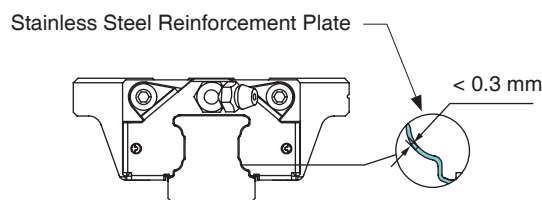
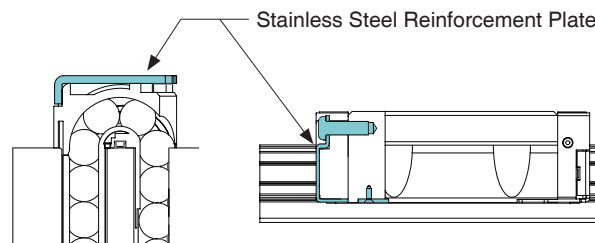
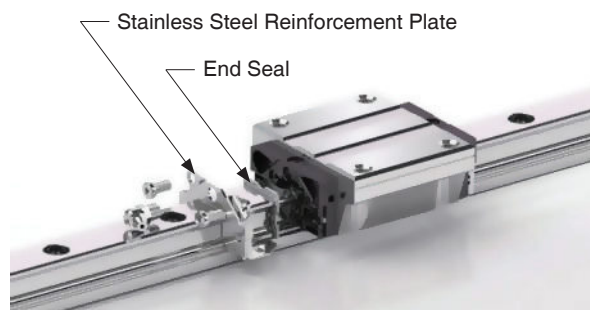
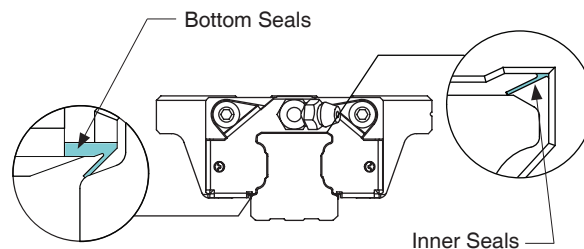
The **Bottom Seals** work in conjunction with the Inner seals by keeping foreign particles out of the recirculating balls in the block while keeping lubrication from leaking out of the block.

The **End Seals** also work in conjunction with the Inner and Bottom seals by keeping foreign particles out of the recirculating balls in the block while keeping lubrication from leaking out of the block. Our engineered plastic has a strong friction resistance and is less prone to cracking than typical NBR plastics.

The L type **Stainless Steel Reinforcement Plate** allows for screws to be fastened onto the top and bottom of the block, reinforcing the block end cap rigidity and therefore helping in the support of the thrust forces the recirculating balls produce in the block end caps. This design allows for higher linear speed and acceleration rates of the block versus other competitors. This reinforcement plate also functions as a scraper for larger particulates like iron filings, and has no more than 0.3 mm clearance between the plates and the rail.

The **Standard Seals (S)** are in direct contact with the rail surface, giving them increased dustproof and lubrication retention capabilities. This class of seal is recommended for blocks that operate in environments high in foreign particles, such as sawdust, for long periods of time. The S-type seals will have a higher friction force than the B-type seals.

The **Low Friction Seals (B)** have a slight contact with the rail surface, and are suitable for most environments, with both a low friction force and scraper function.

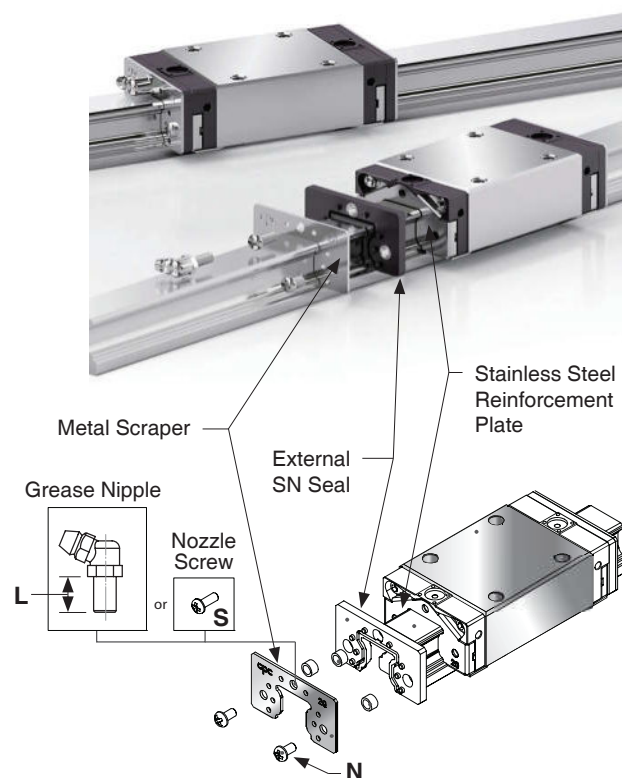
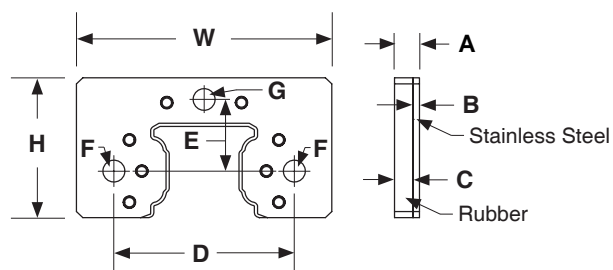


Maximum Velocity = 10 meters/sec (39.4 feet/sec)

Maximum Acceleration = 450 meters/sec² (1,476 feet/sec²)

Block Seals

The (SN) **Metal Scraper Seals** provides an extra layer of protection to the internal recirculating balls of the bearing block. While this option does add to the overall length of a bearing block, its unique rubber seal and stainless steel scrapper, are ideal for applications in harsh environments. The SN seal option is a highly effective dust and iron scrap proofing solution for the grinding, glass processing, graphite processing and wood working machinery applications. The standard S seal option is also provided when the SN seal option is selected.



| Model Number | External Dimen (mm) | | | | | Bore Specification (mm) | | | | Screw Specification (mm) | | |
|--------------|---------------------|-----|-----|----|------|-------------------------|------|-----|-----|--------------------------|-----------|----|
| | A | B | C | W | H | D | E | F | G | N | S | L |
| 15 | 4 | 1 | 3 | 33 | 20.3 | 25 | 10.2 | 3.5 | 3.5 | M3 x 0.35 | M3 x 0.5 | 9 |
| 20 | 4 | 1 | 3 | 41 | 22.5 | 29 | 11.5 | 3.5 | 3.5 | M3 x 0.35 | M3 x 0.5 | 9 |
| 25 | 5.2 | 1.2 | 4 | 47 | 26.5 | 36.5 | 13.5 | 3.5 | 6.5 | M3 x 0.35 | M6 x 0.75 | 12 |
| 30 | 6 | 1.5 | 4.5 | 58 | 34.2 | 42.5 | 17.5 | 4.5 | 6.5 | M4 x 0.5 | M6 x 0.75 | 12 |
| 35 | 6 | 1.5 | 4.5 | 68 | 39.3 | 50 | 20.5 | 4.5 | 10 | M4 x 0.5 | M6 x 0.75 | 12 |
| 45 | 6 | 1.5 | 4.5 | 84 | 49.6 | 65 | 24.9 | 4.5 | 6.5 | M4 x 0.5 | PT 1/8 | 15 |
| 55 | 6 | 1.5 | 4.5 | 98 | 57 | 73 | 28 | 5.5 | 6.5 | M5 x 0.5 | M6 x 0.75 | 12 |

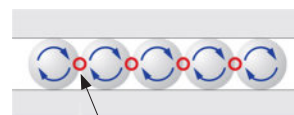
| ARC / HRC / WRC | | | |
|-----------------|---------------------------------------|------|------|
| Model Number | Friction from Block Seal Versions (N) | | |
| | B | S | SN |
| 15 | 2.0 | 3.5 | 7.5 |
| 20 | 3.0 | 4.5 | 9.5 |
| 25 | 4.0 | 5.5 | 13.5 |
| 30 | 5.0 | 8.0 | 18.0 |
| 35 | 6.0 | 11.0 | 23.0 |
| 45 | 8.0 | 15.0 | 35.0 |
| 55 | 10.0 | 18.0 | 48.0 |

Ball Chain - C option

The **Ball Chain (C)** option is a great solution for many linear guide applications. With traditional ball type linear guides, the ball-to-ball contact as the balls recirculate in the bearing block, leads to more friction, heat, and pressure which greatly reduces the service life of the bearing block.

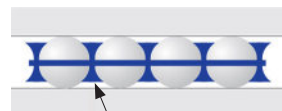
The Ball Chain option provides a proprietary material between each recirculating ball within the bearing block. This provides a greater contact area between the balls and the ball chain material, which prevents the ball-to-ball contact of the recirculating balls. This provides lower operational noise, less heat generation, and lower friction. The reduction of friction between the balls also allows for higher grease retention and lower dust generation. This all leads to a higher load capacity, higher linear speed, higher acceleration, less bearing noise, longer life, and long term maintenance free (lubrication free) operation, all within the same size bearing block as a non-ball chain block.

Traditional Ball Type Linear Guide



The Ball-to-Ball contact creates friction, heat, and higher surface pressure

Ball Chain Linear Guide



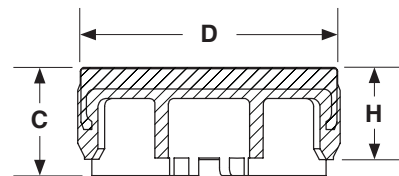
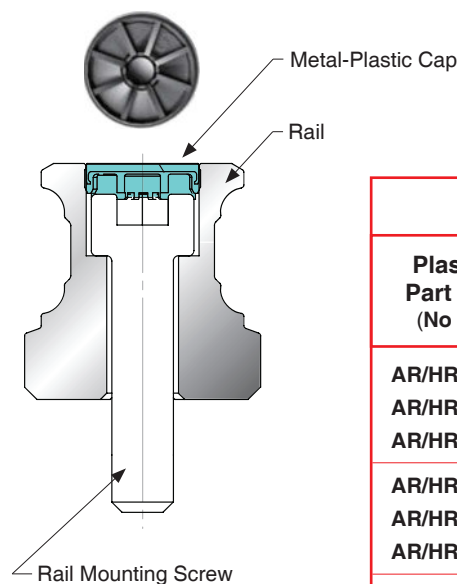
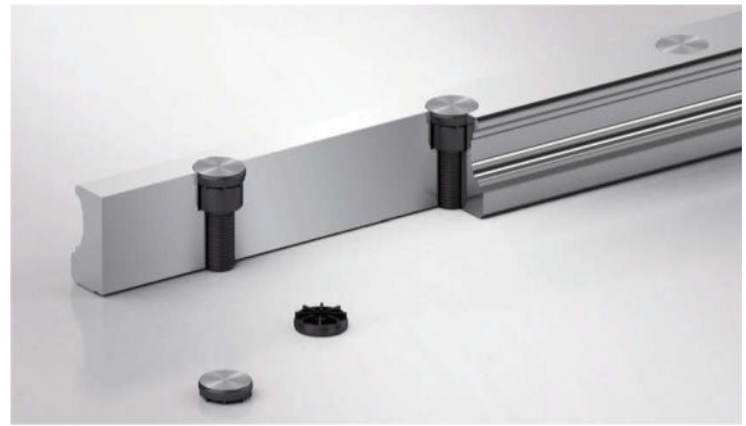
The Ball Chain material eliminates the Ball-to-Ball contact which provides less friction, less heat, less noise, and less surface pressure



Caps for Rail Mounting Holes

The no cost **Plastic Cap** is a great way to cover the rail mounting holes after the rail has been securely mounted to the user base. These caps help prevent external debris from collecting in the rail mounting hole locations.

The extra cost **Metal-Plastic Cap** is a more durable design which covers the rail mounting holes after the rail has been securely mounted to the user base. Due to the difficulty of controlling hammering strength when installing a mounting hole cap, the cap is sometimes hammered too deep, which can lead to accumulation of dirt or scrap material. The Metal-Plastic cap is designed with a supporting block to prop up the cap, which helps prevent the unnecessary sinking of the cap during installation.



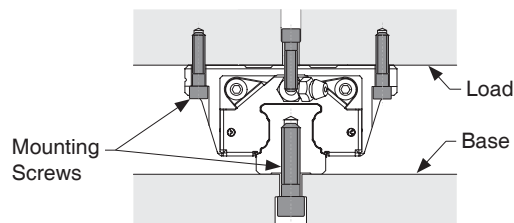
| ARC & HRC | | | | | | |
|-------------------------------------|-------------------------------|-----------|---------------------|--------|--------|--------|
| Plastic Cap Part Number (No Charge) | Metal-Plastic Cap Part Number | Rail Size | Rail Mounting Screw | D (mm) | H (mm) | C (mm) |
| AR/HR15-Rail Cap | AR/HR15-M-Rail Cap | 15 | M4 | 7.7 | 1.7 | 2.0 |
| AR/HR20-Rail Cap | AR/HR20-M-Rail Cap | 20 | M5 | 9.7 | 3.4 | 4.0 |
| AR/HR25-Rail Cap | AR/HR25-M-Rail Cap | 25 | M6 | 11.3 | 2.9 | 3.5 |
| AR/HR30-Rail Cap | AR/HR30-M-Rail Cap | 30 | M8 | 14.3 | 3.9 | 4.5 |
| AR/HR35-Rail Cap | AR/HR35-M-Rail Cap | 35 | M8 | 14.3 | 3.9 | 4.5 |
| AR/HR45-Rail Cap | AR/HR45-M-Rail Cap | 45 | M12 | 20.4 | 5.0 | 5.6 |
| AR/HR55-Rail Cap | AR/HR55-M-Rail Cap | 55 | M14 | 24.4 | 6.0 | 6.5 |

| WRC | | | | | | |
|-------------------------------------|-------------------------------|-----------|---------------------|--------|--------|--------|
| Plastic Cap Part Number (No Charge) | Metal-Plastic Cap Part Number | Rail Size | Rail Mounting Screw | D (mm) | H (mm) | C (mm) |
| WRC21/15-Rail Cap | WRC21/15-M-Rail Cap | 15 | M4 | 7.7 | 1.7 | 2.0 |
| WRC27/20-Rail Cap | WRC27/20-M-Rail Cap | 20 | M4 | 7.7 | 1.7 | 2.0 |

| ARR & HRR & LRR | | | | | | |
|-------------------------------------|-------------------------------|-----------|---------------------|--------|--------|--------|
| Plastic Cap Part Number (No Charge) | Metal-Plastic Cap Part Number | Rail Size | Rail Mounting Screw | D (mm) | H (mm) | C (mm) |
| ARR35-Rail Cap | ARR35-M-Rail Cap | 35 | M8 | 14.3 | 8.0 | 9.5 |
| ARR45-Rail Cap | ARR45-M-Rail Cap | 45 | M12 | 20.4 | 5.0 | 5.6 |

Block and Rail Mounting Screws

The maximum load capacity of a bearing block is not only related to the internal components of the block and rail, but also the mounting hardware used to mount the rail to a user base and the hardware used to mount the load to the bearing block. The minimum tightening torque for mounting the rail to a base and the block to the user load is in the chart.



