

NSK STANDARD BALL SCREWS COMPACT FA SERIES

Quiet, high-speed operating performance.



B-3-2.2 Finished Shaft End MA type, FA type, SA type

◇ **Ball screw sizes are arranged in order of the page number.**

The Table begins with the smallest shaft diameter of each MA, FA, and SA type ball screws, and proceeds to the larger sizes. If ball screws have the same shaft diameter, those with smaller leads appear first. Page numbers of shaft diameter and lead combinations are shown in Table 1.

◇ **Dimension tables**

Dimension tables show shapes/sizes as well as specification factors of each shaft diameter/lead combination. Tables also contain data as follows:

● **Stroke**

Nominal stroke: A reference for your use.
 Maximum stroke: The limit stroke that the nut can move. The figure is obtained by subtracting the nut length from the effective threaded length (L_1).

● **Lead accuracy**

Lead accuracy is C3 and C5 grades
 T : Travel compensation;
 e_p : Tolerance on specified travel;
 v_u : Travel variation
 See "Technical Description: Lead accuracy"

Table 1 Combinations of screw shaft diameter and lead

Lead (mm) \ Screw shaft diameter (mm)	1	1.5	2	2.5	4	5	6
4	B243						
6	B245						
8	B247	B249	B251				
10			B253	B255	B265		
12			B257	B259		B267	
14						B271	
15							
16			B261	B263		B279	
20					B301	B303	
25					B305	B307	B309
28						B313 B315	B317 B319
32						B321 B323	B325 B327
36							
40						B339	
45							
50							

(Page B41) for the details of the codes.

● **Permissible rotational speed**

d · n: Limited by the relative peripheral speed between the screw shaft and the nut.

Critical speed: Limited by the natural frequency of a ball screw shaft. Critical speed depends on the supporting condition of screw shaft.

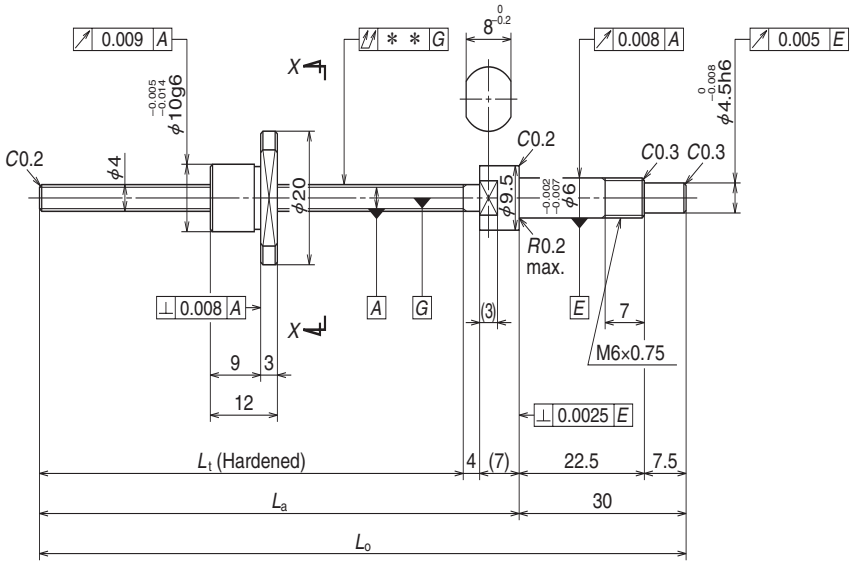
The lower of the two criteria, d·n and Critical Speed, will determine the overall Permissible Rotational Speed of the ball screw. For details, see "Technical description: Permissible rotational speed" (Page B51).

◇ **Other**

The seal of the ball screw, ball recirculating deflector, and end cap are made of synthetic resin. Consult NSK when using our ball screws under extreme environments or in special environments, or if using special lubricant or oil. For special environments, refer to Pages B74 and D2. For lubricants, refer to Pages B71 and D13.

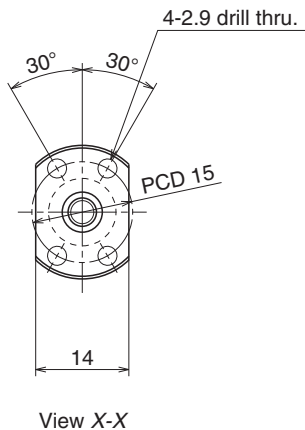
Note: For details of standard stock products, contact NSK.

8	10	12	16	20	25	32	40	50
	B269							
B273								
	B275			B277				
			B281			B283		
	B285			B287			B289	
	B311			B291	B293			B295
B329	B331				B297	B299		
	B333							
	B335							
	B337							
B341	B343	B347						
	B345	B349						
	B351							
	B353							
	B355							



Ball screw No.		Stroke	
		Nominal	Maximum (L_t —Nut length)
Preloaded (MPFD)	Precise clearance (MSFD)		
W0400MA-1PY-C3Z1	W0400MA-2Y-C3T1	20	32
W0400MA-3PY-C3Z1	W0400MA-4Y-C3T1	40	52
W0401MA-1PY-C3Z1	W0401MA-2Y-C3T1	70	82

- Remarks:
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. NSK grease PS2 is recommended. Apply to the screw shaft surface when replenishing. Refer to Page D16 for details.
 3. Nut does not have a seal.
 4. Contact NSK if permissible rotational speed is to be exceeded.



Ball screw specifications

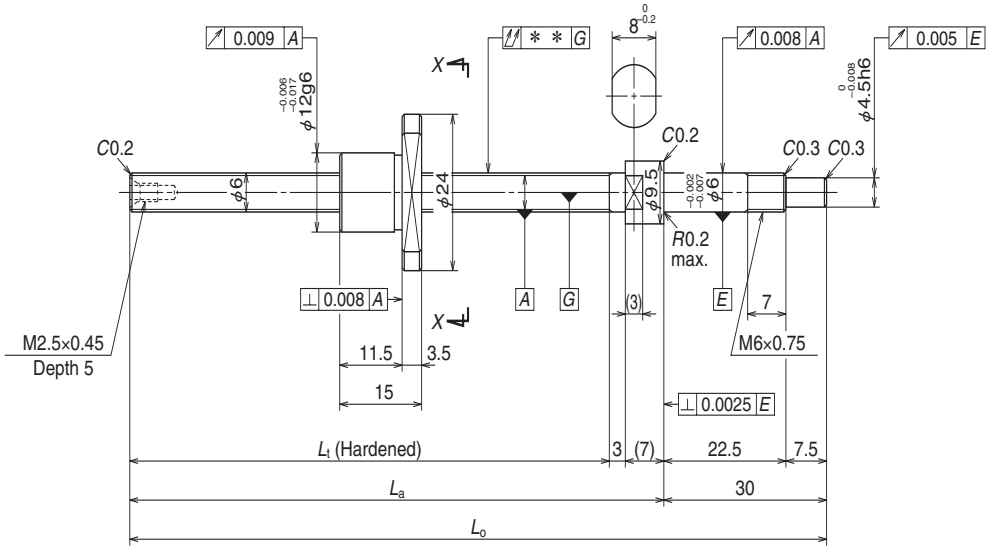
Product classification		Preloaded	Precise clearance
Shaft dia. x Lead / Direction of turn		4×1/Right	
Preload / Ball recirculation		P preload / Deflector	
Ball dia. / Ball circle dia.		0.800/4.2	
Screw shaft root diameter		3.2	
Effective turns of balls		1×2	
Accuracy grade / Preload / Axial play		C3/Z	C3/T
Basic load rating (N)	Dynamic C_a	370	
	Static C_{0a}	370	
Axial play		0	0.005 or less
Preload (N)		19.6	—
Dynamic friction torque, (N-cm)		1.0 or less	0.3 or less
Spacer ball		None	
Factory packed grease		NSK grease PS2	

Recommended support unit

WBK06-01A	(square)
WBK06-11	(round)

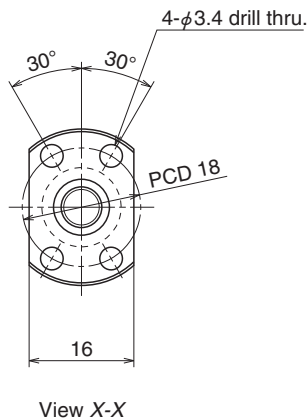
Unit: mm

Screw shaft length			Lead accuracy			Shaft run-out ** ↗	Mass (kg)	Permissible rotational speed N (min ⁻¹)
L_t	L_a	L_o	T	e_p	v_u			Supporting condition
44	55	85	0	0.008	0.008	0.015	0.024	3000
64	75	105	0	0.008	0.008	0.020	0.026	3000
94	105	135	0	0.008	0.008	0.025	0.028	3000



Ball screw No.		Stroke	
		Nominal	Maximum (L_t —Nut length)
Preloaded (MPFD)	Precise clearance (MSFD)		
W0600MA-1PY-C3Z1	W0600MA-2Y-C3T1	40	50
W0601MA-1PY-C3Z1	W0601MA-2Y-C3T1	70	80
W0601MA-3PY-C3Z1	W0601MA-4Y-C3T1	100	110

- Remarks:
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. NSK grease PS2 is recommended. Apply to the screw shaft surface when replenishing. Refer to Page D16 for details.
 3. Nut does not have a seal.
 4. Contact NSK if permissible rotational speed is to be exceeded.



Ball screw specifications

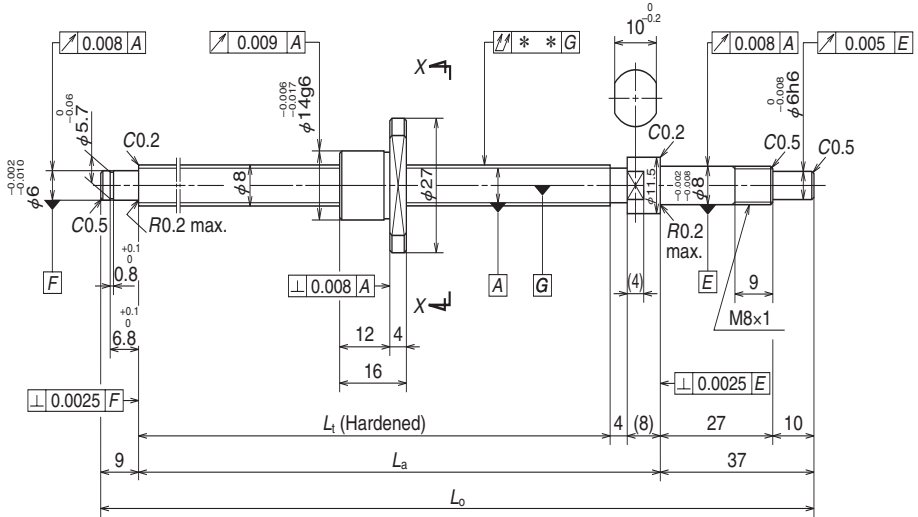
Product classification		Preloaded	Precise clearance
Shaft dia. x Lead / Direction of turn		6×1/Right	
Preload / Ball recirculation		P preload / Deflector	
Ball dia. / Ball circle dia.		0.800/6.2	
Screw shaft root diameter		5.2	
Effective turns of balls		1×3	
Accuracy grade / Preload / Axial play		C3/Z	C3/T
Basic load rating (N)	Dynamic C_a	680	
	Static C_{0a}	920	
Axial play		0	0.005 or less
Preload (N)		24.5	—
Dynamic friction torque, (N-cm)		1.3 or less	0.3 or less
Spacer ball		None	
Factory packed grease		NSK grease PS2	

Recommended support unit

WBK06-01A	(square)
WBK06-11	(round)

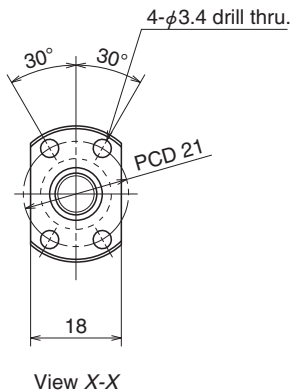
Unit: mm

Screw shaft length			Lead accuracy			Shaft run-out ** \uparrow	Mass (kg)	Permissible rotational speed N (min ⁻¹)
L_t	L_a	L_o	T	e_p	v_u			Supporting condition
65	75	105	0	0.008	0.008	0.015	0.039	3000
95	105	135	0	0.008	0.008	0.020	0.045	3000
125	135	165	0	0.010	0.008	0.025	0.051	3000



Ball screw No.		Stroke	
		Nominal	Maximum (L_1 —Nut length)
Preloaded (MPFD)	Precise clearance (MSFD)		
W0800MA-1PY-C3Z1	W0800MA-2Y-C3T1	40	64
W0801MA-1PY-C3Z1	W0801MA-2Y-C3T1	70	94
W0801MA-3PY-C3Z1	W0801MA-4Y-C3T1	100	124
W0802MA-1PY-C3Z1	W0802MA-2Y-C3T1	150	174

- Remarks:
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. NSK grease PS2 is recommended. Apply to the screw shaft surface when replenishing. Refer to Page D16 for details.
 3. Nut does not have a seal.
 4. Contact NSK if permissible rotational speed is to be exceeded.

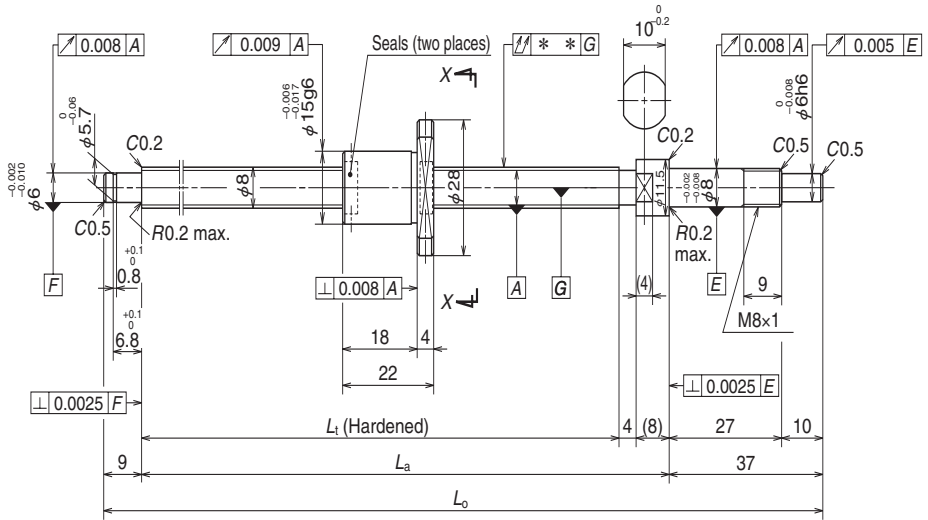


Ball screw specifications		
Product classification	Preloaded	Precise clearance
Shaft dia. x Lead / Direction of turn	8×1/Right	
Preload / Ball recirculation	P preload / Deflector	
Ball dia. / Ball circle dia.	0.800/8.2	
Screw shaft root diameter	7.2	
Effective turns of balls	1×3	
Accuracy grade / Preload / Axial play	C3/Z	C3/T
Basic load rating (N)	Dynamic C_a	790
	Static C_{0a}	1290
Axial play	0	0.005 or less
Preload (N)	29.4	—
Dynamic friction torque, (N-cm)	1.8 or less	0.5 or less
Spacer ball	None	
Factory packed grease	NSK grease PS2	

Recommended support unit	For drive side	For opposite to drive side
	WBK08-01A (square)	○
WBK08S-01 (square)		○
WBK08-11 (round)	○	

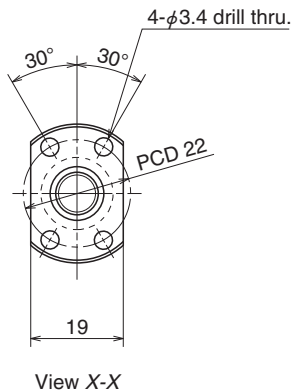
Unit: mm

Screw shaft length			Lead accuracy			Shaft run-out ** ↗	Mass (kg)	Permissible rotational speed N (min ⁻¹)
L_t	L_a	L_o	T	e_p	v_u			Supporting condition
80	92	138	0	0.008	0.008	0.025	0.073	3000
110	122	168	0	0.010	0.008	0.030	0.084	3000
140	152	198	0	0.010	0.008	0.030	0.095	3000
190	202	248	0	0.010	0.008	0.035	0.11	3000



Ball screw No.		Stroke	
		Nominal	Maximum (L_t —Nut length)
Preloaded (MPFD)	Precise clearance (MSFD)		
W0800MA-3PY-C3Z1.5	W0800MA-4Y-C3T1.5	40	58
W0801MA-5PY-C3Z1.5	W0801MA-6Y-C3T1.5	70	88
W0801MA-7PY-C3Z1.5	W0801MA-8Y-C3T1.5	100	118
W0802MA-3PY-C3Z1.5	W0802MA-4Y-C3T1.5	150	168

Remarks: 1. We recommend NSK support unit. Refer to Page B433 for details.
 2. NSK grease PS2 is recommended. Apply to the screw shaft surface when replenishing. Refer to Page D16 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.



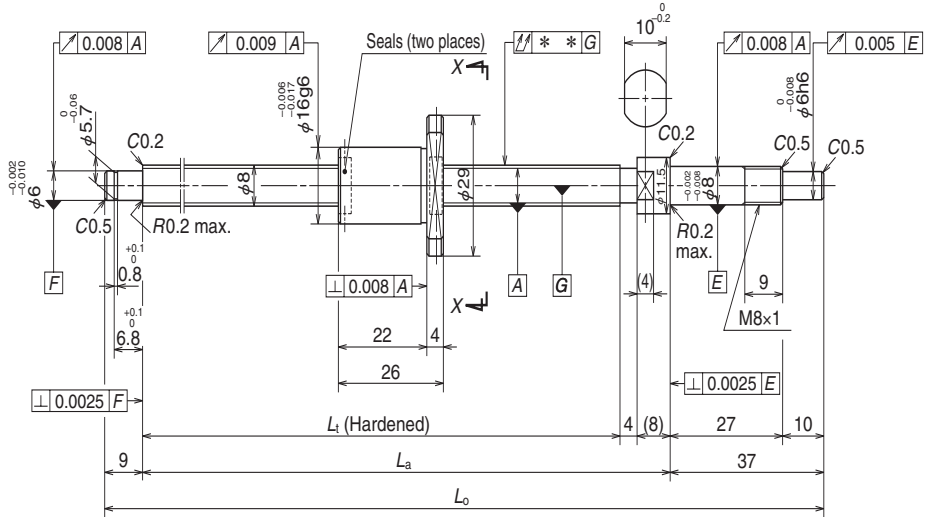
Ball screw specifications

Product classification		Preloaded	Precise clearance
Shaft dia. x Lead / Direction of turn		8×1.5/Right	
Preload / Ball recirculation		P preload / Deflector	
Ball dia. / Ball circle dia.		1.000/8.3	
Screw shaft root diameter		7.0	
Effective turns of balls		1×3	
Accuracy grade / Preload / Axial play		C3/Z	C3/T
Basic load rating (N)	Dynamic C_a	1270	
	Static C_{0a}	1970	
Axial play		0	0.005 or less
Preload (N)		49.0	—
Dynamic friction torque, (N·cm)		2.0 or less	0.5 or less
Spacer ball		None	
Factory packed grease		NSK grease PS2	

Recommended support unit	For drive side	For opposite to drive side
WBK08-01A (square)	○	
WBK08S-01 (square)		○
WBK08-11 (round)	○	

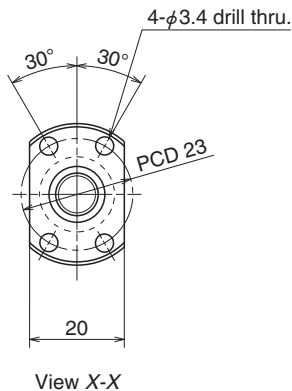
Unit: mm

Screw shaft length			Lead accuracy			Shaft run-out ** ↗	Mass (kg)	Permissible rotational speed N (min ⁻¹)
L_t	L_a	L_o	T	e_p	v_u			Supporting condition
80	92	138	0	0.008	0.008	0.025	0.082	3000
110	122	168	0	0.010	0.008	0.030	0.093	3000
140	152	198	0	0.010	0.008	0.030	0.10	3000
190	202	248	0	0.010	0.008	0.035	0.12	3000



Ball screw No.		Stroke	
		Nominal	Maximum (L_t —Nut length)
Preloaded (MPFD)	Precise clearance (MSFD)		
W0800MA-5PY-C3Z2	W0800MA-6Y-C3T2	40	54
W0801MA-9PY-C3Z2	W0801MA-10Y-C3T2	70	84
W0801MA-11PY-C3Z2	W0801MA-12Y-C3T2	100	114
W0802MA-5PY-C3Z2	W0802MA-6Y-C3T2	150	164

- Remarks:
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. NSK grease PS2 is recommended. Apply to the screw shaft surface when replenishing. Refer to Page D16 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.



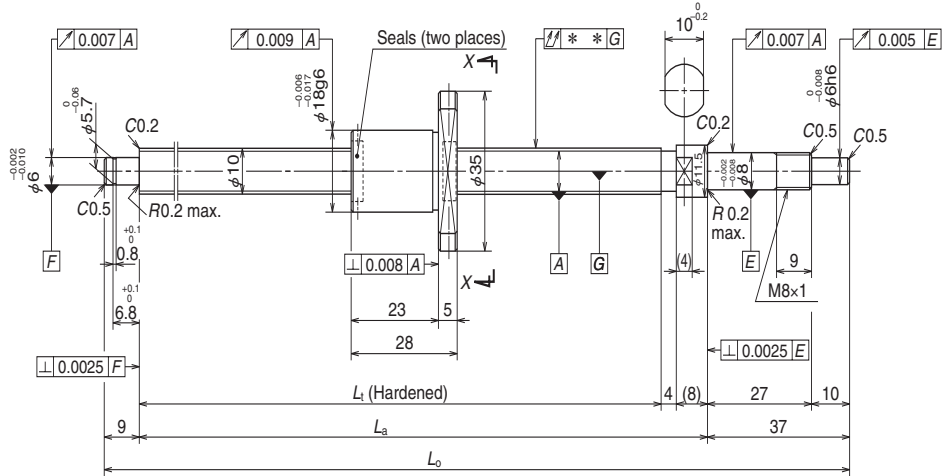
Ball screw specifications

Product classification		Preloaded	Precise clearance
Shaft dia. x Lead / Direction of turn		8×2/Right	
Preload / Ball recirculation		P preload / Deflector	
Ball dia. / Ball circle dia.		1.200/8.3	
Screw shaft root diameter		6.9	
Effective turns of balls		1×3	
Accuracy grade / Preload / Axial play		C3/Z	C3/T
Basic load rating (N)	Dynamic C_a	1560	
	Static C_{0a}	2200	
Axial play		0	0.005 or less
Preload (N)		49.0	—
Dynamic friction torque, (N-cm)		2.0 or less	0.5 or less
Spacer ball		None	
Factory packed grease		NSK grease PS2	

Recommended support unit	For drive side	For opposite to drive side
WBK08-01A (square)	○	
WBK08S-01 (square)		○
WBK08-11 (round)	○	

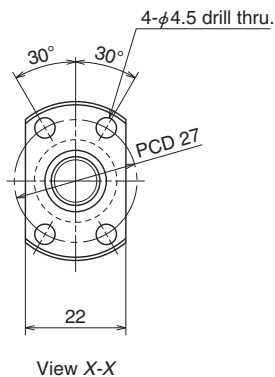
Unit: mm

Screw shaft length			Lead accuracy			Shaft run-out ** ↗	Mass (kg)	Permissible rotational speed N (min ⁻¹)
L_t	L_a	L_o	T	e_p	v_u			Supporting condition
80	92	138	0	0.008	0.008	0.025	0.09	3000
110	122	168	0	0.010	0.008	0.030	0.10	3000
140	152	198	0	0.010	0.008	0.030	0.11	3000
190	202	248	0	0.010	0.008	0.035	0.13	3000



Ball screw No.		Stroke	
		Nominal	Maximum (L_t —Nut length)
Preloaded (MPFD)	Precise clearance (MSFD)		
W1001MA-1PY-C3Z2	W1001MA-2Y-C3T2	50	72
W1001MA-3PY-C3Z2	W1001MA-4Y-C3T2	100	122
W1002MA-1PY-C3Z2	W1002MA-2Y-C3T2	150	172
W1002MA-3PY-C3Z2	W1002MA-4Y-C3T2	200	222

- Remarks:
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. NSK grease PS2 is recommended. Apply to the screw shaft surface when replenishing. Refer to Page D16 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.



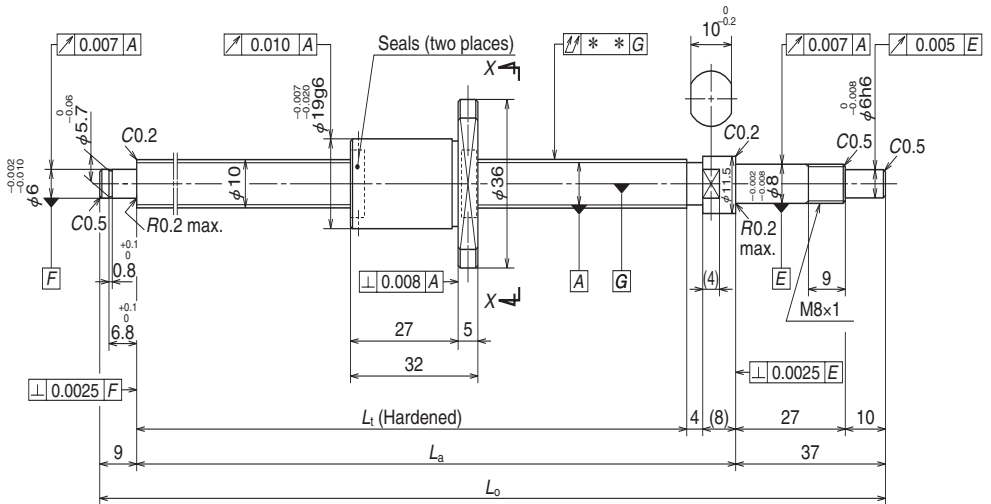
Ball screw specifications

Product classification		Preloaded	Precise clearance
Shaft dia. x Lead / Direction of turn		10×2/Right	
Preload / Ball recirculation		P preload / Deflector	
Ball dia. / Ball circle dia.		1.200/10.3	
Screw shaft root diameter		8.9	
Effective turns of balls		1×3	
Accuracy grade / Preload / Axial play		C3/Z	C3/T
Basic load rating (N)	Dynamic C_a	1800	
	Static C_{0a}	2970	
Axial play		0	0.005 or less
Preload (N)		58.8	—
Dynamic friction torque, (N-cm)		0.1 – 2.4	0.5 or less
Spacer ball		None	
Factory packed grease		NSK grease PS2	

Recommended support unit	For drive side	For opposite to drive side
WBK08-01A (square)	○	
WBK08S-01 (square)		○
WBK08-11 (round)	○	

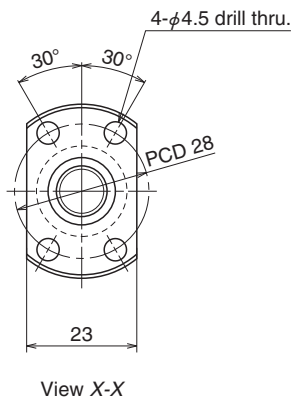
Unit: mm

Screw shaft length			Lead accuracy			Shaft run-out ** ↗	Mass (kg)	Permissible rotational speed N (min ⁻¹)
L_t	L_a	L_o	T	e_p	v_u			Supporting condition
100	112	158	0	0.008	0.008	0.020	0.13	3000
150	162	208	0	0.010	0.008	0.030	0.16	3000
200	212	258	0	0.010	0.008	0.030	0.19	3000
250	262	308	0	0.012	0.008	0.030	0.22	3000



Ball screw No.		Stroke	
		Nominal	Maximum (L_1 —Nut length)
Preloaded (MPFD)	Precise clearance (MSFD)		
W1001MA-5PY-C3Z2.5	W1001MA-6Y-C3T2.5	50	68
W1001MA-7PY-C3Z2.5	W1001MA-8Y-C3T2.5	100	118
W1002MA-5PY-C3Z2.5	W1002MA-6Y-C3T2.5	150	168
W1002MA-7PY-C3Z2.5	W1002MA-8Y-C3T2.5	200	218

- Remarks:
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. NSK grease PS2 is recommended. Apply to the screw shaft surface when replenishing. Refer to Page D16 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.



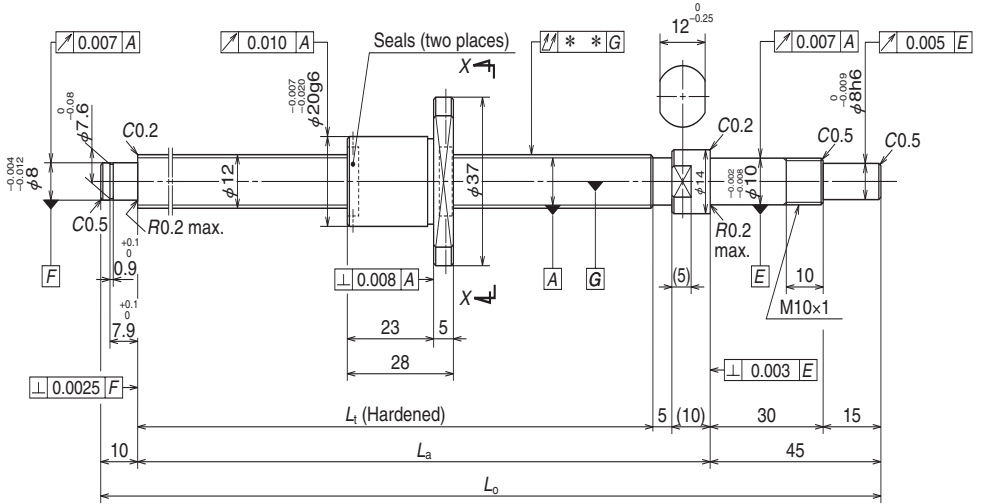
Ball screw specifications

Product classification		Preloaded	Precise clearance
Shaft dia. x Lead / Direction of turn		10×2.5/Right	
Preload / Ball recirculation		P preload / Deflector	
Ball dia. / Ball circle dia.		1.588/10.4	
Screw shaft root diameter		8.6	
Effective turns of balls		1×3	
Accuracy grade / Preload / Axial play		C3/Z	C3/T
Basic load rating (N)	Dynamic C_a	2500	
	Static C_{0a}	3630	
Axial play		0	0.005 or less
Preload (N)		98.1	—
Dynamic friction torque, (N-cm)		0.2 – 2.9	0.5 or less
Spacer ball		None	
Factory packed grease		NSK grease PS2	

Recommended support unit	For drive side	For opposite to drive side
WBK08-01A (square)	○	
WBK08S-01 (square)		○
WBK08-11 (round)	○	

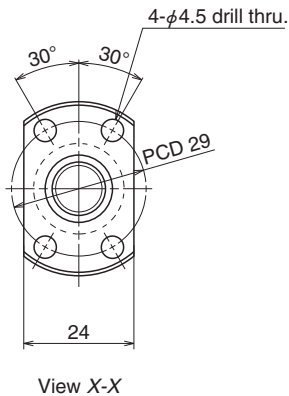
Unit: mm

Screw shaft length			Lead accuracy			Shaft run-out ** ↗	Mass (kg)	Permissible rotational speed N (min ⁻¹)
L_t	L_a	L_o	T	e_p	v_u			Supporting condition
100	112	158	0	0.008	0.008	0.020	0.14	3000
150	162	208	0	0.010	0.008	0.030	0.17	3000
200	212	258	0	0.010	0.008	0.030	0.20	3000
250	262	308	0	0.012	0.008	0.030	0.23	3000



Ball screw No.		Stroke	
		Nominal	Maximum (L_1 —Nut length)
Preloaded (MPFD)	Precise clearance (MSFD)		
W1201MA-1PY-C3Z2	W1201MA-2Y-C3T2	50	82
W1201MA-3PY-C3Z2	W1201MA-4Y-C3T2	100	132
W1202MA-1PY-C3Z2	W1202MA-2Y-C3T2	150	182
W1202MA-3PY-C3Z2	W1202MA-4Y-C3T2	200	232
W1203MA-1PY-C3Z2	W1203MA-2Y-C3T2	250	282

- Remarks:
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. NSK grease PS2 is recommended. Apply to the screw shaft surface when replenishing. Refer to Page D16 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.



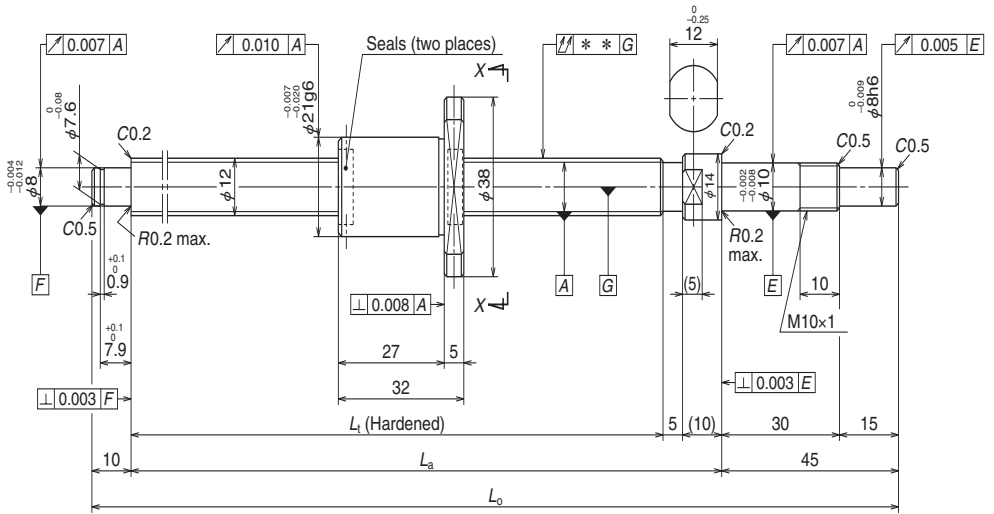
Ball screw specifications

Product classification		Preloaded	Precise clearance
Shaft dia. x Lead / Direction of turn		12×2/Right	
Preload / Ball recirculation		P preload / Deflector	
Ball dia. / Ball circle dia.		1.200/12.3	
Screw shaft root diameter		10.9	
Effective turns of balls		1×3	
Accuracy grade / Preload / Axial play		C3/Z	C3/T
Basic load rating (N)	Dynamic C_a	1960	
	Static C_{0a}	3620	
Axial play		0	0.005 or less
Preload (N)		98.1	—
Dynamic friction torque, (N-cm)		0.4 – 3.4	1.0 or less
Spacer ball		None	
Factory packed grease		NSK grease PS2	

Recommended support unit	For drive side	For opposite to drive side
WBK10-01A (square)	○	
WBK10S-01 (square)		○
WBK10-11 (round)	○	

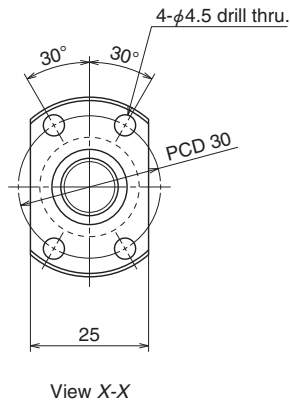
Unit: mm

Screw shaft length			Lead accuracy			Shaft run-out ** ↗	Mass (kg)	Permissible rotational speed N (min ⁻¹)
L_t	L_a	L_o	T	e_p	v_u			Supporting condition
110	125	180	0	0.010	0.008	0.020	0.20	3000
160	175	230	0	0.010	0.008	0.030	0.24	3000
210	225	280	0	0.012	0.008	0.030	0.28	3000
260	275	330	0	0.012	0.008	0.040	0.32	3000
310	325	380	0	0.012	0.008	0.040	0.36	3000



Ball screw No.		Stroke	
		Nominal	Maximum (L_1 —Nut length)
Preloaded (MPFD)	Precise clearance (MSFD)		
W1201MA-5PY-C3Z2.5	W1201MA-6Y-C3T2.5	50	78
W1201MA-7PY-C3Z2.5	W1201MA-8Y-C3T2.5	100	128
W1202MA-5PY-C3Z2.5	W1202MA-6Y-C3T2.5	150	178
W1202MA-7PY-C3Z2.5	W1202MA-8Y-C3T2.5	200	228
W1203MA-3PY-C3Z2.5	W1203MA-4Y-C3T2.5	250	278

- Remarks:
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. NSK grease PS2 is recommended. Apply to the screw shaft surface when replenishing. Refer to Page D16 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.



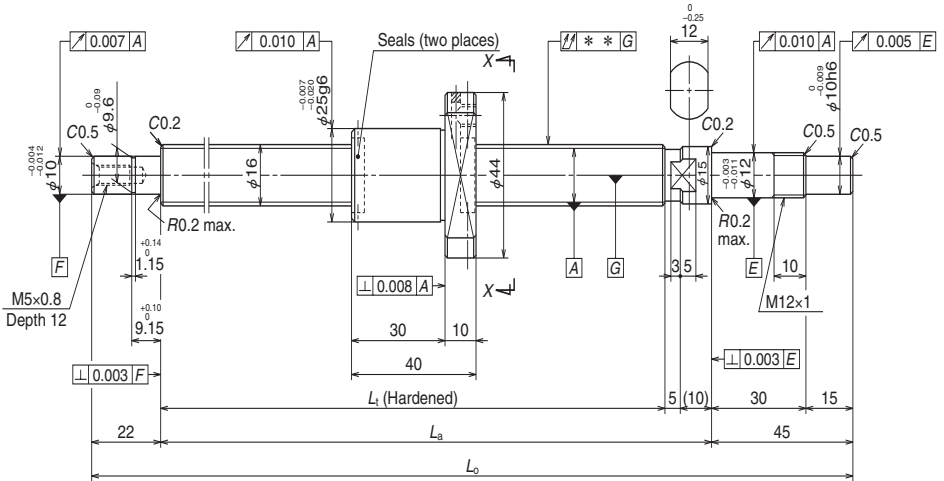
Ball screw specifications

Product classification	Preloaded	Precise clearance
Shaft dia. x Lead / Direction of turn	12×2.5/Right	
Preload / Ball recirculation	P preload / Deflector	
Ball dia. / Ball circle dia.	1.588/12.4	
Screw shaft root diameter	10.6	
Effective turns of balls	1×3	
Accuracy grade / Preload / Axial play	C3/Z	C3/T
Basic load rating (N)	Dynamic C_a	2790
	Static C_{0a}	4530
Axial play	0	0.005 or less
Preload (N)	98.1	—
Dynamic friction torque, (N-cm)	0.4 – 3.4	1.0 or less
Spacer ball	None	
Factory packed grease	NSK grease PS2	

Recommended support unit	For drive side	For opposite to drive side
WBK10-01A (square)	○	
WBK10S-01 (square)		○
WBK10-11 (round)	○	

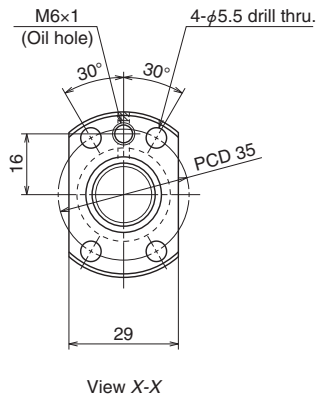
Unit: mm

Screw shaft length			Lead accuracy			Shaft run-out ** ↗	Mass (kg)	Permissible rotational speed N (min ⁻¹)
L_t	L_a	L_o	T	e_p	v_u			Supporting condition
110	125	180	0	0.010	0.008	0.020	0.21	3000
160	175	230	0	0.010	0.008	0.030	0.25	3000
210	225	280	0	0.012	0.008	0.030	0.29	3000
260	275	330	0	0.012	0.008	0.040	0.33	3000
310	325	380	0	0.012	0.008	0.040	0.37	3000



Ball screw No.		Stroke	
		Nominal	Maximum (L_t —Nut length)
Preloaded (MPFD)	Precise clearance (MSFD)		
W1601MA-1PY-C3Z2	W1601MA-2Y-C3T2	50	99
W1601MA-3PY-C3Z2	W1601MA-4Y-C3T2	100	149
W1602MA-1PY-C3Z2	W1602MA-2Y-C3T2	150	199
W1602MA-3PY-C3Z2	W1602MA-4Y-C3T2	200	249
W1603MA-1PY-C3Z2	W1603MA-2Y-C3T2	300	349

- Remarks:
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. NSK grease PS2 is recommended. The amount for replenishing should be about 50% of the nut internal space capacity. Refer to Page D16 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.



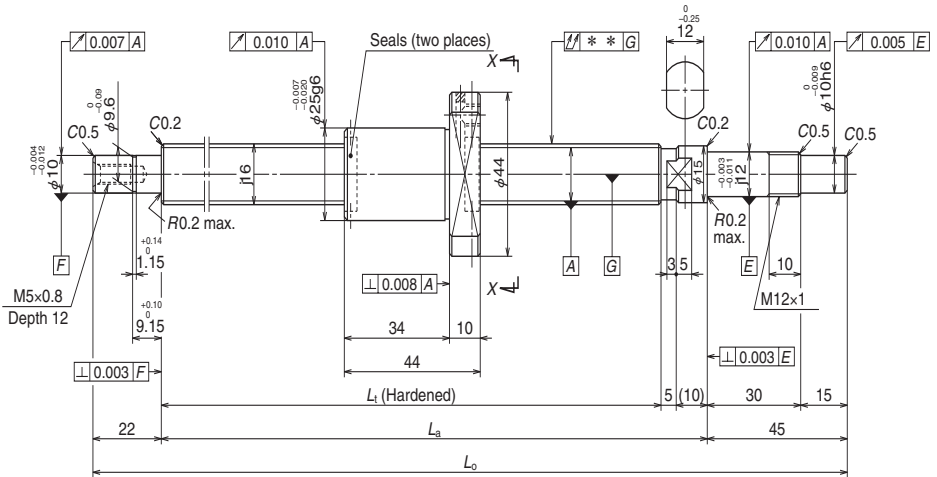
Ball screw specifications

Product classification		Preloaded	Precise clearance
Shaft dia. x Lead / Direction of turn		16x2/Right	
Preload / Ball recirculation		P preload / Deflector	
Ball dia. / Ball circle dia.		1.588/16.4	
Screw shaft root diameter		14.6	
Effective turns of balls		1x4	
Accuracy grade / Preload / Axial play		C3/Z	C3/T
Basic load rating (N)	Dynamic C_a	4150	
	Static C_{0a}	8450	
Axial play		0	0.005 or less
Preload (N)		147	—
Dynamic friction torque, (N-cm)		0.5 – 4.9	1.5 or less
Spacer ball		None	
Factory packed grease		NSK grease PS2	
Internal spatial volume of nut (cm ³)		1.6	
Standard volume of grease replenishing (cm ³)		0.8	

Recommended support unit	For drive side	For opposite to drive side
WBK12-01A (square)	○	
WBK12S-01 (square)		○
WBK12-11 (round)	○	

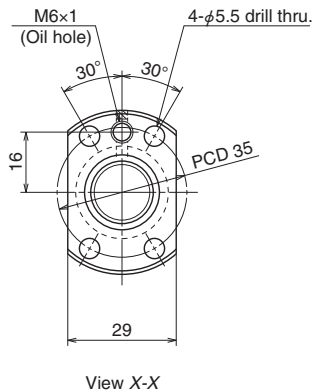
Unit: mm

Screw shaft length			Lead accuracy			Shaft run-out ** ↑↓	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
L_t	L_a	L_o	T	e_p	v_u			Supporting condition	
								Fixed - Simple support	Fixed - Fixed
139	154	221	0	0.010	0.008	0.020	0.41	3000	3000
189	204	271	0	0.010	0.008	0.020	0.48	3000	3000
239	254	321	0	0.012	0.008	0.030	0.55	3000	3000
289	304	371	0	0.012	0.008	0.030	0.62	3000	3000
389	404	471	0	0.013	0.010	0.035	0.77	3000	3000



Ball screw No.		Stroke	
		Nominal	Maximum (L_1 —Nut length)
Preloaded (MPFD)	Precise clearance (MSFD)		
W1601MA-5PY-C3Z2.5	W1601MA-6Y-C3T2.5	50	95
W1601MA-7PY-C3Z2.5	W1601MA-8Y-C3T2.5	100	145
W1602MA-5PY-C3Z2.5	W1602MA-6Y-C3T2.5	150	195
W1602MA-7PY-C3Z2.5	W1602MA-8Y-C3T2.5	200	245
W1603MA-3PY-C3Z2.5	W1603MA-4Y-C3T2.5	300	345

- Remarks:
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. NSK grease PS2 is recommended. The amount for replenishing should be about 50% of the nut internal space capacity. Refer to Page D16 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.



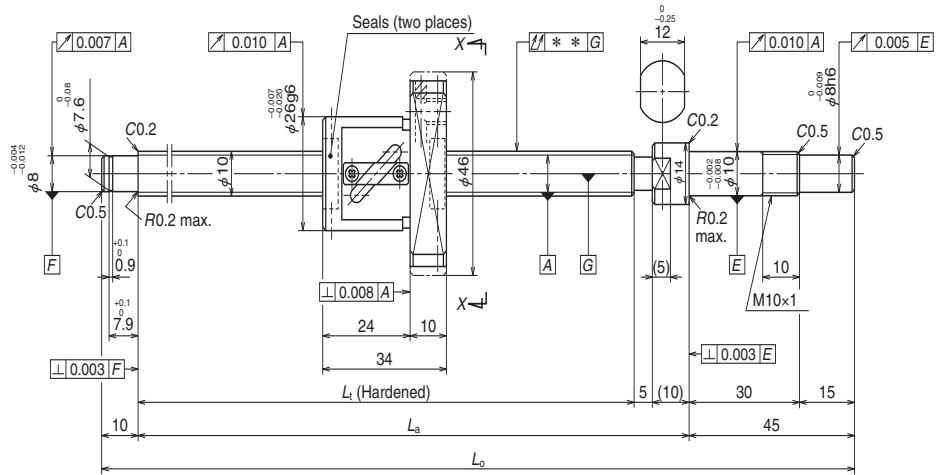
Ball screw specifications

Product classification		Preloaded	Precise clearance
Shaft dia. x Lead / Direction of turn		16×2.5/Right	
Preload / Ball recirculation		P preload / Deflector	
Ball dia. / Ball circle dia.		1.588/16.4	
Screw shaft root diameter		14.6	
Effective turns of balls		1×4	
Accuracy grade / Preload / Axial play		C3/Z	C3/T
Basic load rating (N)	Dynamic C_a	4150	
	Static C_{0a}	8440	
Axial play		0	0.005 or less
Preload (N)		147	—
Dynamic friction torque, (N·cm)		0.5 – 4.9	1.5 or less
Spacer ball		None	
Factory packed grease		NSK grease PS2	
Internal spatial volume of nut (cm ³)		1.6	
Standard volume of grease replenishing (cm ³)		0.8	

Recommended support unit		For drive side	For opposite to drive side
WBK12-01A	(square)	○	
WBK12S-01	(square)		○
WBK12-11	(round)	○	

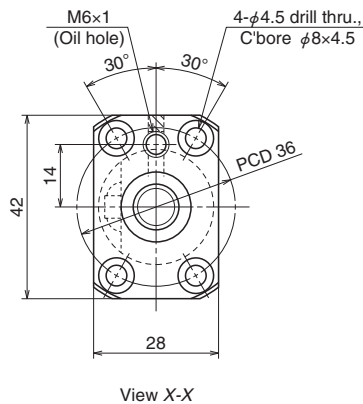
Unit: mm

Screw shaft length			Lead accuracy			Shaft run-out ** ∇	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
L_t	L_a	L_o	T	e_p	v_u			Supporting condition	
								Fixed - Simple support	Fixed - Fixed
139	154	221	0	0.010	0.008	0.020	0.42	3000	3000
189	204	271	0	0.010	0.008	0.020	0.49	3000	3000
239	254	321	0	0.012	0.008	0.030	0.57	3000	3000
289	304	371	0	0.012	0.008	0.030	0.64	3000	3000
389	404	471	0	0.013	0.010	0.035	0.79	3000	3000



Ball screw No.		Stroke	
		Nominal	Maximum (L_1 —Nut length)
Preloaded (PFT)	Precise clearance (SFT)		
W1001FA-1P-C3Z4	W1001FA-2-C3T4	50	76
W1001FA-3P-C3Z4	W1001FA-4-C3T4	100	126
W1002FA-1P-C3Z4	W1002FA-2-C3T4	150	176
W1002FA-3P-C3Z4	W1002FA-4-C3T4	200	226
W1003FA-1P-C3Z4	W1003FA-2-C3T4	250	276
W1003FA-3P-C3Z4	W1003FA-4-C3T4	300	326

- Remarks:
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. NSK grease PS2 is recommended. The amount for replenishing should be about 50% of the nut internal space capacity. Refer to Page D16 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.



