

PRECISION ROLLED BALL SCREWS

Diameter: $\varnothing 8 \sim 40$ mm

Lead: 2 ~ 25 mm

Thread direction: Right hand thread

Material: CK55 – 1.1203 (induction surface hardened – 58 ~ 62 HRC)

Accuracy grade: C5, C7

i Ball screws of nominal diameter $\varnothing 10$ available only in C7 accuracy grade

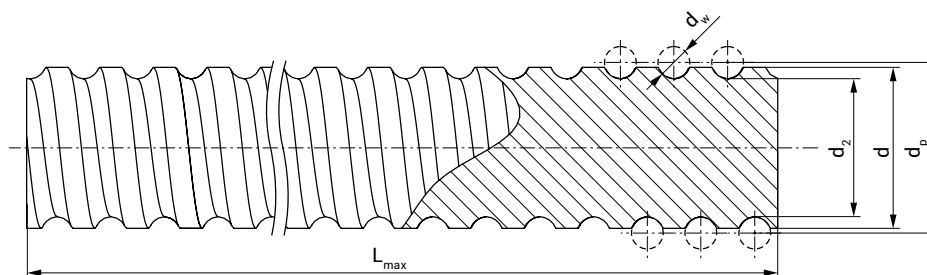
Maximum length:

Nominal diameter d [mm]	Maximum length [mm]
8	1200
10	1200
12	3000
16	3000
20	3000
25	6000
32	6000
40	6000

Ball screw size list:

Nominal diameter d [mm]	Lead [mm]						
	2	4	5	10	16	20	25
8	•						
10	•	•					
12		•	•				
16			•	•	•		
20			•	•		•	
25			•	•			•
32			•	•		•	
40			•	•		•	

Dimensions:



d	Nominal diameter	[mm]
d_2	Root diameter	[mm]
d_p	Ball center-to-center diameter	[mm]
d_w	Ball diameter	[mm]
L_{max}	Maximum length of the ball screw shaft	[mm]

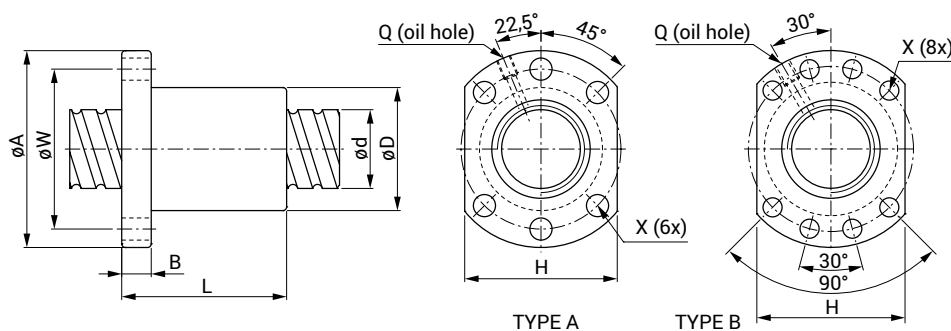
Ball screw d × l	d [mm]	l [mm]	Ball size d _w [mm]	d ₂ [mm]	d _p [mm]	Maximum length L _{max} [mm]	Mass [kg/m]	Planar moment of inertia [mm ⁴]	Mass moment of inertia [kg · cm ² /m]	Helix direction ¹
8x2	8	2	1,2	7,2	8,4	1200	0,37	133	0,03	R
10x2	10	2	1,2	9,2	10,4	1200	0,58	355	0,07	R
10x4	10	4	2	8,7	10,7	1200	0,56	276	0,06	R
12x4	12	4	2,381	10,2	12,6	3000	0,80	527	0,13	R
12x5	12	5	2	10,3	12,3	3000	0,81	561	0,13	R
12x10	12	10	2	10,0	12,0	3000	0,79	491	0,13	R
16x5	16	5	3,175	13,4	16,5	3000	1,41	1569	0,40	LR
16x10	16	10	3,175	13,4	16,6	3000	1,41	1597	0,41	R
16x16	16	16	3,175	13,4	16,6	3000	1,41	1597	0,41	R
20x5	20	5	3,175	17,4	20,6	3000	2,26	4510	1,03	LR
20x10	20	10	3,969	17,1	21,0	3000	2,23	4163	1,01	R
20x20	20	20	3,175	17,4	20,6	3000	2,26	4531	1,03	R
25x5	25	5	3,175	22,4	25,6	6000	3,59	12403	2,62	LR
25x10	25	10	3,5	22,0	25,5	6000	3,55	11499	2,56	R
25x10	25	10	4,762	21,2	26,0	6000	3,48	9964	2,45	R
25x25	25	25	3,969	21,8	25,7	6000	3,53	11009	2,52	R
32x5	32	5	3,175	29,4	32,6	6000	5,98	36674	7,24	LR
32x10	32	10	6,35	27,1	33,4	6000	5,68	26359	6,54	R
32x20	32	20	3,969	28,7	32,7	6000	5,89	33360	7,03	R
40x5	40	5	3,175	37,4	40,6	6000	9,44	96041	18,07	LR
40x10	40	10	6,35	35,0	41,4	6000	9,06	73830	16,65	R
40x20	40	20	5,556	35,8	41,4	6000	9,19	81028	17,13	R

