

B-3- 2.1 Compact FA PSS Type

◆Features

In order to respond quickly to a wide range of needs, NSK keeps end-deflector recirculation system ball screws, which offer high-speed and low-noise operation and compact design, in standard stock as the Compact FA Series.

The exceptionally high performance ball screws are ready for use in a variety of fields such as semiconductor manufacturing equipment, LCD manufacturing equipment, chip mounting equipment, measuring apparatus, and medical equipment.

●Quieter sound

The noise level of ball screws has been reduced by 6 dB, about half of what is sensed by the ear.

●Compact

The outside diameter of the ball nut is as much as 30% smaller than those of NSK conventional products. This contributes to more compact design of all sorts of equipment and devices such as thinner XY tables.

●High speed

Permissible rotational speeds up to 5 000 min⁻¹. This capability dramatically expands the range of service conditions.

Please refer to the dimension table for details of permissible rotational speed.

●Grease fitting provided as standard equipment

The new ball screws are standardly equipped with a grease fitting (M5 × 0.8). Lubrication ports are provided in 2 places to facilitate maintenance. The ball screws can be easily connected to an integrated lubrication system.

Also, compact, thin plastic seal is available. Nut outside diameter is compact compare with the return tube recirculation system.

●Low-profile design

The low-profile support units especially compatible with the compact FA PSS type are available for uniquely space-saving design.

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

Table begins with the smallest shaft diameter ball screw, and proceeds to the larger sizes

◆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 (L1).

●Lead accuracy

Lead accuracy is C5 grades

T: Travel compensation;

e_p: Tolerance on specified travel;

v_u: Travel variation

See "Technical Description: Lead accuracy" (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.

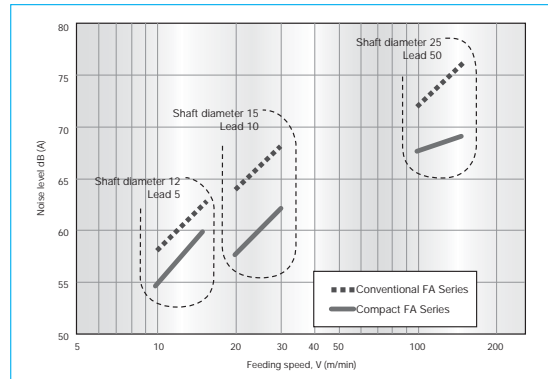
The lower of the two criteria, d·n and Critical Speed, will determine the overall Permissible Rotational Speed of the ball screw. For details, see "Technical description: Permissible rotational speed" (Page B51).

◆Other

The seal of the ball screw and end deflector 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.



(Microphone was positioned at a distance of 400 mm for all noise levels)

Fig. 1 Comparison of noise level

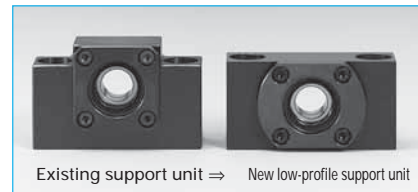


Fig. 2 Comparison of support units

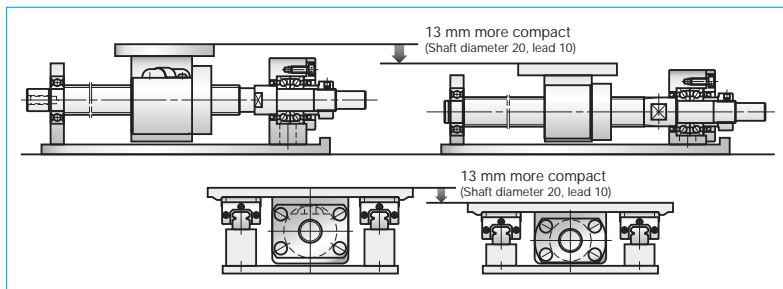
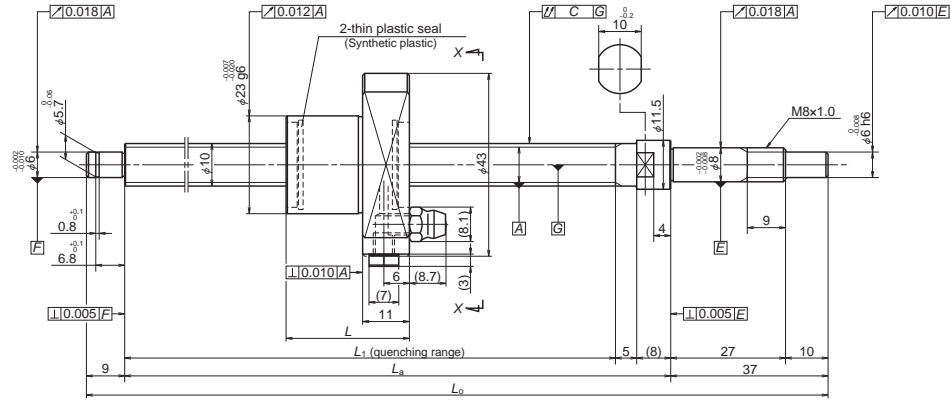


Fig. 3 Comparison of FA Type and Compact FA Series

Table 1 Combinations of screw shaft diameter and lead

Lead \ Screw shaft diameter	5	10	20	25	30	40	50	60
10	B221	B221						
12	B223	B223	B223		B223			
15	B225	B225	B227		B227			
20	B229	B229	B231		B231	B233		B233
25	B235	B235	B237	B237	B239		B239	

Compact FA PSS Type

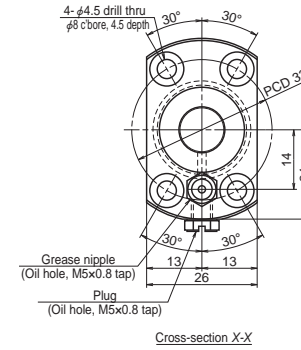


NSK

Screw shaft ø10

Lead 5, 10

Unit: mm



Ball screw specification

Preload type	Oversize ball preload (P-preload)
Ball diameter/screw shaft root diameter	2.000 / 8.2
Ball circle dia.	10.3
Accuracy grade/axial play	C5 / 0
Factory pre-packed grease	NSK grease PS2

Recommended support unit	Unit: mm	
	For drive side	For opposite to drive side
WBK08-01B (square)	○	
WBK08S-01B (square)		○
WBK08-11B (round)	○	

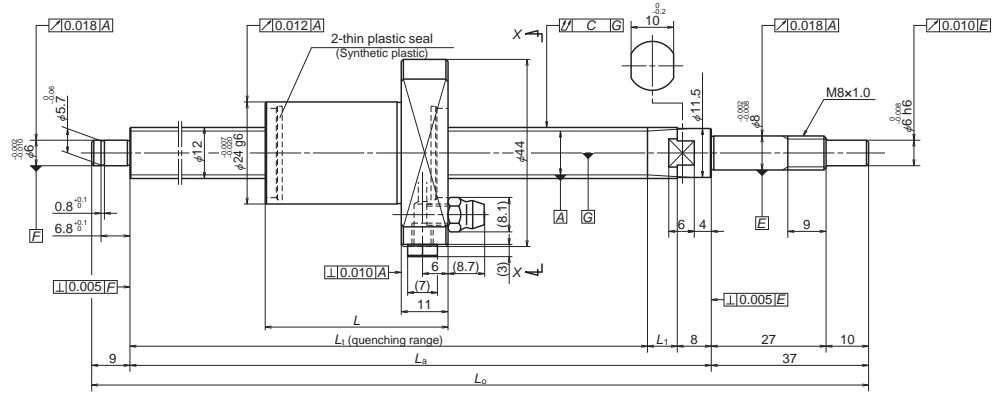
Ball screw No.	Screw shaft diameter <i>d</i>	Lead <i>I</i>	Basic load ratings (N)		Stroke		Nut length <i>L</i>	Screw shaft dimensions		
			Dynamic <i>C_a</i>	Static <i>C_{0a}</i>	Nominal	Max. <i>L_i-L</i>		<i>L_i</i>	<i>L_a</i>	<i>L_o</i>
PSS1005N1D0171	10	5	2 930	4 790	50	83	29	112	125	171
PSS1005N1D0221					100	133		162	175	221
PSS1005N1D0321					200	233		262	275	321
PSS1005N1D0421					300	333		362	375	421
PSS1005N1D0521					400	433		462	475	521
PSS1010N1D0221		10	1 970	3 010	100	130	32	162	175	221
PSS1010N1D0321					200	230		262	275	321
PSS1010N1D0421					300	330		362	375	421
PSS1010N1D0521					400	430		462	475	521

- Remarks:
1. Indicates ball screw preload control value. About 2.0 N·cm of torque is added due to thin plastic seal.
 2. Contact NSK if permissible rotational speed is to be exceeded.
 3. Service temperature range is 0°C to 80°C.