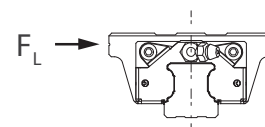
Many linear guide applications without edge support for either the rail or bearing block experience lateral forces, pull off forces, or moment loads. In these situations, the strength of the rail and block mounting screws will determine the maximum possible load capacity of the linear guide system used.

The charts below display the maximum forces allowed per rail size and block size with the use of different mounting screw tensile strengths.

When the external forces are greater than the ratings below, fixing elements should be used in the mounting procedures.

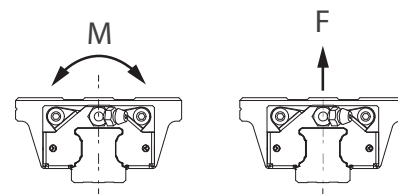
| Strength Grade 12.9 Alloy Steel Screws | Mounting Screw Tightening Torque (Nm) | | |
|--|--|-----------|-----------------------|
| | Steel | Cast Iron | Non-ferrous Metals |
| M3 | 2.0 | 1.3 | 1.0 |
| M4 | 4.1 | 2.7 | 2.1 |
| M5 | 8.8 | 5.9 | 4.4 |
| M6 | 13.7 | 9.2 | 6.9 |
| M8 | 30.0 | 20.0 | 15.0 |
| M10 | 68.0 | 45.0 | 33.0 |
| M12 | 118.0 | 78.0 | 59.0 |
| M14 | 157.0 | 105.0 | 78.0 |

| Mounting Screw Maximum Lateral Bearing Capacity | | | | | |
|---|-----------------|----------------|--------------|-----------------|--------------|
| Model Number | ARC & HRC & WRC | | | ARR & HRR & LRR | |
| | Short Block | Standard Block | Long Block | Standard Block | Long Block |
| | F_L (N) | F_L (N) | F_L (N) | F_L (N) | F_L (N) |
| 15 | 240 | 280 | 320 | | |
| 20 | 410 | 480 | 550 | | |
| 25 | 610 | 710 | 810 | | |
| 30 | 1200 | 1400 | 1600 | | |
| 35 | | 1400 | 1600 | 2800 | 3200 |
| 45 | | 3400 | 3900 | 6900 | 7900 |
| 55 | | 4800 | 5500 | | |



Note: The values in this chart are for a class 8.8 alloy steel mounting screw. Using a 10.9 class alloy steel screw would make the values 1.4 times larger. Using a 12.9 class alloy steel screw would make the values 1.68 times larger.

| Mounting Screw Maximum Tensile Strength and Torque | | | | | | | | | |
|--|-----------------|-----------|----------------|-----------|------------|-----------|-----------------|-----------|--------------------|
| Model Number | ARC & HRC & WRC | | | | | | ARR & HRR & LRR | | |
| | Short Block | | Standard Block | | Long Block | | Standard Block | | Long Block |
| | F (N) | M (Nm) | F (N) | M (Nm) | F (N) | M (Nm) | F (N) | M (Nm) | F (N) M (Nm) |
| 15 | 3200 | 22 | 3700 | 26 | 4200 | 30 | | | |
| 20 | 5500 | 51 | 6400 | 60 | 7300 | 68 | | | |
| 25 | 8100 | 87 | 9400 | 100 | 10800 | 120 | | | |
| 30 | 15900 | 210 | 18500 | 240 | 21100 | 280 | | | |
| 35 | | | 18500 | 300 | 21100 | 340 | 36900 | 590 | 42200 680 |
| 45 | | | 45900 | 970 | 52400 | 1100 | 91700 | 1900 | 104800 2200 |
| 55 | | | 63700 | 1600 | 72800 | 1800 | | | |

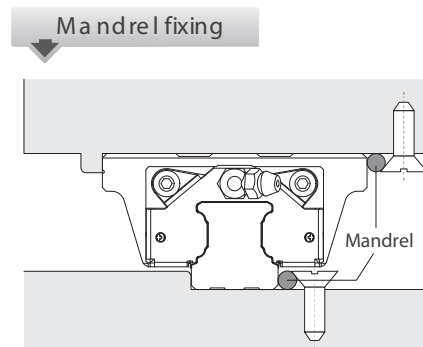
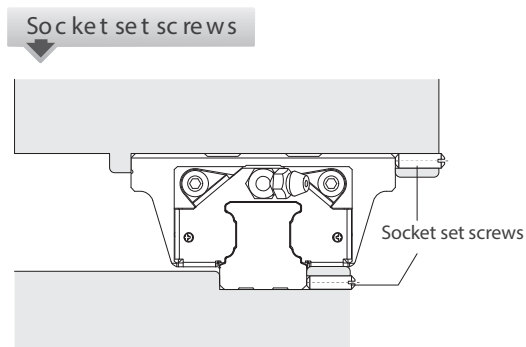
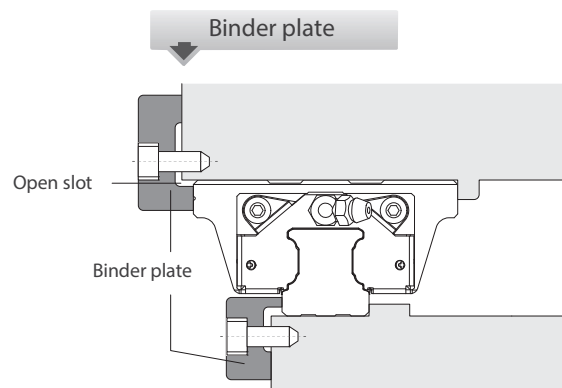
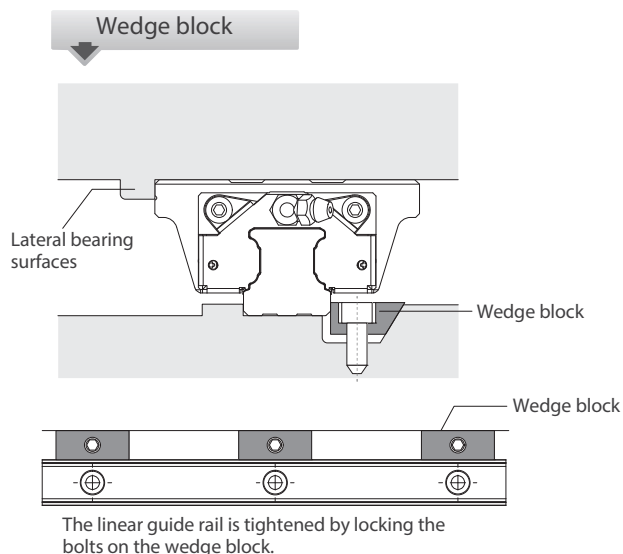


Note: The values in this chart are for a class 8.8 alloy steel mounting screw. Using a 10.9 class alloy steel screw would make the values 1.4 times larger. Using a 12.9 class alloy steel screw would make the values 1.68 times larger.

Bearing and Rail Fixing Elements

When the lateral user load is greater than the lateral load capacity provided using just bearing and rail mounting screws, additional fixing elements should be used.

The following diagrams show several common elements and styles that can be used.



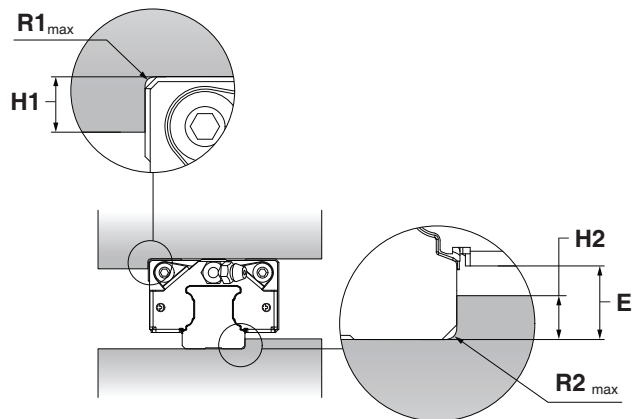
Reference Edge for Block and Rail

To ensure that a linear guide is precisely mounted to the user base and load, there is a chamfer located on every block and rail. The corner of the user load and base must be smaller than the chamfer of the linear guide components to avoid any interference.

| ARC & HRC | | | | | |
|-----------|------------------------|---------|------------------------|---------|--------|
| Rail Size | R1 _{max} (mm) | H1 (mm) | R2 _{max} (mm) | H2 (mm) | E (mm) |
| 15 | 0.5 | 4.0 | 0.5 | 2.5 | 3.3 |
| 20 | 0.5 | 5.0 | 0.5 | 4.0 | 5.0 |
| 25 | 1.0 | 5.0 | 1.0 | 5.0 | 6.0 |
| 30 | 1.0 | 6.0 | 1.0 | 5.0 | 6.6 |
| 35 | 1.0 | 6.0 | 1.0 | 6.5 | 7.6 |
| 45 | 1.0 | 8.0 | 1.0 | 8.0 | 9.3 |
| 55 | 1.5 | 10.0 | 1.5 | 10.0 | 12.0 |

| WRC | | | | | |
|-----------|------------------------|---------|------------------------|---------|--------|
| Rail Size | R1 _{max} (mm) | H1 (mm) | R2 _{max} (mm) | H2 (mm) | E (mm) |
| 21/15 | 0.4 | 5.0 | 0.4 | 2.0 | 2.7 |
| 27/20 | 0.4 | 5.0 | 0.4 | 3.0 | 3.5 |

| ARR & HRR & LRR | | | | | |
|-----------------|------------------------|---------|------------------------|---------|--------|
| Rail Size | R1 _{max} (mm) | H1 (mm) | R2 _{max} (mm) | H2 (mm) | E (mm) |
| 35 | 1.0 | 8.0 | 1.0 | 5.0 | 6.0 |
| 45 | 1.0 | 10.0 | 0.5 | 7.0 | 8.0 |

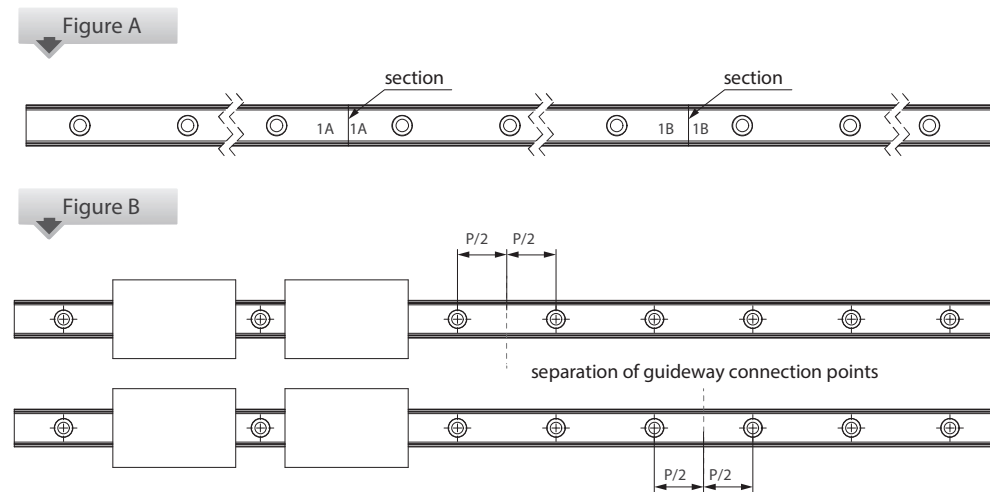


Rail Butt Joints

When an application calls for rail lengths longer than the standard maximum length for a given rail size, butt joining of 2 rails is the solution.

In a 1 rail application, butt joints will be labeled so that the rails can be properly mated during installation. See figure A below.

In a 2 rail application, in order to avoid accuracy effects as multiple blocks pass through a rail butt joint, the butt joints in the 2 rails should be spaced apart. See figure B below.



Preload & Clearance - ARC

| Preload Class | Definition | Clearance (μm) | | | | | | | Application |
|---------------|----------------|-----------------------------|------------|------------|------------|------------|------------|------------|---|
| | | 15 | 20 | 25 | 30 | 35 | 45 | 55 | |
| V0 | Light Preload | +0 to -4 | +0 to -5 | +0 to -6 | +0 to -7 | +0 to -8 | +0 to -10 | +0 to -12 | precision applications smooth motion, low friction |
| V1 | Medium Preload | -4 to -10 | -5 to -12 | -6 to -15 | -7 to -18 | -8 to -20 | -10 to -24 | -12 to -28 | precision motion, high stiffness, high load |
| V2 | Heavy Preload | -10 to -16 | -12 to -18 | -15 to -23 | -18 to -27 | -20 to -31 | -24 to -36 | -28 to -45 | precision motion, super high stiffness, super high load |

Preload & Clearance - HRC

| Preload Class | Definition | Clearance (μm) | | | | | | | Application |
|---------------|----------------|-----------------------------|------------|------------|------------|------------|------------|------------|---|
| | | 15 | 20 | 25 | 30 | 35 | 45 | 55 | |
| V0 | Light Preload | +0 to -4 | +0 to -5 | +0 to -6 | +0 to -7 | +0 to -8 | +0 to -10 | +0 to -12 | precision applications smooth motion, low friction |
| V1 | Medium Preload | -4 to -12 | -5 to -14 | -6 to -16 | -7 to -19 | -8 to -22 | -10 to -25 | -12 to -29 | precision motion, high stiffness, high load |
| V2 | Heavy Preload | -12 to -19 | -14 to -23 | -16 to -26 | -19 to -31 | -22 to -35 | -25 to -40 | -29 to -46 | precision motion, super high stiffness, super high load |

Preload & Clearance - WRC

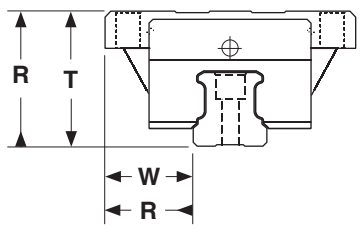
| Preload Class | Definition | Clearance (μm) | | Application |
|---------------|----------------|-----------------------------|------------|---|
| | | 21/15 | 27/20 | |
| V0 | Light Preload | +0 to -4 | +0 to -5 | precision applications smooth motion, low friction |
| V1 | Medium Preload | -4 to -10 | -5 to -12 | precision motion, high stiffness, high load |
| V2 | Heavy Preload | -10 to -16 | -12 to -18 | precision motion, super high stiffness, super high load |

| ARC / HRC / WRC | | | |
|-----------------|---------------------------|------|------|
| Model Number | Friction from Preload (N) | | |
| | V0 | V1 | V2 |
| 15 MS/FS | 0.60 | 0.80 | 1.00 |
| 15 MN/FN | 0.65 | 0.85 | 1.10 |
| 15 ML/FL | 0.70 | 0.90 | 1.40 |
| 20 MS/FS | 0.70 | 1.10 | 1.40 |
| 20 MN/FN | 0.75 | 1.40 | 1.60 |
| 20 ML/FL | 0.80 | 1.60 | 1.80 |
| 25 MS/FS | 0.90 | 1.20 | 1.80 |
| 25 MN/FN | 0.95 | 1.60 | 1.95 |
| 25 ML/FL | 1.20 | 1.80 | 2.00 |
| 30 MS/FS | 1.00 | 1.80 | 2.30 |
| 30 MN/FN | 1.10 | 2.00 | 2.50 |
| 30 ML/FL | 1.40 | 2.20 | 2.80 |
| 35 MN/FN | 1.25 | 2.50 | 3.25 |
| 35 ML/FL | 1.60 | 2.70 | 3.50 |
| 45 MN/FN | 2.10 | 2.80 | 4.00 |
| 45 ML/FL | 2.30 | 3.50 | 4.55 |
| 55 MN/FN | 4.10 | 5.50 | 7.95 |
| 55 ML/FL | 4.30 | 6.60 | 8.60 |