¹R: Only right helix available. LR: Right and left helix available.

BALL NUTS

Material: 15CrMo – 1.7262 (carbonized hardened – 58 ~ 62 HRC)

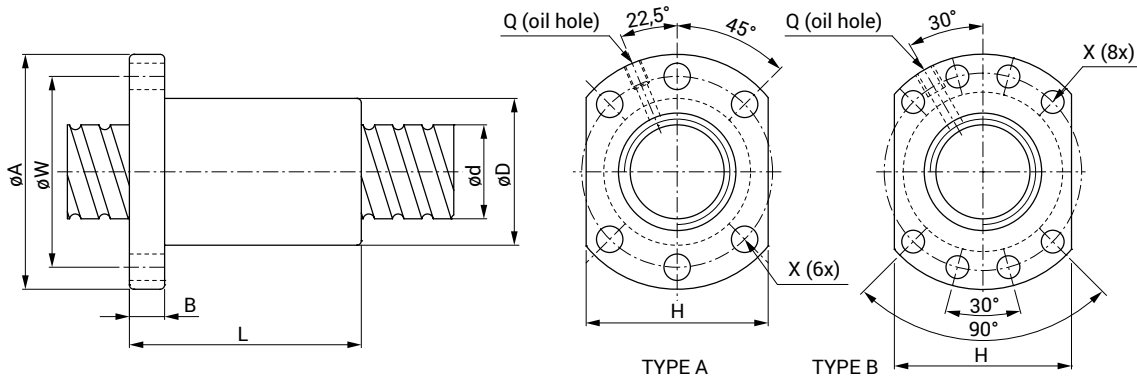
FSU: flanged single nut (DIN standard 69051)



Model	Dimensions [mm]											Type	Number of circuits	Basic dynamic load rating [kN] C	Basic static load rating [kN] C ₀	Basic rigidity [N/μm] K ₀₀	Mass [kg]	Helix direction ¹
	d	l	d _w	D (g6)	A	B	L	W	X	H	Q							
FSU 1605 T4	16	5	3,175	28	48	10	50	38	5,5	40	M6x8	A	T4	13,2	15,0	230	0,180	LR
FSU 1610 T3	16	10	3,175	28	48	12	65	38	5,5	40	M6x8	A	T3	10,6	12,1	230	0,245	R
FSU 2005 T4	20	5	3,175	36	58	10	53	47	6,6	44	M6x8	A	T4	14,8	19,6	280	0,310	LR
FSU 2505 T4	25	5	3,175	40	62	10	53	51	6,6	48	M6x8	A	T4	16,7	25,3	330	0,340	LR
FSU 2510 T4	25	10	4,762	40	62	12	85	51	6,6	48	M6x8	A	T4	28,3	36,3	350	0,480	R
FSU 3205 T4	32	5	3,175	50	80	12	53	65	9,0	62	M6x8	A	T4	18,9	33,4	410	0,600	LR
FSU 3210 T4	32	10	6,35	50	80	16	90	65	9,0	62	M6x8	A	T4	47,4	76,9	430	0,900	R
FSU 4005 T4	40	5	3,175	63	93	16	56	78	9,0	70	M8x10	B	T4	21,0	42,6	490	1,000	LR
FSU 4010 T4	40	10	6,35	63	93	18	93	78	9,0	70	M8x10	B	T4	53,0	98,8	530	1,450	R

¹R: Only right helix available. LR: Right and left helix available.

