

NSK Standard Ball Screws Compact FA Series

Compact-nut ball screws with increased speed and low noise for NSK standard.

They accommodate a variety of uses, from use in semiconductor equipment to various transfer equipment.



NSK Standard Ball Screws Compact FA Series

Compact FA Series has a broad lineup to meet various industrial needs.

Low noise and space-compact design is achieved.

The compact FA series of ball screws includes the following types to quickly and easily meet your requirements:

- PSS Type which offers various sizes for general use.
- USS Type for high accuracy and clean environment use.
- FSS Type for transfer equipment.

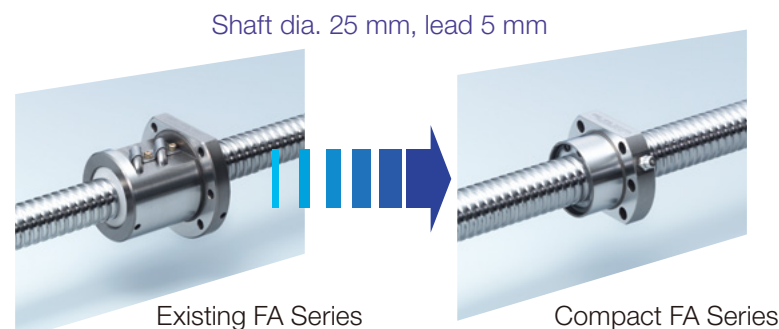
Features

Quick delivery

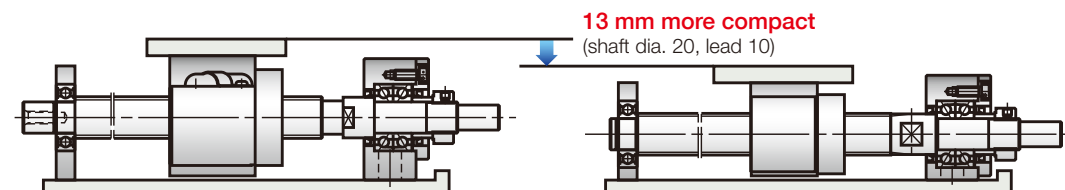
Ball screws and support units in the catalog are in stock.

Compact

The outside diameter of the ball nut is as much as 30% smaller than those of existing NSK products, and the low-profile support units especially compatible with the compact FA series are available. These contribute to more compact design of equipment and devices.

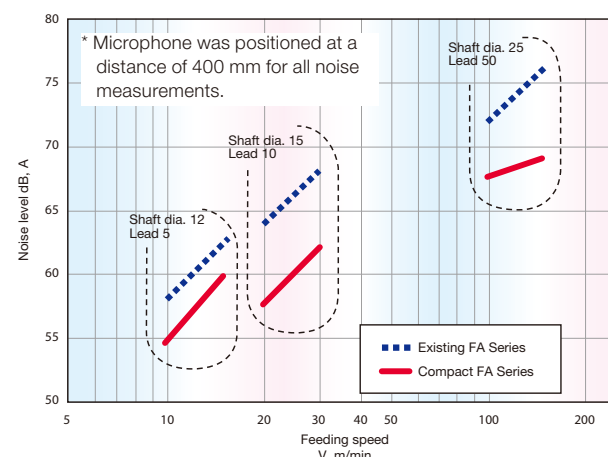


Comparison of existing FA Series and Compact FA Series



High-speed, low-noise

Used with the end-deflector recirculation system. Maximum rotational speed of 5 000 min⁻¹ is achieved, and noise reduced by 6 dB compared with the tube recirculation system. The vibration is reduced as well.



Thin plastic seal

Screw shafts with diameters of 10 to 25 mm are equipped with a thin layer of sealing, which minimizes spattering of grease and helps to achieve a clean environment.

* Screws with shaft diameters of 6 mm or 8 mm are not sealed.

Grease fitting

A grease fitting (M5 × 0.8) is provided as a standard equipment for shaft dia. of 10 to 25 mm. Two lubrication ports are provided to facilitate easy maintenance.

LINE UP

Selection of ball screws

Three types of compact FA Series are available. Choose optimal types for application.

NSK Standard Ball Screws

Compact FA PSS Type for general uses

Accuracy grade: C5 grade of JIS
Axial play: shaft dia. 6 and 8 mm; 0.005 mm or less
shaft dia. 10 mm or over; 0

Page 3,
7 to 30

Compact FA USS Type for high-accuracy and clean environments

Accuracy grade: C3 grade of JIS Axial play: 0

Page 4,
31 to 36

Compact FA FSS type for transfer equipment

Accuracy grade: Ct7 grade of JIS Axial play: 0.010 mm or less

Page 5,
37 to 44

Combinations of screw shaft diameter and lead

Unit: mm

Lead Screw shaft dia.	5	8	10	12	15	20	25	30	40	50	60
6		●		●							
8			●		●						
10	●	●		●							
12	●	●	●	●		●		●			
15	●	●	●	●		●	●	●			
20	●		●	●		●	●	●	●		●
25	●		●	●		●	●	●		●	

● PSS type ● USS type ● FSS type

Support Unit

Shape	Square type	Round type	Page 45 to 50
Applications	<ul style="list-style-type: none"> • For general uses • For clean uses • Space-saving (low-profile type) 	<ul style="list-style-type: none"> • For general uses • For clean uses 	

Compact FA Series PSS Type for General Uses

Applications

Semiconductor manufacturing equipment, LCD manufacturing equipment, material handling equipment, measuring equipment, medical equipment etc.

Accuracy grade and axial play

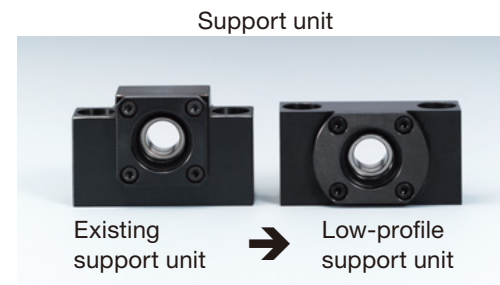
Accuracy grade: C5 grade of JIS Axial play 1) Shaft dia. 6 and 8 mm: 0.005 mm or less
2) Shaft dia. 10 mm or over: 0 (Oversize ball preload)

Wide variation

Abundant combinations of shaft diameter, lead and stroke are available to meet a wide range of customer needs.

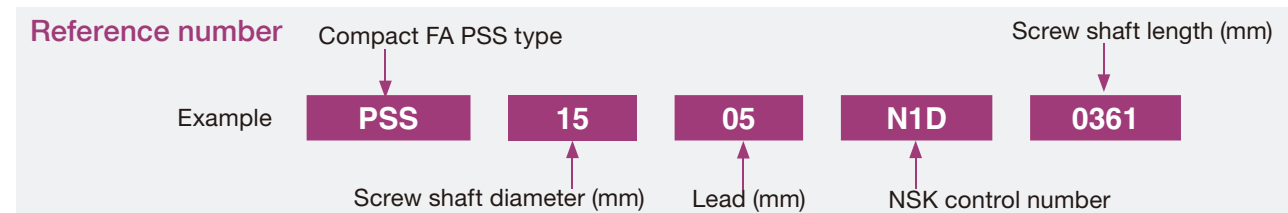
Shaft end support

The low-profile support units especially compatible with the compact FA series are available. Since the ends of ball screw shafts are shaped to accommodate the shapes of support units, no detailed design after purchase is necessary.



Combinations of shaft diameter, lead and stroke

Shaft dia.	Lead	Stroke (overall shaft length for shaft dia. 6 and 8 mm)														Page	Recommended support unit	
		50	100	150	200	300	400	500	600	700	800	1 000	1 200	1 600	2 000		Fixed	Simple
6	8			●												7 to 8	WBK04-01M (square) WBK04-11M (round)	-
	12			●														
8	10			●												9 to 10	WBK06-01M (square) WBK06-11M (round)	-
	15			●														
10	5	●	●		●	●	●									11 to 12	WBK08-01B	WBK08S-01B
	10		●		●	●	●											
12	5	●	●		●	●	●	●								13 to 14	WBK08-01B	WBK08S-01B
	10		●		●	●	●	●										
	20		●		●	●	●	●										
15	30		●		●	●	●	●										
	5	●	●		●	●	●	●	●							15 to 18	WBK12-01B WBK10-01B	WBK12S-01B
	10		●		●	●	●	●	●	●								
	20		●		●	●	●	●	●	●	●							
30		●		●	●	●	●	●	●	●								
20	5			●	●	●	●	●	●	●						19 to 24	WBK15-01B	WBK15S-01B
	10			●	●	●	●	●	●	●	●							
	20				●	●	●	●	●	●	●	●						
	30				●	●	●	●	●	●	●	●	●					
	40					●	●	●	●	●	●	●	●	●				
25	60						●	●	●	●	●	●	●	●	25 to 30	WBK20-01	WBK20S-01	
	5			●	●	●	●	●	●	●	●							
	10				●	●	●	●	●	●	●							
	20					●	●	●	●	●	●	●						
	25						●	●	●	●	●	●	●					



Compact FA Series USS Type for High-Accuracy and Clean Uses

Applications

Clean uses for semiconductor manufacturing equipment, LCD manufacturing equipment, inspection equipment etc.

Accuracy grade and axial play

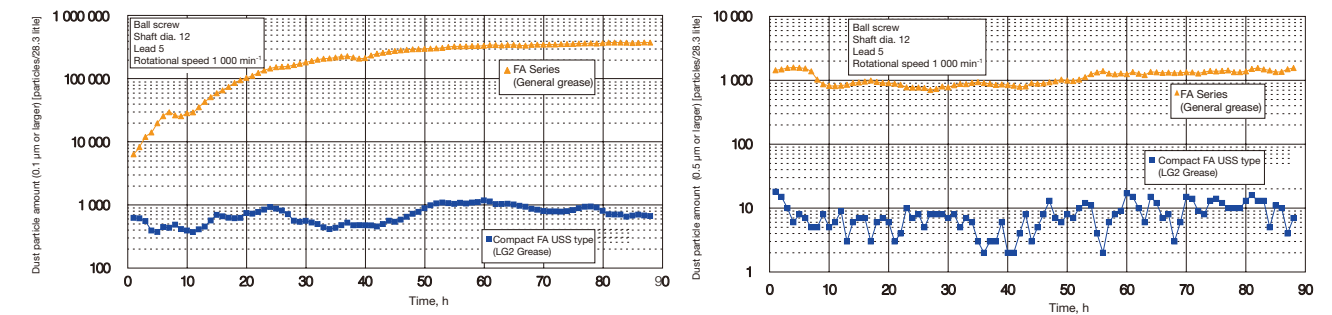
Accuracy grade: C3 grade of JIS Axial play: 0 (Oversize ball preload)

Low-dust emissions

Dust particles are reduced by 90% compared with general lithium grease since NSK clean grease LG2 is used as a standard.

Low-dust emissions (LG2 Grease)

- 1/100 of dust emissions comparing with existing FA series
- Ideal for clean environmental use due to superb low-dust feature

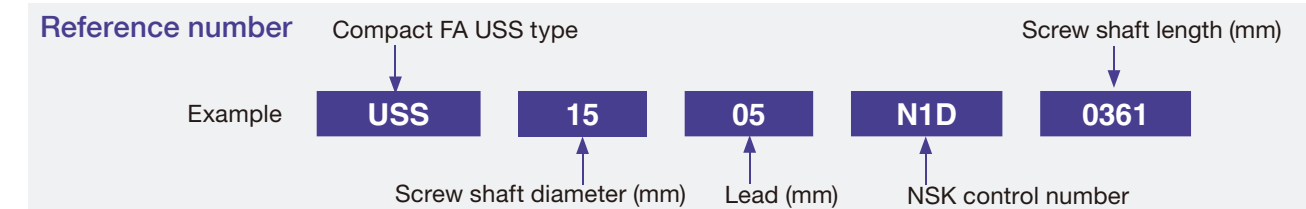


Shaft end support

Low-profile support unit especially compatible with Compact FA Series and support unit for clean environments are available.

Combinations of screw shaft diameter, lead and stroke

Shaft dia.	Lead	Stroke					Page	Recommended support unit		
		100	200	400	500	600		Fixed	Simple	Application
10	5	●	●	●			31 to 32	WBK08-01B	WBK08S-01B	Low
								WBK08-01C	WBK08S-01C	Clean
12	5	●	●		●		33 to 34	WBK08-01B	WBK08S-01B	Low
								WBK08-01C	WBK08S-01C	Clean
15	5	●	●	●		●	35 to 36	WBK12-01B	WBK12S-01B	Low
								WBK12-01C	WBK12S-01C	Clean



Compact FA Series FSS Type for Transfer Equipment

Applications

Transfer equipment for abundant industrial fields such as automobile, semiconductor, food and medical equipment.

Accuracy grade and axial play

Accuracy grade: Ct7 grade of JIS Axial play: 0.010 mm or less

Easy stroke setting

Flexible stroke setting with fixed-simple support by means of mounting support unit (simple support side) directly onto ball screw thread outside diameter. Since corner cutting is not necessary, it is easy for customers to cut the screws, which contributes to reduction in cost and lead time. If necessary, NSK will accept orders for cutting.

Precautions

During the cutting process, be careful not to let metal particles or burrs fall inside the nuts. Customers are also advised to treat the cut surface. When inserting the support unit (simple support side), apply oil or grease on the outside of the shaft and inside the bearing.

Shaft end support

Fixed side: The low-profile support units especially compatible with the compact FA PSS type are available.
Simple side: Proprietary support units are available.



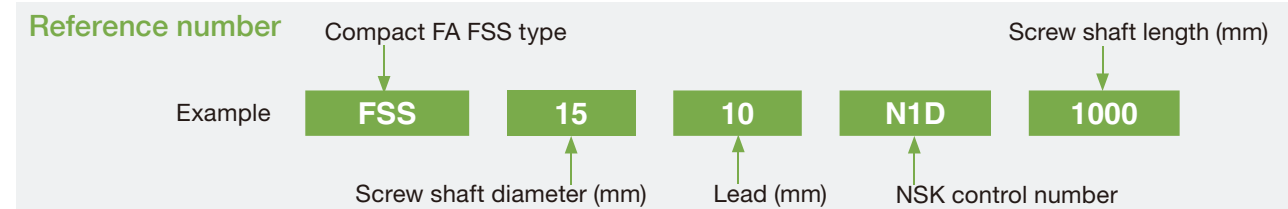
Design precautions

Permissible rotational speed varies when using cut screw shaft. It is necessary to calculate two items below, and whichever smaller is the permissible rotational speed.

- Critical speed which is the resonance vibration of the shaft. (Refer to the technical description of the catalog "Precision Machine Components".)
- Maximum rotational speed 5 000 min⁻¹

Combinations of shaft diameter, lead and shaft length

Shaft dia.	Lead	Overall shaft length						Page	Recommended support unit	
		400	500	600	900	1 000	1 450		Fixed	Simple
12	10	●		●	●			37 to 38	WBK08-01B	WBK12SF-01B
15	10		●			●	●	39 to 40	WBK12-01B	WBK15SF-01B
	20		●			●	●			
20	10			●		●	●	41 to 42	WBK15-01B	WBK20SF-01B
	20			●		●	●			
25	10			●		●	●	43 to 44	WBK20-01	WBK25SF-01
	20			●		●	●			
	25			●		●	●			



Precautions

Design

- (1) If a ball screw of which left shaft end (opposite driven side) is the shape I, and is supported with the "fixed-fixed" supporting method, you should be aware that the operating life of support bearings may drop due to thermal expansion of the screw shaft, depending on usage conditions. In this case, you should consider a structure that can absorb thermal expansion of the screw shaft if necessary. Please consult with NSK for a detailed examination.
- (2) If using an NSK linear guide, the maximum speed of a linear guide of standard specifications under ordinary conditions is limited to 100 m/min. A linear guide with high-speed specifications is available if higher operating speed is required. Contact NSK for further information.
- (3) For general precautions concerning ball screws, please see NSK Catalog No. E3162 "Precision Machine Components."

Usage and handling

Ball screws are precision products and should be treated as follows:

[Lubrication]

- (1) Compact FA Series ball screws are packed and coated with lubrication grease at the factory, and require no further lubrication under ordinary circumstances. If the surface of the grease becomes contaminated with dirt and metal powder under operation, clean it with white kerosene and replenish with new grease of the same kind through the oil hole (grease fitting) on the ball nut. Avoid mixing different types of grease.
- (2) Lubricant should be checked after the first 2 to 3 months of operation. If excessively dirty, we recommend you wipe away the old grease and replenish with a generous quantity of grease. After that, grease should be checked and replenished once a year under ordinary circumstances, but the period may vary depending upon the service environment.



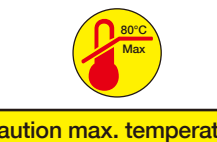
[Handling]

- (1) Never disassemble the ball screw, otherwise dirt may contaminate the inside of the unit and affect precision or result in equipment failure.
- (2) Compact FA Series ball screws incorporate a new ball re-circulation system. Consequently, only NSK authorized plants should conduct disassembly and reassembly. If the nut accidentally comes off the screw shaft or is dropped, NSK will check precision, problems or perform repairs at your expense.
- (3) When the ball screw is erected upright, the screw shaft or nut could fall by force of its own weight and result in injury. If dropped, the ball grooves could be dented or re-circulation parts damaged, resulting in loss of function. This would require the ball screw to be inspected by NSK. If so, be sure to send the ball screw to NSK and we will check it for a fee.



[Usage]

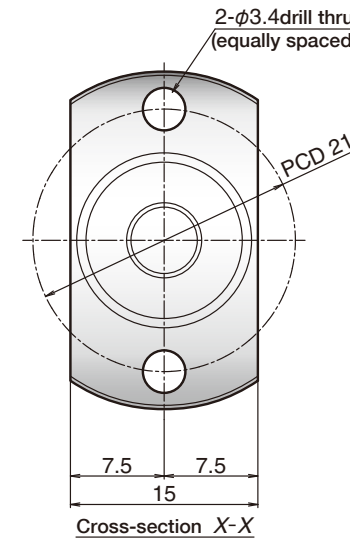
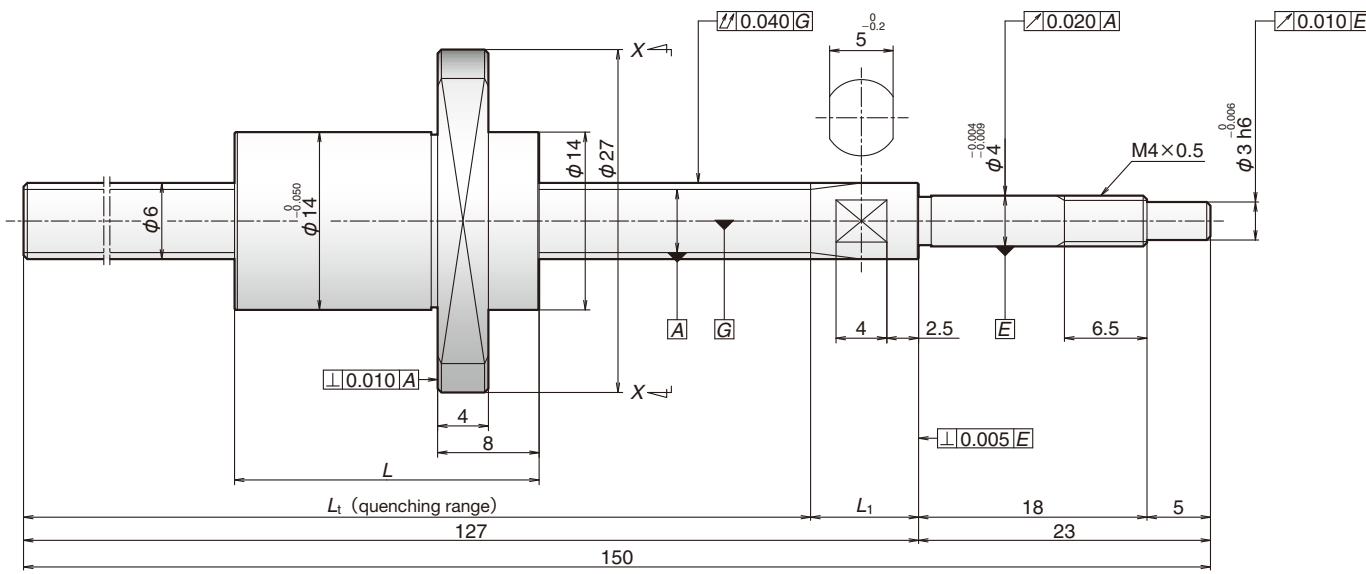
- (1) Ball screws should be used in a clean environment. The ball screws should be provided with a dust cover to prevent the entry of debris such as dust and metal powder. If foreign matter is allowed to contaminate the ball screw, this could not only cause the ball screw to lose some of its function, but also result in clogging and damaging the re-circulation system parts, or cause the table to fall or a similar serious accident.
- (2) Compact FA Series ball screws are designed to be used in a service temperature environment of 80°C or lower. Do not allow the service temperature limit to be exceeded. In some cases, using ball screws in temperatures above 80°C might lead to damage of re-circulation system parts or seal parts. Contact NSK if 80°C must be exceeded.



