

"MODULAR" FXRG RAIL - UNIQUE ASSEMBLY POSSIBILITIES

FLEXRACE a very flexible linear system with unique assembly possibilities. The FLEXRACE system provides an extremely versatile linear system with three raceways, each with 90 degree, allowing great variety of rail / roller configurations for a wide range of applications. FLEXRACE is designed to be a strong and simple multitask linear system for larger handling and automation applications. It is a Low-cost, easy to assemble system, that offers smooth motion even on inaccurate surfaces.

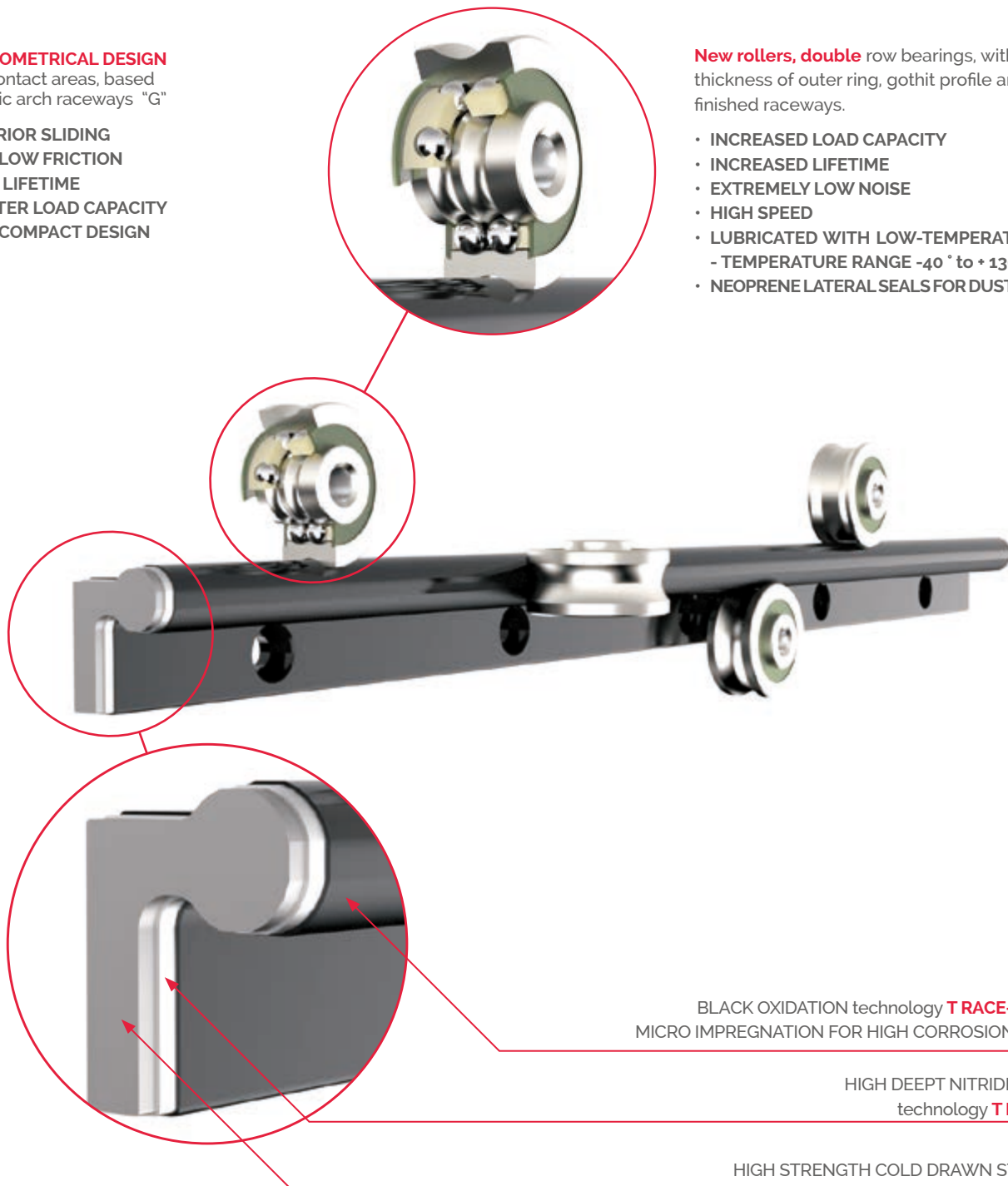
New GEOMETRICAL DESIGN

of the contact areas, based on Gothic arch raceways "G"

- SUPERIOR SLIDING
- VERY LOW FRICTION
- LONG LIFETIME
- GREATER LOAD CAPACITY
- VERY COMPACT DESIGN

New rollers, double row bearings, with increased thickness of outer ring, gothic profile and super finished raceways.

