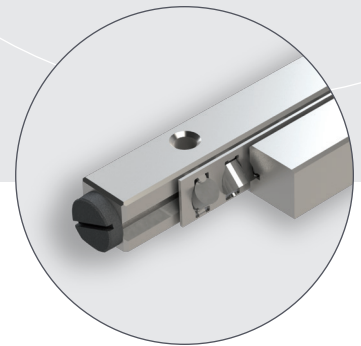
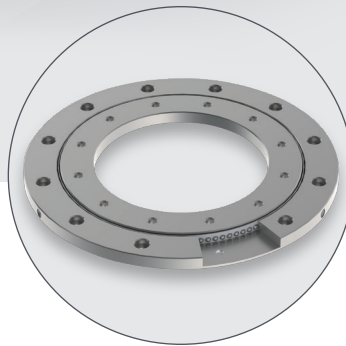
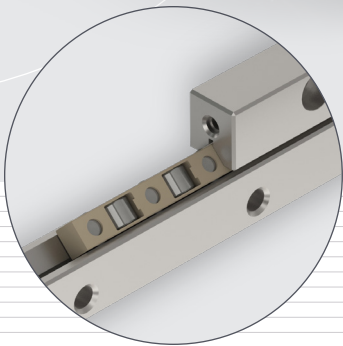
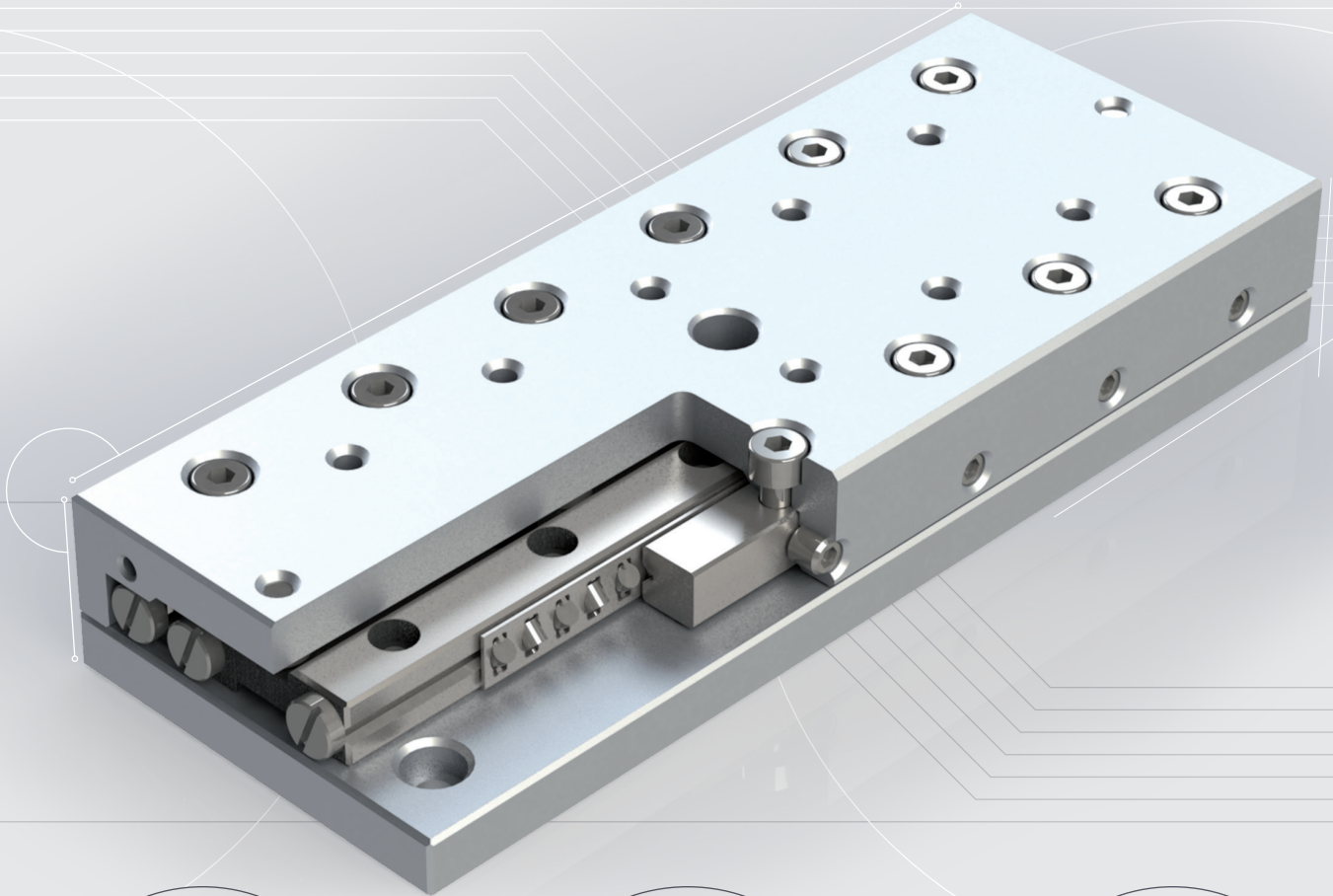