Lead accuracy			Shaft runout <i>C</i>	Dynamic preload torque (N·cm) *1	Mass (kg)	Permissible rotational speed (min ⁻¹) *1	Internal spatial volume of nut (cm ³)	Standard volume of grease replenishing (cm ³)	
Target value <i>T</i>	Error <i>e_p</i>	Variation <i>v_i</i>							
0	0.020	0.018	0.030	0.7 - 3.3	0.3	5 000	0.8	0.4	
			0.045	0.7 - 3.3	0.3				
			0.060	0.6 - 4.3	0.3				
			0.070	0.6 - 4.3	0.4				
			0.085	0.4 - 4.9	0.5				
	0.023	0.020	0.018	0.045	0.7 - 3.3	0.3	5 000	0.7	0.4
				0.060	0.6 - 4.3	0.4			
				0.070	0.6 - 4.3	0.4			
				0.085	0.4 - 4.9	0.5			

- Remarks:
4. NSK support unit is recommended. Refer to Page B433 for details.
 5. The amount for replenishing should be about 50% of nut internal space capacity. Refer to Page D16 for details.

Compact FA PSS Type

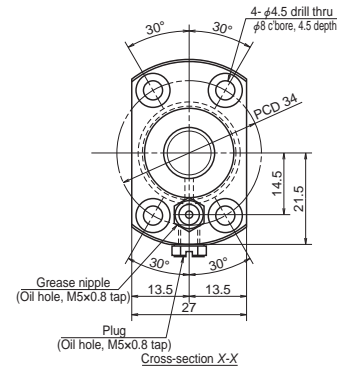


NSK

Screw shaft $\phi 12$

Lead 5, 10, 20, 30

Unit: mm



Ball screw specification

Preload type	Oversize ball preload (P-preload)
Ball diameter/screw shaft root diameter	2.000 / 10.2
Ball circle dia.	12.3
Accuracy grade/axial play	C5 / 0
Factory pre-packed grease	NSK grease PS2

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

Unit: mm

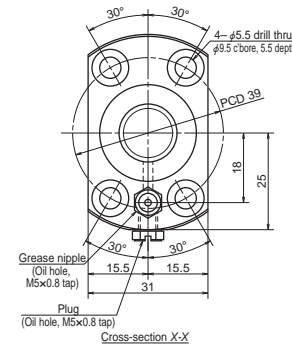
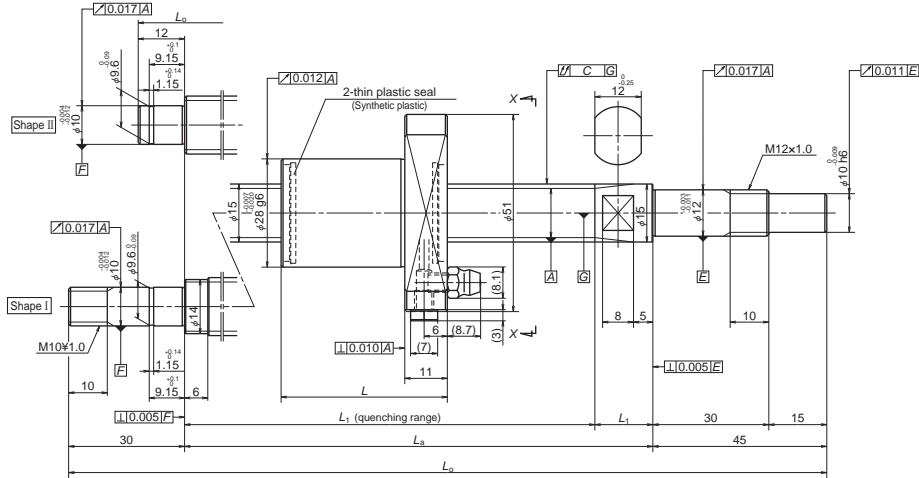
Ball screw No.	Screw shaft diameter d	Lead I	Basic load ratings (N)		Stroke		Nut length L	Screw shaft dimensions			
			Dynamic C_a	Static C_{0a}	Nominal	Max. L_1-L		L_1	L_a	L_o	L_1
PSS1205N1D0171	12	5	3 200	5 860	50	80	30	110	125	171	7
PSS1205N1D0221					100	130		160	175	221	
PSS1205N1D0321					200	230		260	275	321	
PSS1205N1D0421					300	330		360	375	421	
PSS1205N1D0521					400	430		460	475	521	
PSS1205N1D0621					500	530		560	575	621	
PSS1210N1D0221		10	3 200	5 860	100	117	43	160	175	221	7
PSS1210N1D0321					200	217		260	275	321	
PSS1210N1D0421					300	317		360	375	421	
PSS1210N1D0521					400	417		460	475	521	
PSS1210N1D0621					500	517		560	575	621	
PSS1220N1D0271					20	2 150		3 610	100	158	
PSS1220N1D0371		200	258	308			325		371		
PSS1220N1D0471		300	358	408			425		471		
PSS1220N1D0571		400	458	508			525		571		
PSS1220N1D0671		500	558	608			625		671		
PSS1230N1D0271		30	2 150	3 610			100		133	70	203
PSS1230N1D0371					200	233	303	325	371		
PSS1230N1D0471	300				333	403	425	471			
PSS1230N1D0571	400				433	503	525	571			
PSS1230N1D0671	500				533	603	625	671			

- Remarks: 1. Indicates ball screw preload control value. About 2.0 N-cm of torque is added due to thin plastic seal.
2. Contact NSK if permissible rotational speed is to be exceeded.
3. Service temperature range is 0°C to 80°C.

Target value T	Lead accuracy		Shaft runout C	Dynamic preload torque (N-cm) ^{*1}	Mass (kg)	Permissible rotational speed (min ⁻¹) ^{*2}	Internal spatial volume of nut (cm ³)	Standard volume of grease replenishing (cm ³)
	Error e_p	Variation v_u						
0	0.020	0.018	0.030	0.7 - 3.3	0.3	5 000	1.0	0.5
	0.020	0.018	0.045	0.7 - 3.3	0.3			
	0.023	0.018	0.060	0.6 - 4.3	0.4			
	0.025	0.020	0.070	0.6 - 4.3	0.5			
	0.027	0.020	0.085	0.6 - 4.3	0.6			
	0.030	0.023	0.085	0.4 - 4.9	0.7			
	0.020	0.018	0.045	0.7 - 3.3	0.4	5 000	1.0	0.5
	0.023	0.018	0.060	0.6 - 4.3	0.5			
	0.025	0.020	0.070	0.6 - 4.3	0.5			
	0.027	0.020	0.085	0.6 - 4.3	0.6			
	0.030	0.023	0.085	0.4 - 4.9	0.7			
	0.030	0.023	0.110	0.6 - 5.9	0.8			
	0.023	0.018	0.045	1.4 - 4.5	0.5	5 000	1.5	0.8
	0.023	0.018	0.060	0.9 - 4.9	0.6			
	0.027	0.020	0.070	0.9 - 4.9	0.7			
	0.030	0.023	0.085	0.6 - 5.9	0.7			
	0.030	0.023	0.110	0.6 - 5.9	0.8			
	0.030	0.023	0.110	0.6 - 5.9	0.8			

- Remarks: 4. NSK support unit is recommended. Refer to Page B433 for details.
5. The amount for replenishing should be about 50% of nut internal space capacity. Refer to Page D16 for details.

