Type RV and RW can be supplied with the pertinent mounting hardware.
The largest portion of these products are used as linear guides.

2.2 Types
2.2.1 Track rollers LFR, mounting bolts and studs RC/RE
The track rollers series LFR can be used on round shafts with diameter from 4 mm to 50 mm.
The contact between track roller gothic arch groove profile and shaft is on two points.
This allows the units to carry loads in both axial and radial direction.
The track rollers are available with either shields ZZ or contact seals 2RS.

2.2.2 Track rollers RV
The track rollers RV have a groove machined in the outer ring. The groove is "V" shaped with an included angle of 120 degrees. These units are predominantly used on shafts with diameters from 7 to 20 MM. The contact between track roller and shafts is on two points.
In special cases, the units can run on profiled ways.
The units are supplied with non contact shields.

2.2.3 Track rollers with "W" profile, type RM
The track rollers series RM have grooves machined in the outer ring of the unit with an included angle of 90 degree. They have been engineered to run on profiled steel elements that have identical shape. They can run on either the internal or the external surfaces of the outer ring.

They are available with either non-contacting shields ZZ or contact seals 2RS.

3. Bearing tolerances

3.1 Standard of tolerances
Track roller bearing "tolerances" or dimensional accuracy and running accuracy, are regulated by ISO and JIS standards (rolling bearing tolerances). For dimensional accuracy, these standards prescribe the tolerances necessary when installing bearings on shafts or in housings.
Running accuracy is defined as the allowable limits for bearing runout during operation.

Table 3.1 Comparison of tolerance classifications of national standards

Standard		Tolerance class				
Japanese industrial standard (JIS)	JIS	class 0,6X	class 6	class 5	class 4	class 2
International Organization for Standardization (ISO)	ISO	Normal class Class 6X	Class 6	Class 5	Class 4	Class 2
Deutsches Institut fur Normung(ISO)	DIN	P0	P6	P5	P4	P2
American National Standards Institute (ANSI)	ANSI/ABMA	ABEC-1	ABEC-3	ABEC-5	ABEC-7	ABEC-9

3.2 Tolerances for radial bearings

Table 3.2 Inner rings

(Unit: μm)

Nominal bore diameter d mm		Single plane mean bore diameter deviation Δdmp										Single radial plane bore diameter variation Vdp									
		class 0		class 6		class 5		class 4 ❷		class 2 ❷		diameter series 9					maxdiameter series 0,1				
												class 0	class 6	class 5	class 4	class 2	class 0	class 6	class 5	class 4	class 2
over	incl.	high	low	high	low	high	low	high	low	high	low	max.					max.				
10	18	0	-8	0	-7	0	-5	0	-4	0	-2.5	10	9	5	4	2.5	8	7	4	3	2.5
18	30	0	-10	0	-8	0	-6	0	-5	0	-2.5	13	10	6	5	2.5	10	8	5	4	2.5
30	50	0	-12	0	-10	0	-8	0	-6	0	-2.5	15	13	8	6	2.5	12	10	6	5	2.5

Table 3.3 Inner rings

(Unit: μm)

Nominal bore diameter d mm		Single radial plane bore diameter variation Vdp maxdiameter series 2,3,4					Mean single plane bore diameter variation Vdmp					Inner ring radial runout Kia					Face runout with bore Sd		
		class 0	class 6	class 5	class 4	class 2	class 0	class 6	class 5	class 4	class 2	class 0	class 6	class 5	class 4	class 2	class 5	class 4	class 2
over	incl.	max.					max.					max.					max.		
10	18	6	5	4	3	2.5	6	5	3	2.0	1.5	10	7	4	2.5	1.5	7.0	3.0	1.5
18	30	8	6	5	4	2.5	8	6	3	2.5	1.5	13	8	4	3.0	2.5	8.0	4.0	1.5
30	50	9	8	6	5	2.5	9	8	4	3.0	1.5	15	10	5	4.0	2.5	8.0	4.0	1.5

Table 3.4 Inner rings

(Unit: μm)

Nominal bore diameter d mm		Inner ring axial runout (with side) Sia ❷			Inner ring width deviation ΔBs										Inner ring width variation VBs				
					normal						modified ❸								
		class 5	class 4	class 2	class 0,6		class 5,4		class 2		class 0,6		class 5,4		class 0	class 6	class 5	class 4	class 2
over	incl.				high	low	high	low	high	low	high	low	high	low	max.				
10	18	7	3	1.5	0	-120	0	-80	0	-80	0	-250	0	-250	20	20	5	2.5	1.5
18	30	8	4	2.5	0	-120	0	-120	0	-120	0	-250	0	-250	20	20	5	2.5	1.5
30	50	8	4	2.5	0	-120	0	-120	0	-120	0	-380	0	-250	20	20	5	3.0	1.5

Note: ❶ The dimensional difference Δds of bore diameter to applied for class 4 and 2 is the same as the tolerance of dimentional difference Δdmp of average bore diameter. However, the dimensional difference is applied to diameter series 0, 1, 2, 3 and 4 against Class 4, and to all the diameter series against Class 2.

❷ To be applied for deep groove ball bearing and angular contact ball bearings.

❸ To be applied for individual raceway rings manufactured for combined bearing use.

Symbols: Δdmp: deviation of the mean bore diameter from the nominal (Δdmp = dmp − d).
Vdp: bore diameter variation: difference between the largest and smallest single bore diameters in one plane.
Vdmp: mean bore diameter variation: difference between the largest and smallest mean bore diameters of one ring or washer.
Kia: radial runout of assembled bearing inner ring and assembled bearing outer ring, respectively.
Sd: side face runout with reference to bore (of inner ring).
Sia: side face runout of assembled bearing inner ring and assembled bearing outer ring, respectively.
ΔBs: deviation of single inner ring width or single outer ring width from the nominal (ΔBs = Bs − B etc.)
VBs: ring width variation: difference between the largest and smallest single widths of inner ring and of outer ring, respectively.

