

Standard precision ball screws

Features

● GP, GG, GE series: Various screw shaft diameters, leads, and accuracy grades available for your selection

- An optimal size can be selected from a variety of screw shaft diameters, leads, and accuracy grades eliminating unnecessary compromise in product selection.

● FG, FE series: High rotational speed

- Delivers higher rotational speed up to 5,000 min⁻¹ through our unique recirculation system.
- In consideration of the load rating, the products have higher specifications than previous KURODA products.

● DP series: The industry's smallest compact nut class

- Utilizes a deflector recirculation system which realizes minimal nut dimensions.
- With leads from 1 mm, the DP series is suitable for machines and equipment that requires fine pitch forwarding and precise positioning.

● HG series: Optimal for high-speed conveyance achieved by larger leads

- Larger leads enable a higher feed rate at a low rotational speed.
- With the adoption of multi-start thread, we have achieved a more compact nut with an improved load rating.

□ Summary of the specifications

Screw shaft diameter	ø6 to ø32 mm
Lead	1 to 60 mm
Accuracy grade	C3 grade: GP, DP C5 grade: FG, GG, HG C7 grade: FE, GE
Axial clearance	Refer to each product specification table.
Shaft end type	One shaft end finished (C3 grade: GP, DP) Unfinished shaft ends
Product line	Standard product

□ Options available

Series	Additional shaft-end machining	Surface treatment	Change of grease type	Change of nut direction	LUBSEAL
GP, DP FG, GG, HG FE, GE	○	○	○	○	See the notes below.

- The GP and DP series have one shaft end finished.
- The surface treatment is anticorrosive black coating (coating thickness: 1 to 2 μm).
- Contact KURODA regarding the inclusion of grease types other than the standard grease.
- Please refer to the LUBSEAL series and size reference chart or the option specifications on each product's page to determine whether or not LUBSEAL is supported.

□ Model numbers of each series

Example model numbers	Series	Shaft diameter	Lead	Number of circuits	Combination	Flange type	Ball recirculation system	Wiper material	Thread direction	Overall screw shaft length	Shaft end type	Thread length	Accuracy grade	Axial clearance
	FG	15	10	P	S	H	P	N	R	0900	X	0840	C5	F
DP	6 to 14	1 to 4	J	S	H	D	N	R	To be shown with a 4-digit number in metric units (mm)	B, X	To be shown with a 4-digit number in metric units (mm)	C3	F, S	
FG	10 to 25	5 to 25	P		H	P	N					C5	F	
FE					See specifications.	A	See specifications.					C7	M	
GG	8 to 32	2 to 25	Q									A, X	C5	F
GE	8 to 20	2 to 5	Q	See specifications.	Q	See specifications.	B, X	C7	M					
GP							12 to 60	A, X	C3	F, S				
HG	12 to 60	Q	A, X	C5	F, H									

- For more details, refer to the specifications and data for each size.

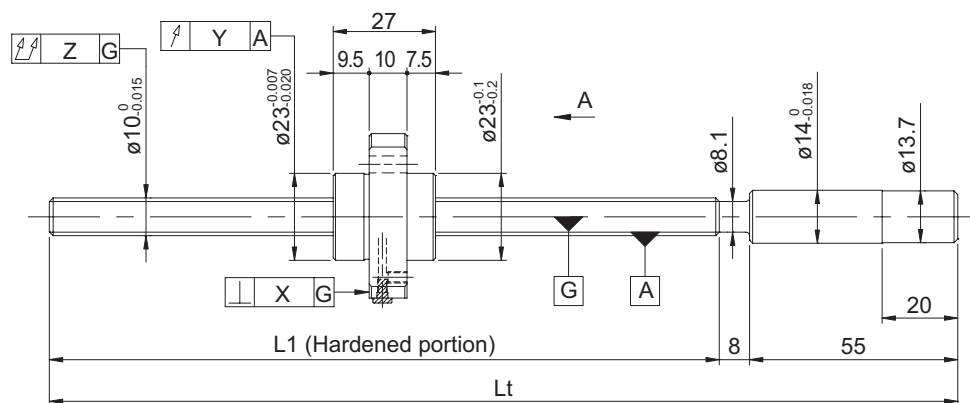
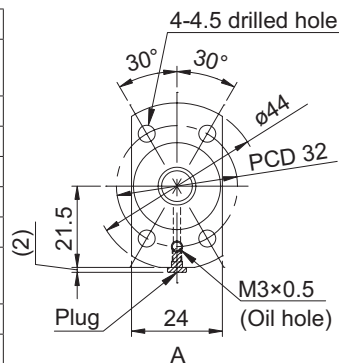
□ Screw shaft diameter and lead combinations

Screw shaft diameter (mm)	Lead (mm)														
	1	2	3	4	5	10	12	15	16	20	25	30	32	40	60
6	○														
8	○	●○		●			□								
10		●○		●		◆◆									
12		●○	○	●	●	◆◆				◆◆		□			
14				○											
15		●		●	◆◆	◆◆		●		●□◆				□	
16								●					□		
20				●	●	◆◆				●□◆		□		□	□
25					◆◆	◆◆				●	◆◆				
32					●	●									

- : GP, GG, GE series
- : DP series (small lead)
- : HG series (large lead)
- ◆: FG, FE series (high rotational speed)

Ball screw specifications

Shaft diameter (mm) - Lead (mm)	10 - 10		
Number of circuits / Thread direction	1.7 turns 1 circuit / Right-hand		
Ball diameter (mm)	2.3812		
Root diameter (mm)	8.1		
Series	FG	FE	
Basic dynamic load rating C (N)	2600		
Basic static load rating C0 (N)	3800		
Accuracy grade / Axial clearance symbol	C5 / S	C5 / F	C7 / M
Axial clearance (mm)	0	0.005 or less	0.030 or less
Preload torque (N·cm)	0.1 to 3.6	Up to 1.0	---
Spacer ball	None		
Recirculation system	End deflector method		
Wiper	None		
Lubricant	Alvania Grease S2		



Model No. (Unfinished shaft ends)	Screw shaft length		Maximum stroke (L1 - nut length)	Lead accuracy		
	L1	Lt		$\pm E_c$	e_c	e_{300}
FG1010PS-HPNR-0255A	192	255	165	0.023	0.018	0.018
FG1010PS-HPNR-0455A	392	455	365	0.025	0.020	
FE1010PS-HPNR-0255A	192	255	165	0.05/300	---	---
FE1010PS-HPNR-0455A	392	455	365			

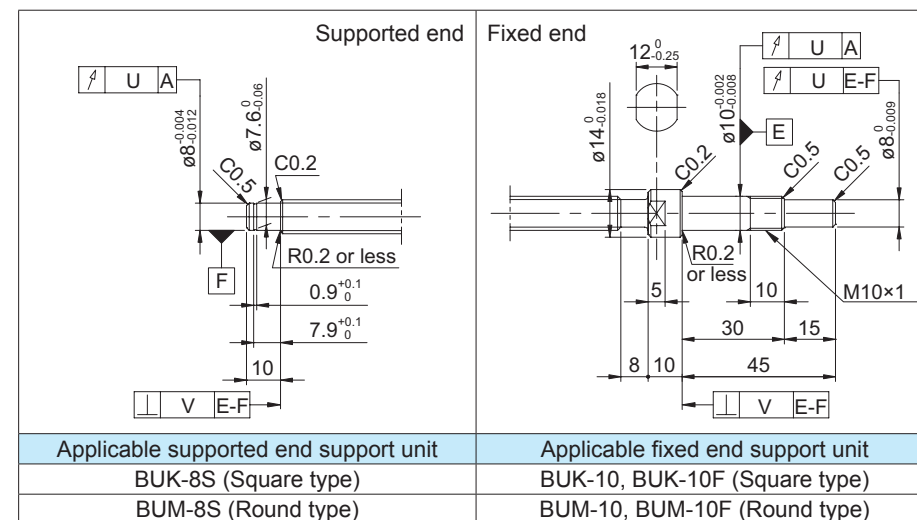
- Product with axial clearance of 0.005 or less (F) shown may be partially preloaded.
- Preload torque is a value before applying grease.