- INCREASED LOAD CAPACITY
- INCREASED LIFETIME
- EXTREMELY LOW NOISE
- HIGH SPEED
- LUBRICATED WITH LOW-TEMPERATURE GREASE
- TEMPERATURE RANGE -40 ° to +130 ° C
- NEOPRENE LATERAL SEALS FOR DUST PROTECTION



BLACK OXIDATION technology **T RACE-NOX 2.0** AND MICRO IMPREGNATION FOR HIGH CORROSION RESISTANCE

HIGH DEEPT NITRIDE HARDENING technology **T RACE-NOX 2.0**

HIGH STRENGTH COLD DRAWN STEEL PROFILE

SELF-ALIGNING SYSTEM when using two parallel rails, compensating large assembly inaccuracies on both longitudinal and transversal plane.

- ALLOW FOR INSTALLATION ON NON PRECISE STRUCTURES - WELDED CARPENTERY OR ALUMINIUM FRAME STRUCTUTRES
- DO NOT REQUIRE MACHINED FIXING SURFACES FOR INSTALLATION. COST SAVING, AS EASY AND FAST ASSEMBLY

Technological evolution of the patented process **T RACENOX 2.0**, based on a decade of experience, to further improve the rail material and thermochemical hardening treatment of deep nitriding and post-oxidation black for an effective corrosion protection.

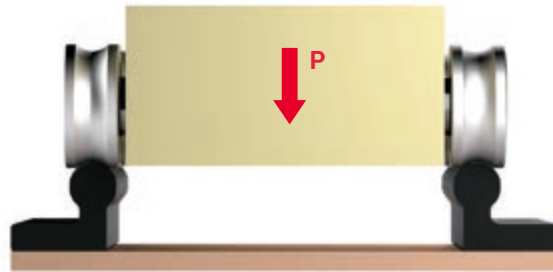
- VERY HIGH HARDNESS
- RESISTANCE TO HEAVY LOADS
- VERY LOW WEAR
- EFFECTIVE CORROSION PROTECTION
Also on raceways, tested to 120 hours in salt fog.
- SMOOTH BLACK FINISH

The FXRG rail allows realization of a wide range of configurations when using two or more rails in parallel. Depending on required load and moment capacities/direction more single rollers and standard sliders are used to obtain unique Self-aligning systems. The below illustrated configurations can be offered by T RACE or made locally. Contact T RACE for eventual support in dimensioning customized systems .

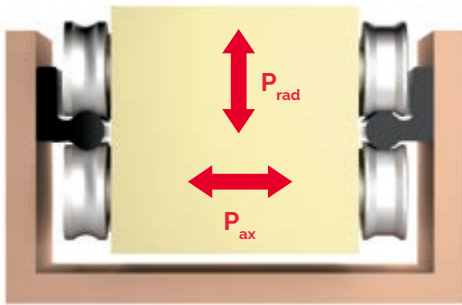


Rotation
 $\pm 5^\circ$

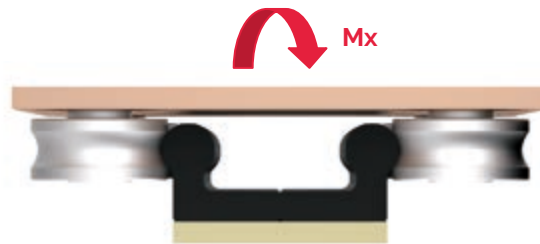
FXRG RAIL WITH GUIDING SLIDER
with limited rotational capacity



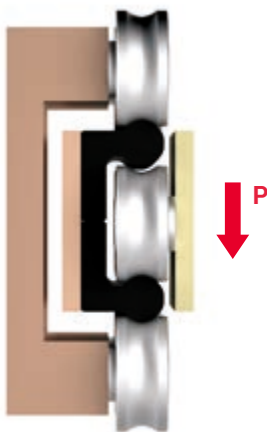
COMBINATION OF TWO FXRG RAIL
with resting load.



