



NSK STANDARD BALL SCREWS COMPACT FA SERIES

Quiet, high-speed operating performance.



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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

NSK STANDARD BALL SCREWS: COMPACT FA SERIES

Compact FA Series ball screws incorporate NSK's ball recirculation system and offer quiet, high-speed performance. In order to respond quickly to a wide range of needs, NSK offers quick-ship delivery on common sizes. These high-performing ball screws are ready for use in a variety of industries including: semiconductor manufacturing, medical equipment, factory automation and general industrial use.

The Compact FA Series includes the following types to meet your application requirements:

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

Features

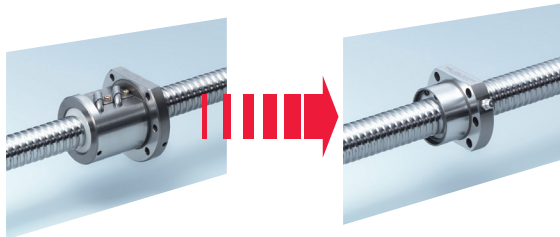
QUICK DELIVERY

Domestic manufacturing and comprehensive stocking program ensure quick-ship delivery and reduced shipping costs.

COMPACT BALL SCREW

The outside diameter of the ball nut is as much as 30% smaller than those of existing NSK products. Compact size enables all sorts of equipment and devices, such as linear stages, to be smaller. NSK has also designed low profile support units, specific for the Compact FA series, enabling a unique space-saving design.

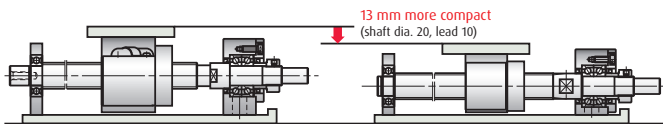
Shaft dia. 25 mm, lead 5 mm



Existing FA Series

Compact FA Series

Comparison of existing FA Series and Compact FA Series



13 mm more compact
(shaft dia. 20, lead 10)

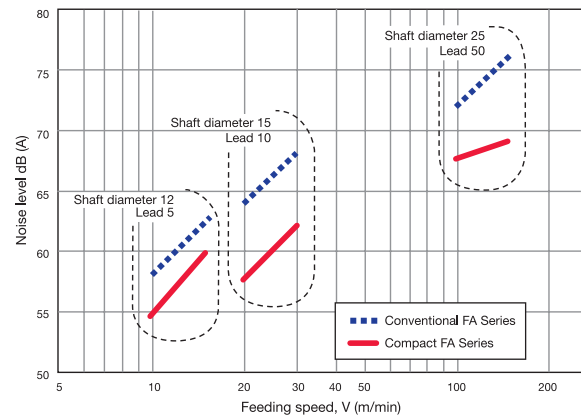


Existing support unit > New low-profile support unit

QUIET OPERATION

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

Noise data



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

HIGH-SPEED OPERATION

Speeds up to 5000 min⁻¹ dramatically expanding the range of service conditions.

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

GREASE FITTING PROVIDED AS STANDARD EQUIPMENT

Lubrication ports are provided in two locations to facilitate maintenance. The ball screws can be easily connected to an integrated lubrication system.

CONTACT SEAL

Compact, thin plastic seal is available to help minimize grease dispersion, maintain a clean work environment and reduce contamination entry.

COMPACT FA SERIES: PSS TYPE FOR GENERAL USE

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

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

SHAFT END SUPPORT

The low-profile support units are compatible with the Compact FA Series.

COMBINATIONS OF SHAFT DIAMETER, LEAD AND STROKE

Shaft dia.	Lead	50	100	150	200	300	400	500	600	700	800	1000	1200	1600	2000	Page
6	8			▲*												8-9
	12			▲*												
8	10			▲*												10-11
	15			▲*												
10	5	●	●		●	●	●									12-13
	10		●		●	●	●									
12	5	●	●		●	●	●	●								14-15
	10		●		●	●	●	●								
15	20		▲		▲	▲	▲	▲								16-19
	30		▲		▲	▲	▲	▲								
20	5	●	●		●	●	●	●	●	●	●	●				20-25
	10		●		●	●	●	●	●	●	●	●	●			
25	20		▲		▲	▲	▲	▲	▲	▲	▲	▲	▲	▲		26-31
	30		▲		▲	▲	▲	▲	▲	▲	▲	▲	▲	▲		
50	5			●	●	●	●	●	●	●	●	●	●	●	●	
	10			●	●	●	●	●	●	●	●	●	●	●	●	
100	20					●	●	●	●	●	●	●	●	●	●	
	30					●	●	●	●	●	●	●	●	●	●	
200	5															
	10															
500	20															
	30															

*For shaft diameter 6 and 8, length shown is overall length.

● Quick-ship delivery. ▲ Contact NSK for availability.

NSK PART NUMBERING FORMAT

PSS COMPACT FA PSS TYPE	15 SCREW SHAFT DIAMETER (MM)	05 LEAD (MM)	N1D NSK CONTROL NUMBER	0361 SCREW SHAFT LENGTH (MM)
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COMPACT FA SERIES: USS TYPE FOR HIGH-ACCURACY AND CLEAN ROOM USE

APPLICATIONS

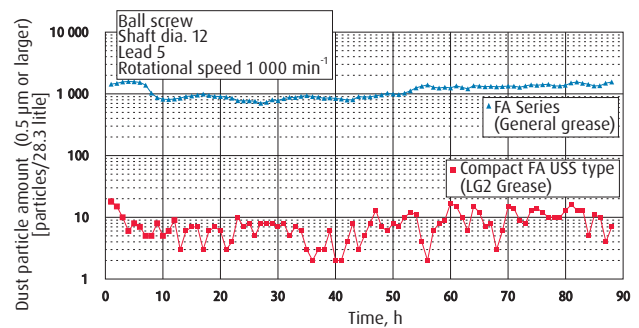
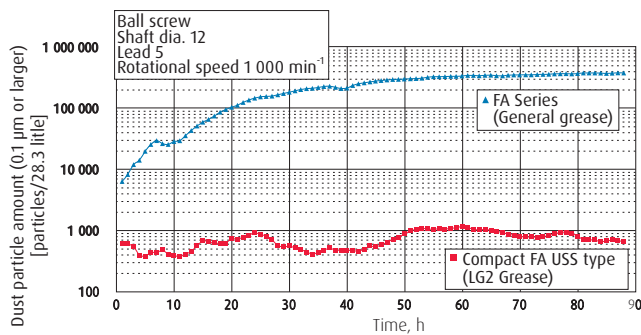
Semiconductor manufacturing equipment, LCD manufacturing equipment, and inspection equipment for clean room environments.

ACCURACY GRADE AND AXIAL PLAY

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

LOW-DUST EMISSION

- NSK LG2 clean grease is used as standard, dust particle generation is reduced to 1/100 as compared to conventional ball screws with standard grease.
- Ideal for clean room use



SHAFT END SUPPORT

Low-profile support units for clean environments are available.

COMBINATIONS OF SCREW SHAFT DIAMETER, LEAD AND STROKE

Shaft dia.	Lead	Stroke					Page
		100	200	400	500	600	
10	5	●	●	●			32-33
12		●	●		●		34-35
15		●	●	●		●	36-37

NSK PART NUMBERING FORMAT

USS COMPACT FA USS TYPE	15 SCREW SHAFT DIAMETER (MM)	05 LEAD (MM)	N1D NSK CONTROL NUMBER	0361 SCREW SHAFT LENGTH (MM)
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COMPACT FA SERIES: FSS TYPE FOR TRANSFER EQUIPMENT

APPLICATIONS

Transfer equipment used in industrial fields such as automotive, semiconductor, and medical equipment.

ACCURACY GRADE AND AXIAL PLAY

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

EASY STROKE SETTING

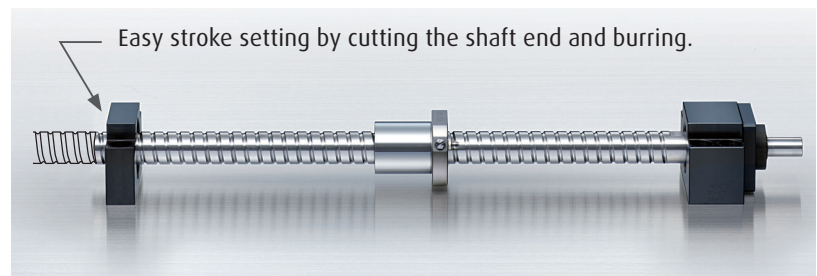
- Flexible stroke setting with fixed-simple support by means of mounting support unit (simple support side) directly to ball screw shaft outside diameter.
- Since corner cutting is not necessary, customers can cut ball screws, which results in reduced cost and lead time.
- NSK can cut shaft if requested. Contact NSK for more information.

PRECAUTIONS

- During the cutting process, be careful not to let metal particles or burrs fall inside the ball nut.
- 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 on the bearing bore.

SHAFT END SUPPORT

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



DESIGN PRECAUTIONS

Permissible rotational speed varies when using cut screw shaft. To determine permissible rotational speed, compare both items below. Use smaller number to determine 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	
		400	500	600	900	1 000		1 450
12	10	•		•	•			38-39
15	10		•			•	•	40-41
	20		•			•	•	
20	10			•		•	•	42-43
	20			•		•	•	
25	10			•		•	•	44-45
	20			•		•	•	
	25			•		•	•	

NSK PART NUMBERING FORMAT

FSS	15	10	N1D	1000
COMPACT FA FSS TYPE	SCREW SHAFT DIAMETER (MM)	LEAD (MM)	NSK CONTROL NUMBER	SCREW SHAFT LENGTH (MM)

PRECAUTIONS

DESIGN

- (1) If the left shaft end of a ball screw (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 NSK for detailed examination.
- (2) 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 or 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, contact NSK. We can perform inspection and repair if needed.
- (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 installed 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.

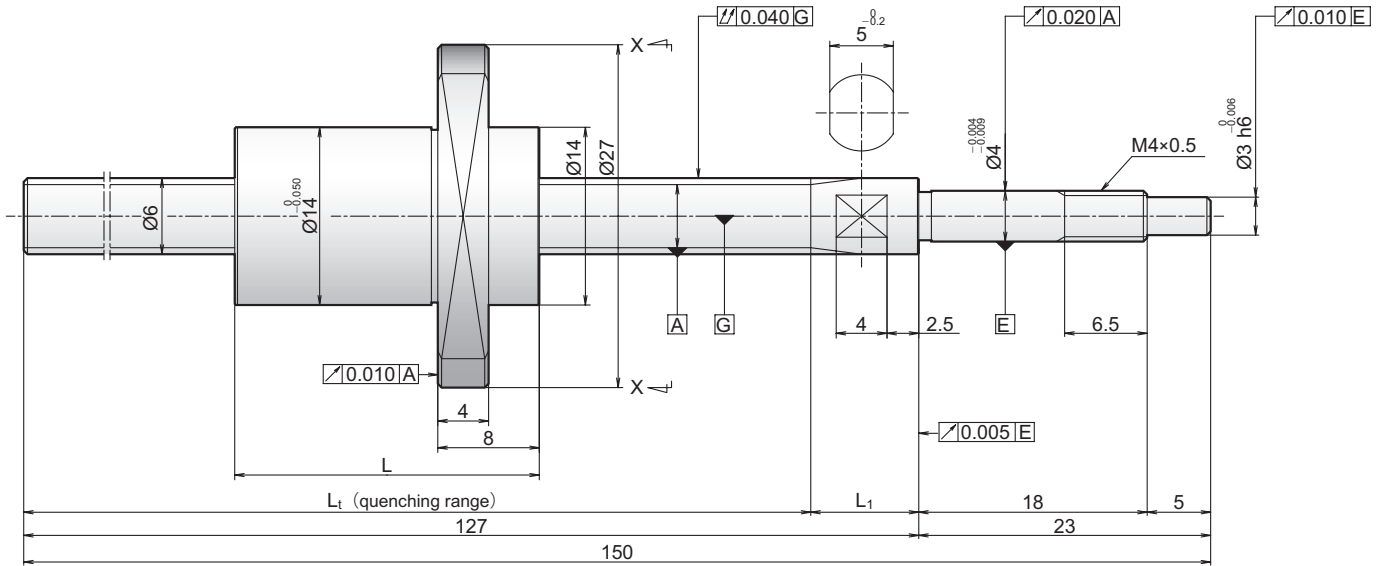


COMPACT FA SERIES OPTIONS

Consult with NSK for information regarding shaft end machining, reversing ball nut direction and other options.

COMPACT FA SERIES

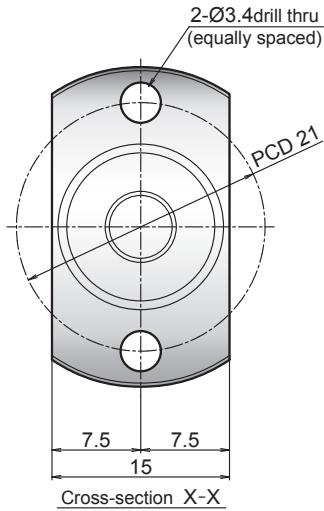
SCREW SHAFT DIAMETER 6 MM, LEAD 8 AND 12 MM



Reference no.	Screw shaft dia. d	Lead ℓ	Effective turns of balls	Basic load ratings (N)		Stroke max.	Nut length L	Screw shaft dimensions	
				Dynamic C_a	Static C_{0a}			L_1	L_2
PSS0608NAD0150	6	8	2	690	805	97.5	16	118.5	8.5
PSS0608NBD0150			4	1480	1940	89.5	24	118.5	8.5
PSS0612NAD0150		12	2	665	800	92.0	20	117.0	10.0
PSS0612NBD0150			4	1430	1970	80.0	32	117.0	10.0

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

PSS TYPE FOR GENERAL USE



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 46-47
WBK04-11M (round)	P 48-49

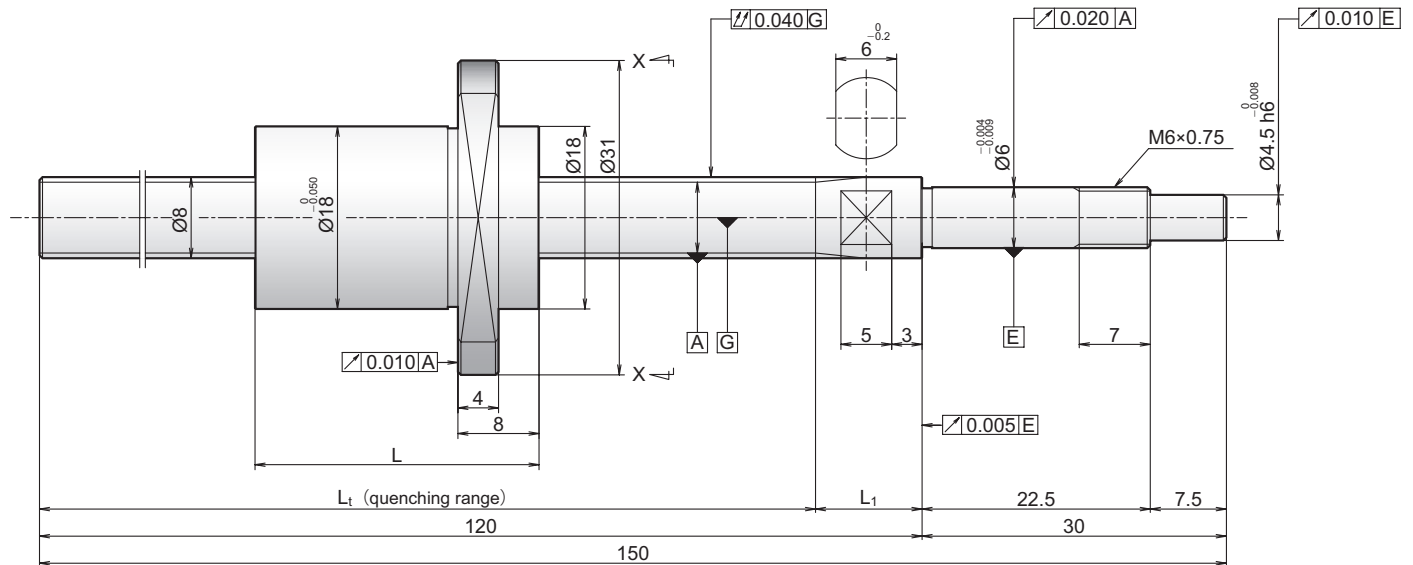
Unit : mm

Lead accuracy			Dynamic preload torque (N·cm)	Mass (kg)	Permissible rotational speed (min ⁻¹)	Internal spatial volume of nut (cm ³)	Standard volume of grease replenishing (cm ³)
Target value T	Error e _p	Variation V _u					
0	0.020	0.018	0.5 or less	0.06	5 000	0.2	0.1
				0.06		0.3	0.2
				0.06		0.2	0.1
				0.07		0.3	0.2

2. Service temperature range is 0 to 80°C.
3. Use of NSK support unit is recommended. Refer to pages 46 to 49 for details.