Compact FA Series options

Consult with NSK for information about such as shaft end machining, reverse direction and alternative preload.

Screw shaft diameter 6 mm, Lead 8 and 12 mm



Unit : mm

Ball screw specification	
Ball dia./screw shaft root dia.	1.2 / 4.9
Ball circle dia.	6.2
Accuracy grade/axial play	C5/ 0.005 mm or less
Factory-packed grease	NSK grease PS2

[Recommended support unit]

For drive side (Fixed)	
WBK04-01M (square)	P 45
WBK04-11M (round)	P 47

Unit : mm

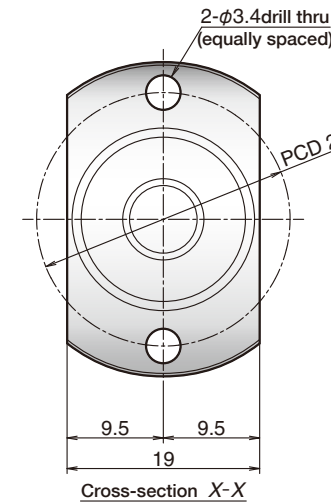
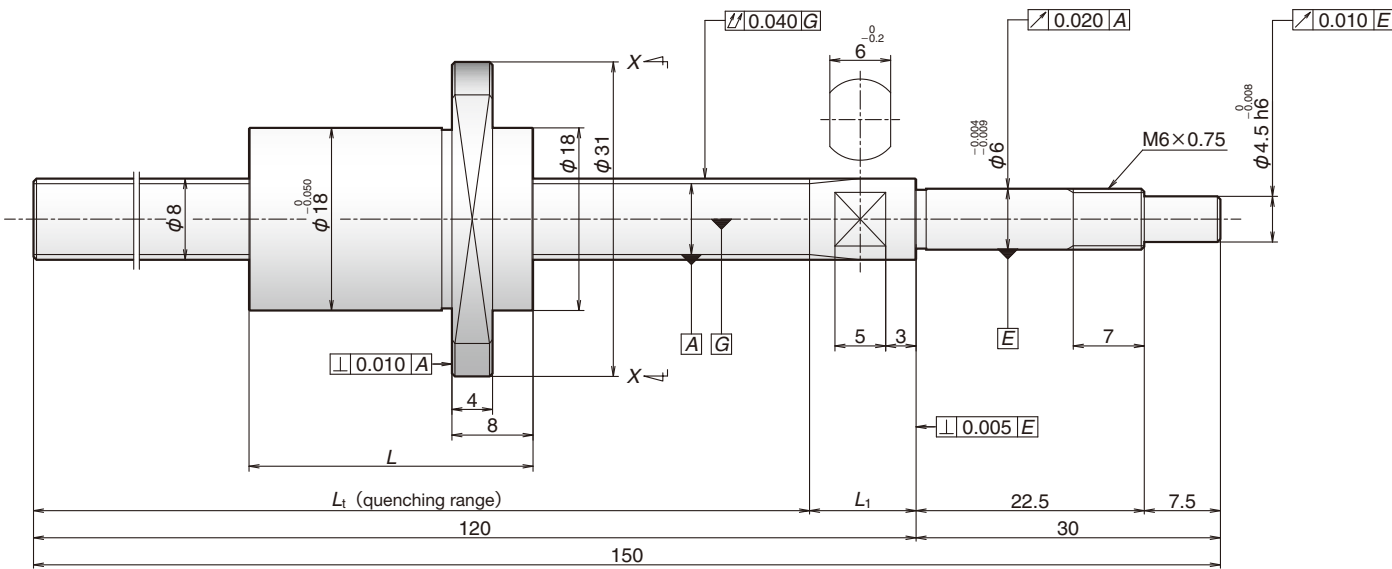
Reference no.	Screw shaft dia. <i>d</i>	Lead <i>ℓ</i>	Effective turns of balls	Basic load ratings (N)		Stroke max.	Nut length <i>L</i>	Screw shaft dimensions		Lead accuracy			Dynamic preload torque (N·cm)	Mass (kg)	Permissible rotational speed (min ⁻¹)*1	Internal spatial volume of nut (cm ³)	Standard volume of grease replenishing (cm ³)
				Dynamic <i>C_a</i>	Static <i>C_{0a}</i>			<i>L_t</i>	<i>L₁</i>	Target value <i>T</i>	Error <i>e_p</i>	Variation <i>V_u</i>					
PSS0608NAD0150	6	8	2	550	715	97.5	16	118.5	8.5	0	20	18	0.5 or less	5 000	0.2	0.1	
PSS0608NBD0150			4	1 180	1 760	89.5	24	118.5	8.5								
PSS0612NAD0150		12	2	550	715	92	20	117	10								
PSS0612NBD0150			4	1 180	1 760	80	32	117	10								

Notes 1. Contact NSK if permissible rotational speed is to be exceeded.

2. Service temperature range is 0 to 80°C.

3. Use of NSK support unit is recommended. Refer to pages 45 to 48 for details.

Screw shaft diameter 8 mm, Lead 10 and 15 mm



Unit : mm

Ball screw specification	
Ball dia./screw shaft root dia.	1.588 / 6.6
Ball circle dia.	8.3
Accuracy grade/axial play	C5/ 0.005 mm or less
Factory-packed grease	NSK grease PS2

[Recommended support unit]

For drive side (Fixed)	
WBK06-01M (square)	P 45
WBK06-11M (round)	P 47

Unit : mm

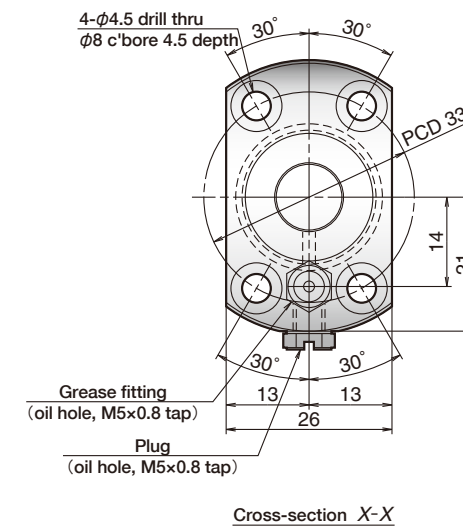
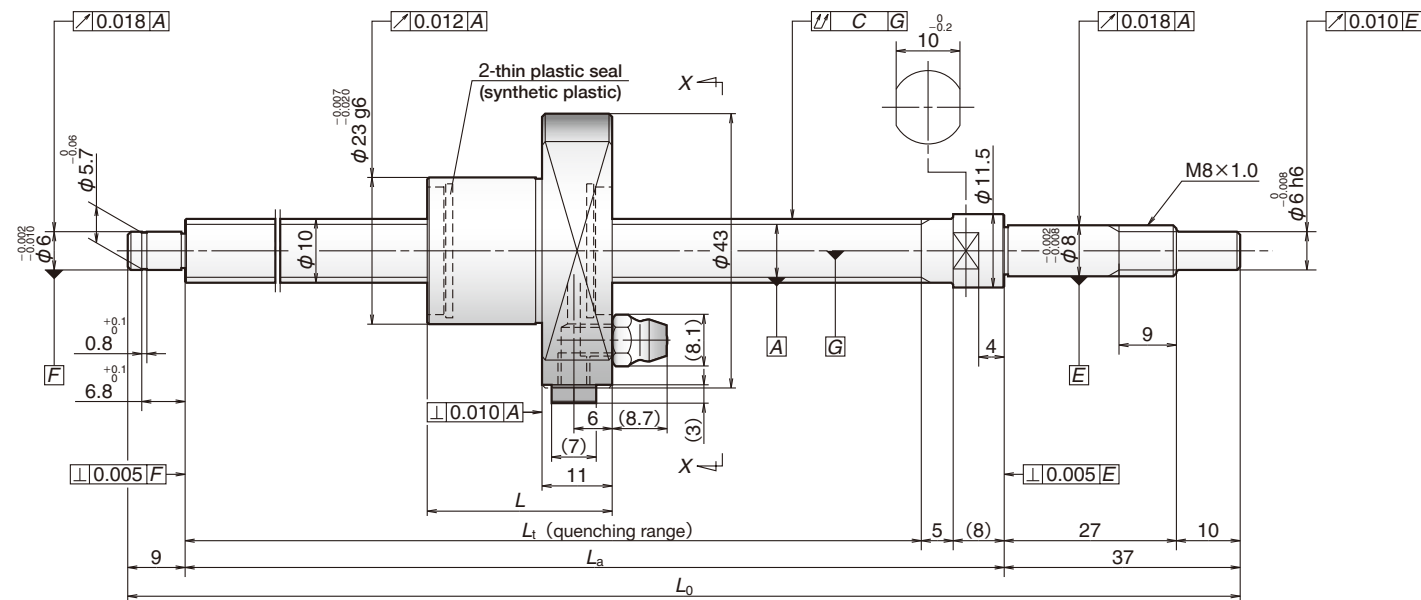
Reference no.	Screw shaft dia. d	Lead ℓ	Effective turns of balls	Basic load ratings (N)		Stroke max.	Nut length L	Screw shaft dimensions		Lead accuracy			Dynamic preload torque (N·cm)	Mass (kg)	Permissible rotational speed (min ⁻¹)*1	Internal spatial volume of nut (cm ³)	Standard volume of grease replenishing (cm ³)
				Dynamic C_a	Static C_{0a}			L_t	L_f	Target value T	Error e_p	Variation V_u					
PSS0810NAD0150	8	10	2	910	1 260	86.5	18	109.5	10.5	0	20	18	0.5 or less	5 000	0.4	0.2	
PSS0810NBD0150			4	1 950	3 080	76.5	28	109.5	10.5								
PSS0815NAD0150		15	2	910	1 260	80	22	107	13								
PSS0815NBD0150			4	1 950	3 080	65	37	107	13								

Notes 1. Contact NSK if permissible rotational speed is to be exceeded.

2. Service temperature range is 0 to 80°C.

3. Use of NSK support unit is recommended. Refer to pages 45 to 48 for details.

Screw shaft diameter 10 mm, Lead 5 and 10 mm



Unit : mm

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

[Recommended support unit]

For drive side (Fixed)	For opposite to drive side (Simple)
WBK08-01B (square, low) P 45	WBK08S-01B (square, low) P 49
WBK08-11 (round) P 47	
WBK08-11B (round, high-load) P 47	

Unit : mm

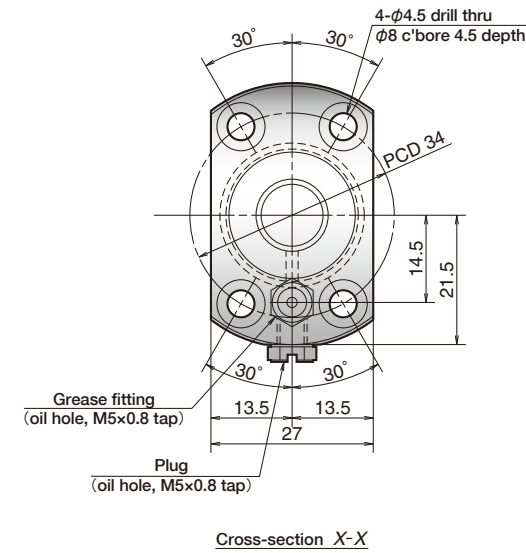
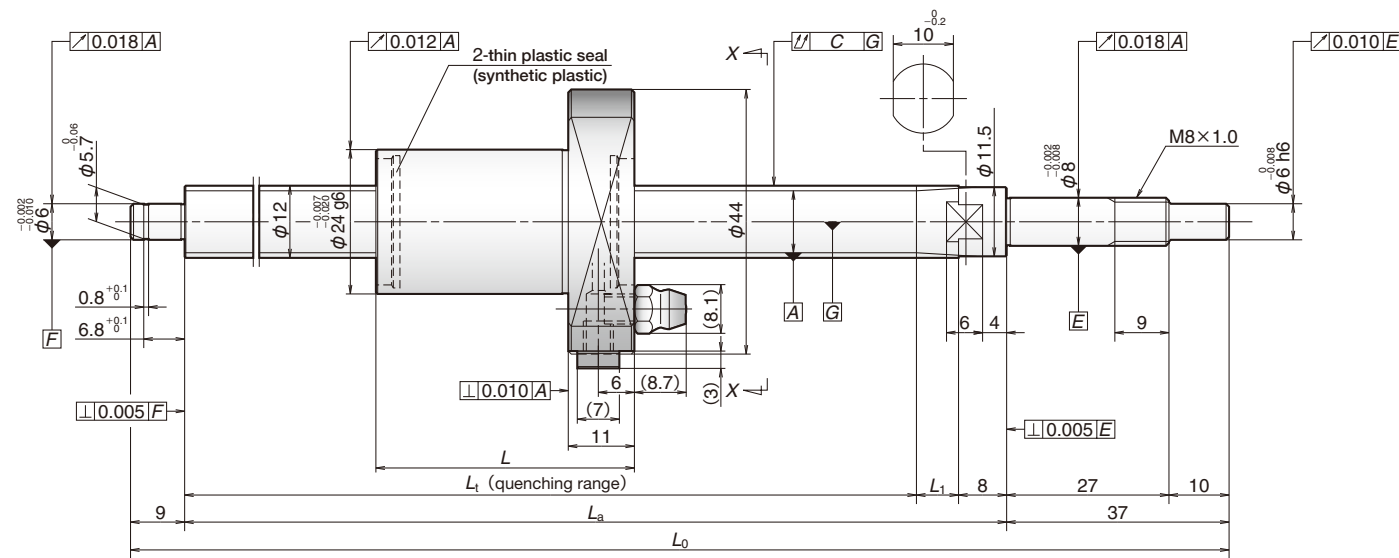
Reference no.	Screw shaft dia. d	Lead ℓ	Basic load ratings (N)		Stroke		Nut length L	Screw shaft dimensions			Lead accuracy			Shaft run-out C	Dynamic preload torque (N·cm)*1	Mass (kg)	Permissible rotational speed (min ⁻¹)*2	Internal spatial volume of nut (cm ³)	Standard volume of grease replenishing (cm ³)
			Dynamic C_a	Static C_{0a}	Nominal	Max. L_r-L		L_r	L_a	L_0	Target value T	Error e_p	Variation V_u						
PSS1005N1D0171	10	5	2 930	4 790	50	83	29	112	125	171	0	0.020	0.018	0.030	0.7 to 3.3	0.3	5 000	0.8	0.4
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									

Notes 1. Indicates ball screw preload control value. Approximately 2.0 N·cm of torque is added due to thin plastic seals.
2. Contact NSK if permissible rotational speed is to be exceeded.

3. Service temperature range is 0 to 80°C.
4. Use of NSK support unit is recommended. Refer to pages 45 to 48 for details.

Screw shaft diameter 12 mm, Lead 5, 10, 20 and 30 mm

Unit : mm



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

[Recommended support unit]

For drive side (Fixed)	For opposite to drive side (Simple)
WBK08-01B (square, low) P 45	WBK08S-01B (square, low) P 49
WBK08-11 (round) P 47	
WBK08-11B (round, high-load) P 47	

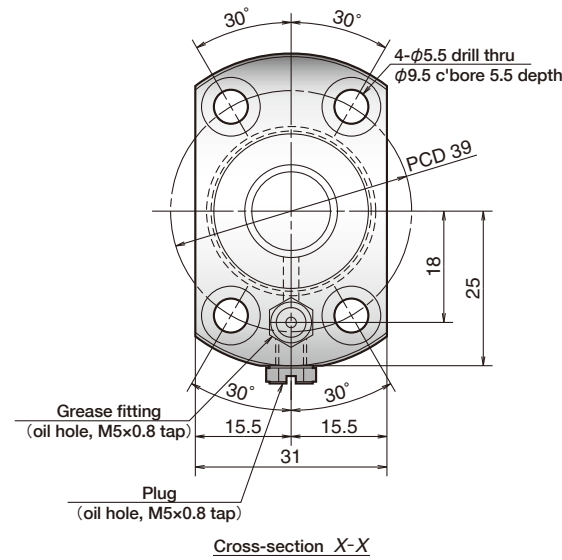
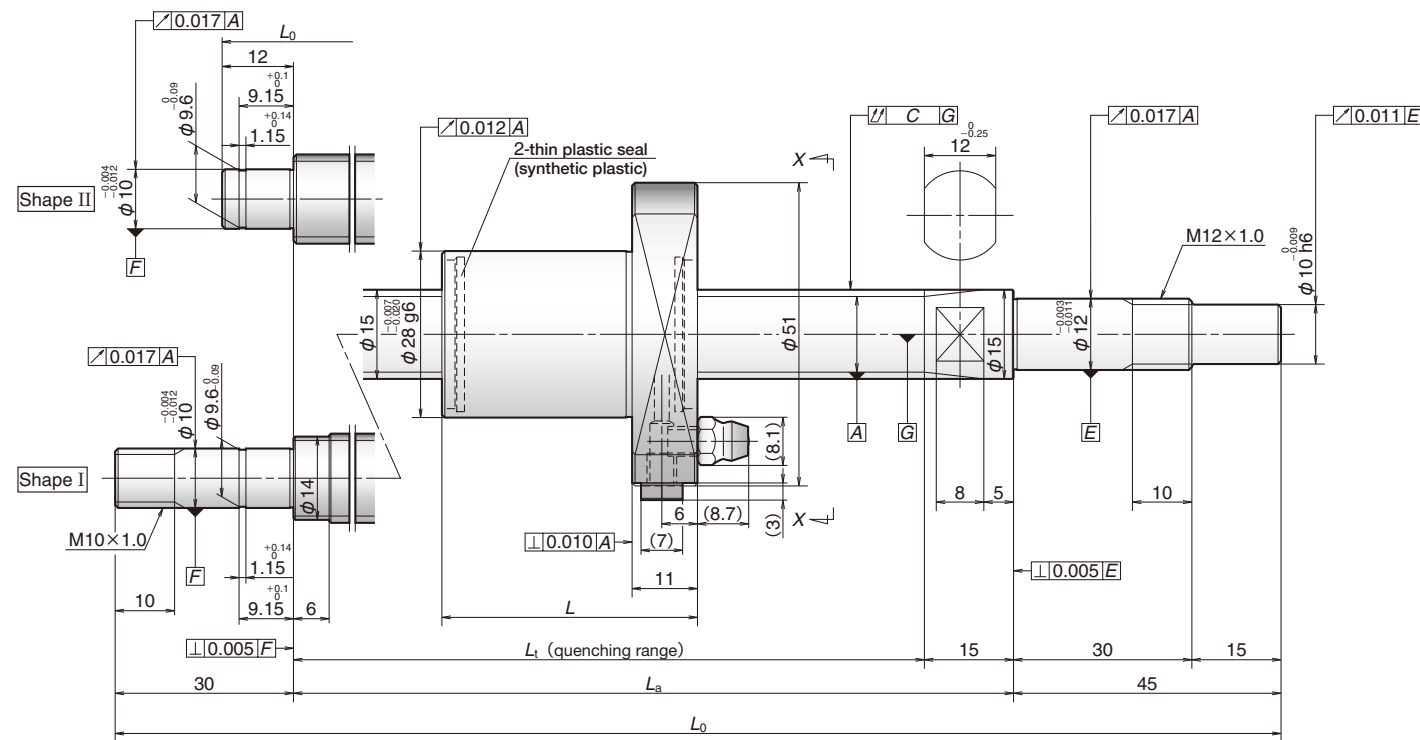
Unit : mm

Reference no.	Screw shaft dia. d	Lead l	Basic load ratings (N)		Stroke		Nut length L	Screw shaft dimensions				Lead accuracy			Shaft run-out 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)
			Dynamic C_a	Static C_{0a}	Nominal	Max. L_r-L		L_t	L_a	L_0	L_t	Target value T	Error e_p	Variation V_u						
PSS1205N1D0171	12	5	3 200	5 860	50	80	30	110	125	171	7	0	0.020	0.018	0.030	0.7 to 3.3	0.3	5 000	1.0	0.5
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	50	208	225	271	9									
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	271	14										
PSS1230N1D0371				200	233		303	325	371											
PSS1230N1D0471				300	333		403	425	471											
PSS1230N1D0571				400	433		503	525	571											
PSS1230N1D0671				500	533		603	625	671											

Notes 1. Indicates ball screw preload control value. Approximately 2.0 N·cm of torque is added due to thin plastic seals.
2. Contact NSK if permissible rotational speed is to be exceeded.