OVER
50
YEARS
of success



LINEAR BEARING SETS TYPE RSD



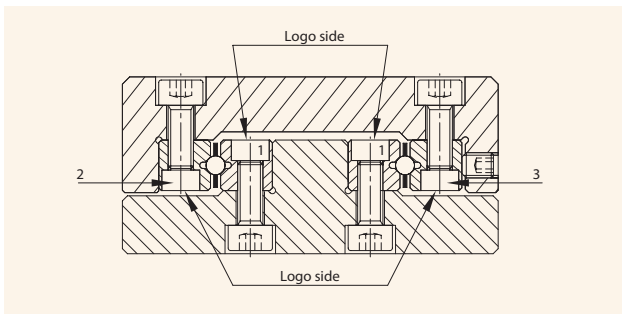
ASSEMBLY PROCEDURE

BEFORE START ASSEMBLY

PM linear bearings are precision components; they have to be handled with meticulous care. To achieve a perfect linear bearing, please pay due attention to the following notes:

- Be careful in handling the components. Do not drop it or hit it with anything like a hammer. Damages on the rail surface will have his impact on the running performance and operation life.
- Keep out any foreign material when mounting the rails.
- During assembly, all linear bearing components must have the same room temperature.
- For an uniform tightening of the bolts the use of a torque screw driver is recommended. Various models and bits are available. Please consult PM.

ASSEMBLY LINEAR BEARINGS



For a satisfying installation of all types of linear bearings in this catalog, the following should be observed:

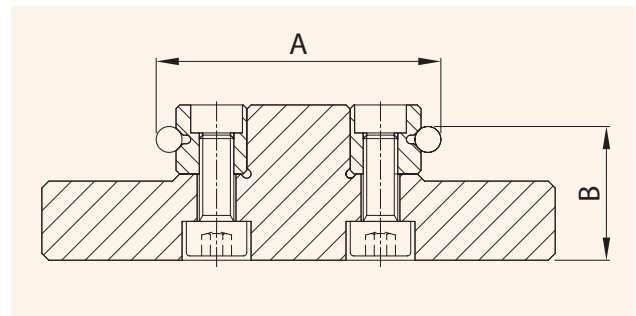
- 1) Fixing holes in the support structure (slide-base) should be "spotted through" from the holes in the rails. This is highly desirable as the original pitch of individual holes may have altered during hardening by as much as 0.4 mm. To compensate this, in part at least, special attachment screws type GD or GDN can be supplied. The dimensions of these are listed in the tables under the relative linear bearings for sizes.
- 2) Carefully de-burr and clean all constructional elements, to ensure a flat surface and a perfect seating of the rails.
- 3) The inner rail-pair (1), mounted "shoulder-to-shoulder" should be bolted down first, as follows: The base and reference face 1 of the linear bearing rails should be lightly oiled before they are clamped

against the mounting and reference shoulder.

They should then be bolted down by tightening up progressively, starting from one end and working to the other.