Shaft end finish type

Standard precision ball screws are available with KURODA's recommended shaft end finish types for each size.

Other than KURODA's recommended shaft end finish types described below, additional machining including keyways, tapped holes, and D-cut processing are also available if requested. Please contact KURODA with your orders. Model examples for finished shaft ends are described below.

Model example: Unfinished shaft ends (See left figure) → Finished shaft ends
 FG1010PS-HPNR-0455A → FG1010PS-HPNR-0455X0382-C5F



Optional specifications

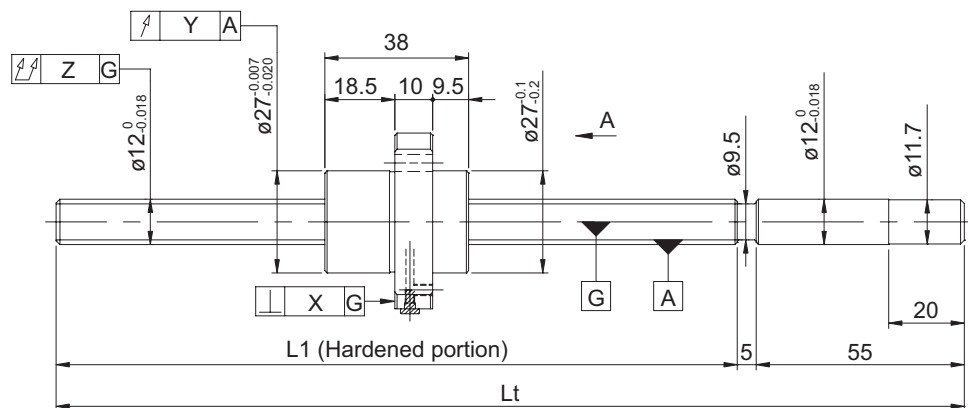
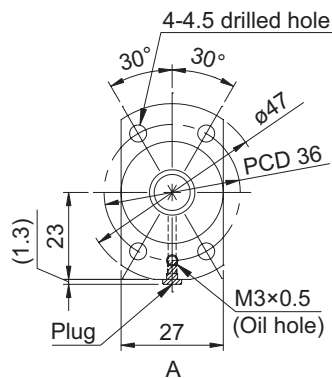
- Anticorrosive black coating (coating thickness: 1 to 2 μm) is available.

Accuracy of each part					Preload torque (N·cm)		Mass (kg)
X	Y	Z	U	V	Without clearance	With clearance	
0.010	0.012	0.055	0.011	0.005	0.1 to 3.6	Up to 1.0	0.29
		0.080					0.40
0.014	0.020	0.080	---	---	---	---	0.29
		0.120					0.40

- At the time of delivery, grease is inserted inside of the nut, with rust-preventive oil also applied. Before and during use, apply lubricant where appropriate.
- For models with lead accuracy grade of C3 or higher and unfinished shaft ends, consult KURODA.

● Ball screw specifications

Shaft diameter (mm) - Lead (mm)	12 - 10		
Number of circuits / Thread direction	2.7 turns 1 circuit / Right-hand		
Ball diameter (mm)	3.175		
Root diameter (mm)	9.5		
Series	FG	FE	
Basic dynamic load rating C (N)	6700		
Basic static load rating C0 (N)	10700		
Accuracy grade / Axial clearance symbol	C5 / S	C5 / F	C7 / M
Axial clearance (mm)	0	0.005 or less	0.030 or less
Preload torque (N·cm)	1.5 to 9.3	Up to 2.0	----
Spacer ball	None		
Recirculation system	End deflector method		
Wiper	None		
Lubricant	Alvania Grease S2		



Model No. (Unfinished shaft ends)	Screw shaft length		Maximum stroke (L1 - nut length)	Lead accuracy		
	L1	Lt		$\pm E_c$	e_c	e_{300}
FG1210PS-HPNR-0455A	395	455	357	0.025	0.020	0.018
FG1210PS-HPNR-0605A	545	605	507	0.030	0.023	
FE1210PS-HPNR-0455A	395	455	357	0.05/300	----	----
FE1210PS-HPNR-0605A	545	605	507			

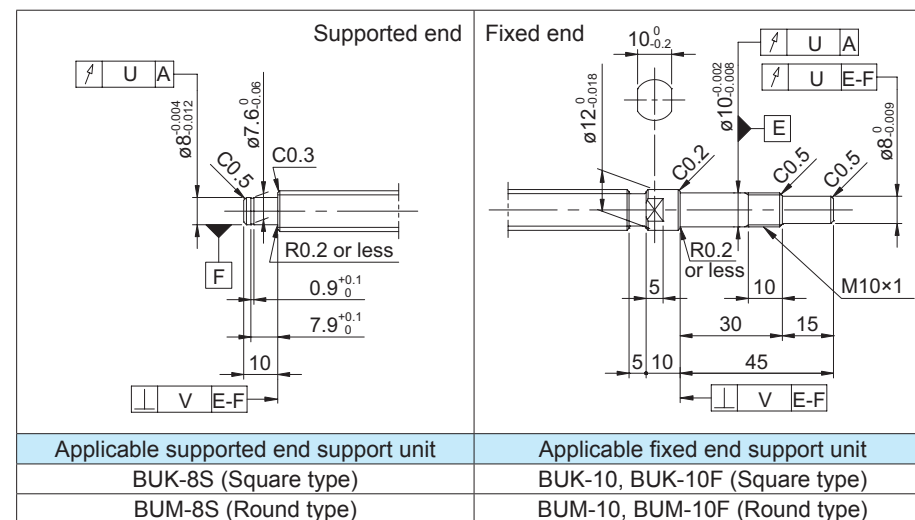
- Product with axial clearance of 0.005 or less (F) shown may be partially preloaded.
- Preload torque is a value before applying grease.

● Shaft end finish type

Standard precision ball screws are available with KURODA's recommended shaft end finish types for each size.

Other than KURODA's recommended shaft end finish types described below, additional machining including keyways, tapped holes, and D-cut processing are also available if requested. Please contact KURODA with your orders. Model examples for finished shaft ends are described below.

Model example: Unfinished shaft ends (See left figure) → Finished shaft ends
 FG1210PS-HPNR-0605A → FG1210PS-HPNR-0605X0535-C5F
 ↳ Thread length
 ↳ Overall screw shaft length



● Optional specifications

- Ball screw lubricating unit LUBSEAL can be equipped. The overall nut length will be 11 mm longer.

Model example: FG1210PS-HPSR-0605X0535-C5F
 ↳ Wiper material S: LUBSEAL

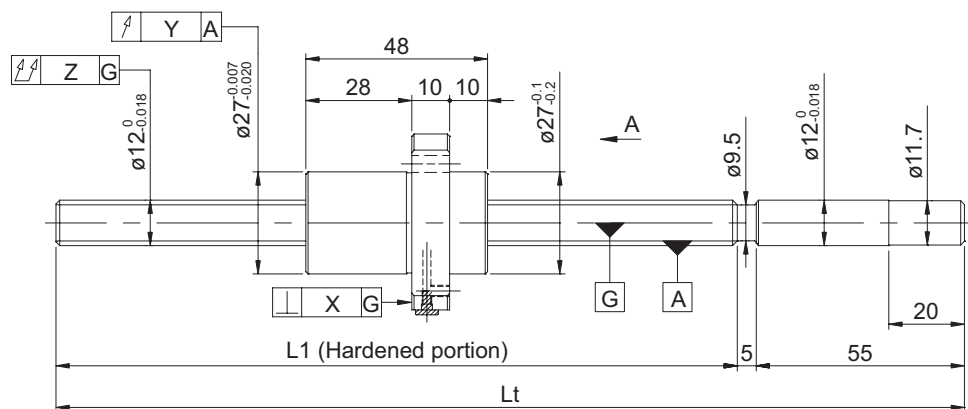
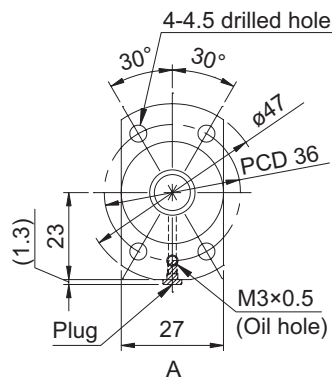
- Anticorrosive black coating (coating thickness: 1 to 2 μm) is available.