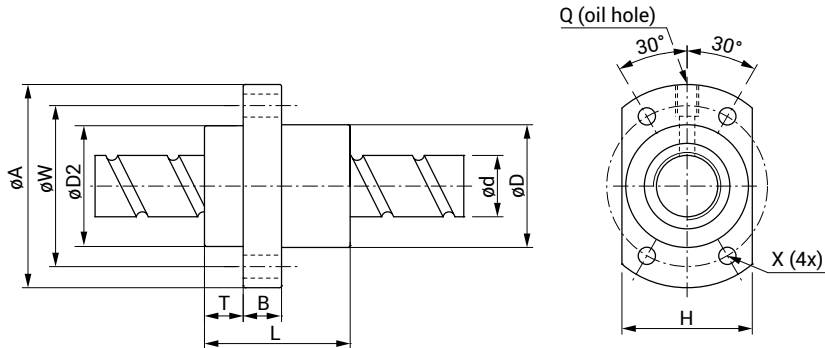
FSC: flanged single nut (low noise type)



Model	Dimensions [mm]											Type	Number of circuits	Basic dynamic load rating [kN]	Basic static load rating [kN]	Basic rigidity [N/μm]	Mass [kg]			
	d	l	d _w	D (g6)	A	B	L	W	X	H	Q									
FSC 1610 T3	16	10	3,175	28	48	12	43	38	5,5	40	M6x8	A	T3	C	11,6	C ₀	14,7	K _{n0}	270	0,180
FSC 3220 T3	32	20	3,969	50	80	13	78	65	9,0	62	M6x8	A	T3	C	21,0	C ₀	35,1	K _{n0}	540	1,000
FSC 4020 T3	40	20	5,556	63	93	15	83	78	9,0	70	M8x10	B	T3	C	37,1	C ₀	63,5	K _{n0}	820	1,300

i Only right helix available.

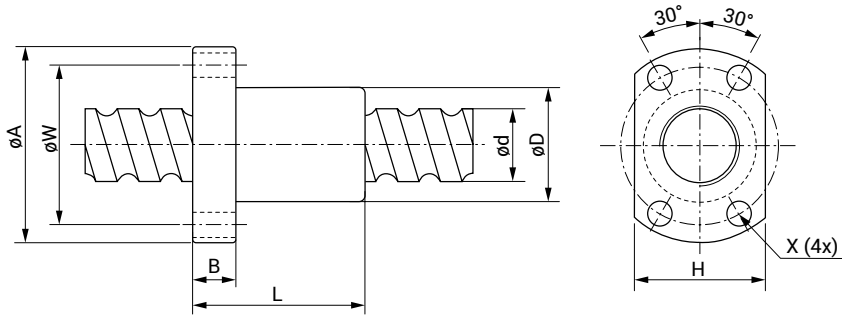
FSE: flanged single nut (high lead type)



Model	Dimensions [mm]												Number of circuits	Basic dynamic load rating [kN]	Basic static load rating [kN]	Basic rigidity [N/μm]	Mass [kg]				
	d	l	d _w	D (g6)	D2 (0/-0,3)	A	B	L	W	X	T	H						Q			
FSE 1616 A2	16	16	3,175	32	32	53	10	48	42	4,5	10,5	38	M6x8	A2	C	14,8	C ₀	19,6	K _{n0}	180	0,250
FSE 2020 A2	20	20	3,175	39	39	62	10	55	50	5,5	10,8	46	M6x8	A2	C	16,3	C ₀	24,2	K _{n0}	290	0,400
FSE 2525 A2	25	25	3,969	47	47	74	12	67	60	6,6	11,2	56	M6x8	A2	C	24,3	C ₀	37,8	K _{n0}	350	0,730

i Only right helix available.