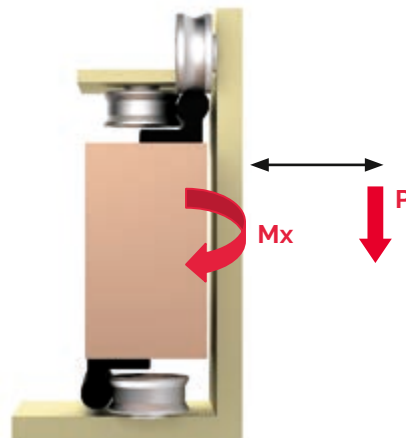
CONFIGURATION WITH TWO PARALLEL FXRG RAILS
with self-aligning capacity



CONFIGURATION WITH TWO FXRG RAILS
to form a single rail with a slider allowing for high M_x moments



TELESCOPIC CONFIGURATION
composed of two FXRG rails with rollers inbetween the rails fixed to mobile part and rollers on fixed structure running on outer raceways, providing a customized solutions for telescopic movements.

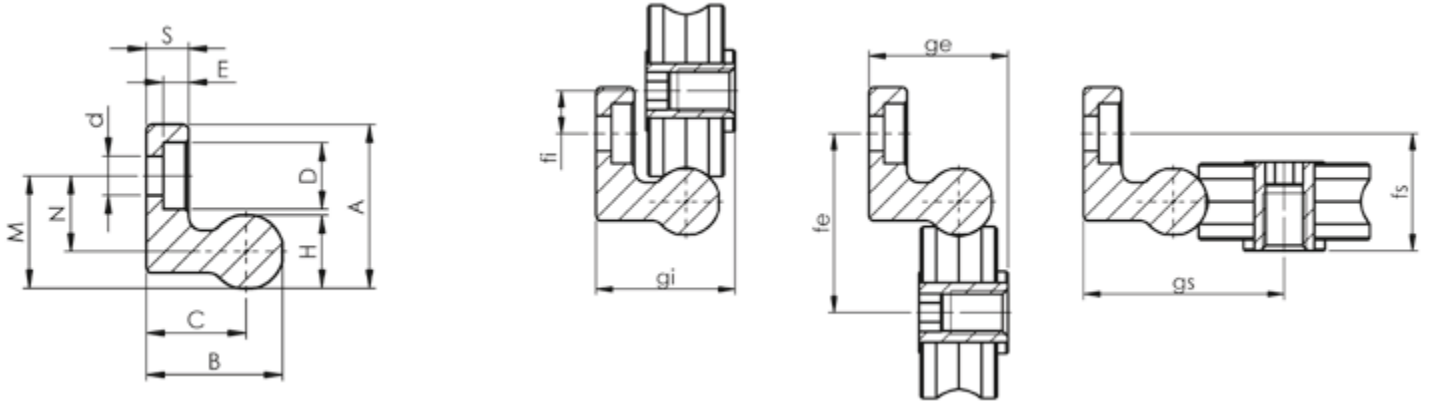


CONFIGURATION OF TWO FXRG RAILS
with high cantilever load capacity, meanwhile Self-aligning.

FXRG RAIL

FXRG rail is a high precision cold drawn profile of high strength steel. After a high depth nitride hardening treatment the rails are oxidized, all according to patent T RACE-NOX innovative process, assuring high hardness and excellent corrosion resistance. The characteristic black color on the whole rail is the result of oxidation and subsequent process of micro-impregnation with oils and substances for improved smoothness and long life. The fixing holes are for standard M6 cylindrical low head screws, DIN 7984, with 80mm pitch.

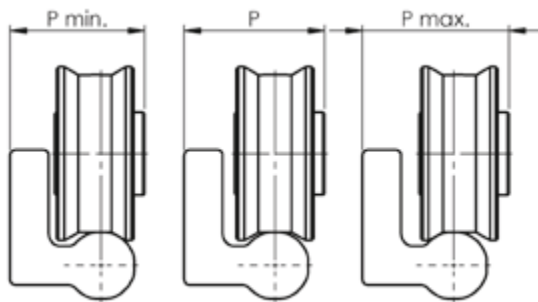
Position of guiding roller CONCENTRIC RCV43G ON THE THREE RACEWAYS



| Code | A (mm) | B (mm) | S (mm) | H (mm) | C (mm) | d (mm) | D (mm) | E (mm) | Screw type | M (mm) | N (mm) | Weight (g) |
|------|--------|--------|--------|--------|--------|--------|--------|--------|-------------|--------|--------|------------|
| FXRG | 27,02 | 22,52 | 7,00 | 12,04 | 16,50 | 6,50 | 11,00 | 4,20 | M6 DIN 7984 | 18,52 | 12,50 | 2,48 |