Accuracy of each part					Preload torque (N·cm)		Mass (kg)
X	Y	Z	U	V	Without clearance	With clearance	
0.010	0.012	0.080	0.011	0.005	1.5 to 9.3	Up to 2.0	0.53
		0.090					
0.014	0.020	0.120	----	----	----	----	0.53
		0.150					

- At the time of delivery, grease is inserted inside of the nut, with rust-preventive oil also applied. Before and during use, apply lubricant where appropriate.
- For models with lead accuracy grade of C3 or higher and unfinished shaft ends, consult KURODA.

● Ball screw specifications

Shaft diameter (mm) - Lead (mm)	12 - 20		
Number of circuits / Thread direction	1.7 turns 1 circuit / Right-hand		
Ball diameter (mm)	3.175		
Root diameter (mm)	9.5		
Series	FG	FE	
Basic dynamic load rating C (N)	4300		
Basic static load rating C0 (N)	6700		
Accuracy grade / Axial clearance symbol	C5 / S	C5 / F	C7 / M
Axial clearance (mm)	0	0.005 or less	0.030 or less
Preload torque (N·cm)	1.2 to 8.4	Up to 2.5	----
Spacer ball	None		
Recirculation system	End deflector method		
Wiper	None		
Lubricant	Alvania Grease S2		



Model No. (Unfinished shaft ends)	Screw shaft length		Maximum stroke (L1 - nut length)	Lead accuracy		
	L1	Lt		$\pm E_c$	e_c	e_{300}
FG1220PS-HPNR-0405A	345	405	297	0.025	0.020	0.018
FG1220PS-HPNR-0605A	545	605	497	0.030	0.023	
FE1220PS-HPNR-0405A	345	405	297	0.05/300	----	----
FE1220PS-HPNR-0605A	545	605	497			

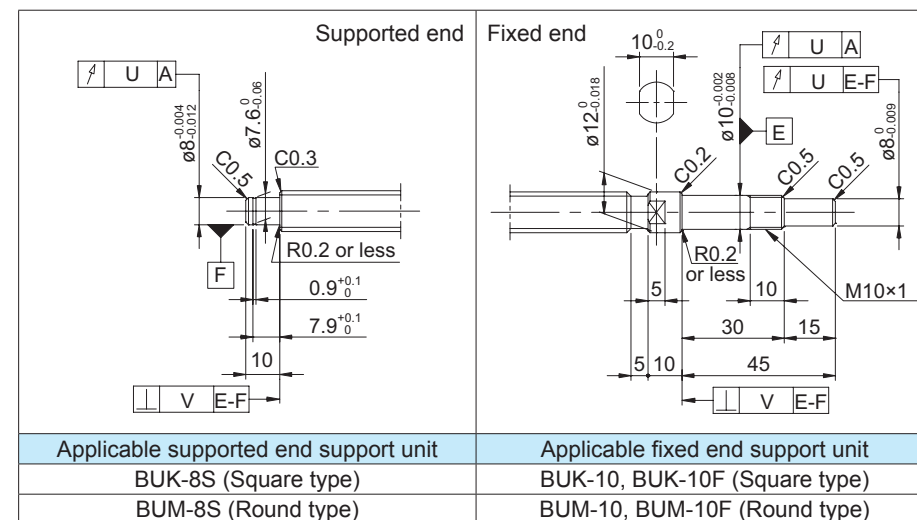
- Product with axial clearance of 0.005 or less (F) shown may be partially preloaded.
- Preload torque is a value before applying grease.

● Shaft end finish type

Standard precision ball screws are available with KURODA's recommended shaft end finish types for each size.

Other than KURODA's recommended shaft end finish types described below, additional machining including keyways, tapped holes, and D-cut processing are also available if requested. Please contact KURODA with your orders. Model examples for finished shaft ends are described below.

Model example: Unfinished shaft ends (See left figure) → Finished shaft ends
 FG1220PS-HPNR-0605A → FG1220PS-HPNR-0605X0535-C5F
 ↳ Thread length
 ↳ Overall screw shaft length



● Optional specifications

- Ball screw lubricating unit LUBSEAL can be equipped. The overall nut length will be 11 mm longer.

Model example: FG1220PS-HPSR-0605X0535-C5F
 ↳ Wiper material S: LUBSEAL

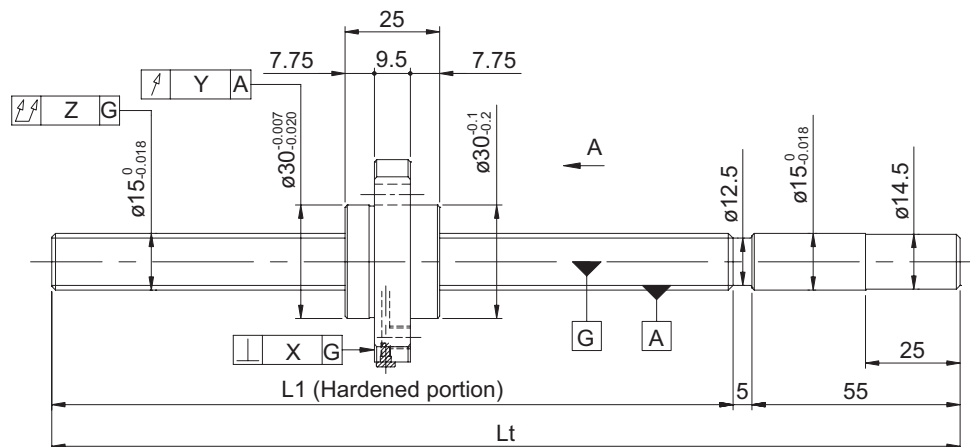
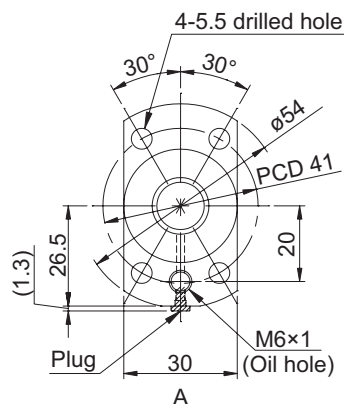
- Anticorrosive black coating (coating thickness: 1 to 2 μm) is available.

Accuracy of each part					Preload torque (N·cm)		Mass (kg)
X	Y	Z	U	V	Without clearance	With clearance	
0.010	0.012	0.080	0.011	0.005	1.2 to 8.4	Up to 2.5	0.54
		0.090					0.71
0.018	0.030	0.120	----	----	----	----	0.54
		0.150					0.71

- At the time of delivery, grease is inserted inside of the nut, with rust-preventive oil also applied. Before and during use, apply lubricant where appropriate.
- For models with lead accuracy grade of C3 or higher and unfinished shaft ends, consult KURODA.