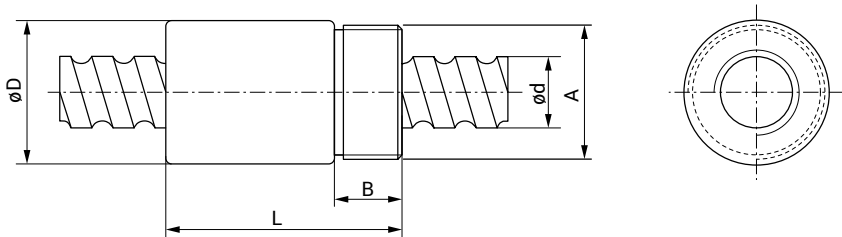
FSK: flanged single nut (miniature type)



Model	Dimensions [mm]											Number of circuits	Basic dynamic load rating [kN] C	Basic static load rating [kN] C ₀	Basic rigidity [N/μm] K _{n0}	Mass [kg]
	d	l	d _w	D (g6)	A	B	L	W	X	H						
FSK 0802 T3	8	2	1,2	16	29	4	26	23	3,4	20	T3	2,1	2,3	60	0,030	
FSK 1002 T3	10	2	1,2	18	35	5	28	27	4,5	22	T3	2,4	3,0	80	0,045	
FSK 1004 T3	10	4	2	26	46	10	35	36	4,5	28	T3	4,6	4,8	100	0,150	

i Only right helix available.

RSK: cylindrical single nut with threaded nose (miniature type)

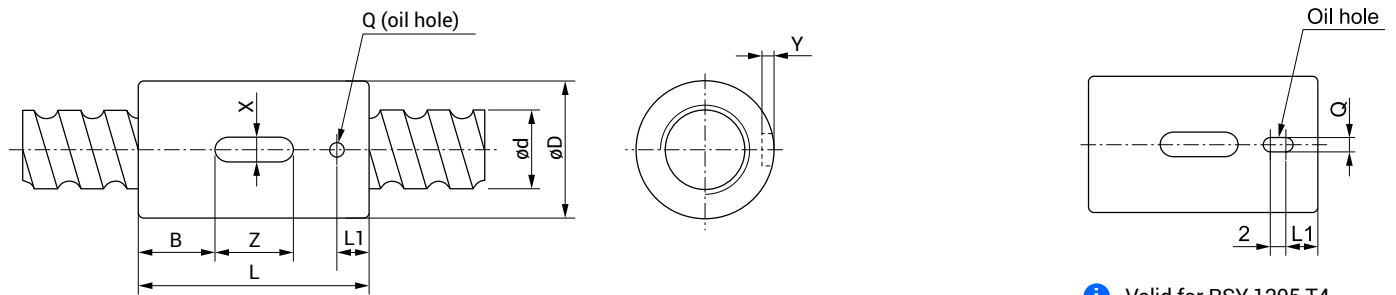


i Without wiper seals

Model	Dimensions [mm]								Number of circuits	Basic dynamic load rating [kN] C	Basic static load rating [kN] C ₀	Basic rigidity [N/μm] K _{n0}	Mass [kg]
	d	l	d _w	D (g6)	A	B	L						
RSK 1204 T3	12	4	2,381	25,5	M20x1	10	34	T3	6,3	6,8	90	0,070	
RSK 1205 T3	12	5	2	25,5	M20x1	10	39	T3	5,0	5,8	100	0,090	

i Only right helix available.