Compact FA PSS Type



NSK

Screw shaft ø15

Lead 5, 10

Unit: mm

Ball screw specification	
Preload type	Oversize ball preload (P-preload)
Ball diameter/screw shaft root diameter	2.778 / 12.6
Ball circle dia.	15.5
Accuracy grade/axial play	C5 / 0
Factory pre-packed grease	NSK grease LR3

Recommended support unit	Unit: mm	
	For drive side	For opposite to drive side
WBK12-01B (square)	○	
WBK12S-01B (square)		○
WBK12-11 (round)	○	
WBK10-01B (square)		○
WBK10-11 (round)		○

Ball screw No.	Screw shaft diameter <i>d</i>	Lead <i>I</i>	Basic load ratings (N)		Stroke		Nut length <i>L</i>	Screw shaft dimensions						
			Dynamic <i>C_a</i>	Static <i>C_{0a}</i>	Nominal	Max. <i>L₁-L</i>		<i>L₁</i>	<i>L_a</i>	<i>L_b</i>	<i>L₁</i>			
												<i>C_a</i>	<i>C_{0a}</i>	Nominal
PSS1505N1D0211	15	5	5 460	10 200	50	109	30	139	154	211	15			
PSS1505N1D0261					100	159						189	204	261
PSS1505N1D0361					200	259						289	304	361
PSS1505N1D0461					300	359						389	404	461
PSS1505N1D0561					400	459						489	504	561
PSS1505N1D0661					500	559						589	604	661
PSS1505N1D0761					600	659						689	704	761
PSS1510N1D0261					10	5 460						10 200	100	146
PSS1510N1D0361		200	246	289			304	361						
PSS1510N1D0461		300	346	389			404	461						
PSS1510N1D0561		400	446	489			504	561						
PSS1510N1D0661		500	546	589			604	661						
PSS1510N1D0761		600	646	689			704	761						
PSS1510N1D0879		700	746	789			804	879						
PSS1510N1D0979	800	846	889	904			979							
PSS1510N1D1179	1 000	1 046	1 089	1 104			1 179							

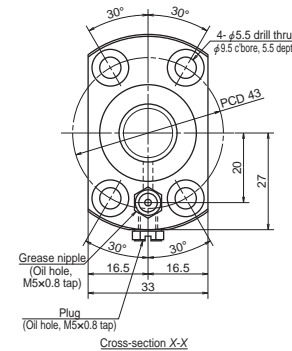
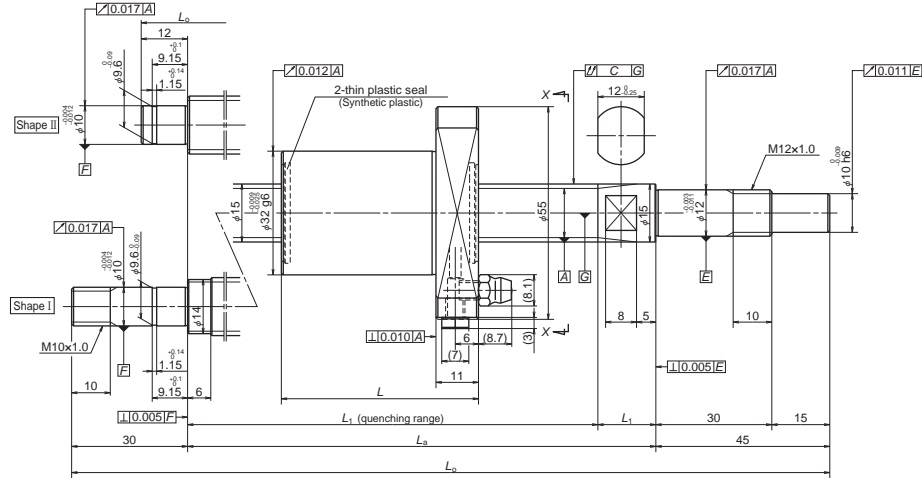
Remarks: 1. Indicates ball screw preload control value. About 2.0 N-cm of torque is added due to thin plastic seal.
 2. Contact NSK if permissible rotational speed is to be exceeded.
 3. Service temperature range is 0°C to 80°C.

Unit: mm

Left shaft end (opposite driven side)	Lead accuracy			Shaft runout <i>C</i>	Dynamic preload torque (N-cm) *1	Mass (kg)	Permissible rotational speed (min) ²		Internal spatial volume of nut (cm ³)	Standard volume of grease replenishing (cm ³)
	Target value <i>T</i>	Error <i>e_p</i>	Variation <i>v_u</i>				Fixed-Simple	Fixed-Fixed		
II	0	0.020	0.018	0.035	0.2 - 6.9	0.5	5 000	—	2.0	1.0
		0.020	0.018	0.035	0.2 - 6.9	0.5				
		0.023	0.018	0.045	0.2 - 6.9	0.6				
		0.025	0.020	0.050	0.4 - 9.8	0.8				
		0.027	0.020	0.060	0.4 - 9.8	0.9				
		0.030	0.023	0.075	0.4 - 9.8	1.0				
		0.035	0.025	0.075	0.4 - 11.8	1.1				
		0.035	0.025	0.075	0.4 - 11.8	1.1				
II	0	0.020	0.018	0.035	0.6 - 7.4	0.6	5 000	—	2.0	1.0
		0.023	0.018	0.045	0.6 - 7.4	0.7				
		0.025	0.020	0.050	0.4 - 9.8	0.8				
		0.027	0.020	0.060	0.4 - 9.8	1.0				
		0.030	0.023	0.075	0.4 - 9.8	1.1				
		0.035	0.025	0.075	0.4 - 11.8	1.2				
I	0	0.035	0.025	0.095	0.4 - 11.8	1.4	2 700	3 400	2.0	1.0
		0.040	0.027	0.095	0.4 - 11.8	1.5	2 200	3 400		
		0.046	0.030	0.120	0.4 - 11.8	1.7	1 400	2 300		

Remarks: 4. NSK support unit is recommended. Refer to Page B433 for details.
 5. The amount for replenishing should be about 50% of nut internal space capacity. Refer to Page D16 for details.

Compact FA PSS Type



Screw shaft ø15

Lead 20, 30

Unit: mm

Ball screw specification	
Preload type	Oversize ball preload (P-preload)
Ball diameter/screw shaft root diameter	3.175 / 12.2
Ball circle dia.	15.5
Accuracy grade/axial play	C5 / 0
Factory pre-packed grease	NSK grease LR3

Recommended support unit	Unit: mm	
	For drive side	For opposite to drive side
WBK12-01B (square)	○	
WBK12S-01B (square)		○
WBK12-11 (round)	○	
WBK10-01B (square)		○
WBK10-11 (round)		○

Ball screw No.	Screw shaft diameter <i>d</i>	Lead <i>I</i>	Basic load ratings (N)		Stroke		Nut length <i>L</i>	Screw shaft dimensions			
			Dynamic <i>C_a</i>	Static <i>C_{0a}</i>	Nominal	Max. <i>L₁-L</i>		<i>L₁</i>	<i>L_a</i>	<i>L_b</i>	<i>L₁</i>
PSS1520N1D0261	15	20	5 070	8 730	100	135	51	186	204	261	18
PSS1520N1D0361					200	235		286	304	361	
PSS1520N1D0461					300	335		386	404	461	
PSS1520N1D0561					400	435		486	504	561	
PSS1520N1D0661					500	535		586	604	661	
PSS1520N1D0761					600	635		686	704	761	
PSS1520N1D0879					700	735		786	804	879	
PSS1520N1D0979					800	835		886	904	979	
PSS1520N1D1179					1 000	1 035		1 086	1 104	1 179	
PSS1530N1D0311					30	5 070		8 730	100	159	
PSS1530N1D0411	200	259	330	354			411				
PSS1530N1D0511	300	359	430	454			511				
PSS1530N1D0611	400	459	530	554			611				
PSS1530N1D0711	500	559	630	654			711				
PSS1530N1D0811	600	659	730	754			811				
PSS1530N1D0929	700	759	830	854			929				
PSS1530N1D1029	800	859	930	954			1 029				
PSS1530N1D1229	1 000	1 059	1 130	1 154			1 229				