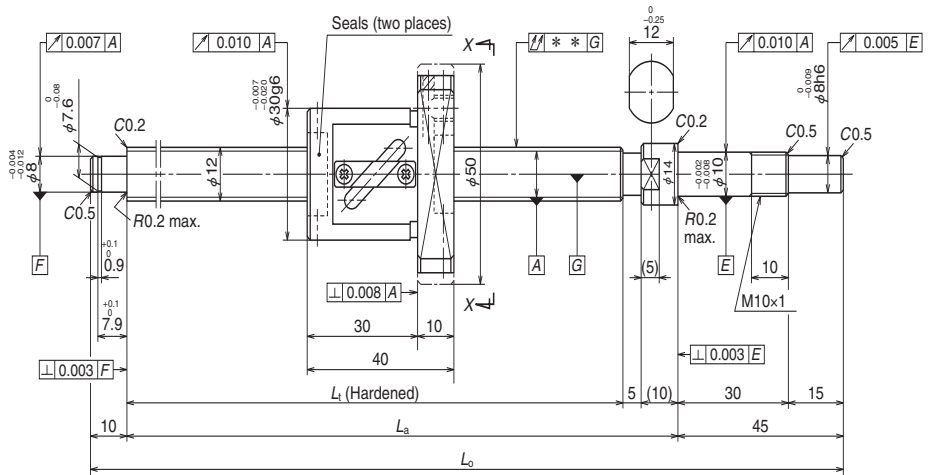
Ball screw specifications

Product classification		Preloaded	Precise clearance
Shaft dia. x Lead / Direction of turn		10×4/Right	
Preload / Ball recirculation		P preload / Return tube	
Ball dia. / Ball circle dia.		2.000/10.3	
Screw shaft root diameter		8.2	
Effective turns of balls		2.5×1	
Accuracy grade / Preload / Axial play		C3/Z	C3/T
Basic load rating (N)	Dynamic C_a	2020	3210
	Static C_{0a}	2210	4420
Axial play		0	0.005 or less
Preload (N)		98.1	—
Dynamic friction torque, (N·cm)		0.5 – 3.9	1.0 or less
Spacer ball		Yes	None
Factory packed grease		NSK grease PS2	
Internal spatial volume of nut (cm ³)		0.8	
Standard volume of grease replenishing (cm ³)		0.4	

Recommended support unit		For drive side	For opposite to drive side
WBK10-01A	(square)	○	
WBK10S-01	(square)		○
WBK10-11	(round)	○	

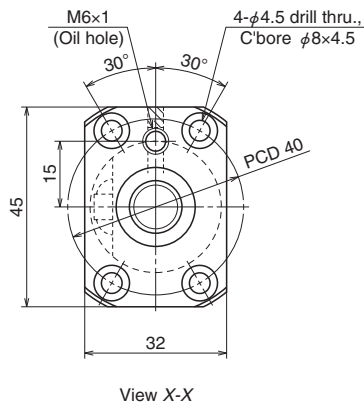
Unit: mm

Screw shaft length			Lead accuracy			Shaft run-out ** ↑↓	Mass (kg)	Permissible rotational speed N (min ⁻¹)
L_t	L_a	L_o	T	e_p	v_u			Supporting condition
110	125	180	0	0.010	0.008	0.020	0.26	3000
160	175	230	0	0.010	0.008	0.030	0.28	3000
210	225	280	0	0.012	0.008	0.030	0.31	3000
260	275	330	0	0.012	0.008	0.040	0.34	3000
310	325	380	0	0.012	0.008	0.040	0.37	3000
360	375	430	0	0.013	0.010	0.050	0.39	3000



Ball screw No.		Stroke	
		Nominal	Maximum (L_1 —Nut length)
Preloaded (PFT)	Precise clearance (SFT)		
W1201FA-1P-C3Z5	W1201FA-2-C3T5	50	70
W1201FA-3P-C3Z5	W1201FA-4-C3T5	100	120
W1202FA-1P-C3Z5	W1202FA-2-C3T5	150	170
W1202FA-3P-C3Z5	W1202FA-4-C3T5	200	220
W1203FA-1P-C3Z5	W1203FA-2-C3T5	250	270
W1204FA-1P-C3Z5	W1204FA-2-C3T5	350	370
W1205FA-1P-C3Z5	W1205FA-2-C3T5	450	470

- Remarks:
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. NSK grease PS2 is recommended. The amount for replenishing should be about 50% of the nut internal space capacity. Refer to Page D16 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.



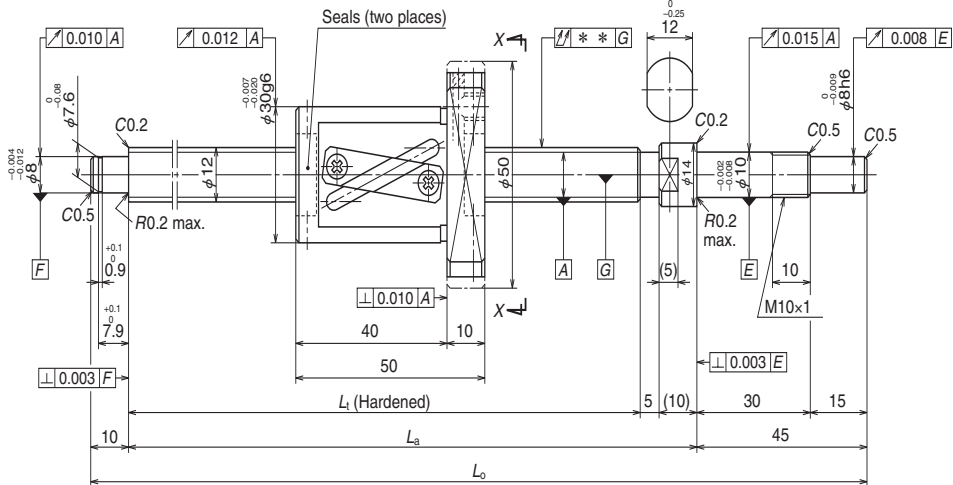
Ball screw specifications

Product classification		Preloaded	Precise clearance
Shaft dia. x Lead / Direction of turn		12×5/Right	
Preload / Ball recirculation		P preload / Return tube	
Ball dia. / Ball circle dia.		2.381/12.3	
Screw shaft root diameter		9.8	
Effective turns of balls		2.5×1	
Accuracy grade / Preload / Axial play		C3/Z	C3/T
Basic load rating (N)	Dynamic C_a	2770	4390
	Static C_{0a}	3130	6260
Axial play		0	0.005 or less
Preload (N)		98.1	—
Dynamic friction torque, (N-cm)		1.0 – 4.4	1.0 or less
Spacer ball		Yes	None
Factory packed grease		NSK grease PS2	
Internal spatial volume of nut (cm ³)		1.2	
Standard volume of grease replenishing (cm ³)		0.6	

Recommended support unit		For drive side	For opposite to drive side
WBK10-01A	(square)	○	
WBK10S-01	(square)		○
WBK10-11	(round)	○	

Unit: mm

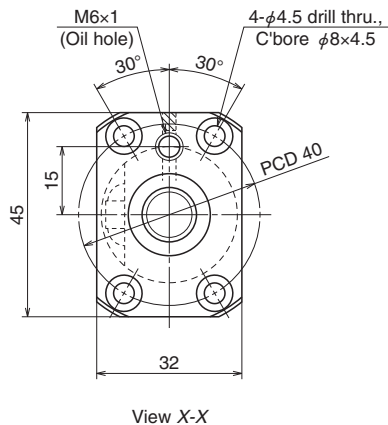
Screw shaft length			Lead accuracy			Shaft run-out ** ↕	Mass (kg)	Permissible rotational speed N (min ⁻¹)
L_t	L_a	L_o	T	e_p	v_u			Supporting condition
110	125	180	0	0.010	0.008	0.020	0.35	3000
160	175	230	0	0.010	0.008	0.030	0.38	3000
210	225	280	0	0.012	0.008	0.030	0.42	3000
260	275	330	0	0.012	0.008	0.040	0.46	3000
310	325	380	0	0.012	0.008	0.040	0.50	3000
410	425	480	0	0.015	0.010	0.050	0.58	3000
510	525	580	0	0.016	0.012	0.065	0.66	3000



Ball screw No.		Stroke	
		Nominal	Maximum (L _r —Nut length)
Preloaded (LPFT)	Precise clearance (LSFT)		
W1201FA-5P-C5Z10	W1201FA-6-C5T10	100	110
W1202FA-5P-C5Z10	W1202FA-6-C5T10	150	160
W1203FA-3P-C5Z10	W1203FA-4-C5T10	250	260
W1204FA-3P-C5Z10	W1204FA-4-C5T10	350	360
W1205FA-3P-C5Z10	W1205FA-4-C5T10	450	460

Remarks:

1. We recommend NSK support unit. Refer to Page B433 for details.
2. NSK grease LR3 is recommended. The amount for replenishing should be about 50% of the nut internal space capacity. Refer to Page D16 for details.
3. Contact NSK if permissible rotational speed is to be exceeded.



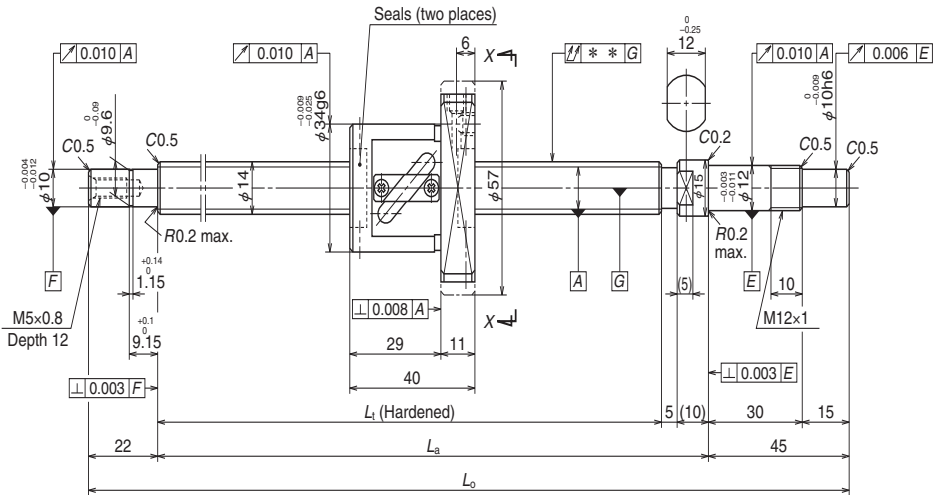
Ball screw specifications

Product classification		Preloaded	Precise clearance
Shaft dia. x Lead / Direction of turn		12×10/Right	
Preload / Ball recirculation		P preload / Return tube	
Ball dia. / Ball circle dia.		2.381/12.5	
Screw shaft root diameter		10.0	
Effective turns of balls		2.5×1	
Accuracy grade / Preload / Axial play		C5/Z	C5/T
Basic load rating (N)	Dynamic C_a	2790	4430
	Static C_{0a}	3220	6430
Axial play		0	0.005 or less
Preload (N)		98.1	—
Dynamic friction torque, (N-cm)		1.0 – 4.9	1.5 or less
Spacer ball		Yes	None
Factory packed grease		NSK grease LR3	
Internal spatial volume of nut (cm ³)		1.4	
Standard volume of grease replenishing (cm ³)		0.7	

Recommended support unit		For drive side	For opposite to drive side
WBK10-01A	(square)	○	
WBK10S-01	(square)		○
WBK10-11	(round)	○	

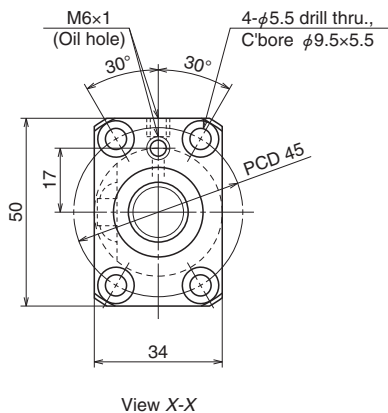
Unit: mm

Screw shaft length			Lead accuracy			Shaft run-out ** ↑↓	Mass (kg)	Permissible rotational speed N (min ⁻¹)
L_t	L_a	L_o	T	e_p	v_u			Supporting condition
160	175	230	0	0.020	0.018	0.035	0.43	3000
210	225	280	0	0.023	0.018	0.035	0.47	3000
310	325	380	0	0.023	0.018	0.050	0.56	3000
410	425	480	0	0.027	0.020	0.060	0.64	3000
510	525	580	0	0.030	0.023	0.075	0.72	3000



Ball screw No.		Stroke	
		Nominal	Maximum (L_1 —Nut length)
Preloaded (PFT)	Precise clearance (SFT)		
W1401FA-1P-C3Z5	W1401FA-2-C3T5	100	149
W1402FA-1P-C3Z5	W1402FA-2-C3T5	150	199
W1403FA-1P-C3Z5	W1403FA-2-C3T5	250	299
W1404FA-1P-C3Z5	W1404FA-2-C3T5	350	399
W1405FA-1P-C3Z5	W1405FA-2-C3T5	450	499
W1406FA-1P-C3Z5	W1406FA-2-C3T5	600	649

- Remarks:
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. NSK grease LR3 is recommended. The amount for replenishing should be about 50% of the nut internal space capacity. Refer to Page D16 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.



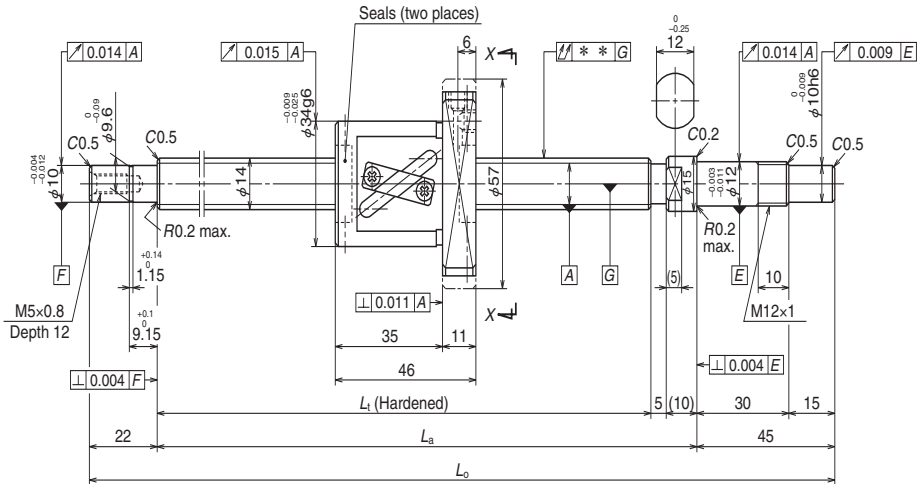
Ball screw specifications

Product classification		Preloaded	Precise clearance
Shaft dia. x Lead / Direction of turn		14×5/Right	
Preload / Ball recirculation		P preload / Return tube	
Ball dia. / Ball circle dia.		3.175/14.5	
Screw shaft root diameter		11.2	
Effective turns of balls		2.5×1	
Accuracy grade / Preload / Axial play		C3/Z	C3/T
Basic load rating (N)	Dynamic C_a	5020	7970
	Static C_{0a}	5970	11900
Axial play		0	0.005 or less
Preload (N)		147	—
Dynamic friction torque, (N-cm)		1.5 – 6.9	2.0 or less
Spacer ball		Yes	None
Factory packed grease		NSK grease LR3	
Internal spatial volume of nut (cm ³)		2.2	
Standard volume of grease replenishing (cm ³)		1.1	

Recommended support unit		For drive side	For opposite to drive side
WBK12-01A	(square)	○	
WBK12S-01	(square)		○
WBK12-11	(round)	○	

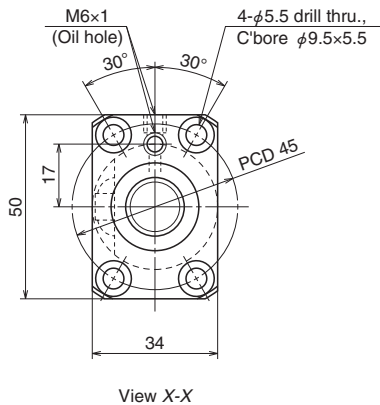
Unit: mm

Screw shaft length			Lead accuracy			Shaft run-out ** $\uparrow\downarrow$	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
L_t	L_a	L_o	T	e_p	v_u			Supporting condition	
								Fixed - Simple support	Fixed - Fixed
189	204	271	0	0.010	0.008	0.020	0.52	3000	3000
239	254	321	0	0.012	0.008	0.030	0.57	3000	3000
339	354	421	0	0.013	0.010	0.035	0.67	3000	3000
439	454	521	0	0.015	0.010	0.045	0.77	3000	3000
539	554	621	0	0.016	0.012	0.045	0.87	3000	3000
689	704	771	0	0.018	0.013	0.055	1.0	3000	3000



Ball screw No.		Stroke	
		Nominal	Maximum (L_t —Nut length)
Preloaded (LPFT)	Precise clearance (LSFT)		
W1401FA-3P-C5Z8	W1401FA-4-C5T8	100	143
W1402FA-3P-C5Z8	W1402FA-4-C5T8	150	193
W1402FA-5P-C5Z8	W1402FA-6-C5T8	200	243
W1403FA-3P-C5Z8	W1403FA-4-C5T8	250	293
W1403FA-5P-C5Z8	W1403FA-6-C5T8	300	343
W1404FA-3P-C5Z8	W1404FA-4-C5T8	350	393
W1404FA-5P-C5Z8	W1404FA-6-C5T8	400	443
W1405FA-3P-C5Z8	W1405FA-4-C5T8	450	493
W1405FA-5P-C5Z8	W1405FA-6-C5T8	500	543
W1406FA-3P-C5Z8	W1406FA-4-C5T8	550	593
W1406FA-5P-C5Z8	W1406FA-6-C5T8	600	643
W1407FA-1P-C5Z8	W1407FA-2-C5T8	700	743

- Remarks:
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. NSK grease LR3 is recommended. The amount for replenishing should be about 50% of the nut internal space capacity. Refer to Page D16 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.



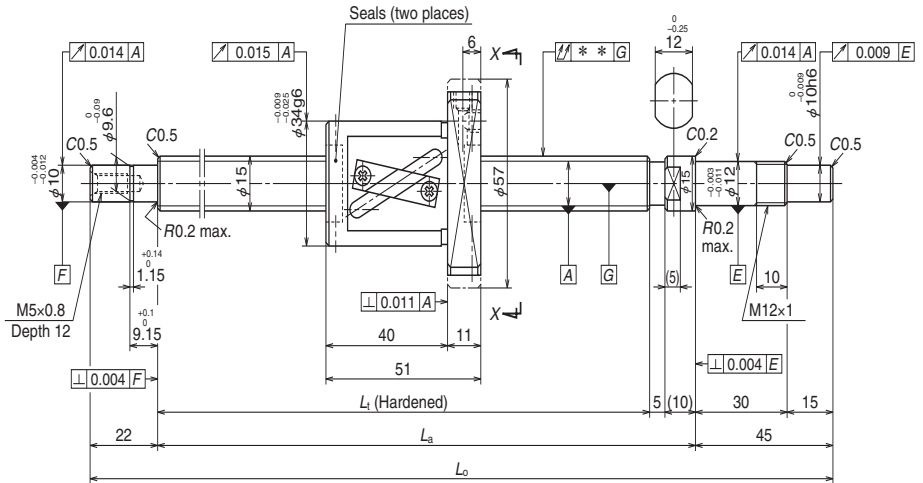
Recommended support unit	For drive side	For opposite to drive side
WBK12-01A (square)	○	
WBK12S-01 (square)		○
WBK12-11 (round)	○	

Ball screw specifications

Product classification		Preloaded	Precise clearance
Shaft dia. x Lead / Direction of turn		14×8/Right	
Preload / Ball recirculation		P preload / Return tube	
Ball dia. / Ball circle dia.		3.175/14.5	
Screw shaft root diameter		11.2	
Effective turns of balls		2.5×1	
Accuracy grade / Preload / Axial play		C5/Z	C5/T
Basic load rating (N)	Dynamic C_a	4960	7780
	Static C_{0a}	5920	11800
Axial play		0	0.005 or less
Preload (N)		147	—
Dynamic friction torque, (N·cm)		1.5 – 7.8	2.4 or less
Spacer ball		Yes	None
Factory packed grease		NSK grease LR3	
Internal spatial volume of nut (cm ³)		2.1	
Standard volume of grease replenishing (cm ³)		1.1	

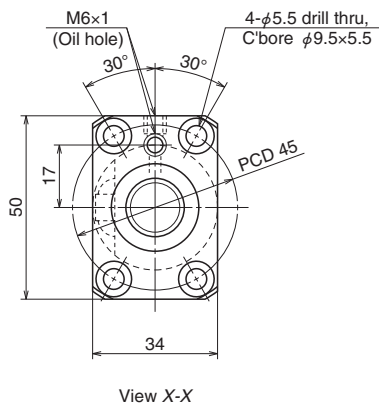
Unit: mm

Screw shaft length			Lead accuracy			Shaft run-out ** ↕	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
L_t	L_a	L_o	T	e_p	v_u			Supporting condition	
								Fixed - Simple support	Fixed - Fixed
189	204	271	0	0.020	0.018	0.025	0.56	3000	3000
239	254	321	0	0.023	0.018	0.035	0.61	3000	3000
289	304	371	0	0.023	0.018	0.035	0.67	3000	3000
339	354	421	0	0.025	0.020	0.040	0.72	3000	3000
389	404	471	0	0.025	0.020	0.040	0.78	3000	3000
439	454	521	0	0.027	0.020	0.050	0.83	3000	3000
489	504	571	0	0.027	0.020	0.050	0.88	3000	3000
539	554	621	0	0.030	0.023	0.050	0.94	3000	3000
589	604	671	0	0.030	0.023	0.065	0.99	3000	3000
639	654	721	0	0.035	0.025	0.065	1.0	3000	3000
689	704	771	0	0.035	0.025	0.065	1.1	3000	3000
789	804	871	0	0.035	0.025	0.085	1.2	2800	3000



Ball screw No.		Stroke	
		Nominal	Maximum (L_t —Nut length)
Preloaded (LPFT)	Precise clearance (LSFT)		
W1501FA-1P-C5Z10	W1501FA-2-C5T10	100	138
W1502FA-1P-C5Z10	W1502FA-2-C5T10	150	188
W1502FA-3P-C5Z10	W1502FA-4-C5T10	200	238
W1503FA-1P-C5Z10	W1503FA-2-C5T10	250	288
W1503FA-3P-C5Z10	W1503FA-4-C5T10	300	338
W1504FA-1P-C5Z10	W1504FA-2-C5T10	350	388
W1504FA-3P-C5Z10	W1504FA-4-C5T10	400	438
W1505FA-1P-C5Z10	W1505FA-2-C5T10	450	488
W1505FA-3P-C5Z10	W1505FA-4-C5T10	500	538
W1506FA-1P-C5Z10	W1506FA-2-C5T10	550	588
W1506FA-3P-C5Z10	W1506FA-4-C5T10	600	638
W1507FA-1P-C5Z10	W1507FA-2-C5T10	700	738
W1508FA-1P-C5Z10	W1508FA-2-C5T10	800	838
W1510FA-1P-C5Z10	W1510FA-2-C5T10	1000	1038

Remarks: 1. We recommend NSK support unit. Refer to Page B433 for details.
 2. NSK grease LR3 is recommended. The amount for replenishing should be about 50% of the nut internal space capacity. Refer to Page D16 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.



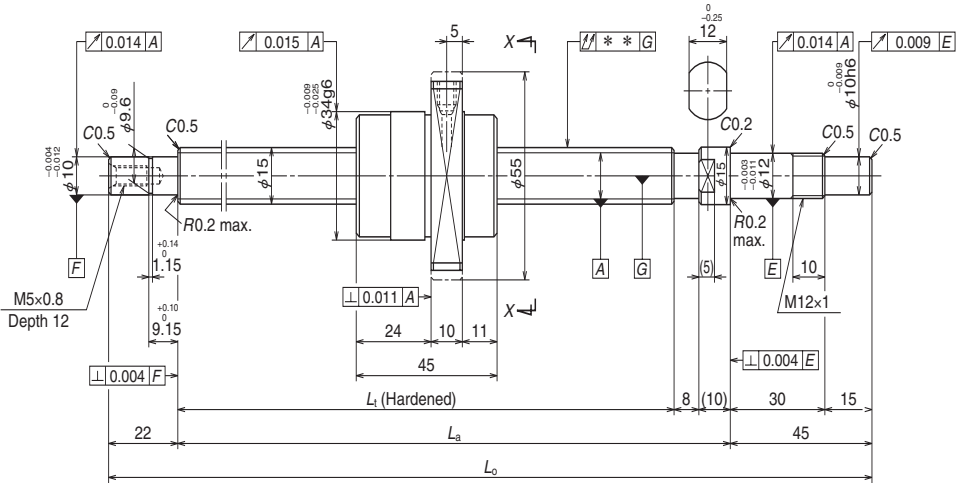
Recommended support unit	For drive side	For opposite to drive side
WBK12-01A (square)	○	
WBK12S-01 (square)		○
WBK12-11 (round)	○	

Ball screw specifications

Product classification		Preloaded	Precise clearance
Shaft dia. x Lead / Direction of turn		15×10/Right	
Preload / Ball recirculation		P preload / Return tube	
Ball dia. / Ball circle dia.		3.175/15.5	
Screw shaft root diameter		12.2	
Effective turns of balls		2.5×1	
Accuracy grade / Preload / Axial play		C5/Z	C5/T
Basic load rating (N)	Dynamic C_a	5130	8140
	Static C_{0a}	6420	12800
Axial play		0	0.005 or less
Preload (N)		147	—
Dynamic friction torque, (N·cm)		1.5 – 7.8	2.4 or less
Spacer ball		Yes	None
Factory packed grease		NSK grease LR3	
Internal spatial volume of nut (cm ³)		2.3	
Standard volume of grease replenishing (cm ³)		1.2	

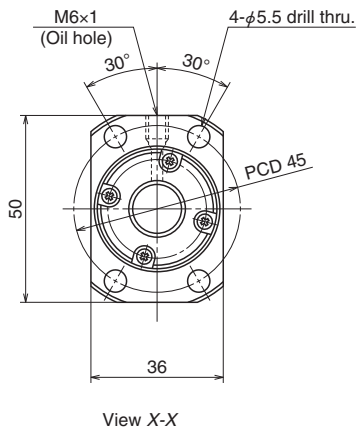
Unit: mm

Screw shaft length			Lead accuracy			Shaft run-out ** ↗	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
L_t	L_a	L_o	T	e_p	v_u			Supporting condition	
								Fixed - Simple support	Fixed - Fixed
189	204	271	0	0.020	0.018	0.025	0.61	3000	3000
239	254	321	0	0.023	0.018	0.035	0.67	3000	3000
289	304	371	0	0.023	0.018	0.035	0.74	3000	3000
339	354	421	0	0.025	0.020	0.040	0.80	3000	3000
389	404	471	0	0.025	0.020	0.040	0.86	3000	3000
439	454	521	0	0.027	0.020	0.050	0.93	3000	3000
489	504	571	0	0.027	0.020	0.050	1.0	3000	3000
539	554	621	0	0.030	0.023	0.050	1.1	3000	3000
589	604	671	0	0.030	0.023	0.065	1.1	3000	3000
639	654	721	0	0.035	0.025	0.065	1.2	3000	3000
689	704	771	0	0.035	0.025	0.065	1.2	3000	3000
789	804	871	0	0.035	0.025	0.085	1.4	3000	3000
889	904	971	0	0.040	0.027	0.085	1.5	2400	3000
1089	1104	1171	0	0.046	0.030	0.110	1.8	1590	2250



Ball screw No.		Stroke	
		Nominal	Maximum (L_t —Nut length)
Preloaded (UPFC)	Precise clearance (USFC)		
W1501FA-3PG-C5Z20	W1501FA-4G-C5T20	100	141
W1502FA-5PG-C5Z20	W1502FA-6G-C5T20	150	191
W1502FA-7PG-C5Z20	W1502FA-8G-C5T20	200	241
W1503FA-5PG-C5Z20	W1503FA-6G-C5T20	250	291
W1503FA-7PG-C5Z20	W1503FA-8G-C5T20	300	341
W1504FA-5PG-C5Z20	W1504FA-6G-C5T20	350	391
W1504FA-7PG-C5Z20	W1504FA-8G-C5T20	400	441
W1505FA-5PG-C5Z20	W1505FA-6G-C5T20	450	491
W1505FA-7PG-C5Z20	W1505FA-8G-C5T20	500	541
W1506FA-5PG-C5Z20	W1506FA-6G-C5T20	550	591
W1506FA-7PG-C5Z20	W1506FA-8G-C5T20	600	641
W1507FA-3PG-C5Z20	W1507FA-4G-C5T20	700	741
W1508FA-3PG-C5Z20	W1508FA-4G-C5T20	800	841
W1510FA-3PG-C5Z20	W1510FA-4G-C5T20	1000	1041

Remarks: 1. We recommend NSK support unit. Refer to Page B433 for details.
 2. NSK grease LR3 is recommended. The amount for replenishing should be about 50% of the nut internal space capacity. Refer to Page D16 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.



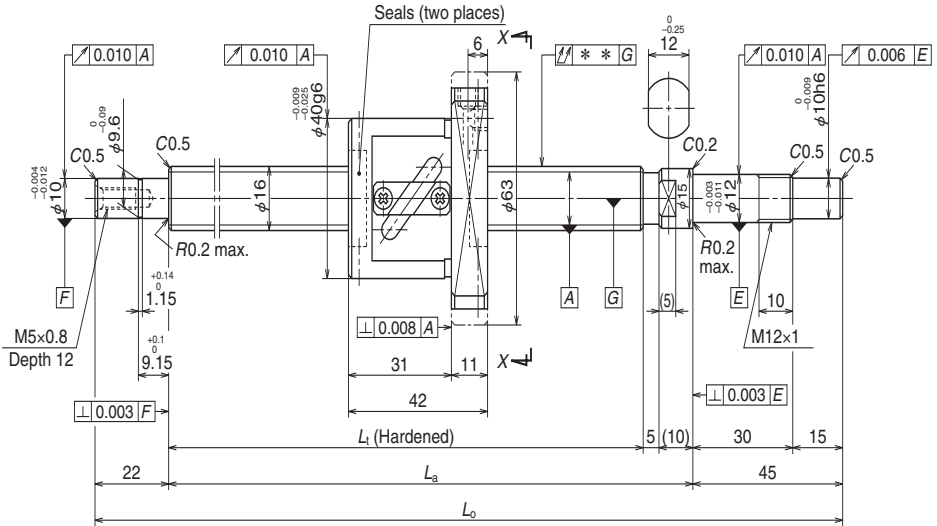
Recommended support unit	For drive side	For opposite to drive side
WBK12-01A (square)	○	
WBK12S-01 (square)		○
WBK12-11 (round)	○	

Ball screw specifications

Product classification		Preloaded	Precise clearance
Shaft dia. x Lead / Direction of turn		15×20/Right	
Preload / Ball recirculation		P preload / End cap	
Ball dia. / Ball circle dia.		3.175/15.5	
Screw shaft root diameter		12.2	
Effective turns of balls		1.7×1	
Accuracy grade / Preload / Axial play		C5/Z	C5/T
Basic load rating (N)	Dynamic C _a	4320	5660
	Static C _{0a}	5800	8700
Axial play		0	0.005 or less
Preload (N)		147	—
Dynamic friction torque, (N·cm)		1.5 – 7.8	2.4 or less
Spacer ball		Yes	None
Factory packed grease		NSK grease LR3	
Internal spatial volume of nut (cm ³)		1.9	
Standard volume of grease replenishing (cm ³)		1.0	

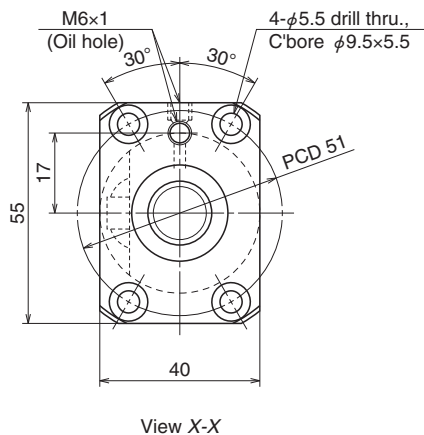
Unit: mm

Screw shaft length			Lead accuracy			Shaft run-out ** ↗	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
L _t	L _a	L _o	T	e _p	v _u			Supporting condition	
								Fixed - Simple support	Fixed - Fixed
186	204	271	0	0.020	0.018	0.025	0.61	3000	3000
236	254	321	0	0.023	0.018	0.035	0.68	3000	3000
286	304	371	0	0.023	0.018	0.035	0.75	3000	3000
336	354	421	0	0.025	0.020	0.040	0.81	3000	3000
386	404	471	0	0.025	0.020	0.040	0.88	3000	3000
436	454	521	0	0.027	0.020	0.050	0.95	3000	3000
486	504	571	0	0.027	0.020	0.050	1.0	3000	3000
536	554	621	0	0.030	0.023	0.050	1.1	3000	3000
586	604	671	0	0.030	0.023	0.065	1.1	3000	3000
636	654	721	0	0.035	0.025	0.065	1.2	3000	3000
686	704	771	0	0.035	0.025	0.065	1.3	3000	3000
786	804	871	0	0.035	0.025	0.085	1.4	3000	3000
886	904	971	0	0.040	0.027	0.085	1.5	2400	3000
1086	1104	1171	0	0.046	0.030	0.110	1.8	1590	2240



Ball screw No.		Stroke	
		Nominal	Maximum (L_t —Nut length)
Preloaded (PFT)	Precise clearance (SFT)		
W1601FA-1P-C3Z5	W1601FA-2-C3T5	100	147
W1602FA-1P-C3Z5	W1602FA-2-C3T5	200	247
W1603FA-1P-C3Z5	W1603FA-2-C3T5	300	347
W1604FA-1P-C3Z5	W1604FA-2-C3T5	400	447
W1606FA-1P-C3Z5	W1606FA-2-C3T5	600	647
W1608FA-1P-C3Z5	W1608FA-2-C3T5	800	847

- Remarks:
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. NSK grease LR3 is recommended. The amount for replenishing should be about 50% of the nut internal space capacity. Refer to Page D16 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.



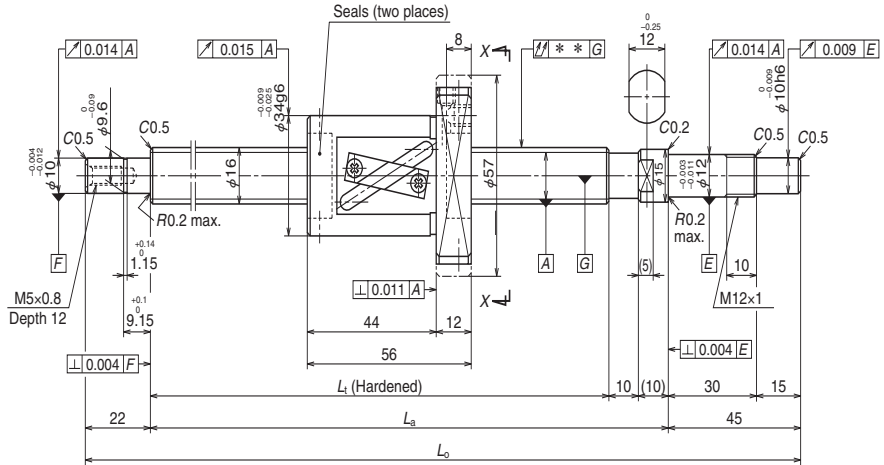
Ball screw specifications

Product classification		Preloaded	Precise clearance
Shaft dia. x Lead / Direction of turn		16×5/Right	
Preload / Ball recirculation		P preload / Return tube	
Ball dia. / Ball circle dia.		3.175/16.5	
Screw shaft root diameter		13.2	
Effective turns of balls		2.5×1	
Accuracy grade / Preload / Axial play		C3/Z	C3/T
Basic load rating (N)	Dynamic C_a	5430	8620
	Static C_{0a}	6890	13800
Axial play		0	0.005 or less
Preload (N)		147	—
Dynamic friction torque, (N·cm)		1.5 – 7.8	2.0 or less
Spacer ball		Yes	None
Factory packed grease		NSK grease LR3	
Internal spatial volume of nut (cm ³)		2.6	
Standard volume of grease replenishing (cm ³)		1.3	

Recommended support unit		For drive side	For opposite to drive side
WBK12-01A	(square)	○	
WBK12S-01	(square)		○
WBK12-11	(round)	○	

Unit: mm

Screw shaft length			Lead accuracy			Shaft run-out ** ↑↓	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
L_t	L_a	L_o	T	e_p	v_u			Supporting condition	
								Fixed - Simple support	Fixed - Fixed
189	204	271	0	0.010	0.008	0.020	0.70	3000	3000
289	304	371	0	0.012	0.008	0.030	0.83	3000	3000
389	404	471	0	0.013	0.010	0.035	0.97	3000	3000
489	504	571	0	0.015	0.010	0.045	1.1	3000	3000
689	704	771	0	0.018	0.013	0.055	1.4	3000	3000
889	904	971	0	0.021	0.015	0.075	1.6	2570	3000

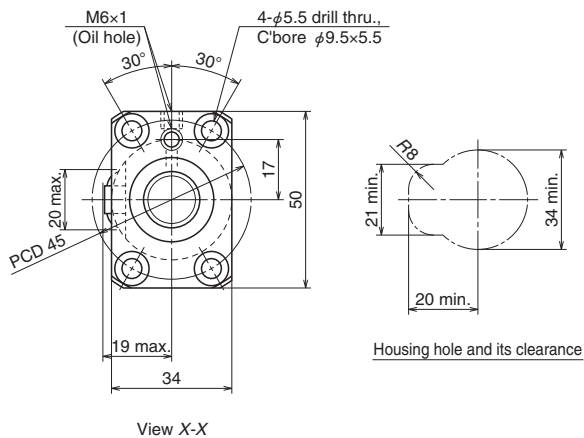


Ball screw No.		Stroke	
		Nominal	Maximum (L_t —Nut length)
Preloaded (LPFT)	Precise clearance (LSFT)		
W1601FA-3P-C5Z16	W1601FA-4-C5T16	100	128
W1602FA-3P-C5Z16	W1602FA-4-C5T16	150	178
W1602FA-5P-C5Z16	W1602FA-6-C5T16	200	228
W1603FA-3P-C5Z16	W1603FA-4-C5T16	250	278
W1603FA-5P-C5Z16	W1603FA-6-C5T16	300	328
W1604FA-3P-C5Z16	W1604FA-4-C5T16	350	378
W1604FA-5P-C5Z16	W1604FA-6-C5T16	400	428
W1605FA-1P-C5Z16	W1605FA-2-C5T16	450	478
W1605FA-3P-C5Z16	W1605FA-4-C5T16	500	528
W1606FA-3P-C5Z16	W1606FA-4-C5T16	550	578
W1606FA-5P-C5Z16	W1606FA-6-C5T16	600	628
W1607FA-1P-C5Z16	W1607FA-2-C5T16	700	728
W1608FA-3P-C5Z16	W1608FA-4-C5T16	800	828
W1610FA-1P-C5Z16	W1610FA-2-C5T16	1000	1028

- Remarks: 1. We recommend NSK support unit. Refer to Page B433 for details.
 2. NSK grease LR3 is recommended. The amount for replenishing should be about 50% of the nut internal space capacity. Refer to Page D16 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.

ø16×16

Unit: mm

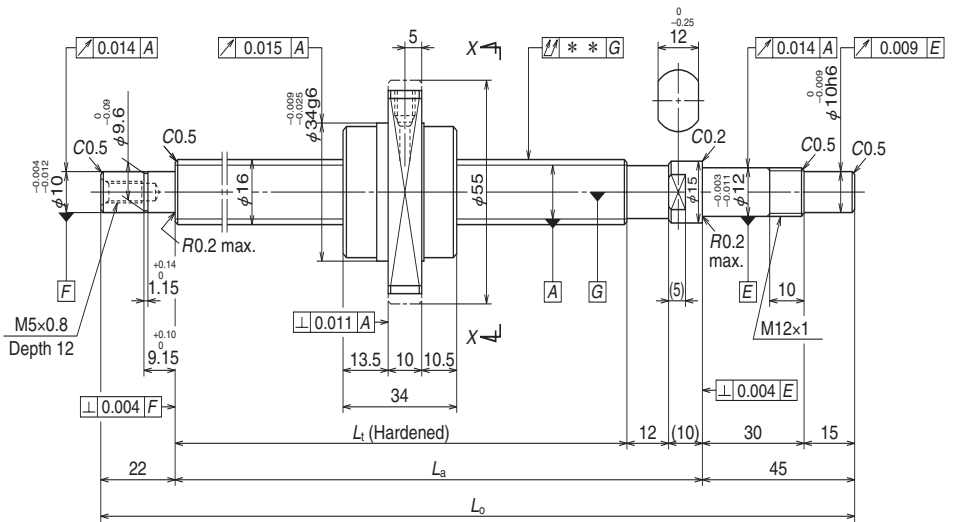


Recommended support unit	For drive side	For opposite to drive side
WBK12-01A (square)	○	
WBK12S-01 (square)		○
WBK12-11 (round)	○	

Ball screw specifications			
Product classification		Preloaded	Precise clearance
Shaft dia. x Lead / Direction of turn		16×16/Right	
Preload / Ball recirculation		P preload / Return tube	
Ball dia. / Ball circle dia.		3.175/16.75	
Screw shaft root diameter		13.4	
Effective turns of balls		1.5×1	
Accuracy grade / Preload / Axial play		C5/Z	C5/T
Basic load rating (N)	Dynamic C_a	4180	5480
	Static C_{0a}	5390	8080
Axial play		0	0.005 or less
Preload (N)		147	—
Dynamic friction torque, (N-cm)		1.5 – 7.8	2.4 or less
Spacer ball		Yes	None
Factory packed grease		NSK grease LR3	
Internal spatial volume of nut (cm ³)		2.1	
Standard volume of grease replenishing (cm ³)		1.1	

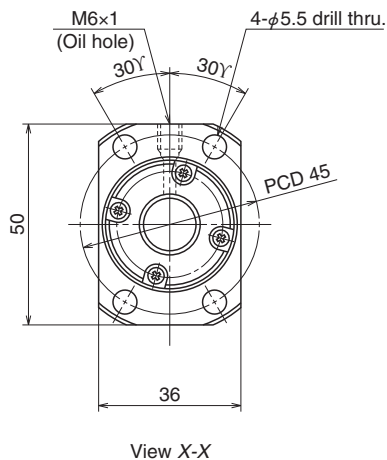
Unit: mm

Screw shaft length			Lead accuracy			Shaft run-out **	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
L_t	L_a	L_o	T	e_p	v_u			Supporting condition	
								Fixed - Simple support	Fixed - Fixed
184	204	271	0	0.020	0.018	0.025	0.69	3000	3000
234	254	321	0	0.023	0.018	0.035	0.77	3000	3000
284	304	371	0	0.023	0.018	0.035	0.84	3000	3000
334	354	421	0	0.025	0.020	0.040	0.92	3000	3000
384	404	471	0	0.025	0.020	0.040	0.99	3000	3000
434	454	521	0	0.027	0.020	0.050	1.1	3000	3000
484	504	571	0	0.027	0.020	0.050	1.1	3000	3000
534	554	621	0	0.030	0.023	0.050	1.2	3000	3000
584	604	671	0	0.030	0.023	0.065	1.3	3000	3000
634	654	721	0	0.035	0.025	0.065	1.4	3000	3000
684	704	771	0	0.035	0.025	0.065	1.4	3000	3000
784	804	871	0	0.035	0.025	0.085	1.6	3000	3000
884	904	971	0	0.040	0.027	0.085	1.7	2690	3000
1084	1104	1171	0	0.046	0.030	0.110	2.0	1770	2480



Ball screw No.		Stroke	
		Nominal	Maximum (L_1 —Nut length)
Preloaded (UPFC)	Precise clearance (USFC)		
W1603FA-7PGX-C5Z32	W1603FA-8GX-C5T32	300	348
W1605FA-5PGX-C5Z32	W1605FA-6GX-C5T32	500	548
W1608FA-5PGX-C5Z32	W1608FA-6GX-C5T32	800	848
W1612FA-1PGX-C5Z32	W1612FA-2GX-C5T32	1200	1248

- Remarks:
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. NSK grease LR3 is recommended. The amount for replenishing should be about 50% of the nut internal space capacity. Refer to Page D16 for details.
 3. Nut does not have a seal.
 4. Contact NSK if permissible rotational speed is to be exceeded.



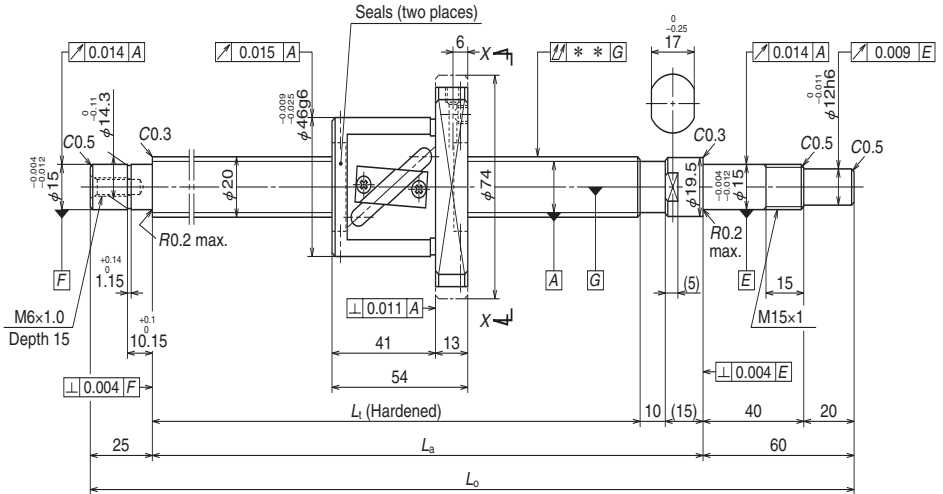
Ball screw specifications

Product classification		Preloaded	Precise clearance
Shaft dia. x Lead / Direction of turn		16×32/Right	
Preload / Ball recirculation		P preload / End cap	
Ball dia. / Ball circle dia.		3.175/16.75	
Screw shaft root diameter		13.4	
Effective turns of balls		0.7×2	
Accuracy grade / Preload / Axial play		C5/Z	C5/T
Basic load rating (N)	Dynamic C _a	4320	
	Static C _{0a}	6760	
Axial play		0	0.005 or less
Preload (N)		118	—
Dynamic friction torque, (N-cm)		1.5 – 9.8	2.4 or less
Spacer ball		None	
Factory packed grease		NSK grease LR3	
Internal spatial volume of nut (cm ³)		2.0	
Standard volume of grease replenishing (cm ³)		1.0	

Recommended support unit		For drive side	For opposite to drive side
WBK12-01A	(square)	○	
WBK12S-01	(square)		○
WBK12-11	(round)	○	

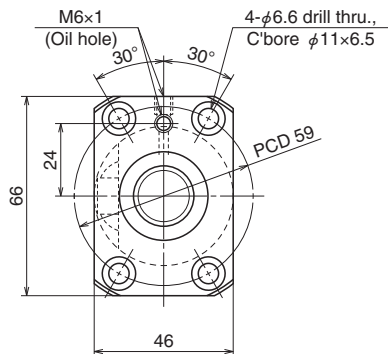
Unit: mm

Screw shaft length			Lead accuracy			Shaft run-out ** ↑↓	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
L _t	L _a	L _o	T	e _p	v _u			Supporting condition	
								Fixed - Simple support	Fixed - Fixed
382	404	471	0	0.025	0.020	0.040	0.90	3000	3000
582	604	671	0	0.030	0.023	0.065	1.2	3000	3000
882	904	971	0	0.040	0.027	0.085	1.7	2630	3000
1282	1304	1371	0	0.054	0.035	0.150	2.3	1240	1740



Ball screw No.		Stroke	
		Nominal	Maximum (L_t —Nut length)
Preloaded (LPFT)	Precise clearance (LSFT)		
W2002FA-1P-C5Z10	W2002FA-2-C5T10	200	235
W2003FA-1P-C5Z10	W2003FA-2-C5T10	300	335
W2004FA-1P-C5Z10	W2004FA-2-C5T10	400	435
W2005FA-1P-C5Z10	W2005FA-2-C5T10	500	535
W2006FA-1P-C5Z10	W2006FA-2-C5T10	600	635
W2007FA-1P-C5Z10	W2007FA-2-C5T10	700	735
W2008FA-1P-C5Z10	W2008FA-2-C5T10	800	835
W2009FA-1P-C5Z10	W2009FA-2-C5T10	900	935
W2010FA-1P-C5Z10	W2010FA-2-C5T10	1000	1035
W2011FA-1P-C5Z10	W2011FA-2-C5T10	1100	1135
W2012FA-1P-C5Z10	W2012FA-2-C5T10	1200	1235

- Remarks:
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. NSK grease LR3 is recommended. The amount for replenishing should be about 50% of the nut internal space capacity. Refer to Page D16 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.