COMPACT FA SERIES

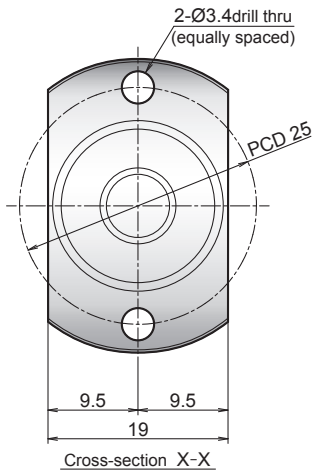
SCREW SHAFT DIAMETER 8 MM, LEAD 10 AND 15 MM



Reference no.	Screw shaft dia. d	Lead ℓ	Effective turns of balls	Basic load ratings (N)		Stroke max.	Nut length L	Screw shaft dimensions	
				Dynamic C_a	Static C_{0a}			L_1	L_2
PSS0810NAD0150	8	10	2	1 150	1 420	86.5	18	109.5	10.5
PSS0810NBD0150			4	2 470	3 430	76.5	28	109.5	10.5
PSS0815NAD0150		15	2	1 130	1 430	80.0	22	107.0	13.0
PSS0815NBD0150			4	2 410	3 520	65.0	37	107.0	13.0

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

PSS TYPE FOR GENERAL USE



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 46-47
WBK06-11M (round)	P 48-49

Unit : mm

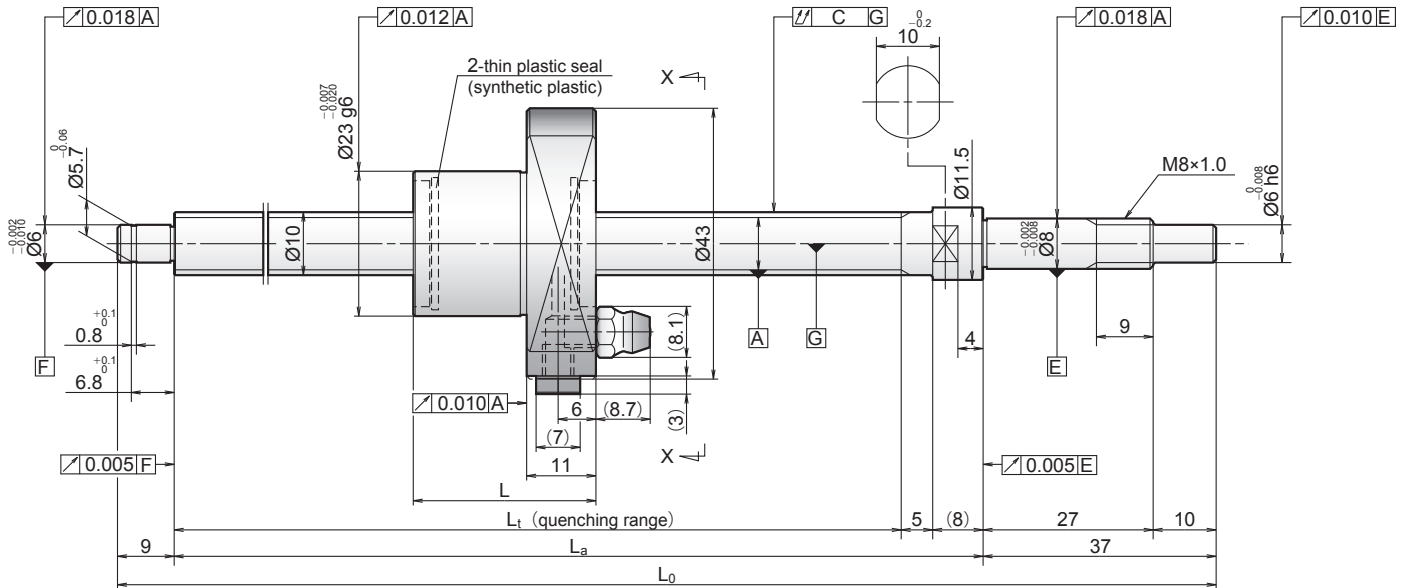
Lead accuracy			Dynamic preload torque (N·cm)	Mass (kg)	Permissible rotational speed (min ⁻¹) ¹	Internal spatial volume of nut (cm ³)	Standard volume of grease replenishing (cm ³)
Target value T	Error e _p	Variation V _u					
0	0.020	0.018	0.5 or less	0.09	5 000	0.4	0.2
				0.11		0.5	0.3
				0.10		0.4	0.2
				0.12		0.6	0.3

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

3. Use of NSK support unit is recommended. Refer to pages 46 to 49 for details.

COMPACT FA SERIES

SCREW SHAFT DIAMETER 10 MM, LEAD 5 AND 10 MM

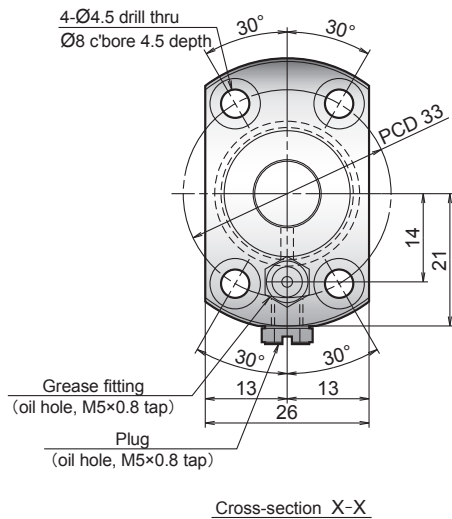


Reference no.	Screw shaft dia. d	Lead ℓ	Basic load ratings (N)		Stroke		Nut length L	Screw shaft dimensions		
			Dynamic C_a	Static C_{0a}	Nominal	Max. L_t-L		L_t	L_a	L_0
PSS1005N1D0171	10	5	3 420	4 840	50	83	29	112	125	171
PSS1005N1D0221					100	133		162	175	221
PSS1005N1D0321					200	233		262	275	321
PSS1005N1D0421					300	333		362	375	421
PSS1005N1D0521					400	433		462	475	521
PSS1010N1D0221	10	10	2 290	2 980	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.

PSS TYPE FOR GENERAL USE

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 46-47	WBK08S-01B (square, low)	P 50-51
WBK08-11 (round)	P 48-49	-	-
WBK08-11B (round, high-load)	P 48-49	-	-

Unit : mm

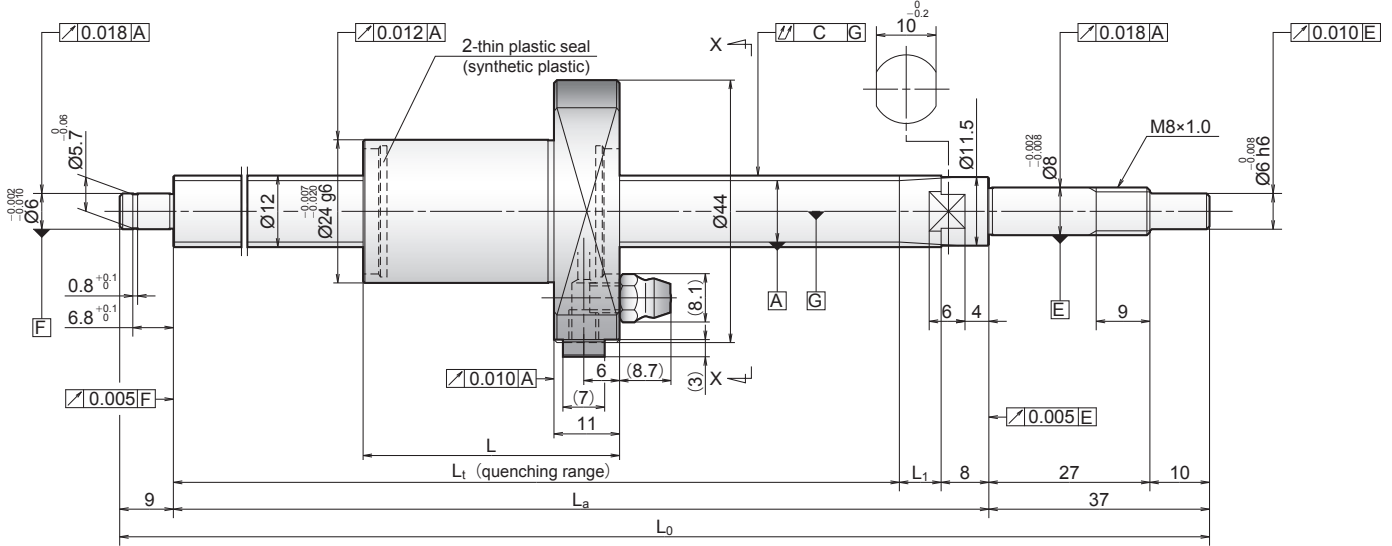
Target value T	Lead accuracy		Shaft run-out C	Dynamic preload torque (N·cm) ¹	Mass (kg)	Permissible rotational speed (min ⁻¹) ²	Internal spatial volume of nut (cm ³)	Standard volume of grease replenishing (cm ³)
	Error e _p	Variation V _u						
0	0.020	0.018	0.030	0.7 to 3.3	0.3	5 000	0.8	0.4
	0.020	0.018	0.045	0.7 to 3.3	0.3			
	0.023	0.018	0.060	0.6 to 4.3	0.3			
	0.025	0.020	0.070	0.6 to 4.3	0.4			
	0.027	0.020	0.085	0.4 to 4.9	0.5		0.7	
	0.020	0.018	0.045	0.7 to 3.3	0.3			
	0.023	0.018	0.060	0.6 to 4.3	0.4			
	0.025	0.020	0.070	0.6 to 4.3	0.4			
0.027	0.020	0.0850	0.4 to 4.9	0.5				

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

4. Use of NSK support unit is recommended. Refer to pages 46 to 51 for details.

COMPACT FA SERIES

SCREW SHAFT DIAMETER 12 MM, LEAD 5, 10, 20 AND 30 MM

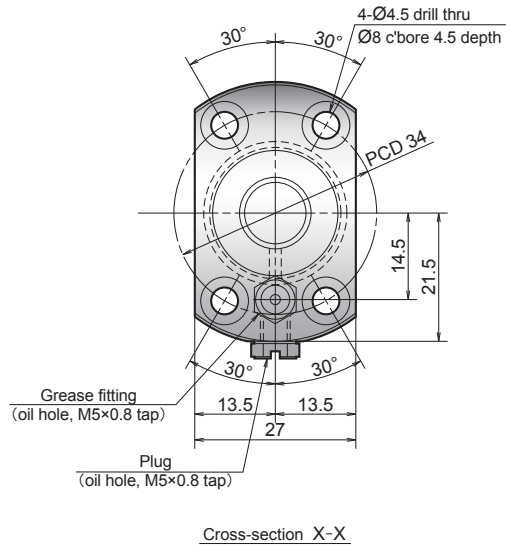


Reference no.	Screw shaft dia. d	Lead ℓ	Basic load ratings (N)		Stroke		Nut length L	Screw shaft dimensions			
			Dynamic C _a	Static C _{0a}	Nominal	Max. L ₁ -L		L _t	L _a	L ₀	L ₁
PSS1205N1D0171	12	5	3 750	5 810	50	80	30	110	125	171	7
PSS1205N1D0221					100	130		160	175	221	
PSS1205N1D0321					200	230		260	275	321	
PSS1205N1D0421					300	330		360	375	421	
PSS1205N1D0521					400	430		460	475	521	
PSS1205N1D0621					500	530		560	575	621	
PSS1210N1D0221		10	3 760	5 780	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	2 330		3 600	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	2 190	3 650	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			

- 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.

PSS TYPE FOR GENERAL USE

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 46-47	WBK08S-01B (square, low)	P 50-51
WBK08-11 (round)	P 48-49	-	-
WBK08-11B (round, high-load)	P 48-49	-	-

Unit : mm

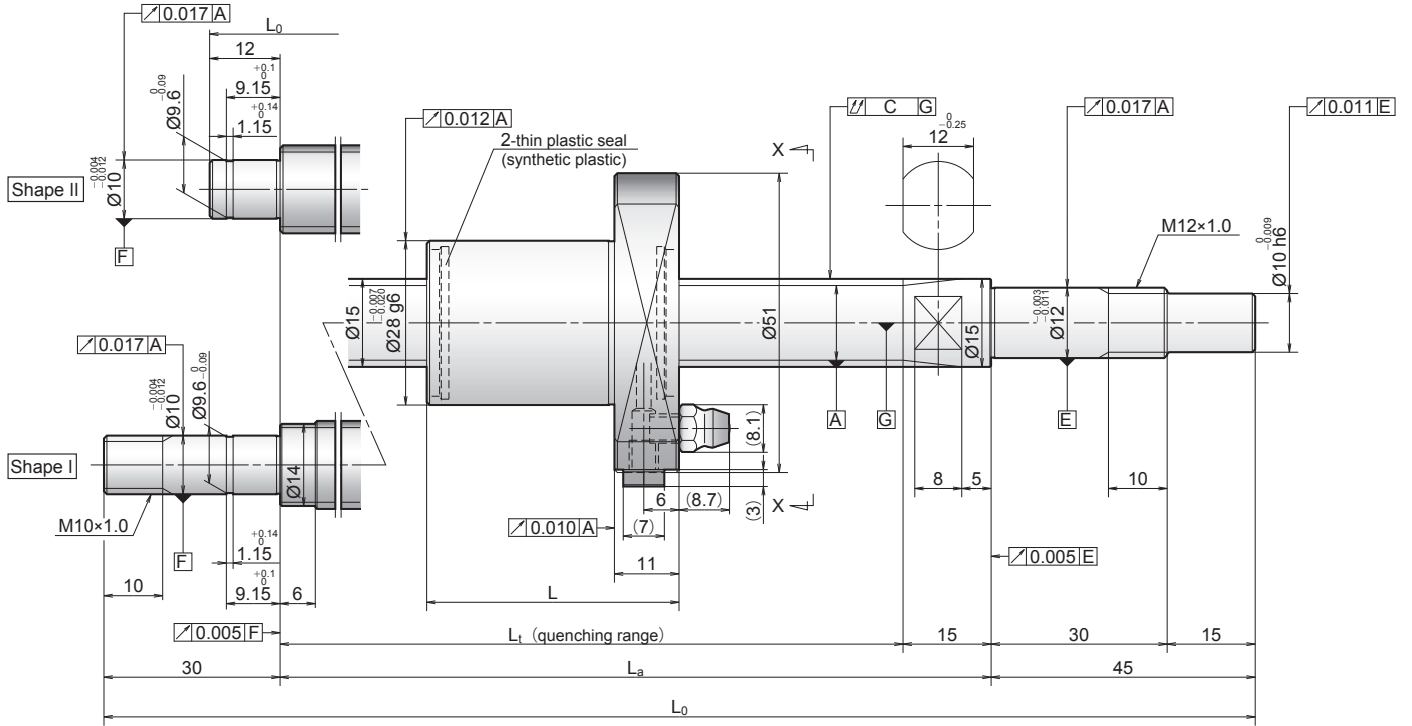
Target value T	Lead accuracy		Shaft run-out C	Dynamic preload torque (N·cm) ⁻¹	Mass (kg)	Permissible rotational speed (min ⁻¹) ²	Internal spatial volume of nut (cm ³)	Standard volume of grease replenishing (cm ³)		
	Error e _p	Variation V _u				Fixed-simple				
0	0.020	0.018	0.030	0.7 to 3.3	0.3	5 000	1.0	0.5		
	0.020	0.018	0.045	0.7 to 3.3	0.3					
	0.023	0.018	0.060	0.6 to 4.3	0.4					
	0.025	0.020	0.070	0.6 to 4.3	0.5					
	0.027	0.020	0.085	0.6 to 4.3	0.6					
	0.030	0.023	0.085	0.4 to 4.9	0.7					
	0.020	0.018	0.045	0.7 to 3.3	0.4	5 000	1.0	0.5		
	0.023	0.018	0.060	0.6 to 4.3	0.5					
	0.025	0.020	0.070	0.6 to 4.3	0.5					
	0.027	0.020	0.085	0.6 to 4.3	0.6					
	0.030	0.023	0.085	0.4 to 4.9	0.7					
	0.023	0.018	0.045	1.4 to 4.5	0.4				5 000	1.2
	0.023	0.018	0.060	0.9 to 4.9	0.5					
	0.027	0.020	0.070	0.9 to 4.9	0.6					
	0.030	0.023	0.085	0.6 to 5.9	0.7					
	0.030	0.023	0.110	0.6 to 5.9	0.8	4 200	5 000	1.5	0.8	
	0.023	0.018	0.045	1.4 to 4.5	0.5					
	0.023	0.018	0.060	0.9 to 4.9	0.6					
	0.027	0.020	0.070	0.9 to 4.9	0.7					
	0.030	0.023	0.085	0.6 to 5.9	0.7					
0.030	0.023	0.110	0.6 to 5.9	0.8						
0.023	0.018	0.045	1.4 to 4.5	0.5	5 000	1.5				0.8
0.023	0.018	0.060	0.9 to 4.9	0.6						
0.027	0.020	0.070	0.9 to 4.9	0.7	4 300	1.5	0.8			
0.030	0.023	0.085	0.6 to 5.9	0.7						
0.030	0.023	0.110	0.6 to 5.9	0.8	4 300	1.5	0.8			
0.023	0.018	0.045	1.4 to 4.5	0.5						