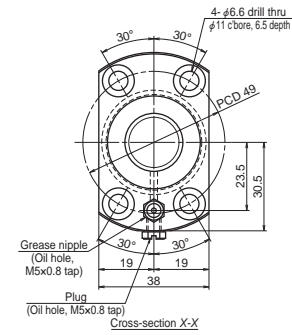
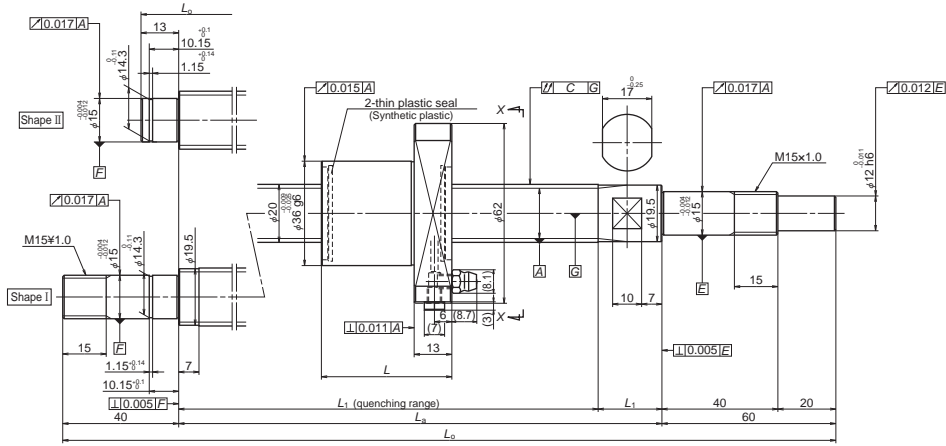
Remarks: 1. Indicates ball screw preload control value. About 2.0 N-cm of torque is added due to thin plastic seal.
 2. Contact NSK if permissible rotational speed is to be exceeded.
 3. Service temperature range is 0°C to 80°C.

Unit: mm

Left shaft end (opposite driven side)	Lead accuracy			Shaft runout <i>C</i>	Dynamic preload torque (N-cm) *1	Mass (kg)	Permissible rotational speed (min) ^{*2}		Internal spatial volume of nut (cm ³)	Standard volume of grease replenishing (cm ³)
	Target value <i>T</i>	Error <i>e_p</i>	Variation <i>v_u</i>				Fixed-Simple	Fixed-Fixed		
II	0	0.020	0.018	0.035	0.8 - 8.8	0.7	5 000	—	2.8	1.4
		0.023	0.018	0.045	0.8 - 8.8	0.8				
		0.025	0.020	0.050	0.8 - 10.8	0.9				
		0.027	0.020	0.060	0.8 - 10.8	1.1				
		0.030	0.023	0.075	0.8 - 10.8	1.2				
		0.035	0.025	0.075	0.8 - 13.8	1.3				
I	0	0.035	0.025	0.095	0.8 - 13.8	1.5	2 900	4 200		
		0.040	0.027	0.095	0.8 - 13.8	1.6	2 200	3 300		
II	0	0.046	0.030	0.120	0.8 - 13.8	1.9	1 500	2 200		
		0.023	0.018	0.035	1.2 - 9.3	0.8	5 000	—	3.4	1.7
		0.025	0.020	0.050	0.8 - 10.8	1.0				
		0.027	0.020	0.060	0.8 - 10.8	1.1				
0.030	0.023	0.060	0.8 - 10.8	1.2						
I	0	0.030	0.023	0.075	0.8 - 13.8	1.4	4 500			
		0.035	0.025	0.095	0.8 - 13.8	1.5	3 300			
		0.040	0.027	0.095	0.8 - 13.8	1.6	2 600	3 800		
		0.040	0.027	0.120	0.8 - 13.8	1.8	2 000	3 000		
I	0	0.046	0.030	0.120	0.8 - 13.8	2.0	1 400	2 000		

Remarks: 4. NSK support unit is recommended. Refer to Page B433 for details.
 5. The amount for replenishing should be about 50% of nut internal space capacity. Refer to Page D16 for details.

Compact FA PSS Type



NSK

Screw shaft ø20

Lead 5, 10

Unit: mm

Ball screw specification	
Preload type	Oversize ball preload (P-preload)
Ball diameter/screw shaft root diameter	3.175 / 17.2
Ball circle dia.	20.5
Accuracy grade/axial play	C5 / 0
Factory pre-packed grease	NSK grease LR3

Recommended support unit	Unit: mm	
	For drive side	For opposite to drive side
WBK15-01B (square)	○	○
WBK15S-01B (square)		○
WBK15-11 (round)	○	○

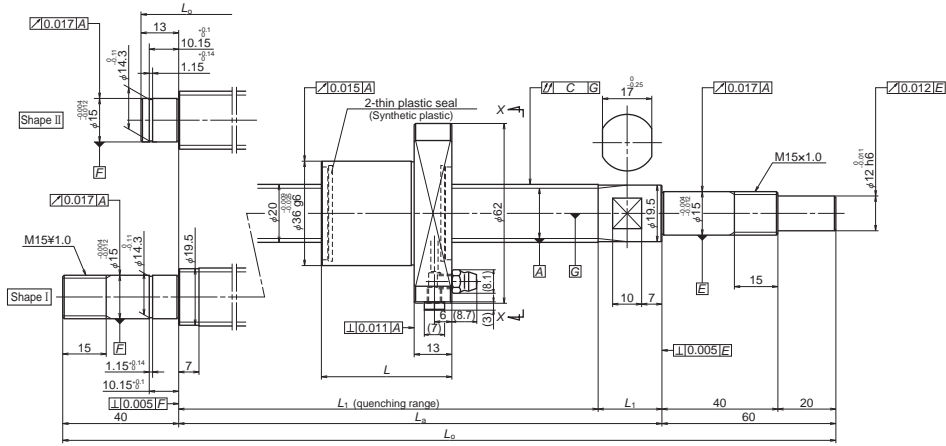
Ball screw No.	Screw shaft diameter <i>d</i>	Lead <i>I</i>	Basic load ratings (N)		Stroke		Nut length <i>L</i>	Screw shaft dimensions								
			Dynamic <i>C_a</i>	Static <i>C_{0a}</i>	Nominal	Max. <i>L₁-L</i>		<i>L₁</i>	<i>L_a</i>	<i>L_b</i>	<i>L_c</i>					
												<i>C_a</i>	<i>C_{0a}</i>	Nominal	Max. <i>L₁-L</i>	<i>L₁</i>
PSS2005N1D0323	20	5	8 790	18 500	150	197	31	228	250	323	22					
PSS2005N1D0373					200	247		278	300	373						
PSS2005N1D0473					300	347		378	400	473						
PSS2005N1D0573					400	447		478	500	573						
PSS2005N1D0673					500	547		578	600	673						
PSS2005N1D0773					600	647		678	700	773						
PSS2005N1D0873					700	747		778	800	873						
PSS2005N1D1000					800	847		878	900	1000						
PSS2010N1D0387					10	8 790		18 500	200	247		45	292	314	387	22
PSS2010N1D0487									300	347			392	414	487	
PSS2010N1D0587	400	447	492	514			587									
PSS2010N1D0687	500	547	592	614			687									
PSS2010N1D0787	600	647	692	714			787									
PSS2010N1D0887	700	747	792	814			887									
PSS2010N1D1014	800	847	892	914			1014									
PSS2010N1D1214	1 000	1047	1092	1 114			1214									
PSS2010N1D1414	1 200	1247	1292	1 314			1414									

Remarks: 1. Indicates ball screw preload control value. About 2.0 N-cm of torque is added due to thin plastic seal.
2. Contact NSK if permissible rotational speed is to be exceeded.
3. Service temperature range is 0°C to 80°C.

