

# LINEAR ROLLER SYSTEM

## with MR rail and R, R.T, R.S sliders

The MR Series Linear Rail System consists of a C-section steel rail with internal convex raceways, where robust double row ball bearing rollers travel. The high precision rollers are lubricated for life and protected with 2RS seals. Sliders are available with three or five rollers, including eccentrics to adjust the bearing preload. Both ends of the sliders are equipped with polyamide wipers to remove debris from the raceway and grease impregnated felt wipers to lubricate the raceways for long life with minimal maintenance.

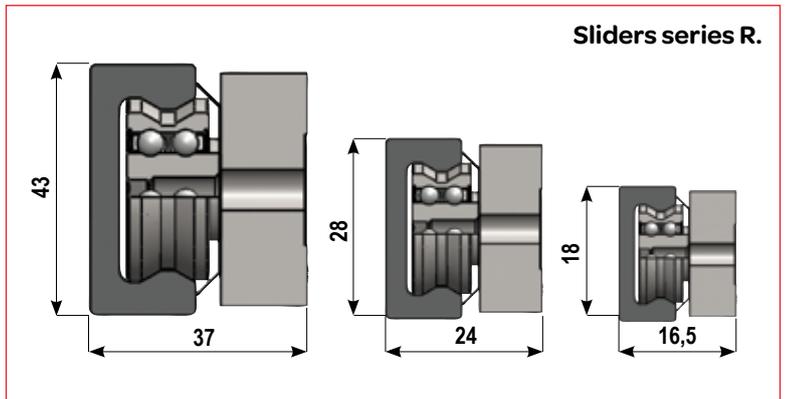
The MR rail system is especially equipped for harsh environments where contamination is a problem. Most bearing systems utilize a groove that a roller or ball travel within. These grooves capture and hold debris that eventually cause the bearing to fail. The convex raceway of the MR Series provides a place for debris and other contaminants to be pushed aside by the rollers. This feature enables the MR Series to function in environments where other bearings quickly fail.



### Sliders Series: RV, RP, RA

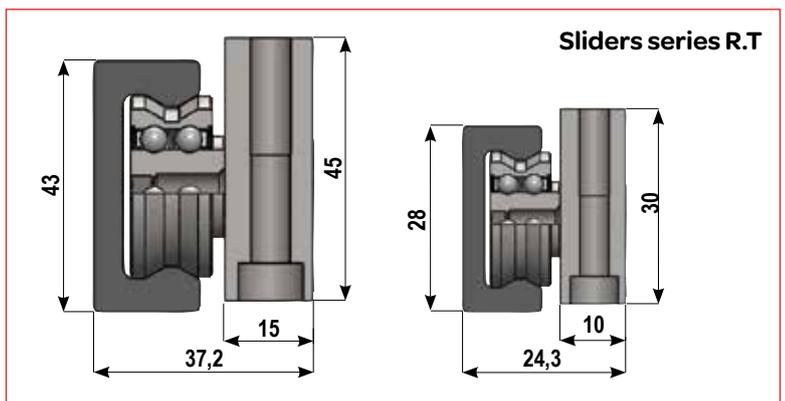
R Sliders Series are made of zinc plated steel with mounting holes parallel to the roller axis and perpendicular to the direction of preferred loading. The sliders have sealed rollers, axial wipers, and longitudinal seals for optimal protection of the internal parts and a sealing strip to prevent accidental tampering of the fixed rollers.

The R Series Sliders are available in 3 sizes and with either 3 or 5 rollers.