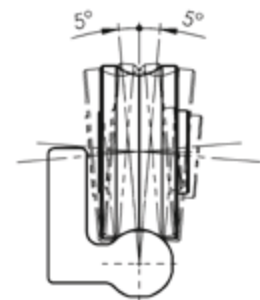
| fi (mm) | gi (mm) | fe (mm) | ge (mm) | fs (mm) | gs (mm) |
|---------|---------|---------|---------|---------|---------|
| 7,82 | 25,50 | 32,82 | 25,50 | 21,50 | 36,82 |

AXIAL MOVEMENT OF FLOATING ROLLER R.PG43 WITH FXRG RAIL

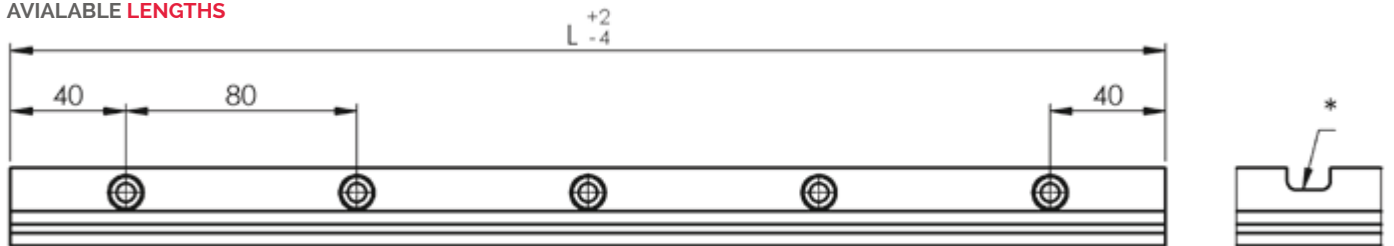


| Code | P (mm) | movement | P _{min} (mm) | P _{max} (mm) |
|------|--------|----------|-----------------------|-----------------------|
| FXRG | 25,50 | +/-1 | 24,50 | 26,50 |

Rotation of guiding roller R.VG43 ON FXRG RAIL



AVAILABLE LENGTHS



*Version FXRG-...-C with additional slot

DIMENSIONS From 400 mm to 2000 mm

| Rail codes | Length L (mm) | | | | | | | | | | | | | | | | | | | | | | | | |
|------------|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|---|
| | 160 | 240 | 320 | 400 | 480 | 560 | 640 | 720 | 800 | 880 | 960 | 1040 | 1120 | 1200 | 1280 | 1360 | 1440 | 1520 | 1600 | 1680 | 1760 | 1840 | 1920 | 2000 | |
| FXRG | | | | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • |

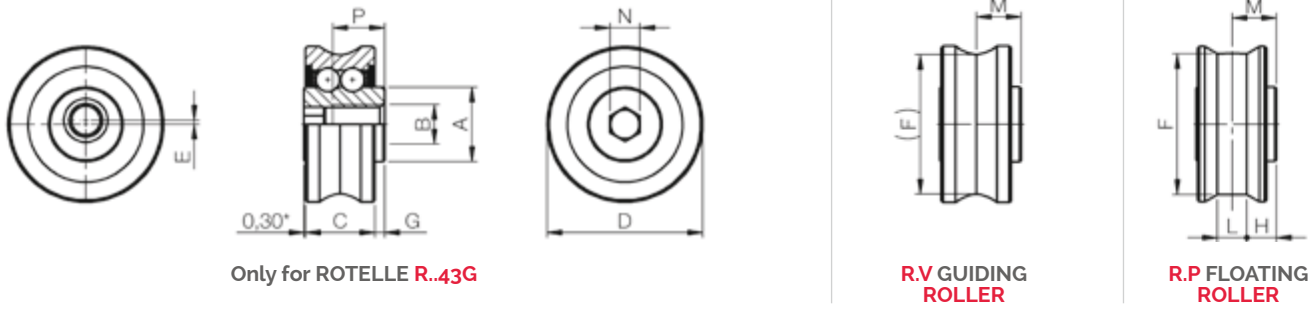
• Available in stock

DIMENSIONS From 2080 mm to 4000 mm

| Rail codes | Length L (mm) | | | | | | | | | | | | | | | | | | | | | | | | |
|------------|---------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| | 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 |
| FXRG | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • |

| ORDER CODES | VERSION | CHARACTERISTICS |
|-------------|---------|--|
| FXRG43-1040 | BASIC | Cold drawn profile with high depth nitriding hardening "T RACE NOX 2.0", oxidation with micro oil impregnation. Ends are cut to size after treatments and sprayed with protective black paint. |