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

4. Use of NSK support unit is recommended. Refer to pages 46 to 51 for details.

COMPACT FA SERIES

SCREW SHAFT DIAMETER 15 MM, LEAD 5 AND 10 MM

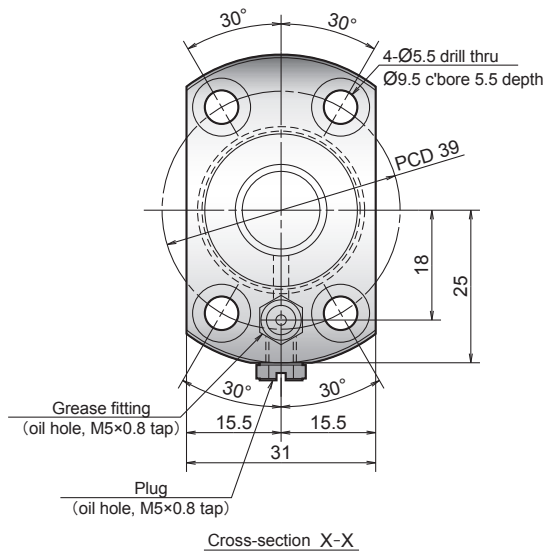


Reference no.	Screw shaft dia. d	Lead ℓ	Basic load ratings (N)		Stroke		Nut length L	Screw shaft dimensions		
			Dynamic C_a	Static C_{0a}	Nominal	Max. $L-L$		L_t	L_a	L_0
PSS1505N1D0211	15	5	6 410	10 100	50	109	30	139	154	211
PSS1505N1D0261					100	159		189	204	261
PSS1505N1D0361					200	259		289	304	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	6 530	10 200	100	146	43	189	204	261
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	

- 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.

PSS TYPE FOR GENERAL USE

Unit : 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 46-47	WBK10-01B (square, low) P 46-47	WBK12S-01B (square, low) P 50-51
WBK12-11 (round) P 48-49	WBK10-11 (round) P 48-49	-

Unit : mm

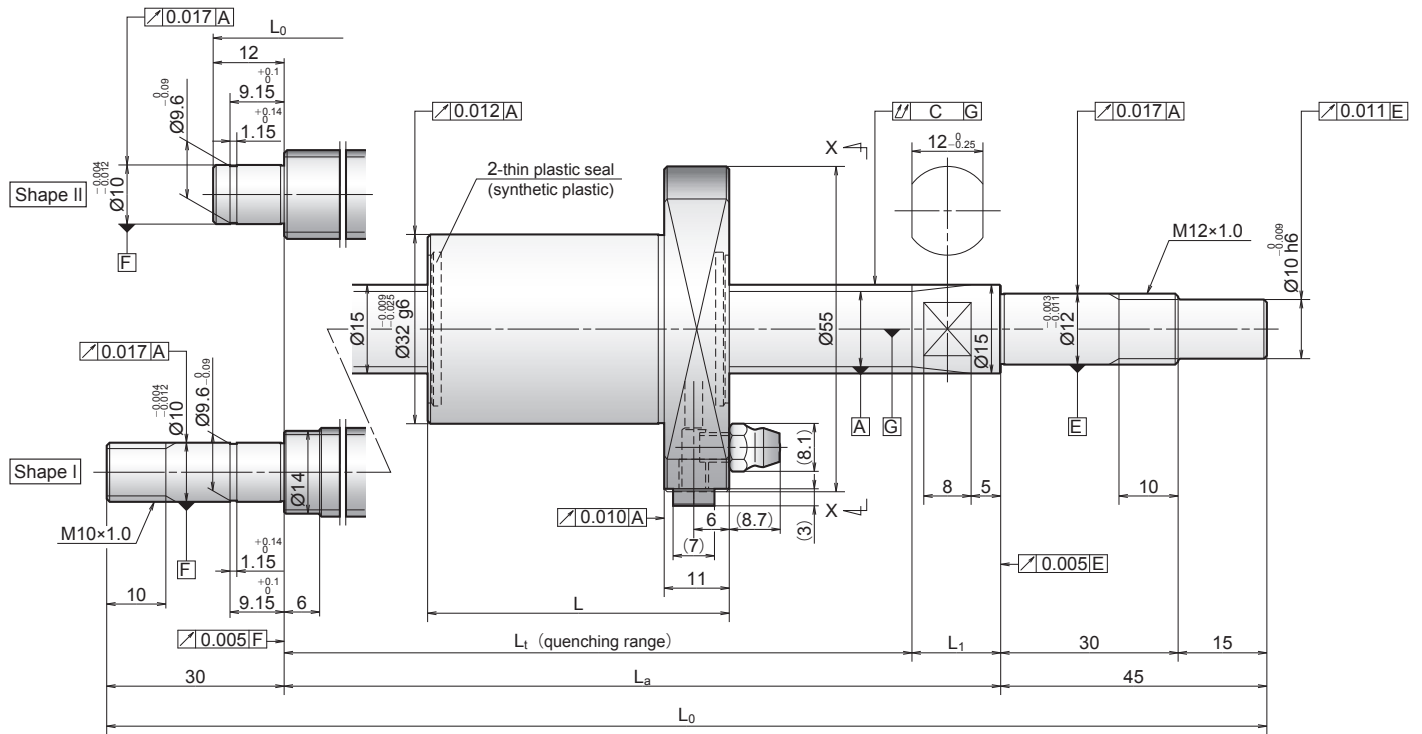
Left shaft end (opposite driven side)	Lead accuracy			Shaft run-out C	Dynamic preload torque (N·cm) ¹	Mass (kg)	Permissible rotational speed (min ⁻¹) ²		Internal spatial volume of nut (cm ³)	Standard volume of grease replenishing (cm ³)
	Target value T	Error e _p	Variation V _u				Fixed-simple	Fixed-Fixed		
II	0	0.020	0.018	0.035	0.2 to 6.9	0.5	5 000	-	2.0	1.0
		0.020	0.018	0.035	0.2 to 6.9	0.5				
		0.023	0.018	0.045	0.2 to 6.9	0.6				
		0.025	0.020	0.050	0.4 to 9.8	0.8				
		0.027	0.020	0.060	0.4 to 9.8	0.9				
		0.030	0.023	0.075	0.4 to 9.8	1.0				
0.035		0.025	0.075	0.4 to 11.8	1.1	3 600				
II		0.020	0.018	0.035	0.6 to 7.4	0.6	5 000	-		
		0.023	0.018	0.045	0.6 to 7.4	0.7				
		0.025	0.020	0.050	0.4 to 9.8	0.8				
		0.027	0.020	0.060	0.4 to 9.8	1.0				
		0.030	0.023	0.075	0.4 to 9.8	1.1				
I	0.035	0.025	0.075	0.4 to 11.8	1.2	3 600	3 400			
	0.035	0.025	0.095	0.4 to 11.8	1.4	2 700	3 400			
	0.040	0.027	0.095	0.4 to 11.8	1.5	2 200	3 400			
		0.046	0.03	0.120	0.4 to 11.8	1.7	1 400	2 300		

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

4. Use of NSK support unit is recommended. Refer to pages 46 to 51 for details.

COMPACT FA SERIES

SCREW SHAFT DIAMETER 15 MM, LEAD 20 AND 30 MM

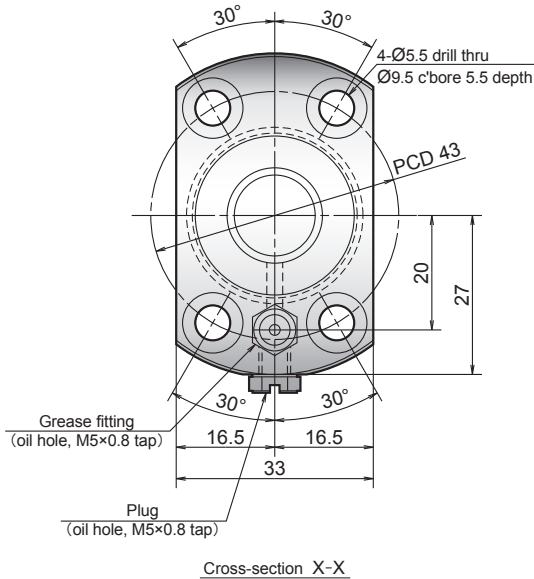


Reference no.	Screw shaft dia. d	Lead ℓ	Basic load ratings (N)		Stroke		Nut length L	Screw shaft dimensions			
			Dynamic C _a	Static C _{0a}	Nominal	Max. L ₁ -L		L ₁	L _a	L ₀	L ₁
PSS1520N1D0261	15	20	5 660	8 700	100	135	51	186	204	261	18
PSS1520N1D0361					200	235		286	304	361	
PSS1520N1D0461					300	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	30		5 500	8 580	100	
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				

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.

PSS TYPE FOR GENERAL USE

Unit : 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 46-47	WBK10-01B (square, low) P 46-47	WBK12S-01B (square, low) P 50-51
WBK12-11 (round) P 48-49	WBK10-11 (round) P 48-49	-

Unit : mm

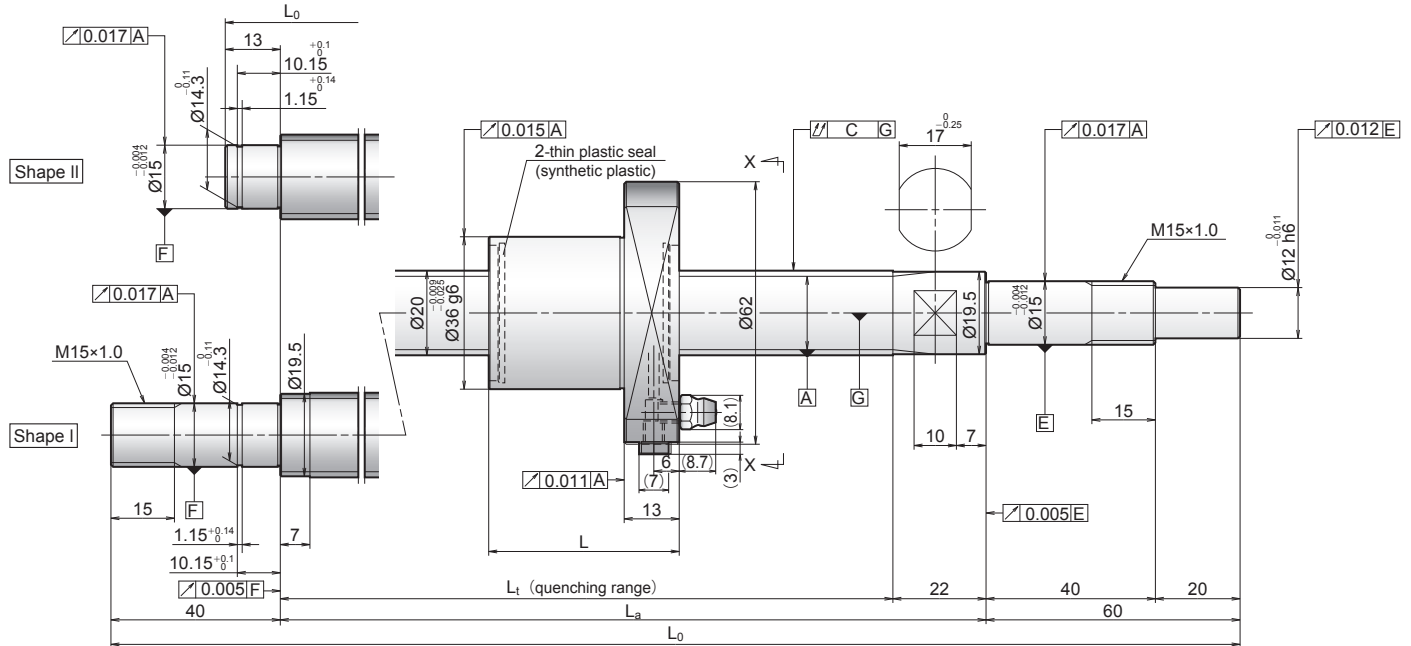
Left shaft end (opposite driven side)	Lead accuracy			Shaft run-out C	Dynamic preload torque (N·cm) ¹	Mass (kg)	Permissible rotational speed (min ⁻¹) ²		Internal spatial volume of nut (cm ³)	Standard volume of grease replenishing (cm ³)
	Target value T	Error e _p	Variation V _u				Fixed-simple	Fixed-Fixed		
II	0	0.020	0.018	0.035	0.8 to 8.8	0.7	5 000	-	2.8	1.4
		0.023	0.018	0.045	0.8 to 8.8	0.8				
		0.025	0.020	0.050	0.8 to 10.8	0.9				
		0.027	0.020	0.060	0.8 to 10.8	1.1				
		0.030	0.023	0.075	0.8 to 10.8	1.2				
0.035		0.025	0.075	0.8 to 13.8	1.3	3 700				
I		0.035	0.025	0.095	0.8 to 13.8	1.5	2 900	4 200		
		0.040	0.027	0.095	0.8 to 13.8	1.6	2 200	3 300		
		0.046	0.030	0.120	0.8 to 13.8	1.9	1 500	2 200		
II		0.023	0.018	0.035	1.2 to 9.3	0.8	5 000	-		
	0.025	0.020	0.050	0.8 to 10.8	1.0					
	0.027	0.020	0.060	0.8 to 10.8	1.1					
	0.030	0.023	0.060	0.8 to 10.8	1.2					
	0.030	0.023	0.075	0.8 to 13.8	1.4	4 500				
I	0.035	0.025	0.095	0.8 to 13.8	1.5	3 300				
	0.040	0.027	0.095	0.8 to 13.8	1.6	2 600	3 800			
	0.040	0.027	0.120	0.8 to 13.8	1.8	2 000	3 000			
	0.046	0.030	0.120	0.8 to 13.8	2.0	1 400	2 000			

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

4. Use of NSK support unit is recommended. Refer to pages 46 to 51 for details.

COMPACT FA SERIES

SCREW SHAFT DIAMETER 20 MM, LEAD 5 AND 10 MM

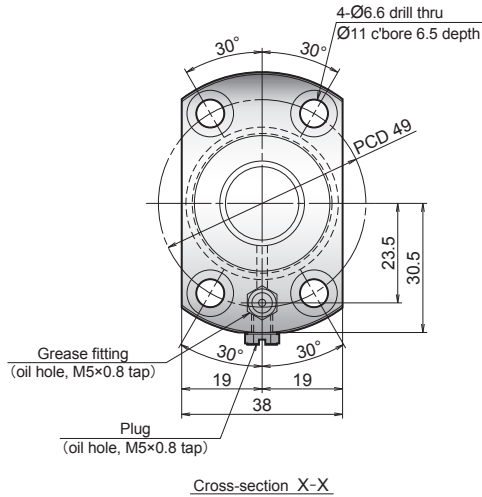


Reference no.	Screw shaft dia. d	Lead ℓ	Basic load ratings (N)		Stroke		Nut length L	Screw shaft dimensions						
			Dynamic C_a	Static C_{0a}	Nominal	Max. L_1-L		L_1	L_a	L_0				
PSS2005N1D0323	20	5	10 400	18 500	150	197	31	228	250	323				
PSS2005N1D0373					200	247		278	300	373				
PSS2005N1D0473					300	347		378	400	473				
PSS2005N1D0573					400	447		478	500	573				
PSS2005N1D0673					500	547		578	600	673				
PSS2005N1D0773					600	647		678	700	773				
PSS2005N1D0873					700	747		778	800	873				
PSS2005N1D1000					800	847		878	900	1000				
PSS2010N1D0387					10	10 200		18 600	200	247	45	292	314	387
PSS2010N1D0487									300	347		392	414	487
PSS2010N1D0587	400	447	492	514			587							
PSS2010N1D0687	500	547	592	614			687							
PSS2010N1D0787	600	647	692	714			787							
PSS2010N1D0887	700	747	792	814			887							
PSS2010N1D1014	800	847	892	914			1 014							
PSS2010N1D1214	1 000	1 047	1 092	1 114			1 214							
PSS2010N1D1414	1 200	1 247	1 292	1 314	1 414									

- 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.