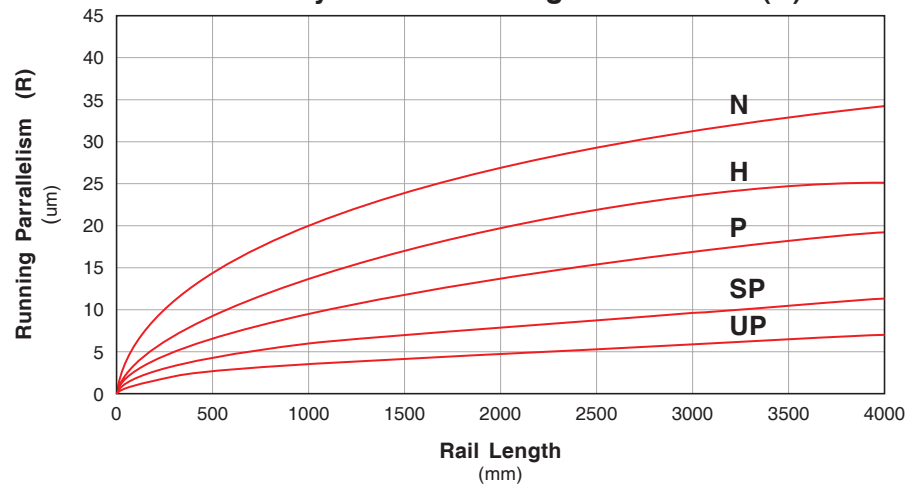
Preload & Clearance - ARR & HRR & LRR

| Preload Class | Definition | Clearance (μm) | | Application |
|---------------|----------------|-----------------------------|----------|---|
| | | 35 | 45 | |
| V0 | Light Preload | -2 to -1 | -2 to -1 | precision applications smooth motion, low friction |
| V1 | Medium Preload | -3 to -2 | -3 to -2 | precision motion, high stiffness, high load |
| V2 | Heavy Preload | -5 to -3 | -5 to -3 | precision motion, super high stiffness, super high load |

Accuracy

| | | N (μm) | H (μm) | P (μm) | SP (μm) | UP (μm) |  <p>R - see graph below for Accuracy of the Running Parallelism</p> |
|--|-------------------|-------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------------------------|---|
| Tolerance of Dimension Height T | T | +/- 80 | +/- 40 | +/- 20 | +/- 10 | +/- 5 | |
| Variation of Height for a Different Block Located at the Same Position on the Rail | ∇ T | 20 | 15 | 7 | 5 | 3 | |
| Tolerance of Dimension Width W | W | +/- 40 | +/- 20 | +/- 10 | +/- 7 | +/- 5 | |
| Variation of Width for a Different Block Located at the Same Position on the Rail | ∇ W | 30 | 15 | 7 | 5 | 3 | |

Accuracy of the Running Parallelism (R)

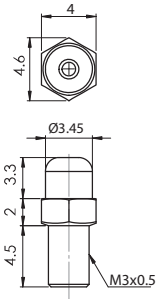
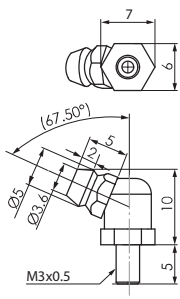
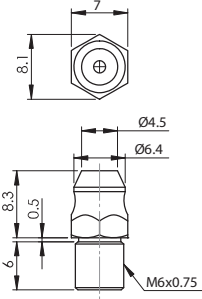
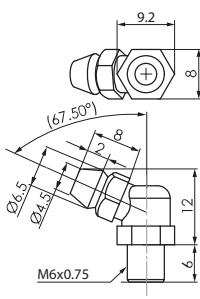
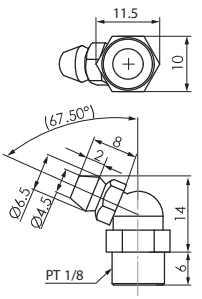
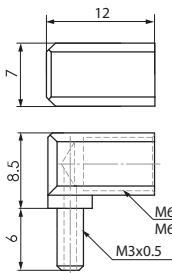
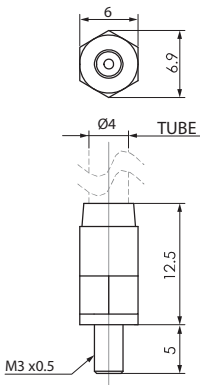
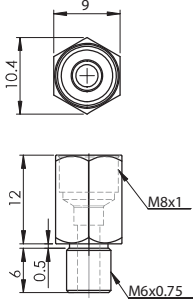
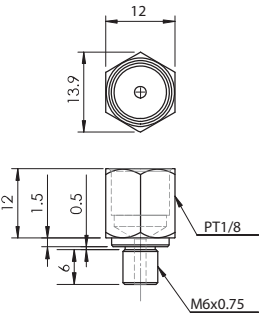
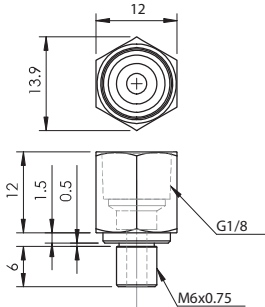
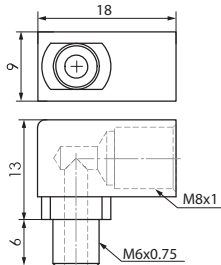
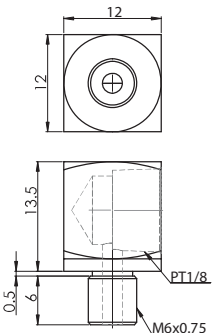
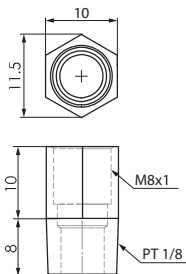
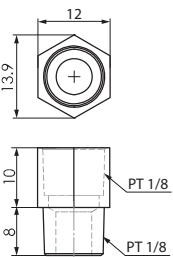
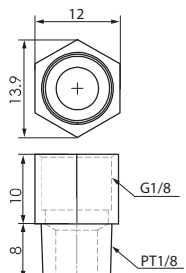
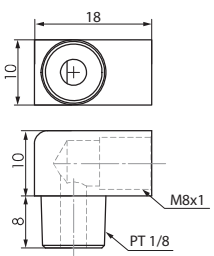
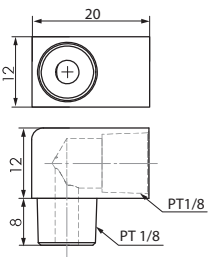


Application

| Accuracy Grade | General Linear Motion Automation | Manufacturing Equipment | Precision Manufacturing Equipment | Measuring Equipment |
|----------------|--|---|---|--|
| N | X | X | | |
| H | X | X | X | |
| P | | X | X | X |
| SP | | | X | X |
| UP | | | | X |
| | Conveyance Systems General Automation Welding Machines Coating Machines Industrial Robots Injection Molding Office Machinery | Cartesian Coordinate Medical Equipment Injection Molding Linear Actuators Punching Press Woodworking | Semiconductor Machines Lathe, Milling, Grinding CNC Maching Center Boring, Drilling, EDM Linear Slides Laser Beam X-Y Table | Three Dimension Measuring Inspection Machines Dressing Machine Detection Mirror Wire Bonding Wire Cutting |

Grease Fitting / Oil Piping Joint

Most Common Options

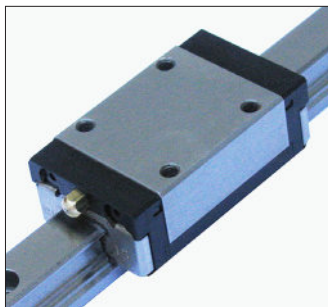
| | | | | |
|---|--|---|---|---|
| <p>A - M 3</p>  | <p>B - M 3</p>  | <p>A - M 6</p>  | <p>B - M 6</p>  <p>JIS B 1517 DIN 71 412 ISO 6392-1 ISO 7824</p> | <p>B - PT1 / 8</p>  <p>JIS B 1517 DIN 71 412 ISO 6392-1 ISO 7824</p> |
| <p>O B - M 3 - M 6</p>  | <p>OA-M3-D4</p>  | <p>OA - M 6 - M 8</p>  <p>Ø 4 Oil hole grease injector available</p> | <p>OA - M 6 - PT1 / 8</p>  | |
| <p>OA-M6-G1/8</p>  <p>Ø 6 Oil hole grease injector available</p> | <p>OB-M6-M8</p>  <p>Ø 4 Oil hole grease injector available</p> | <p>OB-M6-PT1/8</p>  <p>Ø 4 Oil hole grease injector available</p> | <p>OA-PT1/8-M8</p>  <p>Ø 4 Oil hole grease injector available</p> | |
| <p>OA-PT1/8-PT1/8</p>  | <p>OA-PT1/8-G1/8</p>  <p>Ø 6 Oil hole grease injector available</p> | <p>OB-PT1/8-M8</p>  <p>Ø 4 Oil hole grease injector available</p> | <p>OB-PT1/8-PT1/8</p>  | |

Grease Fitting / Oil Piping Joint

Used with the SN Block Seal Option

| A - M 3 - L | B - M 3 - L | A - M 6 - L | B - M 6 - L | A - M 6 - XL |
|----------------|---------------|---------------|----------------|--------------|
| | | | | |
| B - M 6 - XL | OA-M6-M8-L | OA-M6-PT1/8-L | OA-M6-G1/8-L | |
| | | | | |
| OB-M6-M8-L | OB-M6-PT1/8-L | B-PT1/8-L | OA-M6-M8-XL | |
| | | | | |
| OA-M6-PT1/8-XL | OA-M6-G1/8-XL | OB-M6-M8-XL | OB-M6-PT1/8-XL | |
| | | | | |

Specifications subject to change without notice



- * Standard Profile Height Bearing Blocks
- * Alloy steel bearing, rail, and balls
- * Equal loading in all directions
- * 4 rows of re-circulating balls
- * Short, standard & long block
- * Standard and flanged block
- * 5 Different accuracy ranges
- * 3 Different preload values

- * 3 Different block seal options
- * Any rail cut to specific length
- * *Optional* - Tapped bottom rail
- * *Optional* - Self lube reservoir
- * *Optional* - Ball chain block
- * *Optional* - Metal Scraper on block

Series Type ARC - Standard Profile Rail

Rail Type U - Tapped from Bottom

Profile Size 15 - 15 mm 30 - 30 mm
20 - 20 mm 35 - 35 mm
25 - 25 mm 45 - 45 mm
55 - 55 mm

Block Width M - Standard F - Flanged

Block Length S - Short N - Standard L - Long

Block Seals S - Standard B - Low Friction SN - Metal Scraper

Block Lube None Z - Lubrication Pad

Block Bearings Standard C - Ball Chain

Preload Class V0 - Light V1 - Medium V2 - Heavy

Accuracy Grade N - Normal H - High P - Precision SP - Super Precision
UP - Ultra Precision

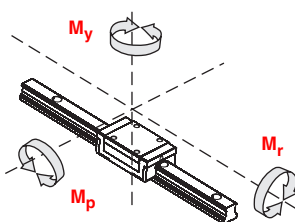
Number of Blocks 2 - Number of blocks on each rail

Rail Length xxxx - Overall rail length (mm)

Start Hole xx - Distance from end (mm)

End Hole xx - Distance from end (mm)

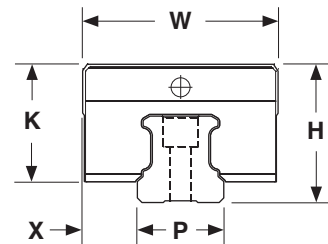
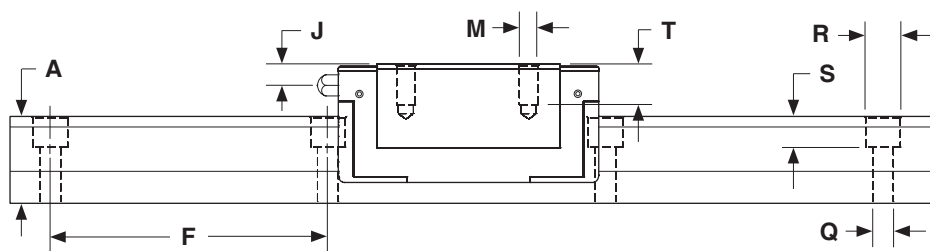
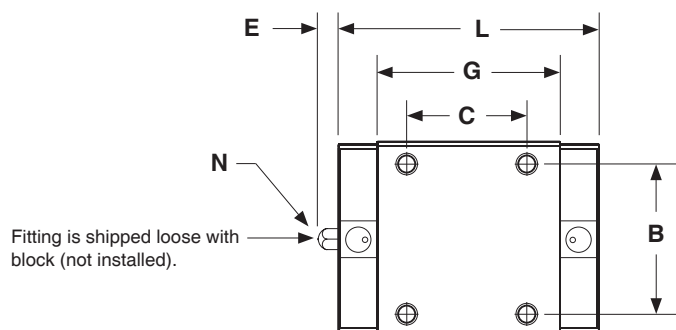
Load Capacities - ARC series

| Model Number | Dynamic Load Capacity C ₅₀ (kN @ 50 km) | | Static Load Capacity C ₀ (kN) | | Static Moment Loads | | | | | |  |
|------------------------|--|-----------------|--|-----------------|------------------------|-----------------|------------------------|-----------------|------------------------|-----------------|---|
| | Standard | with Ball Chain | Standard | with Ball Chain | M _r (Nm) | | M _p (Nm) | | M _y (Nm) | | |
| | | | | | Standard | with Ball Chain | Standard | with Ball Chain | Standard | with Ball Chain | |
| ARC 15 MS ARC 15 FS | 9.7 | 10.7 | 12.1 | 10.8 | 100 | 85 | 50 | 45 | 50 | 45 | |
| ARC 15 MN ARC 15 FN | 12.5 | 14.9 | 17.5 | 16.2 | 140 | 130 | 105 | 95 | 105 | 95 | |
| ARC 15 ML | 16.9 | 19.6 | 26.9 | 24.3 | 215 | 195 | 235 | 215 | 235 | 215 | |
| ARC 20 MS ARC 20 FS | 15.7 | 16.9 | 19.3 | 17.1 | 205 | 185 | 100 | 85 | 100 | 85 | |
| ARC 20 MN ARC 20 FN | 21.5 | 25.6 | 30.0 | 25.7 | 325 | 275 | 230 | 200 | 230 | 200 | |
| ARC 20 ML | 25.7 | 34.1 | 38.5 | 34.3 | 415 | 370 | 390 | 350 | 390 | 350 | |
| ARC 25 MS ARC 25 FS | 22.9 | 24.1 | 27.3 | 24.3 | 350 | 310 | 160 | 145 | 160 | 145 | |
| ARC 25 MN ARC 25 FN | 31.2 | 36.2 | 42.5 | 36.4 | 540 | 465 | 385 | 340 | 385 | 340 | |
| ARC 30 MS ARC 30 FS | 29.3 | 28.7 | 33.1 | 28.9 | 520 | 455 | 230 | 205 | 230 | 205 | |
| ARC 30 MN ARC 30 FN | 41.3 | 49.4 | 53.7 | 49.6 | 845 | 780 | 565 | 530 | 565 | 530 | |
| ARC 30 ML | 49.9 | 65.8 | 70.2 | 66.1 | 1105 | 1040 | 950 | 900 | 950 | 900 | |
| ARC 35 MN ARC 35 FN | 57.8 | 69.9 | 82.9 | 70.2 | 1700 | 1575 | 1080 | 1010 | 1080 | 1010 | |
| ARC 35 ML | 68.9 | 94.4 | 106.5 | 94.7 | 2185 | 1940 | 1755 | 1575 | 1755 | 1575 | |
| ARC 45 MN | 89.8 | 102.5 | 122.1 | 102.8 | 3200 | 2955 | 1910 | 1775 | 1910 | 1775 | |
| ARC 45 ML | 112.8 | 159.4 | 169.1 | 159.7 | 4430 | 4185 | 3460 | 3280 | 3460 | 3280 | |
| ARC 55 MN | 161.3 | N.A. | 186.0 | N.A. | 4949 | N.A. | 3278 | N.A. | 3278 | N.A. | |
| ARC 55 ML | 185.2 | N.A. | 226.0 | N.A. | 6472 | N.A. | 5284 | N.A. | 5284 | N.A. | |