GUIDING ROLLER R.VG AND FLOATING ROLLER R.PG

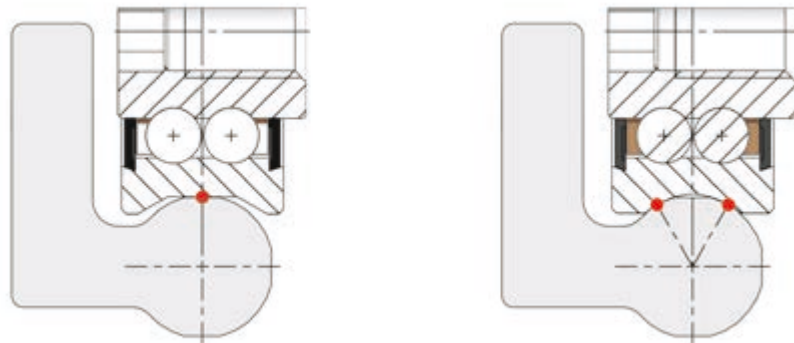


Only for ROTELLE R..43G

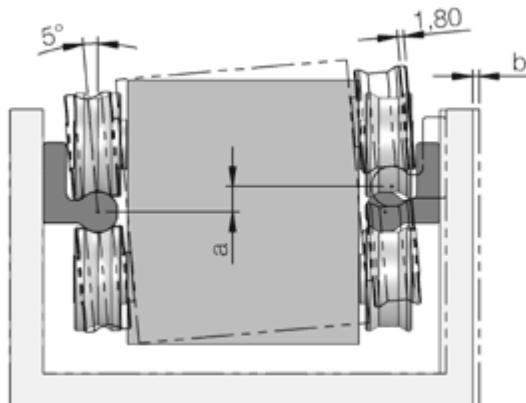
| Roller code | Type | Versions | E (mm) | D (mm) | C (mm) | M (mm) | G (mm) | N chiave | A (mm) | B (mm) | P (mm) | F (mm) | L (mm) | H (mm) | Weight (g) | Dynamic coefficient C (N) | Load capacity | |
|-------------|------------|----------|--------|--------|--------|--------|--------|----------|--------|--------|--------|--------|--------|--------|------------|---------------------------|-----------------------|----------------------|
| | | | | | | | | | | | | | | | | | Co _{rad} (N) | Co _{ax} (N) |
| RCV43G | Concentric | GUIDING | - | 31.4 | 14 | 9 | 2 | 6 | 15 | M8 | 10,5 | - | - | - | 50 | 7600 | 4000 | 1190 |
| RCP43G | | FLOATING | | 31.5 | | | | | | | | 28,59 | 6 | 6 | | | 7600 | 4000 |
| REV43G | Eccentric | GUIDING | 0,8 | 31.4 | 14 | 9 | 2 | 6 | 15 | M8 | 10,5 | - | - | - | 50 | 7600 | 4000 | 1190 |
| REP43G | | FLOATING | | 31.5 | | | | | | | | 28,59 | 6 | 6 | | | 7600 | 4000 |

SELF-ALIGNING COMBINATIONS

When the FXRG rails are used in parallel, use of floating rollers R.P43G and guiding rollers R.V43G provide a Self-aligning system, capable of compensating great inaccuracies of structure or assembly errors. When the guiding rollers R.VG43 are in contact with the FXRG's gothic raceways, the rollers assure precise guiding and meanwhile also compensation for some misalignment, as able to rotate slightly around its longitudinal axis of about +/- 5°. Combined with floating rollers R.PG43 on a parallel rail, such system can compensate an axial displacement of +/- 1 mm, in addition to a max. rotation of +/- 5°.