Left shaft end (opposite driven side)	Lead accuracy			Shaft runout <i>C</i>	Dynamic preload torque (N-cm) ^{*1}	Mass (kg)	Permissible rotational speed (min) ^{*2}		Internal spatial volume of nut (cm ³)	Standard volume of grease replenishing (cm ³)
	Target value <i>T</i>	Error <i>e_p</i>	Variation <i>v_u</i>				Fixed-Simple	Fixed-Fixed		
II	0	0.023	0.018	0.045	0.6 - 7.4	1.0	5 000	—	3.4	1.7
		0.023	0.018	0.045	0.6 - 7.4	1.1				
		0.025	0.020	0.050	0.6 - 7.4	1.3				
		0.027	0.020	0.060	0.4 - 9.8	1.5				
		0.030	0.023	0.075	0.4 - 9.8	1.7				
		0.035	0.025	0.075	0.4 - 9.8	1.9				
		0.035	0.025	0.095	0.4 - 9.8	2.2				
		0.040	0.027	0.095	0.4 - 11.8	2.4				
		0.040	0.027	0.095	0.4 - 11.8	2.4				
		0.040	0.027	0.095	0.4 - 11.8	2.4				
II	0	0.023	0.018	0.045	1.2 - 9.3	1.2	5 000	—	3.2	1.6
		0.025	0.020	0.050	1.2 - 9.3	1.4				
		0.027	0.020	0.060	0.8 - 10.8	1.7				
		0.030	0.023	0.075	0.8 - 10.8	1.9				
		0.035	0.025	0.075	0.8 - 10.8	2.1				
		0.035	0.025	0.095	0.8 - 10.8	2.4				
I	0	0.040	0.027	0.120	0.8 - 13.8	2.6	4 000	4 600	3.2	1.6
		0.046	0.030	0.120	0.8 - 13.8	3.1				
		0.046	0.030	0.120	0.8 - 13.8	3.1				
		0.054	0.035	0.160	0.8 - 13.8	3.6				

Remarks: 4. NSK support unit is recommended. Refer to Page B433 for details.
5. The amount for replenishing should be about 50% of nut internal space capacity. Refer to Page D16 for details.

Compact FA PSS Type

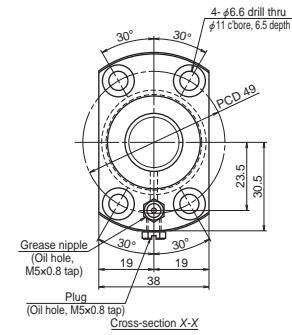


NSK

Screw shaft $\phi 20$

Lead 20, 30

Unit: mm



Ball screw specification

Preload type	Oversize ball preload (P-preload)
Ball diameter/screw shaft root diameter	3.175 / 17.2
Ball circle dia.	20.5
Accuracy grade/axial play	C5 / 0
Factory pre-packed grease	NSK grease LR3

Recommended support unit

Recommended support unit	For drive side	For opposite to drive side
WBK15-01B (square)	<input type="radio"/>	<input type="radio"/>
WBK15S-01B (square)	<input type="radio"/>	<input type="radio"/>
WBK15-11 (round)	<input type="radio"/>	<input type="radio"/>

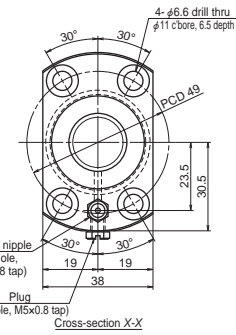
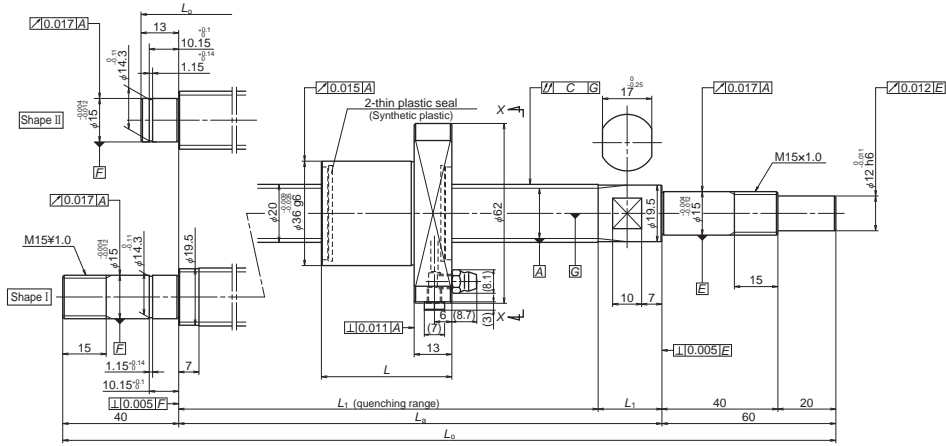
Ball screw No.	Screw shaft diameter d	Lead I	Basic load ratings (N)		Stroke		Nut length L	Screw shaft dimensions									
			Dynamic C_a	Static C_{0a}	Nominal	Max. L_1-L		L_1	L_a	L_b	L_1						
PSS2020N1D0508	20	20	5 900	11 700	300	359	54	413	435	508	22						
PSS2020N1D0608					400	459		513	535	608							
PSS2020N1D0708					500	559		613	635	708							
PSS2020N1D0808					600	659		713	735	808							
PSS2020N1D0908					700	759		813	835	908							
PSS2020N1D1035					800	859		913	935	1 035							
PSS2020N1D1235					1 000	1 059		1 113	1 135	1 235							
PSS2020N1D1435					1 200	1 259		1 313	1 335	1 435							
PSS2020N1D1835					1 600	1 659		1 713	1 735	1 835							
PSS2030N1D0408					30	30		5 900	11 700	200		234	74	308	335	408	27
PSS2030N1D0508										300		334		408	435	508	
PSS2030N1D0608										400		434		508	535	608	
PSS2030N1D0708										500		534		608	635	708	
PSS2030N1D0808										600		634		708	735	808	
PSS2030N1D0908	700	734	808	835			908										
PSS2030N1D1035	800	834	908	935			1 035										
PSS2030N1D1235	1 000	1 034	1 108	1 135			1 235										
PSS2030N1D1435	1 200	1 234	1 308	1 335			1 435										

Remarks: 1. Indicates ball screw preload control value. About 2.0 N-cm of torque is added due to thin plastic seal.
 2. Contact NSK if permissible rotational speed is to be exceeded.
 3. Service temperature range is 0°C to 80°C.