• Ball screw specifications

Shaft diameter (mm) - Lead (mm)	15 - 5		
Number of circuits / Thread direction	2.7 turns 1 circuit / Right-hand		
Ball diameter (mm)	3.175		
Root diameter (mm)	12.5		
Series	FG	FE	
Basic dynamic load rating C (N)	7400		
Basic static load rating C0 (N)	12900		
Accuracy grade / Axial clearance symbol	C5 / S	C5 / F	C7 / M
Axial clearance (mm)	0	0.005 or less	0.030 or less
Preload torque (N·cm)	1.0 to 11.0	Up to 2.0	----
Spacer ball	None		
Recirculation system	End deflector method		
Wiper	None		
Lubricant	Alvania Grease S2		



Model No. (Unfinished shaft ends)	Screw shaft length		Maximum stroke (L1 - nut length)	Lead accuracy		
	L1	Lt		$\pm E_c$	e_c	e_{300}
FG1505PS-HPNR-0600A	540	600	515	0.030	0.023	0.018
FG1505PS-HPNR-1100A	1040	1100	1015	0.046	0.030	
FE1505PS-HPNR-0600A	540	600	515	0.05/300	----	----
FE1505PS-HPNR-1100A	1040	1100	1015			

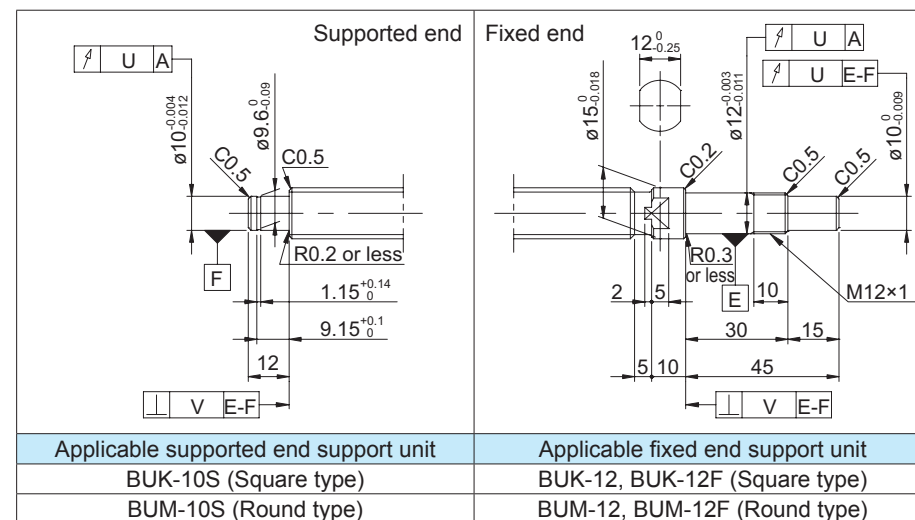
- Product with axial clearance of 0.005 or less (F) shown may be partially preloaded.
- Preload torque is a value before applying grease.

• Shaft end finish type

Standard precision ball screws are available with KURODA's recommended shaft end finish types for each size.

Other than KURODA's recommended shaft end finish types described below, additional machining including keyways, tapped holes, and D-cut processing are also available if requested. Please contact KURODA with your orders. Model examples for finished shaft ends are described below.

Model example: Unfinished shaft ends (See left figure) → Finished shaft ends
 FG1505PS-HPNR-1100A → FG1505PS-HPNR-1100X1028-C5F
 ↳ Thread length
 ↳ Overall screw shaft length



• Optional specifications

- Ball screw lubricating unit LUBSEAL can be equipped. The overall nut length will be 11 mm longer.

Model example: FG1505PS-HPSR-1100X1028-C5F
 ↳ Wiper material S: LUBSEAL

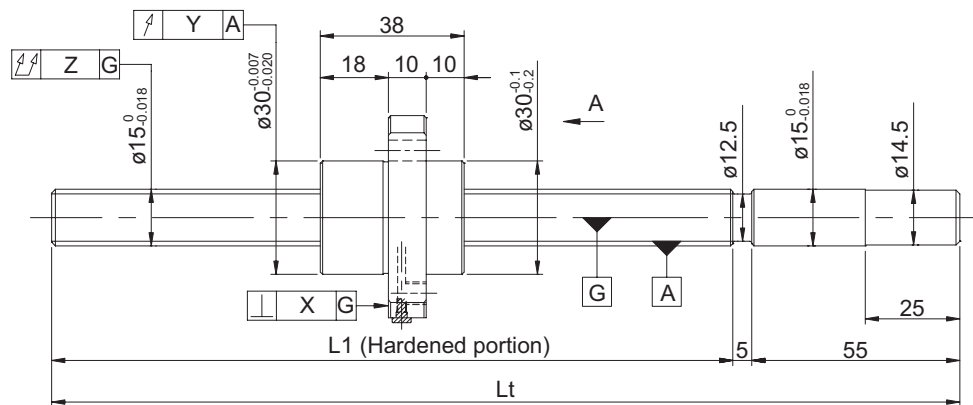
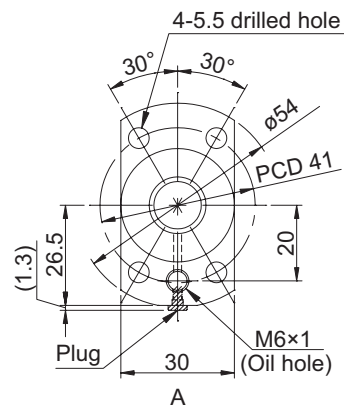
- Anticorrosive black coating (coating thickness: 1 to 2 μm) is available.

Accuracy of each part					Preload torque (N·cm)		Mass (kg)
X	Y	Z	U	V	Without clearance	With clearance	
0.010	0.012	0.075	0.012	0.005	1.0 to 8.5	Up to 2.0	0.83
		0.150			1.0 to 11.0		
0.014	0.020	0.110	----	----	----	----	0.83
		0.210					

- At the time of delivery, grease is inserted inside of the nut, with rust-preventive oil also applied. Before and during use, apply lubricant where appropriate.
- For models with lead accuracy grade of C3 or higher and unfinished shaft ends, consult KURODA.

● Ball screw specifications

Shaft diameter (mm) - Lead (mm)	15 - 10		
Number of circuits / Thread direction	2.7 turns 1 circuit / Right-hand		
Ball diameter (mm)	3.175		
Root diameter (mm)	12.5		
Series	FG	FE	
Basic dynamic load rating C (N)	7400		
Basic static load rating C0 (N)	12900		
Accuracy grade / Axial clearance symbol	C5 / S	C5 / F	C7 / M
Axial clearance (mm)	0	0.005 or less	0.030 or less
Preload torque (N·cm)	1.0 to 12.0	Up to 3.0	----
Spacer ball	None		
Recirculation system	End deflector method		
Wiper	None		
Lubricant	Alvania Grease S2		



Model No. (Unfinished shaft ends)	Screw shaft length		Maximum stroke (L1 - nut length)	Lead accuracy		
	L1	Lt		$\pm E_c$	e_c	e_{300}
FG1510PS-HPNR-0600A	540	600	502	0.030	0.023	0.018
FG1510PS-HPNR-0900A	840	900	802	0.040	0.027	
FG1510PS-HPNR-1100A	1040	1100	1002	0.046	0.030	
FE1510PS-HPNR-0600A	540	600	502	0.05/300	----	----
FE1510PS-HPNR-0900A	840	900	802			
FE1510PS-HPNR-1100A	1040	1100	1002			