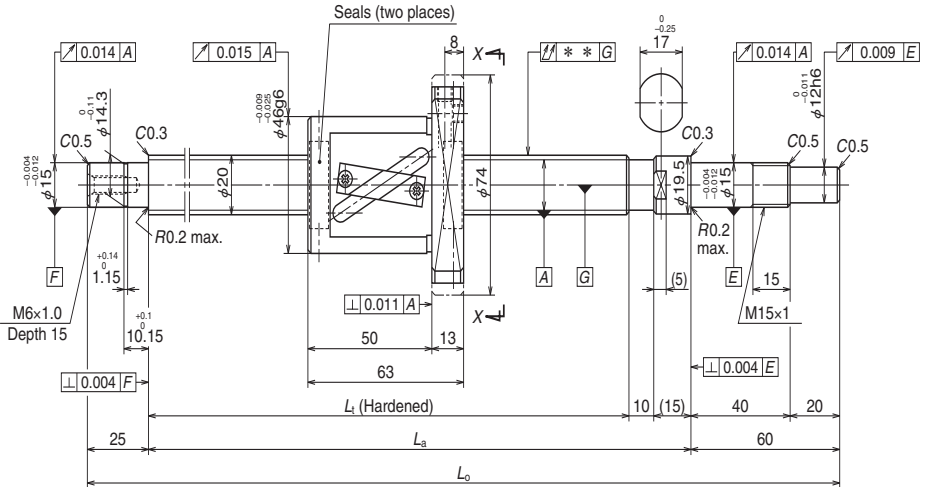
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Recommended support unit	For drive side	For opposite to drive side
WBK15-01A (square)	○	
WBK15S-01 (square)		○
WBK15-11 (round)	○	

Ball screw specifications			
Product classification	Preloaded	Precise clearance	
Shaft dia. x Lead / Direction of turn	20×10/Right		
Preload / Ball recirculation	P preload / Return tube		
Ball dia. / Ball circle dia.	3.969/21		
Screw shaft root diameter	16.9		
Effective turns of balls	2.5×1		
Accuracy grade / Preload / Axial play	C5/Z	C5/T	
Basic load rating (N)	Dynamic C_a	8350	13300
	Static C_{0a}	11000	21900
Axial play	0	0.005 or less	
Preload (N)	196	—	
Dynamic friction torque, (N·cm)	2.0 – 11.8	2.9 or less	
Spacer ball	Yes	None	
Factory packed grease	NSK grease LR3		
Internal spatial volume of nut (cm ³)	4.7		
Standard volume of grease replenishing (cm ³)	2.4		

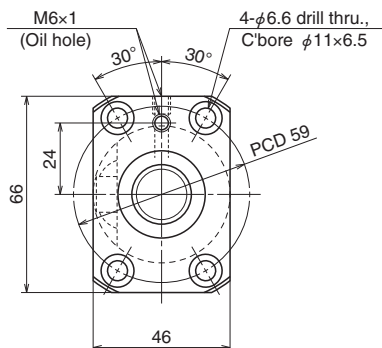
Unit: mm

Screw shaft length			Lead accuracy			Shaft run-out ** ↗↘	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
L_t	L_a	L_o	T	e_p	v_u			Supporting condition	
								Fixed - Simple support	Fixed - Fixed
289	314	399	0	0.023	0.018	0.035	1.4	3000	3000
389	414	499	0	0.025	0.020	0.040	1.6	3000	3000
489	514	599	0	0.027	0.020	0.050	1.9	3000	3000
589	614	699	0	0.030	0.023	0.065	2.1	3000	3000
689	714	799	0	0.035	0.025	0.065	2.3	3000	3000
789	814	899	0	0.035	0.025	0.085	2.5	3000	3000
889	914	999	0	0.040	0.027	0.085	2.8	3000	3000
989	1014	1099	0	0.040	0.027	0.110	3.0	2680	3000
1089	1114	1199	0	0.046	0.030	0.110	3.2	2210	3000
1189	1214	1299	0	0.046	0.030	0.150	3.4	1840	2570
1289	1314	1399	0	0.054	0.035	0.150	3.7	1570	2190



Ball screw No.		Stroke	
		Nominal	Maximum (L_t —Nut length)
Preloaded (LPFT)	Precise clearance (LSFT)		
W2003FA-3P-C5Z20	W2003FA-4-C5T20	200	247
W2004FA-3P-C5Z20	W2004FA-4-C5T20	300	347
W2005FA-3P-C5Z20	W2005FA-4-C5T20	400	447
W2006FA-3P-C5Z20	W2006FA-4-C5T20	500	547
W2007FA-3P-C5Z20	W2007FA-4-C5T20	600	647
W2008FA-3P-C5Z20	W2008FA-4-C5T20	700	747
W2009FA-3P-C5Z20	W2009FA-4-C5T20	800	847
W2010FA-3P-C5Z20	W2010FA-4-C5T20	900	947
W2011FA-3P-C5Z20	W2011FA-4-C5T20	1000	1047
W2012FA-3P-C5Z20	W2012FA-4-C5T20	1100	1147
W2015FA-1P-C5Z20	W2015FA-2-C5T20	1400	1447

- Remarks:
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. NSK grease LR3 is recommended. The amount for replenishing should be about 50% of the nut internal space capacity. Refer to Page D16 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.



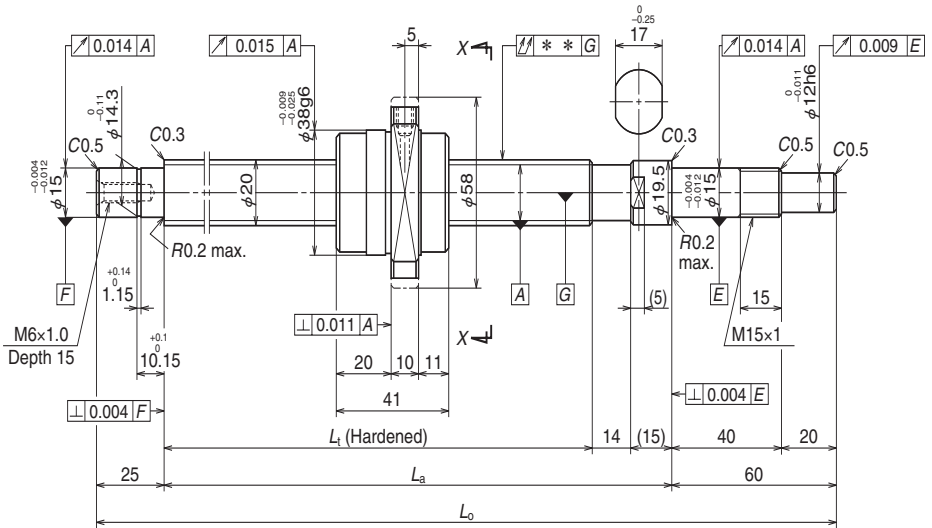
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Recommended support unit	For drive side	For opposite to drive side
WBK15-01A (square)	○	
WBK15S-01 (square)		○
WBK15-11 (round)	○	

Ball screw specifications			
Product classification	Preloaded	Precise clearance	
Shaft dia. x Lead / Direction of turn	20×20/Right		
Preload / Ball recirculation	P preload / Return tube		
Ball dia. / Ball circle dia.	3.969/21		
Screw shaft root diameter	16.9		
Effective turns of balls	1.5×1		
Accuracy grade / Preload / Axial play	C5/Z	C5/T	
Basic load rating (N)	Dynamic C_a	6250	8190
	Static C_{0a}	8760	13100
Axial play	0	0.005 or less	
Preload (N)	196	—	
Dynamic friction torque, (N·cm)	2.0 – 11.8	2.9 or less	
Spacer ball	Yes	None	
Factory packed grease	NSK grease LR3		
Internal spatial volume of nut (cm ³)	4.2		
Standard volume of grease replenishing (cm ³)	2.1		

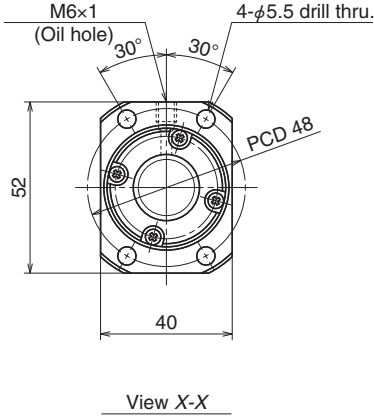
Unit: mm

Screw shaft length			Lead accuracy			Shaft run-out ** ↗↘	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
L_t	L_a	L_o	T	e_p	v_u			Supporting condition	
								Fixed - Simple support	Fixed - Fixed
310	335	420	0	0.023	0.018	0.040	1.6	3000	3000
410	435	520	0	0.027	0.020	0.050	1.8	3000	3000
510	535	620	0	0.030	0.023	0.050	2.0	3000	3000
610	635	720	0	0.030	0.023	0.065	2.3	3000	3000
710	735	820	0	0.035	0.025	0.085	2.5	3000	3000
810	835	920	0	0.040	0.027	0.085	2.7	3000	3000
910	935	1020	0	0.040	0.027	0.110	3.0	3000	3000
1010	1035	1120	0	0.046	0.030	0.110	3.2	2590	3000
1110	1135	1220	0	0.046	0.030	0.110	3.4	2140	2970
1210	1235	1320	0	0.046	0.030	0.150	3.7	1790	2500
1510	1535	1620	0	0.054	0.035	0.180	4.4	1140	1610



Ball screw No.		Stroke	
		Nominal	Maximum (L_t —Nut length)
Preloaded (UPFC)	Precise clearance (USFC)		
W2005FA-5PGX-C5Z40	W2005FA-6GX-C5T40	400	465
W2007FA-5PGX-C5Z40	W2007FA-6GX-C5T40	600	665
W2009FA-5PGX-C5Z40	W2009FA-6GX-C5T40	800	865
W2011FA-5PGX-C5Z40	W2011FA-6GX-C5T40	1000	1065
W2013FA-1PGX-C5Z40	W2013FA-2GX-C5T40	1200	1265
W2017FA-1PGX-C5Z40	W2017FA-2GX-C5T40	1600	1665

- Remarks:
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. NSK grease LR3 is recommended. The amount for replenishing should be about 50% of the nut internal space capacity. Refer to Page D16 for details.
 3. Nut does not have a seal.
 4. Contact NSK if permissible rotational speed is to be exceeded.

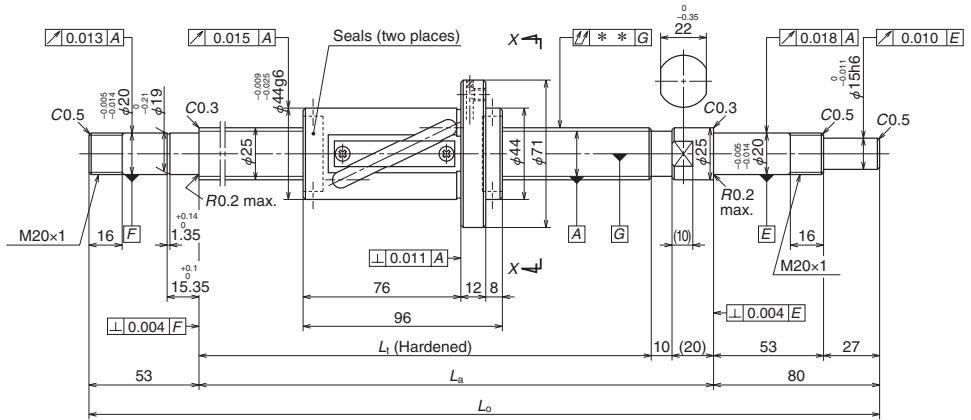


Ball screw specifications		
Product classification	Preloaded	Precise clearance
Shaft dia. x Lead / Direction of turn	20×40/Right	
Preload / Ball recirculation	P preload / End cap	
Ball dia. / Ball circle dia.	3.175/20.75	
Screw shaft root diameter	17.4	
Effective turns of balls	0.7×2	
Accuracy grade / Preload / Axial play	C5/Z	C5/T
Basic load rating (N)	Dynamic C_a	4870
	Static C_{0a}	8420
Axial play	0	0.005 or less
Preload (N)	148	—
Dynamic friction torque, (N·cm)	2.0 – 11.8	2.9 or less
Spacer ball	None	
Factory packed grease	NSK grease LR3	
Internal spatial volume of nut (cm ³)	2.8	
Standard volume of grease replenishing (cm ³)	1.4	

Recommended support unit	For drive side	For opposite to drive side
WBK15-01A (square)	○	
WBK15S-01 (square)		○
WBK15-11 (round)	○	

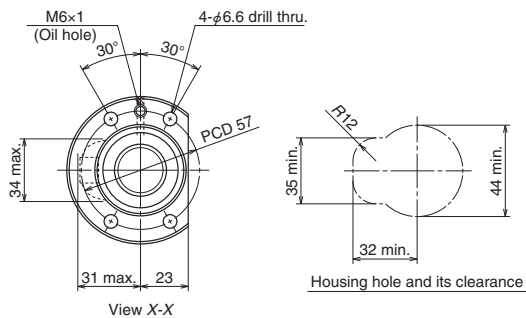
Unit: mm

Screw shaft length			Lead accuracy			Shaft run-out ** ↕	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
L_t	L_a	L_o	T	e_p	v_u			Supporting condition	
								Fixed - Simple support	Fixed - Fixed
506	535	620	0	0.030	0.023	0.050	1.7	3000	3000
706	735	820	0	0.035	0.025	0.085	2.2	3000	3000
906	935	1020	0	0.040	0.027	0.110	2.7	3000	3000
1106	1135	1220	0	0.046	0.030	0.110	3.1	2170	3000
1306	1335	1420	0	0.054	0.035	0.150	3.6	1550	2160
1706	1735	1820	0	0.065	0.040	0.230	4.6	910	1270



Ball screw No.		Stroke	
		Nominal	Maximum (L_r —Nut length)
Preloaded (LPFT)	Precise clearance (LSFT)		
W2507FA-1P-C5Z20	W2507FA-2-C5T20	600	654
W2509FA-1P-C5Z20	W2509FA-2-C5T20	800	854
W2511FA-1P-C5Z20	W2511FA-2-C5T20	1000	1054
W2513FA-1P-C5Z20	W2513FA-2-C5T20	1200	1254
W2515FA-1P-C5Z20	W2515FA-2-C5T20	1400	1454
W2517FA-1P-C5Z20	W2517FA-2-C5T20	1600	1654
W2521FA-1P-C5Z20	W2521FA-2-C5T20	2000	2054

- Remarks:
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. NSK grease LR3 is recommended. The amount for replenishing should be about 50% of the nut internal space capacity. Refer to Page D16 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.

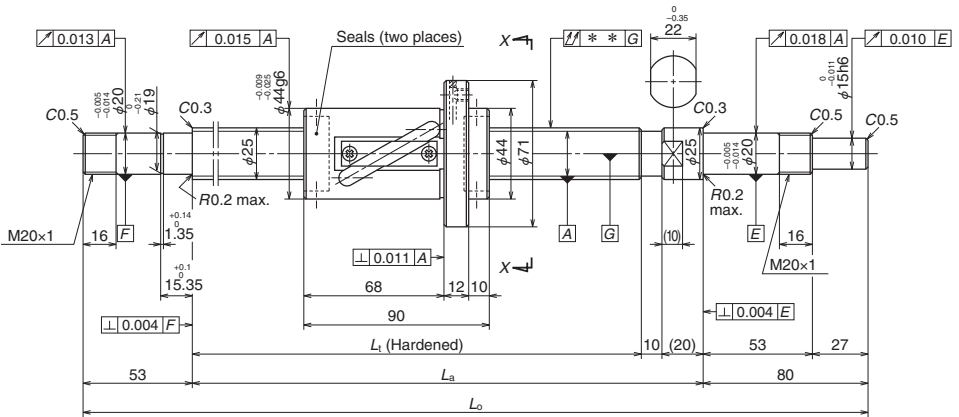


Recommended support unit	For drive side	For opposite to drive side
WBK20-01 (square)	○	○
WBK20S-01 (square)		○
WBK20-11 (round)	○	○

Ball screw specifications			
Product classification		Preloaded	Precise clearance
Shaft dia. x Lead / Direction of turn		25×20/Right	
Preload / Ball recirculation		P preload / Return tube	
Ball dia. / Ball circle dia.		4.762/26.25	
Screw shaft root diameter		21.3	
Effective turns of balls		2.5×1	
Accuracy grade / Preload / Axial play		C5/Z	C5/T
Basic load rating (N)	Dynamic C _a	11700	18600
	Static C _{0a}	16300	32600
Axial play		0	0.005 or less
Preload (N)		343	—
Dynamic friction torque, (N·cm)		3.9 – 24.5	4.9 or less
Spacer ball		Yes	None
Factory packed grease		NSK grease LR3	
Internal spatial volume of nut (cm ³)		12	
Standard volume of grease replenishing (cm ³)		6	

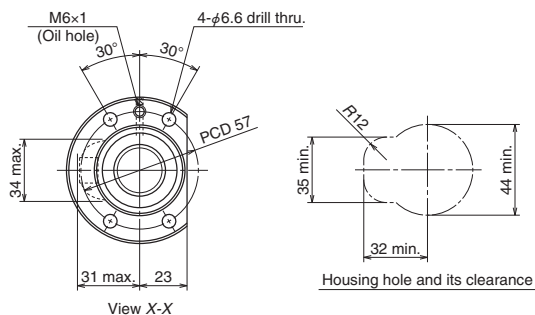
Unit: mm

Screw shaft length			Lead accuracy			Shaft run-out ** ↗	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
L _t	L _a	L _o	T	e _p	v _u			Supporting condition	
								Fixed - Simple support	Fixed - Fixed
750	780	913	0	0.035	0.025	0.055	4.0	2800	2800
950	980	1113	0	0.040	0.027	0.070	4.7	2800	2800
1150	1180	1313	0	0.046	0.030	0.090	5.4	2560	2800
1350	1380	1513	0	0.054	0.035	0.090	6.2	1840	2550
1550	1580	1713	0	0.054	0.035	0.120	6.9	1390	1940
1750	1780	1913	0	0.065	0.040	0.120	7.6	1080	1520
2150	2180	2313	0	0.077	0.046	0.160	9.1	710	1000



Ball screw No.		Stroke	
		Nominal	Maximum (L_t —Nut length)
Preloaded (LPFT)	Precise clearance (LSFT)		
W2507FA-3P-C5Z25	W2507FA-4-C5T25	600	660
W2509FA-3P-C5Z25	W2509FA-4-C5T25	800	860
W2511FA-3P-C5Z25	W2511FA-4-C5T25	1000	1060
W2513FA-3P-C5Z25	W2513FA-4-C5T25	1200	1260
W2515FA-3P-C5Z25	W2515FA-4-C5T25	1400	1460
W2517FA-3P-C5Z25	W2517FA-4-C5T25	1600	1660
W2521FA-3P-C5Z25	W2521FA-4-C5T25	2000	2060

- Remarks:
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. NSK grease LR3 is recommended. The amount for replenishing should be about 50% of the nut internal space capacity. Refer to Page D16 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.



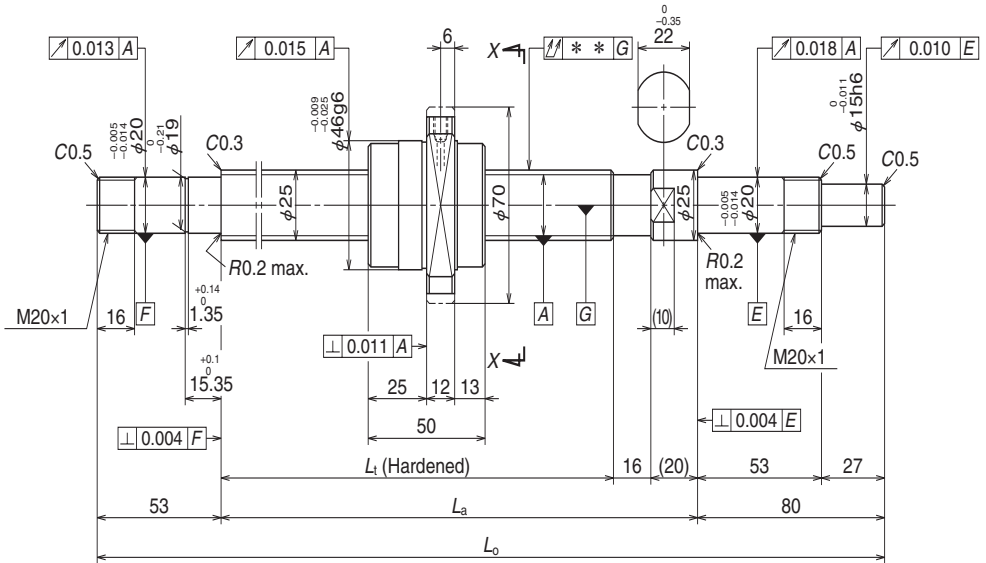
Recommended support unit	For drive side	For opposite to drive side
WBK20-01 (square)	○	○
WBK20S-01 (square)		○
WBK20-11 (round)	○	○

Ball screw specifications

Product classification		Preloaded	Precise clearance
Shaft dia. x Lead / Direction of turn		25×25/Right	
Preload / Ball recirculation		P preload / Return tube	
Ball dia. / Ball circle dia.		4.762/26.25	
Screw shaft root diameter		21.3	
Effective turns of balls		1.5×1	
Accuracy grade / Preload / Axial play		C5/Z	C5/T
Basic load rating (N)	Dynamic C_a	8970	11700
	Static C_{0a}	13100	19700
Axial play		0	0.005 or less
Preload (N)		294	—
Dynamic friction torque, (N·cm)		3.9–24.5	4.9
Spacer ball		Yes	None
Factory packed grease		NSK grease LR3	
Internal spatial volume of nut (cm ³)		7.5	
Standard volume of grease replenishing (cm ³)		3.8	

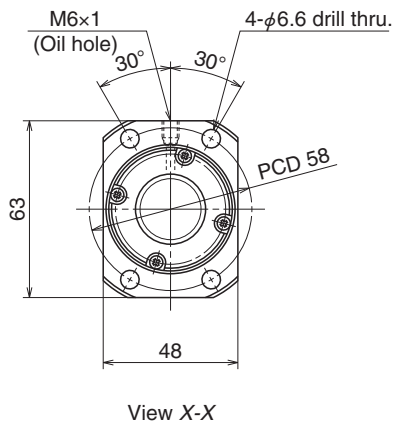
Unit: mm

Screw shaft length			Lead accuracy			Shaft run-out **	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
L_t	L_a	L_o	T	e_p	v_u			Supporting condition	
							Fixed - Simple support		Fixed - Fixed
750	780	913	0	0.035	0.025	0.055	4.0	2800	2800
950	980	1113	0	0.040	0.027	0.070	4.7	2800	2800
1150	1180	1313	0	0.046	0.030	0.090	5.4	2540	2800
1350	1380	1513	0	0.054	0.035	0.090	6.2	1830	2540
1550	1580	1713	0	0.054	0.035	0.120	7.0	1380	1930
1750	1780	1913	0	0.065	0.040	0.120	7.7	1080	1510
2150	2180	2313	0	0.077	0.046	0.160	9.1	710	1000



Ball screw No.		Stroke	
		Nominal	Maximum (L_t —Nut length)
Preloaded (UPFC)	Precise clearance (USFC)		
W2508FA-1PGX-C5Z50	W2508FA-2GX-C5T50	700	794
W2511FA-5PGX-C5Z50	W2511FA-6GX-C5T50	1000	1094
W2516FA-1PGX-C5Z50	W2516FA-2GX-C5T50	1500	1594
W2521FA-5PGX-C5Z50	W2521FA-6GX-C5T50	2000	2094

- Remarks:
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. NSK grease LR3 is recommended. The amount for replenishing should be about 50% of the nut internal space capacity. Refer to Page D16 for details.
 3. Nut does not have a seal.
 4. Contact NSK if permissible rotational speed is to be exceeded.



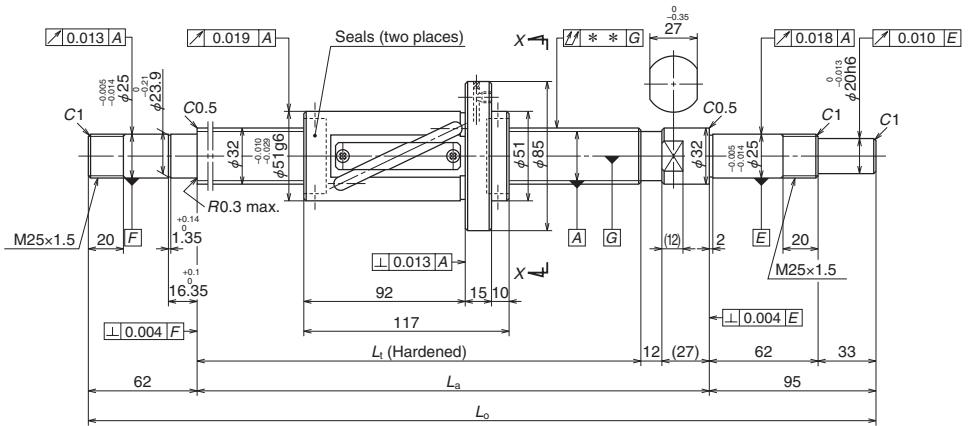
Ball screw specifications

Product classification		Preloaded	Precise clearance
Shaft dia. x Lead / Direction of turn		25×50/Right	
Preload / Ball recirculation		P preload / End cap	
Ball dia. / Ball circle dia.		3.969/26	
Screw shaft root diameter		21.9	
Effective turns of balls		0.7×2	
Accuracy grade / Preload / Axial play		C5/Z	C5/T
Basic load rating (N)	Dynamic C_d	7280	
	Static C_0	13200	
Axial play		0	0.005 or less
Preload (N)		196	—
Dynamic friction torque, (N-cm)		2.9 – 21.5	4.9 or less
Spacer ball		None	
Factory packed grease		NSK grease LR3	
Internal spatial volume of nut (cm ³)		4.2	
Standard volume of grease replenishing (cm ³)		2.1	

Recommended support unit		For drive side	For opposite to drive side
WBK20-01	(square)	○	○
WBK20S-01	(square)		○
WBK20-11	(round)	○	○

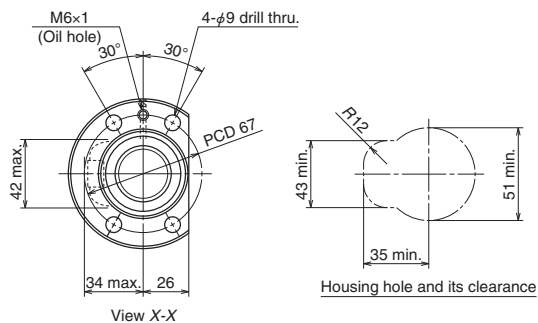
Unit: mm

Screw shaft length			Lead accuracy			Shaft run-out ** ↗	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
L_t	L_a	L_o	T	e_p	v_u			Supporting condition	
								Fixed - Simple support	Fixed - Fixed
844	880	1013	0	0.040	0.027	0.070	4.1	2800	2800
1144	1180	1313	0	0.046	0.030	0.090	5.3	2550	2800
1644	1680	1813	0	0.065	0.040	0.120	7.2	1230	1710
2144	2180	2313	0	0.077	0.046	0.160	9.1	720	1010



Ball screw No.		Stroke	
		Nominal	Maximum (L_t —Nut length)
Preloaded (LPFT)	Precise clearance (LSFT)		
W3211FA-1P-C5Z25	W3211FA-2-C5T25	1000	1063
W3216FA-1P-C5Z25	W3216FA-2-C5T25	1500	1563
W3221FA-1P-C5Z25	W3221FA-2-C5T25	2000	2063
W3227FA-1P-C5Z25	W3227FA-2-C5T25	2600	2663

- Remarks
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. NSK grease LR3 is recommended. The amount for replenishing should be about 50% of the nut internal space capacity. Refer to Page D16 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.

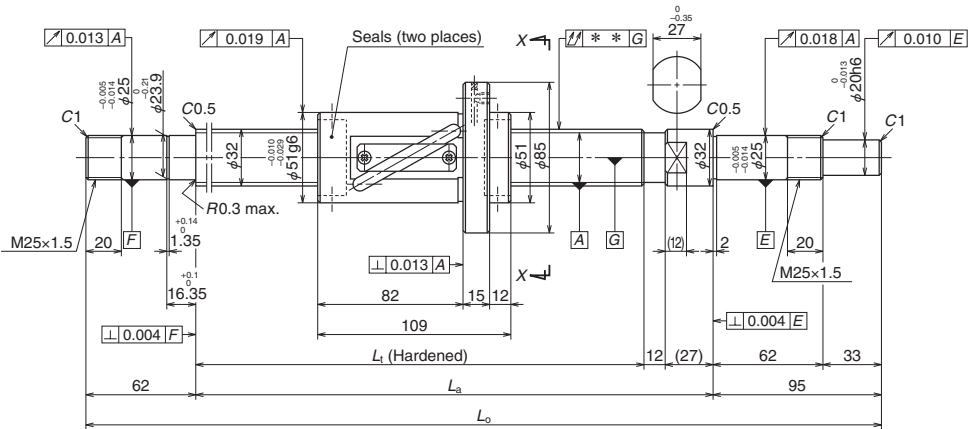


Ball screw specifications			
Product classification	Preloaded	Precise clearance	
Shaft dia. x Lead / Direction of turn	32×25/Right		
Preload / Ball recirculation	P preload / Return tube		
Ball dia. / Ball circle dia.	4.762/33.25		
Screw shaft root diameter	28.3		
Effective turns of balls	2.5×1		
Accuracy grade / Preload / Axial play	C5/Z	C5/T	
Basic load rating (N)	Dynamic C_a	12900	20400
	Static C_{0a}	21100	42200
Axial play	0	0.005 or less	
Preload (N)	441	—	
Dynamic friction torque, (N·cm)	6.8 – 31.5	7.8 or less	
Spacer ball	Yes	None	
Factory packed grease	NSK grease LR3		
Internal spatial volume of nut (cm ³)	17.5		
Standard volume of grease replenishing (cm ³)	8.8		

Recommended support unit		For drive side	For opposite to drive side
WBK25-01	(square)	○	○
WBK25S-01	(square)		○
WBK25-11	(round)	○	○

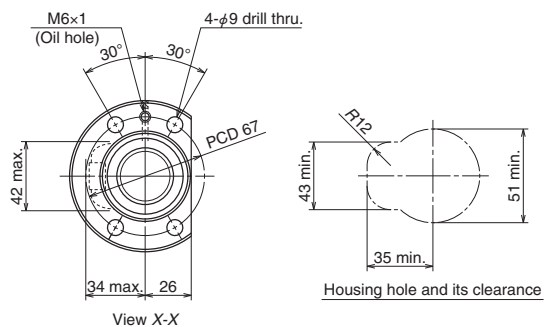
Unit: mm

Screw shaft length			Lead accuracy			Shaft run-out ** ↕	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
L_t	L_a	L_o	T	e_p	v_u			Supporting condition	
								Fixed - Simple support	Fixed - Fixed
1180	1219	1376	0	0.046	0.030	0.090	9.3	2180	2180
1680	1719	1876	0	0.065	0.040	0.120	12.3	1580	2180
2180	2219	2376	0	0.077	0.046	0.160	15.4	930	1300
2780	2819	2976	0	0.093	0.054	0.200	19.1	560	800



Ball screw No.		Stroke	
		Nominal	Maximum (L_t —Nut length)
Preloaded (LPFT)	Precise clearance (LSFT)		
W3211FA-3P-C5Z32	W3211FA-4-C5T32	1000	1071
W3216FA-3P-C5Z32	W3216FA-4-C5T32	1500	1571
W3221FA-3P-C5Z32	W3221FA-4-C5T32	2000	2071
W3227FA-3P-C5Z32	W3227FA-4-C5T32	2600	2671

- Remarks
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. NSK grease LR3 is recommended. The amount for replenishing should be about 50% of the nut internal space capacity. Refer to Page D16 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.



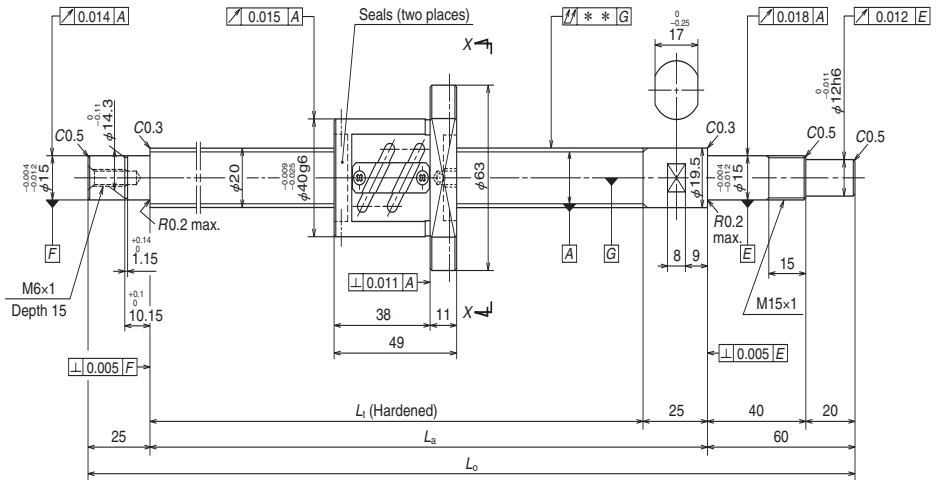
Ball screw specifications

Product classification		Preloaded	Precise clearance
Shaft dia. x Lead / Direction of turn		32×32/Right	
Preload / Ball recirculation		P preload / Return tube	
Ball dia. / Ball circle dia.		4.762/33.25	
Screw shaft root diameter		28.3	
Effective turns of balls		1.5×1	
Accuracy grade / Preload / Axial play		C5/Z	C5/T
Basic load rating (N)	Dynamic C_a	10100	13300
	Static C_{0a}	16800	25200
Axial play		0	0.005 or less
Preload (N)		392	—
Dynamic friction torque, (N·cm)		6.9–31.5	7.8 or less
Spacer ball		Yes	None
Factory packed grease		NSK grease LR3	
Internal spatial volume of nut (cm ³)		14	
Standard volume of grease replenishing (cm ³)		7	

Recommended support unit		For drive side	For opposite to drive side
WBK25-01	(square)	○	○
WBK25S-01	(square)		○
WBK25-11	(round)	○	○

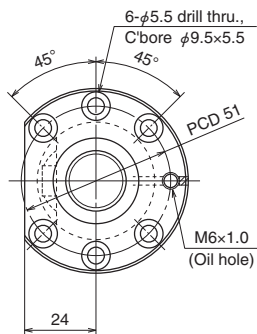
Unit: mm

Screw shaft length			Lead accuracy			Shaft run-out ** ↕	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
L_t	L_a	L_o	T	e_p	v_u			Supporting condition	
								Fixed - Simple support	Fixed - Fixed
1180	1219	1376	0	0.046	0.030	0.090	9.3	2180	2180
1680	1719	1876	0	0.065	0.040	0.120	12.3	1570	2180
2180	2219	2376	0	0.077	0.046	0.160	15.4	920	1290
2780	2819	2976	0	0.093	0.054	0.200	19.1	560	790



Ball screw No.	Stroke		Screw shaft length		
	Nominal	Maximum (L_1 —Nut length)	L_1	L_a	L_o
W2002SA-1P-C5Z4	150	176	225	250	335
W2002SA-2P-C5Z4	200	226	275	300	385
W2003SA-1P-C5Z4	300	326	375	400	485
W2004SA-1P-C5Z4	400	426	475	500	585
W2005SA-1P-C5Z4	500	526	575	600	685
W2006SA-1P-C5Z4	600	626	675	700	785

- Remarks
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. **Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use.** Refer to Page D13 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.



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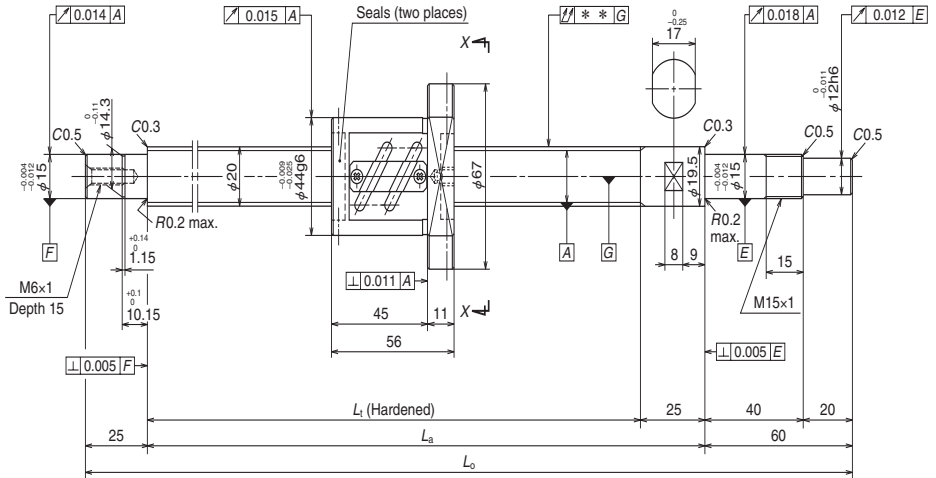
Ball screw specifications

Shaft dia. x Lead / Direction of turn		20x4/Right
Preload / Ball recirculation		P preload / Return tube
Ball dia. / Ball circle dia.		2.381/20.3
Effective turns of balls		2.5x2
Screw shaft root diameter		17.8
Accuracy grade / Preload		C5/Z
Basic load rating (N)	Dynamic C_d	6550
	Static C_{0a}	10900
Preload (N)		294
Dynamic friction torque, median, (N·cm)		3.9
Spacer ball		Yes
Factory packed grease		Refer to Remarks 2.
Internal spatial volume of nut (cm ³)		2.7
Standard volume of grease replenishing (cm ³)		1.4

Recommended support unit	For drive side	For opposite to drive side
WBK15-01A (square)	○	
WBK15S-01 (square)		○
WBK15-11 (round)	○	

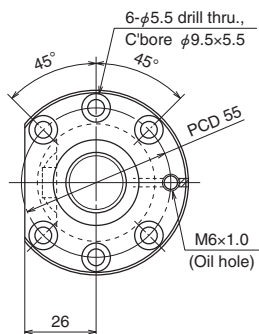
Unit: mm

Lead accuracy			Shaft run-out ** ∟	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
T	e_p	v_u			Supporting condition	
					Fixed - Simple support	Fixed - Fixed
-0.005	0.023	0.018	0.045	1.1	3000	3000
-0.007	0.023	0.018	0.045	1.2	3000	3000
-0.009	0.025	0.020	0.055	1.5	3000	3000
-0.011	0.027	0.020	0.070	1.7	3000	3000
-0.014	0.030	0.023	0.085	1.9	3000	3000
-0.016	0.035	0.025	0.085	2.1	3000	3000



Ball screw No.	Stroke		Screw shaft length		
	Nominal	Maximum (L_t —Nut length)	L_t	L_a	L_o
W2002SA-3P-C5Z5	150	169	225	250	335
W2002SA-4P-C5Z5	200	219	275	300	385
W2003SA-2P-C5Z5	300	319	375	400	485
W2004SA-2P-C5Z5	400	419	475	500	585
W2005SA-2P-C5Z5	500	519	575	600	685
W2007SA-1P-C5Z5	700	719	775	800	885

- Remarks
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. **Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use.** Refer to Page D13 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.



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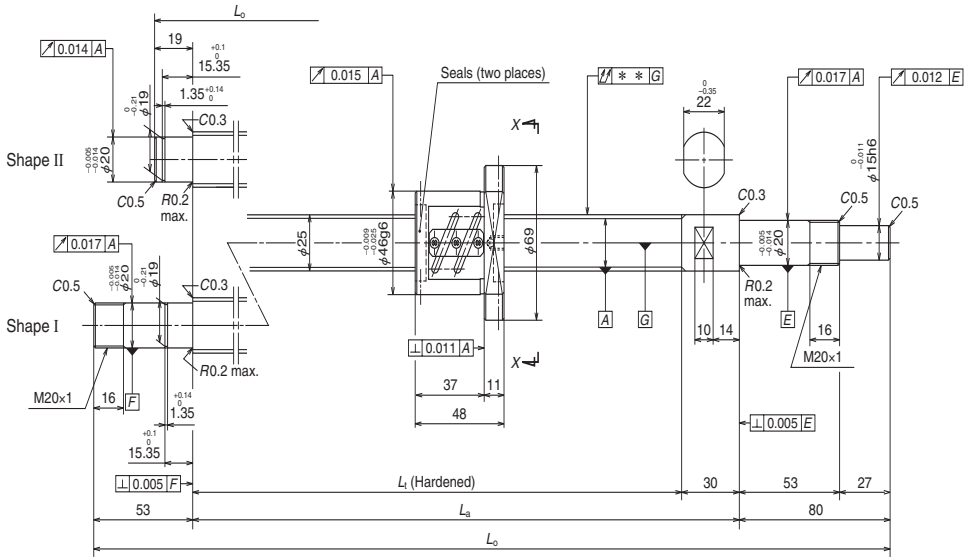
Ball screw specifications

Shaft dia. x Lead / Direction of turn		20x5/Right
Preload / Ball recirculation		P preload / Return tube
Ball dia. / Ball circle dia.		3.175/20.5
Screw shaft root diameter		17.2
Effective turns of balls		2.5x2
Accuracy grade / Preload		C5/Z
Basic load rating (N)	Dynamic C_a	11100
	Static C_{0a}	17100
Preload (N)		490
Dynamic friction torque, median, (N·cm)		7.8
Spacer ball		Yes
Factory packed grease		Refer to Remarks 2.
Internal spatial volume of nut (cm ³)		4.3
Standard volume of grease replenishing (cm ³)		2.2

Recommended support unit	For drive side	For opposite to drive side
WBK15-01A (square)	○	
WBK15S-01 (square)		○
WBK15-11 (round)	○	

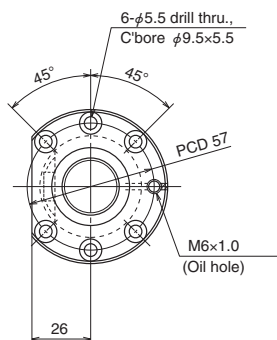
Unit: mm

Lead accuracy			Shaft run-out ** ↗	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
T	e _p	v _u			Supporting condition	
					Fixed - Simple support	Fixed - Fixed
-0.005	0.023	0.018	0.045	1.3	3000	3000
-0.007	0.023	0.018	0.045	1.4	3000	3000
-0.009	0.025	0.020	0.055	1.6	3000	3000
-0.011	0.027	0.020	0.070	1.8	3000	3000
-0.014	0.030	0.023	0.085	2.0	3000	3000
-0.019	0.035	0.025	0.110	2.5	3000	3000



Ball screw No.	Stroke		Screw shaft length		
	Nominal	Maximum (L_t —Nut length)	L_t	L_a	L_o
W2502SA-1P-C5Z4	150	172	220	250	349
W2502SA-2P-C5Z4	200	222	270	300	399
W2503SA-1P-C5Z4	300	322	370	400	499
W2504SA-1P-C5Z4	400	422	470	500	599
W2505SA-1P-C5Z4	500	522	570	600	733
W2507SA-1P-C5Z4	700	722	770	800	933

- Remarks
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. **Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use.** Refer to Page D13 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.



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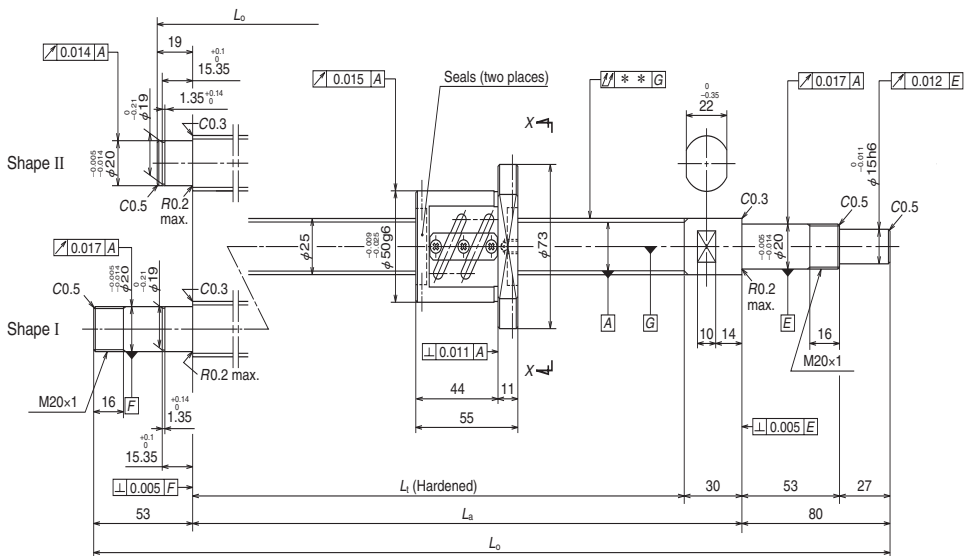
Ball screw specifications

Shaft dia. x Lead / Direction of turn		25×4/Right
Preload / Ball recirculation		P preload / Return tube
Ball dia. / Ball circle dia.		2.381/25.3
Screw shaft root diameter		22.8
Effective turns of balls		2.5×2
Accuracy grade / Preload		C5/Z
Basic load rating (N)	Dynamic C_a	7110
	Static C_{0a}	13600
Preload (N)		290
Dynamic friction torque, median, (N·cm)		4.9
Spacer ball		Yes
Factory packed grease		Refer to Remarks 2.
Internal spatial volume of nut (cm ³)		3.2
Standard volume of grease replenishing (cm ³)		1.6

Recommended support unit	For drive side		For opposite to drive side	
	For drive side	For opposite to drive side	For drive side	For opposite to drive side
WBK20-01 (square)	○	○	○	○
WBK20S-01 (square)			○	○
WBK20-11 (round)	○	○	○	○

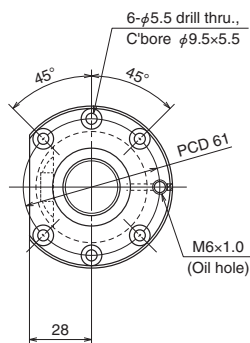
Unit: mm

Left side shaft end	Lead accuracy			Shaft run-out ** ↕	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
	T	e _p	v _u			Supporting condition	
						Fixed - Simple support	Fixed - Fixed
II	-0.005	0.023	0.018	0.035	1.6	2800	—
II	-0.006	0.023	0.018	0.035	1.8	2800	—
II	-0.009	0.025	0.020	0.040	2.2	2800	—
II	-0.011	0.027	0.020	0.050	2.5	2800	—
I	-0.014	0.030	0.023	0.060	3.0	2800	2800
I	-0.018	0.035	0.025	0.075	3.7	2800	2800



Ball screw No.	Stroke		Screw shaft length		
	Nominal	Maximum (L_t —Nut length)	L_t	L_a	L_o
W2502SA-3P-C5Z5	150	165	220	250	349
W2502SA-4P-C5Z5	200	215	270	300	399
W2503SA-2P-C5Z5	300	315	370	400	499
W2504SA-2P-C5Z5	400	415	470	500	599
W2505SA-2P-C5Z5	500	515	570	600	733
W2506SA-1P-C5Z5	600	615	670	700	833
W2507SA-2P-C5Z5	700	715	770	800	933
W2509SA-1P-C5Z5	900	915	970	1000	1133
W2511SA-1P-C5Z5	1000	1115	1170	1200	1333

- Remarks
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. **Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use.** Refer to Page D13 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.



