

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<sup>-1</sup>. 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<sub>p</sub>: Tolerance on specified travel;

v<sub>u</sub>: 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.

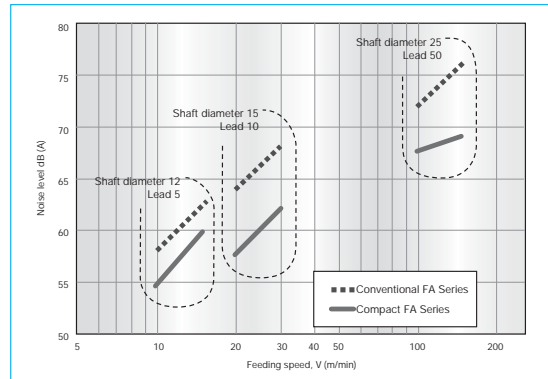
The lower of the two criteria, d·n and Critical Speed, will determine the overall Permissible Rotational Speed of the ball screw. For details, see "Technical description: Permissible rotational speed" (Page B51).

◆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

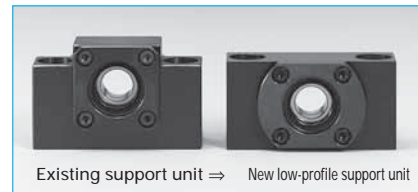


Fig. 2 Comparison of support units

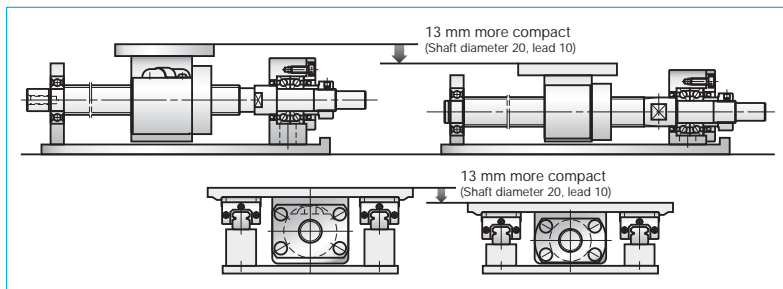


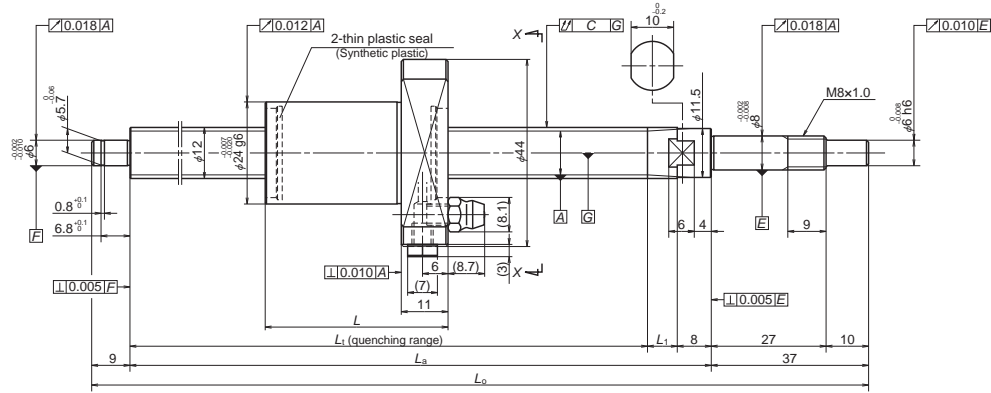
Fig. 3 Comparison of FA Type and Compact FA Series

Table 1 Combinations of screw shaft diameter and lead

Screw shaft diameter \ Lead	Lead							
	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	