Left shaft end (opposite driven side)	Lead accuracy			Shaft runout C	Dynamic preload torque (N-cm) *1	Mass (kg)	Permissible rotational speed (min) *2		Internal spatial volume of nut (cm ³)	Standard volume of grease replenishing (cm ³)		
	Target value T	Error e_p	Variation v_u				Fixed-Simple	Fixed-Fixed				
II	0	0.027	0.020	0.060	1.4 - 11.8	1.6	5 000	—	3.2	1.6		
		0.030	0.023	0.060	1.4 - 11.8	1.8						
		0.030	0.023	0.075	1.4 - 11.8	2.0						
		0.035	0.025	0.095	1.4 - 11.8	2.3						
		0.040	0.027	0.095	0.8 - 13.8	2.5					3 700	
I	0	0.040	0.027	0.120	0.8 - 13.8	2.8	3 000	4 500	4.6	2.3		
		0.046	0.030	0.120	0.8 - 13.8	3.3	2 000	3 000				
		0.054	0.035	0.160	0.8 - 13.8	3.8	1 400	2 100				
II	0	0.065	0.040	0.200	0.8 - 13.8	4.7	800	1 200	4.6	2.3		
		0.023	0.018	0.050	1.6 - 9.8	1.4	5 000	—			4.6	2.3
		0.027	0.020	0.060	1.4 - 11.8	1.7						
		0.030	0.023	0.060	1.4 - 11.8	1.9						
		0.030	0.023	0.075	1.4 - 11.8	2.1						
0.035	0.025	0.095	1.4 - 11.8	2.4	3 900							
I	0	0.040	0.027	0.095	0.8 - 13.8	2.6	3 100	4 600	4.6	2.3		
		0.046	0.030	0.120	0.8 - 13.8	3.4	2 100	3 000				
		0.054	0.035	0.160	0.8 - 13.8	3.9	1 500	2 200				

Remarks: 4. NSK support unit is recommended. Refer to Page B433 for details.
 5. The amount for replenishing should be about 50% of nut internal space capacity. Refer to Page D16 for details.

Compact FA PSS Type



NSK

Screw shaft ø20

Lead 40, 60

Unit: mm

Ball screw specification

Preload type	Oversize ball preload (P-preload)
Ball diameter/screw shaft root diameter	3.175 / 17.2
Ball circle dia.	20.5
Accuracy grade/axial play	C5 / 0
Factory pre-packed grease	NSK grease LR3

Recommended support unit

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

Ball screw No.	Screw shaft diameter <i>d</i>	Lead <i>I</i>	Basic load ratings (N)		Stroke		Nut length <i>L</i>	Screw shaft dimensions								
			Dynamic <i>C_a</i>	Static <i>C_{0a}</i>	Nominal	Max. <i>L₁-L</i>		<i>L₁</i>	<i>L_a</i>	<i>L_b</i>	<i>L_c</i>					
												<i>C_a</i>	<i>C_{0a}</i>	Nominal	Max. <i>L₁-L</i>	<i>L₁</i>
PSS2040N1D0658	20	40	5 900	11 700	400	461	92	553	585	658	32					
PSS2040N1D0758					500	561		653	685	758						
PSS2040N1D0858					600	661		753	785	858						
PSS2040N1D0958					700	761		853	885	958						
PSS2040N1D1085					800	861		953	985	1 085						
PSS2040N1D1285					1 000	1 061		1 153	1 185	1 285						
PSS2040N1D1485					1 200	1 261		1 353	1 385	1 485						
PSS2040N1D1885					1 600	1 661		1 753	1 785	1 885						
PSS2040N1D2285					2 000	2 061		2 153	2 185	2 285						
PSS2060N1D0708					60	5 900		11 700	400	464		129	593	635	708	42
PSS2060N1D0808									500	564			693	735	808	
PSS2060N1D0908									600	664			793	835	908	
PSS2060N1D1008									700	764			893	935	1 008	
PSS2060N1D1135									800	864			993	1 035	1 135	
PSS2060N1D1335	1 000	1 064	1 193	1 235			1 335									
PSS2060N1D1535	1 200	1 264	1 393	1 435			1 535									
PSS2060N1D1935	1 600	1 664	1 793	1 835			1 935									
PSS2060N1D2335	2 000	2 064	2 193	2 235			2 335									

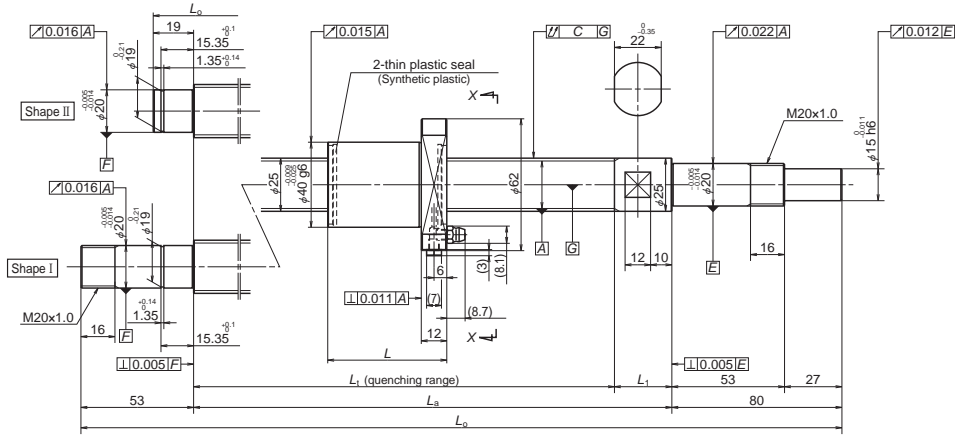
- Remarks: 1. Indicates ball screw preload control value. About 2.0 N-cm of torque is added due to thin plastic seal.
 2. Contact NSK if permissible rotational speed is to be exceeded.
 3. Service temperature range is 0°C to 80°C.

Unit: mm

Left shaft end (opposite driven side)	Lead accuracy			Shaft runout <i>C</i>	Dynamic preload torque (N-cm) *1	Mass (kg)	Permissible rotational speed (min) ^{*)}		Internal spatial volume of nut (cm ³)	Standard volume of grease replenishing (cm ³)		
	Target value <i>T</i>	Error <i>e_p</i>	Variation <i>v_u</i>				Fixed-Simple	Fixed-Fixed				
											<i>T</i>	<i>e_p</i>
II	0	0.030	0.023	0.075	2.2 - 12.8	2.1	5 000	—	5.3	2.7		
		0.035	0.025	0.075	2.2 - 12.8	2.4						
		0.035	0.025	0.095	2.2 - 12.8	2.6						
		0.040	0.027	0.095	1.8 - 14.8	2.8						
I	0	0.040	0.027	0.120	1.8 - 14.8	3.1	2 800	4 200	5.3	2.7		
		0.046	0.030	0.160	1.8 - 14.8	3.6	1 900	2 800				
		0.054	0.035	0.160	1.8 - 14.8	4.1	1 400	2 000				
		0.065	0.040	0.200	1.8 - 14.8	5.1	800	1 200				
II	0	0.077	0.046	0.240	1.8 - 14.8	6.0	500	800	7.0	3.5		
		0.030	0.023	0.075	2.7 - 13.8	2.4	5 000	—			7.0	3.5
		0.035	0.025	0.095	2.7 - 13.8	2.6						
		0.035	0.025	0.095	2.7 - 13.8	2.9						
0.040	0.027	0.120	1.8 - 14.8	3.1								
I	0	0.040	0.027	0.120	1.8 - 14.8	3.4	2 600	3 900	7.0	3.5		
		0.046	0.030	0.160	1.8 - 14.8	3.9	1 800	2 700				
		0.054	0.035	0.160	1.8 - 14.8	4.4	1 300	1 900				
		0.065	0.040	0.200	1.8 - 14.8	5.4	800	1 100				
		0.077	0.046	0.240	1.8 - 14.8	6.3	500	700				

- Remarks: 4. NSK support unit is recommended. Refer to Page B433 for details.
 5. The amount for replenishing should be about 50% of nut internal space capacity. Refer to Page D16 for details.