- 4) Parallelism of the V-tracks of the rails (A and B) should be checked. The tolerance must be within the tolerance of the linear bearings (page 14). When this has been done, the slide element in question is now ready for assembly.

Parallelism of rails V-track: ΔA und ΔB



- 4.1) The slide top can now be assembled. The fixed bearing rail (2) should be mounted as described at 3.1 above, but the adjustable rail (3) should only be screwed down lightly, to leave a gap between V-tracks for the insertion of ball-, roller- or needle cages.
- 5) This point only in cases where end stops are already inserted in the rail ends. Remove the end stop screws.
- 6) Carefully insert the cages. When the cages are exact in position, bolt down the adjustable V-rail lightly, until the screws are finger-tight.
- 7) Fit the end stop screws or end pieces.
- 8) The linear bearing set can now be play-free adjusted using the lateral preload setscrews. (chapter Preload Setting Linear Bearings, page 18).
- 9) Secure the attachment screws on the adjusting rail.
- 10) When assembly is finished, the linear bearings must be inspected for absence of play and for running the accuracy.



TABLES

RECOMMENDED PRELOAD SETTINGS

Table 1 Linear bearings RSD with roller cages

Roller size (mm)	Pitch cage (mm)	Setscrew	Pitch* (mm)	Preload (Ncm)
1.5	3	M 2.5	10	0.75
2	4	M3	15	1.50
3	5	M5	25	4.50
4	7	M5	40	11.50
6	12	M6	100	18.50
9	14	M8	100	105.50
12	22	M10	100	176.50
15	20	M12	100	370.00

Table 2 Linear bearings RSD with ball cages

Roller size (mm)	Pitch cage (mm)	Setscrew	Pitch* (mm)	Preload (Ncm)
1.5	3	M 2.5	10	0.20
2	4	M3	15	0.40
3	5	M5	25	1.10
4	7	M5	40	2.70
6	9	M6	50	4.00
9	14	M8	100	11.70
12	15.5	M10	100	25.00
15	20	M12	100	34.50

Table 3 Linear bearings RSDE with roller cages

Roller size (mm)	Pitch cage (mm)	Setscrew	Pitch* (mm)	Preload (Ncm)
3	3.3	M5	25	16
4	4.4	M5	40	41
6	6.6	M6	50	86
9	On request			

Table 4 Linear bearings RNG with roller cages

Roller size (mm)	Pitch cage (mm)	Setscrew	Pitch* (mm)	Preload (Ncm)
4	4.4	M3	25	14
6	6.6	M4	25	25

Table 5 Linear Bearings N/O and M/V with needle cages

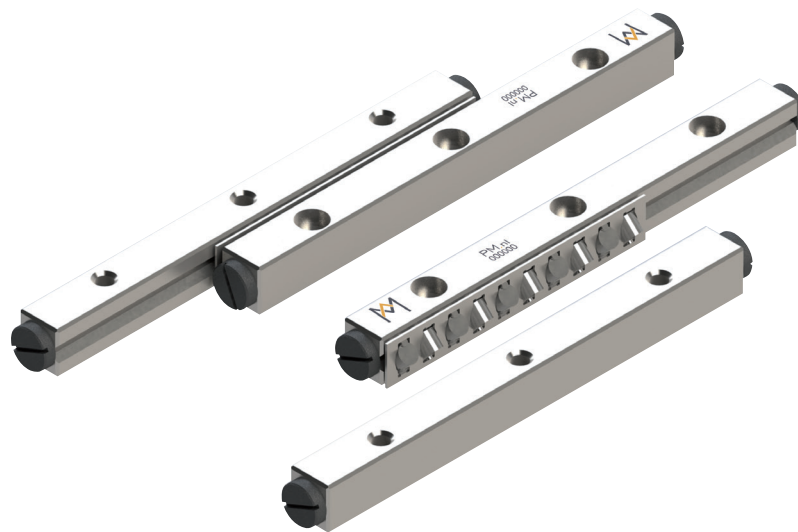
Roller size (mm)	Pitch cage (mm)	Setscrew	Pitch* (mm)	Preload (Ncm)
2	4.5	M6	50	1.05
2	4.5	M8	100	1.30
2.5	5	M8	100	2.70
2.5	5.5	M8	100	2.90
3	6	M12	100	5.70
3.5	7	M14	100	7.70