N.A. - Not Available

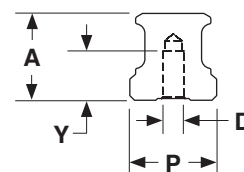
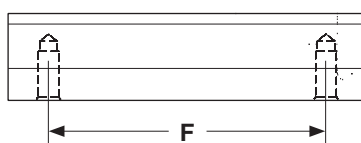
Dimensions & Specifications

| Model Number | Outline (mm) | | | Block Dimensions (mm) | | | | | | | | Rail Dimensions (mm) | | | | | | Weight | |
|--------------|--------------|---------|----------|-----------------------|----|----------|------|-------|--------------|------|-----|----------------------|------|------|-----|-----------------|------------|-------------|--|
| | Height H | Width W | Length L | B | C | M x T | K | G | N | J | E | P | X | A | F | Q x R x S | Block (kg) | Rail (kg/m) | |
| ARC 15 MS | | | 41.2 | | - | | | 26 | | | | | | | | | 0.11 | | |
| ARC 15 MN | 24 | 34 | 55.5 | 26 | 26 | M4 x 7 | 20.7 | 40.3 | M3 x 6.5 | 4.5 | 5.3 | 15 | 9.5 | 15 | 60 | 4.5 x 7.5 x 5.3 | 0.16 | 1.29 | |
| ARC 15 ML | | | 76.2 | | 34 | | | 61 | | | | | | | | | 0.24 | | |
| ARC 20 MS | | | 49.2 | | - | | | 32.2 | | | | | | | | | 0.17 | | |
| ARC 20 MN | 28 | 42 | 69 | 32 | 32 | M5 x 7 | 23 | 52 | M3 x 7.5 | 4 | 10 | 20 | 11 | 20 | 60 | 6 x 9.5 x 8.5 | 0.27 | 2.28 | |
| ARC 20 ML | | | 87.2 | | 45 | | | 70.2 | | | | | | | | | 0.33 | | |
| ARC 25 MS | | | 57.4 | | - | | | 38.4 | | | | | | | | | 0.30 | | |
| ARC 25 MN | 33 | 48 | 81.2 | 35 | 35 | M6 x 9 | 27 | 62.2 | M6 x 7.5 | 5 | 12 | 23 | 12.5 | 23 | 60 | 7 x 11 x 9 | 0.42 | 3.02 | |
| ARC 30 MS | | | 68 | | - | | | 44 | | | | | | | | | 0.56 | | |
| ARC 30 MN | 42 | 60 | 95.5 | 40 | 40 | M8 x 12 | 35.2 | 71.5 | M6 x 8.5 | 7.5 | 12 | 28 | 16 | 27 | 80 | 9 x 14 x 12 | 0.80 | 4.38 | |
| ARC 30 ML | | | 118 | | 60 | | | 94 | | | | | | | | | 1.14 | | |
| ARC 35 MN | | | 111.2 | | 50 | | | 86.2 | | | | | | | | | 1.12 | | |
| ARC 35 ML | 48 | 70 | 136.6 | 50 | 72 | M8 x 13 | 40.4 | 111.6 | M6 x 10 | 8 | 12 | 34 | 18 | 32 | 80 | 9 x 14 x 12 | 1.54 | 6.79 | |
| ARC 45 MN | | | 135.5 | | 60 | | | 102.5 | | | | | | | | | 2.12 | | |
| ARC 45 ML | 60 | 86 | 171.5 | 60 | 80 | M10 x 17 | 50.7 | 138.5 | PT1/8 x 12.5 | 11.1 | 14 | 45 | 20.5 | 39 | 105 | 14 x 20 x 17 | 3.16 | 10.53 | |
| ARC 55 MN | | | 168.5 | | 75 | | | 126.5 | | | | | | | | | 4.20 | | |
| ARC 55 ML | 70 | 100 | 202 | 75 | 95 | M12 x 20 | 58 | 160 | M6 x 10 | 13.5 | 12 | 53 | 23.5 | 45.7 | 120 | 16 x 24 x 20 | 5.08 | 14.0 | |



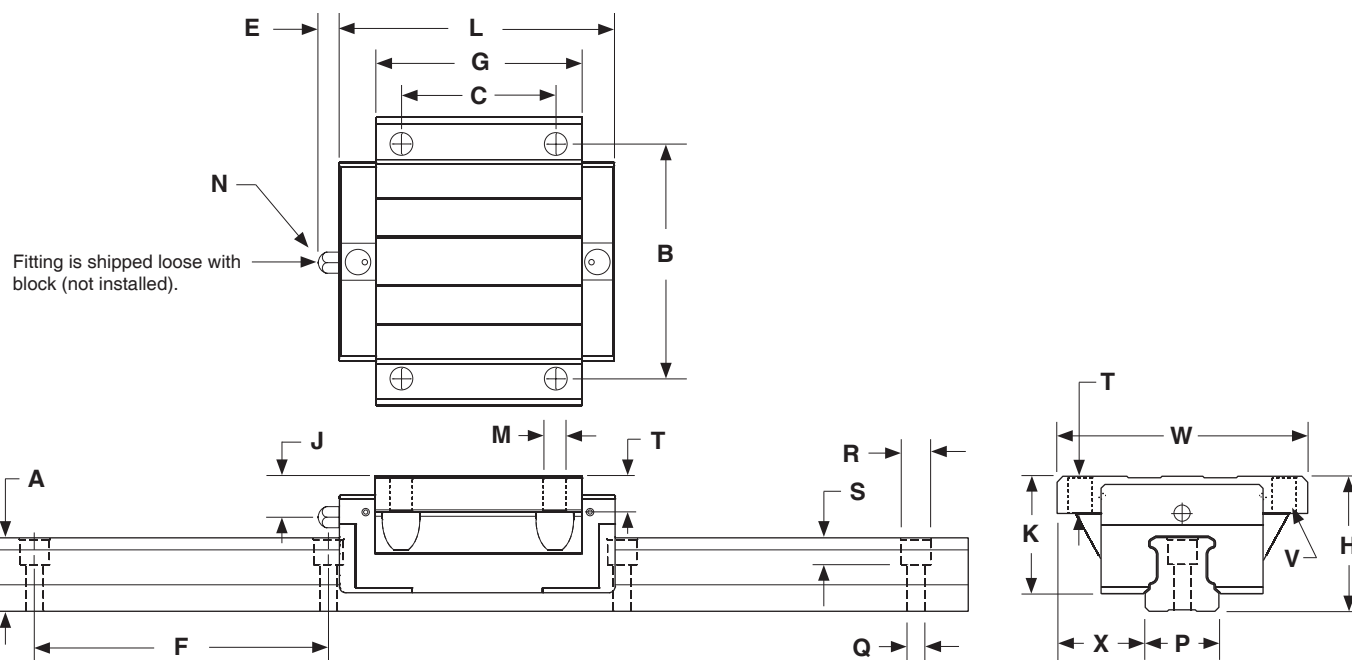
| Rail Size | (mm) | | | |
|-----------|----------|----|------|-----|
| | D x Y | P | A | F |
| ARCU 15 | M5 x 8 | 15 | 15 | 60 |
| ARCU 20 | M6 x 10 | 20 | 20 | 60 |
| ARCU 25 | M6 x 12 | 23 | 23 | 60 |
| ARCU 30 | M8 x 15 | 28 | 27 | 80 |
| ARCU 35 | M8 x 15 | 34 | 32 | 80 |
| ARCU 45 | M12 x 19 | 45 | 39 | 105 |
| ARCU 55 | M14 x 24 | 53 | 45.7 | 120 |

Rail Tapped from Bottom



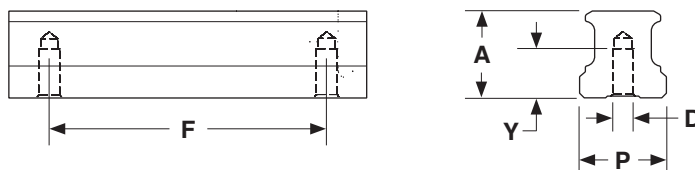
Dimensions & Specifications

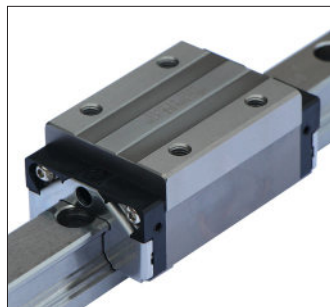
| Model Number | Outline (mm) | | | Block Dimensions (mm) | | | | | | | | | Rail Dimensions (mm) | | | | | | Weight | |
|------------------------|--------------|---------|--------------|-----------------------|---------|----------|----|------|--------------|----------|-----|-----|----------------------|------|----|----|-----------------|--------------|-------------|--|
| | Height H | Width W | Length L | B | C | M x T | V | K | G | N | J | E | P | X | A | F | Q x R x S | Block (kg) | Rail (kg/m) | |
| ARC 15 FS ARC 15 FN | 24 | 52 | 41.2 55.5 | 41 | - 26 | M5 x 7 | M4 | 20.7 | 26 40.3 | M3 x 6.5 | 4.5 | 5.3 | 15 | 18.5 | 15 | 60 | 4.5 x 7.5 x 5.3 | 0.13 0.20 | 1.29 | |
| ARC 20 FS ARC 20 FN | 28 | 59 | 49.2 69 | 49 | - 32 | M6 x 10 | M5 | 23 | 32.2 52 | M3 x 7.5 | 4 | 10 | 20 | 19.5 | 20 | 60 | 6 x 9.5 x 8.5 | 0.21 0.34 | 2.28 | |
| ARC 25 FS ARC 25 FN | 33 | 73 | 57.4 81.2 | 60 | - 35 | M8 x 10 | M6 | 27 | 38.4 62.2 | M6 x 7.5 | 5 | 12 | 23 | 25 | 23 | 60 | 7 x 11 x 9 | 0.35 0.53 | 3.02 | |
| ARC 30 FS ARC 30 FN | 42 | 90 | 68 95.5 | 72 | - 40 | M10 x 12 | M8 | 35.2 | 44 71.5 | M6 x 8.5 | 7.5 | 12 | 28 | 31 | 27 | 80 | 9 x 14 x 12 | 0.75 1.20 | 4.38 | |
| ARC 35 FN | 48 | 100 | 111.2 | 82 | 50 | M10 x 13 | M8 | 40.4 | 86.2 | M6 x 10 | 8 | 12 | 34 | 33 | 32 | 80 | 9 x 14 x 12 | 1.58 | 6.79 | |



| Rail Size | (mm) | | | |
|-----------|----------|----|------|-----|
| | D x Y | P | A | F |
| ARCU 15 | M5 x 8 | 15 | 15 | 60 |
| ARCU 20 | M6 x 10 | 20 | 20 | 60 |
| ARCU 25 | M6 x 12 | 23 | 23 | 60 |
| ARCU 30 | M8 x 15 | 28 | 27 | 80 |
| ARCU 35 | M8 x 15 | 34 | 32 | 80 |
| ARCU 45 | M12 x 19 | 45 | 39 | 105 |
| ARCU 55 | M14 x 24 | 53 | 45.7 | 120 |

Rail Tapped from Bottom





- * Heavy Load Profile Bearing Blocks
- * Alloy steel bearing, rail, and balls
- * Equal loading in all directions
- * 4 rows of re-circulating balls
- * Standard & long block
- * Standard and flanged block
- * 5 Different accuracy ranges
- * 3 Different preload values

- * 3 Different block seal options
- * Any rail cut to specific length
- * *Optional* - Tapped bottom rail
- * *Optional* - Self lube reservoir
- * *Optional* - Ball chain block
- * *Optional* - Metal Scraper on block

Series Type HRC - Heavy Load Profile Rail

Rail Type U - Tapped from Bottom

Profile Size 15 - 15 mm 30 - 30 mm
20 - 20 mm 35 - 35 mm
25 - 25 mm 45 - 45 mm
55 - 55 mm

Block Width M - Standard F - Flanged

Block Length N - Standard L - Long

Block Seals S - Standard B - Low Friction SN - Metal Scraper

Block Lube None Z - Lubrication Pad

Block Bearings Standard C - Ball Chain

Preload Class V0 - Light V1 - Medium V2 - Heavy

Accuracy Grade N - Normal H - High P - Precision SP - Super Precision
UP - Ultra Precision

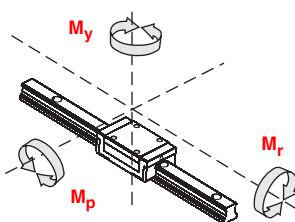
Number of Blocks 2 - Number of blocks on each rail

Rail Length xxxx - Overall rail length (mm)

Start Hole xx - Distance from end (mm)

End Hole xx - Distance from end (mm)