3. Service temperature range is 0 to 80°C.
4. Use of NSK support unit is recommended. Refer to pages 45 to 50 for details.

Screw shaft diameter 15 mm, Lead 5 and 10 mm



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

[Recommended support unit]

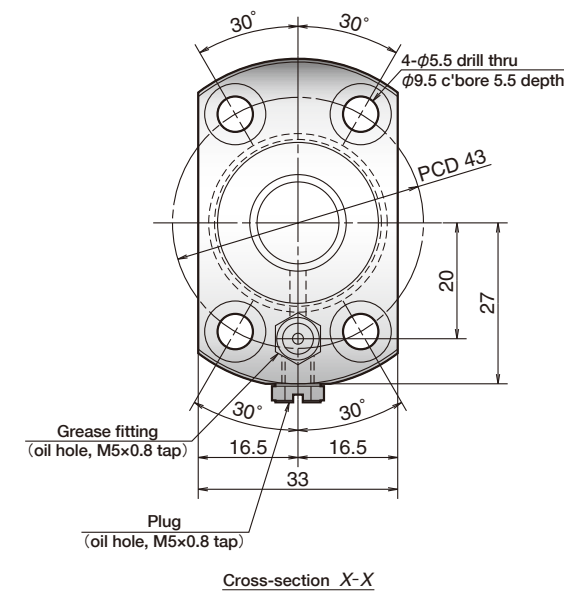
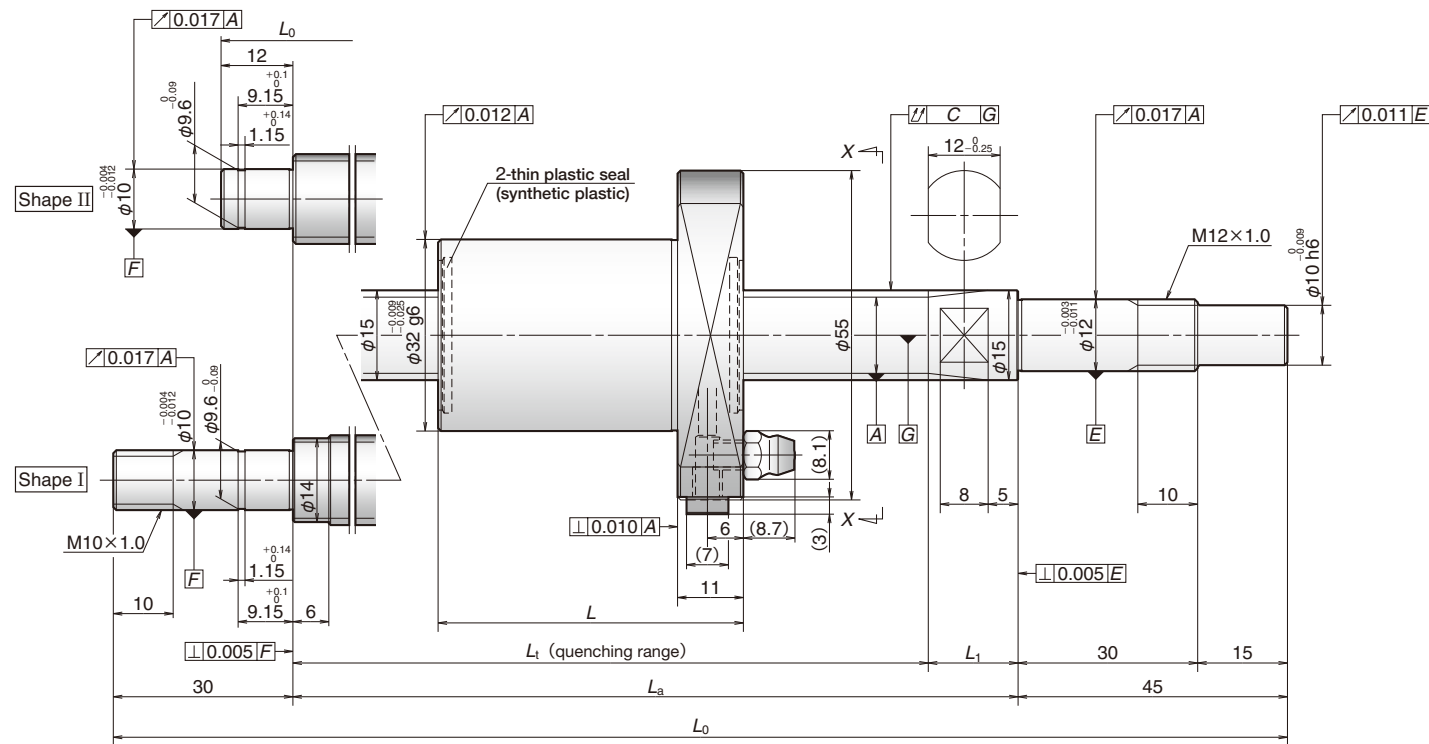
For drive side (Fixed)	For opposite to drive side	
	(Fixed)	(Simple)
WBK12-01B (square, low) P 45	WBK10-01B (square, low) P 45	WBK12S-01B (square, low) P 49
WBK12-11 (round) P 47	WBK10-11 (round) P 47	

Reference no.	Screw shaft dia. <i>d</i>	Lead <i>ℓ</i>	Basic load ratings (N)		Stroke		Nut length <i>L</i>	Screw shaft dimensions			Left shaft end (opposite driven side)	Lead accuracy			Shaft run-out <i>C</i>	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)				
			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>L₀</i>		Target value <i>T</i>	Error <i>e_p</i>	Variation <i>V_u</i>				Fixed-simple	Fixed-Fixed						
																						Fixed-simple	Fixed-Fixed		
PSS1505N1D0211	15	5	5 460	10 200	50	109	30	139	154	211	II	0	0.020	0.018	0.035	0.2 to 6.9	0.5	5 000	-	2.0	1.0				
PSS1505N1D0261					100	159		189	204	261			0.020	0.018	0.035	0.2 to 6.9	0.5								
PSS1505N1D0361					200	259		289	304	361			0.023	0.018	0.045	0.2 to 6.9	0.6								
PSS1505N1D0461					300	359		389	404	461			0.025	0.020	0.050	0.4 to 9.8	0.8								
PSS1505N1D0561					400	459		489	504	561			0.027	0.020	0.060	0.4 to 9.8	0.9								
PSS1505N1D0661					500	559		589	604	661			0.030	0.023	0.075	0.4 to 9.8	1.0								
PSS1505N1D0761					600	659		689	704	761			0.035	0.025	0.075	0.4 to 11.8	1.1					3 600			
PSS1510N1D0261		10			5 460	10 200	100	146	43	189		204	261	II	0	0.020	0.018	0.035	0.6 to 7.4			0.6	5 000	-	
PSS1510N1D0361							200	246		289		304	361			0.023	0.018	0.045	0.6 to 7.4			0.7			
PSS1510N1D0461							300	346		389		404	461			0.025	0.020	0.050	0.4 to 9.8			0.8			
PSS1510N1D0561							400	446		489		504	561			0.027	0.020	0.060	0.4 ~ 9.8			1.0			
PSS1510N1D0661							500	546		589		604	661			0.030	0.023	0.075	0.4 to 9.8			1.1			3 600
PSS1510N1D0761							600	646		689		704	761			0.035	0.025	0.075	0.4 to 11.8			1.2			3 600
PSS1510N1D0879							700	746		789		804	879			0.035	0.025	0.095	0.4 to 11.8			1.4			2 700
PSS1510N1D0979	800	846	889	904			979	0.040	0.027	0.095	0.4 to 11.8	1.5	2 200		3 400										
PSS1510N1D1179	1 000	1 046	1 089	1 104			1 179	0.046	0.030	0.120	0.4 to 11.8	1.7	1 400		2 300										

- Notes
1. Indicates ball screw preload control value. Approximately 2.0 N·cm of torque is added due to thin plastic seals.
 2. Contact NSK if permissible rotational speed is to be exceeded.

3. Service temperature range is 0 to 80°C.
4. Use of NSK support unit is recommended. Refer to pages 45 to 50 for details.

Screw shaft diameter 15 mm, Lead 20 and 30 mm



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

[Recommended support unit]

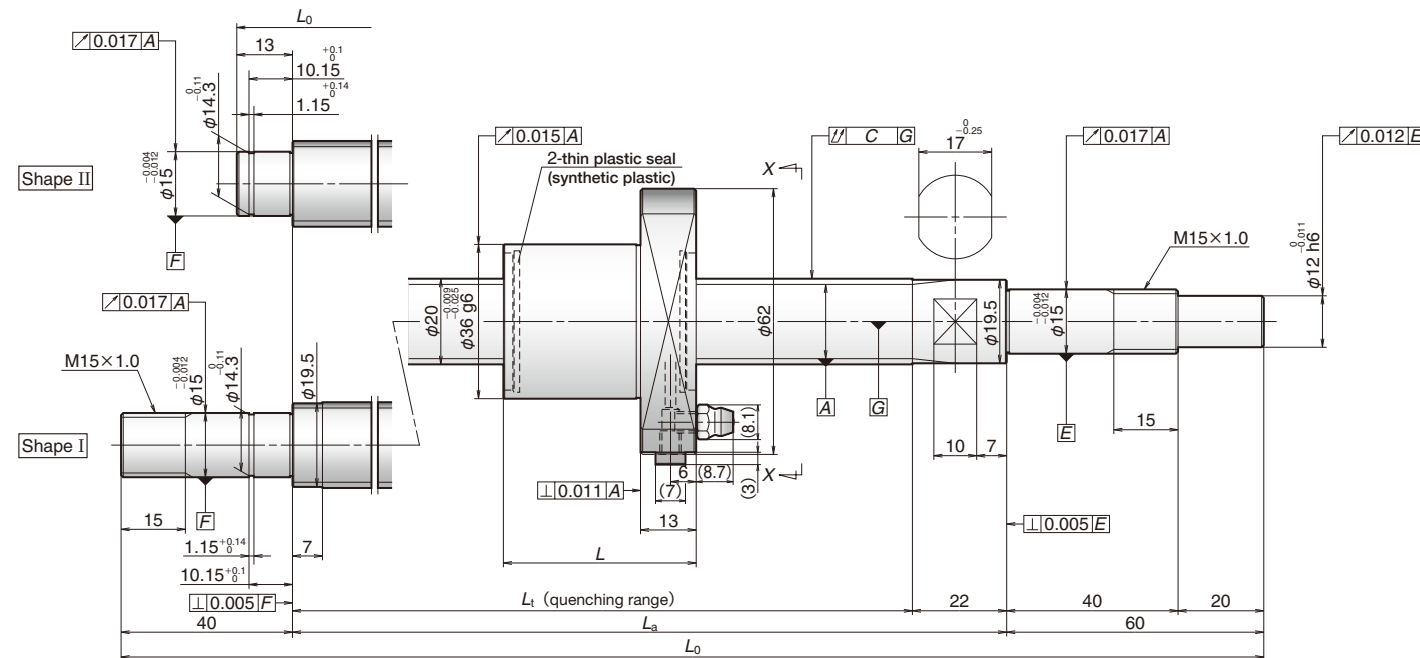
For drive side (Fixed)	For opposite to drive side	
	(Fixed)	(Simple)
WBK12-01B (square, low) P 45	WBK10-01B (square, low) P 45	WBK12S-01B (square, low) P 49
WBK12-11 (round) P 47	WBK10-11 (round) P 47	

Reference no.	Screw shaft dia. <i>d</i>	Lead <i>ℓ</i>	Basic load ratings (N)		Stroke		Nut length <i>L</i>	Screw shaft dimensions				Left shaft end (opposite driven side)	Lead accuracy			Shaft run-out <i>C</i>	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)																		
			Dynamic <i>C_a</i>	Static <i>C_{0a}</i>	Nominal	Max. <i>L_r-L</i>		<i>L_t</i>	<i>L_a</i>	<i>L₀</i>	<i>L₁</i>		Target value <i>T</i>	Error <i>e_p</i>	Variation <i>V_u</i>				Fixed-simple	Fixed-Fixed																				
																							Fixed-simple	Fixed-Fixed																
PSS1520N1D0261	15	20	5 070	8 730	100	135	51	186	204	261	18	II	0	0.020	0.018	0.035	0.8 to 8.8	0.7	5 000	-	2.8	1.4																		
PSS1520N1D0361					200	235								286	304	361	0.023	0.018					0.045	0.8 to 8.8	0.8															
PSS1520N1D0461					300	335								386	404	461	0.025	0.020					0.050	0.8 to 10.8	0.9															
PSS1520N1D0561					400	435								486	504	561	0.027	0.020					0.060	0.8 to 10.8	1.1															
PSS1520N1D0661					500	535								586	604	661	0.030	0.023					0.075	0.8 to 10.8	1.2															
PSS1520N1D0761					600	635								686	704	761	0.035	0.025					0.075	0.8 to 13.8	1.3															
PSS1520N1D0879					700	735								786	804	879	0.035	0.025					0.095	0.8 to 13.8	1.5															
PSS1520N1D0979					800	835								886	904	979	0.040	0.027					0.095	0.8 to 13.8	1.6															
PSS1520N1D1179					1 000	1 035								1 086	1 104	1 179	0.046	0.030					0.120	0.8 to 13.8	1.9															
PSS1530N1D0311					30	30								5 070	8 730	100	159	71					230	254	311	24	II	0	0.023	0.018	0.035	1.2 to 9.3	0.8	5 000	-	3.4	1.7			
PSS1530N1D0411																200	259												330	354	411	0.025	0.020					0.050	0.8 to 10.8	1.0
PSS1530N1D0511																300	359												430	454	511	0.027	0.020					0.060	0.8 to 10.8	1.1
PSS1530N1D0611																400	459												530	554	611	0.030	0.023					0.060	0.8 to 10.8	1.2
PSS1530N1D0711																500	559												630	654	711	0.030	0.023					0.075	0.8 to 13.8	1.4
PSS1530N1D0811	600	659	730	754			811	0.035	0.025	0.095	0.8 to 13.8	1.5																												
PSS1530N1D0929	700	759	830	854			929	0.040	0.027	0.095	0.8 to 13.8	1.6																												
PSS1530N1D1029	800	859	930	954			1 029	0.040	0.027	0.120	0.8 to 13.8	1.8																												
PSS1530N1D1229	1 000	1 059	1 130	1 154			1 229	0.046	0.030	0.120	0.8 to 13.8	2.0																												

Notes 1. Indicates ball screw preload control value. Approximately 2.0 N·cm of torque is added due to thin plastic seals.
2. Contact NSK if permissible rotational speed is to be exceeded.

3. Service temperature range is 0 to 80°C.
4. Use of NSK support unit is recommended. Refer to pages 45 to 50 for details.

Screw shaft diameter 20 mm, Lead 5 and 10 mm

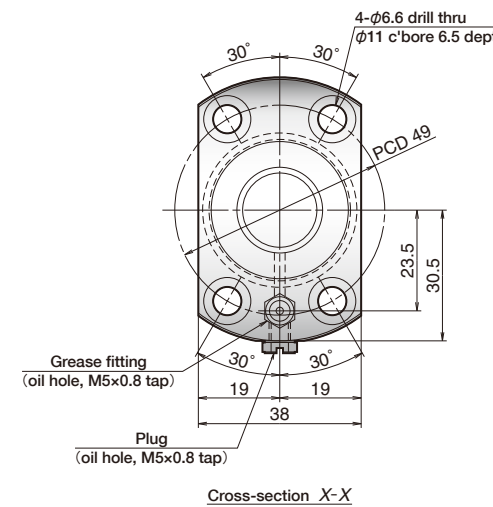


Unit : mm

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

[Recommended support unit]

For drive side (Fixed)	For opposite to drive side	
	(Fixed)	(Simple)
WBK15-01B (square, low) P 45	WBK15-01B (square, low) P 45	WBK15S-01B (square, low) P 49
WBK15-11 (round) P 47	WBK15-11 (round) P 47	



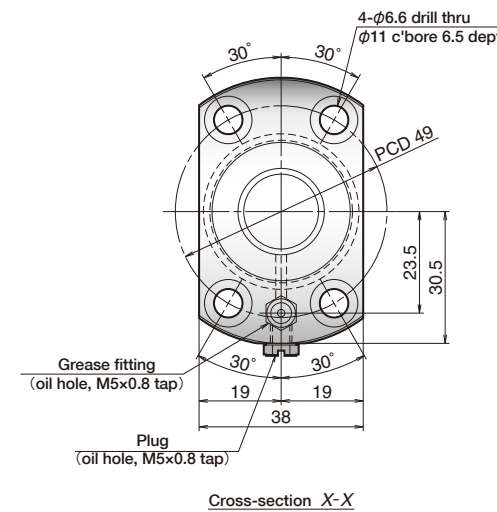
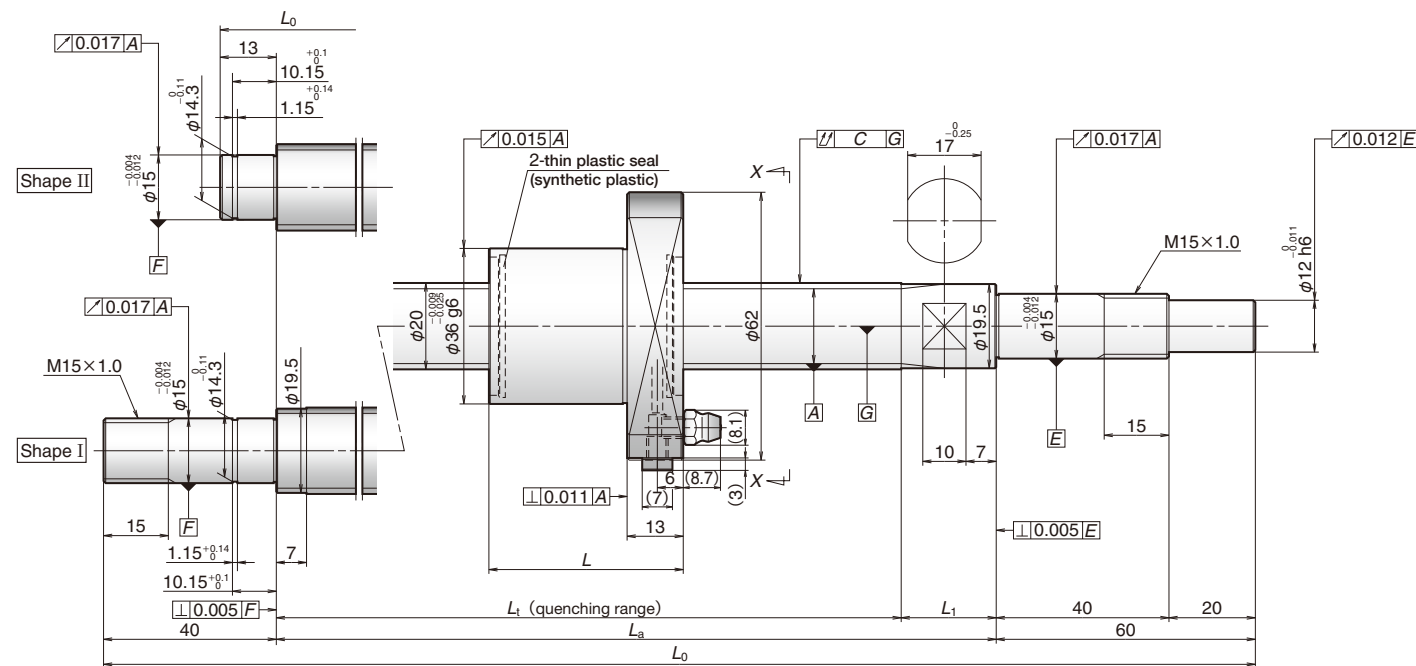
Unit : mm

Reference no.	Screw shaft dia. <i>d</i>	Lead <i>ℓ</i>	Basic load ratings (N)		Stroke		Nut length <i>L</i>	Screw shaft dimensions			Left shaft end (opposite driven side)	Lead accuracy			Shaft run-out <i>C</i>	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)											
			Dynamic <i>C_a</i>	Static <i>C_{0a}</i>	Nominal	Max. <i>L_r-L</i>		<i>L_t</i>	<i>L_a</i>	<i>L₀</i>		Target value <i>T</i>	Error <i>e_p</i>	Variation <i>V_u</i>				Fixed-simple	Fixed-Fixed													
																						Fixed-simple	Fixed-Fixed									
PSS2005N1D0323	20	5	8 790	18 500	150	197	31	228	250	323	II	0	0.023	0.018	0.045	0.6 to 7.4	1.0	5 000	-	3.4	1.7											
PSS2005N1D0373					200	247		278	300	373			0.023	0.018	0.045	0.6 to 7.4	1.1															
PSS2005N1D0473					300	347		378	400	473			0.025	0.020	0.050	0.6 to 7.4	1.3															
PSS2005N1D0573					400	447		478	500	573			0.027	0.020	0.060	0.4 to 9.8	1.5															
PSS2005N1D0673					500	547		578	600	673			0.030	0.023	0.075	0.4 to 9.8	1.7															
PSS2005N1D0773					600	647		678	700	773			0.035	0.025	0.075	0.4 to 9.8	1.9															
PSS2005N1D0873					700	747		778	800	873			0.035	0.025	0.095	0.4 to 9.8	2.2					4 000										
PSS2005N1D1000					800	847		878	900	1000			0.040	0.027	0.095	0.4 to 11.8	2.4					3 200	4 700									
PSS2010N1D0387					10	10		8 790	18 500	200			247	45	292	314	387					II	0	0.023	0.018	0.045	1.2 to 9.3	1.2	5 000	-	3.2	1.6
PSS2010N1D0487										300			347		392	414	487							0.025	0.020	0.050	1.2 to 9.3	1.4				
PSS2010N1D0587	400	447	492	514			587			0.027	0.020	0.060	0.8 to 10.8		1.7																	
PSS2010N1D0687	500	547	592	614			687			0.030	0.023	0.075	0.8 to 10.8		1.9																	
PSS2010N1D0787	600	647	692	714			787			0.035	0.025	0.075	0.8 to 10.8		2.1																	
PSS2010N1D0887	700	747	792	814			887			0.035	0.025	0.095	0.8 to 10.8		2.4	4 000																
PSS2010N1D1014	800	847	892	914			1 014			0.040	0.027	0.120	0.8 to 13.8		2.6	3 100	4 600															
PSS2010N1D1214	1 000	1 047	1 092	1 114			1 214			0.046	0.030	0.120	0.8 to 13.8		3.1	2 100	3 100															
PSS2010N1D1414	1 200	1 247	1 292	1 314			1 414			0.054	0.035	0.160	0.8 to 13.8		3.6	1 500	2 200															

- Notes
1. Indicates ball screw preload control value. Approximately 2.0 N·cm of torque is added due to thin plastic seals.
 2. Contact NSK if permissible rotational speed is to be exceeded.