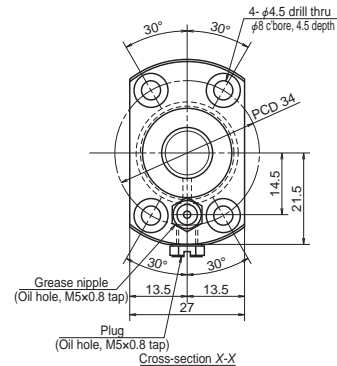
# Compact FA PSS Type



# NSK

## Screw shaft $\phi 12$ 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	Unit: mm	
	For drive side	For opposite to drive side
WBK08-01B (square)	○	
WBK08S-01B (square)		○
WBK08-11B (round)	○	

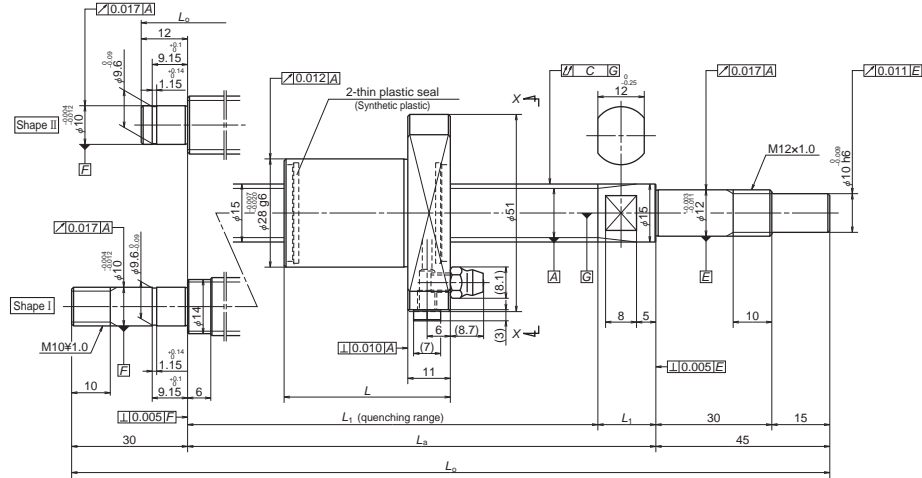
Ball screw No.	Screw shaft diameter $d$	Lead $I$	Basic load ratings (N)		Stroke		Nut length $L$	Screw shaft dimensions			
			Dynamic $C_a$	Static $C_{0a}$	Nominal	Max. $L_1-L$		$L_1$	$L_2$	$L_3$	$L_4$
PSS1205N1D0171	12	5	3 200	5 860	50	80	30	110	125	171	7
PSS1205N1D0221					100	130		160	175	221	
PSS1205N1D0321					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	225
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 <sup>-1</sup> )*2	Internal spatial volume of nut (cm <sup>3</sup> )	Standard volume of grease replenishing (cm <sup>3</sup> )	
	Error $e_p$	Variation $v_u$							Fixed-Simple
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	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



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<sub>a</sub></i>	Static <i>C<sub>0a</sub></i>	Nominal	Max. <i>L<sub>1</sub>-L</i>		<i>L<sub>1</sub></i>	<i>L<sub>a</sub></i>	<i>L<sub>b</sub></i>	<i>L<sub>1</sub></i>
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	43	189	204	261	15
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						

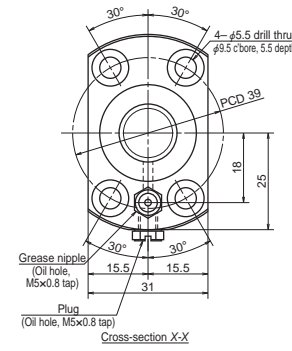
Remarks: 1. Indicates ball screw preload control value. About 2.0 N-cm of torque is added due to thin plastic seal.  
 2. Contact NSK if permissible rotational speed is to be exceeded.  
 3. Service temperature range is 0°C to 80°C.