RECOMMENDED TIGHTENING TORQUE FOR ATTACHMENT SCREWS

Table 6 Tightening torque strength grade 12.9

Max. Tightening torques (Ncm)		
Size	Tightening Torque DIN 912	Attachment screws GD and GDN
M2	0.60	0.48
M3	2.00	1.60
M4	4.90	3.92
M5	9.60	7.68
M6	17.00	13.60
M8	41.00	32.80
M10	79.00	63.20
M12	140.00	112.00
M14	220.00	176.00

*pitch between the preload setscrews



LINEAR BEARING SET

Advantages for users

- Packed as set
- Standard stroke lengths*
- Ready for assembly, reducing cost
- Cages are straighten
- Quick delivery
- Worldwide standardized
- Pre selection by load capacity vs travel length

*In need of longer stroke lengths? Roller cage are easy to shorten. The length of cage should be a least > 70% of rail length.

Linear bearings set type RSD

Used worldwide in high precision linear motion, providing high accuracy and an outstanding reliability. Standard linear bearings sets consists of:

- 4 pcs. rails type RSD
- 2 pcs. roller cages type AA
- 8 pcs. end screws type GA inserted in the rail ends
Packed and delivered as set.

Example: RSD-3100x14AA

One set consists of:

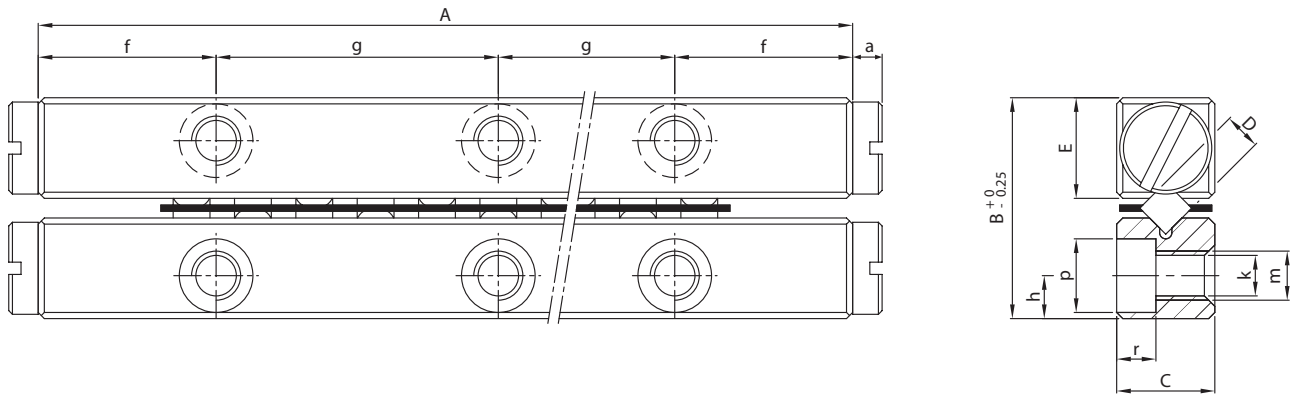
- 4 pcs. rails RSD-3100
- 2 pcs. roller cages R3x14AA
- 8 pcs. End screws GA-3

SET NUMBER STRUCTURE

If changes are required please check the type number structure.

Type + Size	Rail length	Number of rollers	Cage type (Suffix KRE, KREV...)	Stainless steel (Suffix SS)	Higher quality grade (Suffix Q4, SF...)
RSD- 3	100	10	AA		

Ordering example: Standard: 1 set RSD-3100x10AA
Stainless steel: 1 set RSD-3100x10AA-SS