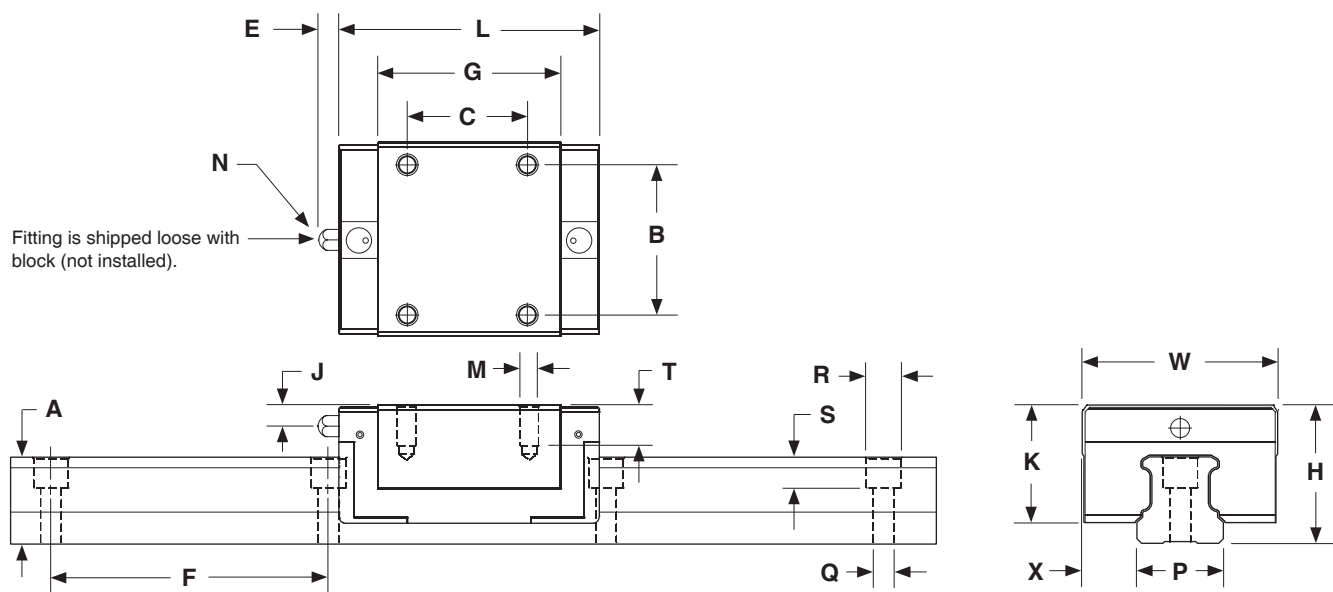
Load Capacities - HRC series

| Model Number | Dynamic Load Capacity C ₅₀ (kN @ 50 km) | | Static Load Capacity C ₀ (kN) | | Static Moment Loads | | | | | |  |
|------------------------|--|-----------------|--|-----------------|------------------------|-----------------|------------------------|-----------------|------------------------|-----------------|---|
| | Standard | with Ball Chain | Standard | with Ball Chain | M _r (Nm) | | M _p (Nm) | | M _y (Nm) | | |
| | | | | | Standard | with Ball Chain | Standard | with Ball Chain | Standard | with Ball Chain | |
| HRC 15 MN HRC 15 FN | 12.5 | 14.9 | 17.5 | 16.2 | 140 | 130 | 105 | 95 | 105 | 95 | |
| HRC 15 ML HRC 15 FL | 16.9 | 19.6 | 26.9 | 24.3 | 215 | 195 | 235 | 215 | 235 | 215 | |
| HRC 20 MN HRC 20 FN | 21.5 | 25.6 | 30.0 | 25.7 | 325 | 275 | 230 | 200 | 230 | 200 | |
| HRC 20 ML HRC 20 FL | 25.7 | 34.1 | 38.5 | 34.3 | 415 | 370 | 390 | 350 | 390 | 350 | |
| HRC 25 MN HRC 25 FN | 31.2 | 36.2 | 42.5 | 36.4 | 540 | 465 | 385 | 340 | 385 | 340 | |
| HRC 25 ML HRC 25 FL | 38.7 | 50.4 | 57.7 | 51.6 | 735 | 655 | 710 | 640 | 710 | 640 | |
| HRC 30 MN HRC 30 FN | 41.3 | 49.4 | 53.7 | 49.6 | 845 | 780 | 565 | 530 | 565 | 530 | |
| HRC 30 ML HRC 30 FL | 49.9 | 65.8 | 70.2 | 66.1 | 1105 | 1040 | 950 | 900 | 950 | 900 | |
| HRC 35 MN HRC 35 FN | 57.8 | 69.9 | 82.9 | 70.2 | 1700 | 1575 | 1080 | 1010 | 1080 | 1010 | |
| HRC 35 ML HRC 35 FL | 68.9 | 94.4 | 106.5 | 94.7 | 2185 | 1940 | 1755 | 1575 | 1755 | 1575 | |
| HRC 45 MN HRC 45 FN | 89.8 | 102.5 | 122.1 | 102.8 | 3200 | 2955 | 1910 | 1775 | 1910 | 1775 | |
| HRC 45 ML HRC 45 FL | 112.8 | 159.4 | 169.1 | 159.7 | 4430 | 4185 | 3460 | 3280 | 3460 | 3280 | |
| HRC 55 MN HRC 55 FN | 161.3 | N.A. | 186.0 | N.A. | 4949 | N.A. | 3278 | N.A. | 3278 | N.A. | |
| HRC 55 ML HRC 55 FL | 185.2 | N.A. | 226.0 | N.A. | 6472 | N.A. | 5284 | N.A. | 5284 | N.A. | |

N.A. - Not Available

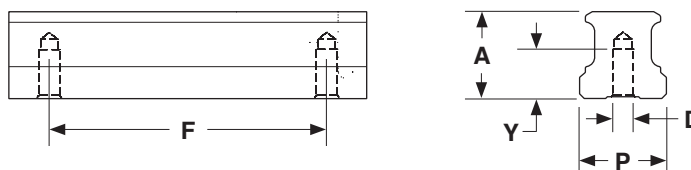
Dimensions & Specifications

| Model Number | Outline (mm) | | | Block Dimensions (mm) | | | | | | | | Rail Dimensions (mm) | | | | | | Weight | |
|------------------------|--------------|---------|----------------|-----------------------|----------|----------|------|----------------|--------------|------|-----|----------------------|------|------|-----|-----------------|--------------|-------------|--|
| | Height H | Width W | Length L | B | C | M x T | K | G | N | J | E | P | X | A | F | Q x R x S | Block (kg) | Rail (kg/m) | |
| HRC 15 MN HRC 15 ML | 28 | 34 | 55.5 76.2 | 26 | 26 | M4 x 7 | 24.7 | 40.3 61 | M3 x 6.5 | 8.5 | 5.3 | 15 | 9.5 | 15 | 60 | 4.5 x 7.5 x 5.3 | 0.20 0.40 | 1.29 | |
| HRC 20 MN HRC 20 ML | 30 | 44 | 69 87.2 | 32 | 36 50 | M5 x 8.5 | 25 | 52 70.2 | M3 x 7.5 | 6 | 10 | 20 | 12 | 20 | 60 | 6 x 9.5 x 8.5 | 0.32 0.40 | 2.28 | |
| HRC 25 MN HRC 25 ML | 40 | 48 | 81.2 105 | 35 | 35 50 | M6 x 9 | 34 | 62.2 86 | M6 x 7.5 | 12 | 12 | 23 | 12.5 | 23 | 60 | 7 x 11 x 9 | 0.58 0.69 | 3.02 | |
| HRC 30 MN HRC 30 ML | 45 | 60 | 95.5 118 | 40 | 40 60 | M8 x 12 | 38.2 | 71.5 94 | M6 x 8.5 | 10.5 | 12 | 28 | 16 | 27 | 80 | 9 x 14 x 12 | 0.90 1.15 | 4.38 | |
| HRC 35 MN HRC 35 ML | 55 | 70 | 111.2 136.6 | 50 | 50 72 | M8 x 13 | 47.4 | 86.2 111.6 | M6 x 10 | 15 | 12 | 34 | 18 | 32 | 80 | 9 x 14 x 12 | 1.43 1.95 | 6.79 | |
| HRC 45 MN HRC 45 ML | 70 | 86 | 135.5 171.5 | 60 | 60 80 | M10 x 20 | 60.7 | 102.5 138.5 | PT1/8 x 12.5 | 21.1 | 14 | 45 | 20.5 | 39 | 105 | 14 x 20 x 17 | 2.79 4.06 | 10.53 | |
| HRC 55 MN HRC 55 ML | 80 | 100 | 168.5 202 | 75 | 75 95 | M12 x 25 | 68 | 126.5 160 | M6 x 10 | 23.5 | 12 | 53 | 23.5 | 45.7 | 120 | 16 x 24 x 20 | 5.11 6.24 | 14.0 | |



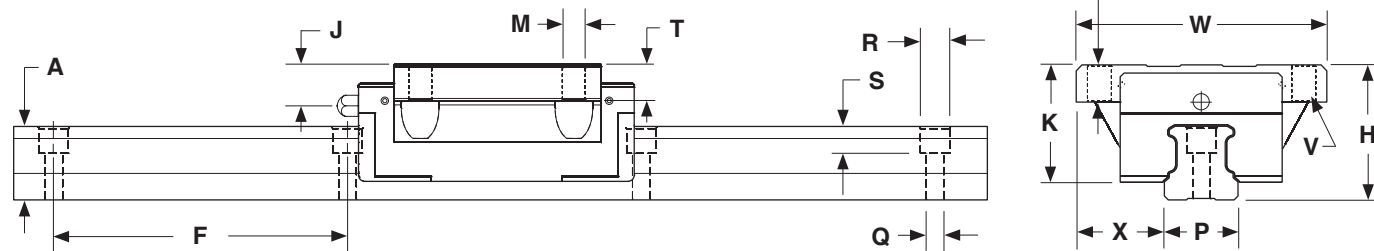
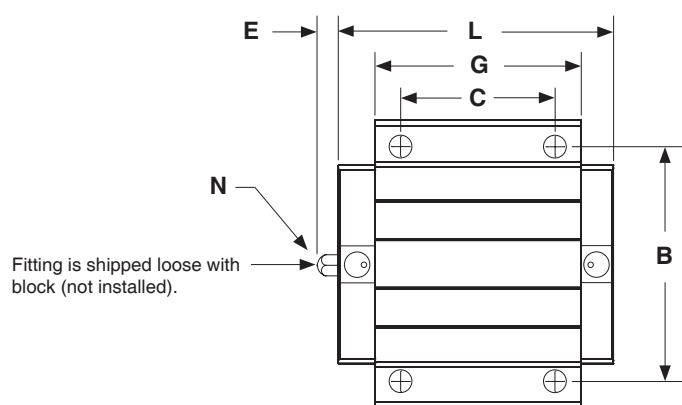
| Rail Size | (mm) | | | |
|-----------|----------|----|------|-----|
| | D x Y | P | A | F |
| HRCU 15 | M5 x 8 | 15 | 15 | 60 |
| HRCU 20 | M6 x 10 | 20 | 20 | 60 |
| HRCU 25 | M6 x 12 | 23 | 23 | 60 |
| HRCU 30 | M8 x 15 | 28 | 27 | 80 |
| HRCU 35 | M8 x 15 | 34 | 32 | 80 |
| HRCU 45 | M12 x 19 | 45 | 39 | 105 |
| HRCU 55 | M14 x 24 | 53 | 45.7 | 120 |

Rail Tapped from Bottom



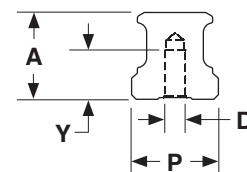
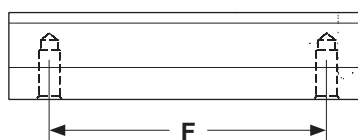
Dimensions & Specifications

| Model Number | Outline (mm) | | | Block Dimensions (mm) | | | | | | | | | Rail Dimensions (mm) | | | | | | Weight | |
|------------------------|--------------|---------|----------------|-----------------------|----|----------|-----|------|----------------|--------------|------|-----|----------------------|------|------|-----|-----------------|--------------|-------------|--|
| | Height H | Width W | Length L | B | C | M x T | V | K | G | N | J | E | P | X | A | F | Q x R x S | Block (kg) | Rail (kg/m) | |
| HRC 15 FN HRC 15 FL | 24 | 47 | 55.5 76.2 | 38 | 30 | M5 x 7 | M4 | 20.7 | 40.3 61 | M3 x 6.5 | 4.5 | 5.3 | 15 | 16 | 15 | 60 | 4.5 x 7.5 x 5.3 | 0.19 0.29 | 1.29 | |
| HRC 20 FN HRC 20 FL | 30 | 63 | 69 87.2 | 53 | 40 | M6 x 10 | M5 | 25 | 52 70.2 | M3 x 7.5 | 6 | 10 | 20 | 21.5 | 20 | 60 | 6 x 9.5 x 8.5 | 0.40 0.51 | 2.28 | |
| HRC 25 FN HRC 25 FL | 36 | 70 | 81.2 105 | 57 | 45 | M8 x 10 | M6 | 30 | 62.2 86 | M6 x 7.5 | 8 | 12 | 23 | 23.5 | 23 | 60 | 7 x 11 x 9 | 0.63 0.87 | 3.02 | |
| HRC 30 FN HRC 30 FL | 42 | 90 | 95.5 118 | 72 | 52 | M10 x 12 | M8 | 35.2 | 71.5 94 | M6 x 8.5 | 7.5 | 12 | 28 | 31 | 27 | 80 | 9 x 14 x 12 | 1.11 1.39 | 4.38 | |
| HRC 35 FN HRC 35 FL | 48 | 100 | 111.2 136.6 | 82 | 62 | M10 x 13 | M8 | 40.4 | 86.2 111.6 | M6 x 10 | 8 | 12 | 34 | 33 | 32 | 80 | 9 x 14 x 12 | 1.55 2.00 | 6.79 | |
| HRC 45 FN HRC 45 FL | 60 | 120 | 135.5 171.5 | 100 | 80 | M12 x 15 | M10 | 50.7 | 102.5 138.5 | PT1/8 x 12.5 | 11.1 | 14 | 45 | 37.5 | 39 | 105 | 14 x 20 x 17 | 2.75 4.28 | 10.53 | |
| HRC 55 FN HRC 55 FL | 70 | 140 | 168.5 202 | 116 | 95 | M14 x 18 | M12 | 58 | 126.5 160 | M6 x 10 | 13.5 | 12 | 53 | 43.5 | 45.7 | 120 | 16 x 24 x 20 | 5.44 6.96 | 14.0 | |



| Rail Size | (mm) | | | |
|-----------|----------|----|------|-----|
| | D x Y | P | A | F |
| HRCU 15 | M5 x 8 | 15 | 15 | 60 |
| HRCU 20 | M6 x 10 | 20 | 20 | 60 |
| HRCU 25 | M6 x 12 | 23 | 23 | 60 |
| HRCU 30 | M8 x 15 | 28 | 27 | 80 |
| HRCU 35 | M8 x 15 | 34 | 32 | 80 |
| HRCU 45 | M12 x 19 | 45 | 39 | 105 |
| HRCU 55 | M14 x 24 | 53 | 45.7 | 120 |