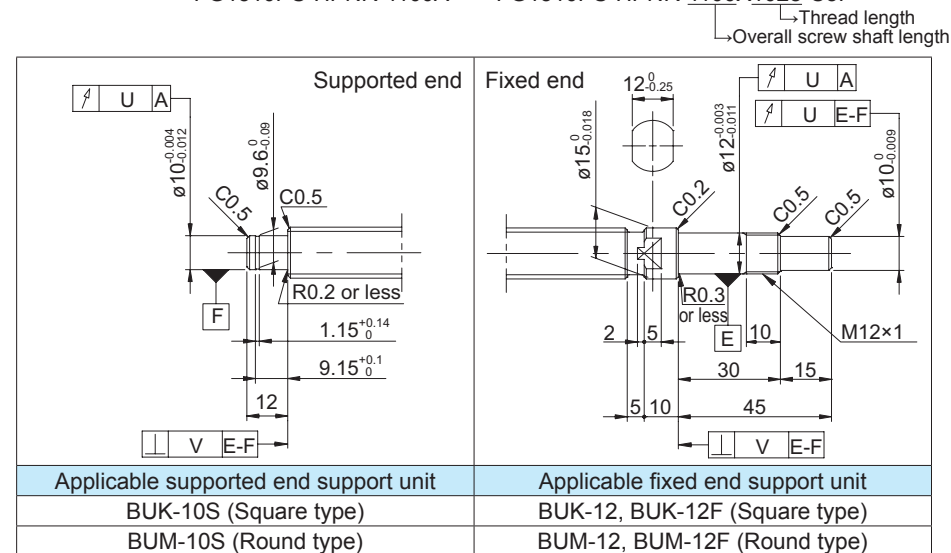
- Product with axial clearance of 0.005 or less (F) shown may be partially preloaded.
- Preload torque is a value before applying grease.

● Shaft end finish type

Standard precision ball screws are available with KURODA's recommended shaft end finish types for each size.

Other than KURODA's recommended shaft end finish types described below, additional machining including keyways, tapped holes, and D-cut processing are also available if requested. Please contact KURODA with your orders. Model examples for finished shaft ends are described below.

Model example: Unfinished shaft ends (See left figure) → Finished shaft ends
 FG1510PS-HPNR-1100A → FG1510PS-HPNR-1100X1028-C5F



● Optional specifications

- Ball screw lubricating unit LUBSEAL can be equipped. The overall nut length will be 11 mm longer.

Model example: FG1510PS-HPSR-1100X1028-C5F
 ↳ Wiper material S: LUBSEAL

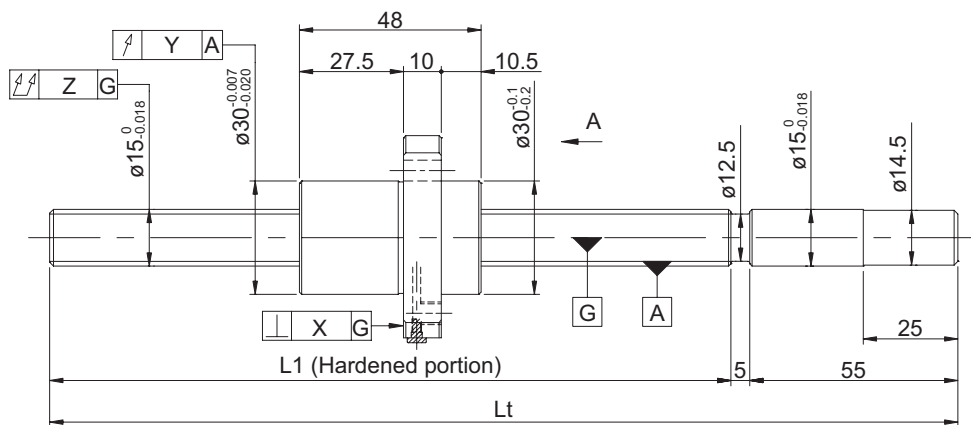
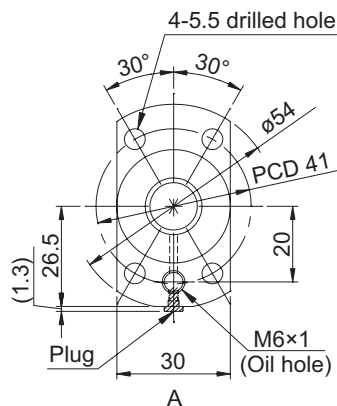
- Anticorrosive black coating (coating thickness: 1 to 2 μm) is available.

Accuracy of each part					Preload torque (N·cm)		Mass (kg)
X	Y	Z	U	V	Without clearance	With clearance	
0.010	0.012	0.075	0.012	0.005	1.5 to 12.0	Up to 3.0	0.96
		0.120			1.5 to 12.0		1.34
		0.150			1.0 to 12.0		1.59
0.014	0.020	0.110	----	----	----	----	0.96
		0.170					1.34
		0.210					1.59

- At the time of delivery, grease is inserted inside of the nut, with rust-preventive oil also applied. Before and during use, apply lubricant where appropriate.
- For models with lead accuracy grade of C3 or higher and unfinished shaft ends, consult KURODA.

• Ball screw specifications

Shaft diameter (mm) - Lead (mm)	15 - 20		
Number of circuits / Thread direction	1.7 turns 1 circuit / Right-hand		
Ball diameter (mm)	3.175		
Root diameter (mm)	12.5		
Series	FG	FE	
Basic dynamic load rating C (N)	4800		
Basic static load rating C0 (N)	8200		
Accuracy grade / Axial clearance symbol	C5 / S	C5 / F	C7 / M
Axial clearance (mm)	0	0.005 or less	0.030 or less
Preload torque (N·cm)	1.0 to 11.0	Up to 3.0	----
Spacer ball	None		
Recirculation system	End deflector method		
Wiper	None		
Lubricant	Alvania Grease S2		



Model No. (Unfinished shaft ends)	Screw shaft length		Maximum stroke (L1 - nut length)	Lead accuracy		
	L1	Lt		$\pm E_c$	e_c	e_{300}
FG1520PS-HPNR-0600A	540	600	492	0.030	0.023	0.018
FG1520PS-HPNR-0900A	840	900	792	0.040	0.027	
FG1520PS-HPNR-1100A	1040	1100	992	0.046	0.030	
FE1520PS-HPNR-0600A	540	600	492	0.05/300	----	----
FE1520PS-HPNR-0900A	840	900	792			
FE1520PS-HPNR-1100A	1040	1100	992			

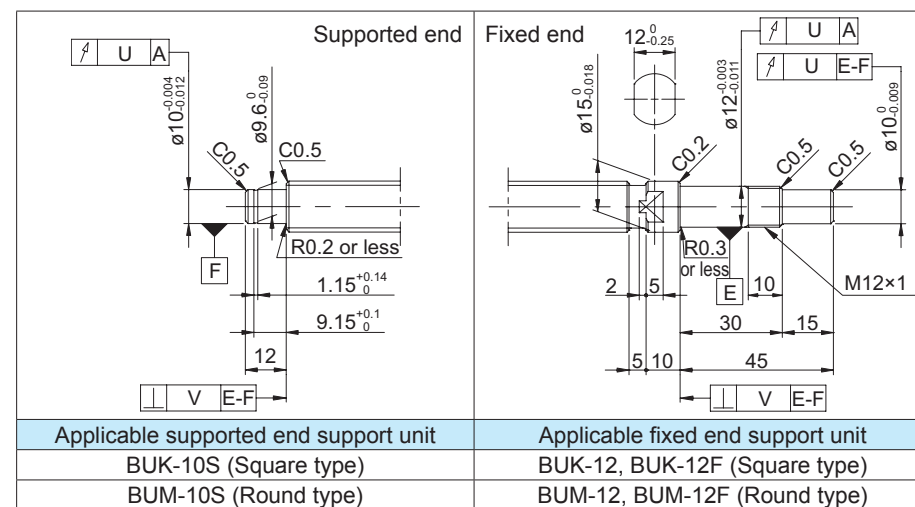
- Product with axial clearance of 0.005 or less (F) shown may be partially preloaded.
- Preload torque is a value before applying grease.

• Shaft end finish type

Standard precision ball screws are available with KURODA's recommended shaft end finish types for each size.