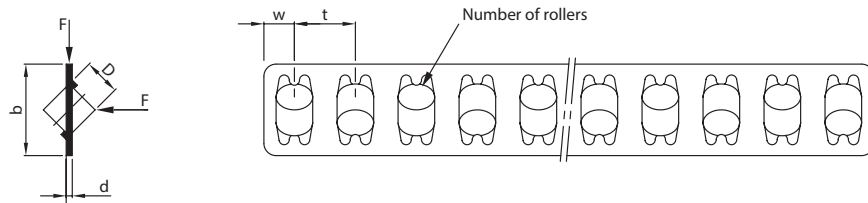


One set include: 4 rails, 2 roller cages + 8 end screws

RSD Kit		Main dimensions					Mounting holes					
Standard	Stainless steel	A	B	C	E	D	f	g	h	k	m	p
RSD-1520x4KZR	RSD-1520x4KZR-SS	20						1x10				
RSD-1530x6KZR	RSD-1530x6KZR-SS	30						2x10				
RSD-1540x8KZR	RSD-1540x8KZR-SS	40						3x10				
RSD-1550x10KZR	RSD-1550x10KZR-SS	50	8.5	4	3.9	1.5	5	4x10	1.8 ^{±0.1}	1.6	M2	3
RSD-1560x13KZR	RSD-1560x13KZR-SS	60						5x10				
RSD-1570x15KZR	RSD-1570x15KZR-SS	70						6x10				
RSD-1580x17KZR	RSD-1580x17KZR-SS	80						7x10				
RSD-2030x5AA	RSD-2030x5AA-SS	30						1x15				
RSD-2045x8AA	RSD-2045x8AA-SS	45						2x15				
RSD-2060x11AA	RSD-2060x11AA-SS	60						3x15				
RSD-2075x13AA	RSD-2075x13AA-SS	75						4x15				
RSD-2090x16AA	RSD-2090x16AA-SS	90						5x15				
RSD-2105x18AA	RSD-2105x18AA-SS	105	12	6	5.5	2	7.5	6x15	2.5 ^{±0.1}	2.5	M3	4.3
RSD-2120x21AA	RSD-2120x21AA-SS	120						7x15				
RSD-2135x23AA	RSD-2135x23AA-SS	135						8x15				
RSD-2150x26AA	RSD-2150x26AA-SS	150						9x15				
RSD-2165x29AA	RSD-2165x29AA-SS	165						10x15				
RSD-2180x32AA	RSD-2180x32AA-SS	180						11x15				
RSD-3050x7AA	RSD-3050x7AA-SS	50						1x25				
RSD-3075x10AA	RSD-3075x10AA-SS	75						2x25				
RSD-3100x14AA	RSD-3100x14AA-SS	100						3x25				
RSD-3125x17AA	RSD-3125x17AA-SS	125						4x25				
RSD-3150x21AA	RSD-3150x21AA-SS	150						5x25				
RSD-3175x24AA	RSD-3175x24AA-SS	175	18	8	8.2	3	12.5	6x25	3.5 ^{±0.2}	3.2	M4	6
RSD-3200x28AA	RSD-3200x28AA-SS	200						7x25				
RSD-3225x31AA	RSD-3225x31AA-SS	225						8x25				
RSD-3250x35AA	RSD-3250x35AA-SS	250						9x25				
RSD-3275x38AA	RSD-3275x38AA-SS	275						10x25				
RSD-3300x42AA	RSD-3300x42AA-SS	300						11x25				

Bold = Short lead time item

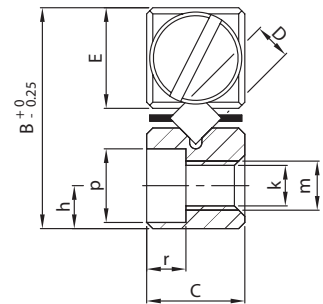
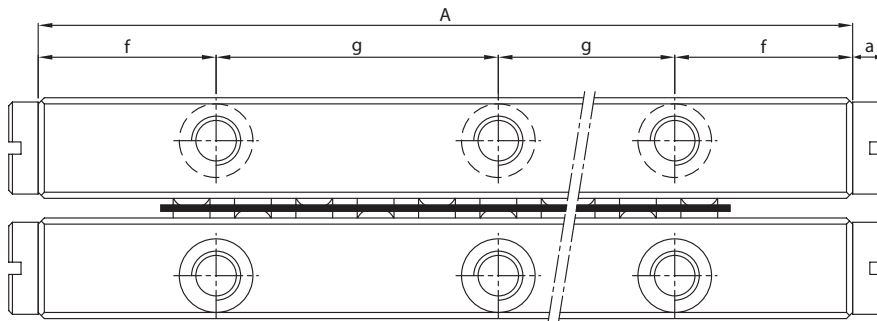
Regular = Long lead time item - please request for price and delivery time