PSS TYPE FOR GENERAL USE

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 46-47	WBK15-01B (square, low) P 46-47	WBK15S-01B (square, low) P 50
WBK15-11 (round) P 48-49	WBK15-11 (round) P 48-49	-

Unit : mm

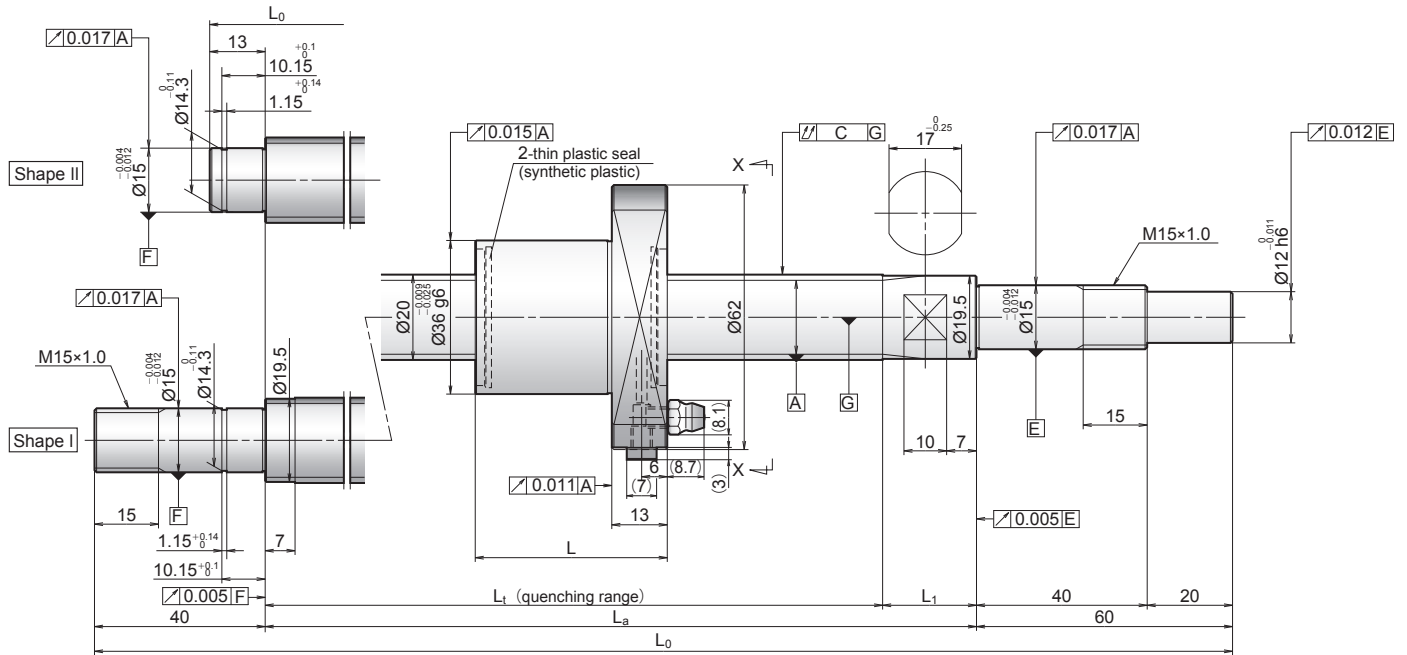
Left shaft end (opposite driven side)	Lead accuracy			Shaft run-out C	Dynamic preload torque (N·cm) ¹	Mass (kg)	Permissible rotational speed (min ⁻¹) ²		Internal spatial volume of nut (cm ³)	Standard volume of grease replenishing (cm ³)
	Target value T	Error e _p	Variation V _u				Fixed-simple	Fixed-Fixed		
II	0	0.023	0.018	0.045	0.6 to 7.4	1.0	5 000	-	3.4	1.7
		0.023	0.018	0.045	0.6 to 7.4	1.1				
		0.025	0.020	0.050	0.6 to 7.4	1.3				
		0.027	0.020	0.060	0.4 to 9.8	1.5				
		0.030	0.023	0.075	0.4 to 9.8	1.7				
		0.035	0.025	0.075	0.4 to 9.8	1.9				
I		0.035	0.025	0.095	0.4 to 9.8	2.2	4 000	4 700	3.2	1.6
		0.040	0.027	0.095	0.4 to 11.8	2.4	3 200			
II		0.023	0.018	0.045	1.2 to 9.3	1.2	5 000	-	3.2	1.6
		0.025	0.020	0.050	1.2 to 9.3	1.4				
		0.027	0.020	0.060	0.8 to 10.8	1.7				
		0.030	0.023	0.075	0.8 to 10.8	1.9				
	0.035	0.025	0.075	0.8 to 10.8	2.1					
I	0.035	0.025	0.095	0.8 to 10.8	2.4	4 000	4 600	3.2	1.6	
	0.040	0.027	0.120	0.8 to 13.8	2.6	3 100				
	0.046	0.030	0.120	0.8 to 13.8	3.1	2 100				3 100
	0.054	0.035	0.160	0.8 to 13.8	3.6	1 500	2 200			

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

4. Use of NSK support unit is recommended. Refer to pages 46 to 51 for details.

COMPACT FA SERIES

SCREW SHAFT DIAMETER 20 MM, LEAD 20 AND 30 MM

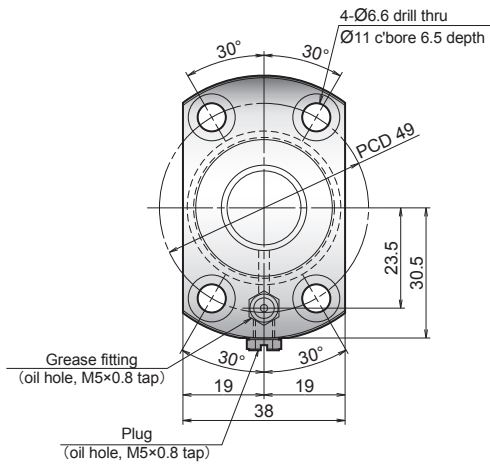


Reference no.	Screw shaft dia. d	Lead ℓ	Basic load ratings (N)		Stroke		Nut length L	Screw shaft dimensions									
			Dynamic C _a	Static C _{0a}	Nominal	Max. L ₁ -L		L ₁	L _a	L ₀	L ₁						
PSS2020N1D0508	20	20	6 790	11 800	300	359	54	413	435	508	22						
PSS2020N1D0608					400	459		513	535	608							
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		6 550	11 800	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										

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.

PSS TYPE FOR GENERAL USE

Unit : mm



Cross-section X-X

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 46-47	WBK15-01B (square, low) P 46-47	WBK15S-01B (square, low) P 50-51
WBK15-11 (round) P 48-49	WBK15-11 (round) P 48-49	-

Unit : mm

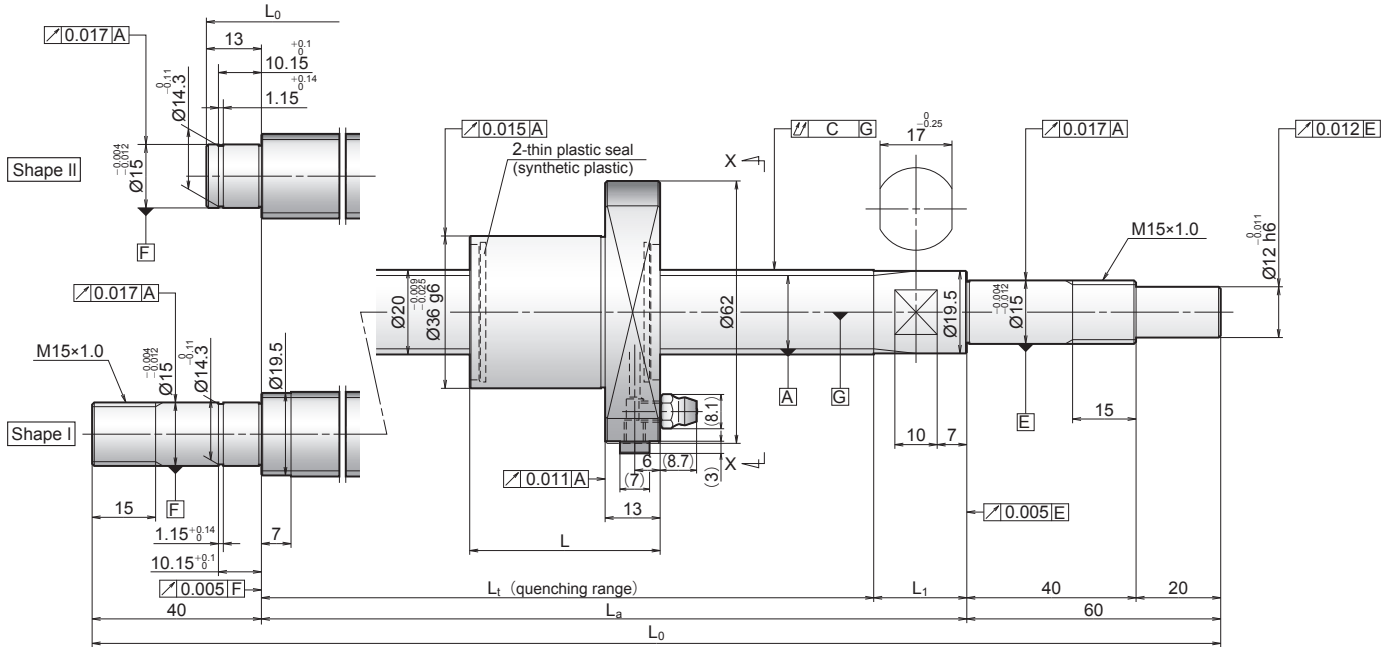
Left shaft end (opposite driven side)	Lead accuracy			Shaft run-out C	Dynamic preload torque (N·cm) ¹	Mass (kg)	Permissible rotational speed (min ⁻¹) ²		Internal spatial volume of nut (cm ³)	Standard volume of grease replenishing (cm ³)
	Target value T	Error e _p	Variation V _u				Fixed-simple	Fixed-Fixed		
II	0	0.027	0.020	0.060	1.4 to 11.8	1.6	5 000	-	3.2	1.6
		0.030	0.023	0.060	1.4 to 11.8	1.8				
		0.030	0.023	0.075	1.4 to 11.8	2.0				
		0.035	0.025	0.095	1.4 to 11.8	2.3				
		0.040	0.027	0.095	0.8 to 13.8	2.5				
I		0.040	0.027	0.120	0.8 to 13.8	2.8	3 000	4 500		
		0.046	0.030	0.120	0.8 to 13.8	3.3	2 000	3 000		
		0.054	0.035	0.160	0.8 to 13.8	3.8	1 400	2 100		
		0.065	0.040	0.200	0.8 to 13.8	4.7	800	1 200		
		II	0.023	0.018	0.050	1.6 to 9.8	1.4	5 000		
0.027	0.020		0.060	1.4 to 11.8	1.7					
0.030	0.023		0.060	1.4 to 11.8	1.9					
0.030	0.023		0.075	1.4 to 11.8	2.1					
0.035	0.025		0.095	1.4 to 11.8	2.4					
0.040	0.027		0.095	0.8 to 13.8	2.6	3 900				
I	0.040	0.027	0.120	0.8 to 13.8	2.9	3 100	4 600			
	0.046	0.030	0.120	0.8 to 13.8	3.4	2 100	3 000			
	0.054	0.035	0.160	0.8 to 13.8	3.9	1 500	2 200			

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

4. Use of NSK support unit is recommended. Refer to pages 46 to 51 for details.

COMPACT FA SERIES

SCREW SHAFT DIAMETER 20 MM, LEAD 40 AND 60 MM

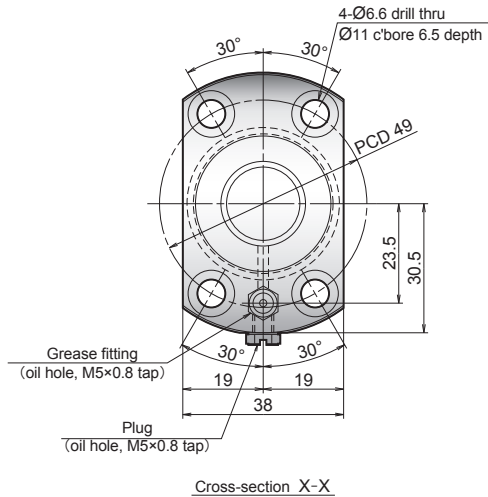


Reference no.	Screw shaft dia. d	Lead ℓ	Basic load ratings (N)		Stroke		Nut length L	Screw shaft dimensions									
			Dynamic C _a	Static C _{0a}	Nominal	Max. L ₁ -L		L ₁	L _a	L ₀	L ₁						
PSS2040N1D0658	20	40	6 380	11 600	400	461	92	553	585	658	32						
PSS2040N1D0758					500	561		653	685	758							
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	60		5 680	11 800	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										

- 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.

PSS TYPE FOR GENERAL USE

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 46-47	WBK15-01B (square, low) P 46-47	WBK15S-01B (square, low) P 50
WBK15-11 (round) P 48-49	WBK15-11 (round) P 48-49	-

Unit : mm

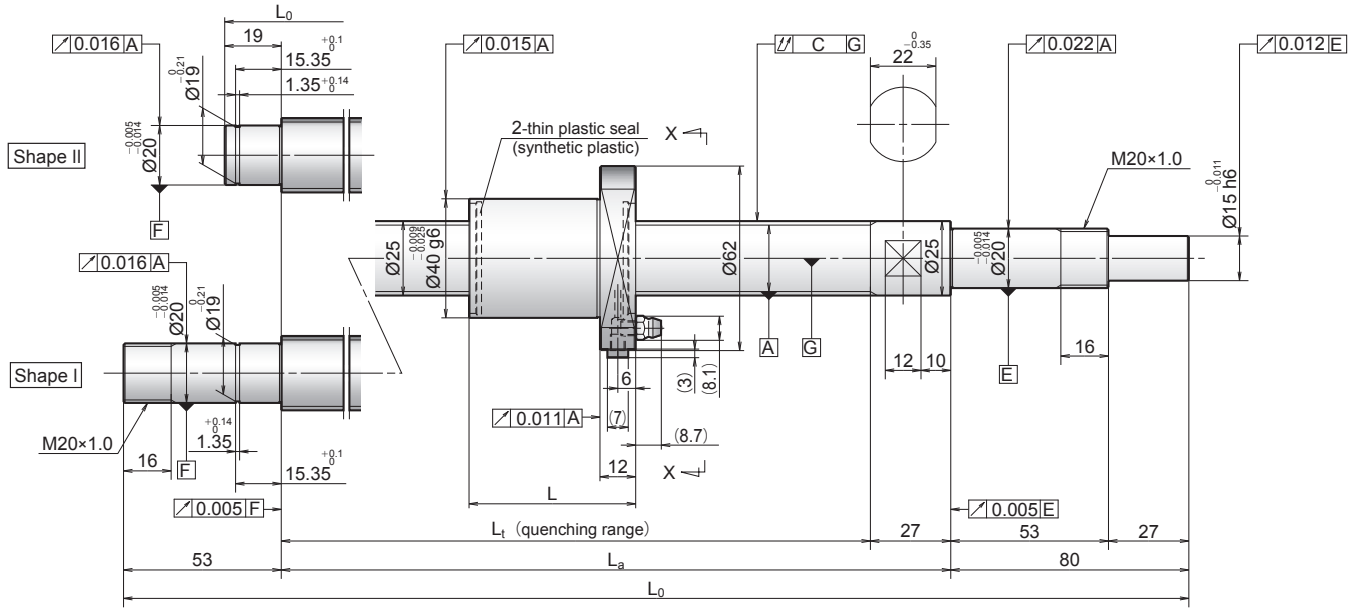
Left shaft end (opposite driven side)	Lead accuracy			Shaft run-out C	Dynamic preload torque (N·cm) ¹	Mass (kg)	Permissible rotational speed (min ⁻¹) ²		Internal spatial volume of nut (cm ³)	Standard volume of grease replenishing (cm ³)		
	Target value T	Error e _p	Variation V _u				Fixed-simple	Fixed-Fixed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

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

4. Use of NSK support unit is recommended. Refer to pages 46 to 51 for details.

COMPACT FA SERIES

SCREW SHAFT DIAMETER 25 MM, LEAD 5 AND 10 MM

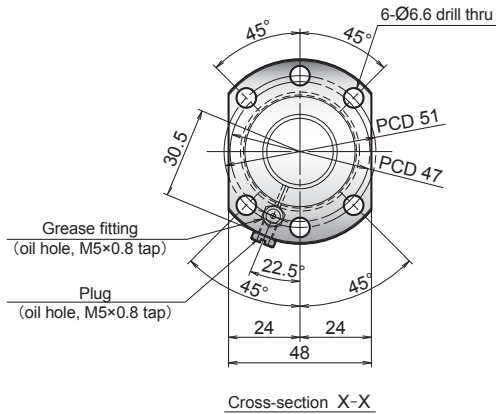


Reference no.	Screw shaft dia. d	Lead ℓ	Basic load ratings (N)		Stroke		Nut length L	Screw shaft dimensions		
			Dynamic C_a	Static C_{0a}	Nominal	Max. $L-L$		L_t	L_a	L_0
PSS2505N1D0349	25	5	11 500	23 500	150	191	32	223	250	349
PSS2505N1D0399					200	241		273	300	399
PSS2505N1D0499					300	341		373	400	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	15 000		32 400	300	367
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			

- 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.