3. Service temperature range is 0 to 80°C.
4. Use of NSK support unit is recommended. Refer to pages 45 to 50 for details.

Screw shaft diameter 20 mm, Lead 20 and 30 mm



Unit : mm

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

[Recommended support unit]

For drive side (Fixed)	For opposite to drive side	
	(Fixed)	(Simple)
WBK15-01B (square, low) P 45	WBK15-01B (square, low) P 45	WBK15S-01B (square, low) P 49
WBK15-11 (round) P 47	WBK15-11 (round) P 47	

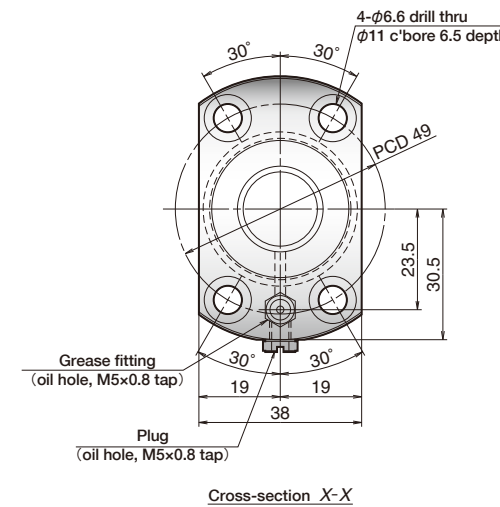
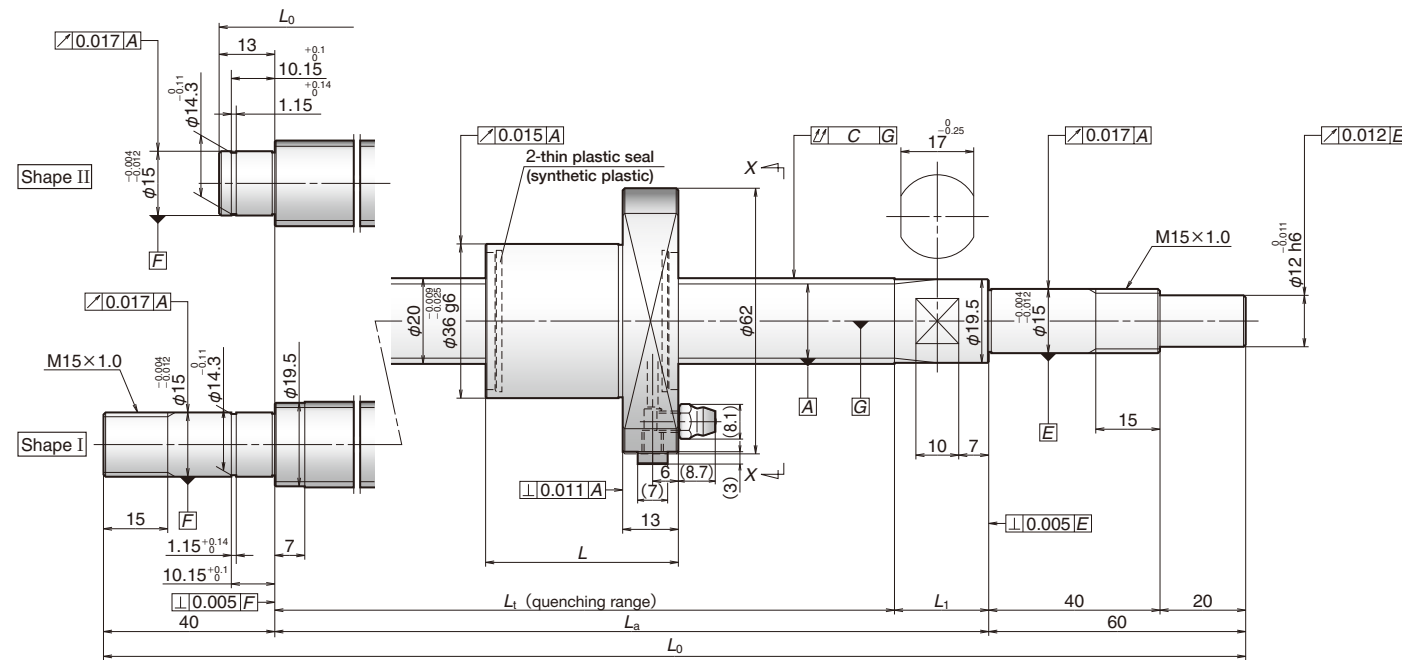
Unit : mm

Reference no.	Screw shaft dia. <i>d</i>	Lead <i>l</i>	Basic load ratings (N)		Stroke		Nut length <i>L</i>	Screw shaft dimensions				Left shaft end (opposite driven side)	Lead accuracy			Shaft run-out <i>C</i>	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)		
			Dynamic <i>C_a</i>	Static <i>C_{0a}</i>	Nominal <i>L_r-L</i>	Max. <i>L_r-L</i>		<i>L_t</i>	<i>L_a</i>	<i>L₀</i>	<i>L₁</i>		Target value <i>T</i>	Error <i>e_p</i>	Variation <i>V_u</i>				Fixed-simple	Fixed-Fixed				
																							Fixed-simple	Fixed-Fixed
PSS2020N1D0508	20	20	5 900	11 700	300	359	54	413	435	508	22	II	0	0.027	0.020	0.060	1.4 to 11.8	1.6	5 000	-	3.2	1.6		
PSS2020N1D0608					400	459		513	535	608				0.030	0.023	0.060	1.4 to 11.8	1.8						
PSS2020N1D0708					500	559		613	635	708				0.030	0.023	0.075	1.4 to 11.8	2.0						
PSS2020N1D0808					600	659		713	735	808				0.035	0.025	0.095	1.4 to 11.8	2.3						
PSS2020N1D0908					700	759		813	835	908				0.040	0.027	0.095	0.8 to 13.8	2.5					3 700	
PSS2020N1D1035					800	859		913	935	1 035				0.040	0.027	0.120	0.8 to 13.8	2.8					3 000	4 500
PSS2020N1D1235					1 000	1 059		1 113	1 135	1 235				0.046	0.030	0.120	0.8 to 13.8	3.3					2 000	3 000
PSS2020N1D1435					1 200	1 259		1 313	1 335	1 435				0.054	0.035	0.160	0.8 to 13.8	3.8					1 400	2 100
PSS2020N1D1835					1 600	1 659		1 713	1 735	1 835				0.065	0.040	0.200	0.8 to 13.8	4.7					800	1 200
PSS2030N1D0408					30	30		5 900	11 700	200				234	74	308	335	408					27	II
PSS2030N1D0508	300	334	408	435			508			0.027	0.020	0.060	1.4 to 11.8	1.7										
PSS2030N1D0608	400	434	508	535			608			0.030	0.023	0.060	1.4 to 11.8	1.9										
PSS2030N1D0708	500	534	608	635			708			0.030	0.023	0.075	1.4 to 11.8	2.1										
PSS2030N1D0808	600	634	708	735			808			0.035	0.025	0.095	1.4 to 11.8	2.4		3 900								
PSS2030N1D0908	700	734	808	835			908			0.040	0.027	0.095	0.8 to 13.8	2.6		3 100	4 600							
PSS2030N1D1035	800	834	908	935			1 035			0.040	0.027	0.120	0.8 to 13.8	2.9		2 100	3 000							
PSS2030N1D1235	1 000	1 034	1 108	1 135			1 235			0.046	0.030	0.120	0.8 to 13.8	3.4		1 500	2 200							
PSS2030N1D1435	1 200	1 234	1 308	1 335			1 435			0.054	0.035	0.160	0.8 to 13.8	3.9										

Notes 1. Indicates ball screw preload control value. Approximately 2.0 N·cm of torque is added due to thin plastic seals.
2. Contact NSK if permissible rotational speed is to be exceeded.

3. Service temperature range is 0 to 80°C.
4. Use of NSK support unit is recommended. Refer to pages 45 to 50 for details.

Screw shaft diameter 20 mm, Lead 40 and 60 mm



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

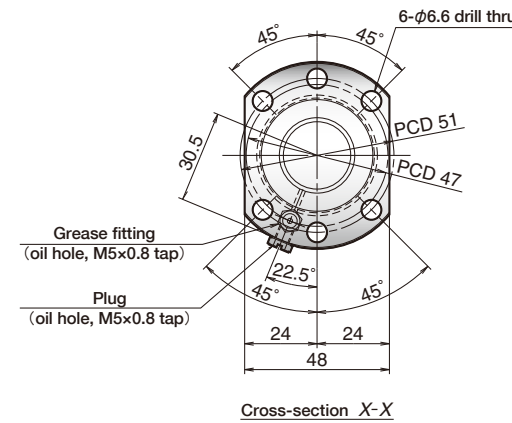
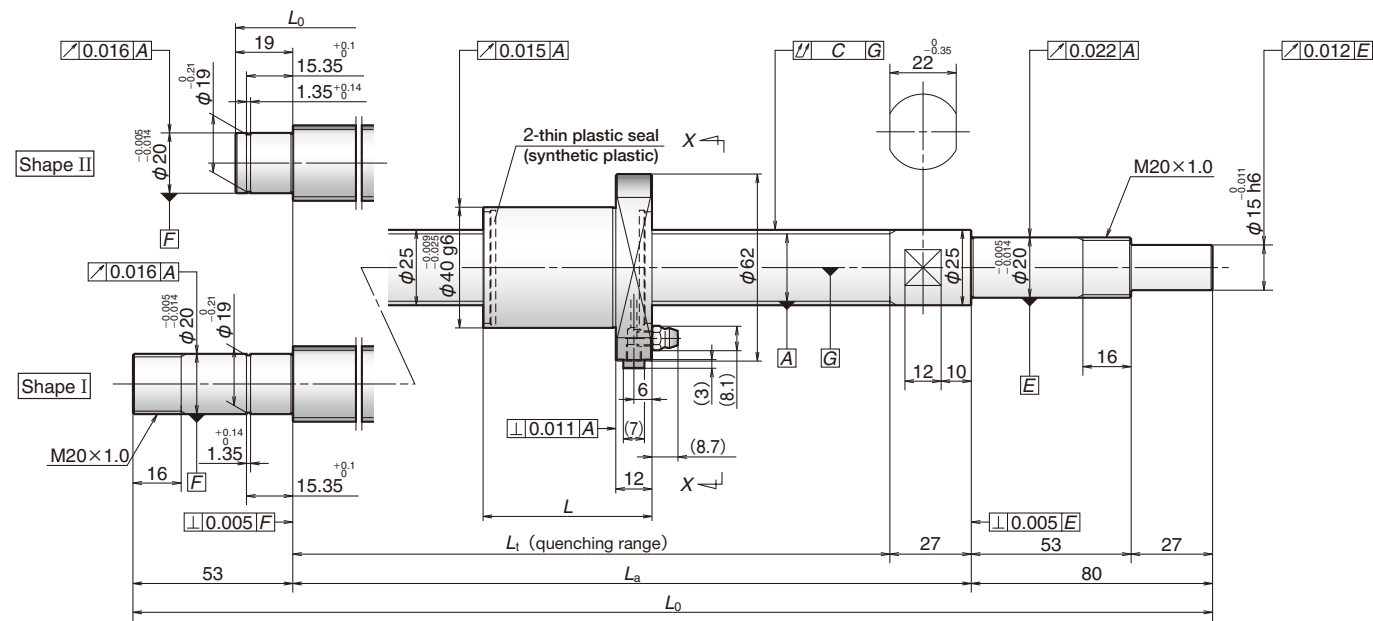
[Recommended support unit]		
For drive side (Fixed)	For opposite to drive side	
	(Fixed)	(Simple)
WBK15-01B (square, low) P 45	WBK15-01B (square, low) P 45	WBK15S-01B (square, low) P 49
WBK15-11 (round) P 47	WBK15-11 (round) P 47	

Reference no.	Screw shaft dia. d	Lead l	Basic load ratings (N)		Stroke		Nut length L	Screw shaft dimensions				Left shaft end (opposite driven side)	Lead accuracy			Shaft run-out 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)	
			Dynamic C_a	Static C_{0a}	Nominal L_t-L	Max. L_t-L		L_t	L_a	L_0	L_1		Target value T	Error e_p	Variation V_u				Fixed-simple	Fixed-Fixed			
																							Fixed-simple
PSS2040N1D0658	20	40	5 900	11 700	400	461	92	553	585	658	32	II	0	0.030	0.023	0.075	2.2 to 12.8	2.1	5 000	-	5.3	2.7	
PSS2040N1D0758					500	561	653	685	758	0.035	0.025			0.075	2.2 to 12.8	2.4							
PSS2040N1D0858					600	661	753	785	858	0.035	0.025			0.095	2.2 to 12.8	2.6							
PSS2040N1D0958					700	761	853	885	958	0.040	0.027			0.095	1.8 to 14.8	2.8							
PSS2040N1D1085					800	861	953	985	1 085	0.040	0.027			0.120	1.8 to 14.8	3.1							
PSS2040N1D1285					1 000	1 061	1 153	1 185	1 285	0.046	0.030			0.160	1.8 to 14.8	3.6							
PSS2040N1D1485					1 200	1 261	1 353	1 385	1 485	0.054	0.035			0.160	1.8 to 14.8	4.1							
PSS2040N1D1885					1 600	1 661	1 753	1 785	1 885	0.065	0.040			0.200	1.8 to 14.8	5.1							
PSS2040N1D2285		2 000	2 061	2 153	2 185	2 285	0.077	0.046	0.240	1.8 to 14.8	6.0												
PSS2060N1D0708		60				400	464	129	593	635	708	42	II	0	0.030	0.023	0.075	2.7 to 13.8	2.4	5 000	-	7.0	3.5
PSS2060N1D0808						500	564	693	735	808	0.035	0.025			0.095	2.7 to 13.8	2.6						
PSS2060N1D0908						600	664	793	835	908	0.035	0.025			0.095	2.7 to 13.8	2.9						
PSS2060N1D1008						700	764	893	935	1 008	0.040	0.027			0.120	1.8 to 14.8	3.1						
PSS2060N1D1135						800	864	993	1 035	1 135	0.040	0.027			0.120	1.8 to 14.8	3.4						
PSS2060N1D1335						1 000	1 064	1 193	1 235	1 335	0.046	0.030			0.160	1.8 to 14.8	3.9						
PSS2060N1D1535						1 200	1 264	1 393	1 435	1 535	0.054	0.035			0.160	1.8 to 14.8	4.4						
PSS2060N1D1935	1 600					1 664	1 793	1 835	1 935	0.065	0.040	0.200			1.8 to 14.8	5.4							
PSS2060N1D2335	2 000	2 064	2 193	2 235	2 335	0.077	0.046	0.240	1.8 to 14.8	6.3													

Notes 1. Indicates ball screw preload control value. Approximately 2.0 N·cm of torque is added due to thin plastic seals.
2. Contact NSK if permissible rotational speed is to be exceeded.

3. Service temperature range is 0 to 80°C.
4. Use of NSK support unit is recommended. Refer to pages 45 to 50 for details.

Screw shaft diameter 25 mm, Lead 5 and 10 mm



Unit : mm

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

[Recommended support unit]

For drive side (Fixed)	For opposite to drive side	
	(Fixed)	(Simple)
WBK20-01 (square) P 45	WBK20-01 (square) P 45	WBK20S-01 (square) P 49
WBK20-11 (round) P 47	WBK20-11 (round) P 47	

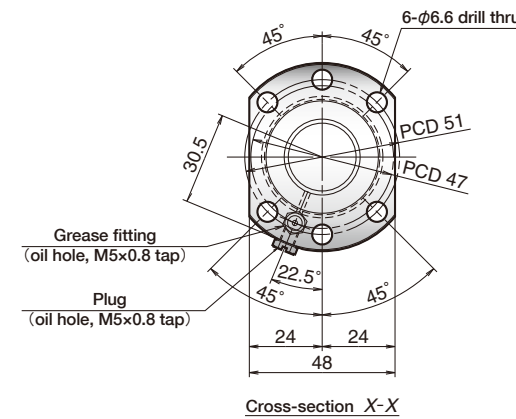
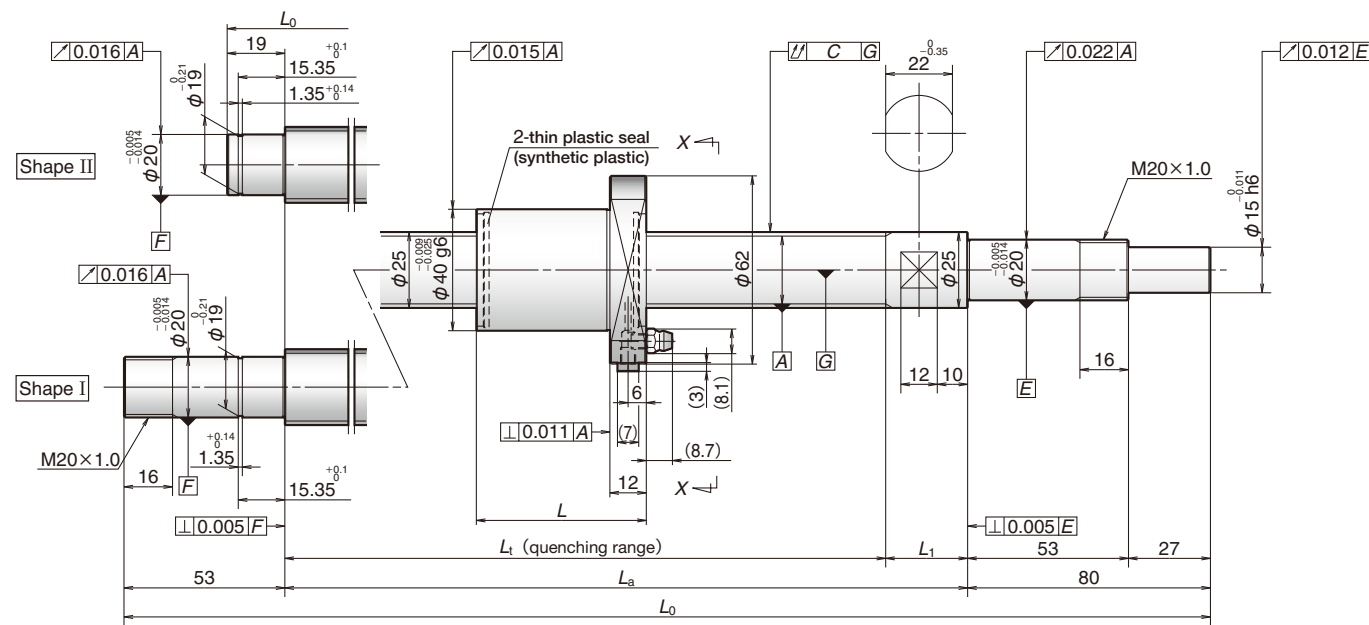
Unit : mm