r	End pieces a	Weight (g)	Load rating C_{dyn} (N)	Roller cage						Type
				b	d	t	w	Z	Stroke	
1.4	1.5	10	208	3.8	0.5	3	2.25	4	10	RSD-1520x4KZR
		14	312					6	18	RSD-1530x6KZR
		18	416					8	27	RSD-1540x8KZR
		22	520					10	30	RSD-1550x10KZR
		27	676					13	35	RSD-1560x13KZR
		31	780					15	40	RSD-1570x15KZR
		34	884					17	50	RSD-1580x17KZR
2	2	28	430	5.6	0.3	4	2.8	5	18	RSD-2030x5AA
		42	688					8	24	RSD-2045x8AA
		55	946					11	30	RSD-2060x11AA
		69	1118					13	44	RSD-2075x13AA
		83	1376					16	50	RSD-2090x16AA
		96	1548					18	64	RSD-2105x18AA
		110	1806					21	70	RSD-2120x21AA
		123	1978					23	84	RSD-2135x23AA
		137	2236					26	90	RSD-2150x26AA
		151	2494					29	95	RSD-2165x29AA
165	2752	32	100	RSD-2180x32AA						
3.2	2.4	94	952	7.5	0.5	5	3.5	7	28	RSD-3050x7AA
		135	1360					10	48	RSD-3075x10AA
		187	1904					14	58	RSD-3100x14AA
		234	2312					17	78	RSD-3125x17AA
		281	2856					21	88	RSD-3150x21AA
		327	3264					24	105	RSD-3175x24AA
		374	3808					28	115	RSD-3200x28AA
		421	4216					31	135	RSD-3225x31AA
		468	4760					35	145	RSD-3250x35AA
		514	5168					38	165	RSD-3275x38AA
		561	5712					42	175	RSD-3300x42AA

F = Load direction according to picture.

Units: mm

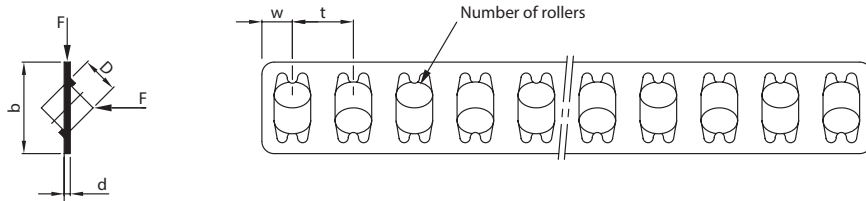


One set include: 4 rails, 2 roller cages + 8 end screws

RSD Kit		Main dimensions					Mounting holes					
Standard	Stainless steel	A	B	C	E	D	f	g	h	k	m	p
RSD-4080x7AA	RSD-4080x7AA-SS	80						1x40				
RSD-4120x11AA	RSD-4120x11AA-SS	120						2x40				
RSD-4160x15AA	RSD-4160x15AA-SS	160						3x40				
RSD-4200x19AA	RSD-4200x19AA-SS	200						4x40				
RSD-4240x23AA	RSD-4240x23AA-SS	240						5x40				
RSD-4280 x27AA	RSD-4280x27AA-SS	280	22	11	10	4	20	6x40	4.5 ^{±0.2}	4.3	M5	7.5
RSD-4320x31AA	RSD-4320x31AA-SS	320						7x40				
RSD-4360x35AA	RSD-4360x35AA-SS	360						8x40				
RSD-4400x39AA	RSD-4400x39AA-SS	400						9x40				
RSD-4440x43AA	RSD-4440x43AA-SS	440						10x40				
RSD-4480x47AA	RSD-4480x47AA-SS	480						11x40				
RSD-6100x8AA	RSD-6100x8AA-SS	100						1x50				
RSD-6150x12AA	RSD-6150x12AA-SS	150						2x50				
RSD-6200x15AA	RSD-6200x15AA-SS	200						3x50				
RSD-6250x19AA	RSD-6250x19AA-SS	250						4x50				
RSD-6300x23AA	RSD-6300x23AA-SS	300						5x50				
RSD-6350x27AA	RSD-6350x27AA-SS	350	31	15	14	6	25	6x50	6 ^{±0.2}	5.2	M6	9.5
RSD-6400x30AA	RSD-6400x30AA-SS	400						7x50				
RSD-6450x34AA	RSD-6450x34AA-SS	450						8x50				
RSD-6500x38AA	RSD-6500x38AA-SS	500						9x50				
RSD-6600x46AA	RSD-6600x46AA-SS	600						11x50				