Rail Tapped from Bottom





- * Wide Rail Profile Bearing Blocks
- * Alloy steel bearing, rail, and balls
- * Equal loading in all directions
- * 4 rows of re-circulating balls
- * Standard & long block
- * Standard and flanged block
- * 5 Different accuracy ranges
- * 3 Different preload values

- * 2 Different block seal options
- * Any rail cut to specific length
- * *Optional* - Tapped bottom rail
- * *Optional* - Ball chain block

Series Type WRC U 21/15 M N S C V1 H - 2 - 1260 - 30 - 30

Rail Type _____
 - Standard **U** - Tapped from Bottom

Profile Size _____
21/15 **27/20**

Block Width _____
M - Standard **F** - Flanged

Block Length _____
N - Standard

Block Seals _____
B - Low Friction

Block Bearings _____
 - Standard **C** - Ball Chain

Preload Class _____
V0 - Light **V1** - Medium **V2** - Heavy

Accuracy Grade _____
N - Normal **H** - High **P** - Precision **SP** - Super Precision
UP - Ultra Precision

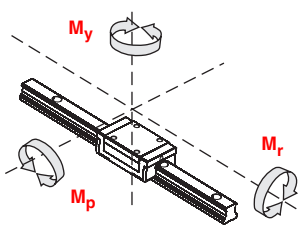
Number of Blocks _____
2 - Number of blocks on each rail

Rail Length _____
xxxx - Overall rail length (mm)

Start Hole _____
xx - Distance from end (mm)

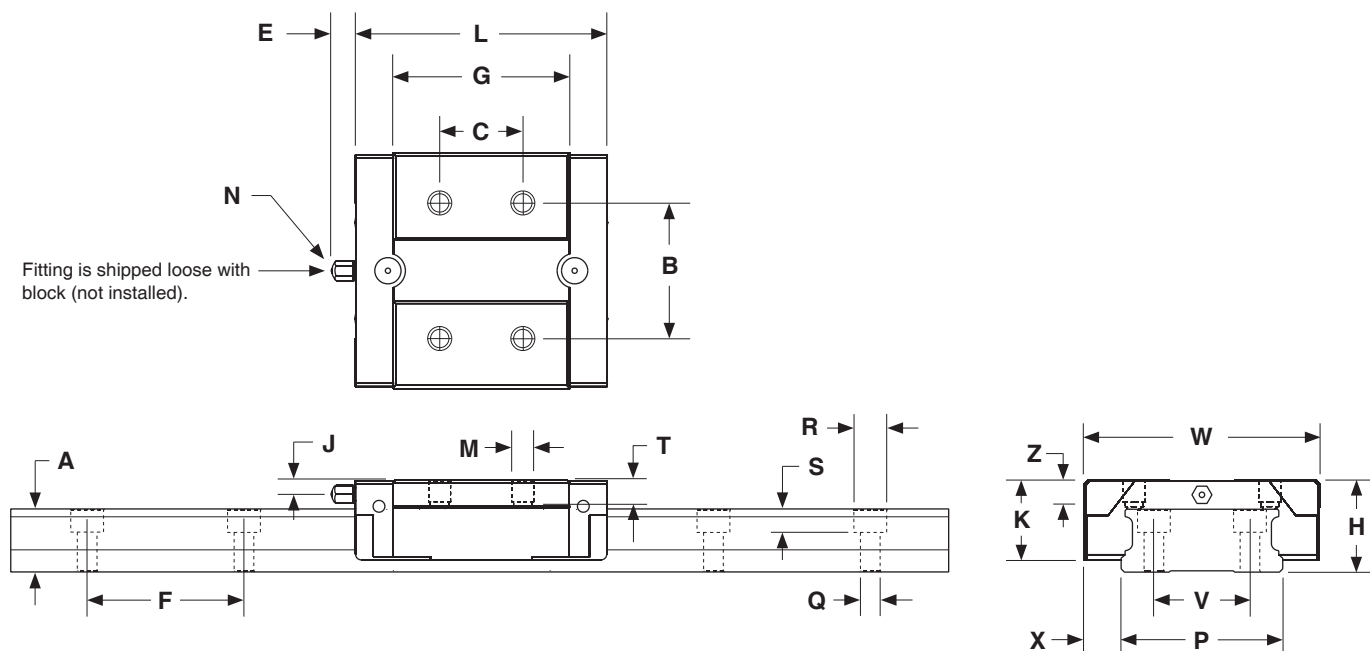
End Hole _____
xx - Distance from end (mm)

Load Capacities - WRC series

| Model Number | Dynamic Load Capacity C ₅₀ (kN @ 50 km) | | Static Load Capacity C ₀ (kN) | | Static Moment Loads | | | | | |  |
|-------------------|--|-----------------|--|-----------------|------------------------|-----------------|------------------------|-----------------|------------------------|-----------------|---|
| | | | | | M _r (Nm) | | M _p (Nm) | | M _y (Nm) | | |
| | Standard | with Ball Chain | Standard | with Ball Chain | Standard | with Ball Chain | Standard | with Ball Chain | Standard | with Ball Chain | |
| WRC 21/15 MN & FN | 12.5 | 14.9 | 17.5 | 16.2 | 315 | 295 | 105 | 95 | 105 | 95 | |
| WRC 27/20 MN & FN | 21.5 | 28.1 | 30.0 | 25.7 | 634 | 535 | 230 | 200 | 230 | 200 | |

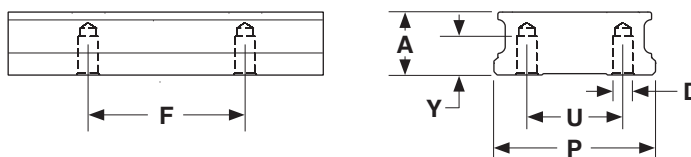
Dimensions & Specifications

| Model Number | Outline (mm) | | | Block Dimensions (mm) | | | | | | | | | Rail Dimensions (mm) | | | | | | Weight | |
|--------------|--------------|---------|----------|-----------------------|----|--------|------|------|----|----------|-----|-----|----------------------|----|-----|------|----|-----------------|------------|-------------|
| | Height H | Width W | Length L | B | C | M x T | K | G | Z | N | J | E | P | V | X | A | F | Q x R x S | Block (kg) | Rail (kg/m) |
| WRC 21/15 MN | 21 | 54 | 57.5 | 31 | 19 | M5 x 5 | 18.3 | 40.3 | 6 | M3 x 6.5 | 3.3 | 5.3 | 37 | 22 | 8.5 | 14.4 | 50 | 4.5 x 7.5 x 5.3 | 0.16 | 3.60 |
| WRC 27/20 MN | 27 | 62 | 70 | 46 | 32 | M6 x 6 | 23.5 | 52 | 10 | M3 x 7.5 | 4.5 | 5.3 | 42 | 24 | 10 | 18.5 | 60 | 4.5 x 7.5 x 5.3 | 0.32 | 5.26 |



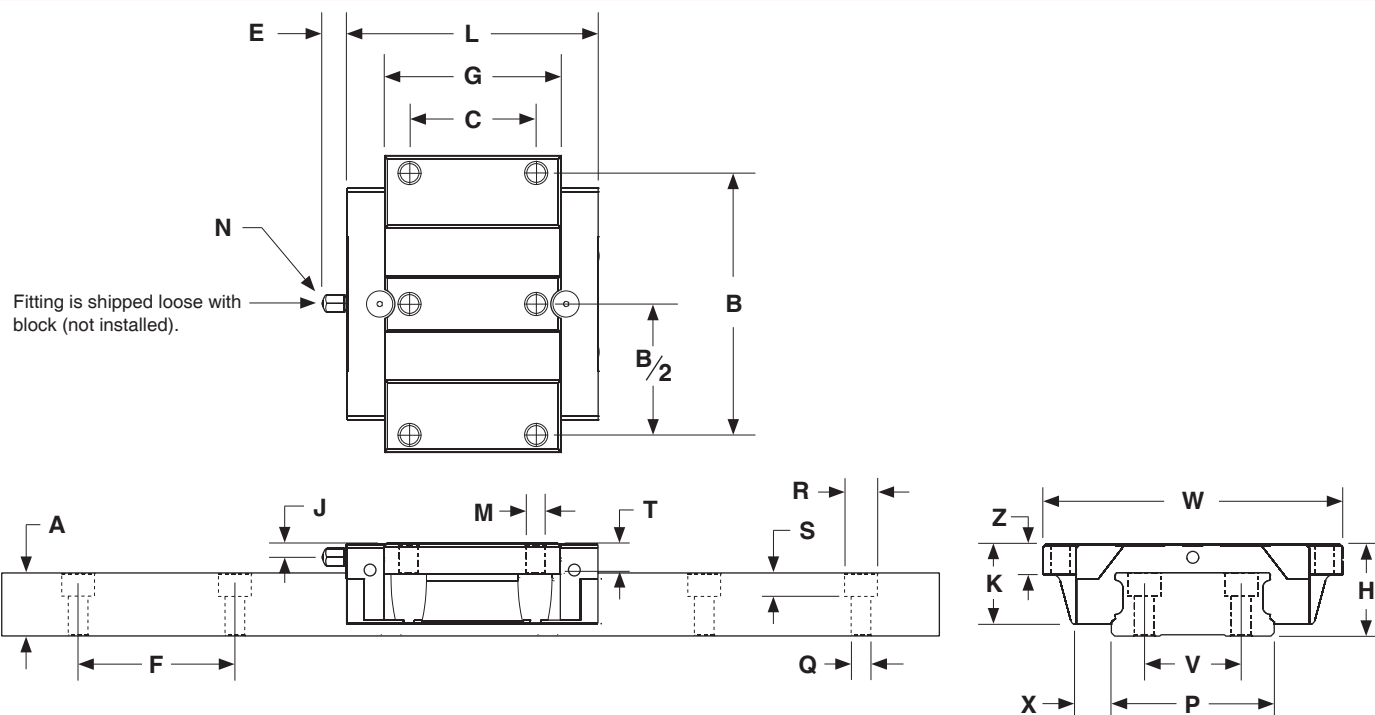
| Rail Size | (mm) | | | | |
|------------|----------|----|------|----|----|
| | D x Y | P | A | F | U |
| WRCU 21/15 | M4 x 8 | 37 | 14.4 | 50 | 22 |
| WRCU 27/20 | M5 x 7.5 | 42 | 18.5 | 60 | 24 |

Rail Tapped from Bottom



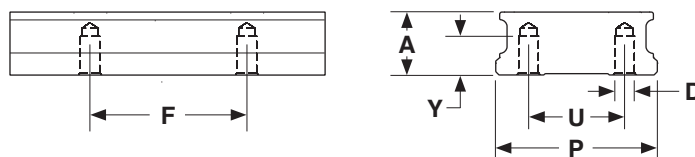
Dimensions & Specifications

| Model Number | Outline (mm) | | | Block Dimensions (mm) | | | | | | | | | Rail Dimensions (mm) | | | | | | Weight | |
|--------------|--------------|---------|----------|-----------------------|----|--------|------|------|---|----------|-----|-----|----------------------|----|------|------|----|-----------------|------------|-------------|
| | Height H | Width W | Length L | B | C | M x T | K | G | Z | N | J | E | P | V | X | A | F | Q x R x S | Block (kg) | Rail (kg/m) |
| WRC 21/15 FN | 21 | 68 | 57.5 | 60 | 29 | M5 x 7 | 18.3 | 40.3 | 7 | M3 x 6.5 | 3.3 | 3.5 | 37 | 22 | 15.5 | 14.4 | 50 | 4.5 x 7.5 x 5.3 | 0.20 | 3.60 |
| WRC 27/20 FN | 27 | 80 | 70 | 70 | 40 | M6 x 9 | 23.5 | 52 | 9 | M3 x 7.5 | 4.5 | 3.5 | 42 | 24 | 19 | 18.5 | 60 | 4.5 x 7.5 x 5.3 | 0.55 | 5.26 |



| Rail Size | (mm) | | | | |
|------------|----------|----|------|----|----|
| | D x Y | P | A | F | U |
| WRCU 21/15 | M4 x 8 | 37 | 14.4 | 50 | 22 |
| WRCU 27/20 | M5 x 7.5 | 42 | 18.5 | 60 | 24 |

Rail Tapped from Bottom





- * Wide Rail Profile Bearing Blocks
- * Alloy steel bearing, rail, and balls
- * Equal loading in all directions
- * 4 rows of re-circulating balls
- * Standard, long & extra long block
- * Standard and flanged block
- * 4 Different accuracy ranges
- * 3 Different preload values

- * Standard seal option
- * Any rail cut to specific length
- * *Optional* - Tapped bottom rail
- * *Optional* - Ball chain block

ARR U 35 M N S C V1 H - 2 - 1260 - 30 - 30

Series Type _____
ARR - Standard Height Roller Linear Guide
HRR - High Profile Roller Linear Guide
LRR - Low Profile Roller Linear Guide

Rail Type _____
 - Standard **U** - Tapped from bottom

Profile Size _____
35 - 35 mm **45** - 45 mm

Block Width _____
M - Standard **F** - Flanged

Block Length _____
N - Standard **L** - Long **XL** - Extra Long

Block Seals _____
S - Standard

Block Bearings _____
 - Standard **C** - Ball Chain

Preload Class _____
V0 - Light **V1** - Medium **V2** - Heavy

Accuracy Grade _____
H - High **P** - Precision **SP** - Super Precision **UP** - Ultra Precision

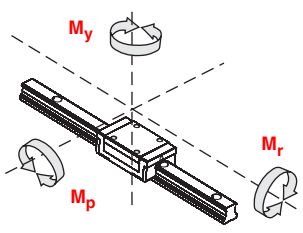
Number of Blocks _____
2 - Number of blocks on each rail

Rail Length _____
xxxx - Overall rail length (mm)

Start Hole _____
xx - Distance from end (mm)

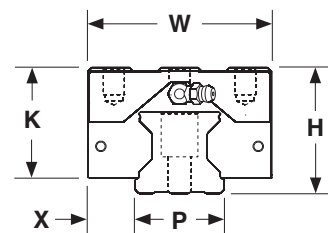
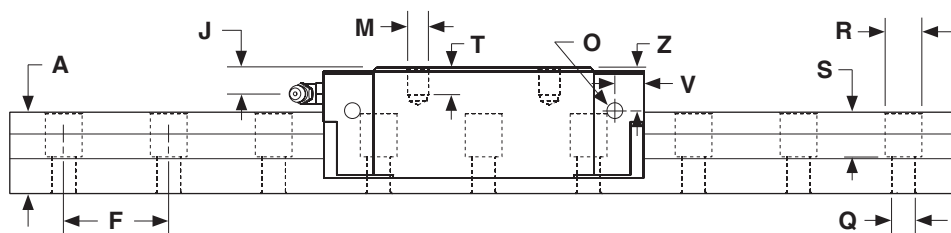
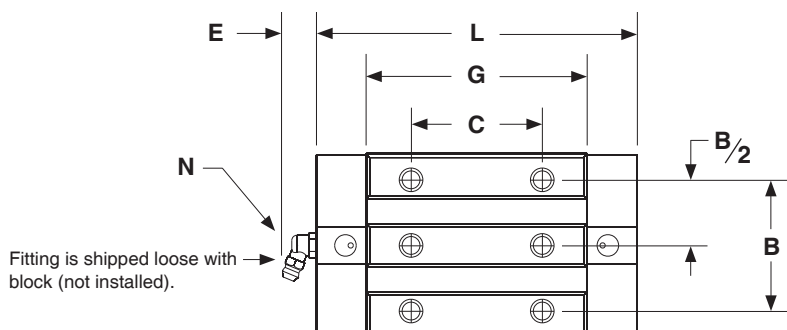
End Hole _____
xx - Distance from end (mm)