PSS TYPE FOR GENERAL USE

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 46-47	WBK20-01 (square) P 46-47	WBK20S-01 (square) P 50
WBK20-11 (round) P 48-49	WBK20-11 (round) P 48-49	-

Unit : mm

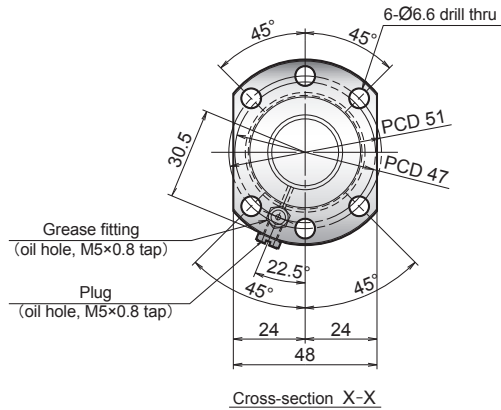
Left shaft end (opposite driven side)	Lead accuracy			Shaft run-out C	Dynamic preload torque (N-cm) ¹	Mass (kg)	Permissible rotational speed (min ⁻¹) ²		Internal spatial volume of nut (cm ³)	Standard volume of grease replenishing (cm ³)
	Target value T	Error e _p	Variation V _u				Fixed-simple	Fixed-Fixed		
II	0	0.023	0.018	0.035	1.2 to 9.3	1.5	5 000	-	4.4	2.2
		0.023	0.018	0.035	1.2 to 9.3	1.6				
		0.025	0.020	0.040	1.2 to 9.3	2.0				
		0.027	0.020	0.045	1.2 to 9.3	2.3				
		0.030	0.023	0.055	0.8 to 10.8	2.7				
		0.035	0.025	0.065	0.8 to 10.8	3.4				
I		0.040	0.027	0.065	0.8 to 10.8	3.7	4 100	4 000	4.4	2.2
		0.046	0.030	0.080	0.8 to 13.8	4.5	2 700			
II		0.027	0.020	0.045	3.1 to 11.8	2.4	5000	-	4.7	2.4
		0.030	0.023	0.055	2.2 to 12.8	2.7				
		0.030	0.023	0.055	2.2 to 12.8	3.1				
		0.035	0.025	0.065	2.2 to 12.8	3.5				
	0.040	0.027	0.065	2.2 to 12.8	3.8					
I	0.040	0.027	0.080	2.2 to 12.8	4.2	3 600	3 700	4.7	2.4	
	0.046	0.030	0.100	1.8 to 14.8	5.0	2 500				
	0.065	0.040	0.130	1.8 to 14.8	7.2	1 000				1 600

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

4. Use of NSK support unit is recommended. Refer to pages 46 to 51 for details.

PSS TYPE FOR GENERAL USE

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 46-47	WBK20-01 (square)	P 46-47	WBK20S-01 (square)	P 50
WBK20-11 (round)	P 48-49	WBK20-11 (round)	P 48-49	-	-

Unit : mm

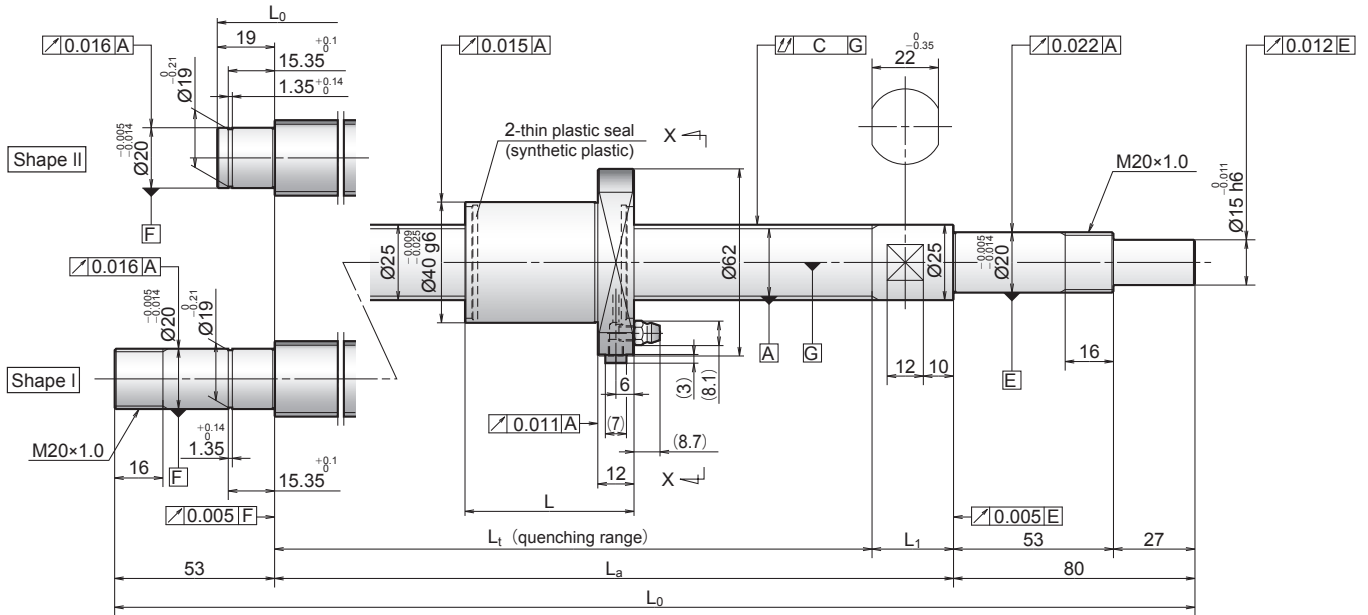
Left shaft end (opposite driven side)	Lead accuracy			Shaft run-out C	Dynamic preload torque (N·cm) ¹	Mass (kg)	Permissible rotational speed (min ⁻¹) ²		Internal spatial volume of nut (cm ³)	Standard volume of grease replenishing (cm ³)	
	Target value T	Error e _p	Variation V _u				Fixed-simple	Fixed-Fixed			
II	0	0.030	0.023	0.055	2.2 to 12.8	3.1	5 000	-	3.9	2.0	
		0.035	0.025	0.065	2.2 to 12.8	3.4					
		0.040	0.027	0.065	2.2 to 12.8	3.8					
		0.040	0.027	0.080	2.2 to 12.8	4.2					
I		0.046	0.030	0.100	1.8 to 14.8	5.0	2 600	3 800			
		0.054	0.035	0.100	1.8 to 14.8	5.8	1 800	2 700			
		0.065	0.040	0.130	1.8 to 14.8	7.3	1 100	1 600			
		0.077	0.046	0.170	1.8 to 14.8	8.8	700	1 000			
II		0.035	0.025	0.055	2.7 to 13.8	3.3	5 000	-	4.3	2.2	
		0.035	0.025	0.065	2.7 to 13.8	3.7					
		0.040	0.027	0.065	2.7 to 13.8	4.1					4 300
		0.040	0.027	0.080	2.7 to 13.8	4.4					3 400
I	0.046	0.030	0.100	1.8 to 14.8	5.3	2 300	3 500				
	0.054	0.035	0.100	1.8 to 14.8	6.0	1 700	2 600				
	0.065	0.040	0.130	1.8 to 14.8	7.5	1 000	1 500				
	0.077	0.046	0.170	1.8 to 14.8	9.1	700	1 000				

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

4. Use of NSK support unit is recommended. Refer to pages 46 to 51 for details.

COMPACT FA SERIES

SCREW SHAFT DIAMETER 25 MM, LEAD 30 AND 50 MM

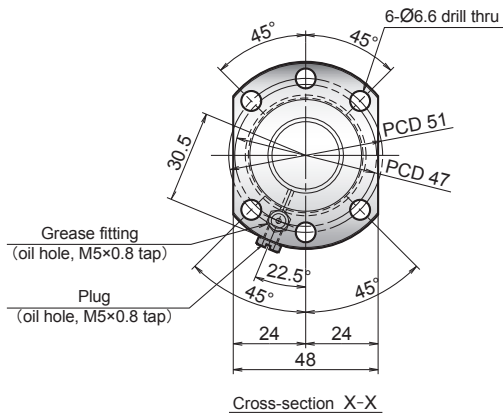


Reference no.	Screw shaft dia. d	Lead ℓ	Basic load ratings (N)		Stroke		Nut length L	Screw shaft dimensions								
			Dynamic C_a	Static C_{0a}	Nominal	Max. $L-L$		L_t	L_a	L_0	L_1					
PSS2530N1D0779	25	30	7 490	14 600	500	576	74	650	680	779	30					
PSS2530N1D0879					600	676		750	780	879						
PSS2530N1D0979					700	776		850	880	979						
PSS2530N1D1079					800	876		950	980	1 079						
PSS2530N1D1313					1 000	1 076		1 150	1 180	1 313						
PSS2530N1D1513					1 200	1 276		1 350	1 380	1 513						
PSS2530N1D1913					1 600	1 676		1 750	1 780	1 913						
PSS2530N1D2313					2 000	2 076		2 150	2 180	2 313						
PSS2550N1D0829					50	6 910		14 700	500	576		114	690	730	829	40
PSS2550N1D0929									600	676			790	830	929	
PSS2550N1D1029									700	776			890	930	1 029	
PSS2550N1D1129									800	876			990	1 030	1 129	
PSS2550N1D1363									1 000	1 076			1 190	1 230	1 363	
PSS2550N1D1563									1 200	1 276			1 390	1 430	1 563	
PSS2550N1D1963	1 600	1 676	1 790	1 830			1 963									
PSS2550N1D2363	2 000	2 076	2 190	2 230			2 363									

- 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.

PSS TYPE FOR GENERAL USE

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 46-47	WBK20-01 (square) P 46-47	WBK20S-01 (square) P 50
WBK20-11 (round) P 48-49	WBK20-11 (round) P 48-49	-

Unit : mm

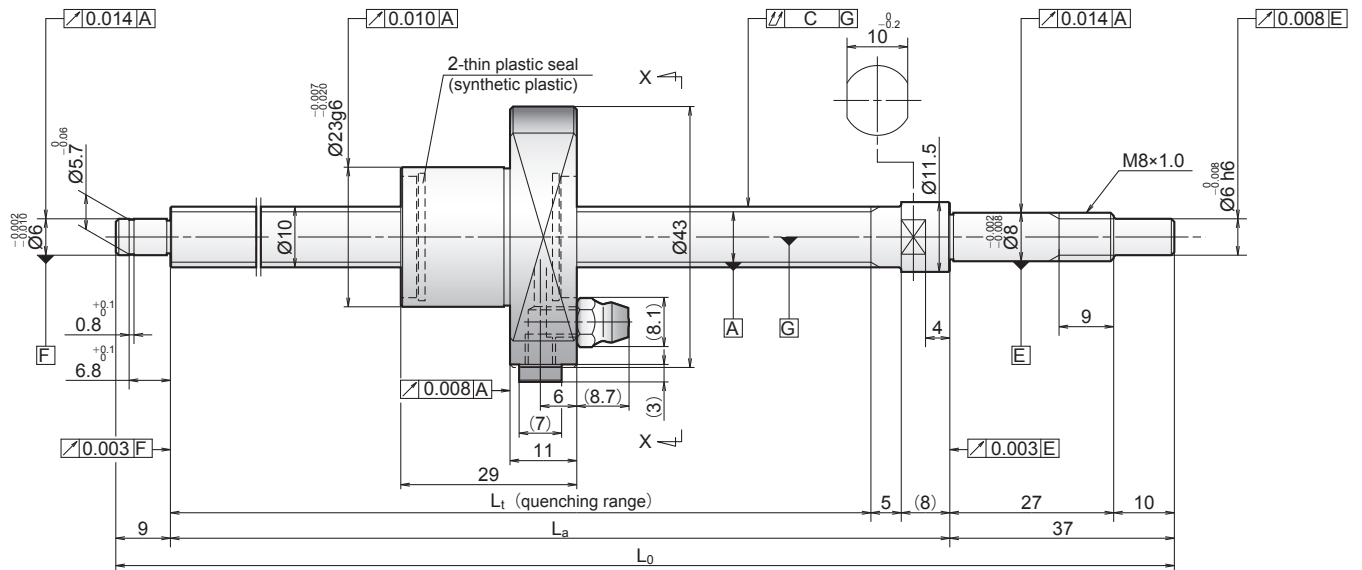
Left shaft end (opposite driven side)	Lead accuracy			Shaft run-out C	Dynamic preload torque (N·cm) ¹	Mass (kg)	Permissible rotational speed (min ⁻¹) ²		Internal spatial volume of nut (cm ³)	Standard volume of grease replenishing (cm ³)		
	Target value T	Error e _p	Variation V _u				Fixed-simple	Fixed-Fixed				
II	0	0.035	0.025	0.055	2.7 to 13.8	3.4	5 000	-	5.5	2.8		
		0.035	0.025	0.065	2.7 to 13.8	3.7						
		0.040	0.027	0.065	2.7 to 13.8	4.1						
		0.040	0.027	0.080	2.7 to 13.8	4.5						
I		0.046	0.030	0.100	1.8 to 14.8	5.3	2 300	3 600				
		0.054	0.035	0.100	1.8 to 14.8	6.1	1 700	2 600				
		0.065	0.040	0.130	1.8 to 14.8	7.6	1 000	1 500				
		0.077	0.046	0.170	1.8 to 14.8	9.1	700	1 000				
II		0.035	0.025	0.065	5.4 to 17.6	3.8	5 000	-			7.7	3.9
		0.035	0.025	0.065	5.4 to 17.6	4.1	4 800					
		0.040	0.027	0.080	5.4 to 17.6	4.5	3 800					
		0.040	0.027	0.080	5.4 to 17.6	4.9	3 100					
I	0.046	0.030	0.100	4.1 to 19.6	5.8	2 200	3 400					
	0.054	0.035	0.100	4.1 to 19.6	6.5	1 600	2 500					
	0.065	0.040	0.130	4.1 to 19.6	8.0	900	1 500					
	0.077	0.046	0.170	4.1 to 19.6	9.6	600	1 000					

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

4. Use of NSK support unit is recommended. Refer to pages 46 to 51 for details.

COMPACT FA SERIES

SCREW SHAFT DIAMETER 10 MM, LEAD 5 MM

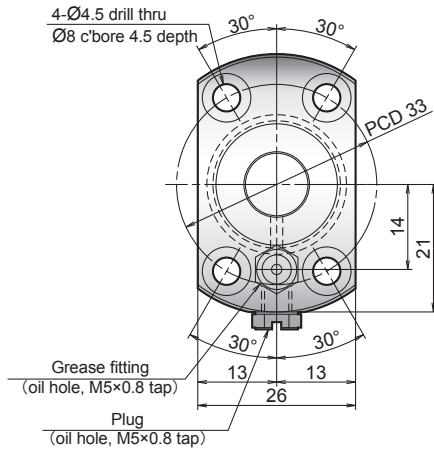


Reference no.	Screw shaft dia. d	Lead l	Basic load ratings (N)		Stroke		Screw shaft dimensions		
			Dynamic C_a	Static C_{0a}	Nominal	Max. L_1-L	L_1	L_a	L_0
USS1005N1D0221	10	5	3 420	4 840	100	133	162	175	221
USS1005N1D0321					200	233	262	275	321
USS1005N1D0521					400	433	462	475	521

- 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.