Bold = Short lead time item

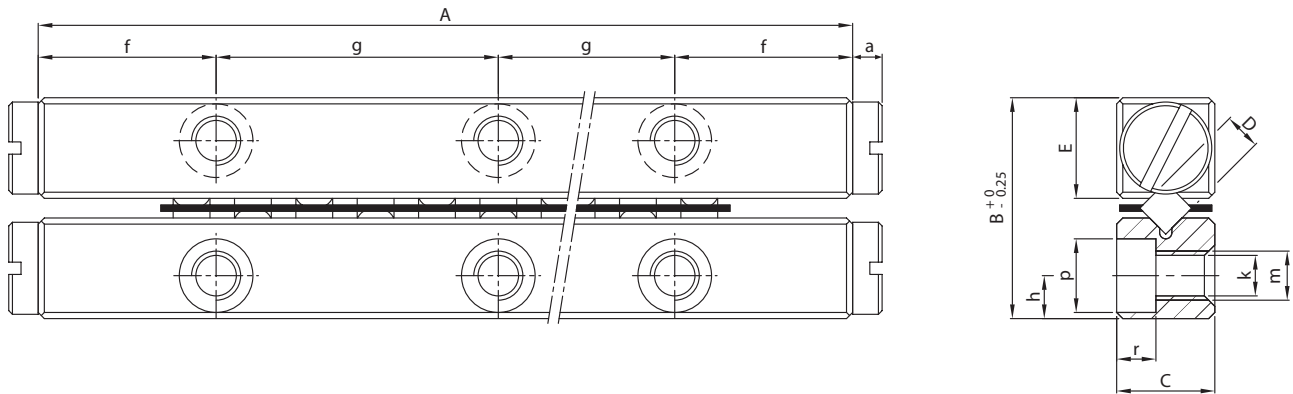
Regular = Long lead time item - please request for price and delivery time



r	End pieces a	Weight (g)	Load rating C_{dyn} (N)	Roller cage					Stroke	Type
				b	d	t	w	Z		
4.1	2.7	282	1862	10	0.5	7	5	7	58	RSD-4080x7AA
		420	2915					11	82	RSD-4120x11AA
		561	3975					15	105	RSD-4160x15AA
		702	5035					19	130	RSD-4200x19AA
		843	6095					23	150	RSD-4240x23AA
		985	7155					27	175	RSD-4280x27AA
		1121	8480					31	200	RSD-4320x31AA
		1263	9275					35	225	RSD-4360x35AA
		1405	10335					39	250	RSD-4400x39AA
		1545	11395					43	270	RSD-4440x43AA
1687	12455	47	295	RSD-4480x47AA						
5.2	3.7	627	4320	14	0.75	9	6	8	55	RSD-6100x8AA
		942	6480					12	84	RSD-6150x12AA
		1260	8100					15	120	RSD-6200x15AA
		1570	10260					19	150	RSD-6250x19AA
		1880	12420					23	185	RSD-6300x23AA
		2200	14580					27	214	RSD-6350x27AA
		2510	16200					30	245	RSD-6400x30AA
		2830	18360					34	280	RSD-6450x34AA
		3140	20520					38	310	RSD-6500x38AA
		3770	24840					46	360	RSD-6600x46AA

F = Load direction according to picture.