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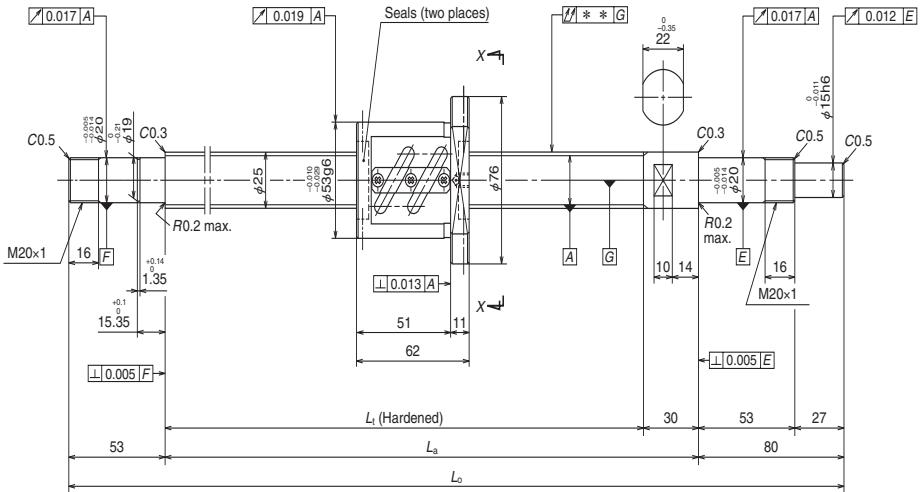
Ball screw specifications

Shaft dia. x Lead / Direction of turn		25x5/Right
Preload / Ball recirculation		P preload / Return tube
Ball dia. / Ball circle dia.		3.175/25.5
Screw shaft root diameter		22.2
Effective turns of balls		2.5x2
Accuracy grade / Preload		C5/Z
Basic load rating (N)	Dynamic C_a	12300
	Static C_{0a}	21800
Preload (N)		540
Dynamic friction torque, median, (N·cm)		8.8
Spacer ball		Yes
Factory packed grease		Refer to Remarks 2.
Internal spatial volume of nut (cm ³)		5.0
Standard volume of grease replenishing (cm ³)		2.5

Recommended support unit	For drive side		For opposite to drive side	
	For drive side	For opposite to drive side	For drive side	For opposite to drive side
WBK20-01 (square)	○	○	○	○
WBK20S-01 (square)			○	○
WBK20-11 (round)	○	○	○	○

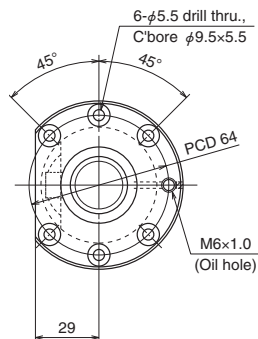
Unit: mm

Left side shaft end	Lead accuracy			Shaft run-out ** ↑↑	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
	T	e _p	v _u			Supporting condition	
						Fixed - Simple support	Fixed - Fixed
II	-0.005	0.023	0.018	0.035	1.8	2800	—
II	-0.006	0.023	0.018	0.035	2.0	2800	—
II	-0.009	0.025	0.020	0.040	2.3	2800	—
II	-0.011	0.027	0.020	0.050	2.7	2800	—
I	-0.014	0.030	0.023	0.060	3.1	2800	2800
I	-0.016	0.035	0.025	0.075	3.4	2800	2800
I	-0.018	0.035	0.025	0.075	3.8	2800	2800
I	-0.023	0.040	0.027	0.090	4.5	2800	2800
I	-0.028	0.046	0.030	0.120	5.2	2480	2800



Ball screw No.	Stroke		Screw shaft length		
	Nominal	Maximum (L_t —Nut length)	L_t	L_a	L_o
W2503SA-3P-C5Z6	250	308	370	400	533
W2505SA-3P-C5Z6	450	508	570	600	733
W2507SA-3P-C5Z6	650	708	770	800	933
W2511SA-2P-C5Z6	1050	1108	1170	1200	1333

- Remarks
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. **Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use.** Refer to Page D13 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.



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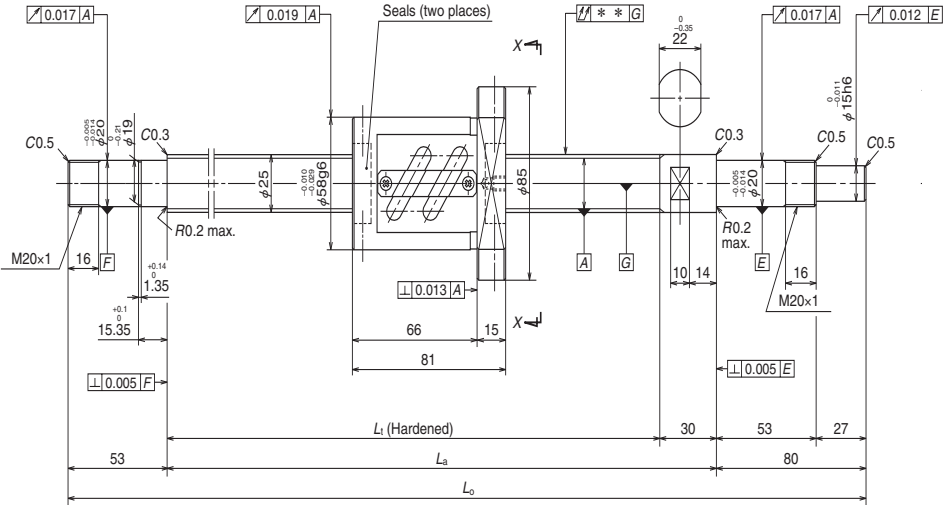
Ball screw specifications

Shaft dia. x Lead / Direction of turn		25x6/Right
Preload / Ball recirculation		P preload / Return tube
Ball dia. / Ball circle dia.		3.969/25.5
Screw shaft root diameter		21.4
Effective turns of balls		2.5×2
Accuracy grade / Preload		C5/Z
Basic load rating (N)	Dynamic C_a	16600
	Static C_{0a}	26700
Preload (N)		685
Dynamic friction torque, median, (N·cm)		13.8
Spacer ball		Yes
Factory packed grease		Refer to Remarks 2.
Internal spatial volume of nut (cm ³)		7.0
Standard volume of grease replenishing (cm ³)		3.5

Recommended support unit		For drive side	For opposite to drive side
WBK20-01	(square)	○	○
WBK20S-01	(square)		○
WBK20-11	(round)	○	○

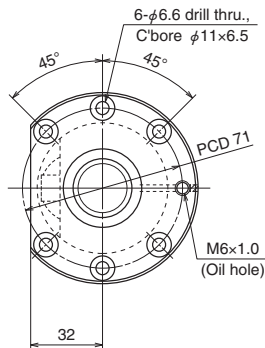
Unit: mm

Lead accuracy			Shaft run-out ** $\uparrow\downarrow$	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
T	e_p	v_u			Supporting condition	
			Fixed - Simple support	Fixed - Fixed		
-0.009	0.025	0.020	0.050	2.5	2800	2800
-0.014	0.030	0.023	0.060	3.2	2800	2800
-0.018	0.035	0.025	0.075	3.9	2800	2800
-0.028	0.046	0.030	0.120	5.2	2410	2800



Ball screw No.	Stroke		Screw shaft length		
	Nominal	Maximum (L_t —Nut length)	L_t	L_a	L_o
W2503SA-4P-C5Z10	250	289	370	400	533
W2505SA-4P-C5Z10	450	489	570	600	733
W2507SA-4P-C5Z10	650	689	770	800	933
W2509SA-2P-C5Z10	850	889	970	1000	1133
W2511SA-3P-C5Z10	1050	1089	1170	1200	1333
W2514SA-1P-C5Z10	1350	1389	1470	1500	1633

- Remarks
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. **Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use.** Refer to Page D13 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.



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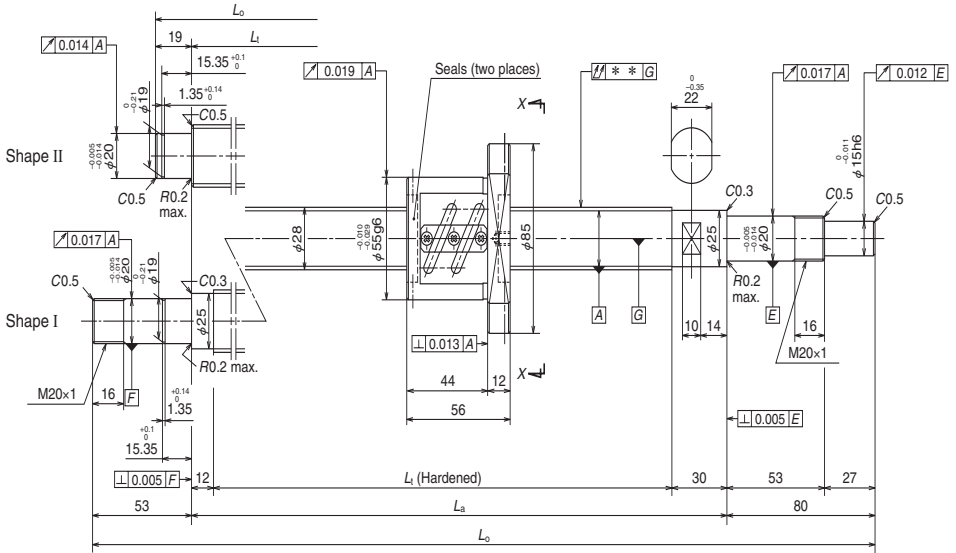
Ball screw specifications

Shaft dia. x Lead / Direction of turn		25×10/Right
Preload / Ball recirculation		P preload / Return tube
Ball dia. / Ball circle dia.		4.762/25.5
Screw shaft root diameter		20.5
Effective turns of balls		1.5×2
Accuracy grade / Preload		C5/Z
Basic load rating (N)	Dynamic C_a	13600
	Static C_{0a}	18900
Preload (N)		585
Dynamic friction torque, median, (N·cm)		13.8
Spacer ball		Yes
Factory packed grease		Refer to Remarks 2.
Internal spatial volume of nut (cm ³)		9.5
Standard volume of grease replenishing (cm ³)		4.8

Recommended support unit	For drive side	For opposite to drive side	
		○	○
WBK20-01 (square)	○	○	○
WBK20S-01 (square)		○	○
WBK20-11 (round)	○	○	○

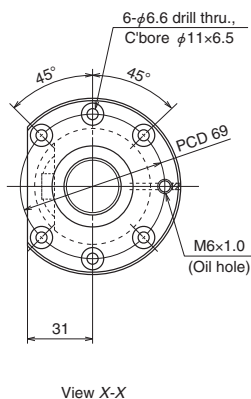
Unit: mm

Lead accuracy			Shaft run-out ** ↗	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
T	e _p	v _u			Supporting condition	
			Fixed - Simple support	Fixed - Fixed		
-0.009	0.025	0.020	0.050	3.2	2800	2800
-0.014	0.030	0.023	0.060	3.8	2800	2800
-0.018	0.035	0.025	0.075	4.5	2800	2800
-0.023	0.040	0.027	0.090	5.2	2800	2800
-0.028	0.046	0.030	0.120	5.9	2340	2800
-0.035	0.054	0.035	0.150	6.9	1470	2050



Ball screw No.	Stroke		Screw shaft length		
	Nominal	Maximum (L_t —Nut length)	L_t	L_a	L_o
W2802SA-1P-C5Z5	200	214	270	300	399
W2803SA-1P-C5Z5	300	314	370	400	499
W2804SA-1P-C5Z5	400	414	470	500	599
W2805SA-1P-C5Z5	450	502	558	600	733
W2807SA-1P-C5Z5	650	702	758	800	933
W2809SA-1P-C5Z5	850	902	958	1000	1133
W2811SA-1P-C5Z5	1050	1102	1158	1200	1333

- Remarks
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. **Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use.** Refer to Page D13 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.



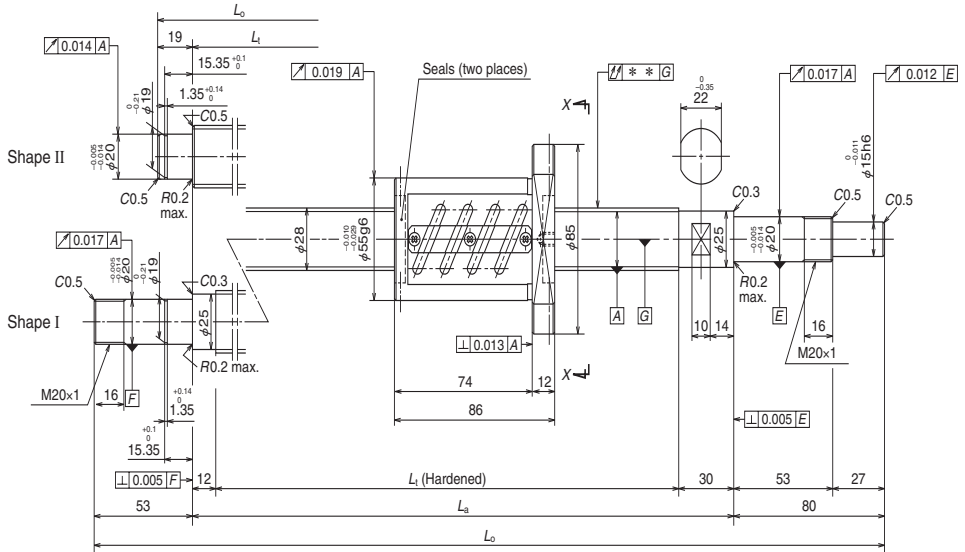
Ball screw specifications

Shaft dia. x Lead / Direction of turn		28x5/Right
Preload / Ball recirculation		P preload / Return tube
Ball dia. / Ball circle dia.		3.175/28.5
Screw shaft root diameter		25.2
Effective turns of balls		2.5x2
Accuracy grade / Preload		C5/Z
Basic load rating (N)	Dynamic C_a	13000
	Static C_{0a}	24400
Preload (N)		540
Dynamic friction torque, median, (N·cm)		9.8
Spacer ball		Yes
Factory packed grease		Refer to Remarks 2.
Internal spatial volume of nut (cm ³)		6.0
Standard volume of grease replenishing (cm ³)		3.0

Recommended support unit		For drive side	For opposite to drive side
WBK20-01	(square)	○	○
WBK20S-01	(square)		○
WBK20-11	(round)	○	○

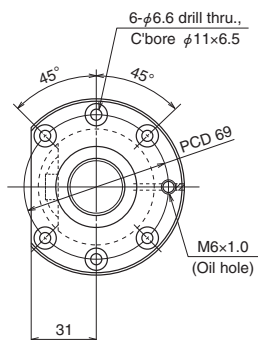
Unit: mm

Left side shaft end	Lead accuracy			Shaft run-out ** ↑↑	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
	T	e _p	v _u			Supporting condition	
						Fixed - Simple support	Fixed - Fixed
II	-0.006	0.023	0.018	0.035	2.5	2500	—
II	-0.009	0.025	0.020	0.040	2.9	2500	—
II	-0.011	0.027	0.020	0.050	3.3	2500	—
I	-0.014	0.030	0.023	0.060	3.8	2500	2500
I	-0.018	0.035	0.025	0.075	4.7	2500	2500
I	-0.024	0.040	0.027	0.090	5.6	2500	2500
I	-0.028	0.046	0.030	0.120	6.5	2500	2500



Ball screw No.	Stroke		Screw shaft length		
	Nominal	Maximum (L_t —Nut length)	L_t	L_a	L_o
W2802SA-2Z-C5Z5	150	184	270	300	399
W2803SA-2Z-C5Z5	250	284	370	400	499
W2804SA-2Z-C5Z5	350	384	470	500	599
W2805SA-2Z-C5Z5	450	472	558	600	733
W2807SA-2Z-C5Z5	650	672	758	800	933
W2809SA-2Z-C5Z5	850	872	958	1000	1133
W2811SA-2Z-C5Z5	1050	1072	1158	1200	1333

- Remarks
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. **Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use.** Refer to Page D13 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.



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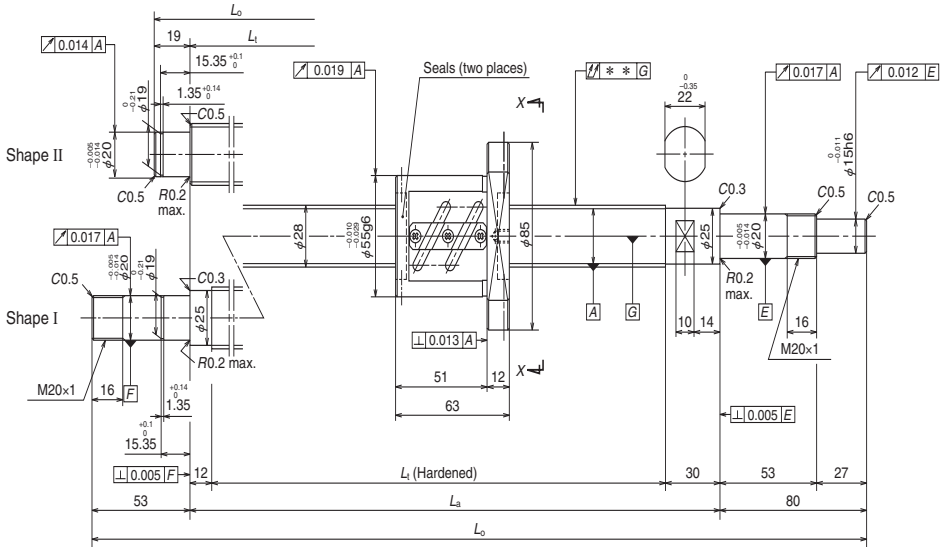
Ball screw specifications

Shaft dia. x Lead / Direction of turn		28x5/Right
Preload / Ball recirculation		Z preload / Return tube
Ball dia. / Ball circle dia.		3.175/28.5
Screw shaft root diameter		25.2
Effective turns of balls		2.5x2
Accuracy grade / Preload		C5/Z
Basic load rating (N)	Dynamic C_a	20600
	Static C_{0a}	48700
Preload (N)		1220
Dynamic friction torque, median, (N·cm)		21.5
Spacer ball		None
Factory packed grease		Refer to Remarks 2.
Internal spatial volume of nut (cm ³)		9.0
Standard volume of grease replenishing (cm ³)		4.5

Recommended support unit	For drive side		For opposite to drive side	
	For drive side	For opposite to drive side	For drive side	For opposite to drive side
WBK20-01 (square)	○	○	○	○
WBK20S-01 (square)			○	○
WBK20-11 (round)	○	○	○	○

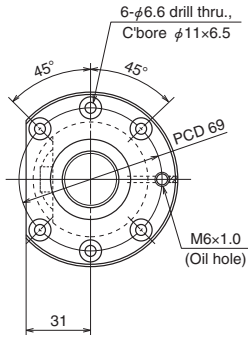
Unit: mm

Left side shaft end	Lead accuracy			Shaft run-out ** ↑↑	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
	T	e _p	v _u			Supporting condition	
						Fixed - Simple support	Fixed - Fixed
II	-0.006	0.023	0.018	0.035	2.8	2500	—
II	-0.009	0.025	0.020	0.040	3.2	2500	—
II	-0.011	0.027	0.020	0.050	3.7	2500	—
I	-0.013	0.030	0.023	0.060	4.2	2500	2500
I	-0.018	0.035	0.025	0.075	5.1	2500	2500
I	-0.023	0.040	0.027	0.090	5.9	2500	2500
I	-0.028	0.046	0.030	0.120	6.8	2500	2500



Ball screw No.	Stroke		Screw shaft length		
	Nominal	Maximum (L_t —Nut length)	L_t	L_a	L_o
W2803SA-3P-C5Z6	250	307	370	400	499
W2805SA-3P-C5Z6	450	507	570	600	699
W2807SA-3P-C5Z6	650	695	758	800	933
W2809SA-3P-C5Z6	850	895	958	1000	1133
W2811SA-3P-C5Z6	1050	1095	1158	1200	1333

- Remarks
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. **Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use.** Refer to Page D13 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.



View X-X

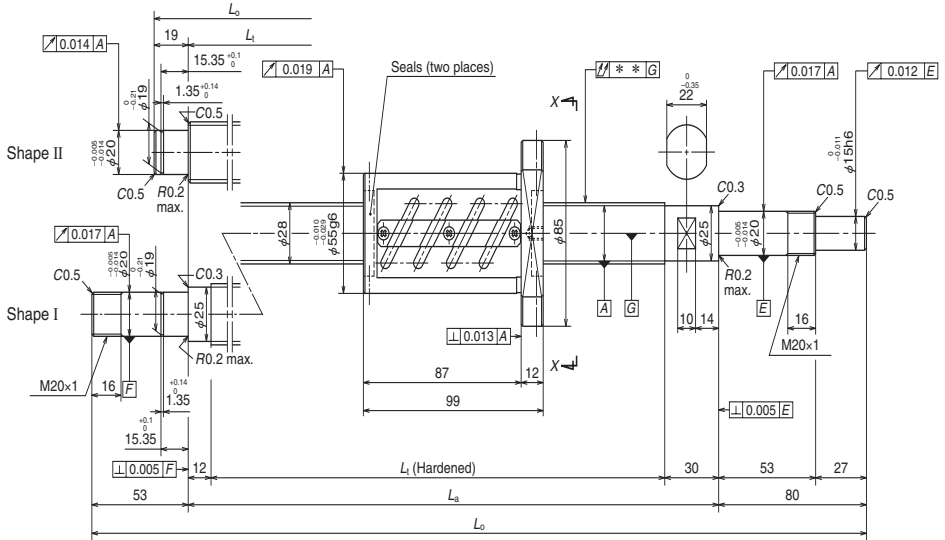
Ball screw specifications

Shaft dia. x Lead / Direction of turn		28x6/Right
Preload / Ball recirculation		P preload / Return tube
Ball dia. / Ball circle dia.		3.175/28.5
Screw shaft root diameter		25.2
Effective turns of balls		2.5x2
Accuracy grade / Preload		C5/Z
Basic load rating (N)	Dynamic C_a	12900
	Static C_{0a}	24300
Preload (N)		540
Dynamic friction torque, median, (N·cm)		11.8
Spacer ball		Yes
Factory packed grease		Refer to Remarks 2.
Internal spatial volume of nut (cm ³)		6.0
Standard volume of grease replenishing (cm ³)		3.0

Recommended support unit	For drive side		For opposite to drive side	
	For drive side	For opposite to drive side	For drive side	For opposite to drive side
WBK20-01 (square)	○	○	○	○
WBK20S-01 (square)			○	○
WBK20-11 (round)	○	○	○	○

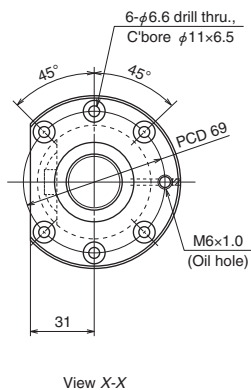
Unit: mm

Left side shaft end	Lead accuracy			Shaft run-out ** ↑↑	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
	T	e _p	v _u			Supporting condition	
						Fixed - Simple support	Fixed - Fixed
II	-0.009	0.025	0.020	0.040	3.0	2500	—
II	-0.014	0.030	0.023	0.060	3.9	2500	—
I	-0.018	0.035	0.025	0.075	4.9	2500	2500
I	-0.023	0.040	0.027	0.090	5.8	2500	2500
I	-0.028	0.046	0.030	0.120	6.6	2500	2500



Ball screw No.	Stroke		Screw shaft length		
	Nominal	Maximum (L_t —Nut length)	L_t	L_a	L_o
W2803SA-4Z-C5Z6	250	271	370	400	499
W2805SA-4Z-C5Z6	450	471	570	600	699
W2807SA-4Z-C5Z6	650	659	758	800	933
W2809SA-4Z-C5Z6	850	859	958	1000	1133
W2811SA-4Z-C5Z6	1050	1059	1158	1200	1333

- Remarks
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. **Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use.** Refer to Page D13 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.



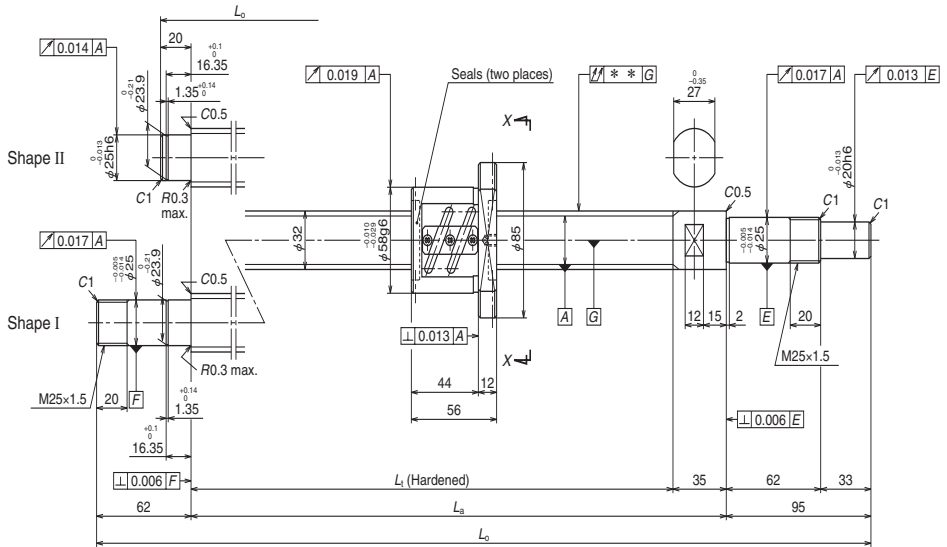
Ball screw specifications

Shaft dia. x Lead / Direction of turn		28x6/Right
Preload / Ball recirculation		Z preload / Return tube
Ball dia. / Ball circle dia.		3.175/28.5
Screw shaft root diameter		25.2
Effective turns of balls		2.5x2
Accuracy grade / Preload		C5/Z
Basic load rating (N)	Dynamic C_a	20600
	Static C_{0a}	48700
Preload (N)		1220
Dynamic friction torque, median, (N·cm)		23.5
Spacer ball		None
Factory packed grease		Refer to Remarks 2.
Internal spatial volume of nut (cm ³)		9.5
Standard volume of grease replenishing (cm ³)		4.8

Recommended support unit	For drive side	For opposite to drive side	
		○	○
WBK20-01 (square)	○	○	○
WBK20S-01 (square)	○	○	○
WBK20-11 (round)	○	○	○

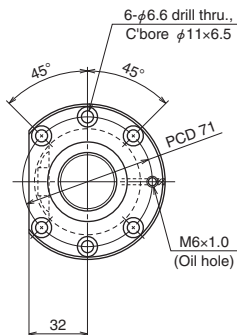
Unit: mm

Left side shaft end	Lead accuracy			Shaft run-out ** ↑↑	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
	T	e_p	v_u			Supporting condition	
						Fixed - Simple support	Fixed - Fixed
II	-0.009	0.025	0.020	0.040	3.4	2500	—
II	-0.014	0.030	0.023	0.060	4.3	2500	—
I	-0.018	0.035	0.025	0.075	5.3	2500	2500
I	-0.023	0.040	0.027	0.090	6.2	2500	2500
I	-0.028	0.046	0.030	0.120	7.1	2500	2500



Ball screw No.	Stroke		Screw shaft length		
	Nominal	Maximum (L_t —Nut length)	L_t	L_a	L_o
W3202SA-1P-C5Z5	150	209	265	300	415
W3203SA-1P-C5Z5	250	309	365	400	515
W3204SA-1P-C5Z5	350	409	465	500	615
W3205SA-1P-C5Z5	450	509	565	600	715
W3206SA-1P-C5Z5	550	609	665	700	857
W3207SA-1P-C5Z5	650	709	765	800	957
W3209SA-1P-C5Z5	850	909	965	1000	1157
W3211SA-1P-C5Z5	1050	1109	1165	1200	1357
W3214SA-1P-C5Z5	1350	1409	1465	1500	1657

- Remarks
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. **Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use.** Refer to Page D13 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.



View X-X

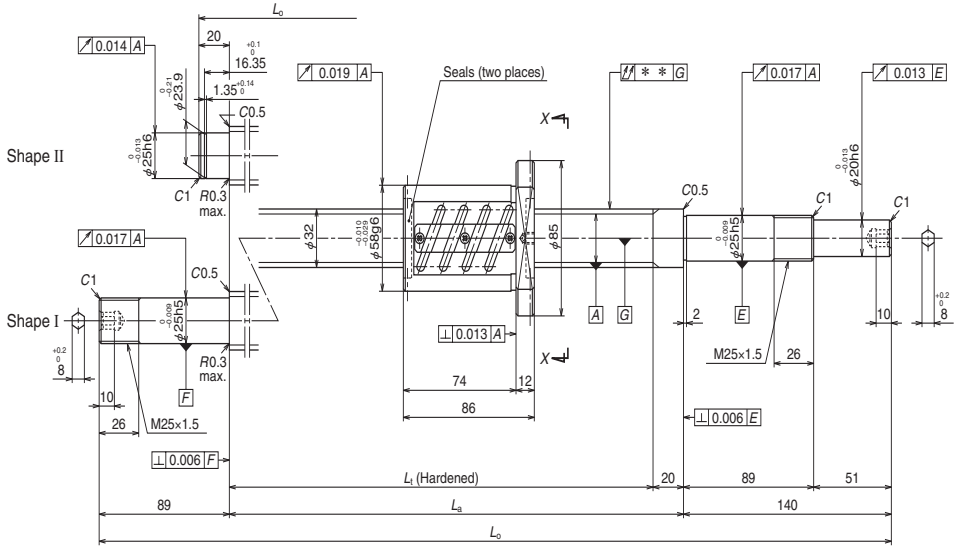
Ball screw specifications

Shaft dia. x Lead / Direction of turn		32x5/Right
Preload / Ball recirculation		P preload / Return tube
Ball dia. / Ball circle dia.		3.175/32.5
Screw shaft root diameter		29.2
Effective turns of balls		2.5x2
Accuracy grade / Preload		C5/Z
Basic load rating (N)	Dynamic C_a	13700
	Static C_{0a}	28000
Preload (N)		590
Dynamic friction torque, median, (N·cm)		11.8
Spacer ball		Yes
Factory packed grease		Refer to Remarks 2.
Internal spatial volume of nut (cm ³)		7.0
Standard volume of grease replenishing (cm ³)		3.5

Recommended support unit	For drive side		For opposite to drive side	
	For drive side	For opposite to drive side	For drive side	For opposite to drive side
WBK25-01 (square)	○	○	○	○
WBK25S-01 (square)			○	○
WBK25-11 (round)	○	○	○	○

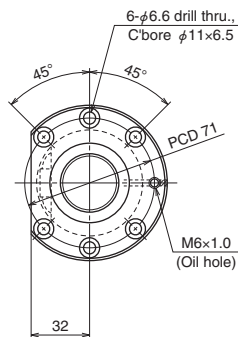
Unit: mm

Left side shaft end	Lead accuracy			Shaft run-out ** ↑↑	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
	T	e_p	v_u			Supporting condition	
						Fixed - Simple support	Fixed - Fixed
II	-0.006	0.023	0.018	0.040	3.1	2180	—
II	-0.009	0.025	0.020	0.050	3.7	2180	—
II	-0.011	0.027	0.020	0.050	4.2	2180	—
II	-0.014	0.030	0.023	0.060	4.8	2180	—
I	-0.016	0.035	0.025	0.075	5.6	2180	2180
I	-0.018	0.035	0.025	0.075	6.1	2180	2180
I	-0.023	0.040	0.027	0.090	7.3	2180	2180
I	-0.028	0.046	0.030	0.120	8.5	2180	2180
I	-0.035	0.054	0.035	0.150	10.2	2070	2180



Ball screw No.	Stroke		Screw shaft length		
	Nominal	Maximum (L_t —Nut length)	L_t	L_a	L_o
W3202SA-2Z-C5Z5	150	194	280	300	460
W3203SA-2Z-C5Z5	250	294	380	400	560
W3204SA-2Z-C5Z5	350	394	480	500	660
W3205SA-2Z-C5Z5	450	494	580	600	760
W3206SA-2Z-C5Z5	550	594	680	700	929
W3207SA-2Z-C5Z5	650	694	780	800	1029
W3209SA-2Z-C5Z5	850	894	980	1000	1229
W3211SA-2Z-C5Z5	1050	1094	1180	1200	1429
W3214SA-2Z-C5Z5	1350	1394	1480	1500	1729

- Remarks
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. **Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use.** Refer to Page D13 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.



View X-X

Ball screw specifications

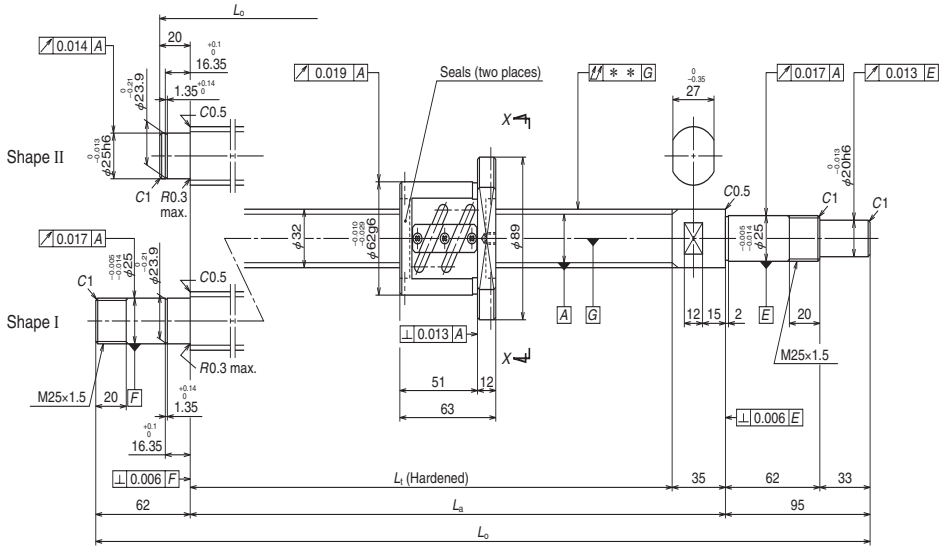
Shaft dia. x Lead / Direction of turn		32x5/Right
Preload / Ball recirculation		Z preload / Return tube
Ball dia. / Ball circle dia.		3.175/32.5
Screw shaft root diameter		29.2
Effective turns of balls		2.5x2
Accuracy grade / Preload		C5/Z
Basic load rating (N)	Dynamic C_a	21800
	Static C_{0a}	56000
Preload (N)		1270
Dynamic friction torque, median, (N·cm)		23.5
Spacer ball		None
Factory packed grease		Refer to Remarks 2.
Internal spatial volume of nut (cm ³)		10
Standard volume of grease replenishing (cm ³)		5

Recommended support unit

WBK25DF-31	(round)
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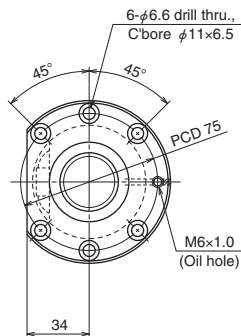
Unit: mm

Left side shaft end	Lead accuracy			Shaft run-out ** ↕	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
	T	e _p	v _u			Supporting condition	
						Fixed - Simple support	Fixed - Fixed
II	-0.007	0.023	0.018	0.040	3.5	2180	—
II	-0.009	0.025	0.020	0.050	4.1	2180	—
II	-0.012	0.027	0.020	0.060	4.7	2180	—
II	-0.014	0.030	0.023	0.060	5.3	2180	—
I	-0.016	0.035	0.025	0.075	6.1	2180	2180
I	-0.019	0.035	0.025	0.090	6.7	2180	2180
I	-0.024	0.040	0.027	0.090	7.9	2180	2180
I	-0.028	0.046	0.030	0.120	9.0	2180	2180
I	-0.036	0.054	0.035	0.150	10.8	2040	2180



Ball screw No.	Stroke		Screw shaft length		
	Nominal	Maximum (L_t —Nut length)	L_t	L_a	L_o
W3203SA-3P-C5Z6	250	302	365	400	515
W3205SA-3P-C5Z6	450	502	565	600	715
W3207SA-3P-C5Z6	650	702	765	800	957
W3209SA-3P-C5Z6	850	902	965	1000	1157
W3211SA-3P-C5Z6	1050	1102	1165	1200	1357
W3214SA-3P-C5Z6	1350	1402	1465	1500	1657

- Remarks
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. **Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use.** Refer to Page D13 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.



View X-X

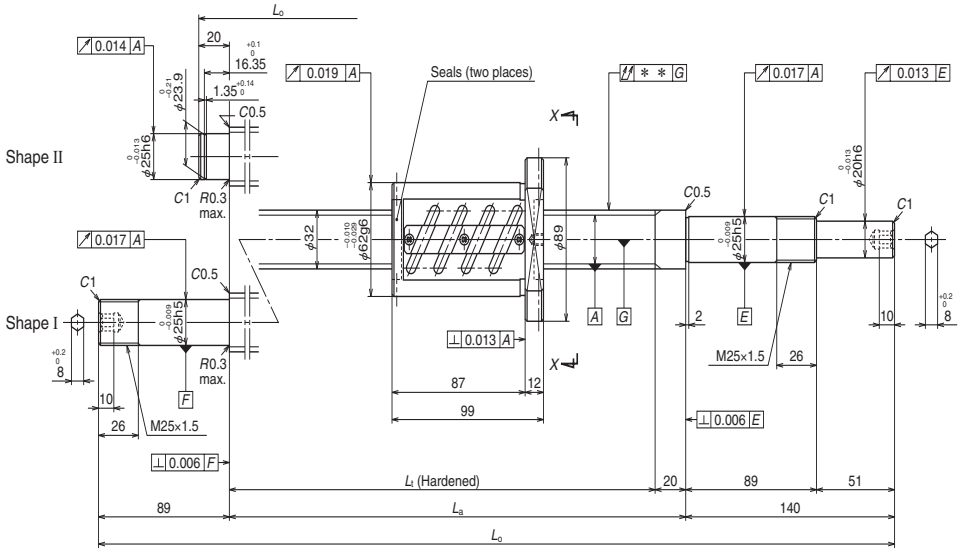
Ball screw specifications

Shaft dia. x Lead / Direction of turn		32x6/Right
Preload / Ball recirculation		P preload / Return tube
Ball dia. / Ball circle dia.		3.969/32.5
Screw shaft root diameter		28.4
Effective turns of balls		2.5x2
Accuracy grade / Preload		C5/Z
Basic load rating (N)	Dynamic C_a	18300
	Static C_{0a}	34700
Preload (N)		780
Dynamic friction torque, median, (N·cm)		15.7
Spacer ball		Yes
Factory packed grease		Refer to Remarks 2.
Internal spatial volume of nut (cm ³)		9.5
Standard volume of grease replenishing (cm ³)		4.8

Recommended support unit	For drive side		For opposite to drive side	
	For drive side	For opposite to drive side	For drive side	For opposite to drive side
WBK25-01 (square)	○	○	○	○
WBK25S-01 (square)			○	○
WBK25-11 (round)	○	○	○	○

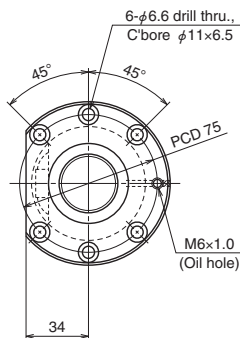
Unit: mm

Left side shaft end	Lead accuracy			Shaft run-out ** ↑↑	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
	T	e _p	v _u			Supporting condition	
						Fixed - Simple support	Fixed - Fixed
II	-0.009	0.025	0.020	0.050	3.8	2180	—
II	-0.014	0.030	0.023	0.060	5.0	2180	—
I	-0.018	0.035	0.025	0.075	6.3	2180	2180
I	-0.023	0.040	0.027	0.090	7.4	2180	2180
I	-0.028	0.046	0.030	0.120	8.5	2180	2180
I	-0.035	0.054	0.035	0.150	10.2	2020	2180



Ball screw No.	Stroke		Screw shaft length		
	Nominal	Maximum (L_t —Nut length)	L_t	L_b	L_o
W3203SA-4Z-C5Z6	250	281	380	400	560
W3205SA-4Z-C5Z6	450	481	580	600	760
W3207SA-4Z-C5Z6	650	681	780	800	1029
W3209SA-4Z-C5Z6	850	881	980	1000	1229
W3211SA-4Z-C5Z6	1050	1081	1180	1200	1429
W3214SA-4Z-C5Z6	1350	1381	1480	1500	1729

- Remarks
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. **Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use.** Refer to Page D13 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.



View X-X

Ball screw specifications

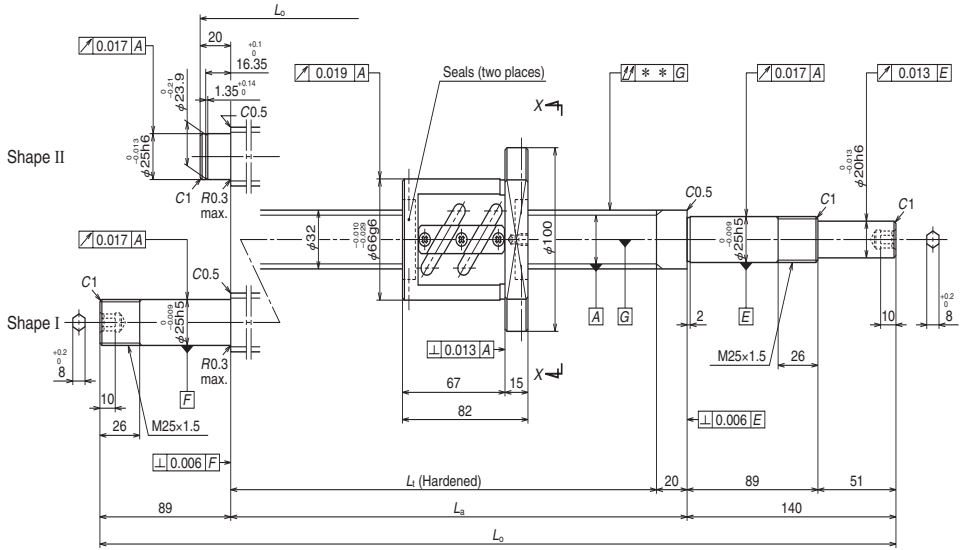
Shaft dia. x Lead / Direction of turn		32×6/Right
Preload / Ball recirculation		Z preload / Return tube
Ball dia. / Ball circle dia.		3.969/32.5
Screw shaft root diameter		28.4
Effective turns of balls		2.5×2
Accuracy grade / Preload		C5/Z
Basic load rating (N)	Dynamic C_a	29100
	Static C_{0a}	69300
Preload (N)		1710
Dynamic friction torque, median, (N·cm)		35.0
Spacer ball		None
Factory packed grease		Refer to Remarks 2.
Internal spatial volume of nut (cm ³)		14
Standard volume of grease replenishing (cm ³)		7

Recommended support unit

WBK25DF-31	(round)
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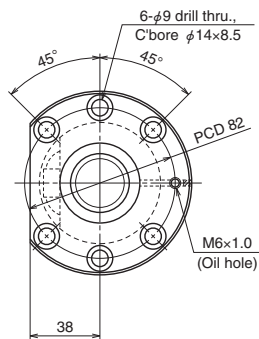
Unit: mm

Left side shaft end	Lead accuracy			Shaft run- out ** $\uparrow\downarrow$	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
	T	e_p	v_u			Supporting condition	
						Fixed - Simple support	Fixed - Fixed
II	-0.009	0.025	0.020	0.050	4.5	2180	—
II	-0.014	0.030	0.023	0.060	5.6	2180	—
I	-0.019	0.035	0.025	0.090	7.0	2180	2180
I	-0.024	0.040	0.027	0.090	8.1	2180	2180
I	-0.028	0.046	0.030	0.120	9.3	2180	2180
I	-0.036	0.054	0.035	0.150	11.0	2000	2180



Ball screw No.	Stroke		Screw shaft length		
	Nominal	Maximum (L_t —Nut length)	L_t	L_b	L_o
W3203SA-5Z-C5Z8	250	298	380	400	560
W3205SA-5Z-C5Z8	450	498	580	600	760
W3207SA-5Z-C5Z8	650	698	780	800	1029
W3209SA-5Z-C5Z8	850	898	980	1000	1229
W3214SA-5Z-C5Z8	1350	1398	1480	1500	1729

- Remarks
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. **Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use.** Refer to Page D13 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.



View X-X

Ball screw specifications

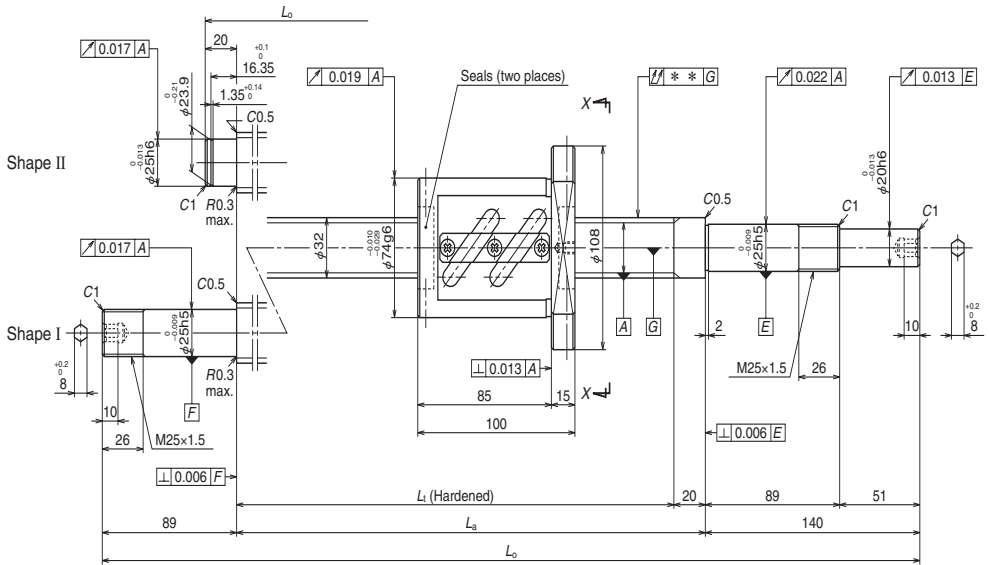
Shaft dia. x Lead / Direction of turn		32x8/Right
Preload / Ball recirculation		Z preload / Return tube
Ball dia. / Ball circle dia.		4.762/32.5
Screw shaft root diameter		27.5
Effective turns of balls		2.5x1
Accuracy grade / Preload		C5/Z
Basic load rating (N)	Dynamic C_a	20600
	Static C_{0a}	40900
Preload (N)		1320
Dynamic friction torque, median, (N·cm)		31.0
Spacer ball		None
Factory packed grease		Refer to Remarks 2.
Internal spatial volume of nut (cm ³)		13
Standard volume of grease replenishing (cm ³)		6.5

Recommended support unit

WBK25DF-31	(round)
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Unit: mm

Left side shaft end	Lead accuracy			Shaft run-out ** ↗	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
	T	e _p	v _u			Supporting condition	
						Fixed - Simple support	Fixed - Fixed
II	-0.009	0.025	0.020	0.050	4.7	2180	—
II	-0.014	0.030	0.023	0.060	5.8	2180	—
I	-0.019	0.035	0.025	0.090	7.2	2180	2180
I	-0.024	0.040	0.027	0.090	8.3	2180	2180
I	-0.036	0.054	0.035	0.150	11.1	1920	2180

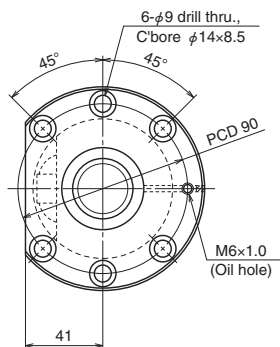


Ball screw No.	Stroke		Screw shaft length		
	Nominal	Maximum (L_t —Nut length)	L_t	L_b	L_o
W3203SA-6Z-C5Z10	250	280	380	400	560
W3204SA-3Z-C5Z10	350	380	480	500	660
W3205SA-6Z-C5Z10	450	480	580	600	760
W3206SA-3Z-C5Z10	550	580	680	700	929
W3207SA-6Z-C5Z10	650	680	780	800	1029
W3209SA-6Z-C5Z10	850	880	980	1000	1229
W3211SA-5Z-C5Z10	1050	1080	1180	1200	1429
W3214SA-6Z-C5Z10	1350	1380	1480	1500	1729
W3217SA-1Z-C5Z10	1650	1680	1780	1800	2029

- Remarks
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. **Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use.** Refer to Page D13 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.