USS TYPE FOR HIGH-ACCURACY AND CLEAN ROOM USE

Unit : mm



Cross-section X-X

Ball screw specification

Shaft dia.	Ø10
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 46-47	WBK08S-01B (square, low)	P 50
WBK08-11 (round)	P 48-49	WBK08S-01C (square, clean)	P 50
WBK08-01C (square, clean)	P 46-47	-	-
WBK08-11C (round, clean)	P 48-49	-	-

Unit : mm

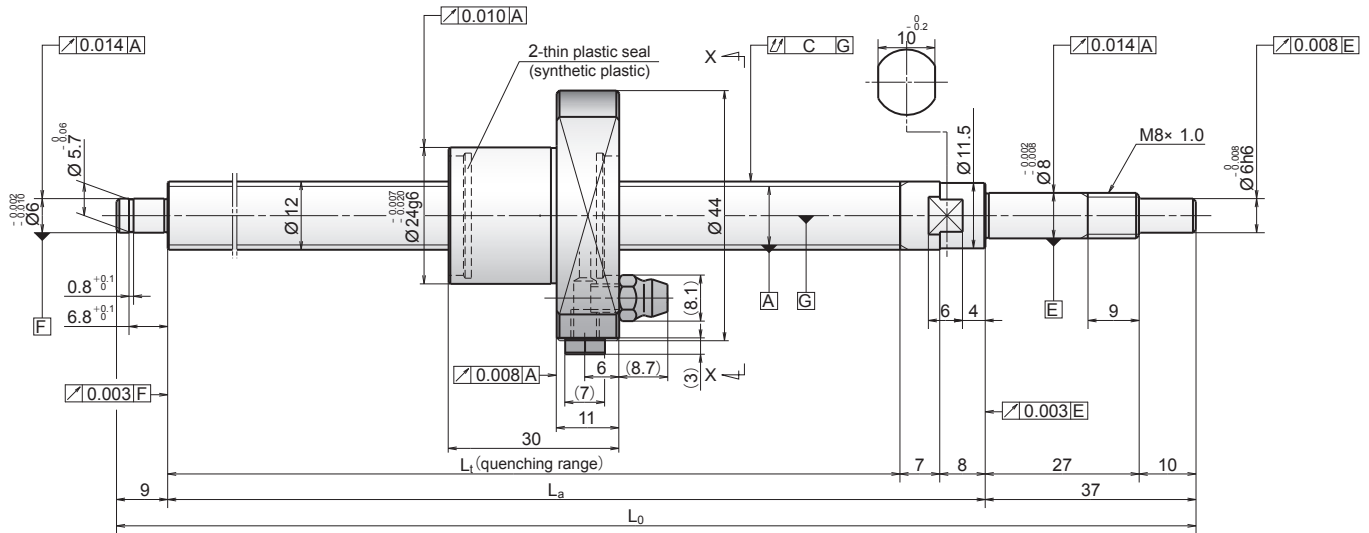
Lead accuracy			Shaft run-out C	Dynamic preload torque (N·cm) ¹⁾	Mass (kg)	Permissible rotational speed (min ⁻¹) ²⁾	Internal spatial volume of nut (cm ³)	Standard volume of grease replenishing (cm ³)
Target value T	Error e _p	Variation V _u				Fixed-simple		
0	0.010	0.008	0.035	0.2 to 1.8	0.3	5 000	0.8	0.4
	0.012	0.008	0.045	0.2 to 2.0	0.3			
	0.015	0.010	0.070	0.2 to 3.0	0.5			

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

4. Use of NSK support unit is recommended. Refer to pages 46 to 50 for details.

COMPACT FA SERIES

SCREW SHAFT DIAMETER 12 MM, LEAD 5 MM

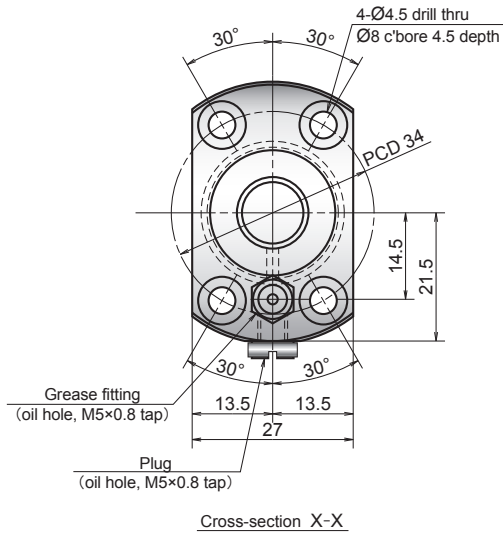


Reference no.	Screw shaft dia. d	Lead l	Basic load ratings (N)		Stroke		Screw shaft dimensions		
			Dynamic C_a	Static C_{0a}	Nominal	Max. L_L-L	L_L	L_a	L_0
USS1205N1D0221	12	5	3 750	5 810	100	130	160	175	221
USS1205N1D0321					200	230	260	275	321
USS1205N1D0621					500	530	560	575	621

- 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.

USS TYPE FOR HIGH-ACCURACY AND CLEAN ROOM USE

Unit : mm



Ball screw specification

Shaft dia.	Ø12
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 46-47	WBK08S-01B (square, low)	P 50
WBK08-11 (round)	P 48-49	WBK08S-01C (square, clean)	P 50
WBK08-01C (square, clean)	P 46-47	-	-
WBK08-11C (round, clean)	P 48-49	-	-

Unit : mm

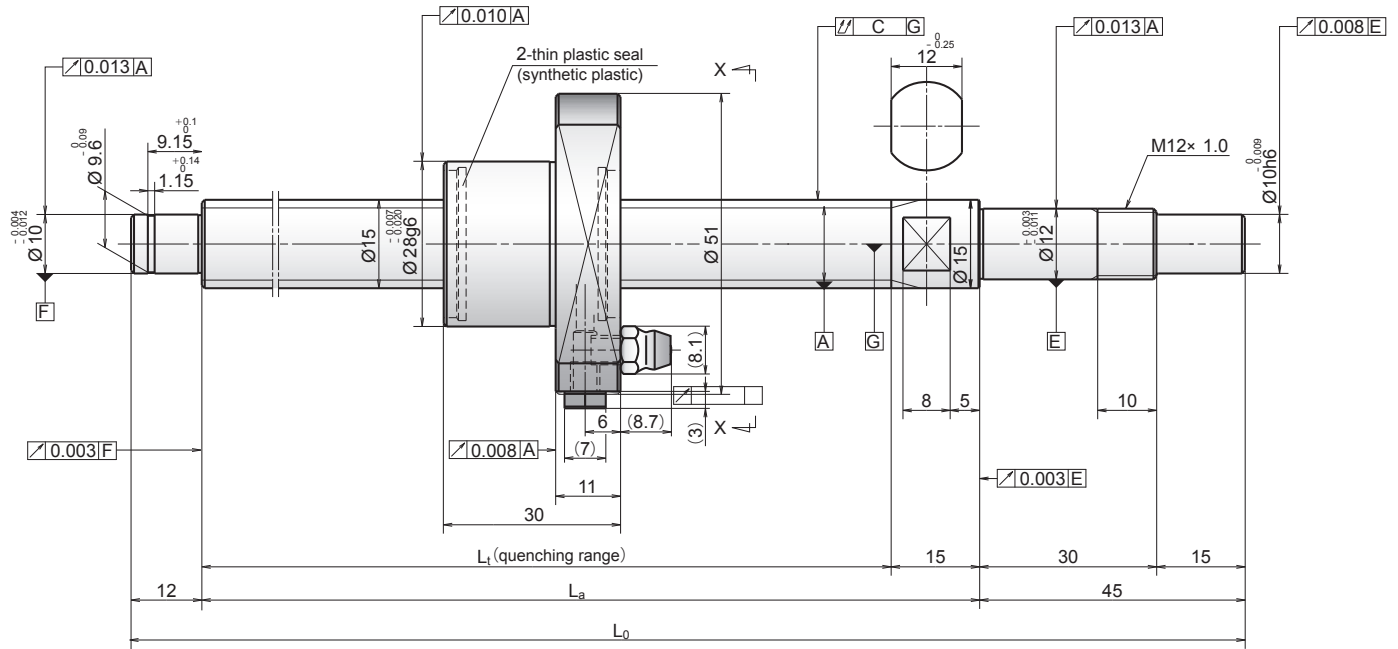
Target value T	Lead accuracy		Shaft run-out C	Dynamic preload torque (N·cm) ⁻¹	Mass (kg)	Permissible rotational speed (min ⁻¹) ⁻²	Internal spatial volume of nut (cm ³)	Standard volume of grease replenishing (cm ³)
	Error e _p	Variation V _u				Fixed-simple		
0	0.010	0.008	0.035	0.2 to 1.8	0.3	5 000	1	0.5
	0.012	0.008	0.045	0.2 to 2.0	0.3			
	0.016	0.012	0.070	0.2 to 3.0	0.7			

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

4. Use of NSK support unit is recommended. Refer to pages 46 to 50 for details.

COMPACT FA SERIES

SCREW SHAFT DIAMETER 15 MM, LEAD 5 MM

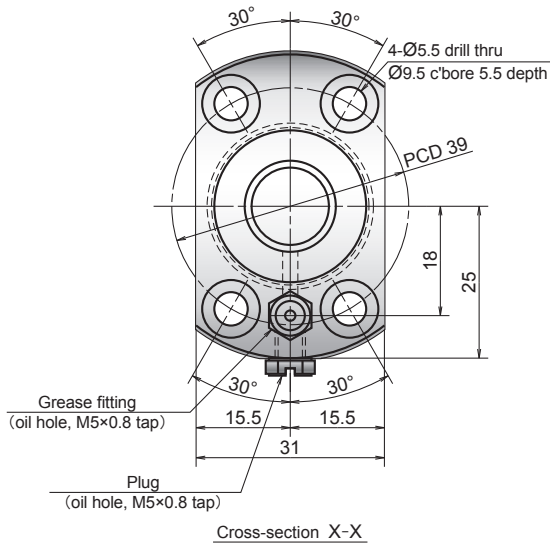


Reference no.	Screw shaft dia. d	Lead ℓ	Basic load ratings (N)		Stroke		Screw shaft dimensions		
			Dynamic C_a	Static C_{0a}	Nominal	Max. L_t-L	L_t	L_a	L_0
USS1505N1D0261	15	5	6 410	10 100	100	159	189	204	261
USS1505N1D0361					200	259	289	304	361
USS1505N1D0561					400	459	489	504	561
USS1505N1D0761					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.

USS TYPE FOR HIGH-ACCURACY AND CLEAN ROOM USE

Unit : mm



Ball screw specification	
Shaft dia.	Ø15
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

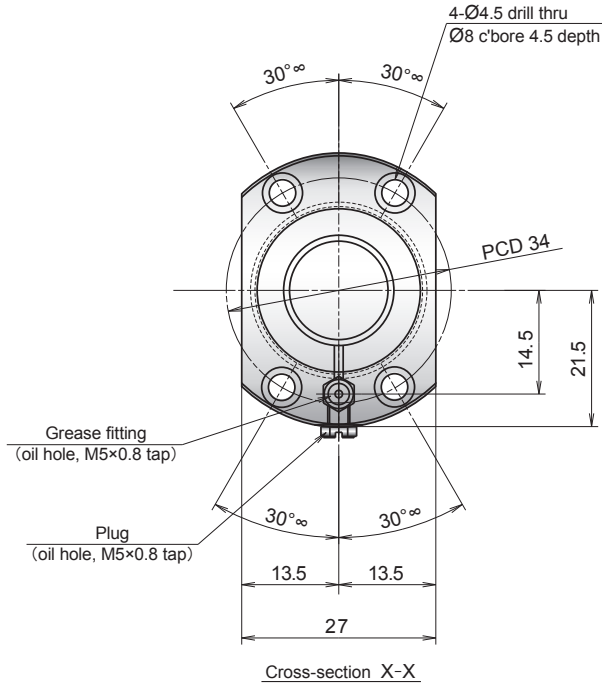
For drive side (Fixed)		For opposite to drive side (Simple)	
WBK12-01B (square, low)	P 46-47	WBK12S-01B (square, low)	P 50
WBK12-11 (round)	P 48-49	WBK12S-01C (square, clean)	P 50
WBK12-01C (square, clean)	P 46-47	-	-
WBK12-11C (round, clean)	P 48-49	-	-

Unit : mm

Target value T	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)
	Error e _p	Variation V _u				Fixed-simple		
0	0.010	0.008	0.025	0.2 to 5.0	0.5	5 000	2	1
	0.012	0.008	0.035	0.2 to 5.0	0.6			
	0.015	0.010	0.045	0.2 to 6.0	0.9	3 600		
	0.018	0.013	0.060	0.2 to 8.0	1.1			

3. Service temperature range is 0 to 80°C.
4. Use of NSK support unit is recommended. Refer to pages 46 to 50 for details.

FSS TYPE FOR TRANSFER EQUIPMENT



Unit : mm

Ball screw specification	
Ball dia./screw shaft root dia.	2.000 / 10.2
Ball circle dia.	12.3
Accuracy grade/axial play	C17 / 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 46-47	WBK12SF-01B (square, low) P 51

Unit : mm

Target value T	Lead accuracy		Shaft run-out C	Mass (kg)	Internal spatial volume of nut (cm ³)	Standard volume of grease replenishing (cm ³)
	Error e _p	Variation V _a				
0	0.120	0.052	0.08	0.5	1.0	0.5
	0.195		0.12	0.7		
	0.310		0.18	1.0		

4. The stroke and permissible rotational speed shown in the table are the values when the support unit recommended by NSK is used and Fixed-Supported (ball screw mounting method) is selected.

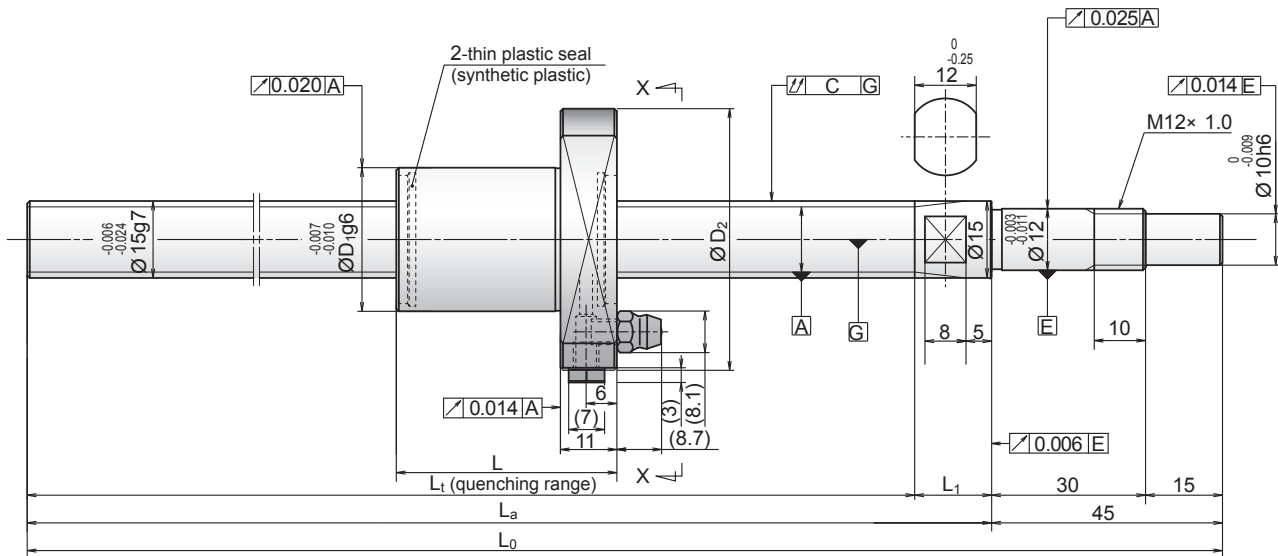
5. Permissible rotational speed varies when using cut screw shaft. It is necessary to calculate two items below, and whichever is smaller is the permissible rotational speed.

*Critical speed which is the resonance vibration of the shaft.

*Maximum rotational speed 5,000 min⁻¹.

COMPACT FA SERIES

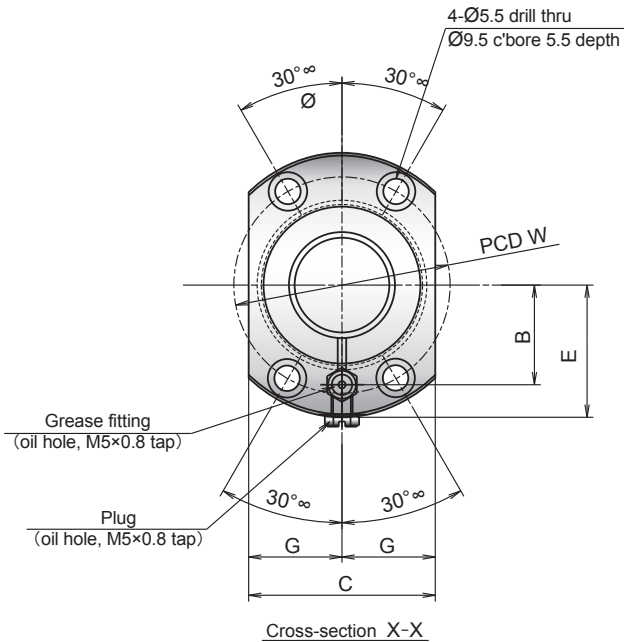
SCREW SHAFT DIAMETER 15 MM, LEAD 10 AND 20 MM



Reference no.	Screw shaft dia. d	Lead l	Basic load ratings (N)		Screw shaft dimensions			
			Dynamic C _a	Static C _{0a}	L ₁	L _a	L ₀	L ₁
FSS1510N1D0500	15	10	6 530	10 200	440	455	500	15
FSS1510N1D1000					940	955	1 000	
FSS1510N1D1450					1 390	1 405	1 450	
FSS1520N1D0500		20	5 660	8 700	437	455	500	18
FSS1520N1D1000					937	955	1 000	
FSS1520N1D1450					1 387	1 405	1 450	

- Notes:
1. Indicates ball screw preload control value. 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. See pages 46-51 for details.