Compact FA PSS Type

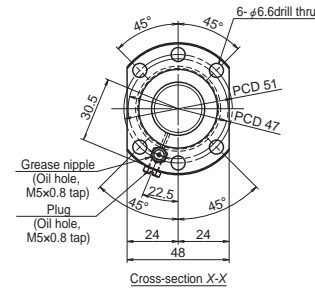


NSK

Screw shaft ø25

Lead 5, 10

Unit: mm



Ball screw specification

Preload type	Oversize ball preload (P-preload)
Ball diameter/screw shaft root diameter	3.175 / 22.2
Ball circle dia.	25.5
Accuracy grade/axial play	C5 / 0
Factory pre-packed grease	NSK grease LR3

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

Ball screw No.	Screw shaft diameter <i>d</i>	Lead <i>I</i>	Basic load ratings (N)		Stroke		Nut length <i>L</i>	Screw shaft dimensions			
			Dynamic <i>C_a</i>	Static <i>C_{0a}</i>	Nominal	Max. <i>L₁-L</i>		<i>L₁</i>	<i>L_a</i>	<i>L_b</i>	<i>L₁</i>
PSS2505N1D0349	25	5	9 760	23 600	150	191	32	223	250	349	27
PSS2505N1D0399					200	241		273	300	399	
PSS2505N1D0499					300	341		373	400	499	
PSS2505N1D0599					400	441		473	500	599	
PSS2505N1D0699					500	541		573	600	699	
PSS2505N1D0899					700	741		773	800	899	
PSS2505N1D0999					800	841		873	900	999	
PSS2505N1D1233					1 000	1 041		1 073	1 100	1 233	
PSS2510N1D0549		10	12 800	32 300	300	367	56	423	450	549	27
PSS2510N1D0649					400	467		523	550	649	
PSS2510N1D0749					500	567		623	650	749	
PSS2510N1D0849					600	667		723	750	849	
PSS2510N1D0949					700	767		823	850	949	
PSS2510N1D1049					800	867		923	950	1 049	
PSS2510N1D1283					1 000	1 067		1 123	1 150	1 283	
PSS2510N1D1883					1 600	1 667		1 723	1 750	1 883	

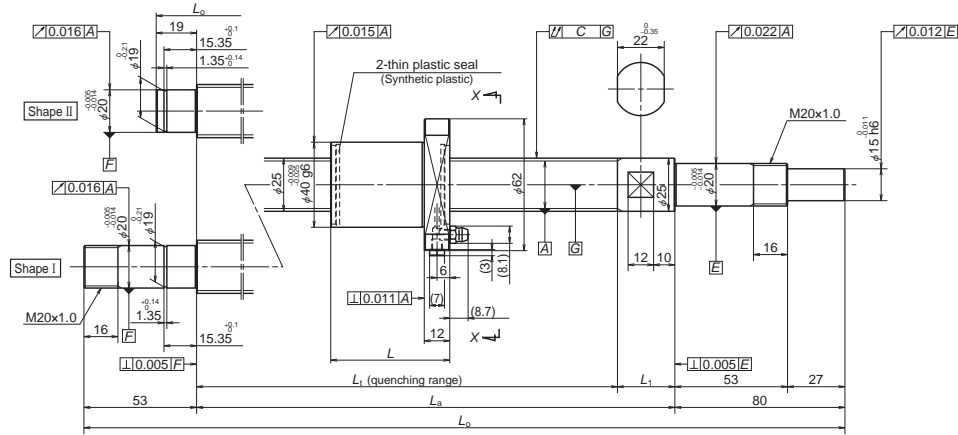
- Remarks: 1. Indicates ball screw preload control value. About 2.0 N-cm of torque is added due to thin plastic seal.
2. Contact NSK if permissible rotational speed is to be exceeded.
3. Service temperature range is 0°C to 80°C.

Unit: mm

Left shaft end (opposite driven side)	Lead accuracy			Shaft runout <i>C</i>	Dynamic preload torque (N-cm) *1	Mass (kg)	Permissible rotational speed (min) ^{*)}		Internal spatial volume of nut (cm ³)	Standard volume of grease replenishing (cm ³)
	Target value <i>T</i>	Error <i>e_p</i>	Variation <i>v_u</i>				Fixed-Simple	Fixed-Fixed		
II	0	0.023	0.018	0.035	1.2 - 9.3	1.5	5 000	—	4.4	2.2
		0.023	0.018	0.035	1.2 - 9.3	1.6				
		0.025	0.020	0.040	1.2 - 9.3	2.0				
		0.027	0.020	0.045	1.2 - 9.3	2.3				
		0.030	0.023	0.055	0.8 - 10.8	2.7				
		0.035	0.025	0.065	0.8 - 10.8	3.4				
		0.040	0.027	0.065	0.8 - 10.8	3.7				
		0.040	0.027	0.065	0.8 - 10.8	3.7				
I	0.046	0.030	0.080	0.8 - 13.8	4.5	2 700	4 000	4.7	2.4	
II	0	0.027	0.020	0.045	3.1 - 11.8	2.4	5 000			—
		0.030	0.023	0.055	2.2 - 12.8	2.7				
		0.030	0.023	0.055	2.2 - 12.8	3.1				
		0.035	0.025	0.065	2.2 - 12.8	3.5				
		0.040	0.027	0.065	2.2 - 12.8	3.8				
		0.040	0.027	0.080	2.2 - 12.8	4.2				
I	0	0.046	0.030	0.100	1.8 - 14.8	5.0	2 500			3 700
		0.065	0.040	0.130	1.8 - 14.8	7.2	1 000	1 600		

- Remarks: 4. NSK support unit is recommended. Refer to Page B433 for details.
5. The amount for replenishing should be about 50% of nut internal space capacity. Refer to Page D16 for details.

Compact FA PSS Type

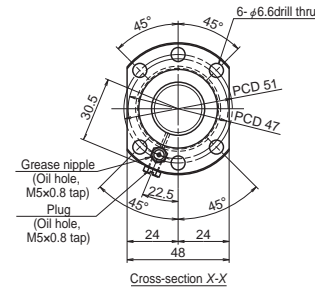


NSK

Screw shaft ø25

Lead 20, 25

Unit: mm



Ball screw specification	
Preload type	Oversize ball preload (P-preload)
Ball diameter/screw shaft root diameter	3.175 / 22.2
Ball circle dia.	25.5
Accuracy grade/axial play	C5 / 0
Factory pre-packed grease	NSK grease LR3

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

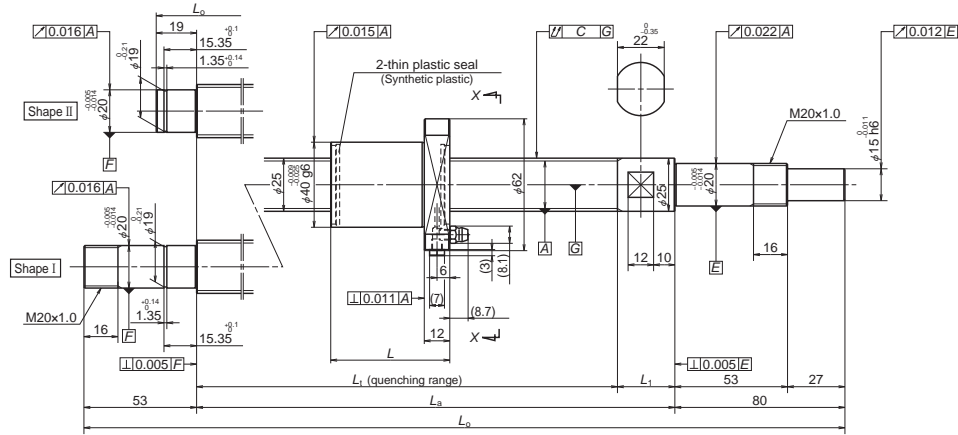
Ball screw No.	Screw shaft diameter <i>d</i>	Lead <i>I</i>	Basic load ratings (N)		Stroke		Nut length <i>L</i>	Screw shaft dimensions									
			Dynamic <i>C_a</i>	Static <i>C_{0a}</i>	Nominal	Max. <i>L₁-L</i>		<i>L₁</i>	<i>L_a</i>	<i>L_b</i>	<i>L₁</i>						
												<i>C_a</i>	<i>C_{0a}</i>	Nominal	Max. <i>L₁-L</i>	<i>L₁</i>	<i>L_a</i>
PSS2520N1D0729	25	20	6 560	14 600	500	550	54	604	630	729	26						
PSS2520N1D0829					600	650		704	730	829							
PSS2520N1D0929					700	750		804	830	929							
PSS2520N1D1029					800	850		904	930	1 029							
PSS2520N1D1263					1 000	1 050		1 104	1 130	1 263							
PSS2520N1D1463					1 200	1 250		1 304	1 330	1 463							
PSS2520N1D1863					1 600	1 650		1 704	1 730	1 863							
PSS2520N1D2263					2 000	2 050		2 104	2 130	2 263							
PSS2525N1D0779					25	25		6 560	14 600	500		587	63	650	680	779	30
PSS2525N1D0879										600		687		750	780	879	
PSS2525N1D0979	700	787	850	880			979										
PSS2525N1D1079	800	887	950	980			1 079										
PSS2525N1D1313	1 000	1 087	1 150	1 180			1 313										
PSS2525N1D1513	1 200	1 287	1 350	1 380			1 513										
PSS2525N1D1913	1 600	1 687	1 750	1 780			1 913										
PSS2525N1D2313	2 000	2 087	2 150	2 180			2 313										