Other than KURODA's recommended shaft end finish types described below, additional machining including keyways, tapped holes, and D-cut processing are also available if requested. Please contact KURODA with your orders. Model examples for finished shaft ends are described below.

Model example: Unfinished shaft ends (See left figure) → Finished shaft ends
 FG1520PS-HPNR-1100A → FG1520PS-HPNR-1100X1028-C5F
 ↳ Thread length
 ↳ Overall screw shaft length



Applicable supported end support unit	Applicable fixed end support unit
BUK-10S (Square type)	BUK-12, BUK-12F (Square type)
BUM-10S (Round type)	BUM-12, BUM-12F (Round type)

• Optional specifications

- Ball screw lubricating unit LUBSEAL can be equipped. The overall nut length will be 11 mm longer.

Model example: FG1520PS-HPSR-1100X1028-C5F
 ↳ Wiper material S: LUBSEAL

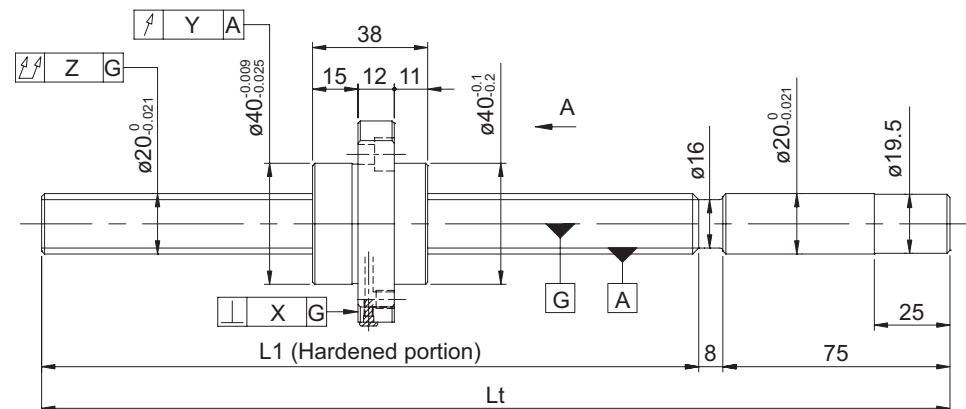
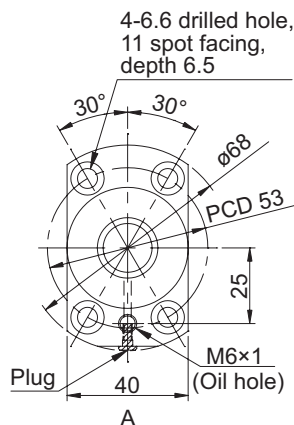
- Anticorrosive black coating (coating thickness: 1 to 2 μ m) is available.

Accuracy of each part					Preload torque (N·cm)		Mass (kg)
X	Y	Z	U	V	Without clearance	With clearance	
0.010	0.012	0.075	0.012	0.005	1.0 to 11.0	Up to 3.0	1.04
		0.120					1.44
		0.150					1.71
0.014	0.020	0.110	----	----	----	----	1.04
		0.170					1.44
		0.210					1.71

- At the time of delivery, grease is inserted inside of the nut, with rust-preventive oil also applied. Before and during use, apply lubricant where appropriate.
- For models with lead accuracy grade of C3 or higher and unfinished shaft ends, consult KURODA.

● Ball screw specifications

Shaft diameter (mm) - Lead (mm)	20 - 10		
Number of circuits / Thread direction	2.7 turns 1 circuit / Right-hand		
Ball diameter (mm)	4.7625		
Root diameter (mm)	16.0		
Series	FG	FE	
Basic dynamic load rating C (N)	18000		
Basic static load rating C0 (N)	33900		
Accuracy grade / Axial clearance symbol	C5 / S	C5 / F	C7 / M
Axial clearance (mm)	0	0.005 or less	0.030 or less
Preload torque (N·cm)	6.5 to 30.0	Up to 4.0	----
Spacer ball	None		
Recirculation system	End deflector method		
Wiper	None		
Lubricant	Alvania Grease S2		



Model No. (Unfinished shaft ends)	Screw shaft length		Maximum stroke (L1 - nut length)	Lead accuracy		
	L1	Lt		$\pm E_c$	e_c	e_{300}
FG2010PS-HPNR-0605A	522	605	484	0.030	0.023	0.018
FG2010PS-HPNR-1005A	922	1005	884	0.040	0.027	
FG2010PS-HPNR-1505A	1422	1505	1384	0.054	0.035	
FE2010PS-HPNR-0605A	522	605	484	0.05/300	----	----
FE2010PS-HPNR-1005A	922	1005	884			
FE2010PS-HPNR-1505A	1422	1505	1384			

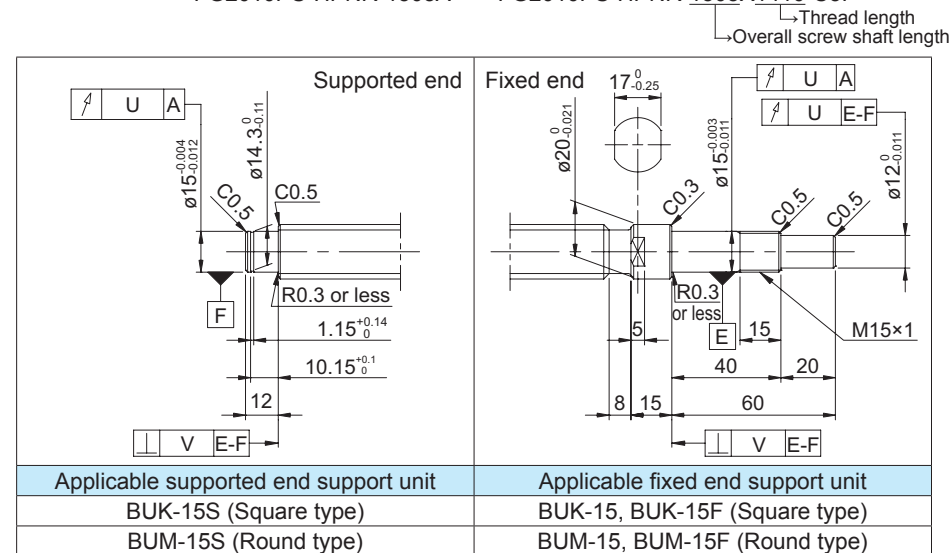
- Product with axial clearance of 0.005 or less (F) shown may be partially preloaded.
- Preload torque is a value before applying grease.

● Shaft end finish type

Standard precision ball screws are available with KURODA's recommended shaft end finish types for each size.

Other than KURODA's recommended shaft end finish types described below, additional machining including keyways, tapped holes, and D-cut processing are also available if requested. Please contact KURODA with your orders. Model examples for finished shaft ends are described below.

Model example: Unfinished shaft ends (See left figure) → Finished shaft ends
FG2010PS-HPNR-1505A → FG2010PS-HPNR-1505X1410-C5F



● Optional specifications

- Ball screw lubricating unit LUBSEAL can be equipped. The overall nut length will be 11 mm longer.