RSY: cylindrical single nut with key way

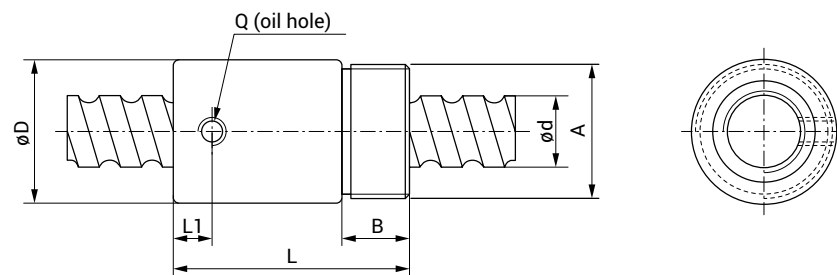


i Valid for RSY 1205 T4

Model	Dimensions [mm]											Number of circuits	Basic dynamic load rating [kN] C	Basic static load rating [kN] C ₀	Basic rigidity [N/μm] K _{n0}	Mass [kg]	Helix direction ¹
	d	l	d _w	D (g6)	L	B (±0,1)	X (+0,02/-0,04)	Y (+0,2/0)	Z (+0,2/0)	L1	Q						
RSY 1205 T4	12	5	2	24	36	10	3	1,5	12	5	3	T4	5,0	5,8	100	0,080	R
RSY 1210 T2	12	10	2	24	40	14,0	3	1,5	12	5	∅3	T2	3,8	4,6	90	0,080	R
RSY 1605 T4	16	5	3,175	28	50	15,0	5	2,0	20	7	∅3	T4	13,2	15,0	230	0,120	LR
RSY 1610 T3	16	10	3,175	28	45	12,5	5	2,0	20	7	∅3	T3	11,6	14,7	230	0,110	R
RSY 1616 T2	16	16	3,175	28	45	12,5	5	2,0	20	7	∅3	T2	8,2	9,8	180	0,110	R
RSY 2005 T4	20	5	3,175	36	53	16,5	5	2,0	20	7	∅3	T4	14,8	19,6	280	0,230	LR
RSY 2010 T3	20	10	3,969	36	54	17,0	5	2,0	20	7	∅3	T3	15,9	18,9	250	0,255	R
RSY 2020 T4	20	20	3,175	36	55	17,5	5	2,0	20	7	∅3	T4	16,3	24,2	270	0,240	R
RSY 2505 T4	25	5	3,175	40	53	16,5	5	2,0	20	7	∅3	T4	16,7	25,3	330	0,270	LR
RSY 2510 T3	25	10	3,5	40	54	17,0	5	2,0	20	7	∅3	T3	15,8	24,1	320	0,260	R
RSY 3205 T4	32	5	3,175	50	53	11,5	6	2,5	30	7	∅3	T4	18,9	33,4	410	0,430	LR
RSY 3210 T3	32	10	6,35	50	70	20	6	2,5	30	7	∅3	T3	37,0	57,7	330	0,510	R
RSY 3220 T3	32	20	3,969	50	78	24,0	6	2,5	30	7	∅3	T3	21,0	35,1	400	0,670	R
RSY 4005 T4	40	5	3,175	63	56	13,0	6	2,5	30	7	∅3	T4	21,0	42,6	490	0,510	L

¹R: Only right helix available. L: Only left helix available. LR: Right and left helix available.

RSU: cylindrical single nut with threaded nose (DIN standard 69051)



Model	Dimensions [mm]										Number of circuits	Basic dynamic load rating [kN] C	Basic static load rating [kN] C ₀	Basic rigidity [N/μm] K _{n0}	Mass [kg]
	d	l	d _w	D (g6)	A	B	L	L1	Q						
RSU 1605 T4	16	5	3,175	32	M30x1,5	16	56	6,5	M6x8	T4	13,2	15,0	230	0,210	

i Only right helix available.

HOW TO ORDER

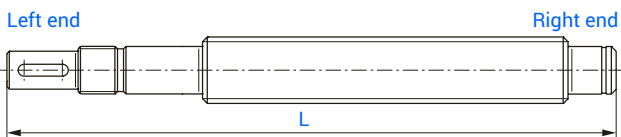
SCR -
 16 -
 05 -
 710,5 -
 C5 -
 03BK10Z -
 05BF10 -
 FSU T4 -
 P0 -
 D

Ball screw
 - SCR: Right helix
 - SCL: Left helix

Nominal diameter [mm]

Lead [mm]

Total length of ball screw shaft [mm]



Accuracy grade:
 - C5
 - C7

Left shaft end machining (see end machining coding below)

Right shaft end machining (see end machining coding below)

Left and right end machining coding:

03	BK10	Z
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Form:
 - 03, 04: For fixed support
 - 05, 06: For simple support
 - 0: Without machining - cut to size
 - C: End with chamfer
 - A: End annealed
 (specified the length in the additional text)
 - SA: End according to the customer's drawing

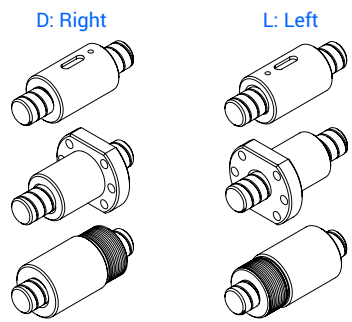
Support unit type
 Only for Form 03, 04, 05, 06

Option (machining of end face)
 - Z: End face with centering hole
 - Leave blank: Without, Form 04, 06, SA

Ball nut type (with number of circuits)

Axial backlash
 - P0: Standard backlash
 - PR: Reduced backlash

Ball nut direction
 - D
 - L



i Orientation of the ball nut based on defining element.