# NSK

## Screw shaft ø15

### Lead 5, 10

Unit: mm



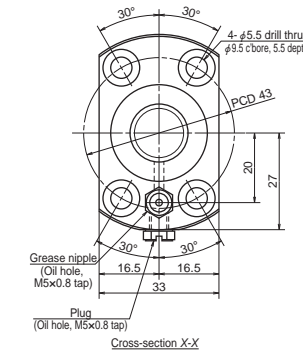
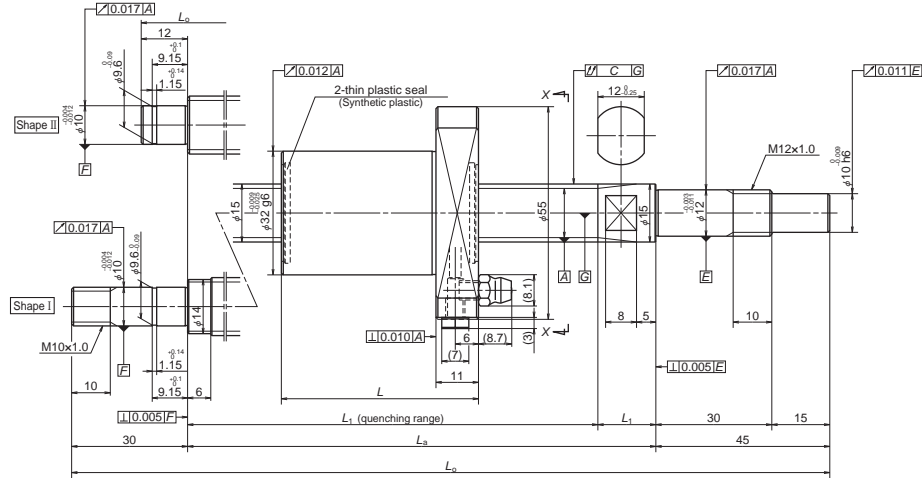
Ball screw specification	
Preload type	Oversize ball preload (P-preload)
Ball diameter/screw shaft root diameter	2.778 / 12.6
Ball circle dia.	15.5
Accuracy grade/axial play	C5 / 0
Factory pre-packed grease	NSK grease LR3

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)		○

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) <sup>2</sup>		Internal spatial volume of nut (cm <sup>3</sup> )	Standard volume of grease replenishing (cm <sup>3</sup> )	
	Target value	Error	Variation				Fixed-Simple	Fixed-Fixed			
	<i>T</i>	<i>e<sub>p</sub></i>	<i>v<sub>u</sub></i>								
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					
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					
I	0	0.035	0.025	0.075	0.4 - 11.8	1.2	3 600	—	2.0	1.0	
		0.035	0.025	0.095	0.4 - 11.8	1.4	2 700				3 400
		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  $\phi 15$

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 $d$	Lead $I$	Basic load ratings (N)		Stroke		Nut length $L$	Screw shaft dimensions			
			Dynamic $C_a$	Static $C_{0a}$	Nominal	Max. $L_1-L$		$L_1$	$L_a$	$L_b$	$L_c$
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.