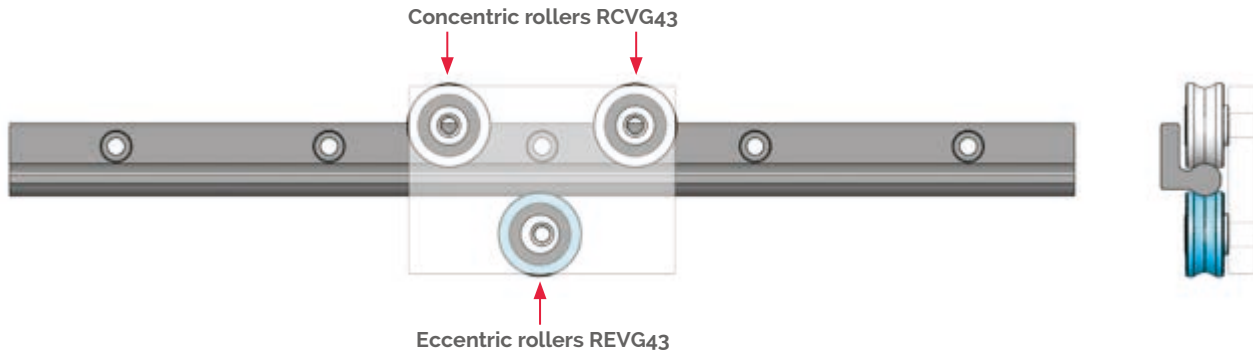
The combination effect of both rotation and lateral movement, allow two parallel rails to compensate for misalignment on both a) and b) level.



SINGLE RAIL WITH 3 ROLLERS SLIDER

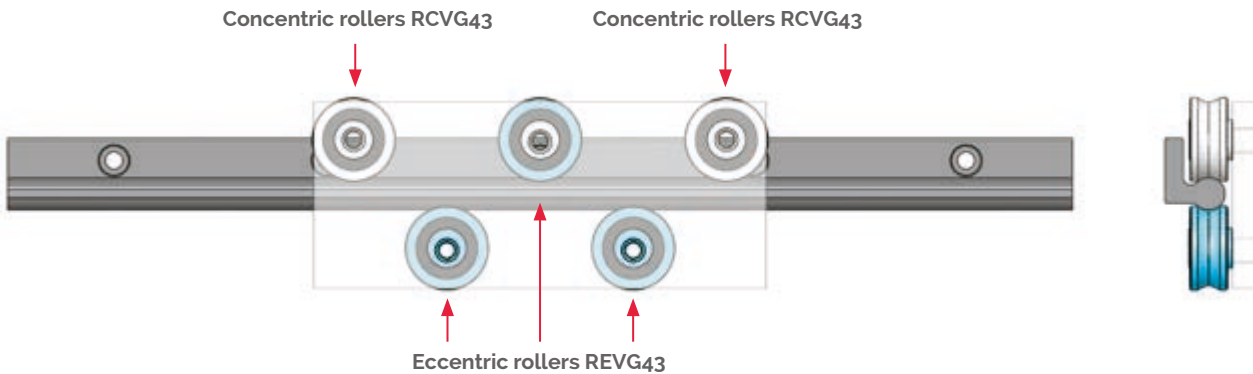
The concentric rollers should be positioned in the direction of radial loading.

Warning! A single slider configuration will rotate $\pm 5^\circ$ around the longitudinal axis of a single FXRG rail, not able to take any Mx moments.