Reference no.	Screw shaft dia. d	Lead l	Basic load ratings (N)		Stroke		Nut length L	Screw shaft dimensions			Left shaft end (opposite driven side)	Lead accuracy			Shaft run-out 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)						
			Dynamic C_a	Static C_{0a}	Nominal	Max. L_f-L		L_f	L_a	L_0		Target value T	Error e_p	Variation V_u				Fixed-simple	Fixed-Fixed								
																						Fixed-simple	Fixed-Fixed				
PSS2505N1D0349	25	5	9 760	23 600	150	191	32	223	250	349	II	0	0.023	0.018	0.035	1.2 to 9.3	1.5	5 000	-	4.4	2.2						
PSS2505N1D0399					200	241							273	300	399	0.023	0.018					0.035	1.2 to 9.3	1.6			
PSS2505N1D0499					300	341							373	400	499	0.025	0.020					0.040	1.2 to 9.3	2.0			
PSS2505N1D0599					400	441							473	500	599	0.027	0.020					0.045	1.2 to 9.3	2.3			
PSS2505N1D0699					500	541							573	600	699	0.030	0.023					0.055	0.8 to 10.8	2.7			
PSS2505N1D0899					700	741							773	800	899	0.035	0.025					0.065	0.8 to 10.8	3.4			
PSS2505N1D0999					800	841							873	900	999	0.040	0.027					0.065	0.8 to 10.8	3.7			
PSS2505N1D1233					1 000	1 041							1 073	1 100	1 233	0.046	0.030					0.080	0.8 to 13.8	4.5	4 100	4 000	
PSS2510N1D0549		10	12 800	32 300	300	367	56	423	450	549		I	0	0.027	0.020	0.045	3.1 to 11.8	2.4	5 000	-	4.7	2.4					
PSS2510N1D0649					400	467								523	550	649	0.030	0.023					0.055	2.2 to 12.8	2.7		
PSS2510N1D0749					500	567								623	650	749	0.030	0.023					0.055	2.2 to 12.8	3.1		
PSS2510N1D0849					600	667								723	750	849	0.035	0.025					0.065	2.2 to 12.8	3.5		
PSS2510N1D0949					700	767								823	850	949	0.040	0.027					0.065	2.2 to 12.8	3.8		
PSS2510N1D1049					800	867								923	950	1 049	0.040	0.027					0.080	2.2 to 12.8	4.2	3 600	
PSS2510N1D1283					1 000	1 067								1 123	1 150	1 283	0.046	0.030					0.100	1.8 to 14.8	5.0	2 500	3 700
PSS2510N1D1883					1 600	1 667								1 723	1 750	1 883	0.065	0.040					0.130	1.8 to 14.8	7.2	1 000	1 600

Notes 1. Indicates ball screw preload control value. Approximately 2.0 N·cm of torque is added due to thin plastic seals.
2. Contact NSK if permissible rotational speed is to be exceeded.

3. Service temperature range is 0 to 80°C.
4. Use of NSK support unit is recommended. Refer to pages 45 to 50 for details.

Screw shaft diameter 25 mm, Lead 20 and 25 mm



Unit : mm

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

[Recommended support unit]

For drive side (Fixed)	For opposite to drive side	
	(Fixed)	(Simple)
WBK20-01 (square) P 45	WBK20-01 (square) P 45	WBK20S-01 (square) P 49
WBK20-11 (round) P 47	WBK20-11 (round) P 47	

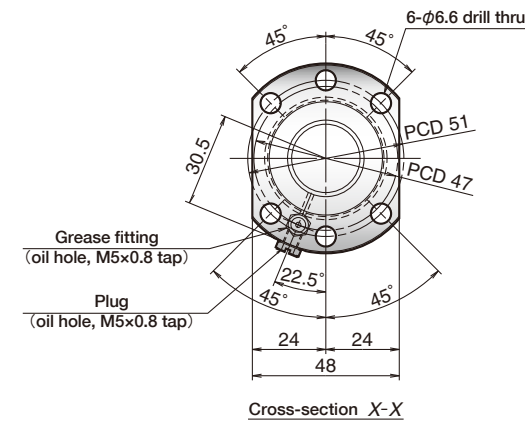
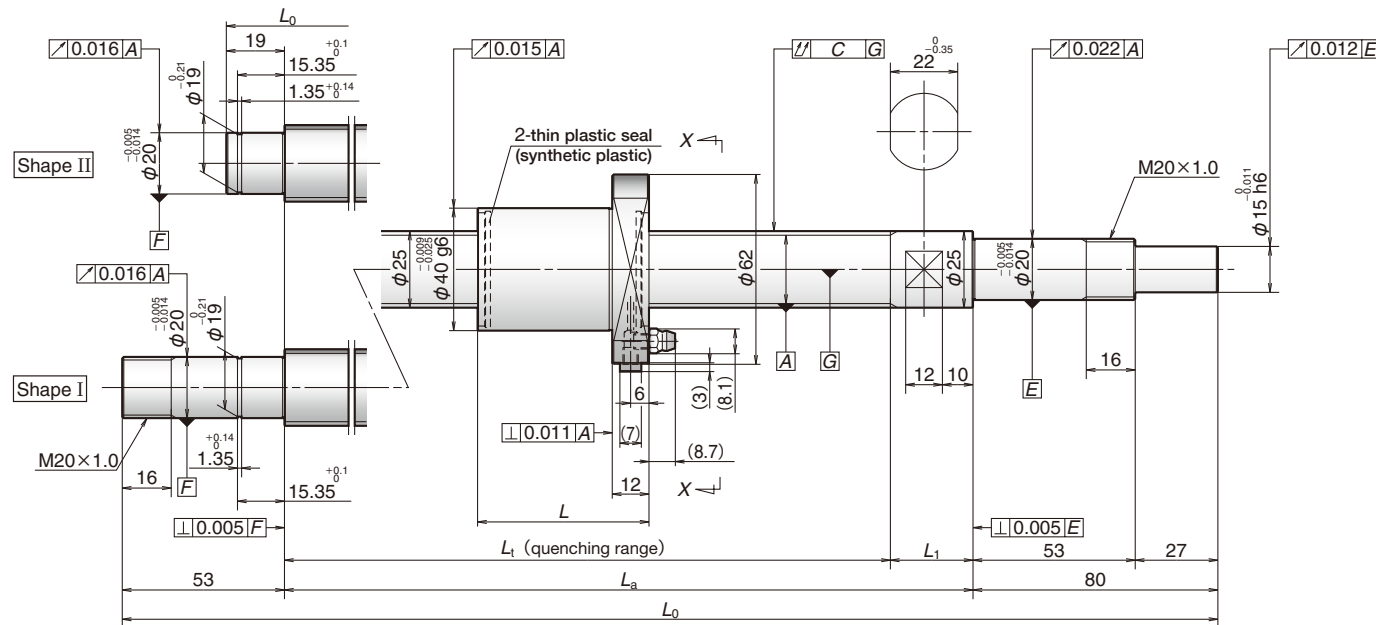
Unit : mm

Reference no.	Screw shaft dia. d	Lead ℓ	Basic load ratings (N)		Stroke		Nut length L	Screw shaft dimensions				Left shaft end (opposite driven side)	Lead accuracy			Shaft run-out 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)	
			Dynamic C_a	Static C_{0a}	Nominal	Max. L_f-L		L_f	L_a	L_0	L_f		Target value T	Error e_p	Variation V_u				Fixed-simple	Fixed-Fixed			
																							Fixed-simple
PSS2520N1D0729	25	20	6 560	14 600	500	550	54	604	630	729	26	II	0	0.030	0.023	0.055	2.2 to 12.8	3.1	5 000	-	3.9	2.0	
PSS2520N1D0829					600	650		704	730	829				0.035	0.025	0.065	2.2 to 12.8	3.4					
PSS2520N1D0929					700	750		804	830	929				0.040	0.027	0.065	2.2 to 12.8	3.8					
PSS2520N1D1029					800	850		904	930	1 029				0.040	0.027	0.080	2.2 to 12.8	4.2					
PSS2520N1D1263					1 000	1 050		1 104	1 130	1 263				0.046	0.030	0.100	1.8 to 14.8	5.0					
PSS2520N1D1463					1 200	1 250		1 304	1 330	1 463				0.054	0.035	0.100	1.8 to 14.8	5.8					
PSS2520N1D1863					1 600	1 650		1 704	1 730	1 863				0.065	0.040	0.130	1.8 to 14.8	7.3					
PSS2520N1D2263					2 000	2 050		2 104	2 130	2 263				0.077	0.046	0.170	1.8 to 14.8	8.8					
PSS2525N1D0779		25	25	6 560	14 600	500	587	63	650	680	779	30	II	0	0.035	0.025	0.055	2.7 to 13.8	3.3	5 000	-	4.3	2.2
PSS2525N1D0879						600	687		750	780	879				0.035	0.025	0.065	2.7 to 13.8	3.7				
PSS2525N1D0979						700	787		850	880	979				0.040	0.027	0.065	2.7 to 13.8	4.1				
PSS2525N1D1079						800	887		950	980	1 079				0.040	0.027	0.080	2.7 to 13.8	4.4				
PSS2525N1D1313						1 000	1 087		1 150	1 180	1 313				0.046	0.030	0.100	1.8 to 14.8	5.3				
PSS2525N1D1513						1 200	1 287		1 350	1 380	1 513				0.054	0.035	0.100	1.8 to 14.8	6.0				
PSS2525N1D1913						1 600	1 687		1 750	1 780	1 913				0.065	0.040	0.130	1.8 to 14.8	7.5				
PSS2525N1D2313						2 000	2 087		2 150	2 180	2 313				0.077	0.046	0.170	1.8 to 14.8	9.1				

Notes 1. Indicates ball screw preload control value. Approximately 2.0 N·cm of torque is added due to thin plastic seals.
2. Contact NSK if permissible rotational speed is to be exceeded.

3. Service temperature range is 0 to 80°C.
4. Use of NSK support unit is recommended. Refer to pages 45 to 50 for details.

Screw shaft diameter 25 mm, Lead 30 and 50 mm



Unit : mm

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

[Recommended support unit]

For drive side (Fixed)	For opposite to drive side	
	(Fixed)	(Simple)
WBK20-01 (square) P 45	WBK20-01 (square) P 45	WBK20S-01 (square) P 49
WBK20-11 (round) P 47	WBK20-11 (round) P 47	

Unit : mm

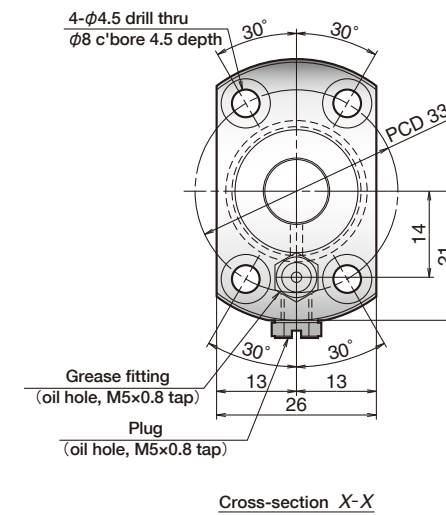
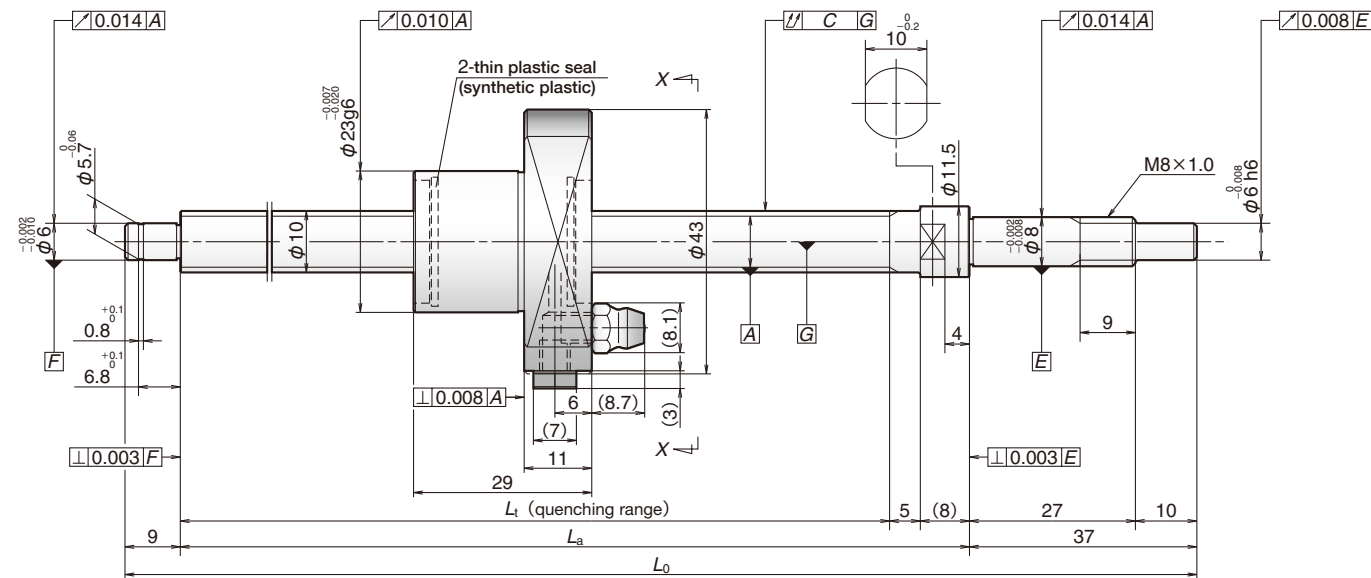
Reference no.	Screw shaft dia. d	Lead l	Basic load ratings (N)		Stroke		Nut length L	Screw shaft dimensions				Left shaft end (opposite driven side)	Lead accuracy			Shaft run-out C	Dynamic preload torque (N·cm) ^{*1}	Mass (kg)	Permissible rotational speed (min ⁻¹) ^{*2}		Internal spatial volume of nut (cm ³)	Standard volume of grease replenishing (cm ³)							
			Dynamic C_a	Static C_{0a}	Nominal	Max. L_t-L		L_t	L_a	L_0	L_1		Target value T	Error e_p	Variation V_u				Fixed-simple	Fixed-Fixed									
																							Fixed-simple	Fixed-Fixed					
PSS2530N1D0779	25	30	6 560	14 600	500	576	74	650	680	779	30	0	0.035	0.025	0.055	2.7 to 13.8	3.4	5 000	5.5	2.8									
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			50	500	576	114	690	730	829							40			0	0.035	0.025	0.065	5.4 to 17.6	3.8	5 000	7.7	3.9
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																							

Notes 1. Indicates ball screw preload control value. Approximately 2.0 N·cm of torque is added due to thin plastic seals.
2. Contact NSK if permissible rotational speed is to be exceeded.

3. Service temperature range is 0 to 80°C.
4. Use of NSK support unit is recommended. Refer to pages 45 to 50 for details.

Screw shaft diameter 10 mm, Lead 5 mm

Unit : mm



Ball screw specification	
Shaft dia.	φ10
Preload type	Oversize ball (P-preload)
Ball dia./screw shaft root dia.	2.000 / 8.2
Ball circle dia.	10.3
Accuracy grade/axial play	C3 / 0
Factory-packed grease	NSK clean grease LG2

[Recommended support unit]

For drive side (Fixed)	For opposite to drive side (Simple)
WBK08-01B (square, low) P 45	WBK08S-01B (square, low) P 49
WBK08-11 (round) P 47	WBK08S-01C (square, clean) P 49
WBK08-01C (square, clean) P 45	
WBK08-01C (round, clean) P 47	

Unit : mm

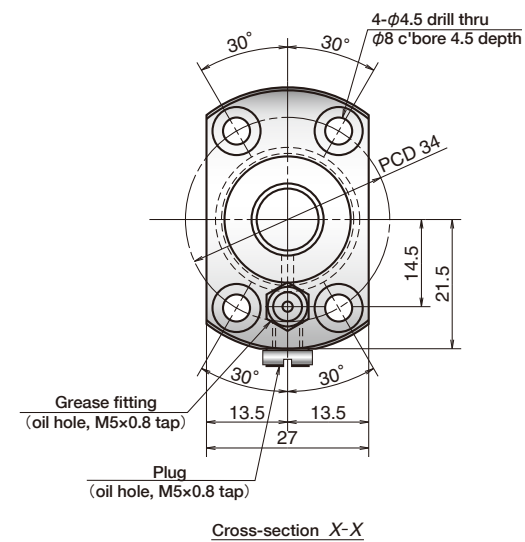
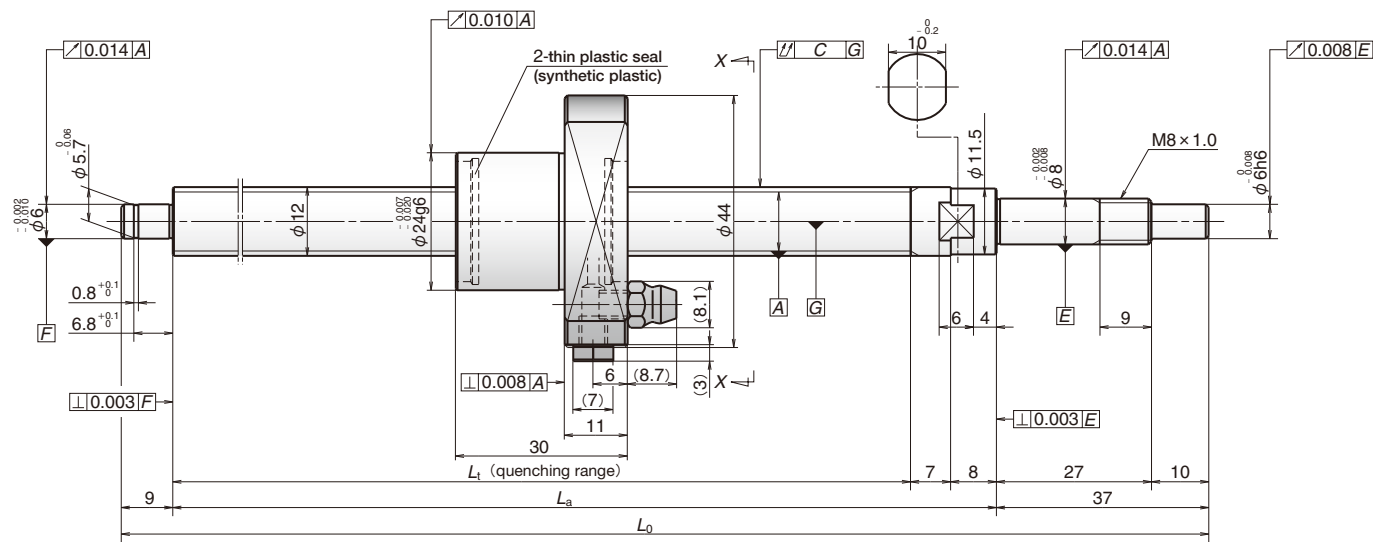
Reference no.	Screw shaft dia. d	Lead l	Basic load ratings (N)		Stroke		Screw shaft dimensions			Lead accuracy			Shaft run-out C	Dynamic preload torque (N·cm) ^{*1}	Mass (kg)	Permissible rotational speed (min ⁻¹) ^{*2}	Internal spatial volume of nut (cm ³)	Standard volume of grease replenishing (cm ³)
			Dynamic C_a	Static C_{0a}	Nominal	Max. L_t-L	L_t	L_a	L_0	Target value T	Error e_p	Variation V_u						
USS1005N1D0221	10	5	2 930	4 790	100	133	162	175	221	0	0.010	0.008	0.035	0.2 to 1.8	0.3	5 000	0.8	0.4
USS1005N1D0321					200	233	262	275	321									
USS1005N1D0521					400	433	462	475	521									

- Notes
1. Indicates ball screw preload control value. Approximately 0.5 N·cm of torque is added due to thin plastic seals.
 2. Contact NSK if permissible rotational speed is to be exceeded.

3. Service temperature range is 0 to 80°C.
4. Use of NSK support unit is recommended. Refer to pages 45 to 50 for details.