FSS TYPE FOR TRANSFER EQUIPMENT



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

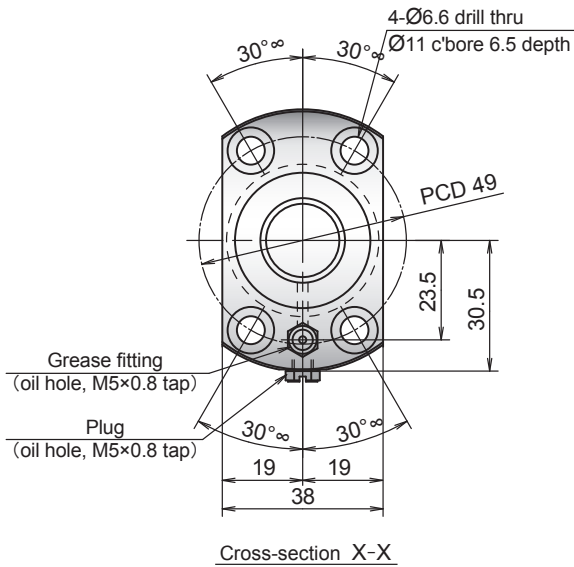
For drive side (Fixed)		For opposite to drive side (Simple)	
WBK12-01B (square, low)	P 46-47	WBK15SF-01B (square, low)	P 51

Unit : mm

Nut dimensions								Lead accuracy			Shaft run-out C	Mass (kg)	Internal spatial volume of nut (cm ³)	Standard volume of grease replenishing (cm ³)
L	D ₁	D ₂	W	B	C	E	G	Target value T	Error e _p	Variation V _u				
43	28	51	39	18	31	25	15.5	0	0.155	0.052	0.070	0.9	2.0	1.0
									0.310		0.125	1.7		
									0.490		0.200	2.3		
51	32	55	43	20	33	27	16.5		0.155		0.070	1.0	2.8	1.4
									0.310		0.125	1.7		
									0.490		0.200	2.3		

- The stroke and permissible rotational speed shown in the table are the values when the support unit recommended by NSK is used and Fixed-Supported (ball screw mounting method) is selected.
- Permissible rotational speed varies when using cut screw shaft. It is necessary to calculate two items below, and whichever is smaller is the permissible rotational speed.
 - *Critical speed which is the resonance vibration of the shaft.
 - *Maximum rotational speed 5,000 min⁻¹.

FSS TYPE FOR TRANSFER EQUIPMENT



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 46-47	WBK20SF-01B (square, low)	P 51

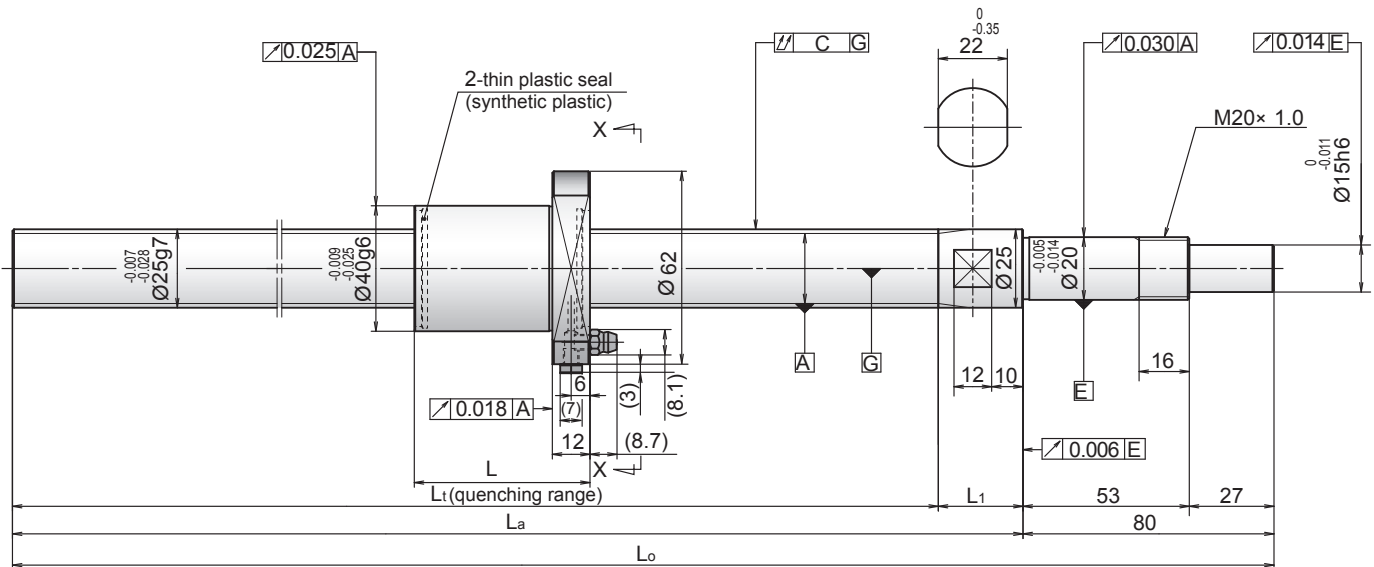
Unit : mm

Nut length L	Lead accuracy			Shaft run-out C	Mass (kg)	Internal spatial volume of nut (cm ³)	Standard volume of grease replenishing (cm ³)
	Target value T	Error e _p	Variation V _u				
45	0	0.195	0.052	0.085	1.7	3.2	1.6
		0.310		0.125	2.6		
		0.490		0.200	3.6		
54		0.195		0.085	1.8		
		0.310		0.125	2.7		
		0.490		0.200	3.8		

- The stroke and permissible rotational speed shown in the table are the values when the support unit recommended by NSK is used and Fixed-Supported (ball screw mounting method) is selected.
- Permissible rotational speed varies when using cut screw shaft. It is necessary to calculate two items below, and whichever is smaller is the permissible rotational speed.
 - *Critical speed which is the resonance vibration of the shaft.
 - *Maximum rotational speed 5,000 min⁻¹.

COMPACT FA SERIES

SCREW SHAFT DIAMETER 25 MM, LEAD 10, 20 AND 25 MM

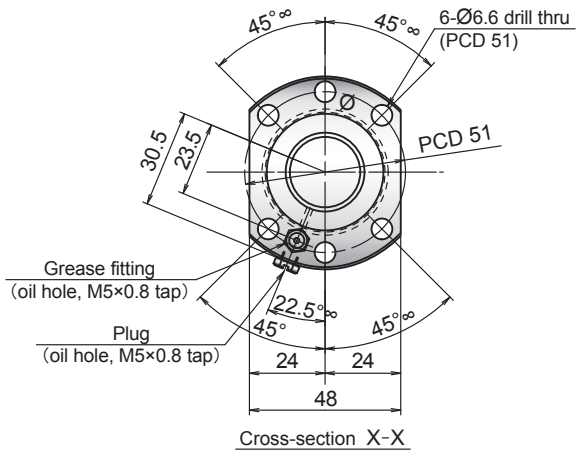


Reference no.	Screw shaft dia. d	Lead ℓ	Basic load ratings (N)		Screw shaft dimensions					
			Dynamic C_a	Static C_{0a}	L_1	L_a	L_0	L_1		
FSS2510N1D0600	25	10	15 000	32 400	493	520	600	27		
FSS2510N1D1000					893	920	1 000			
FSS2510N1D1450					1 343	1 370	1 450			
FSS2520N1D0600		20			7 650	14 800	494	520	600	26
FSS2520N1D1000							894	920	1 000	
FSS2520N1D1450							1 344	1 370	1 450	
FSS2525N1D0600		25			7 490	14 600	490	520	600	30
FSS2525N1D1000							890	920	1 000	
FSS2525N1D1450							1 340	1 370	1 450	

- Notes:
1. Indicates ball screw preload control value. 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. See pages 46-51 for details.

FSS TYPE FOR TRANSFER EQUIPMENT

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 46-47	WBK25SF-01 (square)	P 51

Unit : mm

Nut length L	Lead accuracy			Shaft run-out C	Mass (kg)	Internal spatial volume of nut (cm ³)	Standard volume of grease replenishing (cm ³)
	Target value T	Error e _p	Variation V ₀				
56	0	0.155	0.052	0.065	2.6	4.7	2.4
		0.310		0.090	4.0		
		0.490		0.130	5.8		
54		0.155		0.065	2.6	3.9	2.0
		0.310		0.090	4.0		
		0.490		0.130	5.8		
63		0.155		0.065	2.6	4.3	2.2
		0.310		0.090	4.1		
		0.490		0.130	5.8		

4. The stroke and permissible rotational speed shown in the table are the values when the support unit recommended by NSK is used and Fixed-Supported (ball screw mounting method) is selected.

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

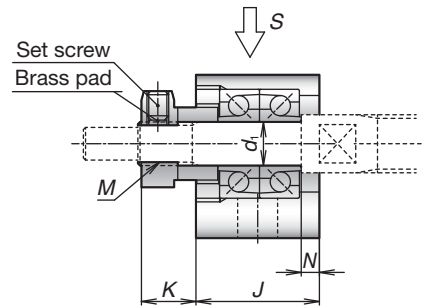
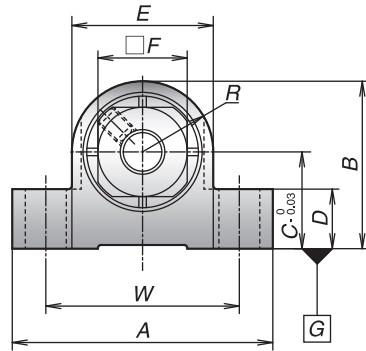
*Critical speed which is the resonance vibration of the shaft.

*Maximum rotational speed 5,000 min⁻¹.

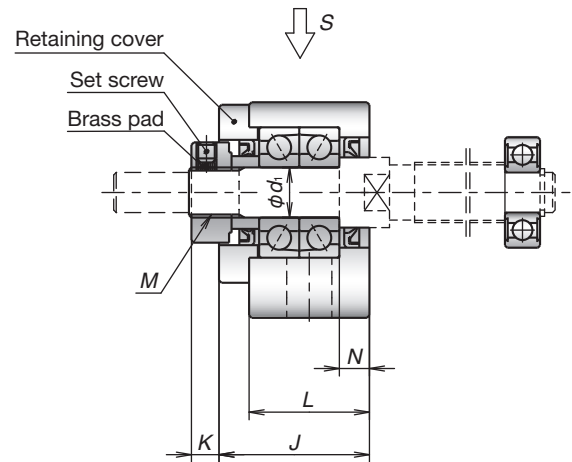
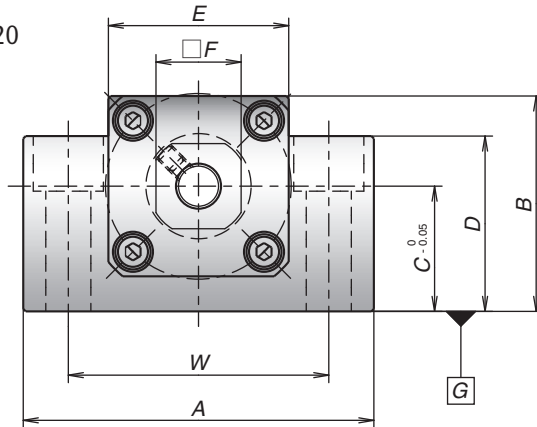
SUPPORT UNITS

FIXED SUPPORT SIDE SUPPORT UNIT (SQUARE TYPE)

WBK04 and 06

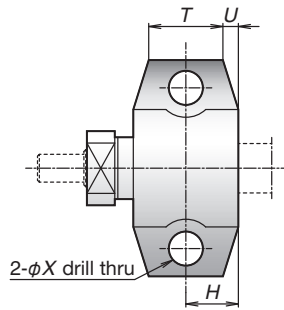


WBK08 to 20

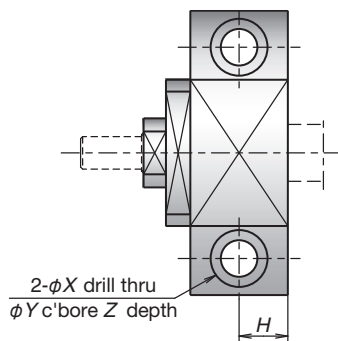


Reference no.	Use	d ₁	A	B	C	D	E	F	L	J	K	R	T	U	N
WBK04-01M	General	4	27	17.0	10.0	6	14	10	-	14.0	5.5	7.0	9	1.5	2.0
WBK06-01M	General	6	35	22.5	13.0	8	19	12	-	17.0	7.5	9.5	12	2.5	2.5
WBK08-01A	General	8	52	32.0	17.0	26	25	14	23.0	23.0	7.0	-	-	-	4.0
WBK08-01B	Low type		62	31.0	15.5	31	-		21.5	25.5	4.5				3.5
WBK08-01C	Clean		52	32.0	17.0	26	25		23.0	23.0	7.0				4.0
WBK10-01A	General	10	70	43.0	25.0	35	36	17	24.0	30.0	5.5	-	-	-	6.0
WBK10-01B	Low type			38.0	20.0	38	-								
WBK10-01C	Clean			43.0	25.0	35	36								
WBK12-01A	General	12	70	43.0	25.0	35	36	19	24.0	30.0	5.5	-	-	-	6.0
WBK12-01B	Low type			38.0	20.0	38	-								
WBK12-01C	Clean			43.0	25.0	35	36								
WBK15-01A	General	15	80	50.0	30.0	40	41	22	25.0	31.0	12.0	-	-	-	5.0
WBK15-01B	Low type			42.0	22.0	42	-								
WBK15-01C	Clean			50.0	30.0	40	41								
WBK20-01	General	20	95	58.0	30.0	45	56	30	42.0	52.0	10.0	-	-	-	10.0

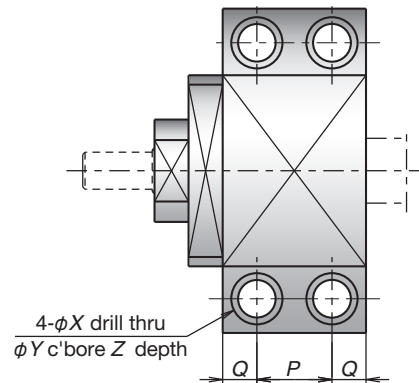
- Notes
1. Use datum surface G for mounting to machine base.
 2. Tighten set screw after locknut has been adjusted and tightened.
 3. Insert brass pad provided with unit into locknut set screw hole, then insert and tighten the set screw.