ø32×10

Unit: mm



View X-X

Ball screw specifications

Shaft dia. x Lead / Direction of turn		32×10/Right
Preload / Ball recirculation		Z preload / Return tube
Ball dia. / Ball circle dia.		6.35/33
Screw shaft root diameter		26.4
Effective turns of balls		2.5×1
Accuracy grade / Preload		C5/Z
Basic load rating (N)	Dynamic C_a	30000
	Static C_{0a}	55100
Preload (N)		1960
Dynamic friction torque, median, (N·cm)		54.0
Spacer ball		None
Factory packed grease		Refer to Remarks 2.
Internal spatial volume of nut (cm ³)		22
Standard volume of grease replenishing (cm ³)		11

Recommended support unit

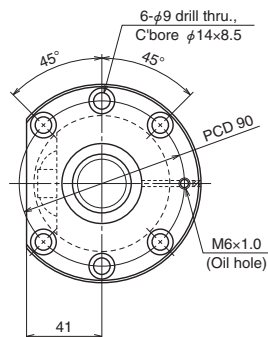
WBK25DF-31	(round)
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Unit: mm

Left side shaft end	Lead accuracy			Shaft run-out ** ↕	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
	T	e_p	v_u			Supporting condition	
						Fixed - Simple support	Fixed - Fixed
II	-0.009	0.025	0.020	0.050	5.5	2180	—
II	-0.012	0.027	0.020	0.060	6.0	2180	—
II	-0.014	0.030	0.023	0.060	6.6	2180	—
I	-0.016	0.035	0.025	0.075	7.4	2180	2180
I	-0.019	0.035	0.025	0.090	7.9	2180	2180
I	-0.024	0.040	0.027	0.090	9.0	2180	2180
I	-0.028	0.046	0.030	0.120	10.1	2180	2180
I	-0.036	0.054	0.035	0.150	11.7	1860	2180
I	-0.043	0.065	0.040	0.200	13.3	1280	1820

ø32×10

Unit: mm



View X-X

Ball screw specifications

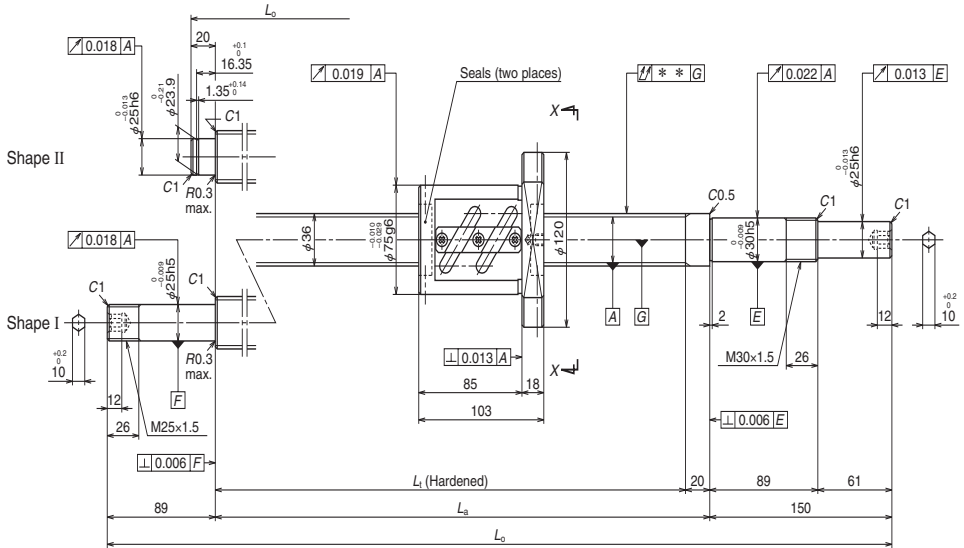
Shaft dia. x Lead / Direction of turn		32×10/Right
Preload / Ball recirculation		D preload / Return tube
Ball dia. / Ball circle dia.		6.35/33
Screw shaft root diameter		26.4
Effective turns of balls		2.5×2
Accuracy grade / Preload		C5/Z
Basic load rating (N)	Dynamic C_a	54500
	Static C_{0a}	110000
Preload (N)		3230
Dynamic friction torque, median, (N·cm)		83.0
Spacer ball		None
Factory packed grease		Refer to Remarks 2.
Internal spatial volume of nut (cm ³)		44
Standard volume of grease replenishing (cm ³)		22

Recommended support unit

WBK25DFD-31	(round)
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Unit: mm

Left side shaft end	Lead accuracy			Shaft run-out ** ↕	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
	T	e_p	v_u			Supporting condition	
						Fixed - Simple support	Fixed - Fixed
II	-0.009	0.025	0.020	0.050	7.5	2180	—
II	-0.012	0.027	0.020	0.060	8.1	2180	—
II	-0.014	0.030	0.023	0.060	8.6	2180	—
I	-0.016	0.035	0.025	0.075	9.5	2180	2180
I	-0.019	0.035	0.025	0.090	10.0	2180	2180
I	-0.024	0.040	0.027	0.120	11.1	2180	2180
I	-0.028	0.046	0.030	0.120	12.2	2180	2180
I	-0.036	0.054	0.035	0.150	13.8	1980	2180
I	-0.043	0.065	0.040	0.200	15.4	1350	1910

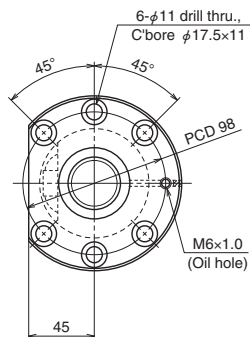


Ball screw No.	Stroke		Screw shaft length		
	Nominal	Maximum (L_t —Nut length)	L_t	L_a	L_o
W3604SA-1Z-C5Z10	350	377	480	500	670
W3606SA-1Z-C5Z10	550	577	680	700	870
W3609SA-1Z-C5Z10	850	877	980	1000	1239
W3613SA-1Z-C5Z10	1250	1277	1380	1400	1639
W3617SA-1Z-C5Z10	1650	1677	1780	1800	2039

- Remarks
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. **Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use.** Refer to Page D13 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.

ø36×10

Unit: mm



View X-X

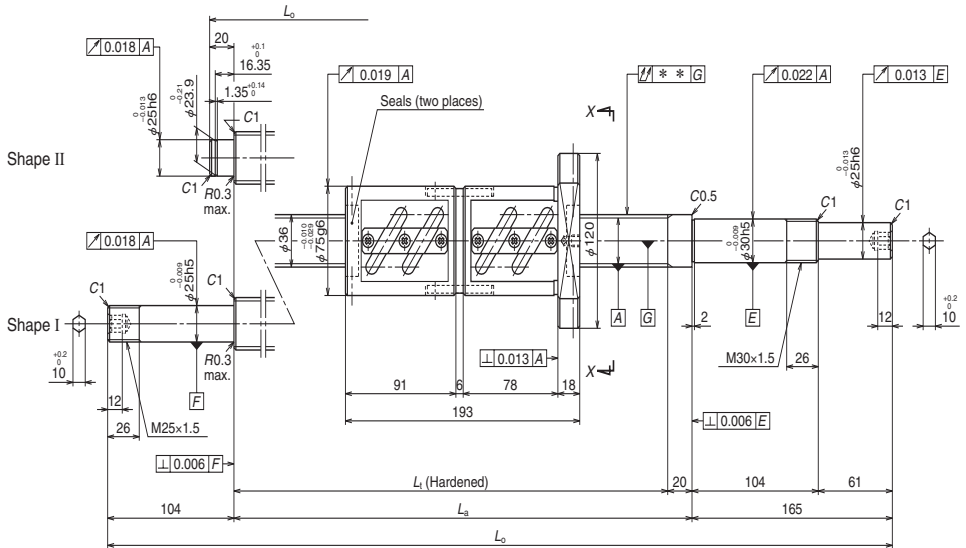
Ball screw specifications

Shaft dia. x Lead / Direction of turn		36×10/Right
Preload / Ball recirculation		Z preload / Return tube
Ball dia. / Ball circle dia.		6.35/37
Screw shaft root diameter		30.4
Effective turns of balls		2.5×1
Accuracy grade / Preload		C5/Z
Basic load rating (N)	Dynamic C_a	32000
	Static C_{0a}	61100
Preload (N)		2060
Dynamic friction torque, median, (N·cm)		59.0
Spacer ball		None
Factory packed grease		Refer to Remarks 2.
Internal spatial volume of nut (cm ³)		32
Standard volume of grease replenishing (cm ³)		16

Recommended support unit	For drive side	For opposite to drive side
WBK30DF-31 (round)	○	
WBK25DF-31 (round)		○

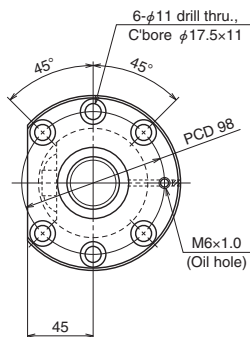
Unit: mm

Left side shaft end	Lead accuracy			Shaft run-out ** ↕	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
	T	e _p	v _u			Supporting condition	
						Fixed - Simple support	Fixed - Fixed
II	-0.012	0.027	0.020	0.040	7.4	1940	—
II	-0.016	0.035	0.025	0.050	8.8	1940	—
I	-0.024	0.040	0.027	0.065	11.1	1940	1940
I	-0.033	0.054	0.035	0.100	13.9	1940	1940
I	-0.043	0.065	0.040	0.130	16.6	1480	1940



Ball screw No.	Stroke		Screw shaft length		
	Nominal	Maximum (L_t —Nut length)	L_t	L_a	L_o
W3604SA-2D-C5Z10	250	287	480	500	685
W3606SA-2D-C5Z10	450	487	680	700	885
W3609SA-2D-C5Z10	750	787	980	1000	1269
W3613SA-2D-C5Z10	1150	1187	1380	1400	1669
W3617SA-2D-C5Z10	1550	1587	1780	1800	2069

- Remarks
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. **Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use.** Refer to Page D13 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.



View X-X

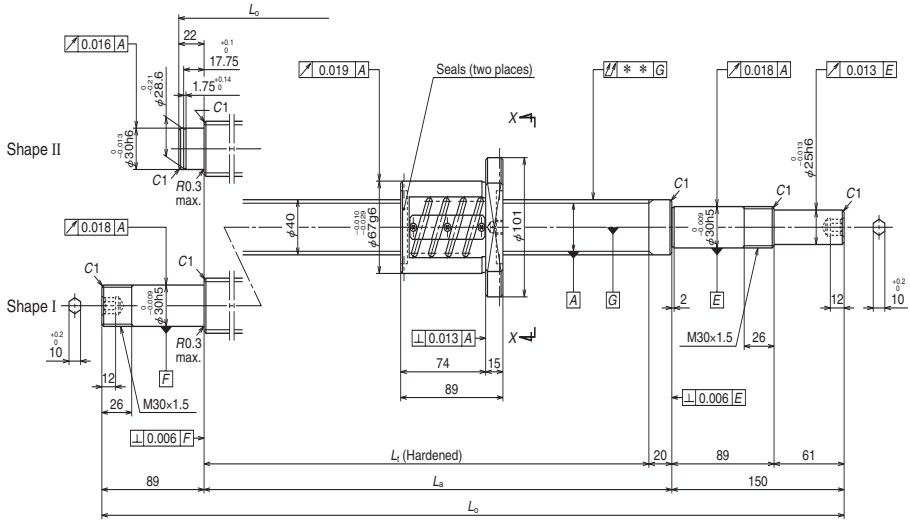
Ball screw specifications

Shaft dia. x Lead / Direction of turn		36×10/Right
Preload / Ball recirculation		D preload / Return tube
Ball dia. / Ball circle dia.		6.35/37
Screw shaft root diameter		30.4
Effective turns of balls		2.5×2
Accuracy grade / Preload		C5/Z
Basic load rating (N)	Dynamic C_a	58000
	Static C_{0a}	122000
Preload (N)		3430
Dynamic friction torque, median, (N·cm)		93.0
Spacer ball		None
Factory packed grease		Refer to Remarks 2.
Internal spatial volume of nut (cm ³)		64
Standard volume of grease replenishing (cm ³)		27

Recommended support unit	For drive side	For opposite to drive side
WBK30DFD-31 (round)	○	
WBK25DFD-31 (round)		○

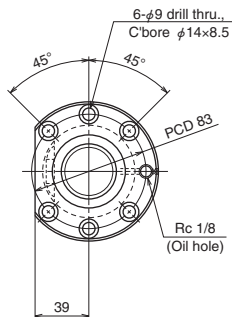
Unit: mm

Left side shaft end	Lead accuracy			Shaft run-out ** ↑↑	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
	T	e _p	v _u			Supporting condition	
						Fixed - Simple support	Fixed - Fixed
II	-0.012	0.027	0.020	0.040	9.3	1940	—
II	-0.016	0.035	0.025	0.050	10.7	1940	—
I	-0.024	0.040	0.027	0.080	13.1	1940	1940
I	-0.033	0.054	0.035	0.100	15.9	1940	1940
I	-0.043	0.065	0.040	0.130	18.6	1540	1940



Ball screw No.	Stroke		Screw shaft length		
	Nominal	Maximum (L_t —Nut length)	L_t	L_b	L_o
W4003SA-1Z-C5Z5	250	291	380	400	572
W4005SA-1Z-C5Z5	450	491	580	600	772
W4007SA-1Z-C5Z5	650	691	780	800	1039
W4009SA-1Z-C5Z5	850	891	980	1000	1239
W4011SA-1Z-C5Z5	1050	1091	1180	1200	1439
W4015SA-1Z-C5Z5	1450	1491	1580	1600	1839

- Remarks
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. **Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use.** Refer to Page D13 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.



View X-X

Ball screw specifications

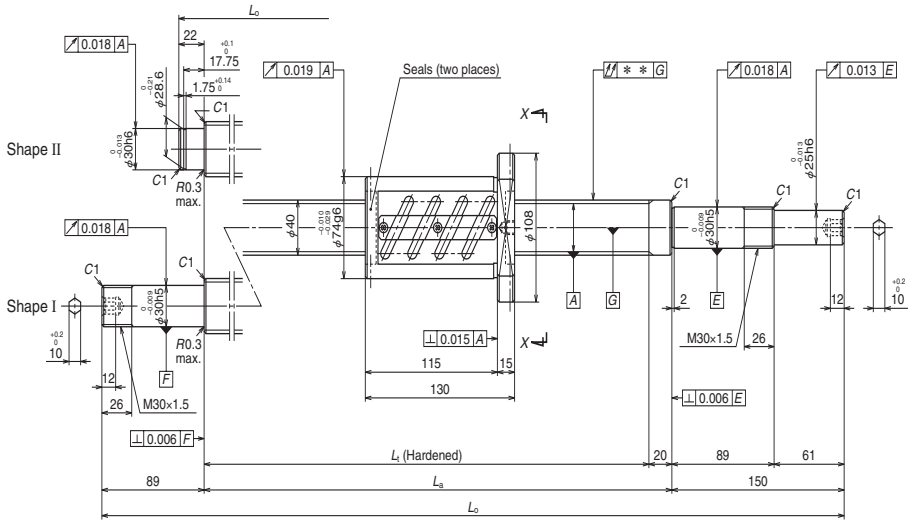
Shaft dia. x Lead / Direction of turn		40x5/Right
Preload / Ball recirculation		Z preload / Return tube
Ball dia. / Ball circle dia.		3.175/40.5
Screw shaft root diameter		37.2
Effective turns of balls		2.5×2
Accuracy grade / Preload		C5/Z
Basic load rating (N)	Dynamic C_a	23900
	Static C_{0a}	70500
Preload (N)		1420
Dynamic friction torque, median, (N·cm)		29.5
Spacer ball		None
Factory packed grease		Refer to Remarks 2.
Internal spatial volume of nut (cm ³)		14
Standard volume of grease replenishing (cm ³)		7

Recommended support unit

WBK30DF-31	(round)
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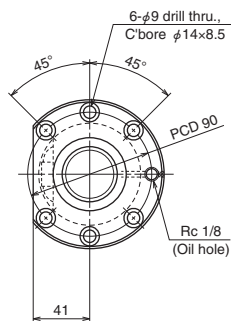
Unit: mm

Left side shaft end	Lead accuracy			Shaft run-out ** ↕	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
	T	e_p	v_u			Supporting condition	
						Fixed - Simple support	Fixed - Fixed
II	-0.009	0.025	0.020	0.035	6.3	1750	—
II	-0.014	0.030	0.023	0.040	8.1	1750	—
I	-0.019	0.035	0.025	0.065	10.3	1750	1750
I	-0.024	0.040	0.027	0.065	12.2	1750	1750
I	-0.028	0.046	0.030	0.080	14.0	1750	1750
I	-0.038	0.054	0.035	0.100	17.7	1750	1750



Ball screw No.	Stroke		Screw shaft length		
	Nominal	Maximum (L_t —Nut length)	L_t	L_b	L_o
W4003SA-2Z-C5Z8	200	250	380	400	572
W4005SA-2Z-C5Z8	400	450	580	600	772
W4007SA-2Z-C5Z8	600	650	780	800	1039
W4009SA-2Z-C5Z8	800	850	980	1000	1239
W4011SA-2Z-C5Z8	1000	1050	1180	1200	1439
W4015SA-2Z-C5Z8	1400	1450	1580	1600	1839

- Remarks
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. **Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use.** Refer to Page D13 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.



View X-X

Ball screw specifications

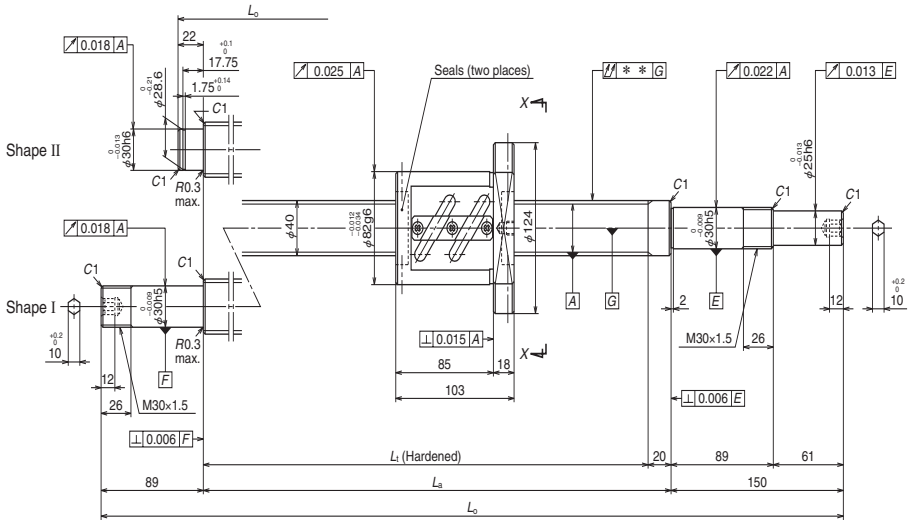
Shaft dia. x Lead / Direction of turn		40x8/Right
Preload / Ball recirculation		Z preload / Return tube
Ball dia. / Ball circle dia.		4.762/40.5
Screw shaft root diameter		35.5
Effective turns of balls		2.5×2
Accuracy grade / Preload		C5/Z
Basic load rating (N)	Dynamic C_a	41100
	Static C_{0a}	103000
Preload (N)		2450
Dynamic friction torque, median, (N·cm)		64.0
Spacer ball		None
Factory packed grease		Refer to Remarks 2.
Internal spatial volume of nut (cm ³)		27
Standard volume of grease replenishing (cm ³)		14

Recommended support unit

WBK30DF-31	(round)
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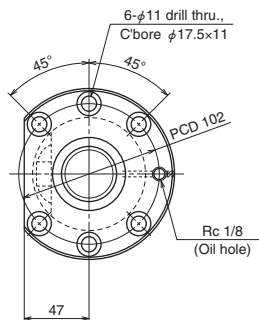
Unit: mm

Left side shaft end	Lead accuracy			Shaft run-out ** ↕	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
	T	e _p	v _u			Supporting condition	
						Fixed - Simple support	Fixed - Fixed
II	-0.009	0.025	0.020	0.035	7.4	1750	—
II	-0.014	0.030	0.023	0.040	9.2	1750	—
I	-0.019	0.035	0.025	0.065	11.3	1750	1750
I	-0.024	0.040	0.027	0.065	13.1	1750	1750
I	-0.028	0.046	0.030	0.080	14.9	1750	1750
I	-0.038	0.054	0.035	0.100	18.5	1750	1750



Ball screw No.	Stroke		Screw shaft length		
	Nominal	Maximum (L_t —Nut length)	L_t	L_b	L_o
W4004SA-1Z-C5Z10	350	377	480	500	672
W4005SA-3Z-C5Z10	450	477	580	600	772
W4006SA-1Z-C5Z10	550	577	680	700	872
W4007SA-3Z-C5Z10	650	677	780	800	1039
W4009SA-3Z-C5Z10	850	877	980	1000	1239
W4011SA-3Z-C5Z10	1050	1077	1180	1200	1439
W4013SA-1Z-C5Z10	1250	1277	1380	1400	1639
W4015SA-3Z-C5Z10	1450	1477	1580	1600	1839
W4017SA-1Z-C5Z10	1650	1677	1780	1800	2039
W4023SA-1Z-C5Z10	2250	2277	2380	2400	2639

- Remarks
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. **Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use.** Refer to Page D13 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.



View X-X

Ball screw specifications

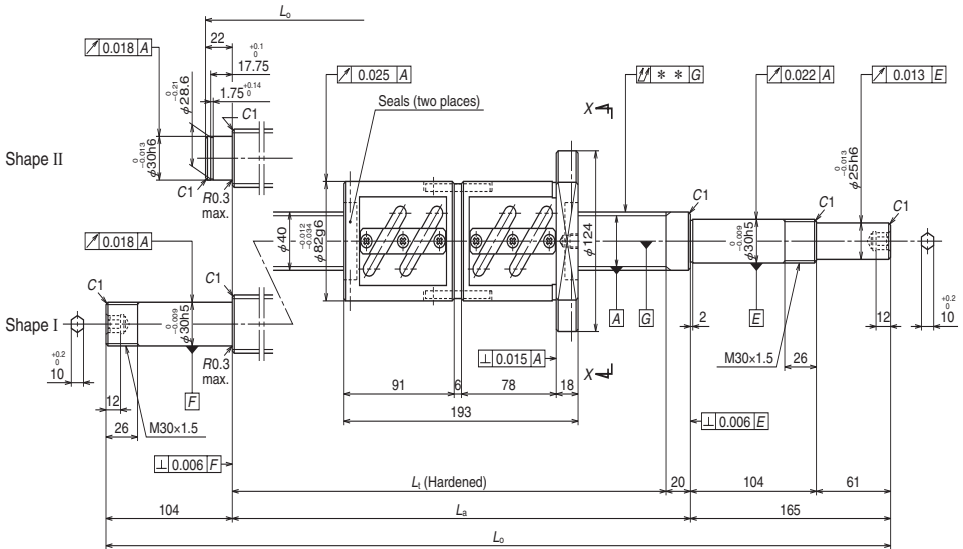
Shaft dia. x Lead / Direction of turn		40×10/Right
Preload / Ball recirculation		Z preload / Return tube
Ball dia. / Ball circle dia.		6.35/41
Screw shaft root diameter		34.4
Effective turns of balls		2.5×1
Accuracy grade / Preload		C5/Z
Basic load rating (N)	Dynamic C_a	33700
	Static C_{0a}	68300
Preload (N)		2160
Dynamic friction torque, median, (N·cm)		64.0
Spacer ball		None
Factory packed grease		Refer to Remarks 2.
Internal spatial volume of nut (cm ³)		30
Standard volume of grease replenishing (cm ³)		15

Recommended support unit

WBK30DF-31	(round)
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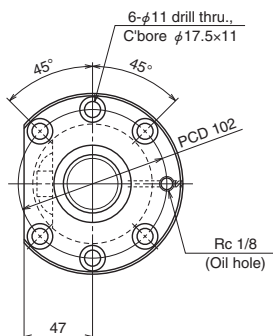
Unit: mm

Left side shaft end	Lead accuracy			Shaft run-out ** ↕	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
	T	e _p	v _u			Supporting condition	
						Fixed - Simple support	Fixed - Fixed
II	-0.012	0.027	0.020	0.040	8.7	1750	—
II	-0.014	0.030	0.023	0.040	9.6	1750	—
II	-0.016	0.035	0.025	0.050	10.4	1750	—
I	-0.019	0.035	0.025	0.065	11.7	1750	1750
I	-0.024	0.040	0.027	0.065	13.4	1750	1750
I	-0.028	0.046	0.030	0.080	15.1	1750	1750
I	-0.033	0.054	0.035	0.100	16.9	1750	1750
I	-0.038	0.054	0.035	0.100	18.6	1750	1750
I	-0.043	0.065	0.040	0.130	20.3	1670	1750
I	-0.057	0.077	0.046	0.170	25.5	930	1320



Ball screw No.	Stroke		Screw shaft length		
	Nominal	Maximum (L_t —Nut length)	L_t	L_b	L_o
W4004SA-2D-C5Z10	250	287	480	500	687
W4005SA-4D-C5Z10	350	387	580	600	787
W4006SA-2D-C5Z10	450	487	680	700	887
W4007SA-4D-C5Z10	550	587	780	800	1069
W4009SA-4D-C5Z10	750	787	980	1000	1269
W4011SA-4D-C5Z10	950	987	1180	1200	1469
W4013SA-2D-C5Z10	1150	1187	1380	1400	1669
W4015SA-4D-C5Z10	1350	1387	1580	1600	1869
W4017SA-2D-C5Z10	1550	1587	1780	1800	2069
W4023SA-2D-C5Z10	2150	2187	2380	2400	2669

Remarks 1. We recommend NSK support unit. Refer to Page B433 for details.
 2. **Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use.** Refer to Page D13 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.



View X-X

Ball screw specifications

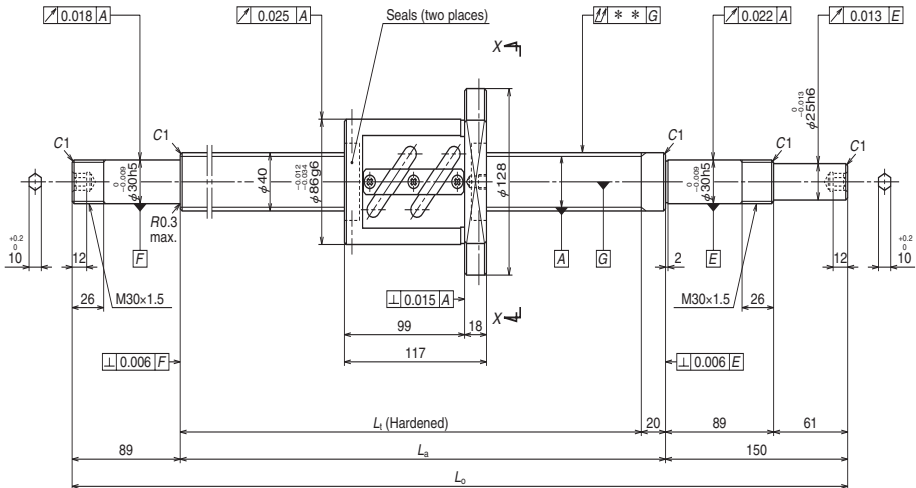
Shaft dia. x Lead / Direction of turn		40×10/Right
Preload / Ball recirculation		D preload / Return tube
Ball dia. / Ball circle dia.		6.35/41
Screw shaft root diameter		34.4
Effective turns of balls		2.5×2
Accuracy grade / Preload		C5/Z
Basic load rating (N)	Dynamic C_a	61200
	Static C_{0a}	137000
Preload (N)		3630
Dynamic friction torque, median, (N·cm)		108
Spacer ball		None
Factory packed grease		Refer to Remarks 2.
Internal spatial volume of nut (cm ³)		59
Standard volume of grease replenishing (cm ³)		30

Recommended support unit

WBK30DFD-31	(round)
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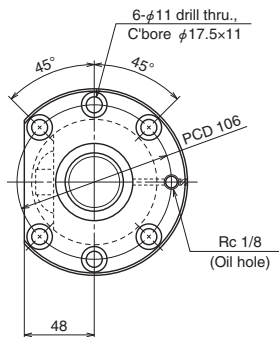
Unit: mm

Left side shaft end	Lead accuracy			Shaft run- out ** $\swarrow \searrow$	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
	T	e_p	v_u			Supporting condition	
						Fixed - Simple support	Fixed - Fixed
II	-0.012	0.027	0.020	0.040	11.0	1750	—
II	-0.014	0.030	0.023	0.040	11.9	1750	—
II	-0.016	0.035	0.025	0.050	12.7	1750	—
I	-0.019	0.035	0.025	0.065	14.1	1750	1750
I	-0.024	0.040	0.027	0.080	15.8	1750	1750
I	-0.028	0.046	0.030	0.080	17.5	1750	1750
I	-0.033	0.054	0.035	0.100	19.3	1750	1750
I	-0.038	0.054	0.035	0.100	21.0	1750	1750
I	-0.043	0.065	0.040	0.130	22.7	1750	1750
I	-0.057	0.077	0.046	0.170	27.9	960	1370



Ball screw No.	Stroke		Screw shaft length		
	Nominal	Maximum (L_t —Nut length)	L_t	L_b	L_o
W4006SA-3Z-C5Z12	500	563	680	700	939
W4009SA-5Z-C5Z12	800	863	980	1000	1239
W4013SA-3Z-C5Z12	1200	1263	1380	1400	1639
W4017SA-3Z-C5Z12	1600	1663	1780	1800	2039
W4024SA-1Z-C5Z12	2300	2363	2480	2500	2739

- Remarks
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. **Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use.** Refer to Page D13 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.



View X-X

Ball screw specifications

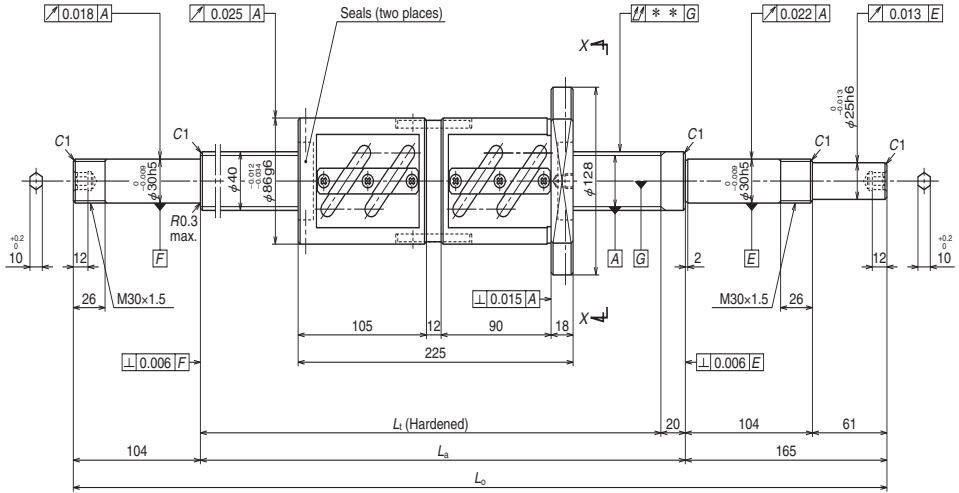
Shaft dia. x Lead / Direction of turn		40×12/Right
Preload / Ball recirculation		Z preload / Return tube
Ball dia. / Ball circle dia.		7.144/41.5
Screw shaft root diameter		34.1
Effective turns of balls		2.5×1
Accuracy grade / Preload		C5/Z
Basic load rating (N)	Dynamic C_a	39500
	Static C_{0a}	77200
Preload (N)		2550
Dynamic friction torque, median, (N·cm)		83.0
Spacer ball		None
Factory packed grease		Refer to Remarks 2.
Internal spatial volume of nut (cm ³)		33
Standard volume of grease replenishing (cm ³)		17

Recommended support unit

WBK30DF-31	(round)
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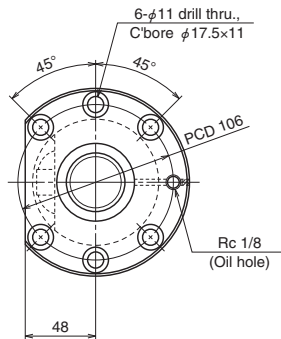
Unit: mm

Lead accuracy			Shaft run-out ** μ	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
T	e_p	v_u			Supporting condition	
			Fixed - Simple support	Fixed - Fixed		
-0.016	0.035	0.025	0.050	11.6	1750	1750
-0.024	0.040	0.027	0.065	14.2	1750	1750
-0.033	0.054	0.035	0.100	17.7	1750	1750
-0.043	0.065	0.040	0.130	21.2	1670	1750
-0.060	0.077	0.046	0.170	27.2	850	1220



Ball screw No.	Stroke		Screw shaft length		
	Nominal	Maximum (L_t —Nut length)	L_t	L_a	L_o
W4006SA-4D-C5Z12	400	455	680	700	969
W4009SA-6D-C5Z12	700	755	980	1000	1269
W4013SA-4D-C5Z12	1100	1155	1380	1400	1669
W4017SA-4D-C5Z12	1500	1555	1780	1800	2069
W4024SA-2D-C5Z12	2200	2255	2480	2500	2769

- Remarks
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. **Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use.** Refer to Page D13 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.



View X-X

Ball screw specifications

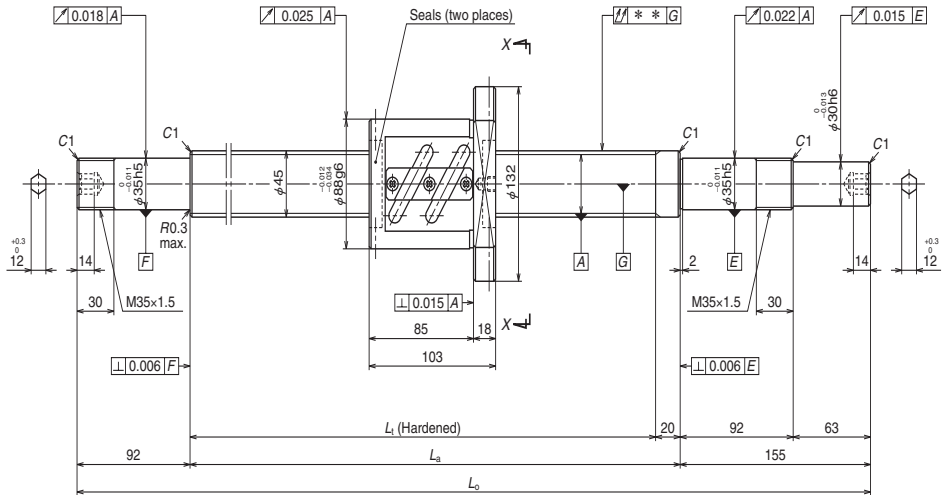
Shaft dia. x Lead / Direction of turn		40×12/Right
Preload / Ball recirculation		D preload / Return tube
Ball dia. / Ball circle dia.		7.144/41.5
Screw shaft root diameter		34.1
Effective turns of balls		2.5×2
Accuracy grade / Preload		C5/Z
Basic load rating (N)	Dynamic C_a	71700
	Static C_{0a}	154000
Preload (N)		4310
Dynamic friction torque, median, (N·cm)		137
Spacer ball		None
Factory packed grease		Refer to Remarks 2.
Internal spatial volume of nut (cm ³)		76
Standard volume of grease replenishing (cm ³)		38

Recommended support unit

WBK30DFD-31	(round)
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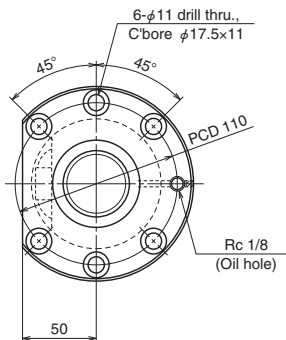
Unit: mm

Lead accuracy			Shaft run-out ** μ	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
T	e_p	v_u			Supporting condition	
					Fixed - Simple support	Fixed - Fixed
-0.016	0.035	0.025	0.050	14.8	1750	1750
-0.024	0.040	0.027	0.080	17.4	1750	1750
-0.033	0.054	0.035	0.100	20.9	1750	1750
-0.043	0.065	0.040	0.130	24.3	1750	1750
-0.060	0.077	0.046	0.170	30.4	880	1260



Ball screw No.	Stroke		Screw shaft length		
	Nominal	Maximum (L_1 —Nut length)	L_1	L_2	L_0
W4506SA-1Z-C5Z10	550	577	680	700	947
W4509SA-1Z-C5Z10	850	877	980	1000	1247
W4513SA-1Z-C5Z10	1250	1277	1380	1400	1647
W4517SA-1Z-C5Z10	1650	1677	1780	1800	2047
W4524SA-1Z-C5Z10	2350	2377	2480	2500	2747

- Remarks
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. **Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use.** Refer to Page D13 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.



View X-X

Ball screw specifications

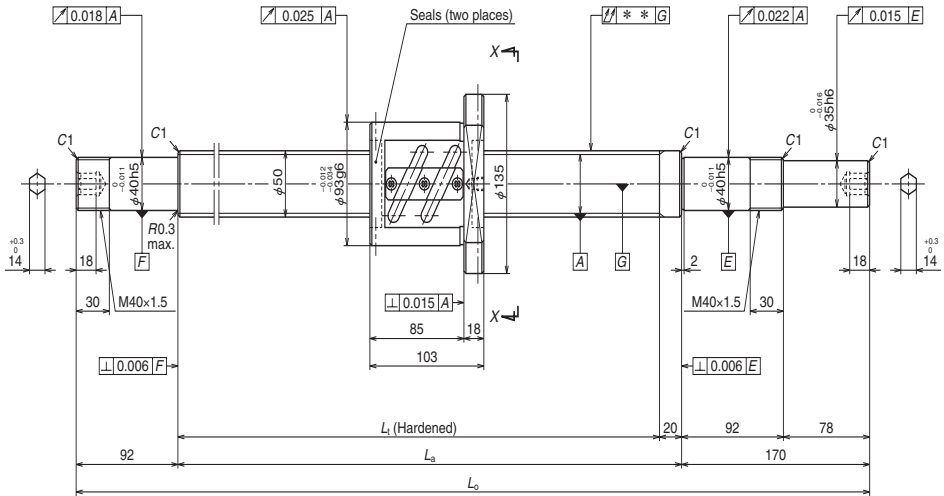
Shaft dia. x Lead / Direction of turn		45×10/Right
Preload / Ball recirculation		Z preload / Return tube
Ball dia. / Ball circle dia.		6.35/46
Screw shaft root diameter		39.4
Effective turns of balls		2.5×1
Accuracy grade / Preload		C5/Z
Basic load rating (N)	Dynamic C_a	36300
	Static C_{0a}	78500
Preload (N)		2260
Dynamic friction torque, median, (N·cm)		69.0
Spacer ball		None
Factory packed grease		Refer to Remarks 2.
Internal spatial volume of nut (cm ³)		33
Standard volume of grease replenishing (cm ³)		17

Recommended support unit

WBK35DF-31	(round)
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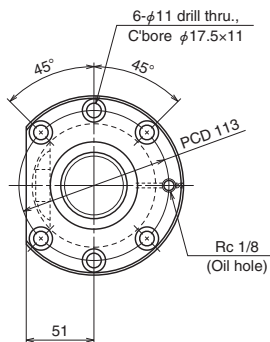
Unit: mm

Lead accuracy			Shaft run-out ** \uparrow	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
T	e_p	v_u			Supporting condition	
			Fixed - Simple support	Fixed - Fixed		
-0.016	0.035	0.025	0.050	13.4	1550	1550
-0.024	0.040	0.027	0.065	16.7	1550	1550
-0.033	0.054	0.035	0.100	21.2	1550	1550
-0.043	0.065	0.040	0.130	25.6	1550	1550
-0.060	0.077	0.046	0.170	33.4	980	1400



Ball screw No.	Stroke		Screw shaft length		
	Nominal	Maximum (L_t —Nut length)	L_t	L_a	L_o
W5005SA-1Z-C5Z10	450	477	580	600	862
W5007SA-1Z-C5Z10	650	677	780	800	1062
W5009SA-1Z-C5Z10	850	877	980	1000	1262
W5011SA-1Z-C5Z10	1050	1077	1180	1200	1462
W5014SA-1Z-C5Z10	1350	1377	1480	1500	1762
W5019SA-1Z-C5Z10	1850	1877	1980	2000	2262
W5025SA-1Z-C5Z10	2450	2477	2580	2600	2862

- Remarks
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. **Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use.** Refer to Page D13 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.



View X-X

Ball screw specifications

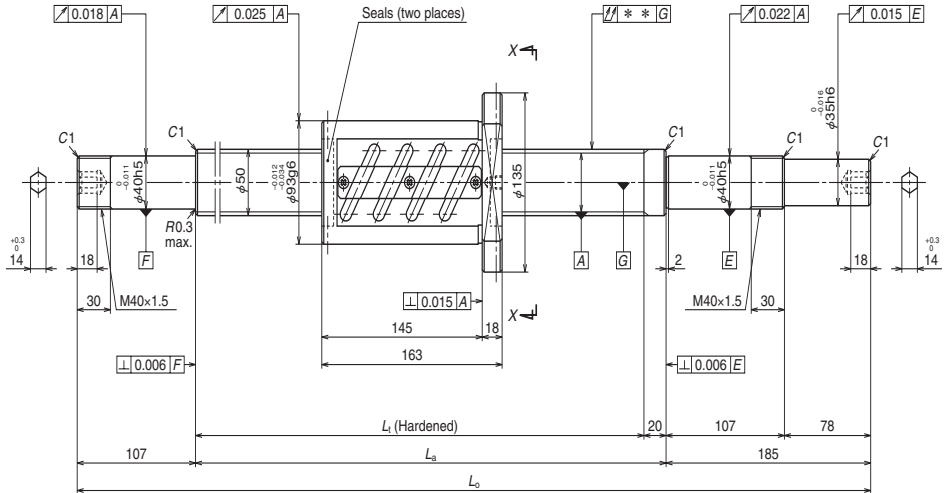
Shaft dia. x Lead / Direction of turn		50×10/Right
Preload / Ball recirculation		Z preload / Return tube
Ball dia. / Ball circle dia.		6.35/51
Screw shaft root diameter		44.4
Effective turns of balls		2.5×1
Accuracy grade / Preload		C5/Z
Basic load rating (N)	Dynamic C_a	37500
	Static C_{0a}	87200
Preload (N)		2450
Dynamic friction torque, median, (N·cm)		79.0
Spacer ball		None
Factory packed grease		Refer to Remarks 2.
Internal spatial volume of nut (cm ³)		37
Standard volume of grease replenishing (cm ³)		19

Recommended support unit

WBK40DF-31	(round)
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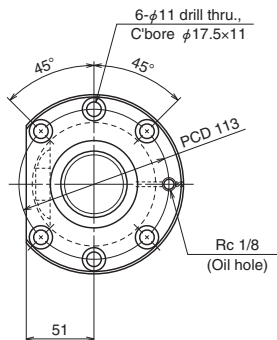
Unit: mm

Lead accuracy			Shaft run-out ** μ	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
T	e_p	v_u			Supporting condition	
			Fixed - Simple support	Fixed - Fixed		
-0.014	0.030	0.023	0.050	14.8	1400	1400
-0.019	0.035	0.025	0.065	17.6	1400	1400
-0.024	0.040	0.027	0.080	20.3	1400	1400
-0.028	0.046	0.030	0.080	23.1	1400	1400
-0.036	0.054	0.035	0.100	27.3	1400	1400
-0.048	0.065	0.040	0.130	34.2	1400	1400
-0.062	0.093	0.054	0.170	42.5	1020	1400



Ball screw No.	Stroke		Screw shaft length		
	Nominal	Maximum (L_t —Nut length)	L_t	L_a	L_o
W5005SA-2Z-C5Z10	350	417	580	600	892
W5007SA-2Z-C5Z10	550	617	780	800	1092
W5009SA-2Z-C5Z10	750	817	980	1000	1292
W5011SA-2Z-C5Z10	950	1017	1180	1200	1492
W5014SA-2Z-C5Z10	1250	1317	1480	1500	1792
W5019SA-2Z-C5Z10	1750	1817	1980	2000	2292
W5025SA-2Z-C5Z10	2350	2417	2580	2600	2892

- Remarks
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. **Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use.** Refer to Page D13 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.



View X-X

Ball screw specifications

Shaft dia. x Lead / Direction of turn		50×10/Right
Preload / Ball recirculation		Z preload / Return tube
Ball dia. / Ball circle dia.		6.35/51
Screw shaft root diameter		44.4
Effective turns of balls		2.5×2
Accuracy grade / Preload		C5/Z
Basic load rating (N)	Dynamic C_a	68100
	Static C_{0a}	174000
Preload (N)		4020
Dynamic friction torque, median, (N·cm)		137
Spacer ball		None
Factory packed grease		Refer to Remarks 2.
Internal spatial volume of nut (cm ³)		59
Standard volume of grease replenishing (cm ³)		30

Recommended support unit

WBK40DFD-31	(round)
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Unit: mm

Lead accuracy			Shaft run-out ** \uparrow	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
T	e_p	v_u			Supporting condition	
			Fixed - Simple support	Fixed - Fixed		
-0.014	0.030	0.023	0.050	16.8	1400	1400
-0.019	0.035	0.025	0.065	19.6	1400	1400
-0.024	0.040	0.027	0.080	22.3	1400	1400
-0.028	0.046	0.030	0.080	25.1	1400	1400
-0.036	0.054	0.035	0.100	29.3	1400	1400
-0.048	0.065	0.040	0.130	36.2	1400	1400
-0.062	0.093	0.054	0.170	44.6	1040	1400

B-3-2.3 Finished Shaft End Ball Screws Made of Stainless Steel KA Type

◇ **Ball screw sizes are arranged in the order of the page number.**

The table begins with the smallest shaft diameter ball screw, and proceeds to larger sizes. If ball screws have the same shaft diameter, those with smaller leads appear first. Page numbers of shaft diameter and lead combinations are shown in Table 1.

◇ **Dimension tables**

The dimension tables show shapes/sizes as well as specification factors of each shaft diameter/lead combination. Tables also contain data as follows:

● **Stroke**

Nominal stroke : A reference for your use.

Maximum stroke: The stroke limit that the nut can move. The figure is obtained by subtracting the nut length (plus some allowance) from the screw threaded length (L_t).

● **Lead accuracy**

Lead accuracy is C3 and C5 grades.

T : Travel compensation;

e_p : Tolerance on specified travel;

v_v : Travel variation

See "Technical Description: Lead error" (Page B41) for details of the codes.

● **Permissible rotational speed**

$d \cdot n$: Limited by the relative peripheral speed between screw shaft and nut.

Critical speed: Limited by the natural frequency of a ball screw shaft. Critical speed depends on the supporting condition of screw shaft.

The lower of the two criteria, $d \cdot n$ and Critical Speed, will determine the overall Permissible Rotational Speed of the ball screw. For details, see "Technical Description: Permissible rotational speed" (Page B51).

Table 1 Combinations of screw shaft diameter and lead

Screw shaft diameter (mm)	Lead (mm)		
		1	2
6		B359	
8		B361	B363
10			B365
12			B369
15			
16			B379
20			

◇ **Material**

A martensitic stainless steel is used. A special heat treatment technology provides the ball groove section with sufficient hardness which produces high load carrying capacity and durability.

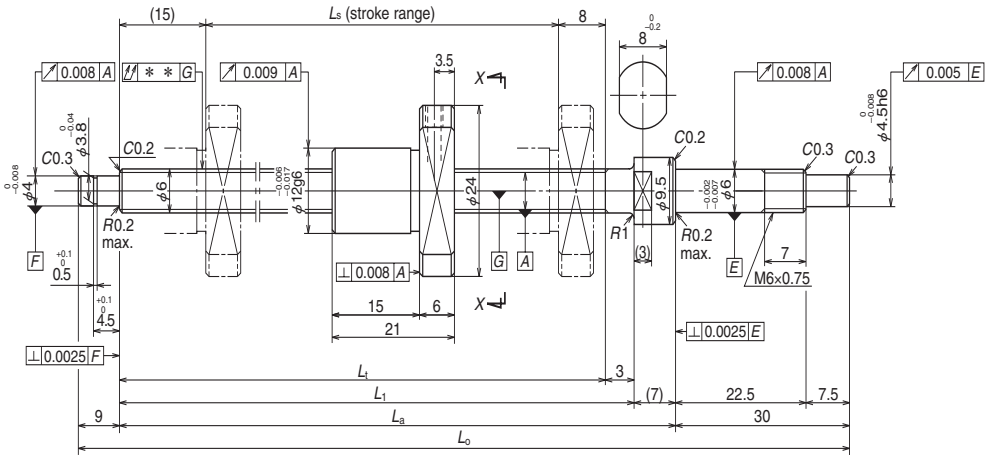
◇ **Other**

Seal of the ball screw, ball recirculating deflector, and end cap are made of synthetic resin. Consult NSK when using the ball screws under extreme environments or special environments, or using special lubricant or oil.

For special environments, refer to Pages B74 and D2. Refer to Pages B71 and D13 for lubricants.

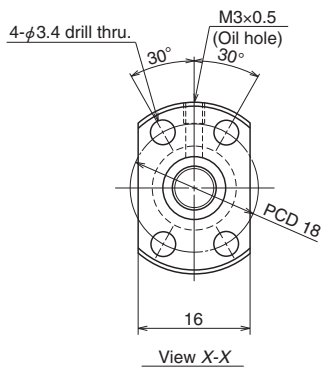
Note: For details of standard stock products, contact NSK.

4	5	10	20
B367			
	B371	B373	
		B375	B377
			B381



Ball screw No.	Stroke		Thread length			
	Nominal	Maximum	L_t	L_1	L_a	L_o
W0601KA-3PY-C3Z1	100	102	125	128	135	174

- Remarks
- Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use.**
Refer to Page D13 for details.
 - NSK Clean Grease LG2 is recommended.
 - Nut does not have a seal.
 - Contact NSK if permissible rotational speed is to be exceeded.