Load Capacities - ARR & HRR & LRR series

| Model Number | Dynamic Load Capacity C ₅₀ (kN @ 50 km) | | Static Load Capacity C ₀ (kN) | | Static Moment Loads | | | | | |  |
|---|--|-----------------|--|-----------------|------------------------|------|------------------------|-------|------------------------|-------|---|
| | Standard | with Ball Chain | Standard | with Ball Chain | M _r (Nm) | | M _p (Nm) | | M _y (Nm) | | |
| ARR 35 MN HRR 35 MN LRR 35 MN HRR 35 FN LRR 35 FN | 71.8 | 89.8 | 154 | 133 | 2742 | 2350 | 1946 | 1710 | 1946 | 1710 | |
| ARR 35 ML HRR 35 ML LRR 35 ML HRR 35 FL LRR 35 FL | 86.6 | 108.4 | 196 | 175 | 3525 | 3133 | 3226 | 2881 | 3226 | 2881 | |
| HRR 35 MXL LRR 35 MXL HRR 35 FXL LRR 35 FXL | 103.3 | 129.1 | 245 | 224 | 4439 | 4047 | 5111 | 4695 | 5111 | 4695 | |
| ARR 45 MN HRR 45 MN LRR 45 MN HRR 45 FN LRR 45 FN | 120.8 | 151.2 | 255 | 222 | 6350 | 5750 | 4450 | 4050 | 4450 | 4050 | |
| ARR 45 ML HRR 45 ML LRR 45 ML HRR 45 FL LRR 45 FL | 148.6 | 185.8 | 333 | 288 | 8450 | 7550 | 7700 | 6900 | 7700 | 6900 | |
| HRR 45 MXL LRR 45 MXL HRR 45 FXL LRR 45 FXL | 173.9 | 217.3 | 410 | 366 | 10500 | 9650 | 11800 | 10850 | 11800 | 10850 | |

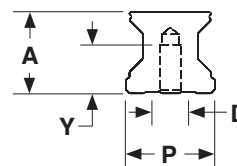
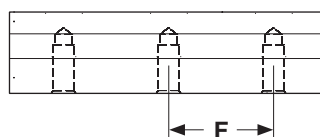
Dimensions & Specifications

| Model Number | Outline (mm) | | | Block Dimensions (mm) | | | | | | | | | | | | Rail Dimensions (mm) | | | | | Weight | |
|------------------------|--------------|---------|--------------|-----------------------|----------|----------|----|-------------|---------|------|----|--------|------|----|----|----------------------|----|------|--------------|--------------|-------------|--|
| | Height H | Width W | Length L | B | C | M x T | K | G | N | J | E | O | Z | V | P | X | A | F | Q x R x S | Block (kg) | Rail (kg/m) | |
| ARR 35 MN ARR 35 ML | 48 | 70 | 122 147.5 | 50 | 50 72 | M8 x 13 | 42 | 84 109.5 | M6 x 12 | 10 | 12 | M6 x 8 | 16.4 | 11 | 34 | 18 | 31 | 40 | 9 x 14 x 17 | 1.20 1.75 | 5.74 | |
| ARR 45 MN ARR 45 ML | 60 | 86 | 156 191 | 60 | 60 80 | M10 x 17 | 52 | 110 145 | M6 x 12 | 14.6 | 12 | M6 x 8 | 21.8 | 11 | 45 | 20.5 | 38 | 52.5 | 14 x 20 x 17 | 2.60 3.35 | 10.0 | |



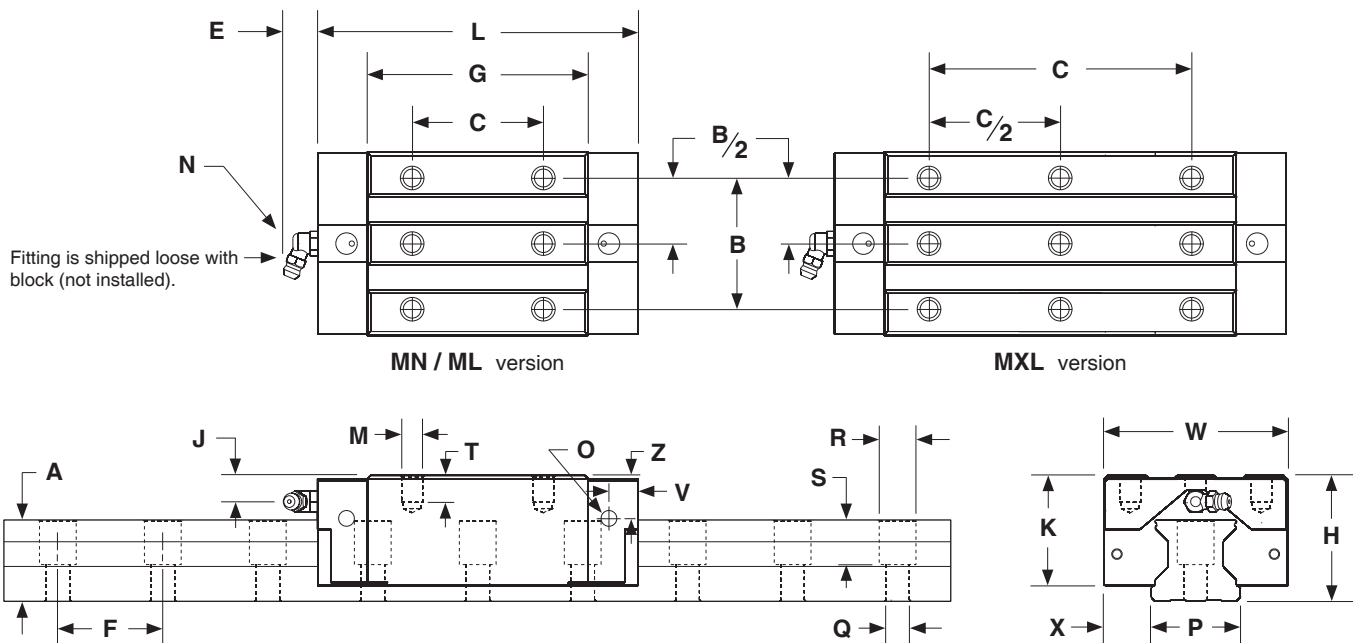
| Rail Size | (mm) | | | |
|-----------|----------|----|----|------|
| | D x Y | P | A | F |
| ARRU 35 | M8 x 15 | 34 | 31 | 40 |
| ARRU 45 | M12 x 19 | 45 | 38 | 52.5 |

Rail Tapped from Bottom



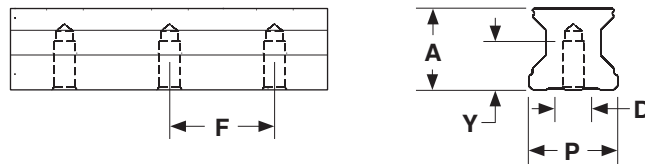
Dimensions & Specifications

| Model Number | Outline (mm) | | | Block Dimensions (mm) | | | | | | | | | | | | Rail Dimensions (mm) | | | | | Weight | |
|--------------|--------------|------------|-------------|-----------------------|-----|----------|----|-------|---------|------|----|--------|------|----|----|----------------------|----|------|--------------|-------|--------|--|
| | Height H | Width W | Length L | B | C | M x T | K | G | N | J | E | O | Z | V | P | X | A | F | Q x R x S | Block | Rail | |
| | | | | | | | | | | | | | | | | | | | | (kg) | (kg/m) | |
| HRR 35 MN | | | 122 | | 50 | | | 84 | | | | | | | | | | | | 1.72 | | |
| HRR 35 ML | 55 | 70 | 147.5 | 50 | 72 | M8 x 16 | 49 | 109.5 | M6 x 12 | 17 | 12 | M6 x 8 | 23.4 | 11 | 34 | 18 | 31 | 40 | 9 x 14 x 17 | 2.1 | 5.74 | |
| HRR 35 MXL | | | 177.5 | | 100 | | | 139.5 | | | | | | | | | | | | 2.7 | | |
| HRR 45 MN | | | 156 | | 60 | | | 110 | | | | | | | | | | | | 3.4 | | |
| HRR 45 ML | 70 | 86 | 191 | 60 | 80 | M10 x 20 | 62 | 145 | M6 x 12 | 24.6 | 12 | M6 x 8 | 31.8 | 11 | 45 | 20.5 | 38 | 52.5 | 14 x 20 x 17 | 4.3 | 10.0 | |
| HRR 45 MXL | | | 226 | | 120 | | | 180 | | | | | | | | | | | | 5.2 | | |



| Rail Size | (mm) | | | |
|-----------|----------|----|----|------|
| | D x Y | P | A | F |
| HRRU 35 | M8 x 15 | 34 | 31 | 40 |
| HRRU 45 | M12 x 19 | 45 | 38 | 52.5 |

Rail Tapped from Bottom

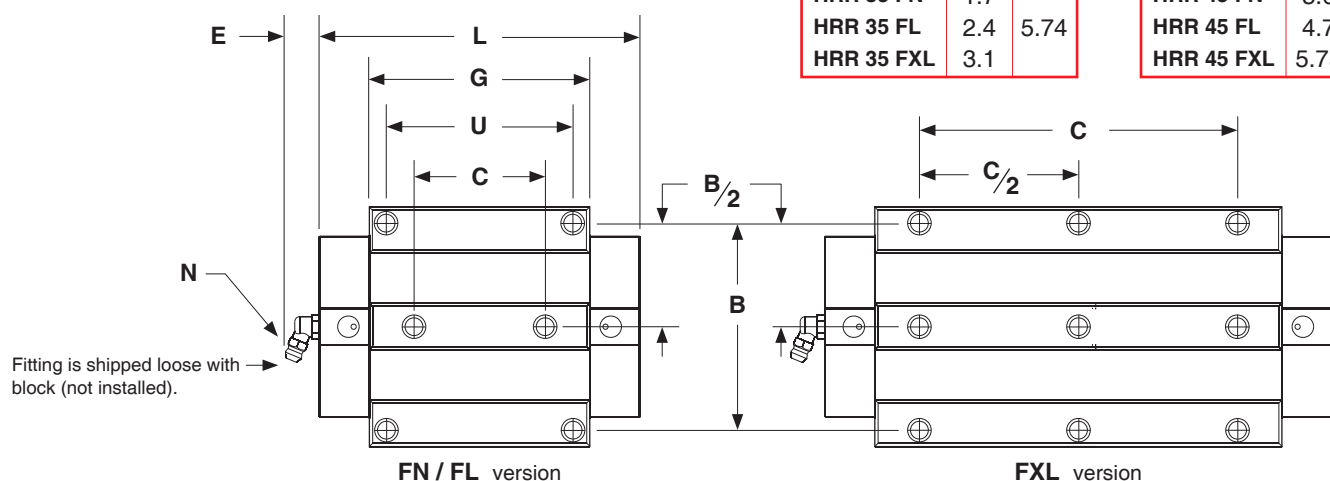


Dimensions & Specifications

| Model Number | Outline (mm) | | | Block Dimensions (mm) | | | | | | | | | | | | | Rail Dimensions (mm) | | | | |
|--------------|--------------|---------|----------|-----------------------|-----|----|----------|---------------------------------|----|-------|---------|------|----|--------|------|----|----------------------|------|----|------|--------------|
| | Height H | Width W | Length L | B | C | U | M x T | M ₁ x T ₁ | K | G | N | J | E | O | Z | V | P | X | A | F | Q x R x S |
| HRR 35 FN | | | 122 | | 52 | 62 | | | | 84 | | | | | | | | | | | |
| HRR 35 FL | 48 | 100 | 147.5 | 82 | 52 | 62 | M8 x 13 | M10 x 13 | 42 | 109.5 | M6 x 12 | 10 | 12 | M6 x 8 | 16.4 | 11 | 34 | 33 | 31 | 40 | 9 x 14 x 17 |
| HRR 35 FXL | | | 177.5 | | 100 | | | | | 139.5 | | | | | | | | | | | |
| HRR 45 FN | | | 156 | | 60 | 80 | | | | 110 | | | | | | | | | | | |
| HRR 45 FL | 60 | 120 | 191 | 100 | 60 | 80 | M10 x 15 | M12 x 15 | 52 | 145 | M6 x 12 | 14.6 | 12 | M6 x 8 | 21.8 | 11 | 45 | 37.5 | 38 | 52.5 | 14 x 20 x 17 |
| HRR 45 FXL | | | 226 | | 120 | | | | | 180 | | | | | | | | | | | |

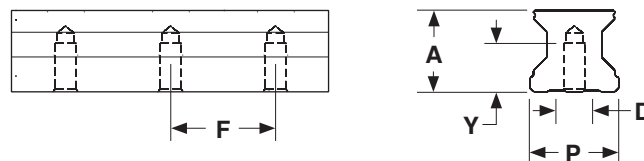
| Model Number | Weight | |
|--------------|------------|-------------|
| | Block (kg) | Rail (kg/m) |
| HRR 35 FN | 1.7 | |
| HRR 35 FL | 2.4 | 5.74 |
| HRR 35 FXL | 3.1 | |

| Model Number | Weight | |
|--------------|------------|-------------|
| | Block (kg) | Rail (kg/m) |
| HRR 45 FN | 3.6 | |
| HRR 45 FL | 4.7 | 10.0 |
| HRR 45 FXL | 5.75 | |