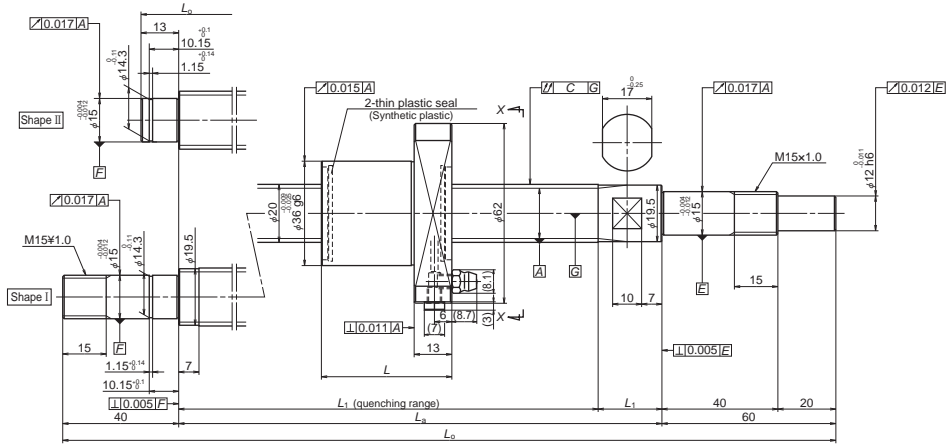
Unit: mm

Left shaft end (opposite driven side)	Lead accuracy			Shaft runout $C$	Dynamic preload torque (N-cm) *1	Mass (kg)	Permissible rotational speed (min) <sup>*2</sup>		Internal spatial volume of nut (cm <sup>3</sup> )	Standard volume of grease replenishing (cm <sup>3</sup> )
	Target value $T$	Error $e_p$	Variation $v_u$				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	3.4	1.7
		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	3.4	1.7
		0.023	0.018	0.035	1.2 - 9.3	0.8				
		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				
		0.030	0.023	0.075	0.8 - 13.8	1.4				
I	0	0.035	0.025	0.095	0.8 - 13.8	1.5	3 300	3 800	3.4	1.7
		0.040	0.027	0.095	0.8 - 13.8	1.6	2 600			
		0.040	0.027	0.120	0.8 - 13.8	1.8	2 000			
		0.046	0.030	0.120	0.8 - 13.8	2.0	1 400			

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

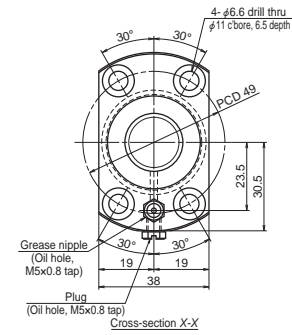


# NSK

## Screw shaft ø20

## Lead 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)	○	○
WBK15S-01B (square)		○
WBK15-11 (round)	○	○

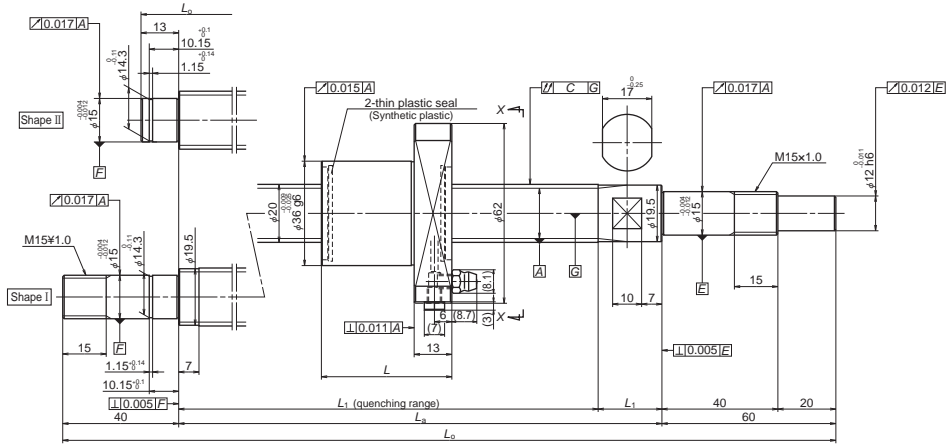
Ball screw No.	Screw shaft diameter <i>d</i>	Lead <i>I</i>	Basic load ratings (N)		Stroke		Nut length <i>L</i>	Screw shaft dimensions									
			Dynamic <i>C<sub>a</sub></i>	Static <i>C<sub>0a</sub></i>	Nominal	Max. <i>L<sub>1</sub>-L</i>		<i>L<sub>1</sub></i>	<i>L<sub>a</sub></i>	<i>L<sub>b</sub></i>	<i>L<sub>c</sub></i>						
												<i>C<sub>a</sub></i>	<i>C<sub>0a</sub></i>	Nominal	Max. <i>L<sub>1</sub>-L</i>	<i>L<sub>1</sub></i>	<i>L<sub>a</sub></i>
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 <i>C</i>	Dynamic preload torque (N-cm) *1	Mass (kg)	Permissible rotational speed (min) *2		Internal spatial volume of nut (cm <sup>3</sup> )	Standard volume of grease replenishing (cm <sup>3</sup> )
	Target value <i>T</i>	Error <i>e<sub>p</sub></i>	Variation <i>v<sub>u</sub></i>				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				
I	0	0.040	0.027	0.120	0.8 - 13.8	2.8	3 000	4 500	3.2	1.6
		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		
		0.065	0.040	0.200	0.8 - 13.8	4.7	800	1 200		
II	0	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				
I	0	0.040	0.027	0.120	0.8 - 13.8	2.9	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  $\phi 20$