- Remarks:
1. Indicates ball screw preload control value. About 2.0 N-cm of torque is added due to thin plastic seal.
 2. Contact NSK if permissible rotational speed is to be exceeded.
 3. Service temperature range is 0°C to 80°C.

Left shaft end (opposite driven side)	Lead accuracy			Shaft runout <i>C</i>	Dynamic preload torque (N-cm) *1	Mass (kg)	Permissible rotational speed (min) ^{*)}		Internal spatial volume of nut (cm ³)	Standard volume of grease replenishing (cm ³)
	Target value <i>T</i>	Error <i>e_p</i>	Variation <i>v_u</i>				Fixed-Simple	Fixed-Fixed		
II	0	0.030	0.023	0.055	2.2 - 12.8	3.1	5 000	—	3.9	2.0
		0.035	0.025	0.065	2.2 - 12.8	3.4				
		0.040	0.027	0.065	2.2 - 12.8	3.8				
		0.040	0.027	0.080	2.2 - 12.8	4.2				
		0.046	0.030	0.100	1.8 - 14.8	5.0				
I	0	0.054	0.035	0.100	1.8 - 14.8	5.8	1 800	2 700	4.3	2.2
		0.065	0.040	0.130	1.8 - 14.8	7.3	1 100	1 600		
		0.077	0.046	0.170	1.8 - 14.8	8.8	700	1 000		
II	0	0.035	0.025	0.055	2.7 - 13.8	3.3	5 000	—	4.3	2.2
		0.035	0.025	0.065	2.7 - 13.8	3.7				
		0.040	0.027	0.065	2.7 - 13.8	4.1				
		0.040	0.027	0.080	2.7 - 13.8	4.4				
		0.046	0.030	0.100	1.8 - 14.8	5.3				
I	0	0.054	0.035	0.100	1.8 - 14.8	6.0	1 700	2 600	4.3	2.2
		0.065	0.040	0.130	1.8 - 14.8	7.5	1 000	1 500		
		0.077	0.046	0.170	1.8 - 14.8	9.1	700	1 000		

- Remarks:
4. NSK support unit is recommended. Refer to Page B433 for details.
 5. The amount for replenishing should be about 50% of nut internal space capacity. Refer to Page D16 for details.

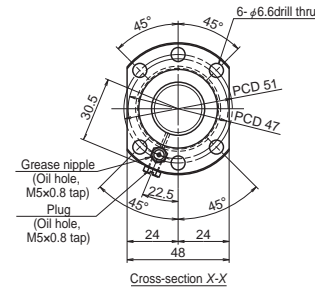
Compact FA PSS Type



Screw shaft ø25

Lead 30, 50

Unit: mm



Ball screw specification	
Preload type	Oversize ball preload (P-preload)
Ball diameter/screw shaft root diameter	3.175 / 22.2
Ball circle dia.	25.5
Accuracy grade/axial play	C5 / 0
Factory pre-packed grease	NSK grease LR3

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

Ball screw No.	Screw shaft diameter <i>d</i>	Lead <i>I</i>	Basic load ratings (N)		Stroke		Nut length <i>L</i>	Screw shaft dimensions								
			Dynamic <i>C_a</i>	Static <i>C_{0a}</i>	Nominal	Max. <i>L₁-L</i>		<i>L₁</i>	<i>L₂</i>	<i>L₃</i>	<i>L₄</i>					
												<i>C_a</i>	<i>C_{0a}</i>	Nominal	Max. <i>L₁-L</i>	<i>L₁</i>
PSS2530N1D0779	25	30	6 560	14 600	500	576	74	650	680	779	30					
PSS2530N1D0879					600	676		750	780	879						
PSS2530N1D0979					700	776		850	880	979						
PSS2530N1D1079					800	876		950	980	1 079						
PSS2530N1D1313					1 000	1 076		1 150	1 180	1 313						
PSS2530N1D1513					1 200	1 276		1 350	1 380	1 513						
PSS2530N1D1913					1 600	1 676		1 750	1 780	1 913						
PSS2530N1D2313					2 000	2 076		2 150	2 180	2 313						
PSS2550N1D0829					50	6 560		14 600	500	576		114	690	730	829	40
PSS2550N1D0929									600	676			790	830	929	
PSS2550N1D1029	700	776	890	930			1 029									
PSS2550N1D1129	800	876	990	1 030			1 129									
PSS2550N1D1363	1 000	1 076	1 190	1 230			1 363									
PSS2550N1D1563	1 200	1 276	1 390	1 430			1 563									
PSS2550N1D1963	1 600	1 676	1 790	1 830			1 963									
PSS2550N1D2363	2 000	2 076	2 190	2 230			2 363									

- Remarks: 1. Indicates ball screw preload control value. About 2.0 N-cm of torque is added due to thin plastic seal.
2. Contact NSK if permissible rotational speed is to be exceeded.
3. Service temperature range is 0°C to 80°C.

Left shaft end (opposite driven side)	Lead accuracy			Shaft runout <i>C</i>	Dynamic preload torque (N-cm) *1	Mass (kg)	Permissible rotational speed (min) ^{*)}		Internal spatial volume of nut (cm ³)	Standard volume of grease replenishing (cm ³)
	Target value <i>T</i>	Error <i>e_p</i>	Variation <i>v_u</i>				Fixed-Simple	Fixed-Fixed		
II	0	0.035	0.025	0.055	2.7 - 13.8	3.4	5 000	—	5.5	2.8
		0.035	0.025	0.065	2.7 - 13.8	3.7				
		0.040	0.027	0.065	2.7 - 13.8	4.1				
		0.040	0.027	0.080	2.7 - 13.8	4.5				
I	0	0.046	0.030	0.100	1.8 - 14.8	5.3	2 300	3 600	5.5	2.8
		0.054	0.035	0.100	1.8 - 14.8	6.1				
		0.065	0.040	0.130	1.8 - 14.8	7.6				
		0.077	0.046	0.170	1.8 - 14.8	9.1				
II	0	0.035	0.025	0.065	5.4 - 17.6	3.8	5 000	—	7.7	3.9
		0.035	0.025	0.065	5.4 - 17.6	4.1				
		0.040	0.027	0.080	5.4 - 17.6	4.5				
		0.040	0.027	0.080	5.4 - 17.6	4.9				
I	0	0.046	0.030	0.100	4.1 - 19.6	5.8	2 200	3 400	7.7	3.9
		0.054	0.035	0.100	4.1 - 19.6	6.5				
		0.065	0.040	0.130	4.1 - 19.6	8.0				
		0.077	0.046	0.170	4.1 - 19.6	9.6				

- Remarks: 4. NSK support unit is recommended. Refer to Page B433 for details.
5. The amount for replenishing should be about 50% of nut internal space capacity. Refer to Page D16 for details.