### Sliders Series: RVT, RAT, RPT, RFT

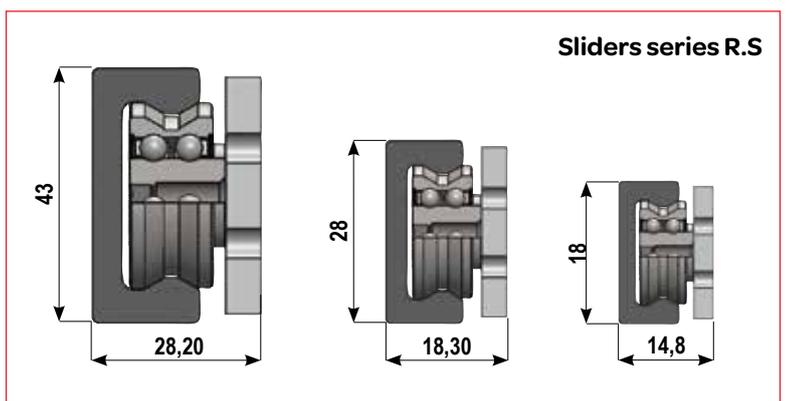
R.T Sliders Series are made of zinc plated steel with mounting holes perpendicular to the roller axis and parallel with the direction of preferred loading. The sliders have sealed rollers and axial wipers for protection of the internal parts. The R.T Series Sliders are available in 2 sizes and with either 3 or 5 rollers.



### Sliders Series: RVS, RAS, RPS, RFS

The R.S Sliders Series have a very slim body to obtain the most compact slider possible, without sacrificing performance. They also offer both threaded and through hole mounting options. The standard slider body is made from zinc plated steel but is also available in all Stainless Steel construction for higher corrosion resistance.

The R.S Series Sliders are available in 2 sizes, 2 materials, and with either 3, 4 or 5 rollers.



Sliders are available with either 3 or 5 rollers. For the 3 roller version, the first and third roller are fixed, concentric rollers that run on the same raceway. The second roller is eccentric and runs on the opposite raceway.

The eccentric feature is used to adjust the slider preload in the rail. For the 5 roller version, the two lateral and the central roller are fixed, and run on the same raceway.

The second and fourth roller are eccentric and run on the opposite raceway. The eccentric feature is used to adjust the slider preload in the rail. Because one raceway contacts more rollers than the other raceway, the sliders have a preferred loading direction.

The slider is marked with two small circular notches indicating the direction with the most rollers and direction of preferred loading. Care during assembly is required to ensure the maximum load capacity of the system is achieved.

The rollers used in the sliders consist of two different geometries to achieve different levels of constraint within the linear rails. Guiding Rollers (RCV, REV) contact the raceway at two points creating a well constrained rollers on the raceway. Floating Rollers (RCP, REP) engage only the peak of the raceway which constrains it radially but allows it to float in the axial direction between the two shoulders.

By using different combinations of guiding and floating rollers, sliders with different performance characteristics are obtained. These combinations can be used to avoid the binding that can occur because of alignment problems when mounting two linear bearings in parallel.

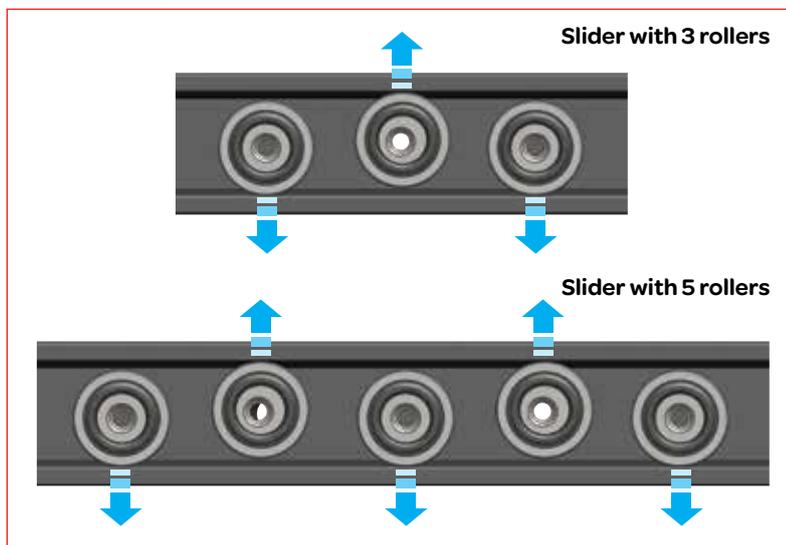
**Guiding Sliders:** By utilizing all guiding rollers RV, RTV, and RSV sliders are obtained, they are fully constrained and will support loads and moments in all directions with the greatest capacity in the radial direction.