Lead 40, 60

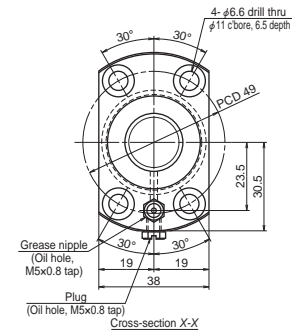
Unit: mm

## 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)	<input type="radio"/>	<input type="radio"/>
WBK15S-01B (square)	<input type="radio"/>	<input type="radio"/>
WBK15-11 (round)	<input type="radio"/>	<input type="radio"/>



Unit: mm

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<sub>a</sub></i>	Static <i>C<sub>0a</sub></i>	Nominal	Max. <i>L<sub>1</sub>-L</i>		<i>L<sub>1</sub></i>	<i>L<sub>a</sub></i>	<i>L<sub>b</sub></i>	<i>L<sub>1</sub></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		

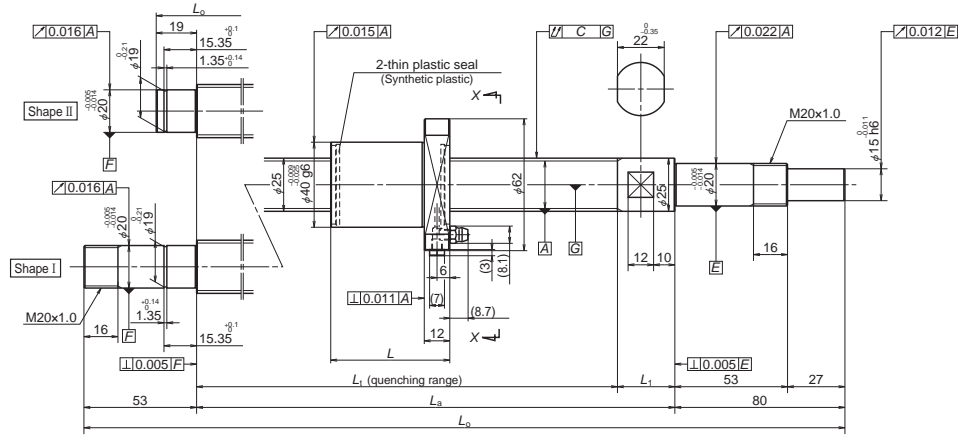
- Remarks: 1. Indicates ball screw preload control value. About 2.0 N-cm of torque is added due to thin plastic seal.
- 2. Contact NSK if permissible rotational speed is to be exceeded.
- 3. Service temperature range is 0°C to 80°C.

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 <sup>3</sup> )	Standard volume of grease replenishing (cm <sup>3</sup> )
	Target value <i>T</i>	Error <i>e<sub>p</sub></i>	Variation <i>v<sub>u</sub></i>				Fixed-Simple	Fixed-Fixed		
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		0.040	0.027	0.120	1.8 - 14.8	3.1	2 800	4 200		
		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		0.077	0.046	0.240	1.8 - 14.8	6.0	500	800		
		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		0.040	0.027	0.120	1.8 - 14.8	3.4	2 600	3 900		
		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

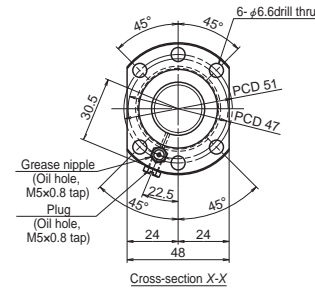


# NSK

## 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<sub>a</sub></i>	Static <i>C<sub>0a</sub></i>	Nominal	Max. <i>L<sub>1</sub>-L</i>		<i>L<sub>1</sub></i>	<i>L<sub>a</sub></i>	<i>L<sub>b</sub></i>	<i>L<sub>1</sub></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	