Model example: FG2010PS-HPSR-1505X1410-C5F
↳ Wiper material S: LUBSEAL

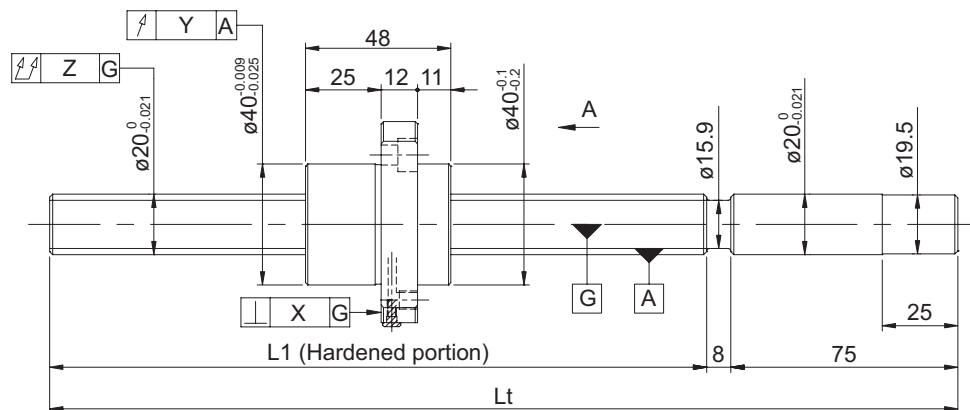
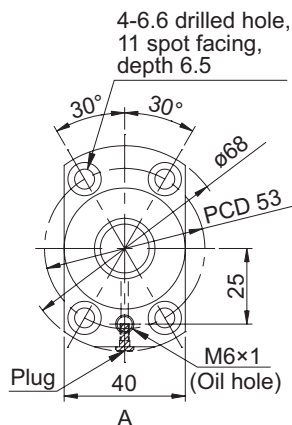
- Anticorrosive black coating (coating thickness: 1 to 2 μm) is available.

X	Y	Z	U	V	Preload torque (N·cm)		Mass (kg)
					Without clearance	With clearance	
0.011	0.015	0.075	0.012	0.005	7.0 to 30.0	Up to 4.0	1.63
		0.150			6.5 to 30.0		2.46
		0.190			6.5 to 30.0		3.49
0.018	0.030	0.110	----	----	----	----	1.63
		0.210					2.46
		0.270					3.49

- At the time of delivery, grease is inserted inside of the nut, with rust-preventive oil also applied. Before and during use, apply lubricant where appropriate.
- For models with lead accuracy grade of C3 or higher and unfinished shaft ends, consult KURODA.

● Ball screw specifications

Shaft diameter (mm) - Lead (mm)	20 - 20		
Number of circuits / Thread direction	1.7 turns 1 circuit / Right-hand		
Ball diameter (mm)	4.7625		
Root diameter (mm)	15.9		
Series	FG	FE	
Basic dynamic load rating C (N)	11600		
Basic static load rating C0 (N)	20600		
Accuracy grade / Axial clearance symbol	C5 / S	C5 / F	C7 / M
Axial clearance (mm)	0	0.005 or less	0.030 or less
Preload torque (N·cm)	4.5 to 22.5	Up to 4.0	----
Spacer ball	None		
Recirculation system	End deflector method		
Wiper	None		
Lubricant	Alvania Grease S2		



Model No. (Unfinished shaft ends)	Screw shaft length		Maximum stroke (L1 - nut length)	Lead accuracy		
	L1	Lt		$\pm E_c$	e_c	e_{300}
FG2020PS-HPNR-1005A	922	1005	874	0.040	0.027	0.018
FG2020PS-HPNR-1505A	1422	1505	1374	0.054	0.035	
FE2020PS-HPNR-1005A	922	1005	874	0.05/300	----	----
FE2020PS-HPNR-1505A	1422	1505	1374			

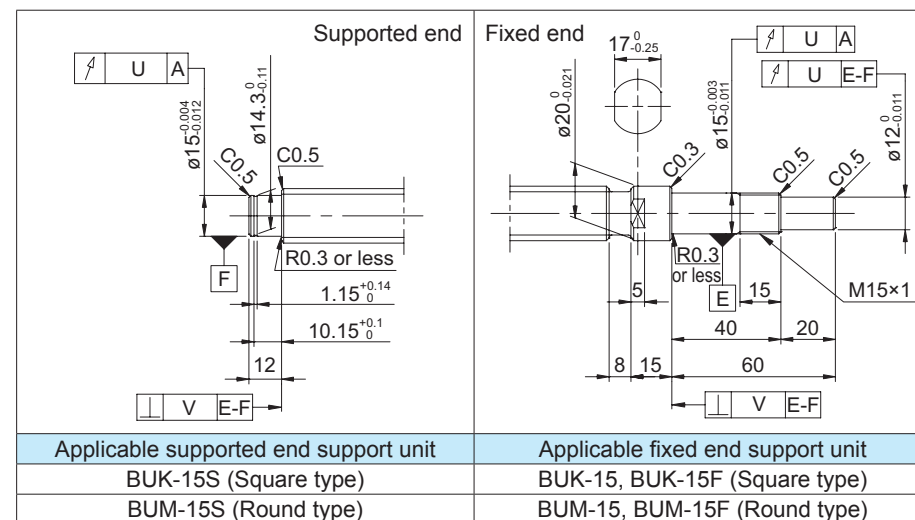
- Product with axial clearance of 0.005 or less (F) shown may be partially preloaded.
- Preload torque is a value before applying grease.

● Shaft end finish type

Standard precision ball screws are available with KURODA's recommended shaft end finish types for each size.

Other than KURODA's recommended shaft end finish types described below, additional machining including keyways, tapped holes, and D-cut processing are also available if requested. Please contact KURODA with your orders. Model examples for finished shaft ends are described below.

Model example: Unfinished shaft ends (See left figure) → Finished shaft ends
 FG2020PS-HPNR-1505A → FG2020PS-HPNR-1505X1410-C5F
 ↳ Thread length
 ↳ Overall screw shaft length



● Optional specifications

- Ball screw lubricating unit LUBSEAL can be equipped. The overall nut length will be 11 mm longer.

Model example: FG2020PS-HPSR-1505X1410-C5F
 ↳ Wiper material S: LUBSEAL

- Anticorrosive black coating (coating thickness: 1 to 2 μm) is available.

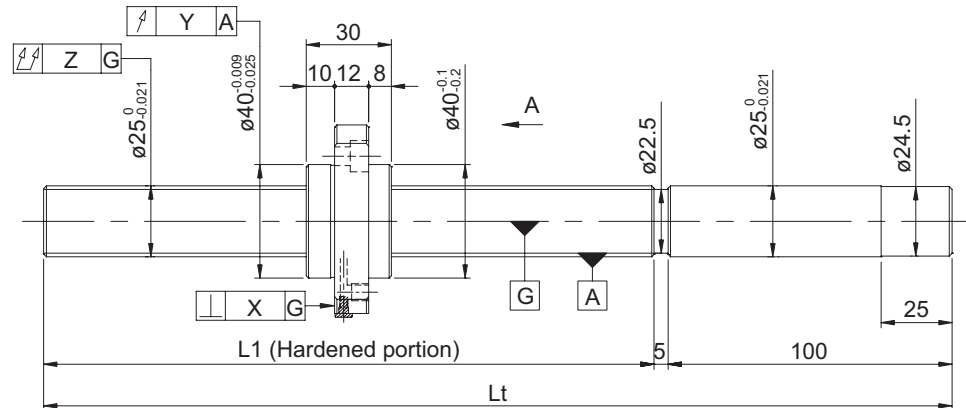
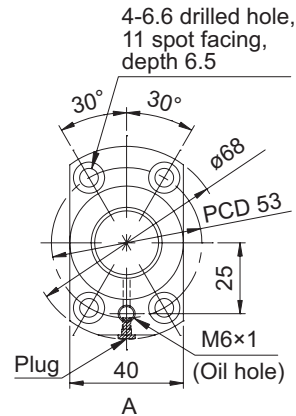
Accuracy of each part					Preload torque (N·cm)		Mass (kg)
X	Y	Z	U	V	Without clearance	With clearance	
0.011	0.015	0.150	0.012	0.005	5.5 to 21.0	Up to 4.0	2.73
		0.190			4.5 to 22.5		3.87
0.018	0.030	0.210	----	----	----	----	2.73
		0.270					----

- At the time of delivery, grease is inserted inside of the nut, with rust-preventive oil also applied. Before and during use, apply lubricant where appropriate.
- For models with lead accuracy grade of C3 or higher and unfinished shaft ends, consult KURODA.