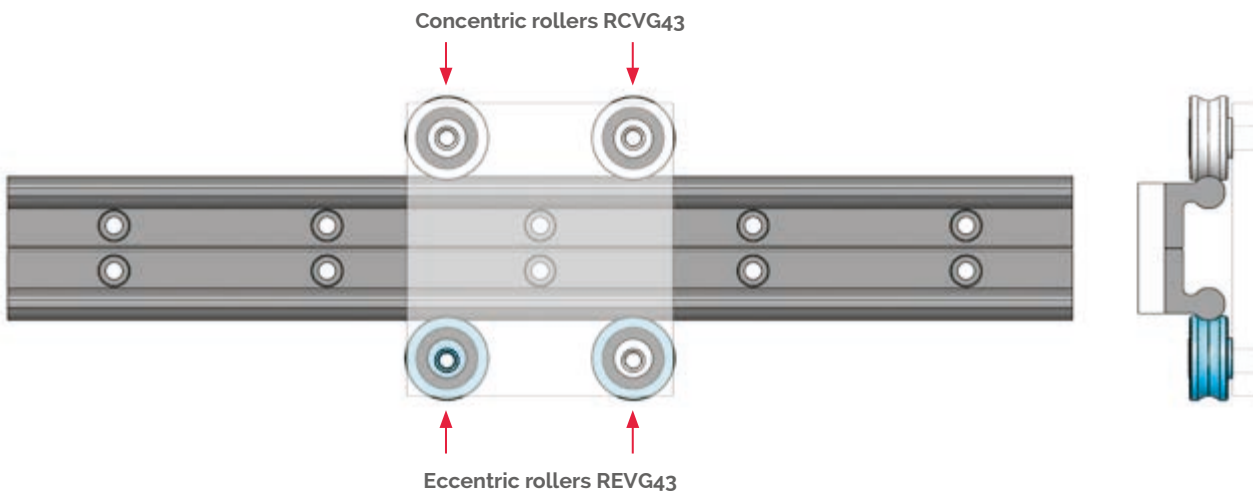


SINGLE RAIL WITH 5 ROLLER SLIDER

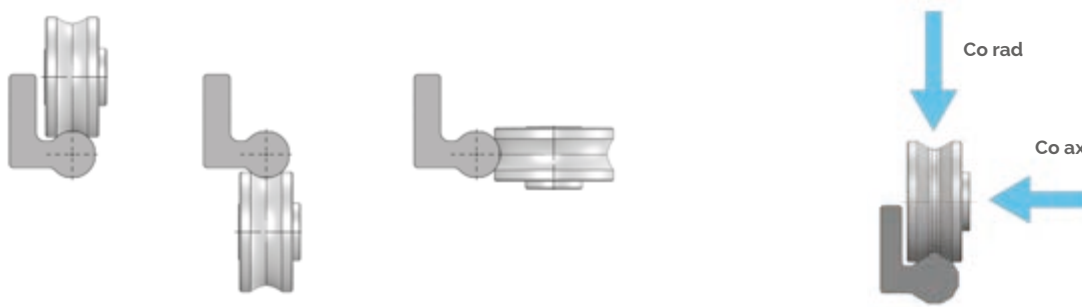
It is recommended in the case of use of more than two rollers on the same track with max. radial load, to use only two concentric rollers (as from example figure). The other rollers are recommended to be eccentric rollers. For cases with a wider distance between the concentric rollers, possible with all concentric rollers, contact T RACE's Technical Office for dimensioning.



DOUBLE RAIL WITH SLIDER FOR HIGH OVERTURNING MOMENTS

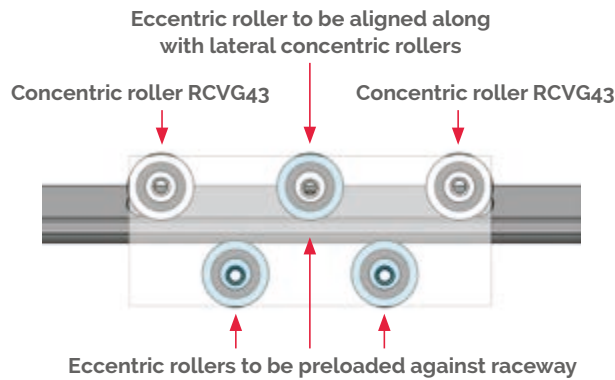


The rollers need to be positioned on the rail in numbers and directions according to the prevailing load. The rollers' load capacity is shown on page 51. It is always preferable to orient the rollers so that the prevailing load acts radially on the rollers, due to higher radial load capacity, than axial load capacity.



The rollers must be fixed on a metal surface not yielding, perfectly flat and with its fixing screws, applying a locking torque of 22 Nm. The tightening of the fixing-screw is to be performed, while holding the roller firm with an Allen-wrench, present on the opposite side of the fixing thread. In case eccentric rollers, it is advisable to use a cup-spring washer under the screw-head to obtain a firm movement, able to maintain the roller "firm" against the surface and facilitate minor adjustment of eccentric roller, before the final locking.

The preload adjustment can also be carried out by checking the force F_i of insertion of the movable part, in which the rollers are fixed into the rail. In general for a good F_i adjustment, the inserting friction must be between 2-10 N. To increase or decrease the F_i act on eccentric rollers, opposite to the load direction (see figure below).



In case required to have eccentric rollers on the internal rail side, it is necessary to include optional accesses, needed to allow Allen-key to reach roller. Otherwise the adjustment can take place outside of the rail.

Configuration possibilities