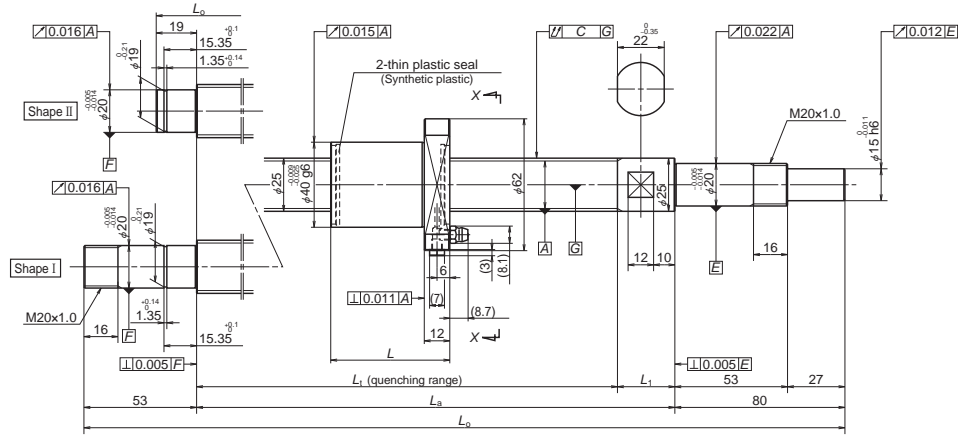
- Remarks: 1. Indicates ball screw preload control value. About 2.0 N-cm of torque is added due to thin plastic seal.  
2. Contact NSK if permissible rotational speed is to be exceeded.  
3. Service temperature range is 0°C to 80°C.

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) <sup>*)</sup>		Internal spatial volume of nut (cm <sup>3</sup> )	Standard volume of grease replenishing (cm <sup>3</sup> )
	Target value <i>T</i>	Error <i>e<sub>p</sub></i>	Variation <i>v<sub>u</sub></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

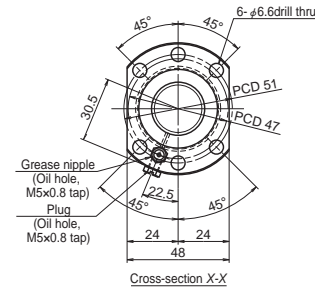


# NSK

## 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	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<sub>a</sub></i>	Static <i>C<sub>0a</sub></i>	Nominal	Max. <i>L<sub>1</sub>-L</i>		<i>L<sub>1</sub></i>	<i>L<sub>a</sub></i>	<i>L<sub>b</sub></i>	<i>L<sub>1</sub></i>						
												<i>C<sub>a</sub></i>	<i>C<sub>0a</sub></i>	Nominal	Max. <i>L<sub>1</sub>-L</i>	<i>L<sub>1</sub></i>	<i>L<sub>a</sub></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.

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) <sup>*)</sup>		Internal spatial volume of nut (cm <sup>3</sup> )	Standard volume of grease replenishing (cm <sup>3</sup> )
	Target value <i>T</i>	Error <i>e<sub>p</sub></i>	Variation <i>v<sub>u</sub></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	2 600	3 800	4.3	2.2
		0.065	0.040	0.130	1.8 - 14.8	7.3	1 800	2 700		
		0.077	0.046	0.170	1.8 - 14.8	8.8	700	1 000		
		0.035	0.025	0.055	2.7 - 13.8	3.3	5 000	—		
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						
I	0	0.046	0.030	0.100	1.8 - 14.8	5.3	2 300	3 500	4.3	2.2
		0.054	0.035	0.100	1.8 - 14.8	6.0	1 700	2 600		
		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.