View S (WBK04 and 06)



View S (WBK08 to 15)



View S (WBK20)

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)

Unit : mm

Counterbore dimensions							Mass (kg)	Specification				Locknut screw M	Attached bearing for support side
H	P	Q	W	X	Y	Z		Axial Direction			Maximum starting torque (N•cm)		
								Basic dynamic load rating C _a (N)	Load limit N	Rigidity (N/μm)			
7.0	-	-	21	3.5	-	-	0.03	1 470	464	39	0.20	M4×0.50	-
8.5	-	-	26	5.5	-	-	0.05	2 760	854	60	0.35	M6×0.75	-
11.5	-	-	38	6.6	11	12	0.25	4 400	1 450	49	0.88	M8×1.0	606ZZ
11.0			46	9.0	14	18	0.30	6 600	2 730	94	1.90		606VV
11.5			38	6.6	11	12	0.25	3 100	1 100	36	0.52		
12.0	-	-	52	9.0	14	11	0.50	6 600	2 730	94	1.90	M10×1.0	608ZZ
						19	0.45	6 600	2 730	94	1.90		608VV
						11	0.50	4 250	1 364	50	1.10		
12.0	-	-	52	9.0	14	11	0.50	7 100	3 040	104	2.10	M12×1.0	6000ZZ
						19	0.40	7 100	3 040	104	2.10		6000VV
						11	0.50	4 700	2 443	57	1.20		
12.5	-	-	60	11.0	17	15	0.70	7 600	3 380	113	2.40	M15×1.0	6002ZZ
						23	0.60	7 600	3 380	113	2.40		6002VV
						15	0.70	5 100	2 757	63	1.30		
-	22	10	75	11.0	17	15	1.40	17 900	8 240	155	6.20	M20×1.0	6204ZZ

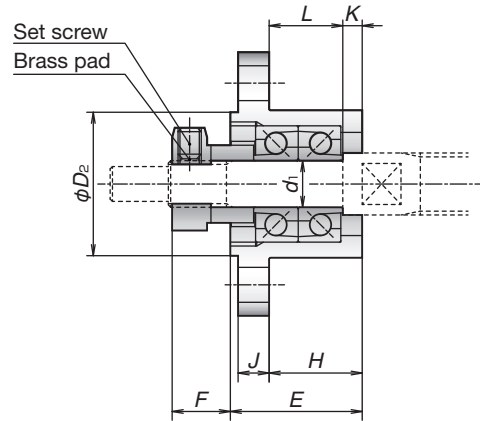
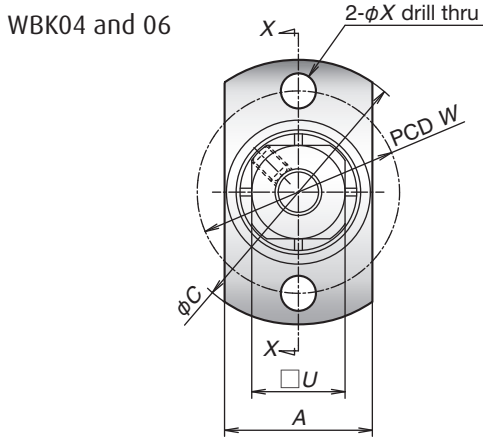
4. Deep groove ball bearing and snap ring are also provided for simple support side. (except WBK04-01M, WBK06-01M).

5. For retaining cover side of WBK08-01A and WBK08-01C, there are no seals.

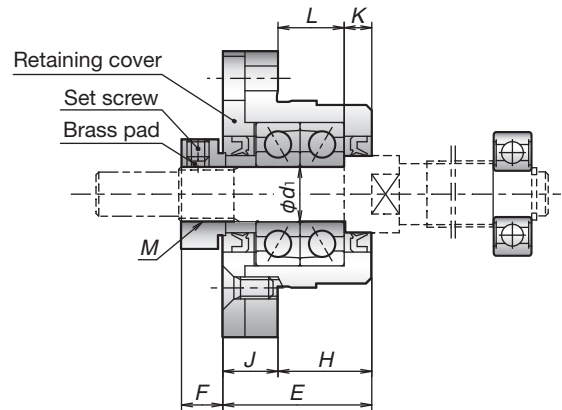
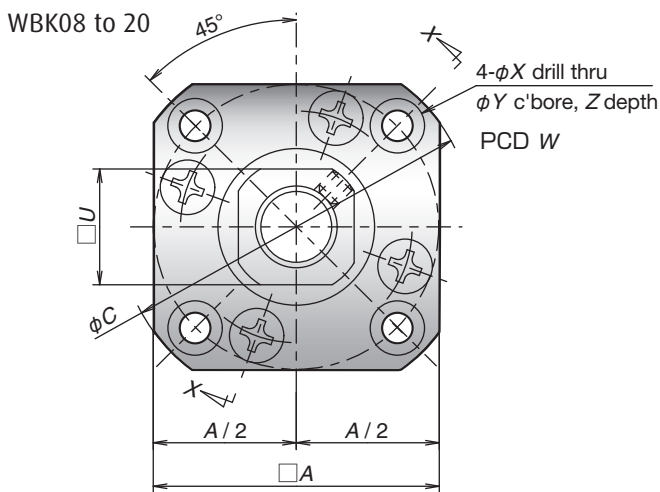
6. For WBK04-01M and WBK06-01M, non-contact metal seals are installed in both sides of bearings.

SUPPORT UNITS

FIXED SUPPORT SIDE SUPPORT UNIT (ROUND TYPE)



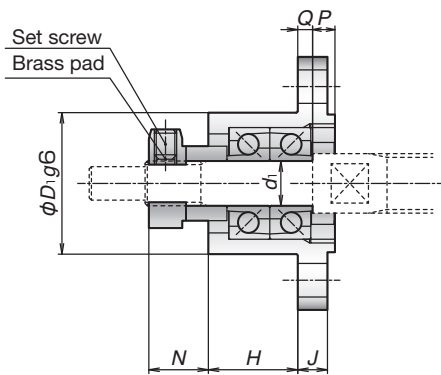
Cross section X-X (Example 1)



View X-X (Example 1)

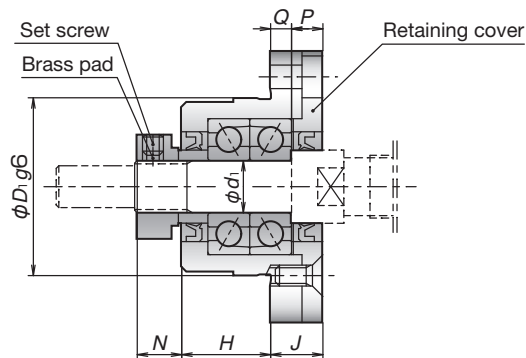
Reference no.	Use	d_1	A	C	D_1	D_2	E	H	L	K	F	N	U	P	Q
WBK04-11M	General	4	14	26	14	14.0	13.5	8.5	7.0	1.5	5.5	6.6	10	2.6	2.4
WBK06-11M	General	6	19	34	19	18.5	17.0	12.0	9.5	2.5	7.5	8.0	12	3.0	2.0
WBK08-11B	High-load	8	42	52	34	-	25.5	15.5	12.0	3.5	4.5	7.0	14	6.0	4.0
WBK08-11	General		35	43	28		23.0	14.0	10.0	4.0	7.0	8.0		5.0	
WBK08-11C	Clean	10	42	52	34	-	27.0	17.0	12.0	5.0	7.5	8.5	17	6.0	4.0
WBK10-11	General		35	43	28		23.0	14.0	10.0	4.0	7.0	8.0		5.0	
WBK10-11C	Clean	12	44	54	36	-	27.0	17.0	12.0	5.0	7.5	8.5	19	6.0	4.0
WBK12-11	General		35	43	28		23.0	14.0	10.0	4.0	7.0	8.0		5.0	
WBK12-11C	Clean	15	52	63	40	-	32.0	17.0	11.0	6.0	12.0	14.0	22	8.0	7.0
WBK15-11	General		35	43	28		23.0	14.0	10.0	4.0	7.0	8.0		5.0	
WBK15-11C	Clean	20	68	85	57	-	52.0	30.0	20.0	10.0	10.0	14.0	30	14.0	8.0
WBK20-11	General		35	43	28		23.0	14.0	10.0	4.0	7.0	8.0		5.0	

- 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.



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)



View X-X (Example 2)

Unit : mm

Counterbore dimensions					Mass (kg)	Specification				Locknut screw M	Attached bearing for support side
J	W	X	Y	Z		Axial Direction			Maximum starting torque (N•cm)		
						Basic dynamic load rating C_0 (N)	Load limit N	Rigidity (N/μm)			
3	20	3.5	-	-	0.02	1 470	464	39	0.20	M4 × 0.50	-
4	26	4.5	-	-	0.04	2 760	854	60	0.35	M6 × 0.75	-
10	42	4.5	8.0	4	0.20	6 600	2 730	94	1.90	M8 × 1.0	606ZZ
9	35	3.4	6.5		0.15	4 400	1 450	49	0.88		606ZZ
						3 100	1 100	36	0.52		606VV
10	42	4.5	8.0	4	0.20	6 600	2 730	94	1.90	M10 × 1.0	608ZZ
						4 250	1 364	50	1.10		608VV
10	44	4.5	8.0	4	0.25	7 100	3 040	104	2.10	M12 × 1.0	6000ZZ
						4 700	2 443	57	1.20		6000VV
15	50	5.5	9.5	6	0.40	7 600	3 380	113	2.40	M15 × 1.0	6002ZZ
						5 100	2 757	63	1.30		6002VV
22	70	6.6	11.0	10	1.10	17 900	8 240	155	6.20	M20 × 1.0	6204ZZ

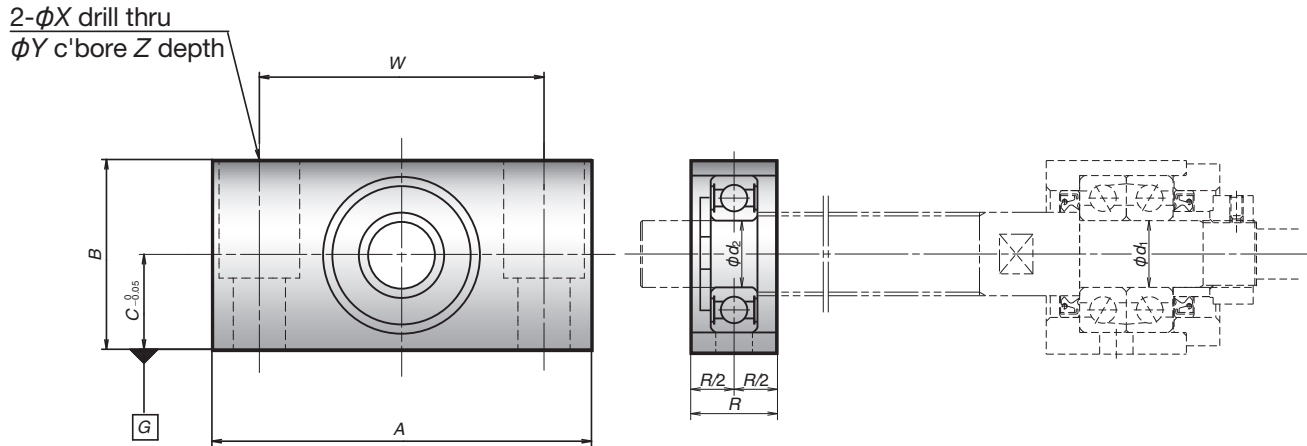
3. Deep groove ball bearing and snap ring are also provided for simple support side. (except WBK04-11M and WBK06-11M)

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.

SUPPORT UNITS FOR SIMPLE SUPPORT SIDE

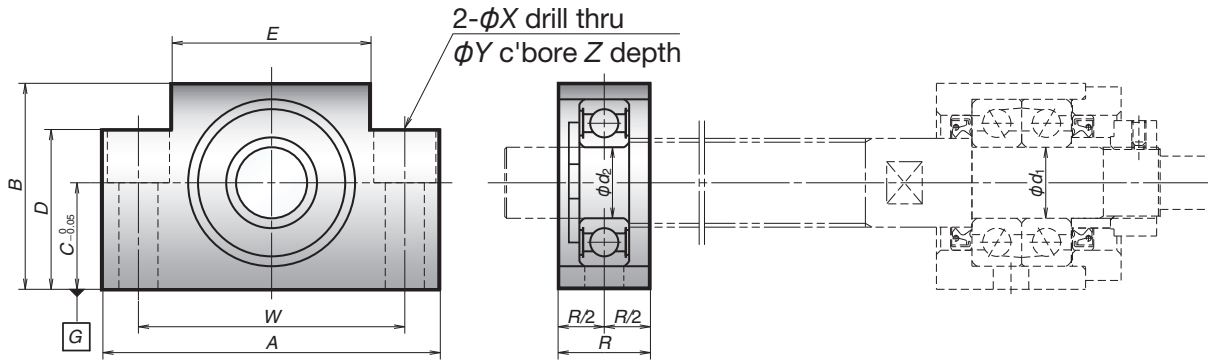
SIMPLE SUPPORT SIDE SUPPORT UNIT FOR PSS AND USS TYPES



Unit : mm

Reference no.	Use	d ₂	A	B	C	R	Counterbore dimensions				Mass (kg)	Bearing reference no.	Radial 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	20.0	20	52	9	14	19	0.4	600ZZ	4 550
WBK15S-01B	Low	15	80	42	22.0	20	60	9	14	23	0.4	600ZZ	5 600

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

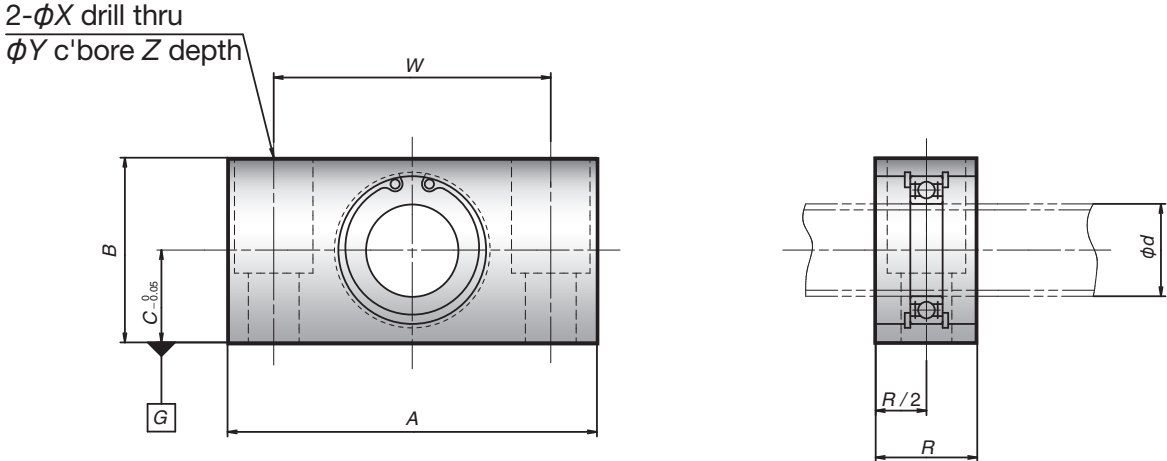


Unit : mm

Reference no.	Use	d ₂	A	B	C	D	E	R	Counterbore dimensions				Mass (kg)	Bearing reference no.	Radial 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	9.0	14	11	0.40	608ZZ	3 300
WBK10S-01C	Clean													608VV	3 300
WBK12S-01	General	10	70	43	25	35	36	20	52	9.0	14	11	0.35	600ZZ	4 550
WBK12S-01C	Clean													600VV	4 550
WBK15S-01	General	15	80	50	30	40	41	20	60	9.0	14	11	0.45	600ZZ	5 600
WBK15S-01C	Clean													600VV	5 600
WBK20S-01	General	20	95	58	30	45	56	26	75	11.0	17	15	0.80	6204ZZ	12 800

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

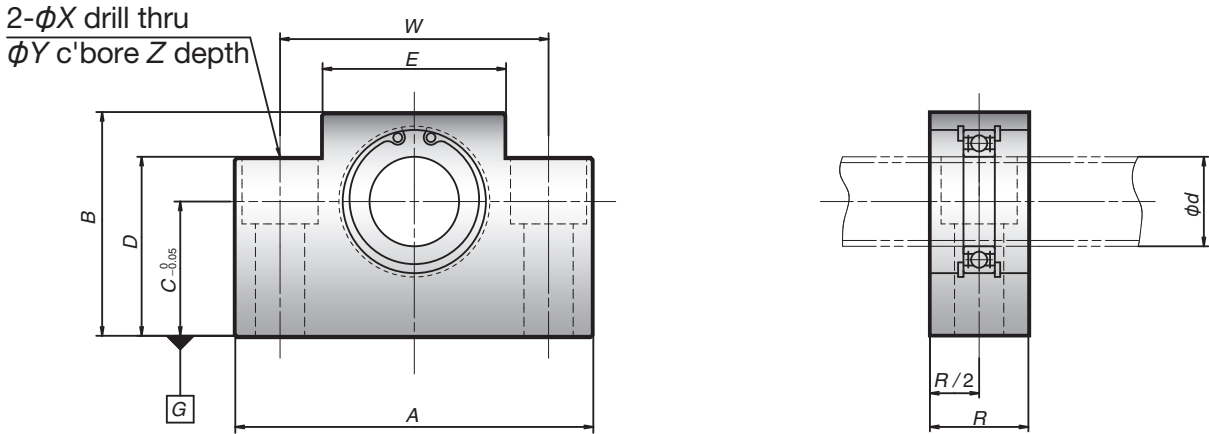
SIMPLE SUPPORT SIDE SUPPORT UNIT FOR FSS TYPES



Unit : mm

Reference no.	d	A	B	C	R	Counterbore dimensions				Mass (kg)	Bearing reference no.	Radial 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	20.0	18	52	9	14	19	0.3	6902ZZ	4 350
WBK20SF-01B	20	80	42	22.0	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.	Radial 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.



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