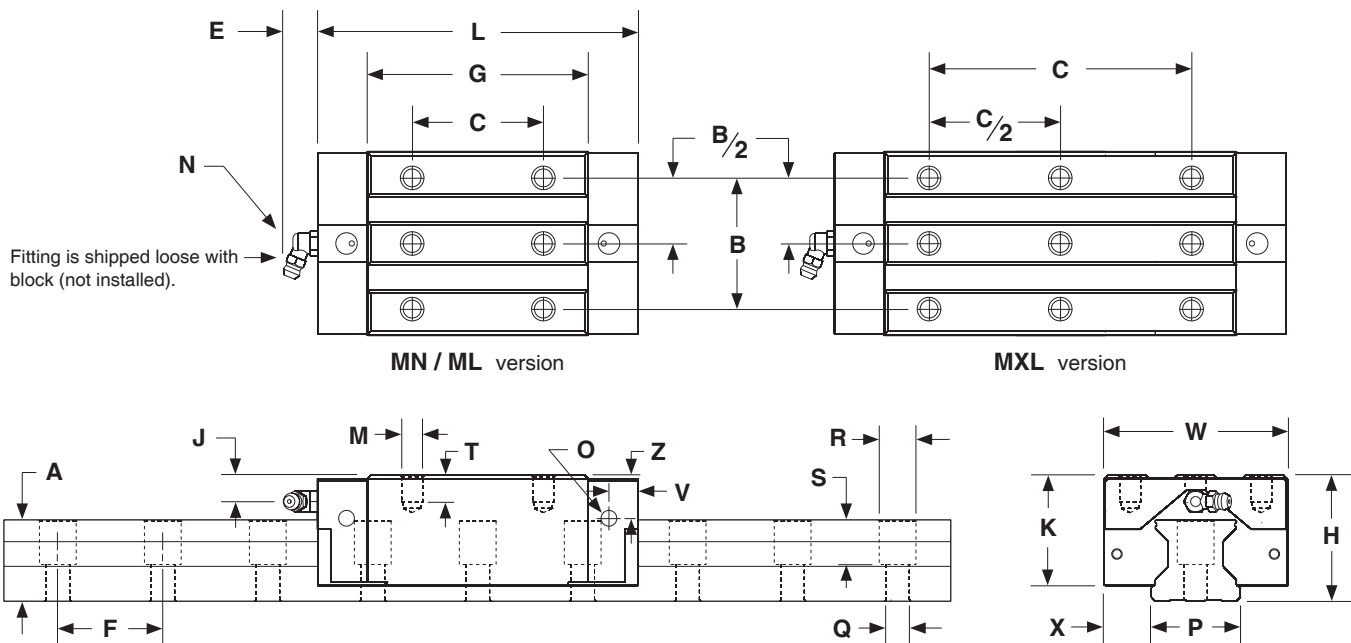
| Rail Size | (mm) | | | |
|-----------|----------|----|----|------|
| | D x Y | P | A | F |
| HRRU 35 | M8 x 15 | 34 | 31 | 40 |
| HRRU 45 | M12 x 19 | 45 | 38 | 52.5 |

Rail Tapped from Bottom



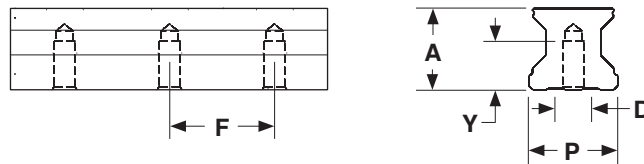
Dimensions & Specifications

| Model Number | Outline (mm) | | | Block Dimensions (mm) | | | | | | | | | | | | Rail Dimensions (mm) | | | | | Weight | |
|--------------|--------------|------------|-------------|-----------------------|-----|----------|----|-------|---------|-----|----|--------|------|----|----|----------------------|----|------|--------------|-------|--------|--|
| | Height H | Width W | Length L | B | C | M x T | K | G | N | J | E | O | Z | V | P | X | A | F | Q x R x S | Block | Rail | |
| | | | | | | | | | | | | | | | | | | | | (kg) | (kg/m) | |
| LRR 35 MN | | | 122 | | 50 | | | 84 | | | | | | | | | | | | 1.1 | | |
| LRR 35 ML | 44 | 70 | 147.5 | 50 | 72 | M8 x 9 | 38 | 109.5 | M6 x 12 | 6 | 12 | M6 x 8 | 12.4 | 11 | 34 | 18 | 31 | 40 | 9 x 14 x 17 | 1.5 | 5.74 | |
| LRR 35 MXL | | | 177.5 | | 100 | | | 139.5 | | | | | | | | | | | | 1.9 | | |
| LRR 45 MN | | | 156 | | 60 | | | 110 | | | | | | | | | | | | 2.1 | | |
| LRR 45 ML | 52 | 86 | 191 | 60 | 80 | M10 x 11 | 44 | 145 | M6 x 12 | 6.6 | 12 | M6 x 8 | 13.8 | 11 | 45 | 20.5 | 38 | 52.5 | 14 x 20 x 17 | 2.7 | 10.0 | |
| LRR 45 MXL | | | 226 | | 120 | | | 180 | | | | | | | | | | | | 3.2 | | |



| Rail Size | (mm) | | | |
|-----------|----------|----|----|------|
| | D x Y | P | A | F |
| LRRU 35 | M8 x 15 | 34 | 31 | 40 |
| LRRU 45 | M12 x 19 | 45 | 38 | 52.5 |

Rail Tapped from Bottom

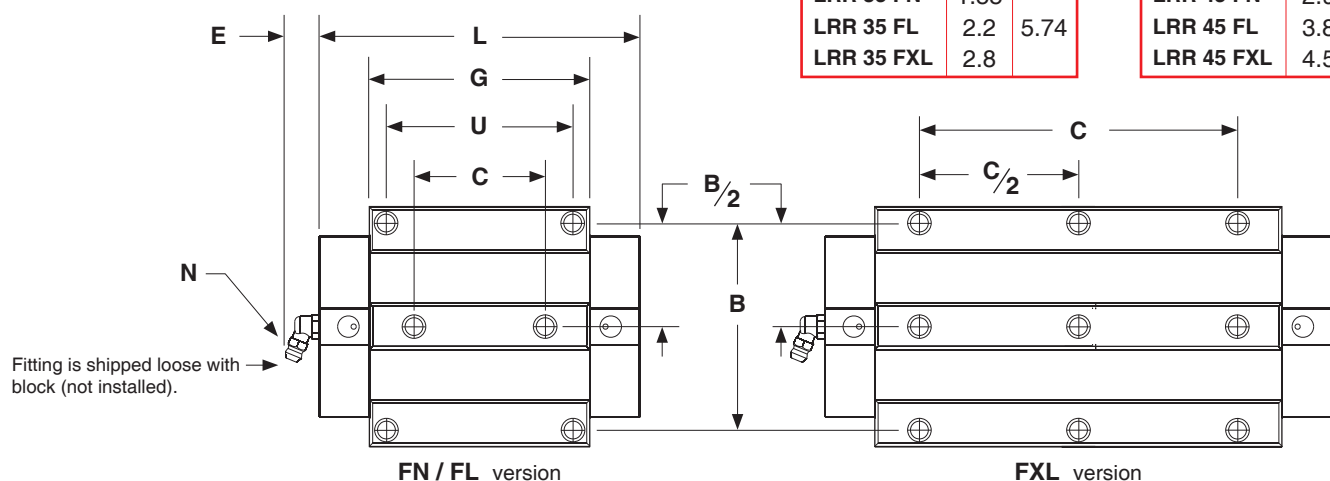


Dimensions & Specifications

| Model Number | Outline (mm) | | | Block Dimensions (mm) | | | | | | | | | | | | | Rail Dimensions (mm) | | | | |
|--------------|--------------|---------|----------|-----------------------|-----|----|----------|---------------------------------|----|-------|---------|-----|----|--------|------|----|----------------------|------|----|------|--------------|
| | Height H | Width W | Length L | B | C | U | M x T | M ₁ x T ₁ | K | G | N | J | E | O | Z | V | P | X | A | F | Q x R x S |
| LRR 35 FN | | | 122 | | 52 | 62 | | | | 84 | | | | | | | | | | | |
| LRR 35 FL | 44 | 100 | 147.5 | 82 | 52 | 62 | M8 x 9 | M10 x 13 | 38 | 109.5 | M6 x 12 | 6 | 12 | M6 x 8 | 12.4 | 11 | 34 | 33 | 31 | 40 | 9 x 14 x 17 |
| LRR 35 FXL | | | 177.5 | | 100 | | | | | 139.5 | | | | | | | | | | | |
| LRR 45 FN | | | 156 | | 60 | 80 | | | | 110 | | | | | | | | | | | |
| LRR 45 FL | 52 | 120 | 191 | 100 | 60 | 80 | M10 x 10 | M12 x 15 | 44 | 145 | M6 x 12 | 6.6 | 12 | M6 x 8 | 13.8 | 11 | 45 | 37.5 | 38 | 52.5 | 14 x 20 x 17 |
| LRR 45 FXL | | | 226 | | 120 | | | | | 180 | | | | | | | | | | | |

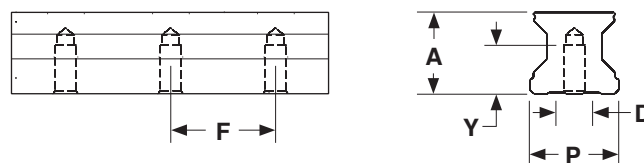
| Model Number | Weight | |
|--------------|------------|-------------|
| | Block (kg) | Rail (kg/m) |
| LRR 35 FN | 1.55 | |
| LRR 35 FL | 2.2 | 5.74 |
| LRR 35 FXL | 2.8 | |

| Model Number | Weight | |
|--------------|------------|-------------|
| | Block (kg) | Rail (kg/m) |
| LRR 45 FN | 2.9 | |
| LRR 45 FL | 3.8 | 10.0 |
| LRR 45 FXL | 4.5 | |



| Rail Size | (mm) | | | |
|-----------|----------|----|----|------|
| | D x Y | P | A | F |
| LRRU 35 | M8 x 15 | 34 | 31 | 40 |
| LRRU 45 | M12 x 19 | 45 | 38 | 52.5 |

Rail Tapped from Bottom



Unit Conversions

Torque Conversions

| Present Units | Convert To | Multiply By |
|------------------|------------------------|-------------|
| Gram-centimeters | newton-meters | 0.0000981 |
| Gram-centimeters | ounce-inches | 0.0138874 |
| Gram-centimeters | pound-inches | 0.000868 |
| Gram-centimeters | pound-feet | 0.0000723 |
| Newton-meters | gram-centimeters | 10,197.162 |
| Newton-meters | ounce-inches | 141.612 |
| Newton-meters | pound-inches | 8.85 |
| Newton-meters | pound-feet | 0.73756 |
| Ounce-inches | gram-centimeters | 72.0077 |
| Ounce-inches | newton-meters | 0.007062 |
| Ounce-inches | pound-inches | 0.0625 |
| Ounce-inches | pound-feet | 0.005208 |
| Pound-inches | gram-centimeters | 1,152.0 |
| Pound-inches | newton-meters | 0.11299 |
| Pound-inches | ounce-inches | 16.0 |
| Pound-inches | pound-feet | 0.08333 |
| Pound-feet | gram-centimeters | 13,825.5 |
| Pound-feet | newton-meters | 1.3558 |
| Pound-feet | ounce-inches | 192.0 |
| Pound-feet | pound-inches | 12.0 |

Distance Conversions

| Present Units | Convert To | Multiply By |
|---------------|-------------------|-------------|
| Arc-minutes | degrees | 0.016666 |
| Arc-seconds | degrees | 0.000277 |
| Centimeters | inches | 0.3937 |
| Centimeters | feet | 0.03280 |
| Centimeters | microns | 10,000.0 |
| Degrees | arc-minutes | 60.0 |
| Degrees | arc-seconds | 3,600.0 |
| Degrees | radians | 0.017453 |
| Feet | centimeters | 30.48 |
| Feet | meters | 0.3048 |
| Inches | centimeters | 2.54 |
| Inches | Km | 0.0000254 |
| Inches | meters | 0.0254 |
| Inches | microns | 25,400.0 |
| Inches | millimeters | 25.4 |
| Km | inches | 39,370.0 |
| Meters | feet | 3.2808 |
| Meters | inches | 39.37 |
| Meters | microns | 1,000,000.0 |
| Microns | centimeters | 0.0001 |
| Microns | inches | 0.00003937 |
| Microns | meters | 0.000001 |
| Microns | millimeters | 0.001 |
| Millimeters | inches | 0.03937 |
| Millimeters | microns | 1,000.0 |
| Radians | degrees | 57.295779 |

Reference : Handbook of Tables for Applied Engineering Science

Inertia Conversions

| Present Units | Convert To | Multiply By |
|-----------------------------|---------------------------------|--------------|
| Gram-cm ² | ounce-inches ² | 0.00546745 |
| Gram-cm ² | ounce-inch-sec ² ... | 0.000014161 |
| Gram-cm ² | pound-inches ² | 0.000341716 |
| Gram-cm ² | pound-inch-sec ² ... | 0.000000885 |
| Gram-cm ² | pound-feet-sec ² ... | 0.000000074 |
| Ounce-inches ² | gram-cm ² | 182.901 |
| Ounce-inches ² | ounce-inch-sec ² ... | 0.00259008 |
| Ounce-inches ² | pound-inches ² | 0.0625 |
| Ounce-inches ² | pound-inch-sec ² ... | 0.00016188 |
| Ounce-inches ² | pound-feet-sec ² ... | 0.00001349 |
| Ounce-inch-sec ² | gram-cm ² | 70,615.4 |
| Ounce-inch-sec ² | ounce-inches ² | 386.0 |
| Ounce-inch-sec ² | pound-inches ² | 24.13045 |
| Ounce-inch-sec ² | pound-inch-sec ² ... | 0.0625 |
| Ounce-inch-sec ² | pound-feet-sec ² ... | 0.00520833 |
| Pound-inches ² | gram-cm ² | 2,926.41 |
| Pound-inches ² | ounce-inches ² | 16.0 |
| Pound-inches ² | ounce-inch-sec ² ... | 0.0414413 |
| Pound-inches ² | pound-inch-sec ² ... | 0.00259008 |
| Pound-inches ² | pound-feet-sec ² ... | 0.00021584 |
| Pound-inch-sec ² | gram-cm ² | 1,129,850.0 |
| Pound-inch-sec ² | ounce-inches ² | 6,177.4 |
| Pound-inch-sec ² | ounce-inch-sec ² ... | 16.0 |
| Pound-inch-sec ² | pound-inches ² | 386.0 |
| Pound-inch-sec ² | pound-feet-sec ² ... | 0.0833333 |
| Pound-feet-sec ² | gram-cm ² | 13,558,200.0 |
| Pound-feet-sec ² | ounce-inches ² | 74,128.9 |
| Pound-feet-sec ² | ounce-inch-sec ² ... | 192.0 |
| Pound-feet-sec ² | pound-inches ² | 4,633.06 |
| Pound-feet-sec ² | pound-inch-sec ² ... | 12.0 |

Load Conversions

| Present Units | Convert To | Multiply By |
|---------------|-----------------|-------------|
| Grams | newtons | 0.009806 |
| Grams | ounces | 0.03528 |
| Grams | pounds | 0.002204 |
| Kilograms | pounds | 2.2046 |
| Newtons | grams | 101.971 |
| Newtons | ounces | 3.59692 |
| Newtons | pounds | 0.224808 |
| Ounces | grams | 28.3495 |
| Ounces | newtons | 0.27802 |
| Ounces | pounds | 0.0625 |
| Pounds | grams | 453.592 |
| Pounds | kilograms | 0.45359 |
| Pounds | newtons | 4.44824 |
| Pounds | ounces | 16.0 |
| Pounds | tons | 0.0005 |
| Tons | pounds | 2,000.0 |

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