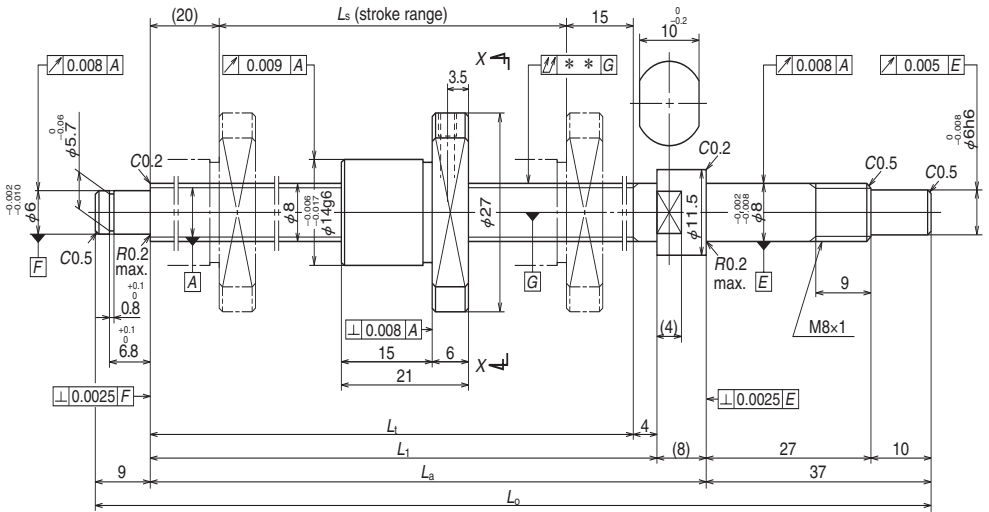


Ball screw specifications

Shaft dia. x Lead / Direction of turn		6x1/Right
Preload / Ball recirculation		P preload / Deflector
Ball dia. / Ball circle dia.		0.800/6.2
Screw shaft root diameter		5.2
Effective turns of balls		1x3
Accuracy grade / Preload		C3/Z
Basic load rating (N)	Dynamic C_s	555
	Static C_{0a}	680
Axial play		0
Preload (N)		147
Dynamic friction torque, (N-cm)		1.3 or less
Spacer ball		None
Factory packed grease		Refer to the remarks 1. below.

Unit: mm

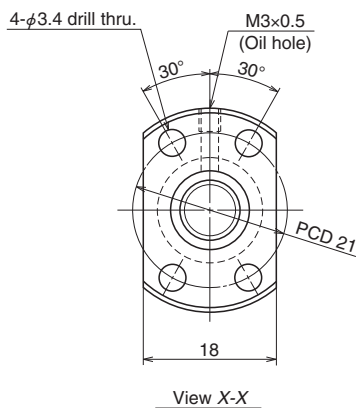
Lead accuracy			Shaft run-out ** \updownarrow	Mass (kg)	Permissible rotational speed N (min ⁻¹)
T	e_p	v_u			Supporting condition
0	0.010	0.008	0.025	0.06	Fixed - Simple support 3000



Ball screw No.	Stroke		Thread length			
	Nominal	Maximum	L_t	L_1	L_a	L_o
W0802KA-1PY-C3Z1	150	155	190	194	202	248

- Remarks
1. Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use.
Refer to Page D13 for details.
NSK Clean Grease LG2 is recommended.
 2. Nut does not have a seal.
 3. Contact NSK if permissible rotational speed is to be exceeded.

Unit: mm

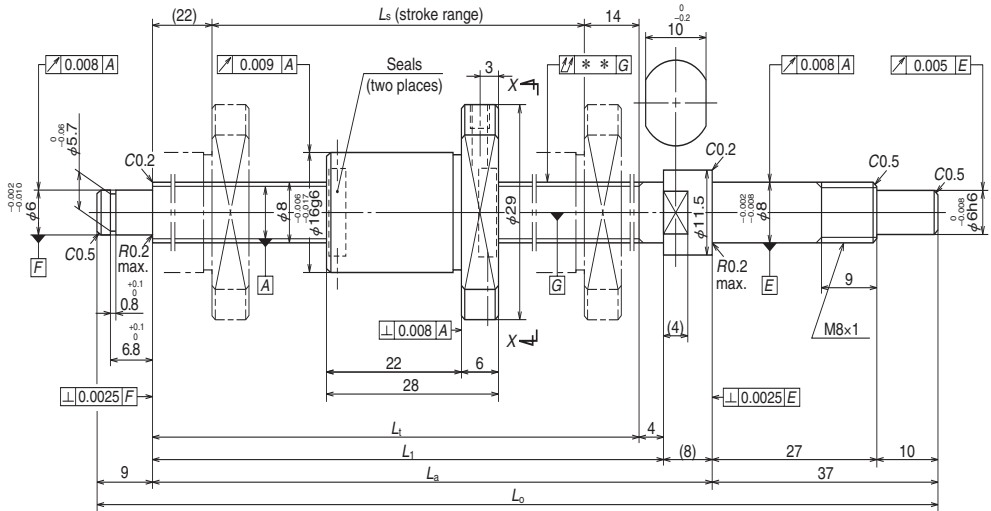
**Ball screw specifications**

Shaft dia. x Lead / Direction of turn		8×1/Right
Preload / Ball recirculation		P preload / Deflector
Ball dia. / Ball circle dia.		0.800/8.2
Screw shaft root diameter		7.2
Effective turns of balls		1×3
Accuracy grade / Preload		C3/Z
Basic load rating (N)	Dynamic C_s	645
	Static C_{0a}	955
Axial play		0
Preload (N)		29.4
Dynamic friction torque, (N·cm)		1.8 or less
Spacer ball		None
Factory packed grease		Refer to the remarks 1. below.

Clean support unit	For drive side	For opposite of drive side
WBK08-01C (square)	○	
WBK08-11C (round)	○	
WBK08S-01C (square)		○

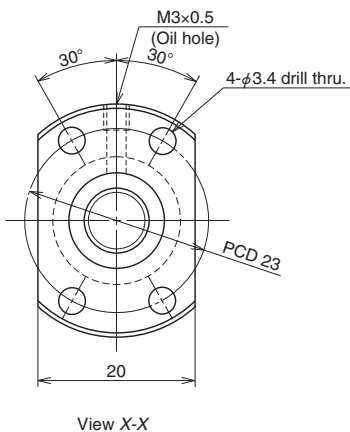
Unit: mm

Lead accuracy			Shaft run-out ** ↗	Mass (kg)	Permissible rotational speed N (min ⁻¹)
T	e_p	v_u			Supporting condition
0	0.010	0.008	0.035	0.12	Fixed - Simple support 3000



Ball screw No.	Stroke		Thread length			
	Nominal	Maximum	L_t	L_1	L_a	L_0
W0802KA-5PY-C3Z2	150	154	190	194	202	248

- Remarks
1. Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use.
Refer to Page D13 for details.
NSK Clean Grease LG2 is recommended.
 2. Contact NSK if permissible rotational speed is to be exceeded.



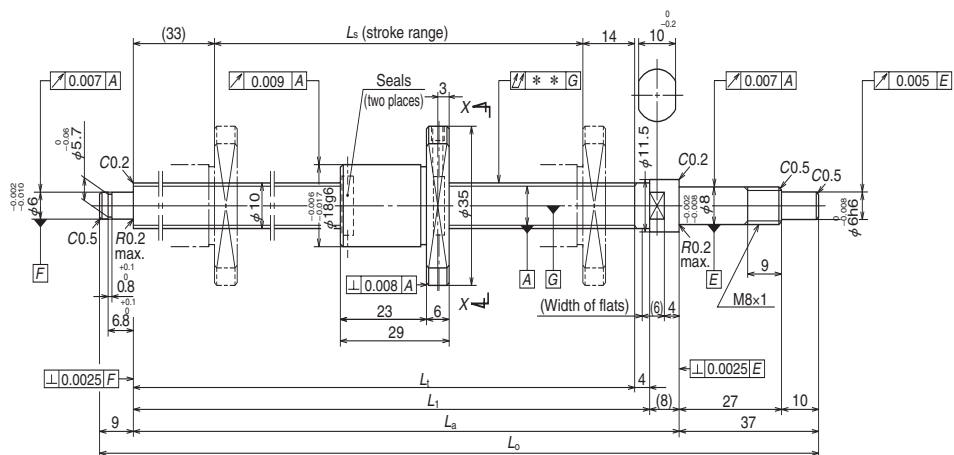
Ball screw specifications

Shaft dia. x Lead / Direction of turn		8x2/Right
Preload / Ball recirculation		P preload / Deflector
Ball dia. / Ball circle dia.		1.200/8.3
Screw shaft root diameter		6.9
Effective turns of balls		1x3
Accuracy grade / Preload		C3/Z
Basic load rating (N)	Dynamic C_s	1270
	Static C_{0a}	1630
Axial play		0
Preload (N)		49.0
Dynamic friction torque, (N-cm)		2.0 or less
Spacer ball		None
Factory packed grease		Refer to the remarks 1. below.
Internal spatial volume of nut (cm ³)		0.34
Standard volume of grease replenishing (cm ³)		0.17

Clean support unit	For drive side	For opposite of drive side
WBK08-01C (square)	○	
WBK08-11C (round)	○	
WBK08S-01C (square)		○

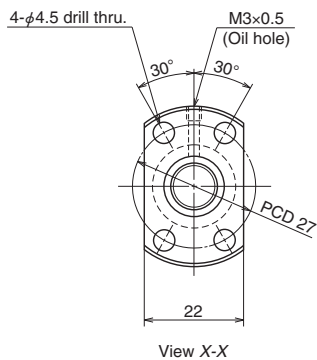
Unit: mm

Lead accuracy			Shaft run-out ** ↗↘	Mass (kg)	Permissible rotational speed N (min ⁻¹)
T	e_p	v_u			Supporting condition
0	0.010	0.008	0.035	0.13	3000 Fixed - Simple support



Ball screw No.	Stroke		Thread length			
	Nominal	Maximum	L_1	L_1	L_a	L_0
W1002KA-3PY-C3Z2	200	203	250	254	262	308

- Remarks
- 1. Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use.**
Refer to Page D13 for details.
NSK Clean Grease LG2 is recommended.
 2. Contact NSK if permissible rotational speed is to be exceeded.



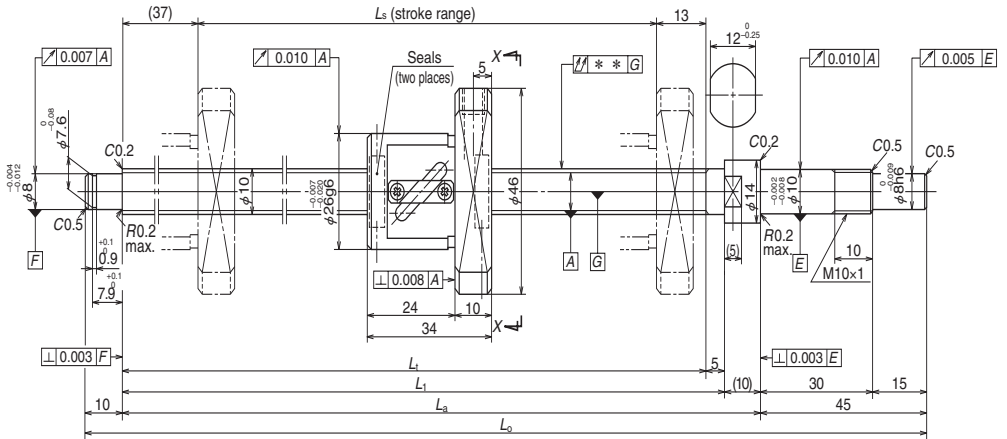
Ball screw specifications

Shaft dia. x Lead / Direction of turn		10x2/Right
Preload / Ball recirculation		P preload / Deflector
Ball dia. / Ball circle dia.		1.200/10.3
Screw shaft root diameter		8.9
Effective turns of balls		1x3
Accuracy grade / Preload		C3/Z
Basic load rating (N)	Dynamic C_d	1470
	Static C_{0a}	2190
Axial play		0
Preload (N)		58.8
Dynamic friction torque, (N-cm)		0.10 – 2.5
Spacer ball		None
Factory packed grease		Refer to the remarks 1. below.
Internal spatial volume of nut (cm ³)		0.44
Standard volume of grease replenishing (cm ³)		0.22

Clean support unit	For drive side	For opposite of drive side
WBK08-01C (square)	○	
WBK08-11C (round)	○	
WBK08S-01C (square)		○

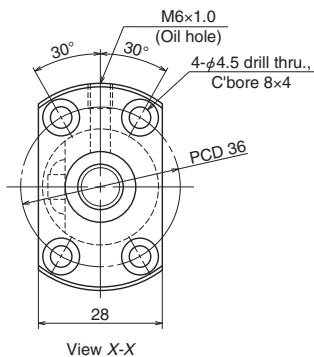
Unit: mm

Lead accuracy			Shaft run-out ** ↑↓	Mass (kg)	Permissible rotational speed N (min ⁻¹)
T	e_p	v_u			Supporting condition
0	0.012	0.008	0.030	0.22	Fixed - Simple support 3000



Ball screw No.	Stroke		Thread length			
	Nominal	Maximum	L_t	L_1	L_a	L_o
W1001KA-3P-C3Z4	100	110	160	165	175	230
W1003KA-3P-C3Z4	300	310	360	365	375	430

Remarks **1. Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use.**
 Refer to Page D13 for details.
 NSK Clean Grease LG2 is recommended.
2. Contact NSK if permissible rotational speed is to be exceeded.



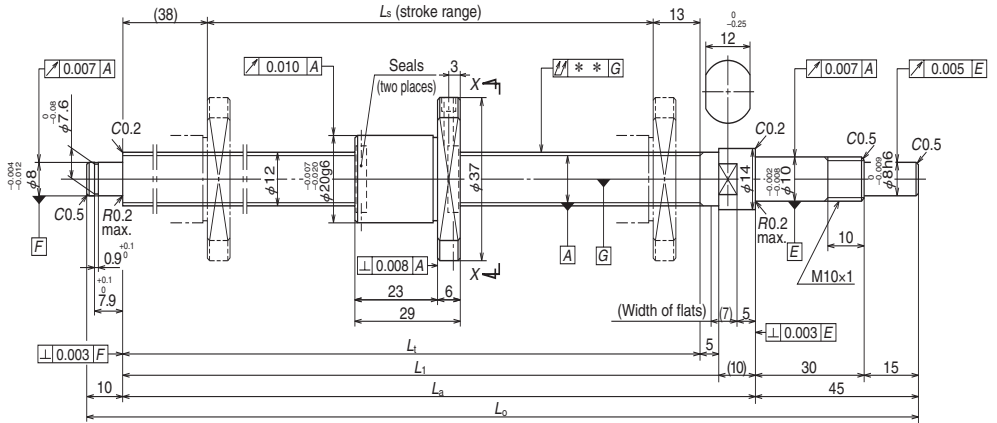
Ball screw specifications

Shaft dia. x Lead / Direction of turn		10x4/Right
Preload / Ball recirculation		P preload / Return tube
Ball dia. / Ball circle dia.		2.000/10.3
Screw shaft root diameter		8.2
Effective turns of balls		2.5x1
Accuracy grade / Preload		C3/Z
Basic load rating (N)	Dynamic C_s	2630
	Static C_{0a}	3270
Axial play		0
Preload (N)		98.1
Dynamic friction torque, (N-cm)		0.5 – 3.9
Spacer ball		None
Factory packed grease		Refer to the remarks 1. below.
Internal spatial volume of nut (cm ³)		0.8
Standard volume of grease replenishing (cm ³)		0.4

Clean support unit	For drive side	For opposite of drive side
WBK10-01C (square)	○	
WBK10-11C (round)	○	
WBK10S-01C (square)		○

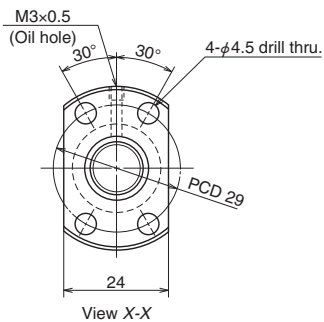
Unit: mm

Lead accuracy			Shaft run-out ** ↕	Mass (kg)	Permissible rotational speed N (min ⁻¹)
T	e_p	v_u			Supporting condition
0	0.010	0.008	0.030	0.29	3000
0	0.013	0.008	0.050	0.39	3000



Ball screw No.	Stroke		Thread length			
	Nominal	Maximum	L_1	L_1	L_a	L_o
W1201KA-3PY-C3Z2	100	109	160	165	175	230
W1203KA-1PY-C3Z2	250	259	310	315	325	380

- Remarks
1. Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use.
Refer to Page D13 for details.
NSK Clean Grease LG2 is recommended.
 2. Contact NSK if permissible rotational speed is to be exceeded.



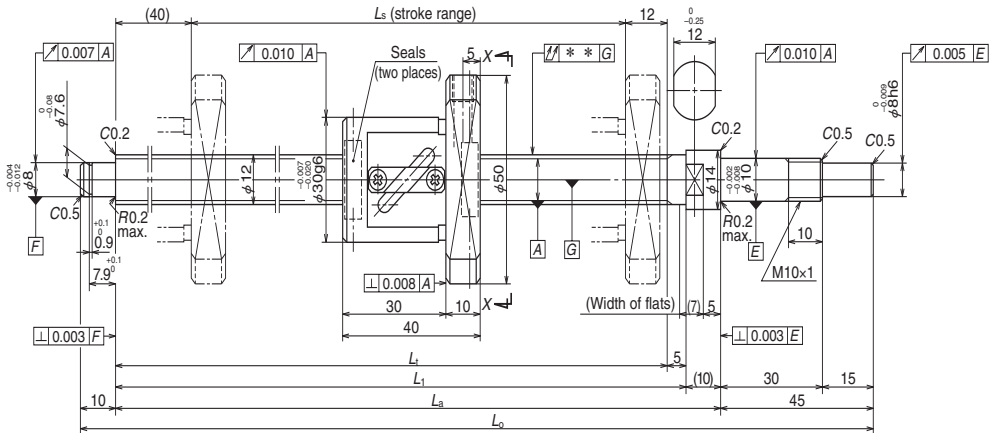
Ball screw specifications

Shaft dia. x Lead / Direction of turn		12x2/Right
Preload / Ball recirculation		P preload / Deflector
Ball dia. / Ball circle dia.		1.200/12.3
Screw shaft root diameter		10.9
Effective turns of balls		1x3
Accuracy grade / Preload		C3/Z
Basic load rating (N)	Dynamic C_s	1600
	Static C_{0a}	2670
Axial play		0
Preload (N)		98.1
Dynamic friction torque, (N-cm)		0.4 – 3.4
Spacer ball		None
Factory packed grease		Refer to the remarks 1. below.
Internal spatial volume of nut (cm ³)		0.53
Standard volume of grease replenishing (cm ³)		0.27

Clean support unit	For drive side	For opposite of drive side
WBK10-01C (square)	○	
WBK10-11C (round)	○	
WBK10S-01C (square)		○

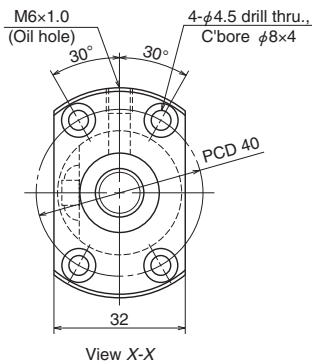
Unit: mm

Lead accuracy			Shaft run-out ** ↑↓	Mass (kg)	Permissible rotational speed N (min ⁻¹)
T	e _p	v _u			Supporting condition
0	0.010	0.008	0.030	0.24	3000
0	0.012	0.008	0.040	0.36	3000



Ball screw No.	Stroke		Thread length			
	Nominal	Maximum	L_t	L_1	L_a	L_o
W1202KA-3P-C3Z5	200	208	260	265	275	330
W1205KA-1P-C3Z5	450	458	510	515	525	580

- Remarks
- 1. Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use.**
Refer to Page D13 for details.
NSK Clean Grease LG2 is recommended.
 2. Contact NSK if permissible rotational speed is to be exceeded.



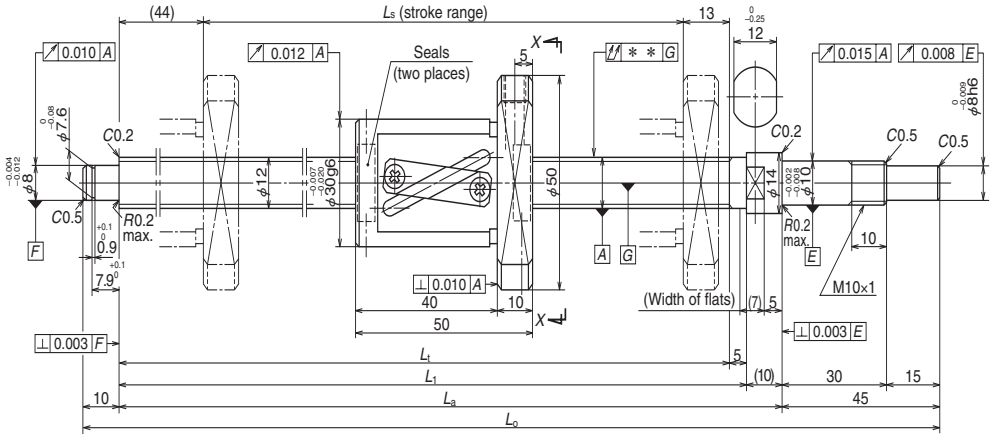
Ball screw specifications

Shaft dia. x Lead / Direction of turn	12x5/Right	
Preload / Ball recirculation	P preload / Return tube	
Ball dia. / Ball circle dia.	2.381/12.3	
Screw shaft root diameter	9.8	
Effective turns of balls	2.5x1	
Accuracy grade / Preload	C3/Z	
Basic load rating (N)	Dynamic C_s	3590
	Static C_{0a}	4630
Axial play	0	
Preload (N)	98.1	
Dynamic friction torque, (N-cm)	1.0 – 4.4	
Spacer ball	None	
Factory packed grease	Refer to the remarks 1. below.	
Internal spatial volume of nut (cm ³)	1.2	
Standard volume of grease replenishing (cm ³)	0.6	

Clean support unit	For drive side	For opposite of drive side
WBK10-01C (square)	○	
WBK10-11C (round)	○	
WBK10S-01C (square)		○

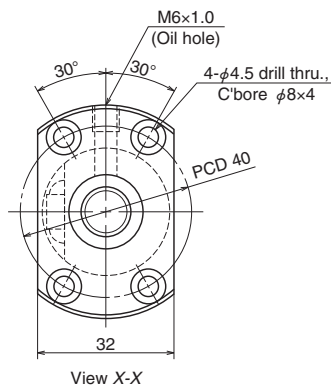
Unit: mm

Lead accuracy			Shaft run-out ** ↑↓	Mass (kg)	Permissible rotational speed N (min ⁻¹)
T	e_p	v_u			Supporting condition
0	0.012	0.008	0.040	0.47	3000
0	0.016	0.012	0.065	0.66	3000



Ball screw No.	Stroke		Thread length			
	Nominal	Maximum	L_t	L_1	L_a	L_c
W1203KA-3P-C5Z10	250	253	310	315	325	380
W1205KA-3P-C5Z10	450	453	510	515	525	580

- Remarks
1. Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use.
Refer to Page D13 for details.
NSK Clean Grease LG2 is recommended.
 2. Contact NSK if permissible rotational speed is to be exceeded.



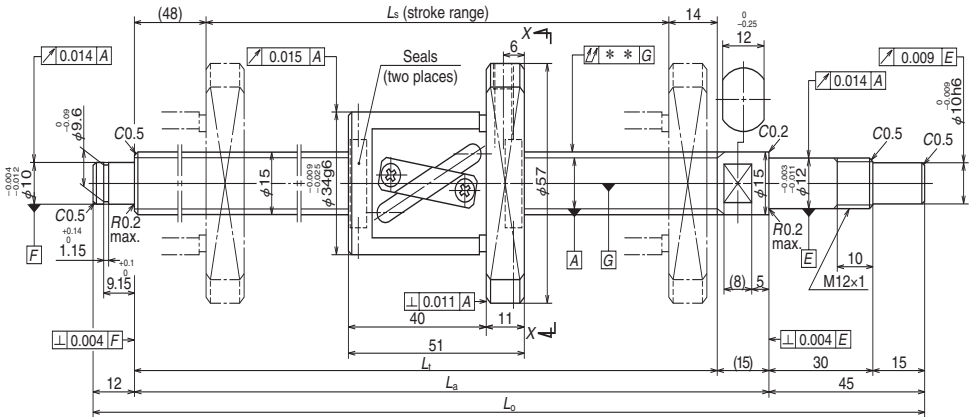
Ball screw specifications

Shaft dia. x Lead / Direction of turn		12x10/Right
Preload / Ball recirculation		P preload / Return tube
Ball dia. / Ball circle dia.		2.381/12.5
Screw shaft root diameter		10.0
Effective turns of balls		2.5x1
Accuracy grade / Preload		C5/Z
Basic load rating (N)	Dynamic C_a	3620
	Static C_{0a}	4750
Axial play		0
Preload (N)		98.1
Dynamic friction torque, (N·cm)		1.0 – 4.9
Spacer ball		None
Factory packed grease		Refer to the remarks 1. below.
Internal spatial volume of nut (cm ³)		1.4
Standard volume of grease replenishing (cm ³)		0.7

Clean support unit	For drive side	For opposite of drive side
WBK10-01C (square)	○	
WBK10-11C (round)	○	
WBK10S-01C (square)		○

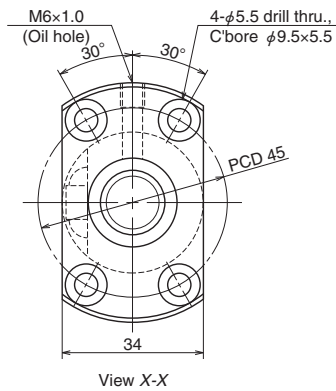
Unit: mm

Lead accuracy			Shaft run-out ** ↗	Mass (kg)	Permissible rotational speed N (min ⁻¹)
T	e_p	v_u			Supporting condition
0	0.023	0.018	0.050	0.56	3000
0	0.030	0.023	0.075	0.72	3000



Ball screw No.	Stroke		Thread length		
	Nominal	Maximum	L_t	L_a	L_o
W1504KA-3P-C5Z10	400	427	489	504	561
W1506KA-3P-C5Z10	600	627	689	704	761
W1510KA-1P-C5Z10	1000	1027	1089	1104	1161

- Remarks
- Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use.**
Refer to Page D13 for details.
NSK Clean Grease LG2 is recommended.
 - Contact NSK if permissible rotational speed is to be exceeded.



Ball screw specifications

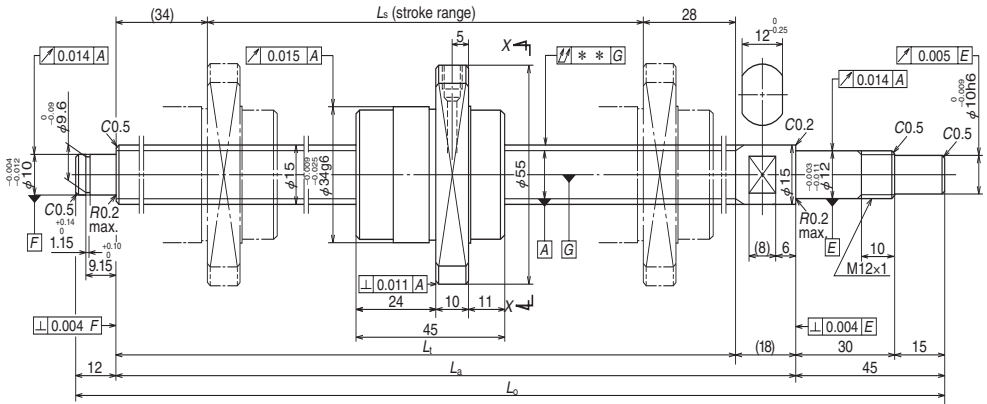
Shaft dia. x Lead / Direction of turn	15x10/Right	
Preload / Ball recirculation	P preload / Return tube	
Ball dia. / Ball circle dia.	3.175/15.5	
Screw shaft root diameter	12.2	
Effective turns of balls	2.5x1	
Accuracy grade / Preload	C5/Z	
Basic load rating (N)	Dynamic C_s	6660
	Static C_{0a}	9480
Axial play	0	
Preload (N)	147	
Dynamic friction torque, (N·cm)	1.5 – 7.9	
Spacer ball	None	
Factory packed grease	Refer to the remarks 1. below.	
Internal spatial volume of nut (cm ³)	2.3	
Standard volume of grease replenishing (cm ³)	1.4	

Clean support unit	For drive side	For opposite of drive side
WBK12-01C (square)	○	
WBK12-11C (round)	○	
WBK12S-01C (square)		○

Unit: mm

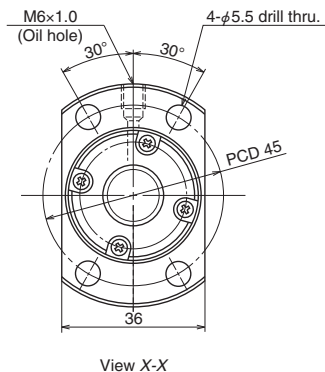
Lead accuracy			Shaft run-out ** $\uparrow\downarrow$	Mass (kg)	Permissible rotational speed N (min ⁻¹)
T	e_p	v_u			Supporting condition
0	0.027	0.020	0.050	0.99	3000
0	0.035	0.025	0.065	1.2	3000
0	0.046	0.030	0.110	1.7	1610

Finished shaft end Stainless steel product KA Type (Ultra high helix lead) Dia. 15, Lead 20



Ball screw No.	Stroke		Thread length		
	Nominal	Maximum	L_t	L_a	L_o
W1504KA-7PG-C5Z20	400	424	486	504	561
W1506KA-7PG-C5Z20	600	624	686	704	761
W1510KA-3PG-C5Z20	1000	1024	1086	1104	1161

- Remarks
- 1. Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use.**
Refer to Page D13 for details.
NSK Clean Grease LG2 is recommended.
 2. Contact NSK if permissible rotational speed is to be exceeded.



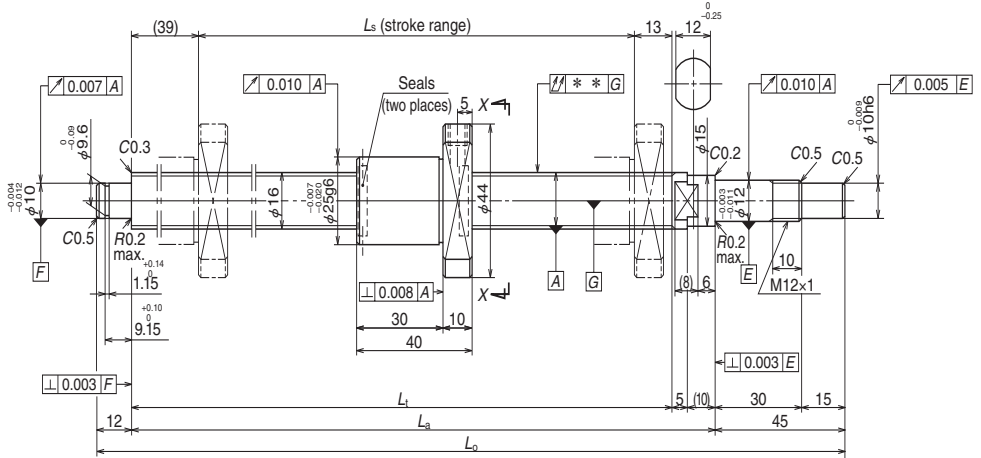
Ball screw specifications

Shaft dia. x Lead / Direction of turn		15×20/Right
Preload / Ball recirculation		P preload / End cap
Ball dia. / Ball circle dia.		3.175/15.5
Screw shaft root diameter		12.2
Effective turns of balls		1.7×1
Accuracy grade / Preload		C5/Z
Basic load rating (N)	Dynamic C_s	4630
	Static C_{0a}	6430
Axial play		0
Preload (N)		147
Dynamic friction torque, (N·cm)		1.5 – 7.9
Spacer ball		None
Factory packed grease		Refer to the remarks 1. below.
Internal spatial volume of nut (cm ³)		1.9
Standard volume of grease replenishing (cm ³)		1.0

Clean support unit	For drive side	For opposite of drive side
WBK12-01C (square)	○	
WBK12-11C (round)	○	
WBK12S-01C (square)		○

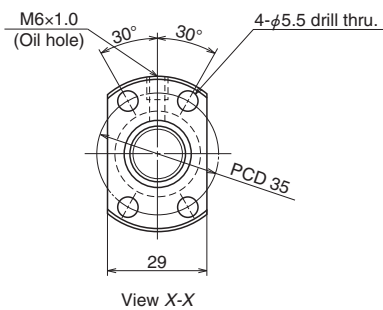
Unit: mm

Lead accuracy			Shaft run-out ** ↑↓	Mass (kg)	Permissible rotational speed N (min ⁻¹)
T	e_p	v_u			Supporting condition
0	0.027	0.020	0.050	1.0	3000
0	0.035	0.025	0.065	1.3	3000
0	0.046	0.030	0.110	1.8	1610



Ball screw No.	Stroke		Thread length		
	Nominal	Maximum	L_t	L_a	L_o
W1601KA-3PY-C3Z2	100	137	189	204	261
W1603KA-1PY-C3Z2	300	337	389	404	461

- Remarks
- 1. Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use.**
Refer to Page D13 for details.
NSK Clean Grease LG2 is recommended.
 2. Contact NSK if permissible rotational speed is to be exceeded.



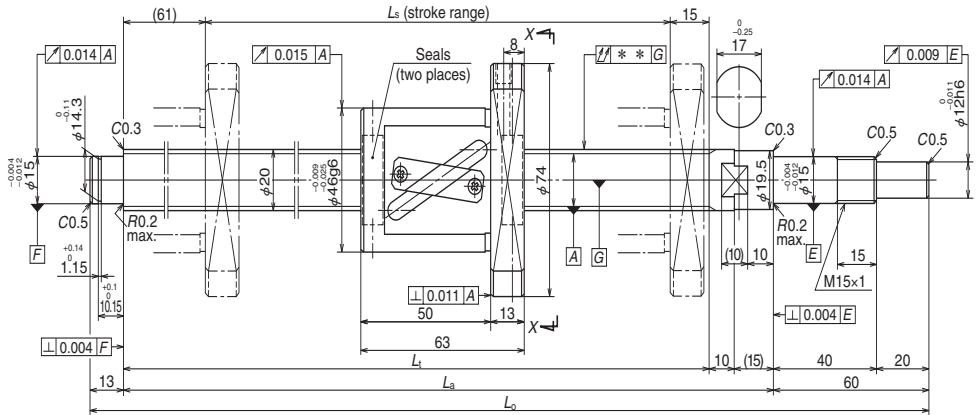
Ball screw specifications

Shaft dia. x Lead / Direction of turn		16x2/Right
Preload / Ball recirculation		P preload / Deflector
Ball dia. / Ball circle dia.		1.588/16.4
Screw shaft root diameter		14.6
Effective turns of balls		1x4
Accuracy grade / Preload		C3/Z
Basic load rating (N)	Dynamic C_s	3400
	Static C_{0a}	6240
Axial play		0
Preload (N)		147
Dynamic friction torque, (N·cm)		0.5 – 4.9
Spacer ball		None
Factory packed grease		Refer to the remarks 1. below.
Internal spatial volume of nut (cm ³)		1.6
Standard volume of grease replenishing (cm ³)		0.8

Clean support unit	For drive side	For opposite of drive side
WBK12-01C (square)	○	
WBK12-11C (round)	○	
WBK12S-01C (square)		○

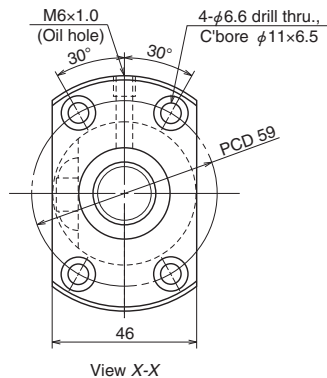
Unit: mm

Lead accuracy			Shaft run-out ** ↑↓	Mass (kg)	Permissible rotational speed N (min ⁻¹)
T	e_p	v_u			Supporting condition
0	0.010	0.008	0.020	0.46	3000
0	0.013	0.010	0.035	0.75	3000



Ball screw No.	Stroke		Thread length		
	Nominal	Maximum	L_t	L_a	L_o
W2005KA-3P-C5Z20	400	434	510	535	608
W2007KA-3P-C5Z20	600	634	710	735	808
W2011KA-3P-C5Z20	1000	1034	1110	1135	1208

- Remarks
- Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use.**
Refer to Page D13 for details.
NSK Clean Grease LG2 is recommended.
 - Contact NSK if permissible rotational speed is to be exceeded.



Ball screw specifications		
Shaft dia. x Lead / Direction of turn		20x20/Right
Preload / Ball recirculation		P preload / Return tube
Ball dia. / Ball circle dia.		3.969/21
Screw shaft root diameter		16.9
Effective turns of balls		1.5x1
Accuracy grade / Preload		C5/Z
Basic load rating (N)	Dynamic C_s	6700
	Static C_{0a}	9710
Axial play		0
Preload (N)		196
Dynamic friction torque, (N·cm)		2.0 – 11.8
Spacer ball		None
Factory packed grease		Refer to the remarks 1. below.
Internal spatial volume of nut (cm ³)		4.2
Standard volume of grease replenishing (cm ³)		2.1

Clean support unit	For drive side	For opposite of drive side
WBK15-01C (square)	○	
WBK15-11C (round)	○	
WBK15S-01C (square)		○

Unit: mm

Lead accuracy			Shaft run-out ** ↗↘	Mass (kg)	Permissible rotational speed N (min ⁻¹)
T	e_p	v_u			Supporting condition
0	0.030	0.023	0.050	2.0	3000
0	0.035	0.025	0.085	2.5	3000
0	0.046	0.030	0.110	3.4	2160

B-3-2.4 Blank Shaft End MS Type, FS Type, SS Type

◇ **Ball screw sizes are arranged in order of the page number.**

The dimension table begins with the smallest shaft diameter of each MS, FS and SS type ball screws, and proceed to larger sizes. If ball screws have the same shaft diameter, those with smaller leads appear first. Page numbers of shaft diameter and lead combinations are shown in the Table 1.

◇ **Dimension tables**

The dimension tables show shapes/sizes as well as specification factors of each shaft diameter/lead combination. Tables also contain data as follows:

● **Lead accuracy**

Lead accuracy is C3 and C5 grades.

T : Travel compensation;

e_p : Tolerance of specified travel;

v_0 : Travel variation

See "Technical description: Lead accuracy" (Page B41) for details of the codes.

● **Permissible rotational speed**

$d \cdot n$: Limited by the relative peripheral speed between the screw shaft and the nut.

Critical speed : Limited by the natural frequency of a ball screw shaft. Critical speed depends on the supporting condition of screw shaft.

Table 1 Combinations of screw shaft diameter and lead

Screw shaft diameter(mm) \ Lead(mm)	1	1.5	2	2.5	4	5	6
4	B385						
6	B385						
8	B385	B387	B387				
10			B387	B389	B393		
12			B389	B389		B393	
14						B395	
15							
16			B391	B391		B399	
20					B405	B405	
25					B407	B407 B409	B407
28						B411 B413	B411 B413
32						B415 B417 B419	B415 B417
36							
40						B421	
45							
50							

Criterion of maximum rotational speed : 3000 min⁻¹

The lower of the two criteria, d-n and Critical Rotational Speed, will determine the overall Permissible Rotational Speed of the ball screw. For details, see "Technical description: Permissible rotational speed" (Page B51).

◇ **Shaft end processing**

MS, FS, and SS types require shaft end processing to your specification. An exclusive support unit (Page B433) is available to design the shaft end support section. See "Configuration of shaft end" (Page B27 and following pages) when using a support unit. See "Technical

Description: Shaft end processing" (Page B83) for procedures of shaft end processing and precautions.

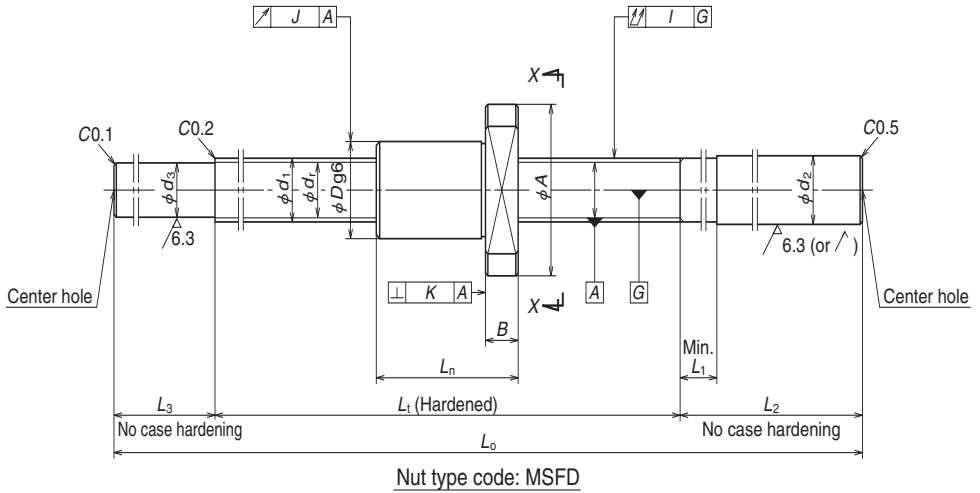
◇ **Other**

Seal of the ball screw, ball recirculating deflector and end cap are made of synthetic resin. Consult NSK when using the ball screws under extreme environments or special environments, or using special lubricant or oil.

For special environments, refer to Pages B74 and D2. Refer to Pages B71 and D13 for lubricants.

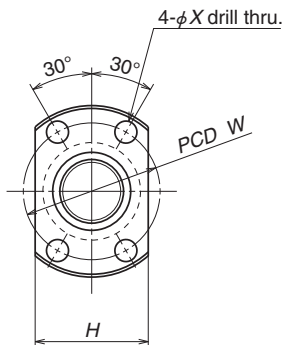
Note: For details of standard stock products, contact NSK.

8	10	12	16	20	25	32	40	50
	B393							
B395								
	B395			B397				
			B399			B397		
	B399			B399			B397	
	B409 B411			B401	B401			B401
B417	B419 B421 B423				B403	B403		
	B421 B423							
B425	B425 B427 B429	B425 B427						
	B431							
	B429							
	B431							



Ball screw No.	Stroke Max. L_r-L_n	Screw shaft dia. d_1	Lead l	Ball dia. D_w	Ball circle dia. d_m	Root dia. d_r	Effective ball turns	Basic load rating (N)		Axial play Max.	Nut			
								Dynamic C_a	Static C_{0a}		Flange			
											Outside dia. D	A	H	B
W0400MS-1Y-C3T1	68	4	1	0.8	4.2	3.2	2	370	370	0.005	10	20	14	3
W0601MS-1Y-C3T1	110	6	1	0.8	6.2	5.2	3	680	920	0.005	12	24	16	3.5
W0801MS-1Y-C3T1	94	8	1	0.8	8.2	7.2	3	790	1290	0.005	14	27	18	4
W0802MS-1Y-C3T1	174													

- Remarks:
1. NSK support unit is recommended. Refer to Page B433 for details.
 2. **Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use.**
Refer to Page D13 for details.
 3. Nut does not have a seal.
 4. Permissible rotational speed is determined by a d-n value and a critical speed. See page B383 and B51.

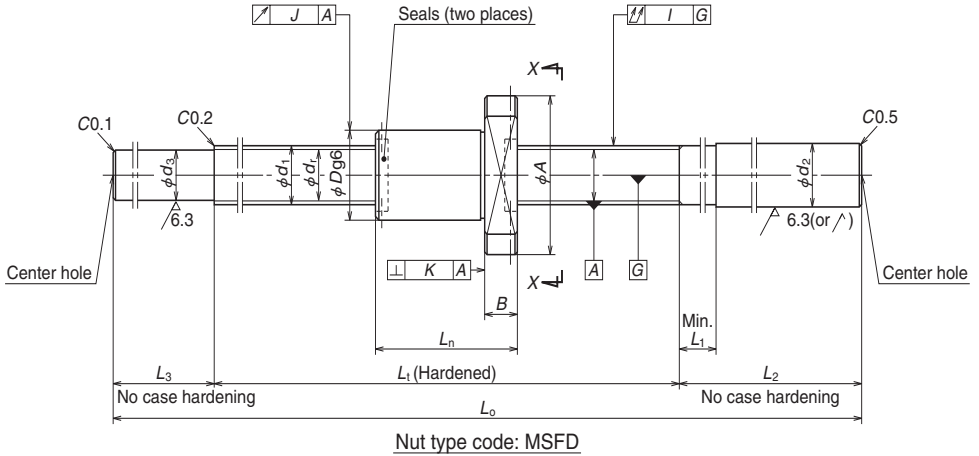


View X-X

Unit: mm

dimensions			Screw shaft dimensions							Lead accuracy			Run out			Mass (kg)	Permissible rotational speed N(min ⁻¹)
Overall length	Bolt hole		Threaded length	Shaft end, right			Shaft end, left		Overall length	Deviation	Variation	Shaft straightness	Nut O.D. eccentricity	Flange perpendicularity			
L_n	W	X	L_t	d_2	L_1	L_2	d_3	L_3	L_o	T	e_p	v_u	I	J	K		
12	15	2.9	80	6.0	4	40	3.3	10	130	0	0.008	0.008	0.030	0.009	0.008	0.026	3000
15	18	3.4	125	8.0	4	50	5.3	15	190	0	0.010	0.008	0.030	0.009	0.008	0.063	3000
16	21	3.4	110	10.2	4	60	7.3	25	195	0	0.010	0.008	0.030	0.009	0.008	0.11	3000
			275						0.050				0.14				

Blank shaft end MS Type

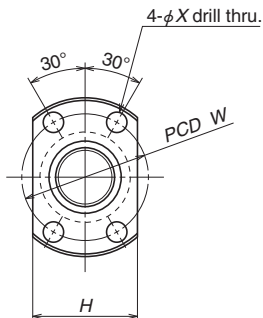


Ball screw No.	Stroke Max. L_1-L_n	Screw shaft dia. d_1	Lead l	Ball dia. D_w	Ball circle dia. d_m	Root dia. d_t	Effective ball turns	Basic load rating (N)		Axial play Max.	Nut			
								Dynamic C_a	Static C_{0a}		Outside dia. D	Flange		
												A	H	B
W0801MS-2Y-C3T1.5	88	8	1.5	1.0	8.3	7.0	3	1270	1970	0.005	15	28	19	4
W0802MS-2Y-C3T1.5	168													
W0801MS-3Y-C3T2	84	8	2	1.2	8.3	6.9	3	1560	2200	0.005	16	29	20	4
W0802MS-3Y-C3T2	164													
W1001MS-1Y-C3T2	122	10	2	1.2	10.3	8.9	3	1800	2970	0.005	18	35	22	5
W1002MS-1Y-C3T2	222													

Remarks: 1. NSK support unit is recommended. Refer to Page B433 for details.

2. **Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use.**
Refer to Page D13 for details.

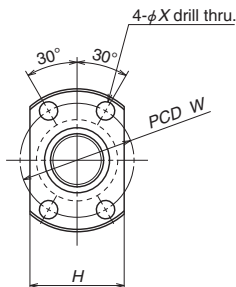
3. Permissible rotational speed is determined by a d-n value and a critical speed. See page B383 and B51.



View X-X

Unit: mm

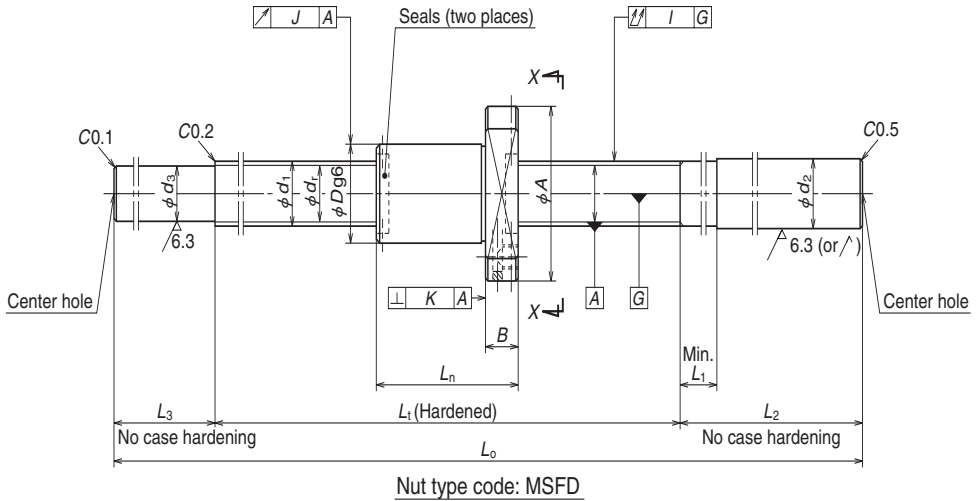
dimensions			Screw shaft dimensions						Lead accuracy			Run out			Mass (kg)	Permissible rotational speed N(min ⁻¹)	
Overall length	Bolt hole		Threaded length	Shaft end, right			Shaft end, left		Overall length	T	Deviation e _p	Variation v _u	Shaft straightness	Nut O.D. eccentricity			Flange perpendicularity
L _n	W	X	L _t	d ₂	L ₁	L ₂	d ₃	L ₃	L _o				I	J	K		
22	22	3.4	110	10.2	4	60	7.2	25	195	0	0.010	0.008	0.030	0.009	0.008	0.12	3000
			190						275				0.050			0.15	
26	23	3.4	110	10.2	4	60	7.0	25	195	0	0.010	0.008	0.030	0.009	0.008	0.12	3000
			190						275				0.050			0.15	
28	27	4.5	150	12.2	4	70	9.0	30	250	0	0.010	0.008	0.035	0.009	0.008	0.22	3000
			250						350		0.012		0.050			0.27	



View X-X

Unit: mm

dimensions			Screw shaft dimensions						Lead accuracy			Run out			Mass (kg)	Permissible rotational speed N(min ⁻¹)
Overall length	Bolt hole		Threaded length	Shaft end, right		Shaft end, left		Overall length	T	Deviation	Variation	Shaft straightness	Nut O.D. eccentricity	Flange perpendicularity		
L _n	W	X	L _t	d ₂	L ₁	L ₂	d ₃	L ₃	L _o		e _p	v _u	I	J	K	
32	28	4.5	150	12.2	4	70	8.7	30	250	0	0.010	0.008	0.035	0.010	0.008	0.23
			350						0.012							0.050
28	29	4.5	210	14.2	5	80	11.0	35	325	0	0.012	0.008	0.050	0.010	0.008	0.36
			425						0.060							0.060
32	30	4.5	210	14.2	5	80	10.7	35	325	0	0.012	0.008	0.050	0.010	0.008	0.37
			425						0.060							0.060

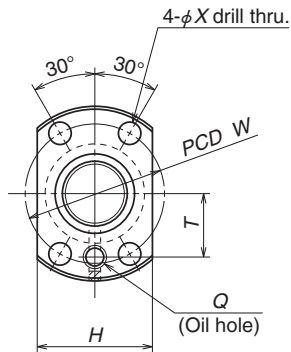


Ball screw No.	Stroke Max. L_1-L_n	Screw shaft dia. d_1	Lead l	Ball dia. D_w	Ball circle dia. d_m	Root dia. d_r	Effective ball turns	Basic load rating (N)		Axial play Max.	Nut						
								Dynamic C_a	Static C_{0a}		Flange				Overall length L_n	Bolt hole	
											Outside dia. D	A	H	B		W	X
W1602MS-1Y-C3T2	210	16	2	1.588	16.4	14.6	4	4150	8450	0.005	25	44	29	10	40	35	5.5
W1604MS-1Y-C3T2	360																
W1602MS-2Y-C3T2.5	206	16	2.5	1.588	16.4	14.6	4	4150	8440	0.005	25	44	29	10	44	35	5.5
W1604MS-2Y-C3T2.5	356																

Remarks: 1. NSK support unit is recommended. Refer to Page B433 for details.

2. Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use. Refer to Page D13 for details.

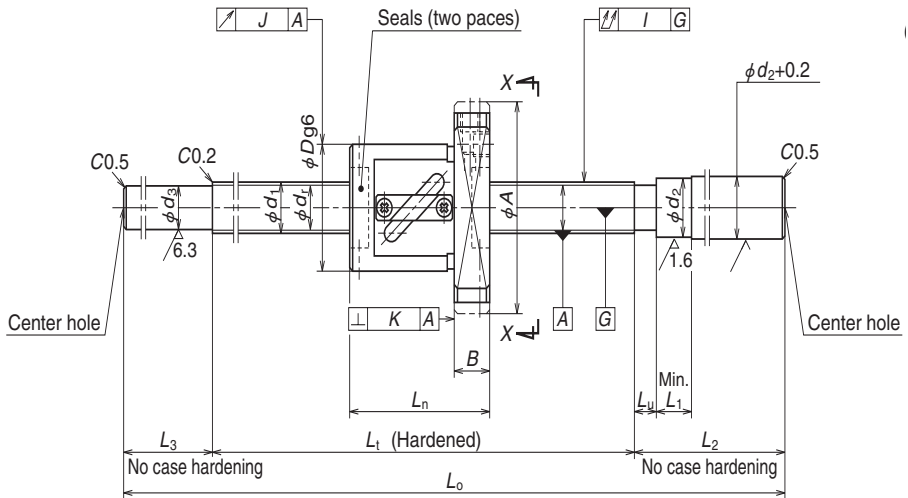
3. Permissible rotational speed is determined by a d-n value and a critical speed. See page B383 and B51.



View X-X

Unit: mm

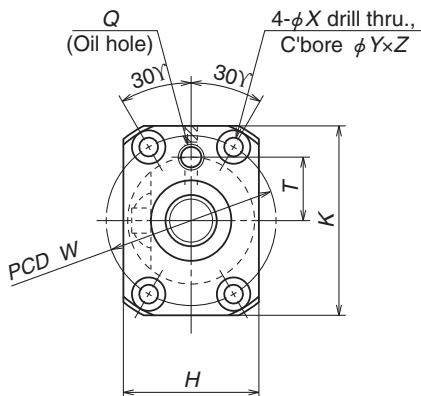
dimensions		Screw shaft dimensions							Lead accuracy			Run out			Mass (kg)	Permissible rotational speed N(min ⁻¹)	Internal spatial volume of nut (cm ³)	Standard volume of grease replenishing (cm ³)
Oil hole		Threaded length	Shaft end, right			Shaft end, left		Overall length	T	Deviation	Variation	Shaft straightness	Nut O.D. eccentricity	Flange perpendicularity				
Q	T	L ₁	d ₂	L ₁	L ₂	d ₃	L ₃	L ₀	T	e _p	v _{ls}	I	J	K				
M6×1	16	250	16.2	30	100	14.7	40	390	0	0.012	0.008	0.035	0.010	0.008	0.71	3000	1.5	0.8
	400	540						0.013										
M6×1	16	250	16.2	30	100	14.7	40	390	0	0.012	0.008	0.035	0.010	0.008	0.73	3000	1.5	0.8
	400	540						0.013										



Nut type code: SFT, LSFT

Ball screw No.	Stroke Max. L_r-L_n	Screw shaft dia. d_1	Lead l	Ball dia. D_w	Ball circle dia. d_m	Root dia. d_r	Effective ball turns Turns x Circuits	Basic load rating (N)		Axial play Max.	Nut									
								Dynamic C_a	Static C_{0a}		Outside dia.				Overall length L_n	Bolt hole				
											D	A	H	K		B	W	X	Y	Z
W1001FS-1-C3T4	126																			
W1002FS-1-C3T4	226	10	4	2.000	10.3	8.2	2.5x1	3210	4420	0.005	26	46	28	42	10	34	36	4.5	8	4.5
W1003FS-1-C3T4	326																			
W1201FS-1-C3T5	110																			
W1202FS-1-C3T5	210	12	5	2.381	12.3	9.8	2.5x1	4390	6260	0.005	30	50	32	45	10	40	40	4.5	8	4.5
W1204FS-1-C3T5	410																			
W1202FS-2-C5T10	200																			
W1204FS-2-C5T10	400	12	10	2.381	12.5	10.0	2.5x1	4430	6430	0.005	30	50	32	45	10	50	40	4.5	8	4.5

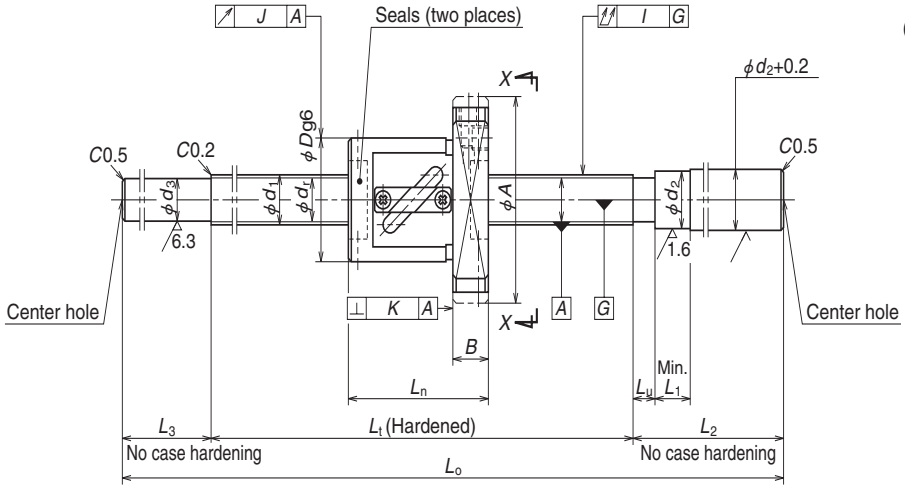
- Remarks:
1. NSK support unit is recommended. Refer to Page B433 for details.
 2. Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use. Refer to Page D13 for details.
 3. Permissible rotational speed is determined by a d-n value and a critical speed. See page B383 and B51.



View X-X

Unit: mm

dimensions		Screw shaft dimensions								Lead accuracy			Run out			Mass (kg)	Permissible rotational speed N(min ⁻¹)	Internal spatial volume of nut (cm ³)	Standard volume of grease replenishing (cm ³)
Oil hole	Threaded length	Shaft end, right				Shaft end, left			Overall length	T	Deviation	Variation	Shaft straightness	Nut O.D. eccentricity	Flange perpendicularity				
Q	T	L _t	d ₂	L _u	L ₁	L ₂	d ₃	L ₃	L _o	T	e _p	v _u	I	J	K				
M6×1	14	160							265	0	0.010	0.008	0.030	0.010	0.008	0.34	3000	0.86	0.43
		260	14	5	40	70	8.2	35	365		0.012	0.008	0.040			0.39			
		360							465		0.013	0.010	0.050			0.45			
M6×1	15	150							255	0	0.010	0.008	0.030	0.010	0.008	0.44	3000	1.2	0.6
		250	14	5	40	70	9.8	35	355		0.012	0.008	0.040			0.52			
		450							555		0.015	0.010	0.065			0.67			
M6×1	15	250	14	8	40	70	10.0	35	355	0	0.023	0.018	0.050	0.012	0.010	0.57	3000	1.4	0.7
		450							555		0.027	0.020	0.075			0.74			



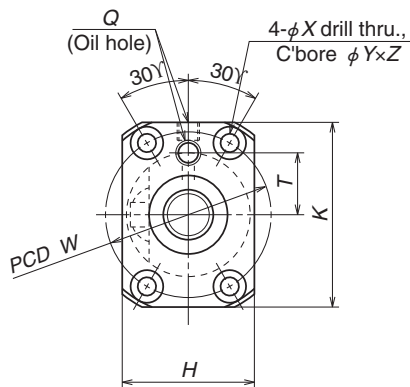
Nut type code: SFT, LSFT

Ball screw No.	Stroke Max. L_t-L_n	Screw shaft dia. d_1	Lead l	Ball dia. D_w	Ball circle dia. d_m	Root dia. d_r	Effective ball turns Turns x Circuits	Basic load rating (N)		Axial play Max.	Nut									
								Dynamic C_a	Static C_{0a}		Outside dia. D	Flange				Overall length L_n	Bolt hole			
												D	A	H	K		B	W	X	Y
W1403FS-1-C3T5	310	14	5	3.175	14.5	11.2	2.5x1	7970	11900	0.005	34	57	34	50	11	40	45	5.5	9.5	5.5
W1406FS-1-C3T5	560																			
W1405FS-1-C5T8	454																			
W1408FS-1-C5T8	754																			
W1504FS-1-C5T10	349	15	10	3.175	15.5	12.2	2.5x1	8140	12800	0.005	34	57	34	50	11	51	45	5.5	9.5	5.5
W1506FS-1-C5T10	549																			
W1509FS-1-C5T10	849																			
W1511FS-1-C5T10	1049																			

Remarks: 1. NSK support unit is recommended. Refer to Page B433 for details.

2. **Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use.**
Refer to Page D13 for details.

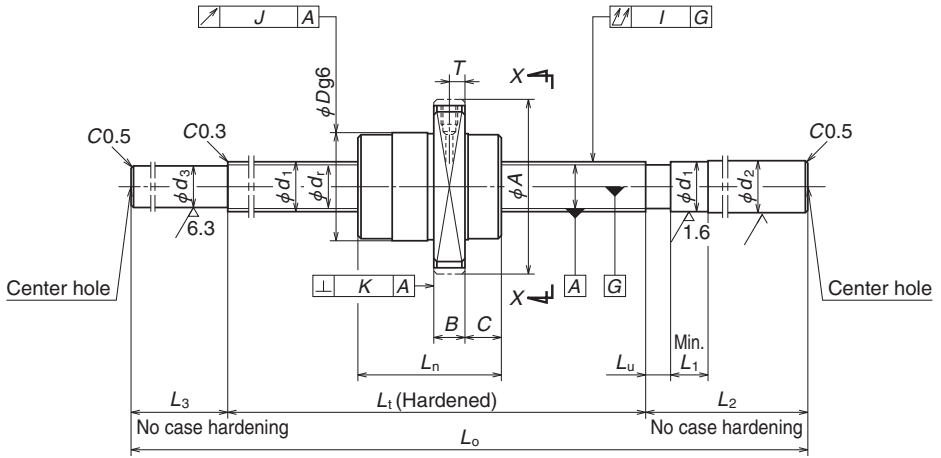
3. Permissible rotational speed is determined by a d-n value and a critical speed. See page B383 and B51.



View X-X

Unit: mm

dimensions		Screw shaft dimensions									Lead accuracy			Run out			Mass (kg)	Permissible rotational speed N(min ⁻¹)	Internal spatial volume of nut (cm ³)	Standard volume of grease replenishing (cm ³)
Oil hole	Threaded length	Shaft end, right			Shaft end, left			Overall length	Deviation	Variation	Shaft straightness	Nut O.D. eccentricity	Flange perpendicularity							
Q	T	L _t	d ₂	L _u	L ₁	L ₂	d _s	L _s	L _o	T	e _p	v _u	I	J	K					
M6×1	17	350	15	5	40	100	11.2	40	490	0	0.013	0.010	0.035	0.012	0.008	0.78	3000	2.0	1.0	
		600							740		0.016	0.012	0.055			1.0				
M6×1	17	500	15	8	40	100	11.2	40	640	0	0.027	0.020	0.065	0.015	0.011	1.0	3000	2.0	1.0	
		800							940		0.035	0.025	0.085			1.3				
M6×1	17	400	15	8	40	120	12.2	50	570	0	0.025	0.020	0.050	0.015	0.011	1.0	3000	2.3	1.2	
		600							770		0.030	0.023	0.065			1.3				
		900							1070		0.040	0.027	0.110			1.7				
		1100							1270		0.046	0.030	0.150			1.9				



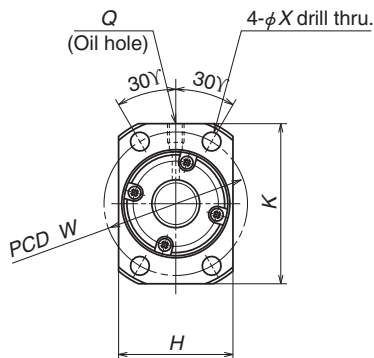
Nut type code: USFC

Ball screw No.	Stroke Max. L_r-L_n	Screw shaft dia. d_1	Lead l	Ball dia. D_w	Ball circle dia. d_m	Root dia. d_f	Effective ball turns x Circuits	Basic load rating (N)		Axial play Max.	Nut								
								Dynamic C_a	Static C_{0a}		Outside dia. D	Flange					Overall length L_o	Bolt hole	
												A	H	K	B	C		W	X
W1504FS-2G-C5T20	355	15	20	3.175	15.5	12.2	1.7x1	5660	8700	0.005	34	55	36	50	10	11	45	45	5.5
W1506FS-2G-C5T20	555																		
W1509FS-2G-C5T20	855																		
W1511FS-2G-C5T20	1055																		
W1609FS-2GX-C5T32	866	16	32	3.175	16.75	13.4	0.7x2	4320	6760	0.005	34	55	36	50	10	10.5	34	45	5.5
W1613FS-1GX-C5T32	1266																		
W2011FS-1GX-C5T40	1059	20	40	3.175	20.75	17.4	0.7x2	4870	8420	0.005	38	58	40	52	10	11	41	48	5.5
W2017FS-1GX-C5T40	1659																		

Remarks: 1. NSK support unit is recommended. Refer to Page B433 for details.

2. Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use. Refer to Page D13 for details.

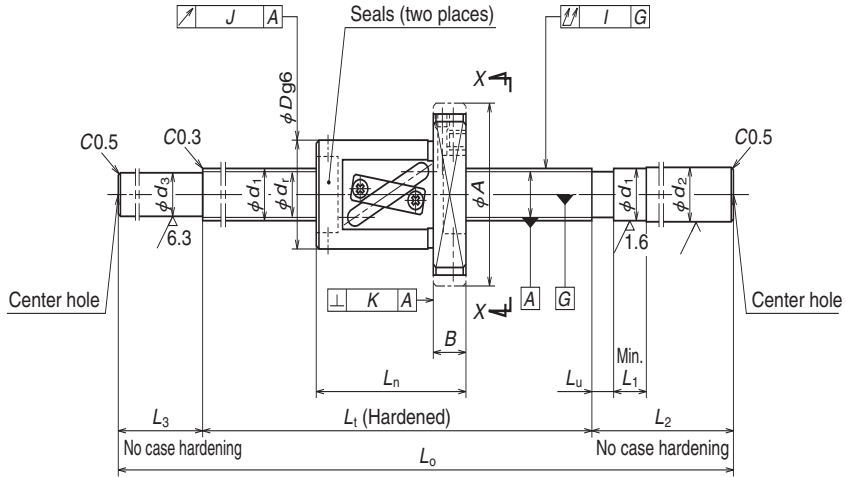
3. Permissible rotational speed is determined by a d-n value and a critical speed. See page B383 and B51.



View X-X

Unit: mm

dimensions		Screw shaft dimensions								Lead accuracy			Run out			Mass (kg)	Permissible rotational speed N(min ⁻¹)	Internal spatial volume of nut (cm ³)	Standard volume of grease replenishing (cm ³)
Oil hole	Threaded length	Shaft end, right				Shaft end, left				Overall length	Lead error	Deviation	Variation	Shaft straightness	Nut O.D. eccentricity				
Q	T	L ₁	d ₂	L _u	L ₁	L ₂	d ₃	L ₃	L ₀	T	e _p	v _u	I	J	K				
M6×1	5	400	15.2	13	40	120	12.2	50	570	0	0.025	0.020	0.050	0.015	0.011	1.0	3000	1.9	1.0
		600							770		0.030	0.023	0.065			1.3			
		900							1070		0.040	0.027	0.110			1.7			
		1100							1270		0.046	0.030	0.150			2.0			
M6×1	5	900	16.2	19	40	150	13.4	60	1110	0	0.040	0.027	0.110	0.015	0.011	1.9	3000	2.0	1.0
		1300							1510		0.054	0.035	0.150			2.5			
M6×1	5	1100	20.2	22	60	150	17.4	80	1330	0	0.046	0.030	0.150	0.015	0.011	3.5	3000	2.7	1.4
		1700							1930		0.065	0.040	0.200			4.9			



Nut type code: SFT, LSFT

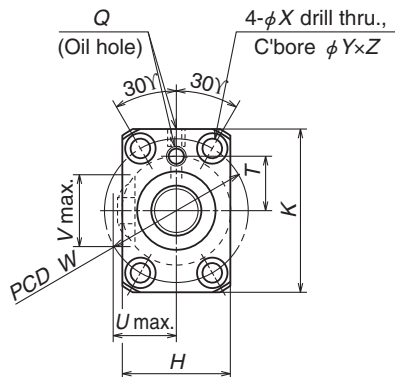
Ball screw No.	Stroke Max. L_t-L_n	Screw shaft dia. d_1	Lead l	Ball dia. D_w	Ball circle dia. d_m	Root dia. d_r	Effective ball turns Turns x Circuits	Basic load rating (N)		Axial play Max.	Nut									
								Dynamic C_d	Static C_{0a}		Outside dia.					Overall length L_n	Bolt			hole
											D	A	H	K	B		W	X	Y	
W1605FS-1-C3T5	458	16	5	3.175	16.5	13.2	2.5x1	8620	13800	0.005	40	63	40	55	11	42	51	5.59	5.5	5.5
W1609FS-1-C3T5	858										40	63	40	55	11	42	51	5.59	5.5	
W1606FS-1-C5T16	544	16	16	3.175	16.75	13.4	1.5x1	5480	8080	0.005	34	57	34	50	12	56	45	5.59	5.5	5.5
W1611FS-1-C5T16	1044										34	57	34	50	12	56	45	5.59	5.5	
W2009FS-1-C5T10	846	20	10	3.969	21	16.9	2.5x1	13300	21900	0.005	46	74	46	66	13	54	59	6.6	11	6.5
W2013FS-1-C5T10	1246										46	74	46	66	13	54	59	6.6	11	6.5
W2010FS-1-C5T20	937	20	20	3.969	21	16.9	1.5x1	8190	13100	0.005	46	74	46	66	13	63	59	6.6	11	6.5
W2015FS-1-C5T20	1437										46	74	46	66	13	63	59	6.6	11	6.5

Remarks: 1. NSK support unit is recommended. Refer to Page B433 for details.

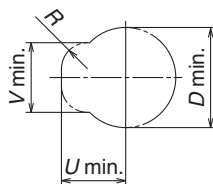
2. Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use.

Refer to Page D13 for details.

3. Permissible rotational speed is determined by a d-n value and a critical speed. See page B383 and B51.



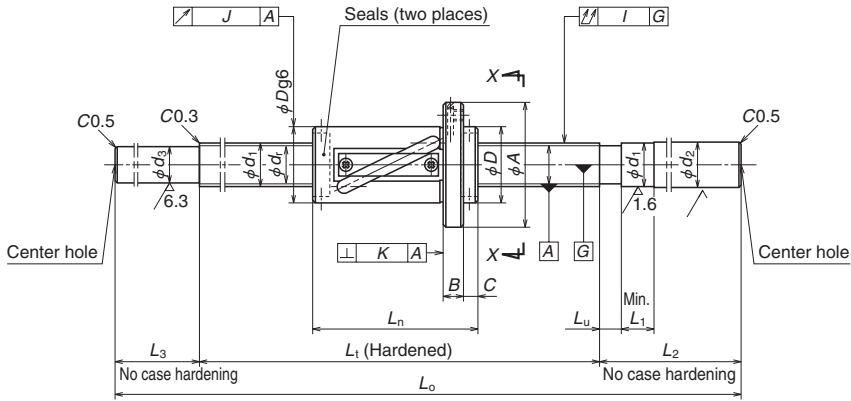
View X-X



Housing hole and its clearance
(Only applicable to shaft dia. φ16×lead 16)

Unit: mm

dimensions			Screw shaft dimensions										Lead accuracy			Run out			Mass (kg)	Permissible rotational speed N (min ⁻¹)	Internal spatial volume of nut (cm ³)	Standard volume of grease replenishing (cm ³)
U	V	R	Oil hole		Threaded length		Shaft end, right				Shaft end, left		Overall length	T	Deviation	Variation	Shaft straightness	Nut O.D. eccentricity				
U	V	R	Q	T	L ₁	d ₂	L ₁	L ₁	L ₂	L ₂	d ₃	L ₃	L ₀	T	e _p	v _u	I	J	K			
—	—	—	M6×1	17	500	16.2	5	40	150	13.2	60	710	0	0.015	0.010	0.055	0.012	0.008	1.4	3000	2.6	1.3
					900							1110		0.021	0.015	0.095			1.9			
19	20	8	M6×1	17	600	16.2	10	40	150	13.4	60	810	0	0.030	0.023	0.085	0.015	0.011	1.5	3000	2.1	1.1
					1100							1310		0.046	0.030	0.150			2.3			
—	—	—	M6×1	24	900	20.2	10	60	150	16.9	80	1130	0	0.040	0.027	0.110	0.015	0.011	3.2	3000	4.7	2.4
					1300							1530		0.054	0.035	0.150			4.1			
—	—	—	M6×1	24	1000	20.2	13	60	150	16.9	80	1230	0	0.040	0.027	0.110	0.015	0.011	3.6	3000	4.2	2.1
					1500							1730		0.054	0.035	0.200			4.8			



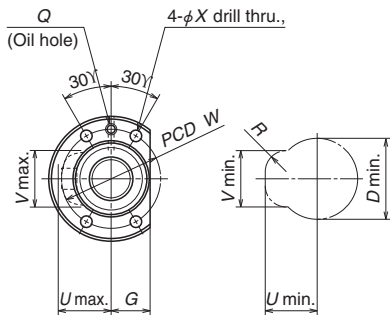
Nut type code: LSFT

Ball screw No.	Stroke Max. L_t-L_n	Screw shaft dia. d_t	Lead l	Ball dia. D_w	Ball circle dia. d_m	Root dia. d_r	Effective ball turns \times Circuits	Basic load rating (N)		Axial play Max.	Nut										
								Dynamic C_a	Static C_{0a}		Nut type code	Flange						Overall length L_n	Bolt hole		
												D	A	G	H	K	B		C	W	X
W2513FS-1-C5T20	1254	25	20	4.762	26.25	21.3	2.5x1	18600	32600	0.005	LSFT	44	71	23	—	—	12	8	96	57	6.6
W2521FS-1-C5T20	2054											44	71	23	—	—	12	8	96	57	6.6
W2513FS-2-C5T25	1260	25	25	4.762	26.25	21.3	1.5x1	11700	19700	0.005	LSFT	44	71	23	—	—	12	10	90	57	6.6
W2521FS-2-C5T25	2060											44	71	23	—	—	12	10	90	57	6.6
W2515FS-1GX-C5T50	1450	25	50	3.969	26	21.9	0.7x2	7280	13200	0.005	USFC	46	70	—	48	63	12	13	50	58	6.6
W2521FS-3GX-C5T50	2100											46	70	—	48	63	12	13	50	58	6.6

Remarks: 1. NSK support unit is recommended. Refer to Page B433 for details.

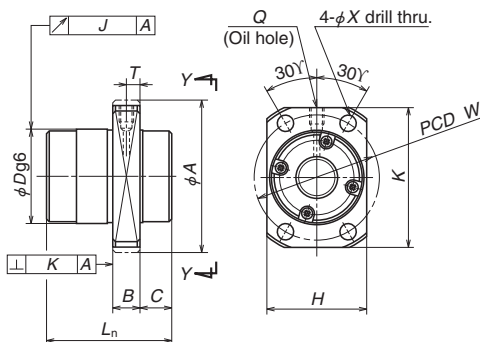
2. Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use. Refer to Page D13 for details.

3. Permissible rotational speed is determined by a d-n value and a critical speed. See page B383 and B51.



View X-X

Housing hole and its clearance

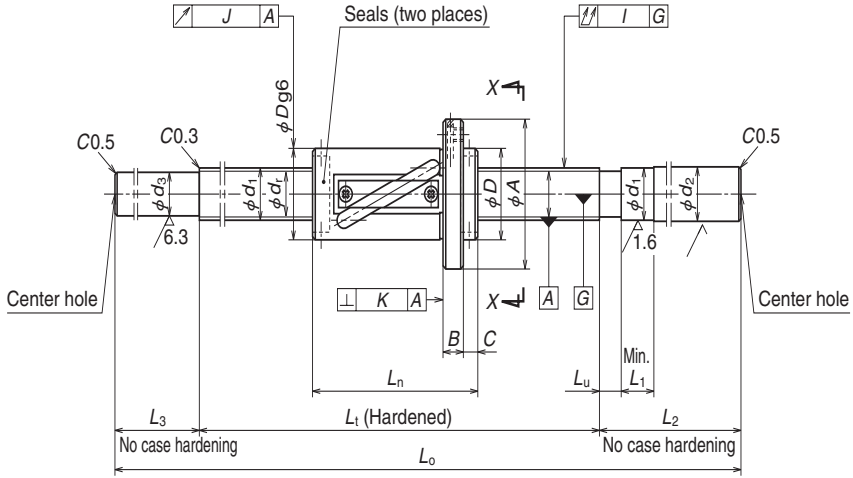


View Y-Y

Nut type code: USFC

Unit: mm

dimensions				Screw shaft dimensions										Lead accuracy			Run out			Mass (kg)	Permissible rotational speed (N/min ⁻¹)	Internal spatial volume of nut (cm ³)	Standard volume of grease replenishing (cm ³)
Projecting tube		Oil hole		Threaded length	Shaft end, right					Shaft end, left					Overall length	T	Deviation	Variation	Shaft straightness				
U	V	R	Q		T	L _t	d ₂	L _u	L ₁	L ₂	d ₃	L ₃	L _o	e _p						v _u	I	J	K
31	35	12	M6×1	—	1350	25.2	13	70	200	21.3	100	1650	0	0.054	0.035	0.120	0.015	0.011	6.8	2800	12	6.0	
					2150							2450							0.077				0.046
32	34	12	M6×1	—	1350	25.2	15	70	200	21.3	100	1650	0	0.054	0.035	0.120	0.015	0.011	6.8	2800	10	5.0	
					2150							2450							0.077				0.046
—	—	—	M6×1	6	1500	25.2	26	70	200	21.9	100	1800	0	0.054	0.035	0.120	0.015	0.011	7.3	2800	5.3	2.7	
					2150							2450							0.077				0.046



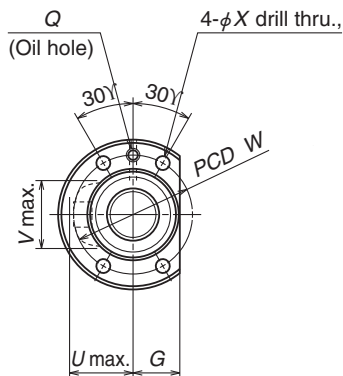
Nut type code: LSFT

Ball screw No.	Stroke Max. $L_t - L_n$	Screw shaft dia. d_1	Lead l	Ball dia. D_w	Ball circle dia. d_m	Root dia. d_r	Effective ball turns Turns × Circuits	Basic load rating (N)		Axial play Max.	Nut								
								Dynamic C_a	Static C_{0a}		Outside dia. D	Flange					Overall length L_n	Bolt hole	
												A	G	B	C	L_n		W	X
W3217FS-1-C5T25	1583	32	25	4.762	33.25	28.3	2.5×1	20400	42200	0.005	51	85	26	15	10	117	67	9	
W3227FS-1-C5T25	2583																		
W3217FS-2-C5T32	1591	32	32	4.762	33.25	28.3	1.5×1	13300	25200	0.005	51	85	26	15	12	109	67	9	
W3227FS-2-C5T32	2591																		

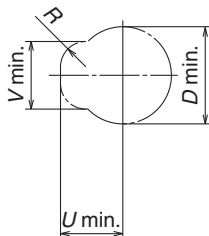
Remarks: 1. NSK support unit is recommended. Refer to Page B433 for details.

2. Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use. Refer to Page D13 for details.

3. Permissible rotational speed is determined by a d-n value and a critical speed. See page B383 and B51.



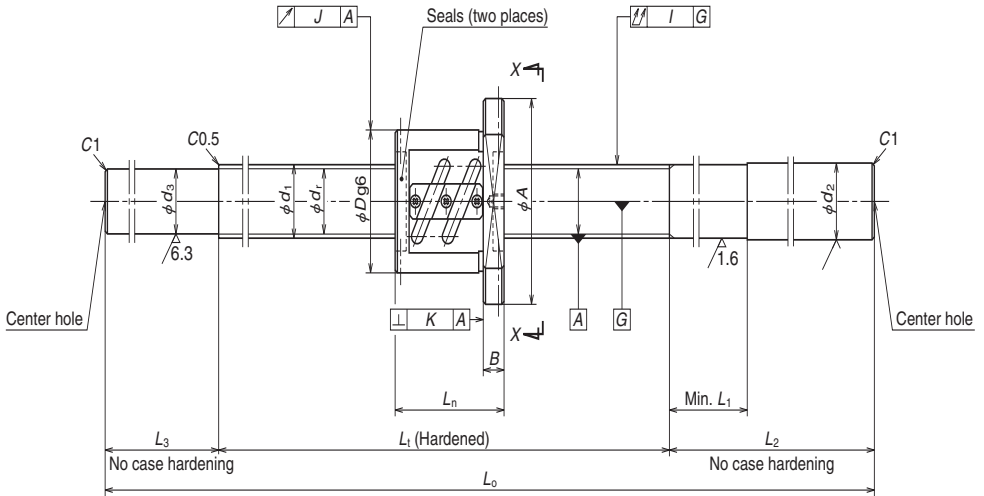
View X-X



Housing hole and its clearance

Unit: mm

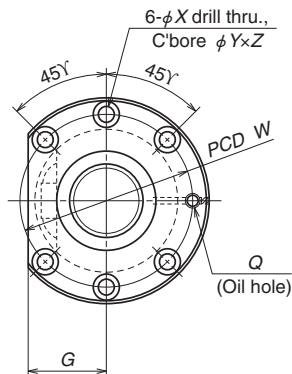
dimensions			Screw shaft dimensions										Lead accuracy			Run out			Mass (kg)	Permissible rotational speed (N/min ⁻¹)	Internal spatial volume of nut (cm ³)	Standard volume of grease replenishing (cm ³)
U	V	R	Oil hole Q	Shaft end, right				Shaft end, left				Overall length L _o	Tread compression T	Deviation e _p	Variation v _u	Shaft straightness I	Nut O.D. eccentricity J	Flange perpendicularity K				
34	42	12	M6×1	1700	32.3	15	70	250	28.3	120	2070	0	0.065	0.040	0.160	0.019	0.013	13.8	2180	17	8.5	
				2700							3070							20.0				
34	42	12	M6×1	1700	32.3	19	70	250	28.3	120	2070	0	0.065	0.040	0.160	0.019	0.013	13.9	2180	15	7.5	
				2700							3070							20.0				



Nut type code: PFT

Ball screw No.	Stroke Max. L_r-L_n	Screw shaft dia. d_1	Lead l	Ball dia. D_w	Ball circle dia. d_m	Root dia. d_r	Effective ball turns Turns x Circuits	Basic load rating (N)		Preload (N)	Dynamic friction torque, median (N·cm)	Nut						
								Dynamic C_a	Static C_{0a}			Outside dia. D	Flange			Overall length L_n	Bolt hole	
													A	G	B		W	X
W2003SS-1P-C5Z4	251	20	4	2.381	20.3	17.8	2.5x2	6550	10900	290	3.9	40	63	24	11	49	51	5.5
W2005SS-1P-C5Z4	451																	
W2008SS-1P-C5Z4	751																	
W2003SS-2P-C5Z5	244	20	5	3.175	20.5	17.2	2.5x2	11100	17100	490	7.8	44	67	26	11	56	55	5.5
W2005SS-2P-C5Z5	444																	
W2007SS-1P-C5Z5	644																	
W2010SS-1P-C5Z5	944																	

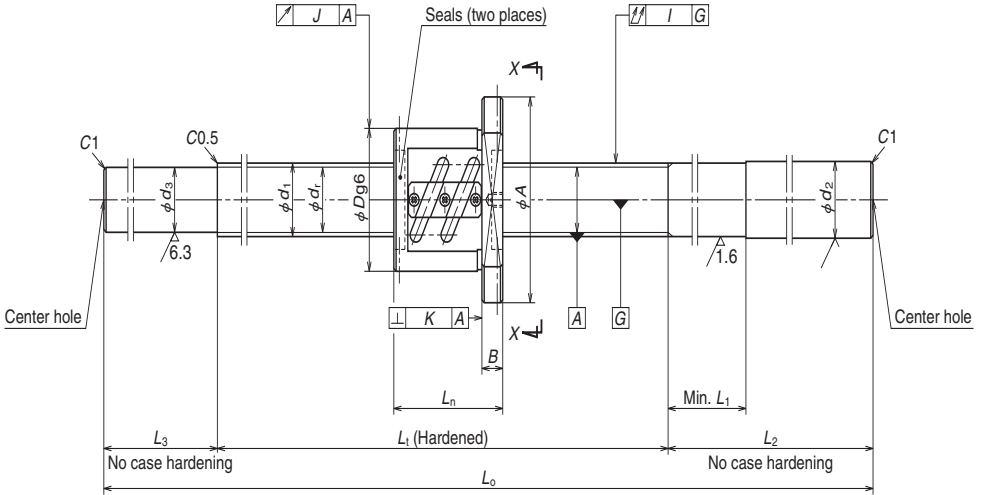
- Remarks:
1. NSK support unit is recommended. Refer to Page B433 for details.
 2. **Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use.** Refer to Page D13 for details.
 3. Permissible rotational speed is determined by a d-n value and a critical speed. See page B383 and B51.



View X-X

Unit: mm

dimensions			Screw shaft dimensions							Lead accuracy			Run out			Mass (kg)	Permissible rotational speed N(min ⁻¹)	Internal spatial volume of nut (cm ³)	Standard volume of grease replenishing (cm ³)
Bolt hole Y	Oil hole Z	Oil hole Q	Threaded length L _t	Shaft end, right d ₂ L ₁ L ₂		Shaft end, left d ₃ L ₃		Overall length L ₀	Travel compensation T	Deviation e _p	Variation v _u	Shaft straightness I	Nut O.D. eccentricity J	Flange perpendicularity K					
9.5	5.5	M6×1	300	20.2	40	150	17.8	—	450	-0.007	0.023	0.018	0.055	0.015	0.011	1.5	3000	2.7	1.4
			500			200		100	1100	-0.012	0.027	0.020	0.085			2.0			
			800			200		100	1100	-0.019	0.035	0.025	0.140			2.9			
9.5	5.5	M6×1	300	20.2	40	150	17.2	—	450	-0.007	0.023	0.018	0.055	0.015	0.011	1.6	3000	4.3	2.2
			500			200		100	700	-0.012	0.027	0.020	0.085			2.2			
			700			200		100	1000	-0.017	0.035	0.025	0.110			2.8			
			1000			200		100	1300	-0.024	0.040	0.027	0.180			3.5			



Nut type code: PFT

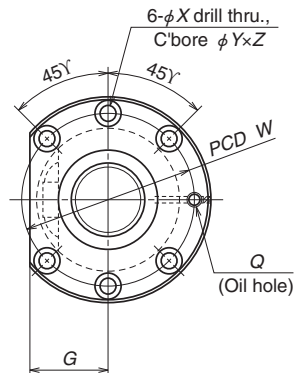
Ball screw No.	Stroke Max. L_r-L_n	Screw shaft dia. d_1	Lead l	Ball dia. D_w	Ball circle dia. d_m	Root dia. d_r	Effective ball turns x Circuits	Basic load rating (N)		Preload (N)	Dynamic friction torque, median (N·cm)	Nut						
								Dynamic C_d	Static C_{0a}			Outside dia. D	Flange			Overall length L_n	Bolt hole W	X
													A	G	B			
W2503SS-1P-C5Z4	252	25	4	2.381	25.3	22.8	2.5x2	7110	13600	290	4.9	46	69	26	11	48	57	5.5
W2506SS-1P-C5Z4	552																	
W2510SS-1P-C5Z4	952																	
W2503SS-2P-C5Z5	245	25	5	3.175	25.5	22.2	2.5x2	12300	21800	540	8.8	50	73	28	11	55	61	5.5
W2505SS-1P-C5Z5	445																	
W2508SS-1P-C5Z5	745																	
W2512SS-1P-C5Z5	1145																	
W2504SS-1P-C5Z6	338																	
W2508SS-2P-C5Z6	738	25	6	3.969	25.5	21.4	2.5x2	16600	26700	690	13.8	53	76	29	11	62	64	5.5
W2512SS-2P-C5Z6	1138																	

Remarks: 1. NSK support unit is recommended. Refer to Page B433 for details.

2. Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use.

Refer to Page D13 for details.

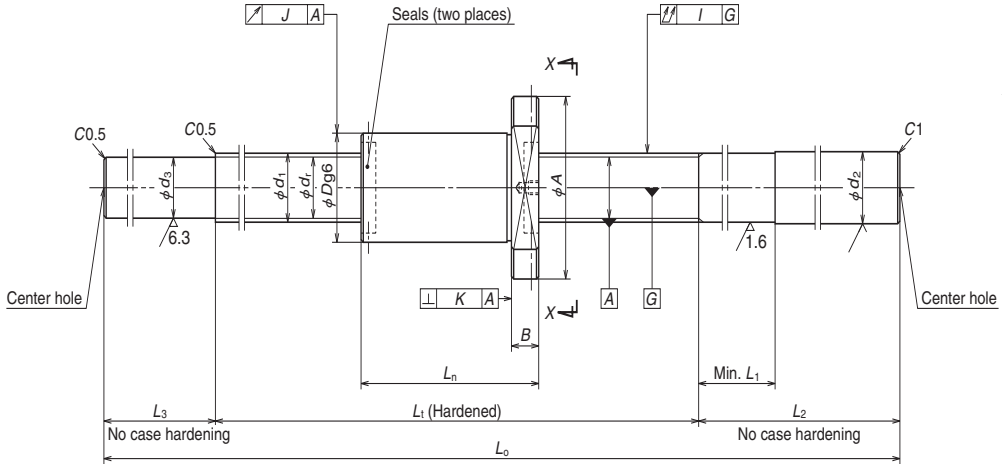
3. Permissible rotational speed is determined by a d-n value and a critical speed. See page B383 and B51.



View X-X

Unit: mm

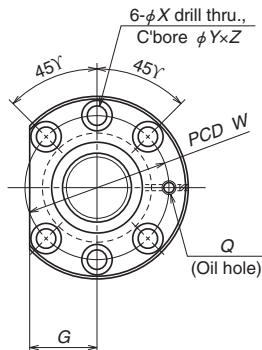
dimensions			Screw shaft dimensions							Lead accuracy			Run out			Mass (kg)	Permissible rotational speed N(min ⁻¹)	Internal spatial volume of nut (cm ³)	Standard volume of grease replenishing (cm ³)
Bolt hole Y	Oil hole Z	Oil hole Q	Threaded length L ₁	Shaft end, right d ₂ L ₁ L ₂		Shaft end, left d ₃ L ₃		Overall length L ₀	Travel compensation T	Deviation e _p	Variation v _u	Shaft straightness I	Nut O.D. eccentricity J	Flange perpendicularity K					
9.5	5.5	M6×1	300	25.2	40	150	22.8	—	450	-0.007	0.023	0.018	0.040	0.015	0.011	2.2	2800	3.2	1.6
			600			200		100	900	-0.014	0.030	0.023	0.075			3.8			
			1000			200		100	1300	-0.024	0.040	0.027	0.120			5.2			
9.5	5.5	M6×1	300	25.2	40	200	22.2	—	500	-0.007	0.023	0.018	0.040	0.015	0.011	2.5	2800	5.2	2.6
			500			200		50	750	-0.012	0.027	0.020	0.060			3.4			
			800			250		100	1150	-0.019	0.035	0.025	0.090			4.8			
			1200			300		100	1600	-0.029	0.046	0.030	0.120			6.3			
9.5	5.5	M6×1	400	25.2	40	200	21.4	—	600	-0.010	0.025	0.020	0.050	0.019	0.013	3.0	2800	7.0	3.5
			800			250		100	1150	-0.019	0.035	0.025	0.090			4.8			
			1200			300		100	1600	-0.029	0.046	0.030	0.120			6.3			



Nut type code: ZFD

Ball screw No.	Stroke Max. L_r-L_n	Screw shaft dia. d_1	Lead l	Ball dia. D_w	Ball circle dia. d_m	Root dia. d_r	Effective ball turns x Circuits	Basic load rating (N)		Preload (N)	Dynamic friction torque, median (N·cm)	Nut						
								Dynamic C_d	Static C_{0a}			Flange				Overall length L_n	Bolt hole	
												Outside dia. D	A	G	B		W	X
W2502SS-1ZY-C5Z5	184																	
W2504SS-3ZY-C5Z5	334																	
W2506SS-2ZY-C5Z5	534	25	5	3.175	25.75	22.4	1x3	11600	22900	740	13.8	40	63	24	11	66	51	5.5
W2509SS-1ZY-C5Z5	834																	
W2512SS-3ZY-C5Z5	1134																	
W2504SS-4ZY-C5Z10	312																	
W2506SS-3ZY-C5Z10	512																	
W2508SS-3ZY-C5Z10	712	25	10	4.762	26.25	21.3	1x2	13300	21200	880	21.5	42	69	26	15	88	55	6.6
W2511SS-1ZY-C5Z10	1012																	
W2515SS-2ZY-C5Z10	1412																	

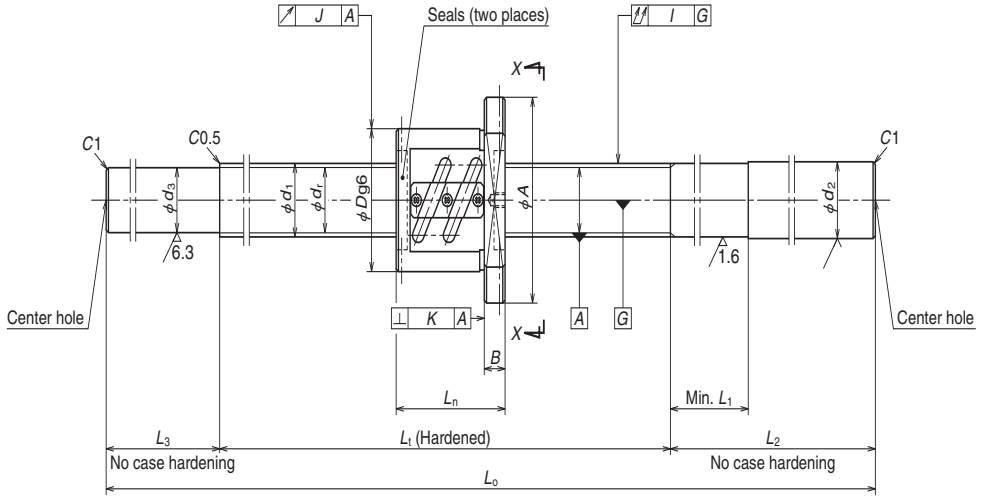
- Remarks:
1. NSK support unit is recommended. Refer to Page B433 for details.
 2. Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use. Refer to Page D13 for details.
 3. Permissible rotational speed is determined by a d-n value and a critical speed. See page B383 and B51.



View X-X

Unit: mm

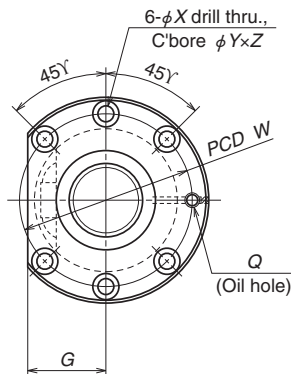
dimensions			Screw shaft dimensions							Lead accuracy			Run out			Mass (kg)	Permissible rotational speed N(min ⁻¹)	Internal spatial volume of nut (cm ³)	Standard volume of grease replenishing (cm ³)
Bolt hole Y	Oil hole Z	Oil hole Q	Threaded length L ₁	Shaft end, right L ₁ L ₂		Shaft end, left d ₃ L ₃		Overall length L ₀	Travel compensation T	Deviation e _p	Variation v _u	Shaft straightness I	Nut O.D. eccentricity J	Flange perpendicularity K					
9.5	5.5	M6×1	250	25.2	40	200	22.4	—	450	-0.005	0.023	0.018	0.040	0.015	0.011	2.1	2800	5.4	2.7
			400			200		50	650	-0.009	0.025	0.020	0.060			2.8			
			600			250		100	950	-0.013	0.030	0.023	0.075			3.9			
			900			250		100	1250	-0.021	0.040	0.027	0.090			4.9			
			1200			300		100	1600	-0.028	0.046	0.030	0.120			6.2			
11	6.5	M6×1	400	25.2	60	200	21.3	50	650	-0.008	0.025	0.020	0.060	0.015	0.011	3.0	2800	9.0	4.5
			600			250		100	950	-0.012	0.030	0.023	0.075			4.1			
			800			250		100	1150	-0.017	0.035	0.025	0.090			4.8			
			1100			300		100	1500	-0.024	0.046	0.030	0.120			6.0			
			1500			300		100	1900	-0.034	0.054	0.035	0.150			7.4			



Nut type code: PFT

Ball screw No.	Stroke Max. L_r-L_n	Screw shaft dia. d_1	Lead l	Ball dia. D_w	Ball circle dia. d_m	Root dia. d_r	Effective ball turns Turns × Circuits	Basic load rating (N)		Preload (N)	Dynamic friction torque, median (N·cm)	Nut						
								Dynamic C_d	Static C_{0a}			Outside dia. D	Flange			Overall length L_n	Bolt hole W	X
													A	G	B			
W2504SS-2P-C5Z10	319	25	10	4.762	25.5	20.5	1.5x2	13600	18900	590	13.8	58	85	32	15	81	71	6.6
W2507SS-1P-C5Z10	619																	
W2510SS-2P-C5Z10	919																	
W2515SS-1P-C5Z10	1419																	
W2804SS-1P-C5Z5	344	28	5	3.175	28.5	25.2	2.5x2	13000	24400	540	9.8	55	85	31	12	56	69	6.6
W2806SS-1P-C5Z5	544																	
W2808SS-1P-C5Z5	744																	
W2812SS-1P-C5Z5	1144																	
W2804SS-3P-C5Z6	337	28	6	3.175	28.5	25.2	2.5x2	12900	24300	540	10.8	55	85	31	12	63	69	6.6
W2806SS-3P-C5Z6	537																	
W2808SS-3P-C5Z6	737																	
W2812SS-3P-C5Z6	1137																	

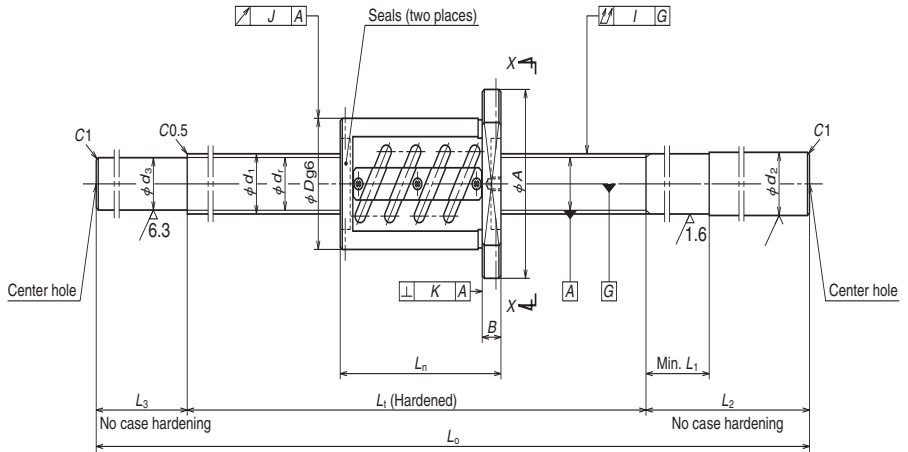
- Remarks: 1. NSK support unit is recommended. Refer to Page B433 for details.
 2. **Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use.** Refer to Page D13 for details.
 3. Permissible rotational speed is determined by a d-n value and a critical speed. See page B383 and B51.