Screw shaft diameter 12 mm, Lead 5 mm

Unit : mm



Ball screw specification	
Shaft dia.	$\phi 12$
Preload type	Oversize ball (P-preload)
Ball dia./screw shaft root dia.	2.000 / 10.2
Ball circle dia.	12.3
Accuracy grade/axial play	C3 / 0
Factory-packed grease	NSK clean grease LG2

[Recommended support unit]

For drive side (Fixed)	For opposite to drive side (Simple)
WBK08-01B (square, low) P 45	WBK08S-01B (square, low) P 49
WBK08-11 (round) P 47	WBK08S-01C (square, clean) P 49
WBK08-01C (square, clean) P 45	
WBK08-01C (round, clean) P 47	

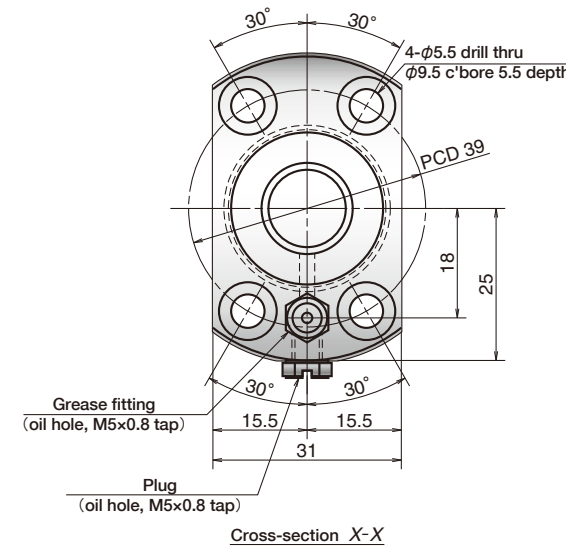
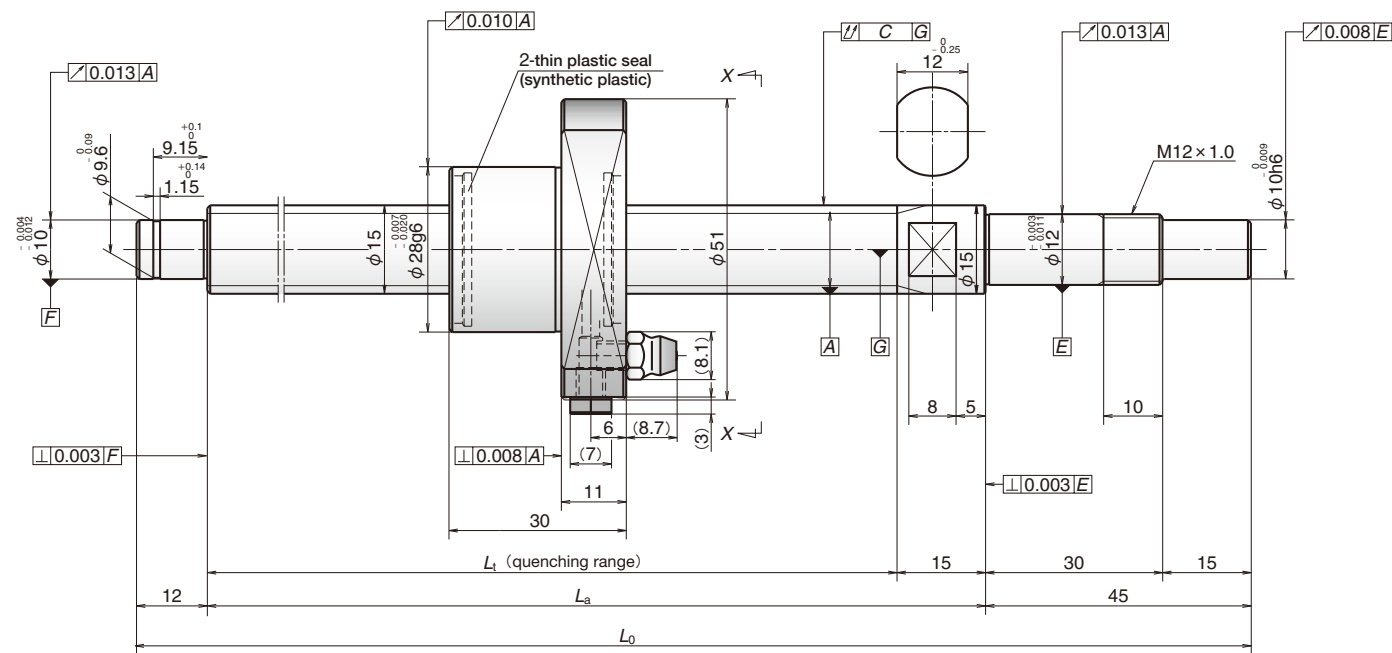
Unit : mm

Reference no.	Screw shaft dia. d	Lead ℓ	Basic load ratings (N)		Stroke		Screw shaft dimensions			Lead accuracy			Shaft run-out 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)					
			Dynamic C_a	Static C_{0a}	Nominal	Max. L_t-L	L_t	L_a	L_0	Target value T	Error e_p	Variation V_u											
USS1205N1D0221	12	5	3 200	5 860	100	130	160	175	221	0	0.010	0.008	0.035	0.2 to 1.8	0.3	5 000	1.0	0.5					
USS1205N1D0321					200	230	260	275	321										0.012	0.008	0.045	0.2 to 2.0	0.3
USS1205N1D0621					500	530	560	575	621										0.016	0.012	0.070	0.2 to 3.0	0.7

- Notes
1. Indicates ball screw preload control value. Approximately 0.5 N·cm of torque is added due to thin plastic seals.
 2. Contact NSK if permissible rotational speed is to be exceeded.

3. Service temperature range is 0 to 80°C.
4. Use of NSK support unit is recommended. Refer to pages 45 to 50 for details.

Screw shaft diameter 15 mm, Lead 5 mm



Unit : mm

Ball screw specification	
Shaft dia.	$\phi 15$
Preload type	Oversize ball (P-preload)
Ball dia./screw shaft root dia.	2.778 / 12.6
Ball circle dia.	15.5
Accuracy grade/axial play	C3 / 0
Factory-packed grease	NSK clean grease LG2

[Recommended support unit]

For drive side (Fixed)	For opposite to drive side (Simple)
WBK12-01B (square, low) P 45	WBK12S-01B (square, low) P 49
WBK12-11 (round) P 47	WBK12S-01C (square, clean) P 49
WBK12-01C (square, clean) P 45	
WBK12-01C (round, clean) P 47	

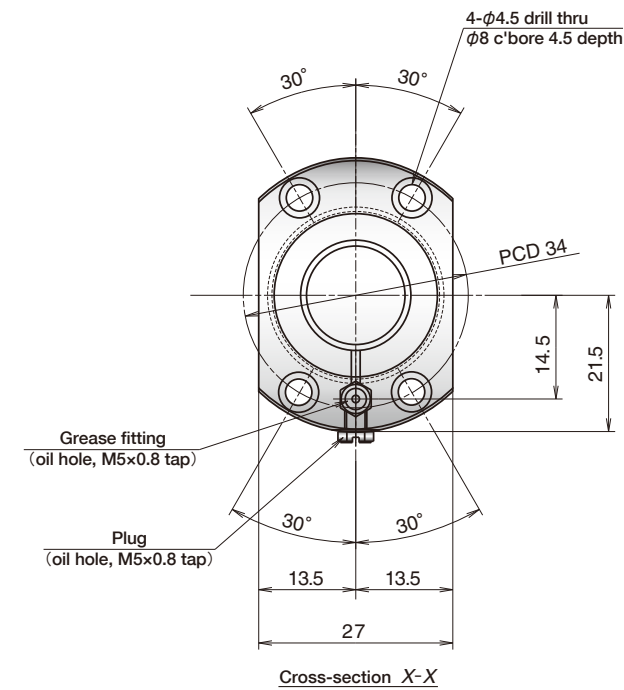
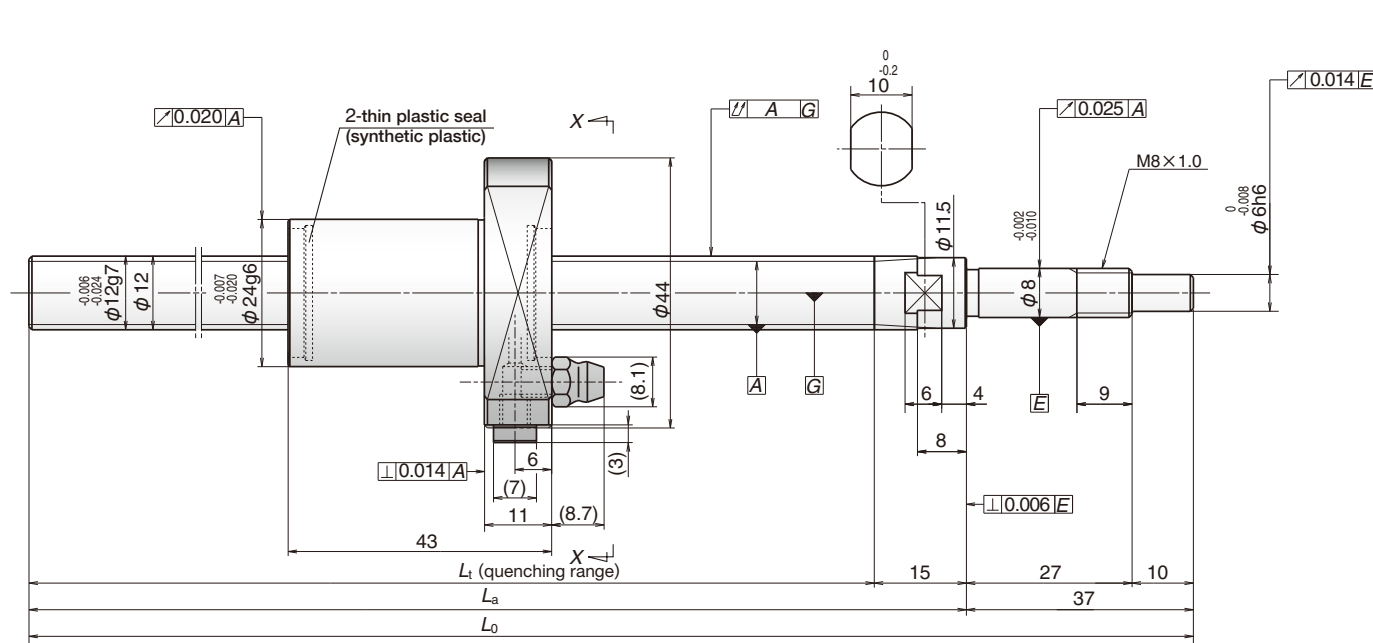
Unit : mm

Reference no.	Screw shaft dia. d	Lead ℓ	Basic load ratings (N)		Stroke		Screw shaft dimensions			Lead accuracy			Shaft run-out 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)
			Dynamic C_a	Static C_{0a}	Nominal	Max. L_t-L	L_t	L_a	L_o	Target value T	Error e_p	Variation V_u						
USS1505N1D0261	15	5	5 460	10 200	100	159	189	204	261	0	0.010	0.008	0.025	0.2 to 5.0	0.5	5 000	2.0	1.0
USS1505N1D0361					200	259	289	304	361									
USS1505N1D0561					400	459	489	504	561									
USS1505N1D0761					600	659	689	704	761									

Notes 1. Indicates ball screw preload control value. Approximately 0.5 N · cm of torque is added due to thin plastic seals.
2. Contact NSK if permissible rotational speed is to be exceeded.

3. Service temperature range is 0 to 80°C.
4. Use of NSK support unit is recommended. Refer to pages 45 to 50 for details.

Screw shaft diameter 12 mm, Lead 10 mm



Unit : mm

Ball screw specification	
Ball dia./screw shaft root dia.	2.000 / 10.2
Ball circle dia.	12.3
Accuracy grade/axial play	Ct7 / 0.010 or less
Factory-packed grease	NSK grease LR3

[Recommended support unit]

For drive side (Fixed)	For opposite to drive side (Simple)
WBK08-01B (square, low) P 45	WBK12SF-01B (square, low) P 50

Unit : mm

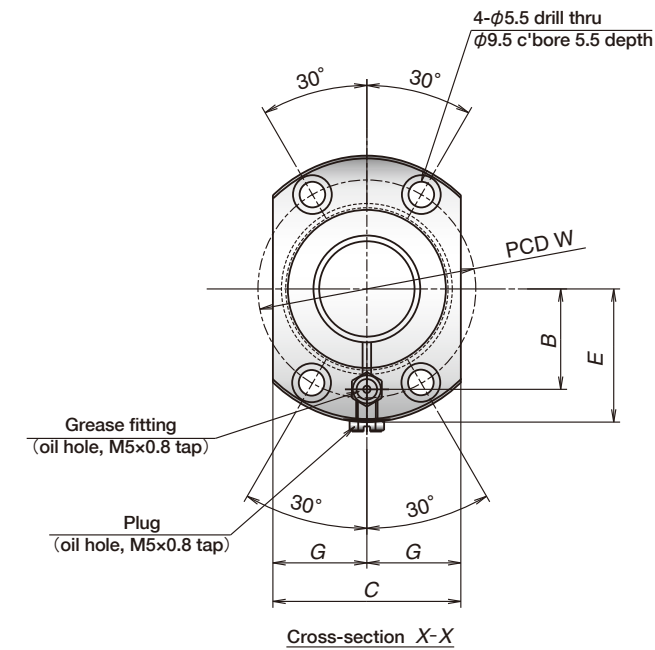
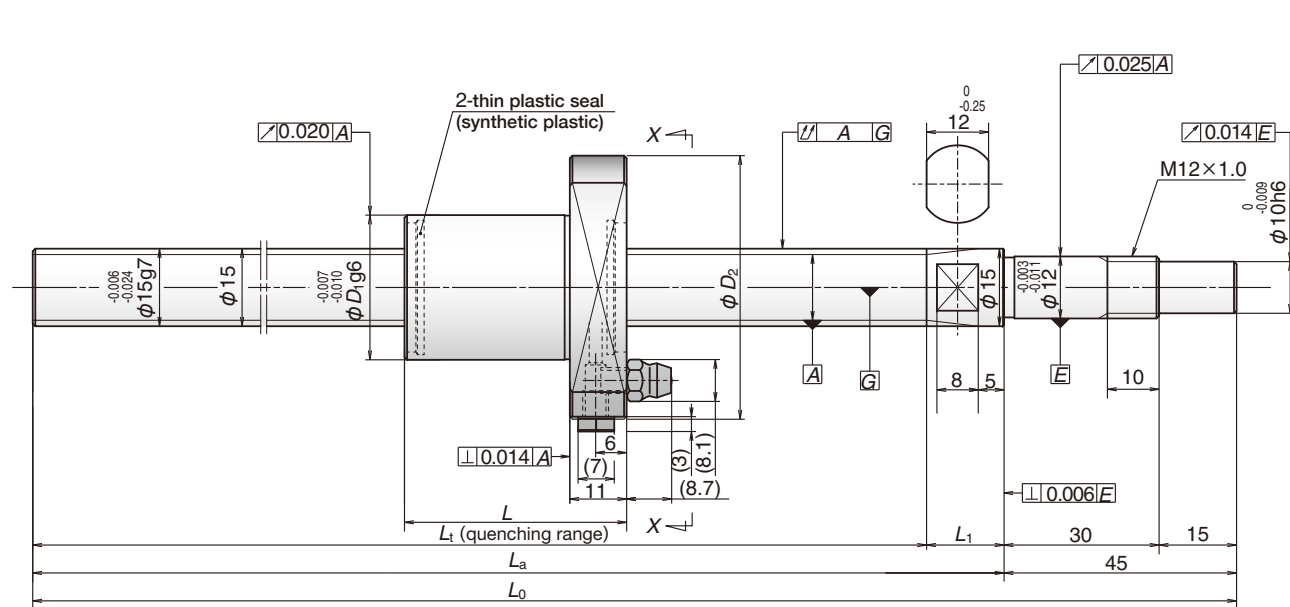
Reference no.	Screw shaft dia. d	Lead ℓ	Basic load ratings (N)		Screw shaft dimensions			Lead accuracy			Shaft run-out A	Mass (kg)	Internal spatial volume of nut (cm ³)	Standard volume of grease replenishing (cm ³)	
			Dynamic C_a	Static C_{0a}	L_t	L_a	L_0	Target value T	Error e_p	Variation V_{300}					
FSS1210N1D0400	12	10	3 200	5 860	348	363	400	0	0.120	0.052	0.080	0.5	1.0	0.5	
FSS1210N1D0600					548	563	600								0.195
FSS1210N1D0900					848	863	900								0.310

Notes 1. Approximately 2.0 N · cm of torque is added due to thin plastic seals.

2. Service temperature range is 0 to 80°C.

3. Use of NSK support unit is recommended. Refer to pages 45 to 50 for details.

Screw shaft diameter 15 mm, Lead 10 and 20 mm



Unit : mm

Ball screw specification		
Lead	10	20
Ball dia./screw shaft root dia.	2.778 / 12.6	3.175 / 12.2
Ball circle dia.	15.5	
Accuracy grade/axial play	Ct7 / 0.010 or less	
Factory-packed grease	NSK grease LR3	

[Recommended support unit]

For drive side (Fixed)	For opposite to drive side (Simple)
WBK12-01B (square, low) P 45	WBK15SF-01B (square, low) P 50

Unit : mm

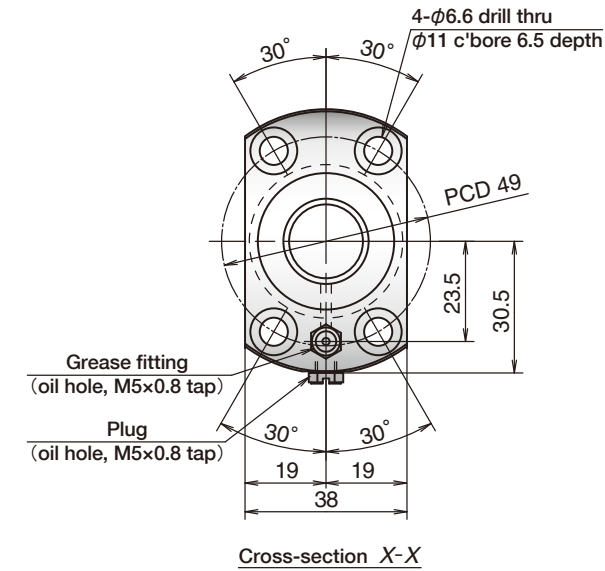
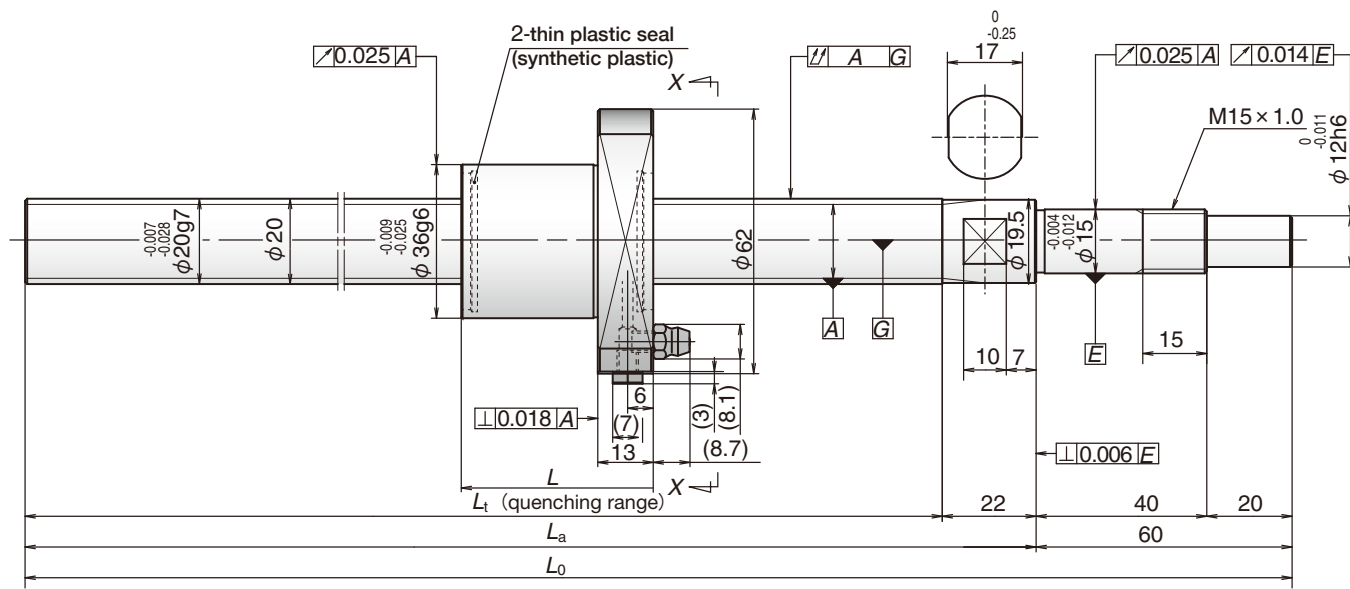
Reference no.	Screw shaft dia. d	Lead ℓ	Basic load ratings (N)		Screw shaft dimensions				Nut dimensions							Lead accuracy			Shaft run-out A	Mass (kg)	Internal spatial volume of nut (cm^3)	Standard volume of grease replenishing (cm^3)													
			Dynamic C_a	Static C_{0a}	L_t	L_a	L_0	L_1	L	D_1	D_2	W	B	C	E	G	Target value T	Error e_p					Variation V_{300}												
FSS1510N1D0500	15	10	5 460	10 200	440	455	500	15	43	28	51	39	18	31	25	15.5	0	0.155	0.052	0.070	0.9	2.0	1.0												
FSS1510N1D1000					940	955	1 000											0.310		0.125															
FSS1510N1D1450					1 390	1 405	1 450											0.490		0.200				2.3											
FSS1520N1D0500		20	5 070	8 730	437	455	500	18										51		32	55			43	20	33	27	16.5	0	0.155	0.052	0.070	1.0	2.8	1.4
FSS1520N1D1000					937	955	1 000																							0.310		0.125			
FSS1520N1D1450					1 387	1 405	1 450																							0.490		0.200			

Notes 1. Approximately 2.0 N · cm of torque is added due to thin plastic seals.