**Floating Sliders:** By utilizing all floating rollers to construct RP, RSP, and RTP sliders are obtained, these sliders are able to carry full load in the radial direction and also float and rotate a small amount in the rail without affecting the preload or quality of the movement and without binding. Floating sliders are used in 2 rail systems to absorb parallelism errors in the mounting surfaces. For size 43 sliders, RF, RFT, and RFS sliders are available which allow even greater axial displacement.

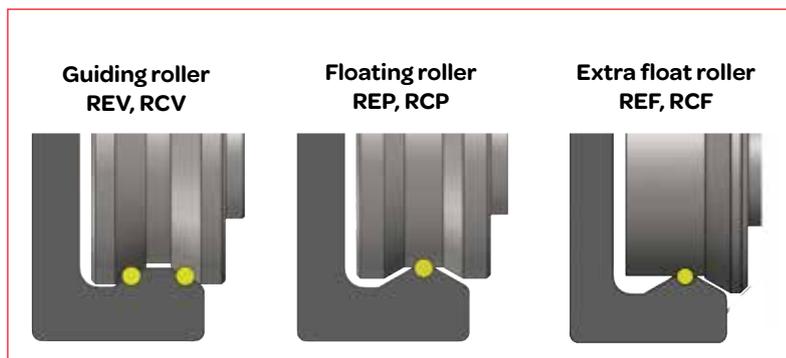
**Rotating Sliders:** By mixing guiding and floating rollers to construct RA, RSA, and RTA sliders are obtained, these sliders are able to carry full load in the radial direction and also rotate slightly without affecting the preload or quality of movement. These sliders also retain the ability to guide the payload as it travels. Rotating sliders are used in 2 rail systems to absorb angular errors in the mounting surfaces, that cause traditional bearings to bind.

**Combination:** By combining a floating and rotating slider together in a 2 rail system, the MR rail system can carry and guide a full payload while compensating for parallelism and angular errors in the rail mounting surfaces. These types of errors are often found when mounting to welded frames, structural Aluminum frames, sheet metal structures, etc. The self alignment capability can eliminate the need to machine the rail mounting surfaces.

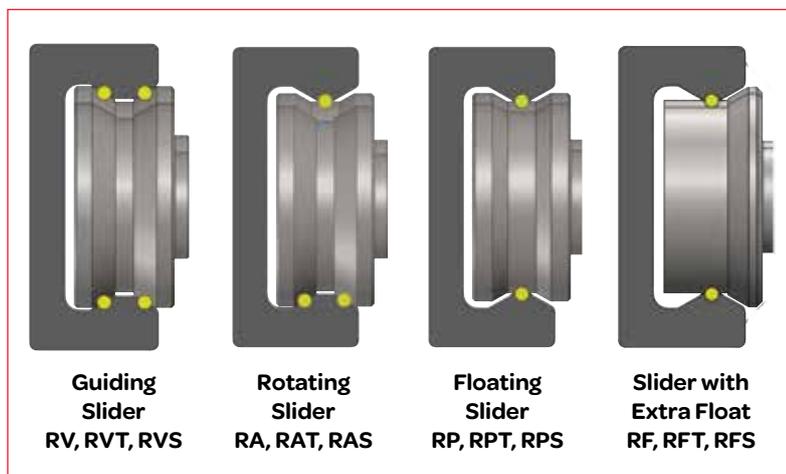
### Roller loading position



### Roller contact points



### Slider contact points



### Selfaligning combination