View X-X

Unit: mm

dimensions			Screw shaft dimensions						Lead accuracy			Run out			Mass (kg)	Permissible rotational speed N(min ⁻¹)	Internal spatial volume of nut (cm ³)	Standard volume of grease replenishing (cm ³)	
Bolt hole Y	Oil hole Z	Oil hole Q	Threaded length L ₁	Shaft end, right d ₂ L ₁ L ₂		Shaft end, left d ₃ L ₃		Overall length L ₀	Travel compensation T	Deviation e _p	Variation v _u	Shaft straightness I	Nut O.D. eccentricity J	Flange perpendicularity K					
11	6.5	M6×1	400	25.2	60	200	20.5	50	650	-0.010	0.025	0.020	0.060	0.019	0.013	3.8	2800	9.7	4.9
			700			100		1050	-0.017	0.035	0.025	0.090	5.1						
			1000			100		1350	-0.024	0.040	0.027	0.120	6.1						
			1500			100		1900	-0.036	0.054	0.035	0.150	8.0						
11	6.5	M6×1	400	28.2	40	200	25.2	—	600	-0.010	0.025	0.020	0.050	0.019	0.013	3.7	2500	6.1	3.1
			600			100		950	-0.014	0.030	0.023	0.075	5.2						
			800			100		1150	-0.019	0.035	0.025	0.090	6.1						
			1200			100		1600	-0.029	0.046	0.030	0.120	8.1						
11	6.5	M6×1	400	28.2	40	200	25.2	—	600	-0.010	0.025	0.020	0.050	0.019	0.013	3.8	2500	6.1	3.1
			600			100		950	-0.014	0.030	0.023	0.075	5.3						
			800			100		1150	-0.019	0.035	0.025	0.090	6.2						
			1200			100		1600	-0.029	0.046	0.030	0.120	8.2						



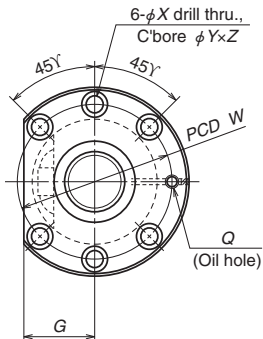
Nut type code: ZFT

Ball screw No.	Stroke Max. L_r-L_n	Screw shaft dia. d_1	Lead l	Ball dia. D_w	Ball circle dia. d_m	Root dia. d_r	Effective ball turns x Circuits	Basic load rating (N)		Preload (N)	Dynamic friction torque, median (N·cm)	Nut						
								Dynamic C_d	Static C_{0a}			Outside dia. D	Flange			Overall length L_n	Bolt hole	
													A	G	B		W	X
W2804SS-2Z-C5Z5	314	28	5	3.175	28.5	25.2	2.5x2	20600	48700	1225	21.5	55	85	31	12	86	69	6.6
W2806SS-2Z-C5Z5	514																	
W2808SS-2Z-C5Z5	714																	
W2812SS-2Z-C5Z5	1114	28	6	3.175	28.5	25.2	2.5x2	20600	48700	1225	22.5	55	85	31	12	99	69	6.6
W2804SS-4Z-C5Z6	301																	
W2806SS-4Z-C5Z6	501																	
W2808SS-4Z-C5Z6	701	28	6	3.175	28.5	25.2	2.5x2	20600	48700	1225	22.5	55	85	31	12	99	69	6.6
W2812SS-4Z-C5Z6	1101																	

Remarks: 1. NSK support unit is recommended. Refer to Page B433 for details.

2. Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use. Refer to Page D13 for details.

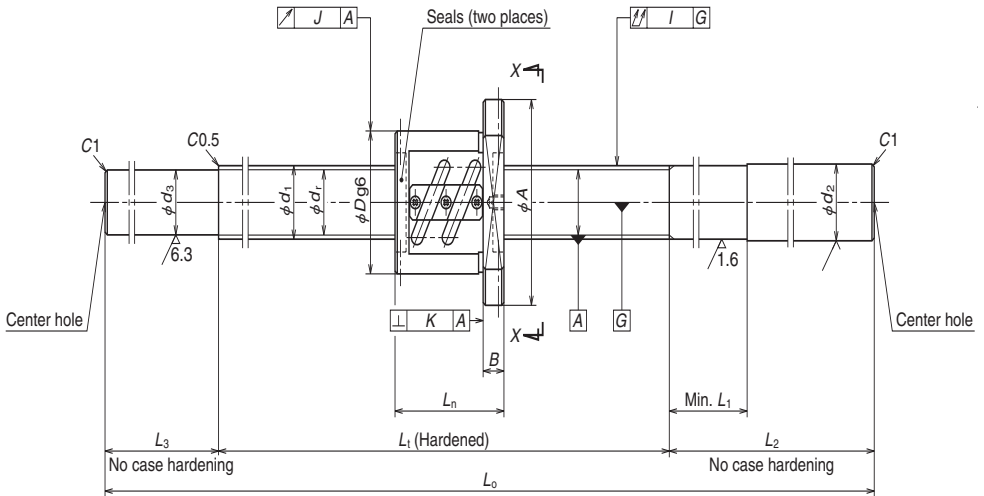
3. Permissible rotational speed is determined by a d-n value and a critical speed. See page B383 and B51.



View X-X

Unit: mm

dimensions			Screw shaft dimensions							Lead accuracy			Run out			Mass (kg)	Permissible rotational speed N(min ⁻¹)	Internal spatial volume of nut (cm ³)	Standard volume of grease replenishing (cm ³)
Bolt hole Y	Oil hole Z	Oil hole Q	Threaded length L ₁	Shaft end, right		Shaft end, left		Overall length L ₀	Travel compensation T	Deviation e _p	Variation v _u	Shaft straightness I	Nut O.D. eccentricity J	Flange perpendicularity K					
11	6.5	M6×1	400	28.2	40	200	25.2	—	600	-0.010	0.025	0.020	0.050	0.019	0.013	4.7	2500	9.2	4.6
			600			100		950	-0.014	0.030	0.023	0.075	5.5						
			800			100		1150	-0.019	0.035	0.025	0.090	6.4						
			1200			100		1600	-0.029	0.046	0.030	0.120	8.4						
11	6.5	M6×1	400	28.2	40	200	25.2	—	600	-0.010	0.025	0.020	0.050	0.019	0.013	4.2	2500	9.5	4.8
			600			100		950	-0.014	0.030	0.023	0.075	5.7						
			800			100		1150	-0.019	0.035	0.025	0.090	6.6						
			1200			100		1600	-0.029	0.046	0.030	0.120	8.6						



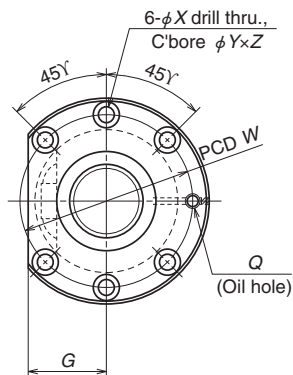
Nut type code: PFT

Ball screw No.	Stroke Max. L_1-L_n	Screw shaft dia. d_1	Lead l	Ball dia. D_w	Ball circle dia. d_m	Root dia. d_r	Effective ball turns \times Circuits	Basic load rating (N)		Preload (N)	Dynamic friction torque, median (N-cm)	Nut				
								Dynamic C_a	Static C_{0a}			Outside dia. D	Flange			Overall length L_n
													A	G	B	
W3204SS-1P-C5Z5	344	32	5	3.175	32.5	29.2	2.5×2	13700	28000	590	10.8	58	85	32	12	56
W3206SS-1P-C5Z5	544															
W3208SS-1P-C5Z5	744															
W3212SS-1P-C5Z5	1144															
W3215SS-1P-C5Z5	1444															
W3206SS-3P-C5Z6	537	32	6	3.969	32.5	28.4	2.5×2	18300	34700	780	15.6	62	89	34	12	63
W3210SS-1P-C5Z6	937															
W3215SS-3P-C5Z6	1437															

Remarks: 1. NSK support unit is recommended. Refer to Page B433 for details.

2. Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use. Refer to Page D13 for details.

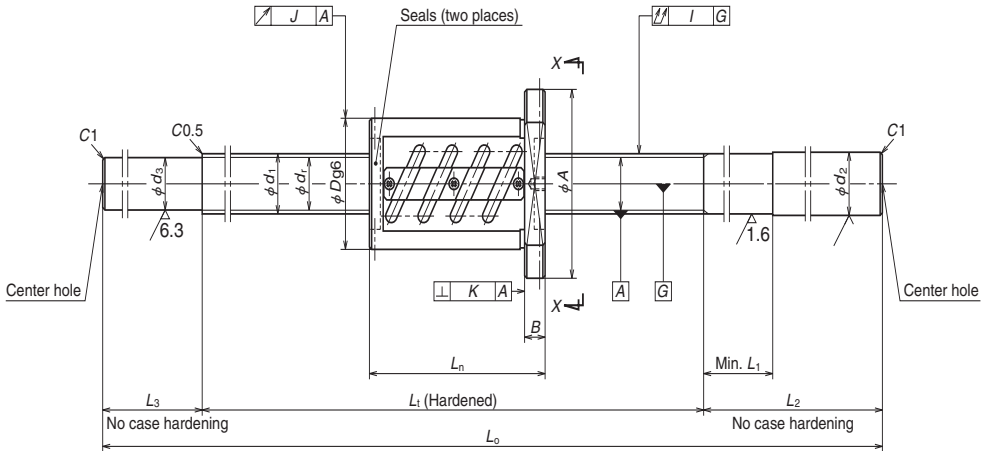
3. Permissible rotational speed is determined by a d-n value and a critical speed. See page B383 and B51.



View X-X

Unit: mm

dimensions					Screw shaft dimensions						Lead accuracy			Run out			Mass (kg)	Permissible rotational speed N (min ⁻¹)	Internal spatial volume of nut (cm ³)	Standard volume of grease replenishing (cm ³)	
Bolt hole		Oil hole			Threaded length	Shaft end, right		Shaft end, left		Overall length	Travel compensation	Deviation	Variation	Shaft straightness	Nut O.D. eccentricity	Flange perpendicularity					
W	X	Y	Z	Q	L ₁	d ₂	L ₁	L ₂	d ₃	L ₃	L ₀	T	e _p	v _u	I	J	K				
71	6.6	11	6.5	M6×1	400	32.3	40	200	29.2	50	650	-0.010	0.025	0.020	0.060	0.019	0.013	4.8	2180	6.9	3.5
					600			250		100	950	-0.014	0.030	0.023	0.075			6.5			
					800			250		100	1150	-0.019	0.035	0.025	0.090			7.7			
					1200			300		100	1600	-0.029	0.046	0.030	0.120			10.3			
					1500			300		100	1900	-0.036	0.054	0.035	0.150			12.1			
75	6.6	11	6.5	M6×1	600	32.3	40	250	28.4	100	950	-0.014	0.030	0.023	0.075	0.019	0.013	6.7	2180	9.4	4.7
					1000			300		1400	-0.024	0.040	0.027	0.120	9.2						
					1500			300		1900	-0.036	0.054	0.035	0.150	12.1						



Nut type code: ZFT

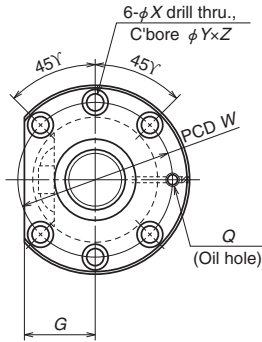
Ball screw No.	Stroke Max. L_1-L_n	Screw shaft dia. d_1	Lead l	Ball dia. D_w	Ball circle dia. d_m	Root dia. d_r	Effective ball turns \times Circuits	Basic load rating (N)		Preload (N)	Dynamic friction torque, median (N-cm)	Nut				
								Dynamic C_a	Static C_{0a}			Outside dia. D	Flange			Overall length L_n
													A	G	B	
W3204SS-2Z-C5Z5	314	32	5	3.175	32.5	29.2	2.5x2	21800	56000	1270	22.5	58	85	32	12	86
W3206SS-2Z-C5Z5	514															
W3208SS-2Z-C5Z5	714															
W3212SS-2Z-C5Z5	1114															
W3215SS-2Z-C5Z5	1414															
W3206SS-4Z-C5Z6	501	32	6	3.969	32.5	28.4	2.5x2	29100	69300	1720	34.5	62	89	34	12	99
W3210SS-2Z-C5Z6	901															
W3215SS-4Z-C5Z6	1401															
W3206SS-5Z-C5Z8	518	32	8	4.762	32.5	27.5	2.5x1	20600	40900	1320	30.5	66	100	38	15	82
W3210SS-3Z-C5Z8	918															
W3215SS-5Z-C5Z8	1418															

Remarks: 1. NSK support unit is recommended. Refer to Page B433 for details.

2. Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use.

Refer to Page D13 for details.

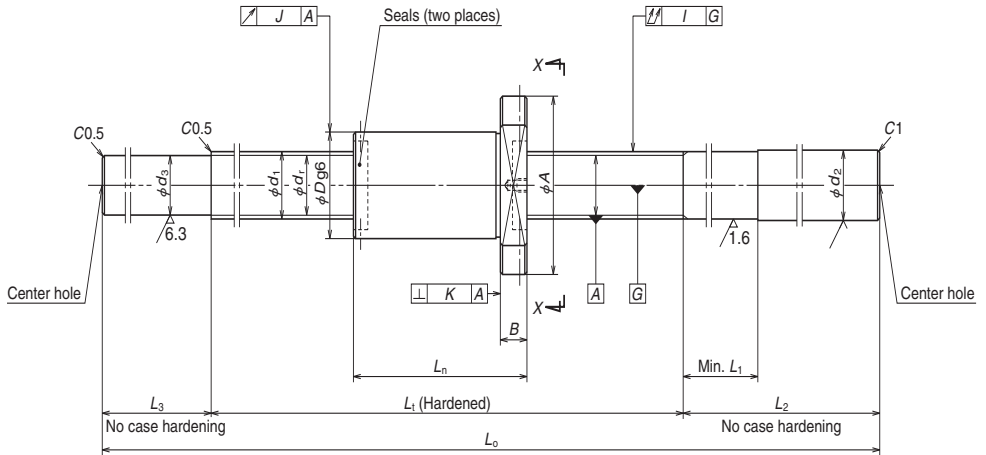
3. Permissible rotational speed is determined by a d·n value and a critical speed. See page B383 and B51.



View X-X

Unit: mm

dimensions					Screw shaft dimensions						Lead accuracy			Run out			Mass (kg)	Permissible rotational speed N (min ⁻¹)	Internal spatial volume of nut (cm ³)	Standard volume of grease replenishing (cm ³)	
Bolt hole		Oil hole			Threaded length	Shaft end, right		Shaft end, left		Overall length	Travel compensation	Deviation	Variation	Shaft straightness	Nut O.D. eccentricity	Flange perpendicularity					
W	X	Y	Z	Q	L ₁	d ₂	L ₁	L ₂	d ₃	L ₃	L ₀	T	e _p	v _u	I	J	K				
71	6.6	11	6.5	M6×1	400	32.3	40	200	29.2	50	650	-0.010	0.025	0.020	0.060	0.019	0.013	5.1	2180	10	5.0
					600			250		100	950	-0.014	0.030	0.023	0.075			6.9			
					800			300		100	1600	-0.029	0.046	0.030	0.120			10.1			
					1200			300		100	1900	-0.036	0.054	0.035	0.150			12.4			
					1500			300		100	1900	-0.036	0.054	0.035	0.150			12.4			
75	6.6	11	6.5	M6×1	600	32.3	40	250	28.4	100	1400	-0.024	0.040	0.027	0.120	0.019	0.013	7.1	2180	15	7.5
					1000			300		1900	-0.036	0.054	0.035	0.150	9.7						
					1500			300		1900	-0.036	0.054	0.035	0.150	12.6						
82	9	14	8.5	M6×1	600	32.3	50	250	27.5	100	1400	-0.024	0.040	0.027	0.120	0.019	0.013	7.3	2180	7.9	4.0
					1000			300		1900	-0.036	0.054	0.035	0.150	9.8						
					1500			300		1900	-0.036	0.054	0.035	0.150	12.6						



Nut type code: ZFD

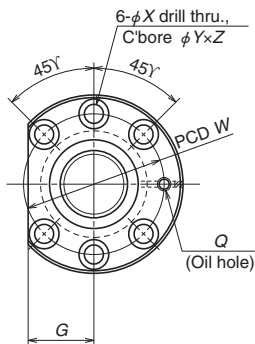
Ball screw No.	Stroke Max. L_1-L_n	Screw shaft dia. d_1	Lead l	Ball dia. D_w	Ball circle dia. d_m	Root dia. d_r	Effective ball turns \times Circuits	Basic load rating (N)		Preload (N)	Dynamic friction torque, median (N·cm)	Nut				
								Dynamic C_a	Static C_{0a}			Flange				Overall length L_n
												Outside dia. D	A	G	B	
W3204SS-3ZY-C5Z5	323	32	5	3.175	32.75	29.4	4	16800	40600	1080	19.6	48	75	29	12	77
W3206SS-6ZY-C5Z5	523															
W3209SS-1ZY-C5Z5	823															
W3212SS-3ZY-C5Z5	1123															
W3216SS-1ZY-C5Z5	1523															
W3205SS-3ZY-C5Z10	380	32	10	6.35	33.75	27.1	3	30500	52500	1860	49.0	54	88	34	15	120
W3207SS-3ZY-C5Z10	580															
W3210SS-6ZY-C5Z10	880															
W3214SS-3ZY-C5Z10	1280															
W3218SS-3ZY-C5Z10	1680															

Remarks: 1. NSK support unit is recommended. Refer to Page B433 for details.

2. Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use.

Refer to Page D13 for details.

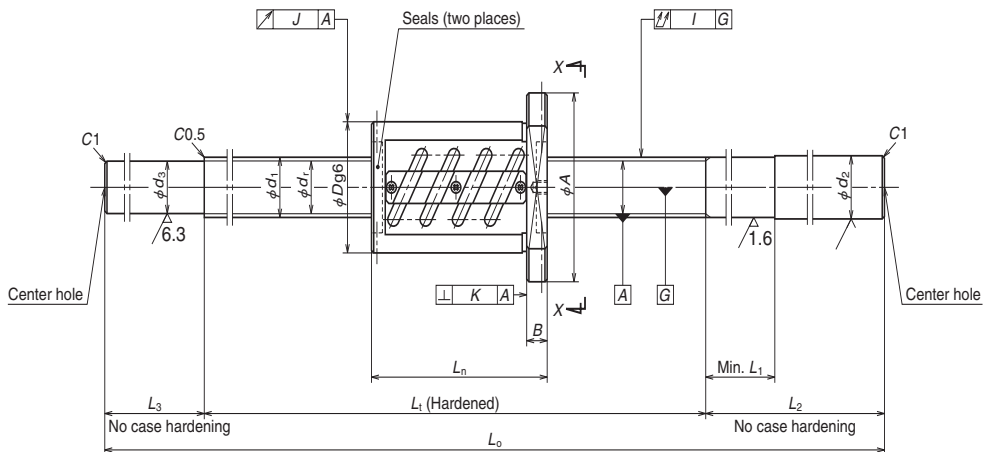
3. Permissible rotational speed is determined by a d-n value and a critical speed. See page B383 and B51.



View X-X

Unit: mm

dimensions					Screw shaft dimensions						Lead accuracy			Run out			Mass (kg)	Permissible rotational speed N (min ⁻¹)	Internal spatial volume of nut (cm ³)	Standard volume of grease replenishing (cm ³)	
Bolt hole		Oil hole	Threaded length	Shaft end, right		Shaft end, left		Overall length	Travel compensation	Deviation	Variation	Shaft straightness	Nut O.D. eccentricity	Flange perpendicularity							
W	X	Y	Z	Q	L ₁	d ₂	L ₁	L ₂	d ₃	L ₃	L ₀	T	e _p	v _u	I	J	K				
61	6.6	11	6.5	M6×1	400	32.3	40	200	29.4	50	650	-0.009	0.025	0.020	0.060	0.015	0.011	4.6	2180	22	11
					600			250		100	950	-0.013	0.030	0.023	0.075			6.4			
					900			250		100	1250	-0.021	0.040	0.027	0.090			8.1			
					1200			300		100	1600	-0.028	0.046	0.030	0.120			10.2			
					1600			300		100	2000	-0.037	0.054	0.035	0.150			12.6			
70	9	14	8.5	M6×1	500	32.3	60	250	27.1	100	850	-0.010	0.027	0.020	0.075	0.019	0.013	6.2	2180	23	12
					700			250		100	1050	-0.015	0.035	0.025	0.090			7.3			
					1000			300		100	1400	-0.022	0.040	0.027	0.120			9.3			
					1400			350		120	1870	-0.032	0.054	0.035	0.150			11.9			
					1800			350		120	2270	-0.041	0.065	0.040	0.200			14.1			



Nut type code: ZFT

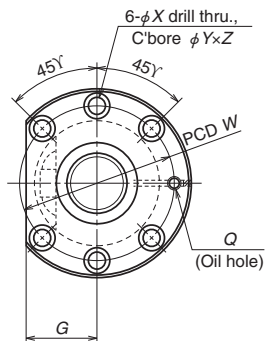
Ball screw No.	Stroke Max. L_1-L_n	Screw shaft dia. d_1	Lead l	Ball dia. D_w	Ball circle dia. d_m	Root dia. d_r	Effective ball turns \times Circuits	Basic load rating (N)		Preload (N)	Dynamic friction torque, median (N-cm)	Nut				
								Dynamic C_a	Static C_{0a}			Flange				Overall length L_n
												Outside dia. D	A	G	B	
W3205SS-1Z-C5Z10	400	32	10	6.350	33	26.4	2.5x1	30000	55100	1960	50	74	108	41	15	100
W3207SS-1Z-C5Z10	600															
W3210SS-4Z-C5Z10	900															
W3214SS-1Z-C5Z10	1300															
W3218SS-1Z-C5Z10	1700															
W3607SS-1Z-C5Z10	597	36	10	6.350	37	30.4	2.5x1	32000	61100	2060	56	75	120	45	18	103
W3612SS-1Z-C5Z10	1097															
W3620SS-1Z-C5Z10	1897															
W4006SS-1Z-C5Z5	511															
W4010SS-1Z-C5Z5	911	40	5	3.175	40.5	37.2	2.5x2	23900	70500	1420	28.5	67	101	39	15	89
W4016SS-1Z-C5Z5	1511															

Remarks: 1. NSK support unit is recommended. Refer to Page B433 for details.

2. Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use.

Refer to Page D13 for details.

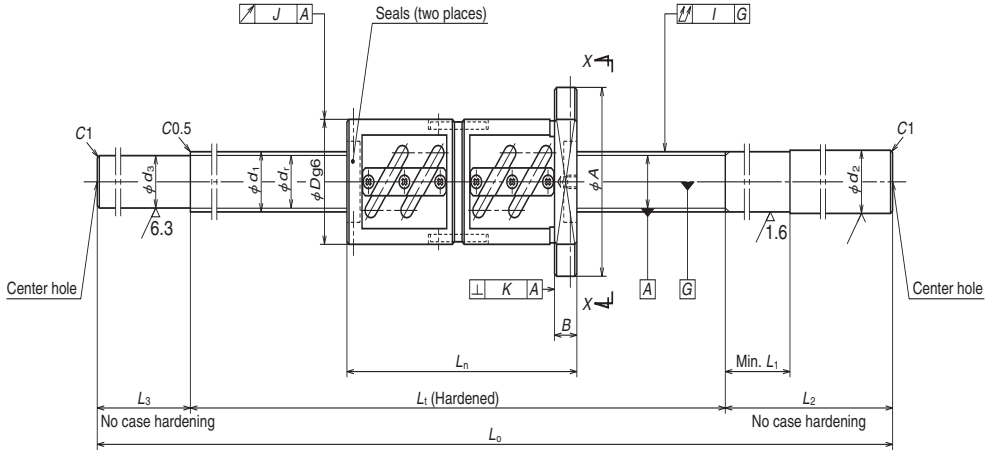
3. Permissible rotational speed is determined by a d-n value and a critical speed. See page B383 and B51.



View X-X

Unit: mm

dimensions					Screw shaft dimensions							Lead accuracy			Run out			Mass (kg)	Permissible rotational speed N (min ⁻¹)	Internal spatial volume of nut (cm ³)	Standard volume of grease replenishing (cm ³)
Bolt hole				Oil hole	Threaded length	Shaft end, right		Shaft end, left			Overall length	Travel compensation	Deviation	Variation	Shaft straightness	Nut O.D. eccentricity	Flange perpendicularity				
W	X	Y	Z	Q	L _t	d ₂	L ₁	L ₂	d ₃	L ₃	L ₀	T	e _p	v _u	I	J	K				
90	9	14	8.5	M6×1	500	32.3	60	250	26.4	100	850	-0.012	0.027	0.020	0.075	0.019	0.013	7.5	2180	22	11
					700			250		100	1050	-0.017	0.035	0.025	0.090			8.5			
					1000			300		100	1400	-0.024	0.040	0.027	0.120			10.5			
					1400			350		120	1870	-0.034	0.054	0.035	0.150			13.1			
					1800			350		120	2270	-0.043	0.065	0.040	0.200			15.2			
98	11	17.5	11	M6×1	700	36.3	60	300	30.4	100	1100	-0.017	0.035	0.025	0.065	0.019	0.013	10.9	1940	27	14
					1200			350		120	1670	-0.029	0.046	0.030	0.100			14.9			
					2000			350		120	2470	-0.048	0.065	0.040	0.130			20.4			
83	9	14	8.5	Rc1/8	600	40.3	50	300	37.2	100	1000	-0.014	0.030	0.023	0.050	0.019	0.013	11.1	1750	14	7.0
					1000			300		100	1400	-0.024	0.040	0.027	0.080			14.8			
					1600			350		100	2050	-0.038	0.054	0.035	0.130			20.8			



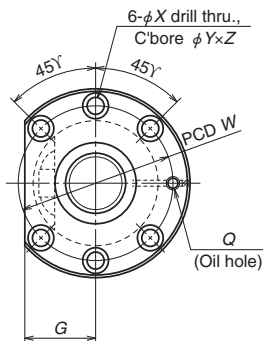
Nut type code: DFT

Ball screw No.	Stroke Max. L_1-L_n	Screw shaft dia. d_1	Lead l	Ball dia. D_w	Ball circle dia. d_m	Root dia. d_r	Effective ball turns Turns × Circuits	Basic load rating (N)		Preload (N)	Dynamic friction torque, median (N·cm)	Nut				
								Dynamic C_a	Static C_{0a}			Outside dia. D	Flange			Overall length L_n
													A	G	B	
W3205SS-2D-C5Z10	310	32	10	6.350	33	26.4	2.5×2	54500	110000	3240	83	74	108	41	15	190
W3207SS-2D-C5Z10	510															
W3210SS-5D-C5Z10	810															
W3214SS-2D-C5Z10	1210															
W3218SS-2D-C5Z10	1610															
W3607SS-2D-C5Z10	507	36	10	6.350	37	30.4	2.5×2	58000	122000	3430	93	75	120	45	18	193
W3612SS-2D-C5Z10	1007															
W3620SS-2D-C5Z10	1807															

Remarks: 1. NSK support unit is recommended. Refer to Page B433 for details.

2. Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use. Refer to Page D13 for details.

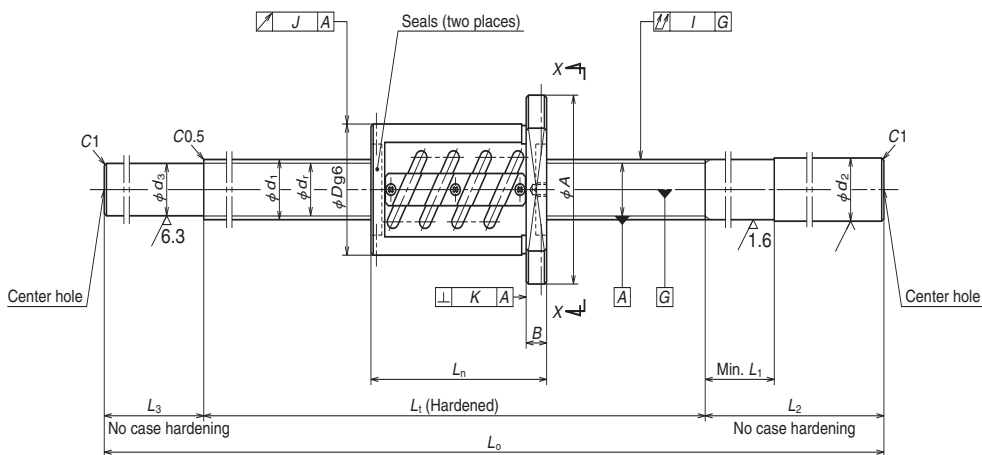
3. Permissible rotational speed is determined by a d·n value and a critical speed. See page B383 and B51.



View X-X

Unit: mm

dimensions					Screw shaft dimensions						Lead accuracy			Run out			Mass (kg)	Permissible rotational speed N (min ⁻¹)	Internal spatial volume of nut (cm ³)	Standard volume of grease replenishing (cm ³)	
Bolt hole		Oil hole	Threaded length	Shaft end, right		Shaft end, left		Overall length	Travel compensation	Deviation	Variation	Shaft straightness	Nut O.D. eccentricity	Flange perpendicularity							
W	X	Y	Z	Q	L ₁	d ₂	L ₁	L ₂	d ₃	L ₃	L ₀	T	e _p	v _u	I	J	K				
90	9	14	8.5	M6×1	500	32.3	60	250	26.4	100	850	-0.012	0.027	0.020	0.075	0.019	0.013	9.5	2180	57	29
					700			250		100	1050	-0.017	0.035	0.025	0.090			10.6			
					1000			300		120	1870	-0.024	0.040	0.027	0.120			15.1			
					1400			350		120	2270	-0.034	0.054	0.035	0.150			17.2			
					1800			350		120	2270	-0.043	0.065	0.040	0.200			17.2			
98	11	17.5	11	M6×1	700	36.3	60	300	30.4	100	1100	-0.017	0.035	0.025	0.065	0.019	0.013	12.8	1940	67	34
					1200			350		120	1670	-0.029	0.046	0.030	0.100			16.8			
					2000			350		120	2470	-0.048	0.065	0.040	0.130			22.3			



Nut type code: ZFT

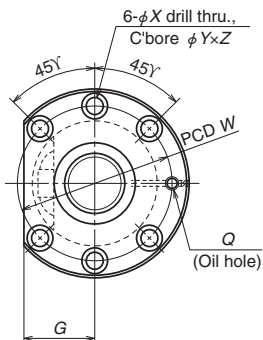
Ball screw No.	Stroke Max. $L_t - L_n$	Screw shaft dia. d_1	Lead l	Ball dia. D_w	Ball circle dia. d_m	Root dia. d_r	Effective ball turns \times Circuits	Basic load rating (N)		Preload (N)	Dynamic friction torque, median (N-cm)	Nut				
								Dynamic C_a	Static C_{oa}			Outside dia. D	Flange			Overall length L_n
													A	G	B	
W4007SS-1Z-C5Z8	570	40	8	4.762	40.5	35.5	2.5x2	41100	103000	2450	64	74	108	41	15	130
W4012SS-1Z-C5Z8	1070															
W4018SS-1Z-C5Z8	1670															
W4007SS-2Z-C5Z10	597	40	10	6.350	41	34.4	2.5x1	33700	68300	2160	64	82	124	47	18	103
W4010SS-2Z-C5Z10	897															
W4014SS-1Z-C5Z10	1297															
W4018SS-2Z-C5Z10	1697	40	12	7.144	41.5	34.1	2.5x1	39500	77200	2550	83	86	128	48	18	117
W4024SS-1Z-C5Z10	2297															
W4010SS-4Z-C5Z12	883															
W4016SS-2Z-C5Z12	1483	40	12	7.144	41.5	34.1	2.5x1	39500	77200	2550	83	86	128	48	18	117
W4025SS-1Z-C5Z12	2383															

Remarks: 1. NSK support unit is recommended. Refer to Page B433 for details.

2. **Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use.**

Refer to Page D13 for details.

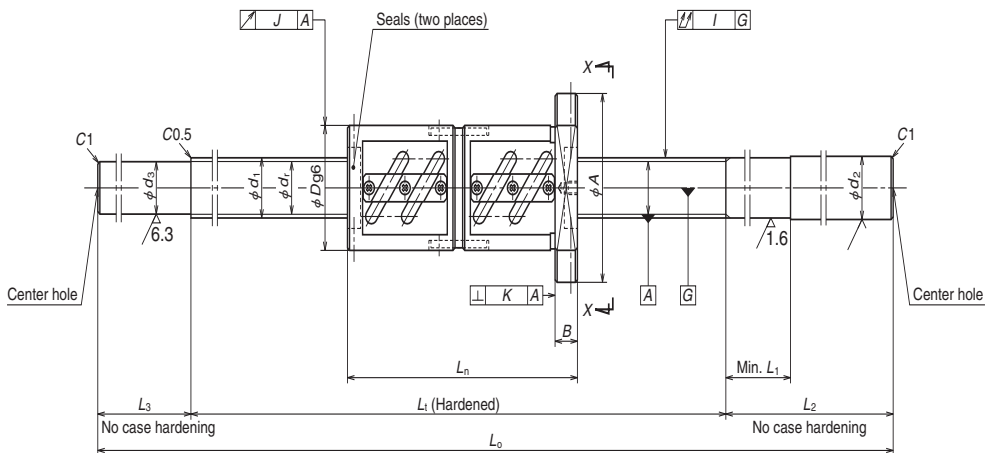
3. Permissible rotational speed is determined by a d-n value and a critical speed. See page B383 and B51.



View X-X

Unit: mm

dimensions					Screw shaft dimensions						Lead accuracy			Run out			Mass (kg)	Permissible rotational speed N (min ⁻¹)	Internal spatial volume of nut (cm ³)	Standard volume of grease replenishing (cm ³)	
Bolt hole				Oil hole	Threaded length	Shaft end, right		Shaft end, left		Overall length	Travel compensation	Deviation	Variation	Shaft straightness	Nut O.D. eccentricity	Flange perpendicularity					
W	X	Y	Z	Q	L ₁	d ₂	L ₁	L ₂	d ₃	L ₃	L ₀	T	e _p	v _u	I	J	K				
90	9	14	8.5	Rc1/8	700	40.3	50	300	35.5	100	1100	-0.017	0.035	0.025	0.065	0.019	0.013	13.0	1750	27	14
					1200			350		100	1650	-0.029	0.046	0.030	0.100			18.0			
					1800			350		120	2270	-0.043	0.065	0.040	0.130			23.5			
102	11	17.5	11	Rc1/8	700	40.3	60	300	34.4	100	1100	-0.017	0.035	0.025	0.065	0.025	0.015	13.3	1750	30	15
					1000			300		100	1400	-0.024	0.040	0.027	0.080			15.9			
					1400			350		120	1870	-0.034	0.054	0.035	0.100			20.0			
					1800			350		120	2270	-0.043	0.065	0.040	0.130			23.4			
					2400			400		150	2950	-0.058	0.077	0.046	0.170			29.4			
106	11	17.5	11	Rc1/8	1000	40.3	70	300	34.1	100	1400	-0.024	0.040	0.027	0.080	0.025	0.015	16.7	1750	35	18
					1600			350		150	2100	-0.038	0.054	0.035	0.130			22.9			
					2500			400		150	3050	-0.060	0.077	0.046	0.170			31.1			



Nut type code: DFT

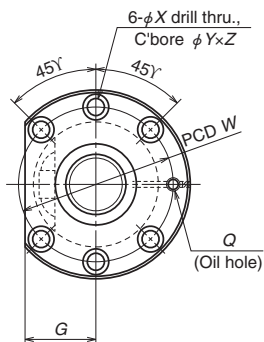
Ball screw No.	Stroke Max. L_1-L_n	Screw shaft dia. d_1	Lead l	Ball dia. D_w	Ball circle dia. d_m	Root dia. d_r	Effective ball turns × Circuits	Basic load rating (N)		Preload (N)	Dynamic friction torque, median (N·cm)	Nut				
								Dynamic C_a	Static C_{0a}			Outside dia. D	Flange			Overall length L_n
													A	G	B	
W4007SS-3D-C5Z10	507	40	10	6.350	41	34.4	2.5×2	61200	137000	3630	108	82	124	47	18	193
W4010SS-3D-C5Z10	807															
W4014SS-2D-C5Z10	1207															
W4018SS-3D-C5Z10	1607															
W4024SS-2D-C5Z10	2207															
W4010SS-5D-C5Z12	775	40	12	7.144	41.5	34.1	2.5×2	71700	154000	4310	138	86	128	48	18	225
W4016SS-3D-C5Z12	1375															
W4025SS-2D-C5Z12	2275															

Remarks: 1. NSK support unit is recommended. Refer to Page B433 for details.

2. Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use.

Refer to Page D13 for details.

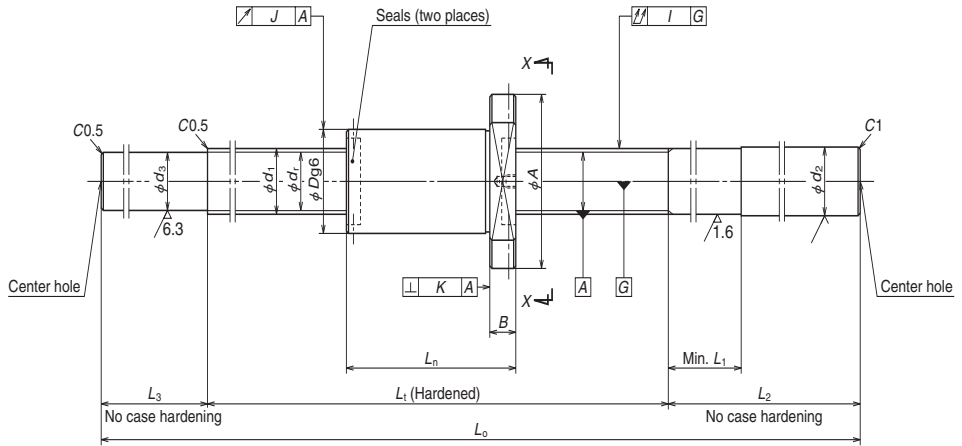
3. Permissible rotational speed is determined by a d·n value and a critical speed. See page B383 and B51.



View X-X

Unit: mm

dimensions				Screw shaft dimensions						Lead accuracy			Run out			Mass (kg)	Permissible rotational speed N (min ⁻¹)	Internal spatial volume of nut (cm ³)	Standard volume of grease replenishing (cm ³)		
Bolt hole		Oil hole		Threaded length	Shaft end, right		Shaft end, left		Overall length	Travel compensation	Deviation	Variation	Shaft straightness	Nut O.D. eccentricity	Flange perpendicularity						
W	X	Y	Z	Q	L ₁	d ₂	L ₁	L ₂	d ₃	L ₃	L ₀	T	e _p	v _u	I	J	K				
102	11	17.5	11	Rc1/8	700	40.3	60	300	34.4	100	1100	-0.017	0.035	0.025	0.065	0.025	0.015	15.5	1750	74	37
					1000			300		100	1400	-0.024	0.040	0.027	0.080			18.1			
					1400			350		120	1870	-0.034	0.054	0.035	0.100			22.2			
					1800			350		120	2270	-0.043	0.065	0.040	0.130			25.6			
					2400			400		150	2950	-0.058	0.077	0.046	0.170			31.6			
106	11	17.5	11	Rc1/8	1000	40.3	70	300	34.1	100	1400	-0.024	0.040	0.027	0.080	0.025	0.015	19.7	1750	93	47
					1600			350		150	2100	-0.038	0.054	0.035	0.130			25.8			
					2500			400		150	3050	-0.060	0.077	0.046	0.170			34.0			



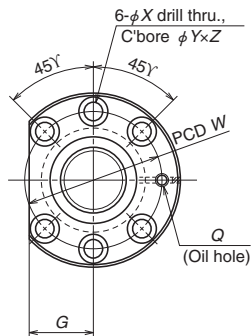
Nut type code: ZFD

Ball screw No.	Stroke Max. $L_T - L_n$	Screw shaft dia. d_1	Lead l	Ball dia. D_w	Ball circle dia. d_m	Root dia. d_r	Effective ball turns	Basic load rating (N)		Preload (N)	Dynamic friction torque, median (N·cm)	Nut				
								Dynamic C_a	Static C_{0a}			Flange				Overall length L_n
												Outside dia. D	A	G	B	
W4007SS-4ZY-C5Z10	557	40	10	6.350	41.75	35.1	4	45200	93100	2840	83	62	104	40	18	143
W4010SS-6ZY-C5Z10	857															
W4014SS-3ZY-C5Z10	1257															
W4018SS-4ZY-C5Z10	1657															
W4024SS-3ZY-C5Z10	2257															
W5007SS-1ZY-C5Z10	557	50	10	6.350	51.75	45.1	4	51500	122000	3240	108	72	114	44	18	143
W5010SS-3ZY-C5Z10	857															
W5015SS-3ZY-C5Z10	1357															
W5020SS-3ZY-C5Z10	1857															
W5026SS-3ZY-C5Z10	2457															

Remarks: 1. NSK support unit is recommended. Refer to Page B433 for details.

2. Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use. Refer to Page D13 for details.

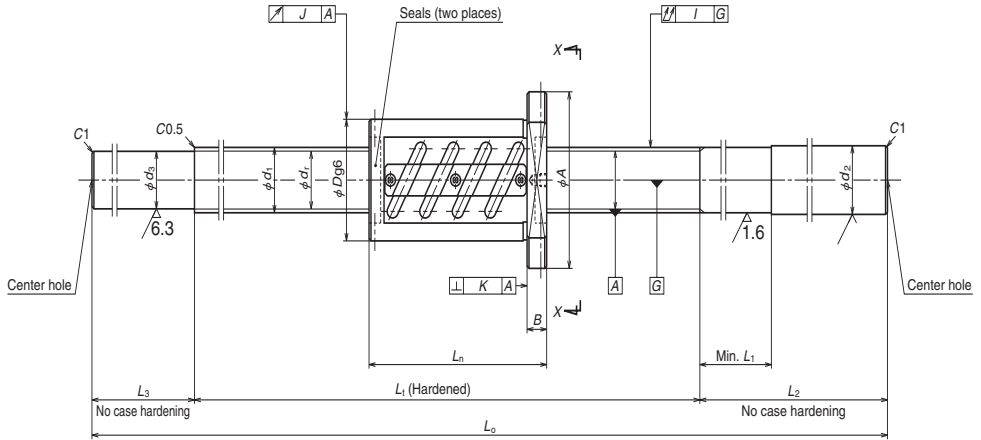
3. Permissible rotational speed is determined by a d·n value and a critical speed. See page B383 and B51.



View X-X

Unit: mm

dimensions				Screw shaft dimensions						Lead accuracy			Run out			Mass (kg)	Permissible rotational speed N (min ⁻¹)	Internal spatial volume of nut (cm ³)	Standard volume of grease replenishing (cm ³)		
Bolt hole				Threaded length L ₁	Shaft end, right		Shaft end, left		Overall length L ₀	Travel compensation T	Deviation e _p	Variation v _u	Shaft straightness I	Nut O.D. eccentricity J	Flange perpendicularity K						
W	X	Y	Z		Q	L ₁	L ₂	L ₃								L ₃					
82	11	17.5	11	Rc1/8	700	40.3	60	300	35.1	100	1100	-0.015	0.035	0.025	0.065	0.019	0.013	12.1	1750	32	16
					1000			300		100	1400	-0.022	0.040	0.027	0.080			14.7			
					1400			350		120	1870	-0.032	0.054	0.035	0.100			18.9			
					1800			350		120	2270	-0.041	0.065	0.040	0.130			22.5			
					2400			400		150	2950	-0.056	0.077	0.046	0.170			28.5			
92	11	17.5	11	Rc1/8	700	50.3	60	300	45.1	100	1100	-0.015	0.035	0.025	0.065	0.019	0.013	18.3	1400	39	20
					1000			300		100	1400	-0.022	0.040	0.027	0.080			22.5			
					1500			400		150	2050	-0.034	0.054	0.035	0.130			31.8			
					2000			400		150	2550	-0.046	0.065	0.040	0.170			38.9			
					2600			500		200	3300	-0.060	0.093	0.054	0.220			49.5			



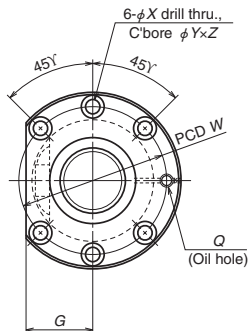
Nut type code: ZFT

Ball screw No.	Stroke Max. L_1-L_n	Screw shaft dia. d_1	Lead l	Ball dia. D_w	Ball circle dia. d_m	Root dia. d_r	Effective ball turns Turns \times Circuits	Basic load rating (N)		Preload (N)	Dynamic friction torque, median (N-cm)	Nut				
								Dynamic C_a	Static C_{0a}			Outside dia. D	Flange			Overall length L_n
													A	G	B	
W4510SS-1Z-C5Z10	897	45	10	6.350	46	39.4	2.5×1	36300	78500	2260	69	88	132	50	18	103
W4516SS-1Z-C5Z10	1497															
W4525SS-1Z-C5Z10	2397															
W5010SS-1Z-C5Z10	897	50	10	6.350	51	44.4	2.5×1	37500	87200	2450	78	93	135	51	18	103
W5015SS-1Z-C5Z10	1397															
W5020SS-1Z-C5Z10	1897															
W5026SS-1Z-C5Z10	2497	50	10	6.350	51	44.4	2.5×2	68100	174000	4020	138	93	135	51	18	163
W5010SS-2Z-C5Z10	837															
W5015SS-2Z-C5Z10	1337															
W5020SS-2Z-C5Z10	1837															
W5026SS-2Z-C5Z10	2437															

Remarks: 1. NSK support unit is recommended. Refer to Page B433 for details.

2. Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use. Refer to Page D13 for details.

3. Permissible rotational speed is determined by a d-n value and a critical speed. See page B383 and B51.



View X-X

Unit: mm

dimensions					Screw shaft dimensions						Lead accuracy			Run out			Mass (kg)	Permissible rotational speed N (min ⁻¹)	Internal spatial volume of nut (cm ³)	Standard volume of grease replenishing (cm ³)	
Bolt hole				Oil hole	Threaded length	Shaft end, right		Shaft end, left		Overall length	Travel compensation	Deviation	Variation	Shaft straightness	Nut O.D. eccentricity	Flange perpendicularity					
W	X	Y	Z	Q	L ₁	d ₂	L ₁	L ₂	d ₃	L ₃	L ₀	T	e _p	v _u	I	J	K				
110	11	17.5	11	Rc1/8	1000	45.3	60	300	39.4	100	1400	-0.024	0.040	0.027	0.080	0.025	0.015	19.7	1550	34	17
					1600			400		150	2150	-0.038	0.054	0.035	0.130			28.1			
					2500			450		150	3100	-0.060	0.077	0.046	0.170			38.8			
113	11	17.5	11	Rc1/8	1000	50.3	60	300	44.4	100	1400	-0.024	0.040	0.027	0.080	0.025	0.015	23.8	1400	37	19
					1500			400		150	2050	-0.036	0.054	0.035	0.130			32.9			
					2000			400		150	2550	-0.048	0.065	0.040	0.170			39.8			
					2600			450		150	3200	-0.062	0.093	0.054	0.220			48.9			
113	11	17.5	11	Rc1/8	1000	50.3	60	300	44.4	100	1400	-0.024	0.040	0.027	0.080	0.025	0.015	25.5	1400	59	30
					1500			400		150	2050	-0.036	0.054	0.035	0.130			34.6			
					2000			400		150	2550	-0.048	0.065	0.040	0.170			41.5			
					2600			450		150	3200	-0.062	0.093	0.054	0.220			50.7			