2. Service temperature range is 0 to 80°C.

3. Use of NSK support unit is recommended. Refer to pages 45 to 50 for details.

Screw shaft diameter 20 mm, Lead 10 and 20 mm



Unit : mm

Ball screw specification	
Ball dia./screw shaft root dia.	3.175 / 17.2
Ball circle dia.	20.5
Accuracy grade/axial play	Ct7 / 0.010 or less
Factory-packed grease	NSK grease LR3

[Recommended support unit]

For drive side (Fixed)	For opposite to drive side (Simple)
WBK15-01B (square, low) P 45	WBK20SF-01B (square, low) P 50

Unit : mm

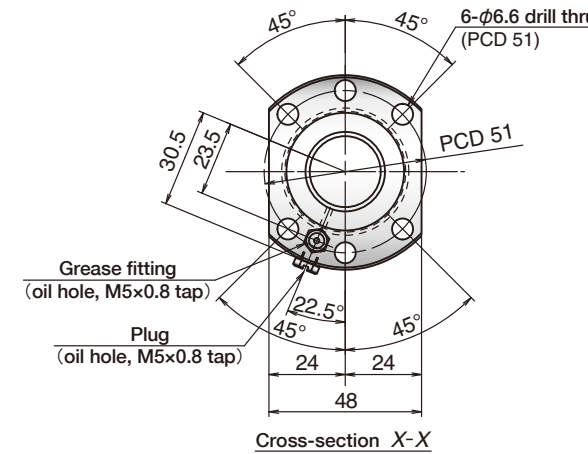
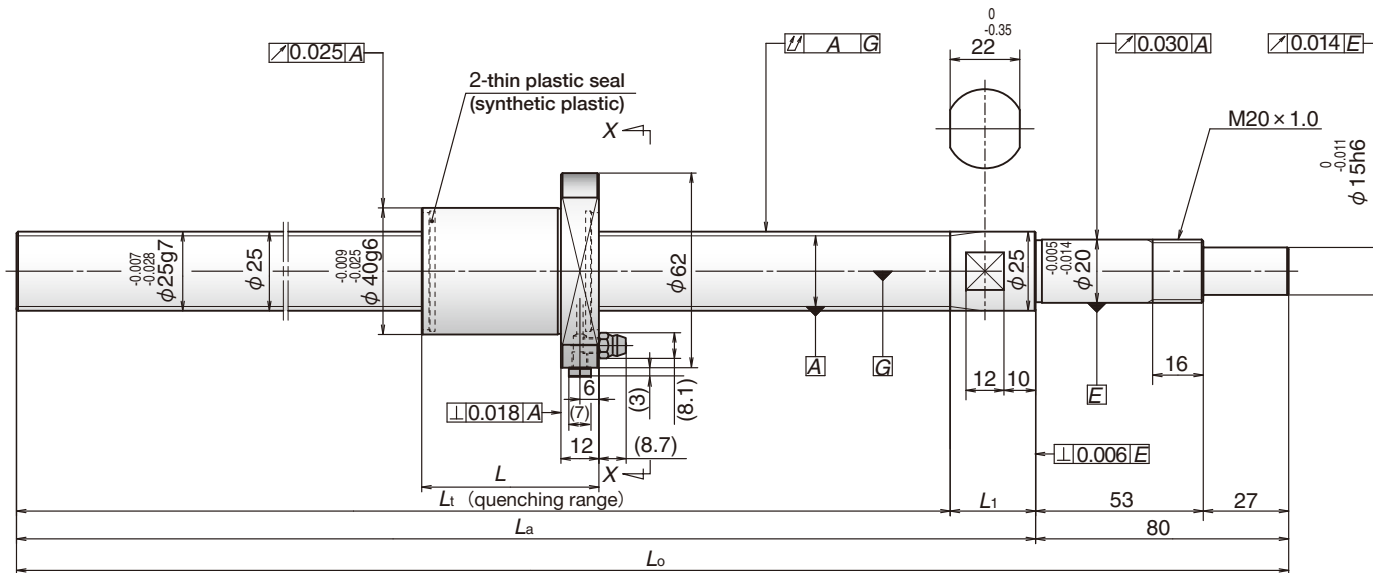
Reference no.	Screw shaft dia. d	Lead ℓ	Basic load ratings (N)		Screw shaft dimensions			Nut length L	Lead accuracy			Shaft run-out A	Mass (kg)	Internal spatial volume of nut (cm ³)	Standard volume of grease replenishing (cm ³)	
			Dynamic C_a	Static C_{0a}	L_t	L_a	L_o		Target value T	Error e_p	Variation V_{300}					
FSS2010N1D0600	20	10	8 790	18 500	518	540	600	45	0	0.195	0.052	0.085	1.7	3.2	1.6	
FSS2010N1D1000					918	940	1 000			0.310						
FSS2010N1D1450					1 368	1 390	1 450			0.490						
FSS2020N1D0600		20	20	5 900	11 700	518	540	600	54	0	0.195	0.052	0.085	1.8	3.2	1.6
FSS2020N1D1000						918	940	1 000			0.310					
FSS2020N1D1450						1 368	1 390	1 450			0.490					

Notes 1. Approximately 2.0 N · cm of torque is added due to thin plastic seals.

2. Service temperature range is 0 to 80°C.
3. Use of NSK support unit is recommended. Refer to pages 45 to 50 for details.

Screw shaft diameter 25 mm, Lead 10, 20 and 25 mm

Unit : mm



Ball screw specification	
Ball dia./screw shaft root dia.	3.175 / 22.2
Ball circle dia.	25.5
Accuracy grade/axial play	Ct7 / 0.010 or less
Factory-packed grease	NSK grease LR3

[Recommended support unit]

For drive side (Fixed)	For opposite to drive side (Simple)
WBK20-01 (square) P 45	WBK25SF-01 (square) P 50

Unit : mm

Reference no.	Screw shaft dia. <i>d</i>	Lead <i>ℓ</i>	Basic load ratings (N)		Screw shaft dimensions				Nut length <i>L</i>	Lead accuracy			Shaft run-out <i>A</i>	Mass (kg)	Internal spatial volume of nut (cm ³)	Standard volume of grease replenishing (cm ³)
			Dynamic <i>C_a</i>	Static <i>C_{0a}</i>	<i>L_t</i>	<i>L_a</i>	<i>L₀</i>	<i>L₁</i>		Target value <i>T</i>	Error <i>e_p</i>	Variation <i>V₃₀₀</i>				
FSS2510N1D0600	25	10	12 800	32 300	493	520	600	27	56	0	0.155	0.052	0.065	2.6	4.7	2.4
FSS2510N1D1000					893	920	1 000				0.310					
FSS2510N1D1450					1 343	1 370	1 450				0.490					
FSS2520N1D0600	25	20	6 560	14 600	494	520	600	26	54	0	0.155	0.052	0.065	2.6	3.9	2.0
FSS2520N1D1000					894	920	1 000				0.310					
FSS2520N1D1450					1 344	1 370	1 450				0.490					
FSS2525N1D0600	25	25	6 560	14 600	490	520	600	30	63	0	0.155	0.052	0.065	2.6	4.3	2.2
FSS2525N1D1000					890	920	1 000				0.310					
FSS2525N1D1450					1 340	1 370	1 450				0.490					

Notes 1. Approximately 2.0 N · cm of torque is added due to thin plastic seals.

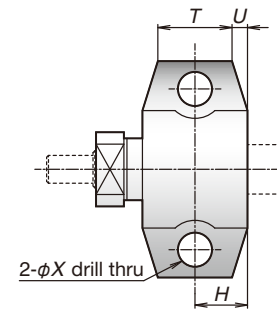
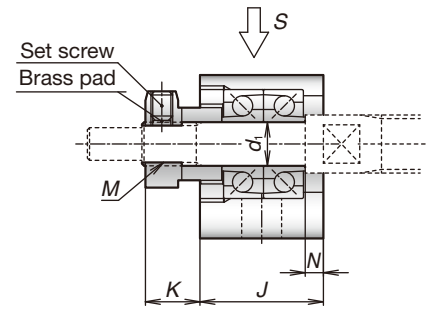
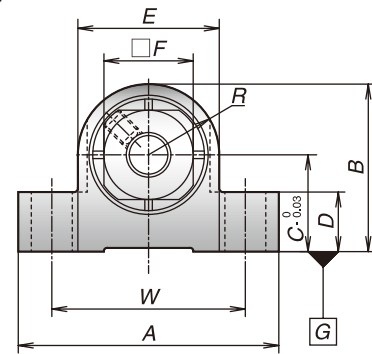
2. Service temperature range is 0 to 80°C.

3. Use of NSK support unit is recommended. Refer to pages 45 to 50 for details.

Square Type Support Unit

Fixed support side support unit (square type)

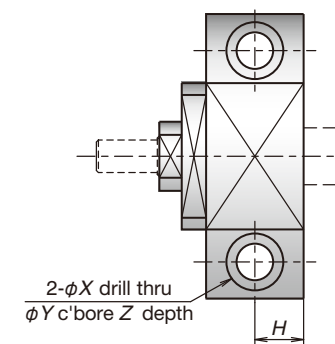
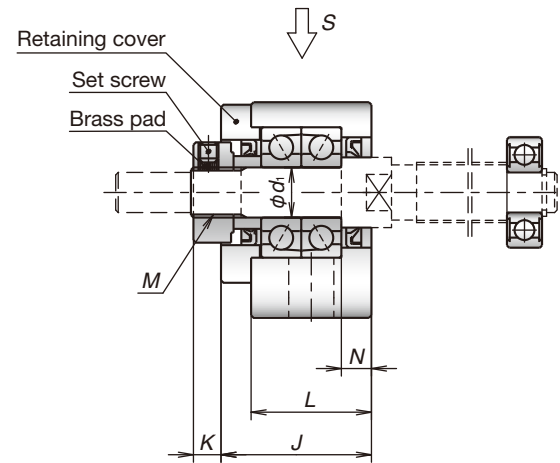
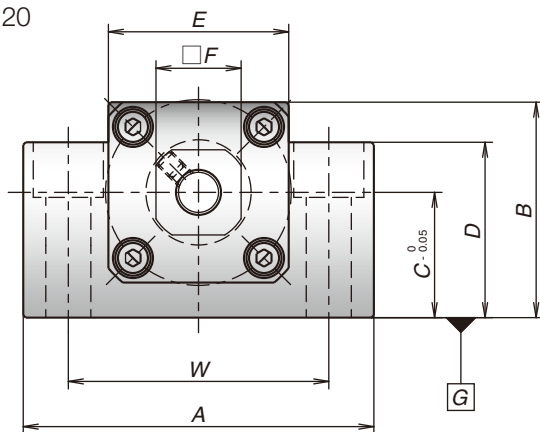
WBK04 and 06



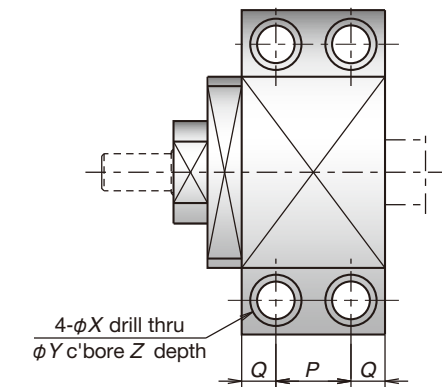
View S (WBK04 and 06)

Reference no.	Tightening torque (reference) [N·cm]	
	Locknut	Set screw
WBK04-**	100	69 (M3)
WBK06-**	190	69 (M3)
WBK08-**	230	69 (M3)
WBK10-**	280	147 (M4)
WBK12-**	630	147 (M4)
WBK15-**	790	147 (M4)
WBK20-**	1 670	147 (M4)

WBK08 to 20



View S (WBK08 to 15)



View S (WBK20)

Unit : mm

Reference no.	Use	d_i	A	B	C	D	E	F	L	J	K	R	T	U	N	Counterbore dimensions				Mass (kg)	Specification				Locknut screw M	Attached bearing for support side														
																H	P	Q	W		X	Y	Z	Basic dynamic load rating C_a (N)			Load limit C_a (N)	Rigidity (N/μm)	Maximum starting torque (N·cm)											
WBK04-01M	General	4	27	17	10	6	14	10	-	14	5.5	7	9	2.5	2	7	-	-	21	3.5	-	-	0.03	1 470	464	39	0.2	M4×0.5	-											
WBK06-01M	General	6	35	22.5	13	8	19	12	-	17	7.5	9.5	12	2.5	2.5	8.5	-	-	26	5.5	-	-	0.05	2 760	854	60	0.35	M6×0.75	-											
WBK08-01A	General	8	52	32	17	26	25	14	23	23	7	-	-	-	4	11.5	-	-	38	6.6	11	12	0.25	4 400	1 450	49	0.88	M8×1	606ZZ											
WBK08-01B	Low type		62	31	15.5	31	-		21.5	25.5	4.5	-	-	-	3.5	11			46	9	14	18	0.3	6 600	2 730	94	1.9		606VV											
WBK08-01C	Clean		52	32	17	26	25		23	23	7	-	-	-	4	11.5			38	6.6	11	12	0.25	3 100	1 100	36	0.52		606VV											
WBK10-01A	General	10	70	43	25	35	36	17	24	30	5.5	-	-	-	6	12	-	-	52	9	14	11	0.5	6 600	2 730	94	1.9	M10×1	608ZZ											
WBK10-01B	Low type			38	20	38	-												19	24	30	5.5	-	-	-	6	12		-	-	52	9	14	19	0.45	6 600	2 730	94	1.9	608VV
WBK10-01C	Clean			43	25	35	36												11	0.5	4 250	1 364	50	1.1	608VV															
WBK12-01A	General	12	70	43	25	35	36	19	24	30	5.5	-	-	-	6	12	-	-	52	9	14	11	0.5	7 100	3 040	104	2.1	M12×1	6000ZZ											
WBK12-01B	Low type			38	20	38	-												19	24	30	5.5	-	-	-	6	12		-	-	52	9	14	19	0.4	7 100	3 040	104	2.1	6000VV
WBK12-01C	Clean			43	25	35	36												11	0.5	4 700	2 443	57	1.2	6000VV															
WBK15-01A	General	15	80	50	30	40	41	22	25	31	12	-	-	-	5	12.5	-	-	60	11	17	15	0.7	7 600	3 380	113	2.4	M15×1	6002ZZ											
WBK15-01B	Low type			42	22	42	-												22	25	31	12	-	-	-	5	12.5		-	-	60	11	17	23	0.6	7 600	3 380	113	2.4	6002VV
WBK15-01C	Clean			50	30	40	41												15	0.7	5 100	2 757	63	1.3	6002VV															
WBK20-01	General	20	95	58	30	45	56	30	42	52	10	-	-	-	10	-	22	10	75	11	17	15	1.4	17 900	8 240	155	6.2	M20×1	6204ZZ											

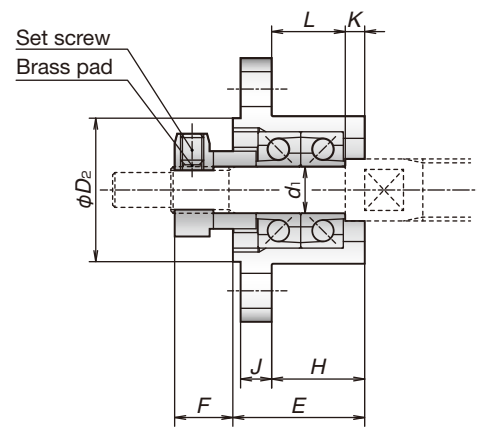
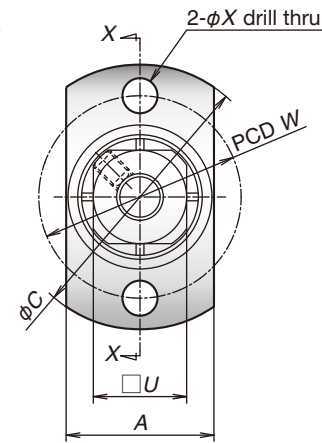
- Notes
1. Use datum surface G for mounting to machine base.
 2. Tighten set screw after locknut has been adjusted and tightened.
 3. Insert brass pad provided with unit into locknut set screw hole, then insert and tighten the set screw.

4. Deep groove ball bearing and snap ring are also provided for simple support side. (except WBK04-01M, WBK06-01M)
5. For retaining cover side of WBK08-01A and WBK08-01C, there are no seals.
6. For WBK04-01M and WBK06-01M, non-contact metal seals are installed in both sides of bearings.