Table 3.5 Outer rings (Unit: μm)

Nominal Outside diameter D mm		Single plane mean outside diameter deviation $\triangle D_{mp}$										Single radial plane outside diameter variation VD_p									
		class 0		class 6		class 5		class 4①		class 2①		diameter series 9					maxdiameter series 0,1				
												class 0	class 6	class 5 max.	class 4	class 2	class 0	class 6	class 5 max.	class 4	class 2
over	incl.	high	low	high	low	high	low	high	low	high	low										
6	18	0	-8	0	-7	0	-5	0	-4	0	-2.5	10	9	5	4	2.5	8	7	4	3	2.5
18	30	0	-9	0	-8	0	-6	0	-5	0	-4.0	12	10	6	5	4.0	9	8	5	4	4.0
30	50	0	-11	0	-9	0	-7	0	-6	0	-4.0	14	11	7	6	4.0	11	9	5	5	4.0
50	80	0	-13	0	-11	0	-9	0	-7	0	-4.0	16	14	9	7	4.0	13	11	7	5	4.0
80	120	0	-15	0	-13	0	-10	0	-8	0	-5.0	19	16	10	8	5.0	19	16	8	6	5.0

Table 3.6 Outer rings (Unit: μm)

Nominal Outside diameter D mm		Single radial plane outside diameter variation VD_p maxdiameter series 2,3,4					Single radial plane outside diameter variation VD_p② capped bearings diameter series		Mean single plane outside diameter variation VD_{mp}				
		class 0	class 6	class 5 max.	class 4	class 2	2,3,4 class 0	0,1,2,3,4 class 6 max.	class 0	class 6	class 5 max.	class 4	class 2
over	incl.												
6	18	6	5	4	3	2.5	10	9	6	5	3	2.0	1.5
18	30	7	6	5	4	4.0	12	10	7	6	3	2.5	2.0
30	50	8	7	5	5	4.0	16	13	8	7	4	3.0	2.0
50	80	10	8	7	5	4.0	20	16	10	8	5	3.5	2.0
80	120	11	10	8	6	5.0	26	20	11	10	5	4.0	2.5

Symbols: $\triangle D_{mp}$: deviation of the mean outside diameter from the nominal ($\triangle D_{mp} = D_{mp} - D$).
VD_p: outside diameter variation: difference between the largest and smallest single outside diameters in one plane.
VD_{mp}: mean outside diameter variation: difference between the largest and smallest mean outside diameters of one ring or washer.

Table 3.7 Outer rings (Unit: μm)

Nominal Outside diameter D mm over	incl.	Outer ring radial runout Kea class 0	class 6	class 5 max.	class 4	class 2	Outside surface inclination SD class 5	class 4 max.	class 2	Outside ring axial runout Sea⑥ class 5	class 4 max.	class 2	Outer ring width deviation ΔCs all type	Outer ring width variation VCs class 0,6	class 5	class 4 max.	class 2
6	18	15	8	5	3	1.5	8	4	1.5	8	5	1.5	Identical to ΔBs of inner ring of same bearing	Identical to ΔBs and VBs of inner ring of same bearing	5	2.5	1.5
18	30	15	9	6	4	2.5	8	4	1.5	8	5	2.5			5	2.5	1.5
30	50	20	10	7	5	2.5	8	4	1.5	8	5	2.5			5	2.5	1.5
50	80	25	13	8	5	4.0	8	4	1.5	10	5	4.0			6	3.0	1.5
80	120	35	18	10	6	5.0	9	5	2.5	11	6	5.0			8	4.0	2.5

Note: ⑤ The dimensional difference ΔDs of outer diameter to be applied for classes 4 and 2 is the same as the tolerance of dimensional difference ΔDmp of average outer diameter. However, the dimensional difference is applied to diameter series 0,1,2,3 and 4 against Class 4, and also to all the diameter series against Class 2.
⑥ To be applied in case snap rings are not installed on the bearings.
⑦ To be applied for Track Roller Bearings.

Symbols: Kea: radial runout of assembled bearing inner ring and assembled bearing outer ring, respectively.
SD: outside inclination variation: variation in inclination of outside cylindrical surface to outer ring side face.
Sea: side face runout of assembled bearing inner ring and assembled bearing outer ring, respectively.
ΔCs: deviation of single inner ring width or single outer ring width from the nominal (ΔBs = Bs - B etc.)
VCs: ring width variation: difference between the largest and smallest single widths of inner ring and of outer ring, respectively.

4. Bearing fits

Track rollers are precision machine elements. These products must be very carefully handled before and during fitting. Their trouble-free operation depends largely on the care taken during fitting

4.1 Compatibility and miscibility

The anti-corrosive preservation oil used for rolling bearings is compatible and miscible with oils and greases with a mineral oil base. Compatibility should be checked if the following are used:
- synthetic lubricants
- thickeners other than lithium or lithium complex soaps.

If there is an incompatibility, the anti-corrosive oil should be washed out before greasing. particularly in the following cases:
- lubricants based on PTFE/alkoxyfluoroether
- lubricants with a polycarbamide thickener

and if
- the lubricant is changed
- the rolling bearings are contaminated.

If in doubt, please contact the relevant lubricant manufacturer.

4.2 Guidelines for fitting

- The assembly area must be kept clean and free from dust
- Protect bearings from dust, contaminants and moisture
  - contaminants have a detrimental influence on the running and operating life of rolling bearings
- Inspect the housing bore and shaft/axis seating for
  - dimensional and geometrical tolerances
  - cleanliness