Units: mm

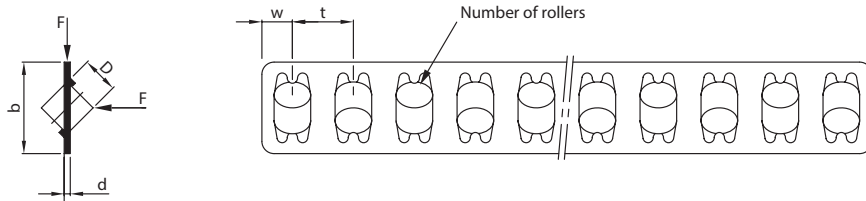


One set include: 4 rails, 2 roller cages + 8 end screws

RSD Kit		Main dimensions					Mounting holes					
Standard	Stainless steel	A	B	C	E	D	f	g	h	k	m	p
RSD-9200x10AA	RSD-9200x10AA-SS	200						1x100				
RSD-9300x15AA	RSD-9300x15AA-SS	300						2x100				
RSD-9400x20AA	RSD-9400x20AA-SS	400						3x100				
RSD-9500x25AA	RSD-9500x25AA-SS	500						4x100				
RSD-9600x30AA	RSD-9600x30AA-SS	600						5x100				
RSD-9700x35AA	RSD-9700x35AA-SS	700	44	22	19.8	9	50	6x100	9 \pm 0.2	6.8	M8	11
RSD-9800x40AA	RSD-9800x40AA-SS	800						7x100				
RSD-9900x45AA	RSD-9900x45AA-SS	900						8x100				
RSD-91000x50AA	RSD-91000x50AA-SS	1000						9x100				
RSD-91100x55AA	RSD-91100x55AA-SS	1100						10x100				
RSD-91200x60AA	RSD-91200x60AA-SS	1200						11x100				
RSD-12200x7AA	On request	200						1x100				
RSD-12300x11AA		300						2x100				
RSD-12400x15AA		400						3x100				
RSD-12500x18AA		500						4x100				
RSD-12600x23AA		600						5x100				
RSD-12700x26AA		700	58	28	25.9	12	50	6x100	12 \pm 0.2	8.5	M10	13.5
RSD-12800x31AA		800						7x100				
RSD-12900x34AA		900						8x100				
RSD-121000x37AA		1000						9x100				
RSD-121100x42AA		1100						10x100				
RSD-121200x46AA		1200						11x100				

Bold = Short lead time item

Regular = Long lead time item - please request for price and delivery time



r	End pieces a	Weight (g)	Load rating C_{dyn} (N)	Roller cage					Stroke	Type
				b	d	t	w	Z		
6.2	4.2	2720	13500	20	1	14	9.5	10	115	RSD-9200x10AA
		4030	20250					15	175	RSD-9300x15AA
		5380	27000					20	235	RSD-9400x20AA
		6700	33750					25	295	RSD-9500x25AA
		8050	40500					30	355	RSD-9600x30AA
		9230	47250					35	415	RSD-9700x35AA
		10501	54000					40	475	RSD-9800x40AA
		11900	60750					45	535	RSD-9900x45AA
		13000	67500					50	595	RSD-91000x50AA
		14099	74250					55	655	RSD-91100x55AA
		15200	81000					60	715	RSD-91200x60AA
8.3	5.3	4670	17920	26	1.2	18	12	7	120	RSD-12200x7AA
		6880	28160					11	200	RSD-12300x11AA
		9090	38400					15	240	RSD-12400x15AA
		11400	46080					18	320	RSD-12500x18AA
		13700	58880					23	360	RSD-12600x23AA
		15800	66560					26	440	RSD-12700x26AA
		18200	79360					31	480	RSD-12800x31AA
		20500	87040					34	560	RSD-12900x34AA
		22800	94720					37	640	RSD-121000x37AA
		25000	107520					42	680	RSD-121100x42AA
		27300	117760					46	720	RSD-121200 x46AA

F = Load direction according to picture.

Units: mm

PM RESEARCH AND PRODUCTION FACILITY



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