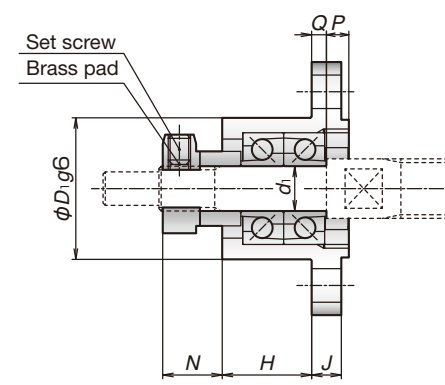
Round Type Support Unit

Fixed support side support unit (round type)

WBK04 and 06



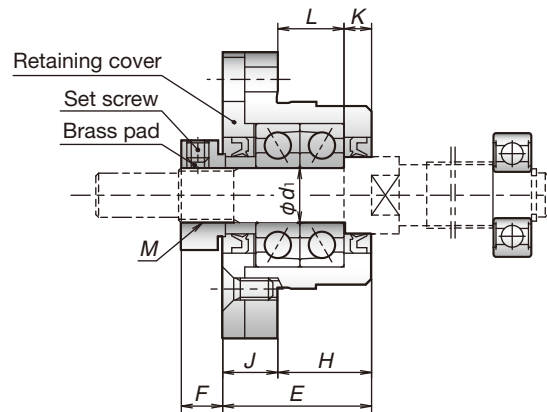
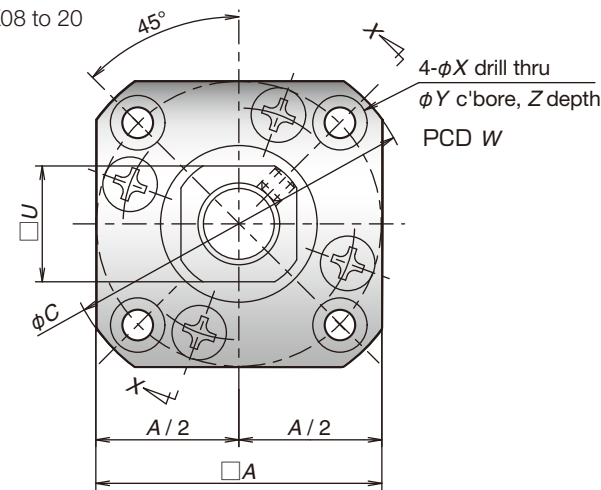
Cross section X-X (Example 1)



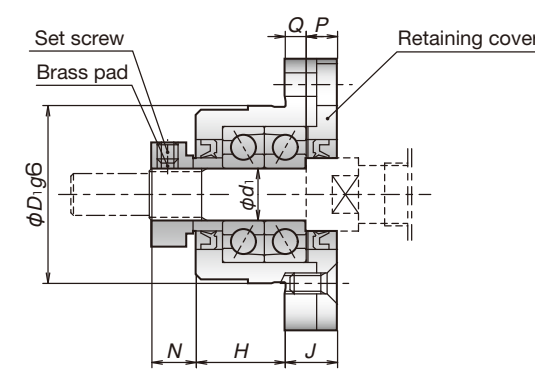
Cross section X-X (Example 2)

Reference no.	Tightening torque (reference) [N·cm]	
	Locknut	Set screw
WBK04-**	100	69 (M3)
WBK06-**	190	69 (M3)
WBK08-**	230	69 (M3)
WBK10-**	280	147 (M4)
WBK12-**	630	147 (M4)
WBK15-**	790	147 (M4)
WBK20-**	1 670	147 (M4)

WBK08 to 20



View X-X (Example 1)



View X-X (Example 2)

Unit : mm

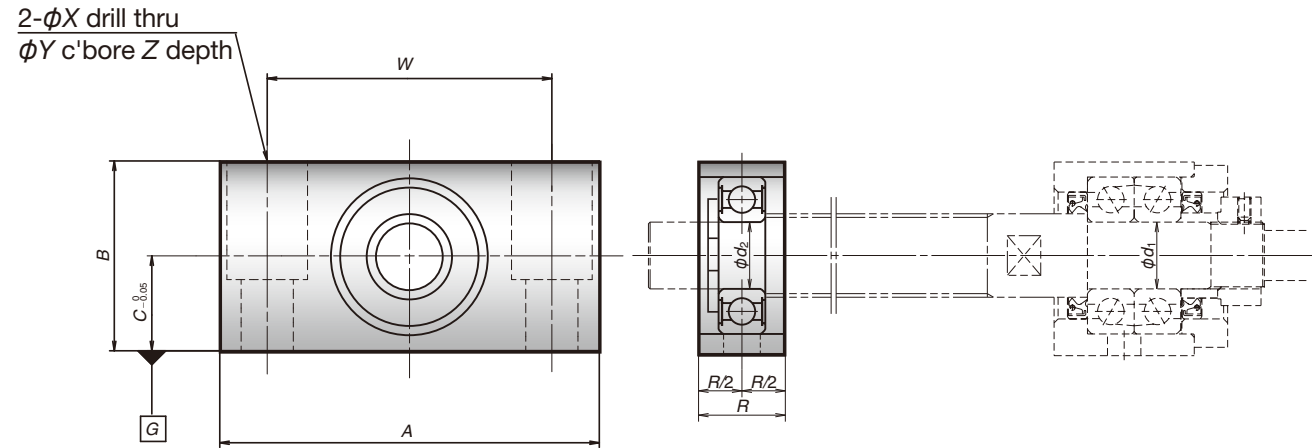
Reference no.	Use	d_1	A	C	D_1	D_2	E	H	L	K	F	N	U	P	Q	Counterbore dimensions					Mass (kg)	Specification				Locknut screw M	Attached bearing for support side	
																J	W	X	Y	Z		Basic dynamic load rating C_a (N)	Load limit C_a (N)	Rigidity (N/μm)	Maximum starting torque (N·cm)			
WBK04-11M	General	4	14	26	14	14	13.5	8.5	7	1.5	5.5	6.6	10	2.6	2.4	3	20	3.5	-	-	0.02	1 470	464	39	0.2	M4 × 0.5	-	
WBK06-11M	General	6	19	34	19	18.5	17	12	9.5	2.5	7.5	8	12	3	2	4	26	4.5	-	-	0.04	2 760	854	60	0.35	M6 × 0.75	-	
WBK08-11B	High-load	8	42	52	34	-	25.5	15.5	12	3.5	4.5	7	14	6	4	10	42	4.5	8	4	0.2	6 600	2 730	94	1.9	M8 × 1	606ZZ	
WBK08-11	General		35	43	28	-	23	14	10	4	7	8				5	9	35	3.4		6.5	0.15	4 400	1 450	49		0.88	606ZZ
WBK08-11C	Clean		3	100	1 100	36	0.52	606VV																				
WBK10-11	General	10	42	52	34	-	27	17	12	5	7.5	8.5	17	6	4	10	42	4.5	8	4	0.2	6 600	2 730	94	1.9	M10 × 1	608ZZ	
WBK10-11C	Clean		4	250	1 364	50	1.1	608VV																				
WBK12-11	General	12	44	54	36	-	27	17	12	5	7.5	8.5	19	6	4	10	44	4.5	8	4	0.25	7 100	3 040	104	2.1	M12 × 1	6000ZZ	
WBK12-11C	Clean		4	700	2 443	57	1.2	6000VV																				
WBK15-11	General	15	52	63	40	-	32	17	11	6	12	14	22	8	7	15	50	5.5	9.5	6	0.4	7 600	3 380	113	2.4	M15 × 1	6002ZZ	
WBK15-11C	Clean		7	100	2 757	63	1.3	6002VV																				
WBK20-11	General	20	68	85	57	-	52	30	20	10	10	14	30	14	8	22	70	6.6	11	10	1.1	17 900	8 240	155	6.2	M20 × 1	6204ZZ	

- Notes
1. Tighten set screw after locknut has been adjusted and tightened.
 2. Insert brass pad provided with unit into locknut set screw hole, then insert and tighten the set screw.

3. Deep groove ball bearing and snap ring are also provided for simple support side. (except WBK04-11M and WBK06-11M)
4. For retaining cover side of WBK08-11 and WBK08-11C, there are no seals.
5. For WBK04-11M and WBK06-11M, non-contact metal seals are installed in both sides of bearings.

Square Type Support Unit for Simple Support Side

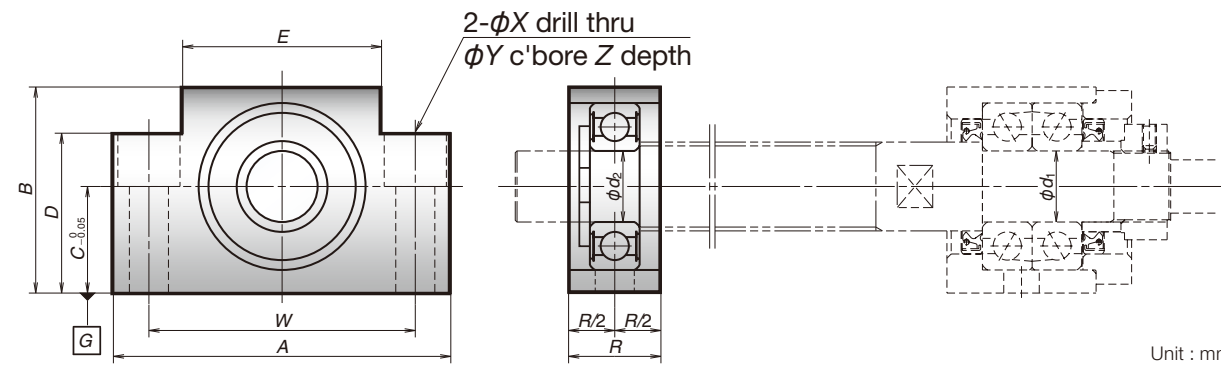
Simple support side support unit for PSS and USS types



Unit : mm

Reference no.	Use	d_2	A	B	C	R	Counterbore dimensions				Mass (kg)	Bearing reference no.	Axial direction basic dynamic load rating (N)
							W	X	Y	Z			
WBK08S-01B	Low	6	62	31	15.5	16	46	9	14	18	0.2	606ZZ	2 260
WBK12S-01B	Low	10	70	38	20	20	52	9	14	19	0.4	6000ZZ	4 550
WBK15S-01B	Low	15	80	42	22	20	60	9	14	23	0.4	6002ZZ	5 600

Note 1. Use datum surface G for mounting to machine base.

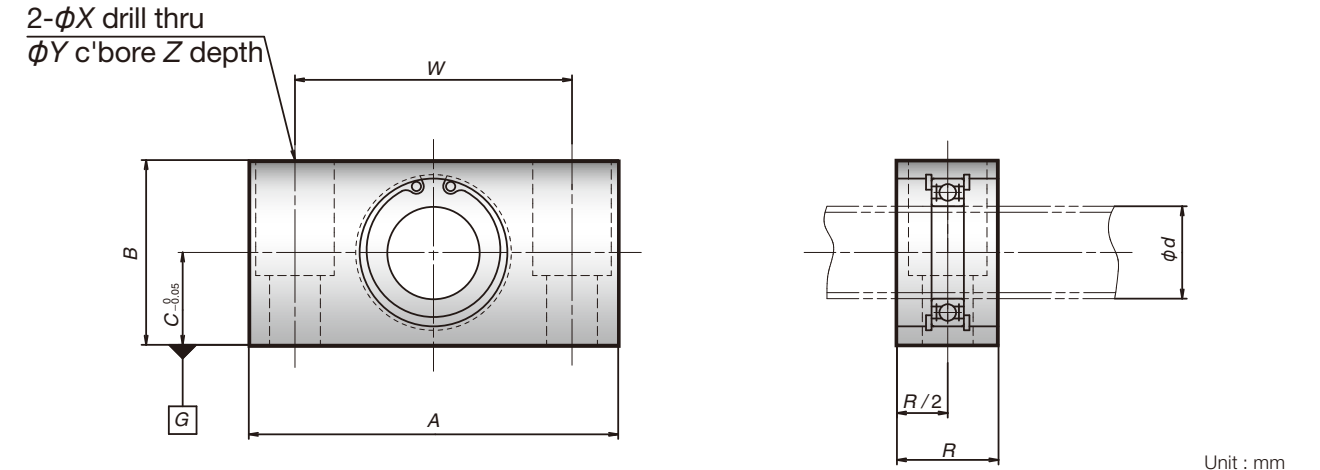


Unit : mm

Reference no.	Use	d_2	A	B	C	D	E	R	Counterbore dimensions				Mass (kg)	Bearing reference no.	Axial direction basic dynamic load rating (N)
									W	X	Y	Z			
WBK08S-01	General	6	52	32	17	26	25	15	38	6.6	11	12	0.15	606ZZ	2 260
WBK08S-01C	Clean													606VV	2 260
WBK10S-01	General	8	70	43	25	35	36	20	52	9	14	11	0.4	608ZZ	3 300
WBK10S-01C	Clean													608VV	3 300
WBK12S-01	General	10	70	43	25	35	36	20	52	9	14	11	0.35	6000ZZ	4 550
WBK12S-01C	Clean													6000VV	4 550
WBK15S-01	General	15	80	50	30	40	41	20	60	9	14	11	0.45	6002ZZ	5 600
WBK15S-01C	Clean													6002VV	5 600
WBK20S-01	General	20	95	58	30	45	56	26	75	11	17	15	0.8	6204ZZ	12 800

Note 1. Use datum surface G for mounting to machine base.

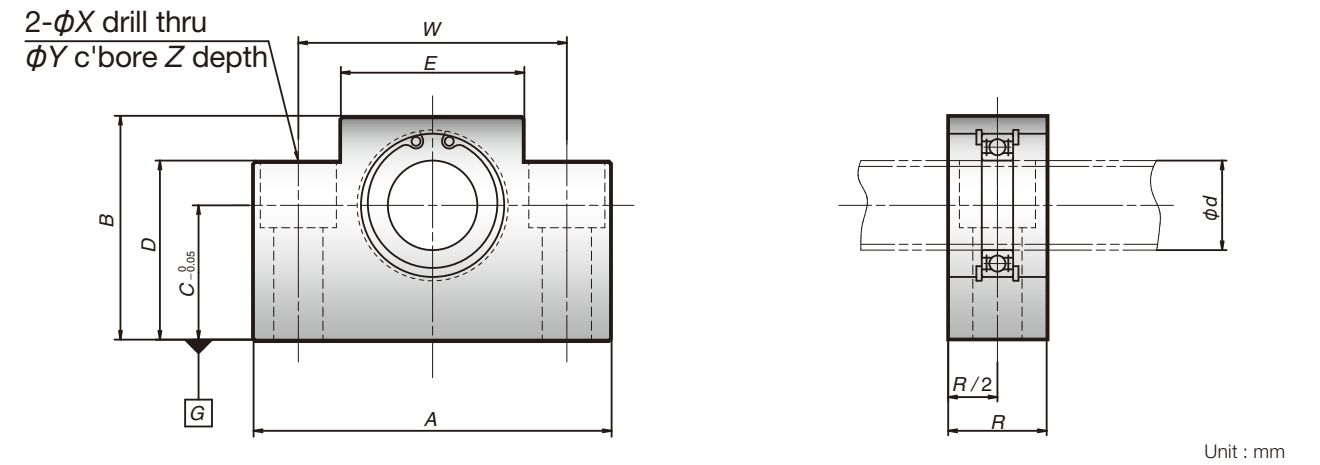
Simple support side support unit for FSS type



Unit : mm

Reference no.	d	A	B	C	R	Counterbore dimensions				Mass (kg)	Bearing reference no.	Axial direction basic dynamic load rating (N)
						W	X	Y	Z			
WBK12SF-01B	12	62	31	15.5	18	46	9	14	18	0.2	6801ZZ	1 920
WBK15SF-01B	15	70	38	20	18	52	9	14	19	0.3	6902ZZ	4 350
WBK20SF-01B	20	80	42	22	22	60	11	17	23	0.4	6804ZZ	4 000

Note 1. Use datum surface G for mounting to machine base.



Unit : mm

Reference no.	d	A	B	C	D	E	R	Counterbore dimensions				Mass (kg)	Bearing reference no.	Axial direction basic dynamic load rating (N)
								W	X	Y	Z			
WBK25SF-01	25	95	58	30	45	56	22	75	11	17	15	0.55	6005ZZ	10 100

Note 1. Use datum surface G for mounting to machine base.

Worldwide Sales Offices

NSK LTD.-HEADQUARTERS, TOKYO, JAPAN
 INDUSTRIAL MACHINERY BUSINESS DIVISION-HEADQUARTERS tel: 03-3779-7227
 GLOBAL AFTERMARKET DEPARTMENT tel: 03-3779-7253
 PRECISION MACHINERY DEPARTMENT tel: 03-3779-7163
 MECHATRONICS BUSINESS DEPARTMENT tel: 0466-21-3027
 AUTOMOTIVE BUSINESS DIVISION-HEADQUARTERS tel: 03-3779-7189

Africa
South Africa:
NSK SOUTH AFRICA (PTY) LTD.
 Johannesburg tel: 011-458-3600

Asia and Oceania
Australia:
NSK AUSTRALIA PTY. LTD.
 Melbourne tel: 03-9765-4400

China:
NSK HONG KONG LTD.
 Hong Kong tel: 02739-9933
 Shenzhen tel: 0755-25904886

KUNSHAN NSK CO., LTD.
 Kunshan tel: 0512-5771-5654

CHANGSHU NSK NEEDLE BEARING CO., LTD.
 Jiangsu tel: 0512-5230-1111

NSK STEERING SYSTEMS DONGGUAN CO., LTD.
 Dongguan tel: 0769-2262-0960

NSK (CHINA) RESEARCH & DEVELOPMENT CO., LTD.
 Jiangsu tel: 0512-5796-3000

NSK (SHANGHAI) TRADING CO., LTD.
 Jiangsu tel: 0512-5796-3000

NSK (CHINA) INVESTMENT CO., LTD.
 Jiangsu tel: 0512-5796-3000
 Beijing tel: 010-6590-8161
 Tian Jin tel: 022-8319-5030
 Changchun tel: 0431-8898-8682
 Shenyang tel: 024-2334-2868
 Dalian tel: 0411-8800-8168
 Nanjing tel: 025-8472-6671
 Fuzhou tel: 0591-8380-1030
 Wuhan tel: 027-8556-9630
 Qingdao tel: 0532-5568-3877
 Guangzhou tel: 020-3817-7800
 Changsha tel: 0731-8571-3100
 Luoyang tel: 0379-6069-6188
 Xi'an tel: 029-8765-1896
 Chongqing tel: 023-6806-5310
 Chengdu tel: 028-8528-3680

NSK CHINA SALES CO., LTD.
 Jiangsu tel: 0512-5796-3000

India:
RANE NSK STEERING SYSTEMS LTD.
 Chennai tel: 044-474-06017

NSK INDIA SALES CO. PVT. LTD.
 Chennai tel: 044-2847-9600
 Gurgaon tel: 0124-4104-530
 Kolkata tel: 033-4001-2062
 Mumbai tel: 022-2838-7787

NSK-ABC BEARINGS LTD.
 Chennai tel: 044-2714-3000

Indonesia:
PT. NSK INDONESIA
 Jakarta tel: 021-252-3458

Korea:
NSK KOREA CO., LTD.
 Seoul tel: 02-3287-0300
 Changwon tel: 055-287-6001

Malaysia:
NSK BEARINGS (MALAYSIA) SDN.BHD.
 Shah Alam tel: 03-7803-8859

New Zealand:
NSK NEW ZEALAND LTD.
 Auckland tel: 09-276-4992

Philippines:
NSK REPRESENTATIVE OFFICE
 Manila tel: 02-893-9543

Singapore:
NSK INTERNATIONAL (SINGAPORE) PTE LTD.
 Singapore tel: 6496-8000

NSK SINGAPORE (PRIVATE) LTD.
 Singapore tel: 6496-8000

Taiwan:
TAIWAN NSK PRECISION CO., LTD.
 Taipei tel: 02-2509-3305

TAIWAN NSK TECHNOLOGY CO., LTD.
 Taipei tel: 02-2509-3305

Thailand:
NSK BEARINGS (THAILAND) CO., LTD.
 Bangkok tel: 02320-2555

SIAM NSK STEERING SYSTEMS CO., LTD.
 Chachoengsao tel: 038-522-343

NSK ASIA PACIFIC TECHNOLOGY CENTER (THAILAND) CO., LTD.
 Chonburi tel: 038-454-631

Vietnam:
NSK VIETNAM CO., LTD.
 Hanoi tel: 04-3955-0159

NSK REPRESENTATIVE OFFICE
 Ho Chi Minh City tel: 08-3822-7907

Europe
NSK EUROPE LTD. (EUROPEAN HEADQUARTERS)
 Maidenhead tel: 01628-509-800

France:
NSK FRANCE S.A.S.
 Paris tel: 01-30-57-39-39

Germany:
NSK DEUTSCHLAND GMBH
 Düsseldorf tel: 02102-4810

Italy:
NSK ITALIA S.P.A.
 Milano tel: 0299-5191

Poland:
NSK EUROPE LTD. WARSAW LIAISON OFFICE
 Warsaw tel: 022-645-1525

NSK STEERING SYSTEMS EUROPE (POLSKA) SP.Z O.O.
 Walbrzych tel: 074-664-4101

NSK NEEDLE BEARING POLAND SP.Z O.O.
 Kielce tel: 041-345-2469

NSK POLSKA SP.Z O.O.
 Kielce tel: 041-347-5110

Spain:
NSK SPAIN S.A.
 Barcelona tel: 093-433-5775

Turkey:
NSK RULMANLARI ORTA DOGU TIC. LTD. STI.
 Istanbul tel: 0216-355-0398

United Kingdom:
NSK EUROPEAN TECHNOLOGY CENTRE
 Newark tel: 01636-605-123

NSK UK Ltd.
 Newark tel: 01636-605-123

North and South America
NSK AMERICAS, INC. (AMERICAN HEADQUARTERS)
 Ann Arbor tel: 734-913-7500

Argentina:
NSK ARGENTINA SRL
 Buenos Aires tel: 11-4704-5100

Brazil:
NSK BRASIL LTDA.
 São Paulo tel: 011-3269-4786

Canada:
NSK CANADA INC.
 Toronto tel: 905-890-0740

Mexico:
NSK RODAMIENTOS MEXICANA, S.A. DE C.V.
 Mexico City tel: 55-3682-2900

United States of America:
NSK CORPORATION
 Ann Arbor tel: 734-913-7500

NSK AMERICAN TECHNOLOGY CENTER
 Ann Arbor tel: 734-913-7500

NSK PRECISION AMERICA, INC.
 Franklin tel: 317-738-5000

NSK STEERING SYSTEMS AMERICA, INC.
 Bennington tel: 802-442-5448

NSK LATIN AMERICA, INC.
 Miami tel: 305-477-0605

<As of June 2012>

For the latest information, please refer to the NSK website.

www.nsk.com

NSK Ltd. has a basic policy not to export any products or technology designated as controlled items by export-related laws. When exporting the products in this brochure, the laws of the exporting country must be observed. Specifications are subject to change without notice and without any obligation on the part of the manufacturer. Every care has been taken to ensure the accuracy of the data contained in this brochure, but no liability can be accepted for any loss or damage suffered through errors or omissions. We will gratefully acknowledge any additions or corrections.

For more information about NSK products, please contact: _____