FG series (Accuracy grade C5) / FE series (Accuracy grade C7)

● Ball screw specifications

Shaft diameter (mm) - Lead (mm)	25 - 5		
Number of circuits / Thread direction	3.7 turns 1 circuit / Right-hand		
Ball diameter (mm)	3.175		
Root diameter (mm)	22.5		
Series	FG	FE	
Basic dynamic load rating C (N)	13100		
Basic static load rating C0 (N)	31800		
Accuracy grade / Axial clearance symbol	C5 / S	C5 / F	C7 / M
Axial clearance (mm)	0	0.005 or less	0.030 or less
Preload torque (N·cm)	2.0 to 25.0	Up to 6.0	----
Spacer ball	None		
Recirculation system	End deflector method		
Wiper	None		
Lubricant	Alvania Grease S2		



Model No. (Unfinished shaft ends)	Screw shaft length		Maximum stroke (L1 - nut length)	Lead accuracy		
	L1	Lt		$\pm E_c$	e_c	e_{300}
FG2505PS-HPNR-0600A	495	600	465	0.027	0.020	0.018
FG2505PS-HPNR-1000A	895	1000	865	0.040	0.027	
FG2505PS-HPNR-1505A	1400	1505	1370	0.054	0.035	
FE2505PS-HPNR-0600A	495	600	465	0.05/300	----	----
FE2505PS-HPNR-1000A	895	1000	865			
FE2505PS-HPNR-1505A	1400	1505	1370			

- Product with axial clearance of 0.005 or less (F) shown may be partially preloaded.
- Preload torque is a value before applying grease.

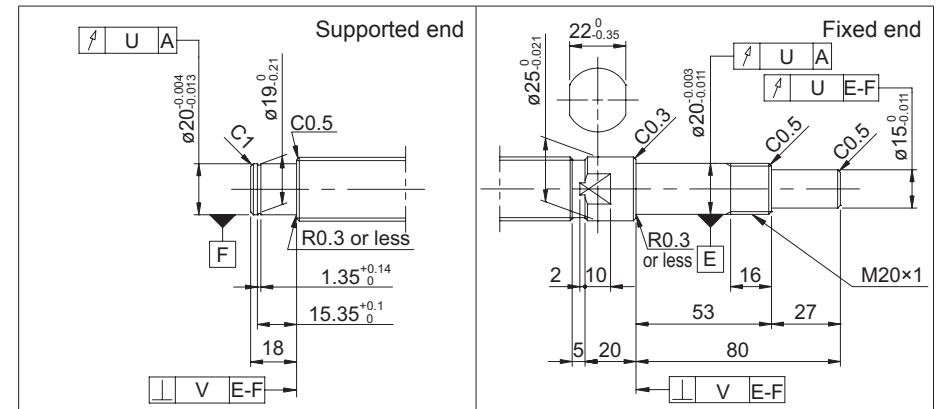
Screw shaft diameter $\phi 25$, Lead 5

● Shaft end finish type

Standard precision ball screws are available with KURODA's recommended shaft end finish types for each size.

Other than KURODA's recommended shaft end finish types described below, additional machining including keyways, tapped holes, and D-cut processing are also available if requested. Please contact KURODA with your orders. Model examples for finished shaft ends are described below.

Model example: Unfinished shaft ends (See left figure) → Finished shaft ends
 FG2505PS-HPNR-1505A → FG2505PS-HPNR-1505X1382-C5F
 ↳ Thread length
 ↳ Overall screw shaft length



Applicable supported end support unit	Applicable fixed end support unit
BUK-20S (Square type)	BUK-20, BUK-20F (Square type)
BUM-20S (Round type)	BUM-20, BUM-20F (Round type)

● Optional specifications

- Ball screw lubricating unit LUBSEAL can be equipped. The overall nut length will be 11 mm longer.

Model example: FG2505PS-HPSR-1505X1382-C5F
 ↳ Wiper material S: LUBSEAL

- Anticorrosive black coating (coating thickness: 1 to 2 μm) is available.

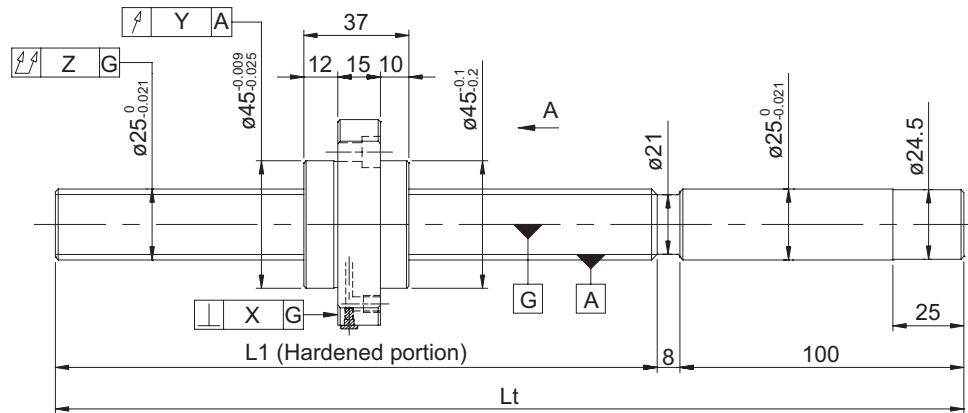
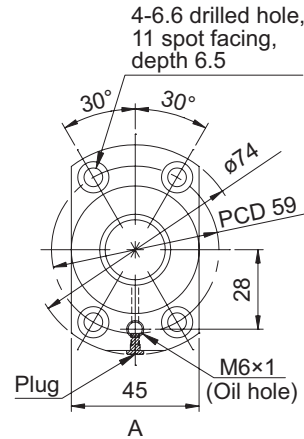
Accuracy of each part					Preload torque (N·cm)		Mass (kg)
X	Y	Z	U	V	Without clearance	With clearance	
0.011	0.015	0.060	0.013	0.005	2.0 to 25.0	Up to 6.0	2.37
		0.085					3.74
		0.130					5.47
0.018	0.030	0.090	----	----	----	----	2.37
		0.130					3.74
		0.190					5.47

- At the time of delivery, grease is inserted inside of the nut, with rust-preventive oil also applied. Before and during use, apply lubricant where appropriate.
- For models with lead accuracy grade of C3 or higher and unfinished shaft ends, consult KURODA.

FG series (Accuracy grade C5) / FE series (Accuracy grade C7)

● Ball screw specifications

Shaft diameter (mm) - Lead (mm)	25 - 10		
Number of circuits / Thread direction	2.7 turns 1 circuit / Right-hand		
Ball diameter (mm)	4.7625		
Root diameter (mm)	21.0		
Series	FG	FE	
Basic dynamic load rating C (N)	20400		
Basic static load rating C0 (N)	42600		
Accuracy grade / Axial clearance symbol	C5 / S	C5 / F	C7 / M
Axial clearance (mm)	0	0.005 or less	0.030 or less
Preload torque (N·cm)	9.0 to 38.0	Up to 6.0	----
Spacer ball	None		
Recirculation system	End deflector method		
Wiper	None		
Lubricant	Alvania Grease S2		



Model No. (Unfinished shaft ends)	Screw shaft length		Maximum stroke (L1 - nut length)	Lead accuracy		
	L1	Lt		$\pm E_c$	e_c	e_{300}
FG2510PS-HPNR-1020A	912	1020	875	0.040	0.027	0.018
FG2510PS-HPNR-1520A	1412	1520	1375	0.054	0.035	
FE2510PS-HPNR-1020A	912	1020	875	0.05/300	----	----
FE2510PS-HPNR-1520A	1412	1520	1375			

- Product with axial clearance of 0.005 or less (F) shown may be partially preloaded.
- Preload torque is a value before applying grease.

Screw shaft diameter $\phi 25$, Lead 10

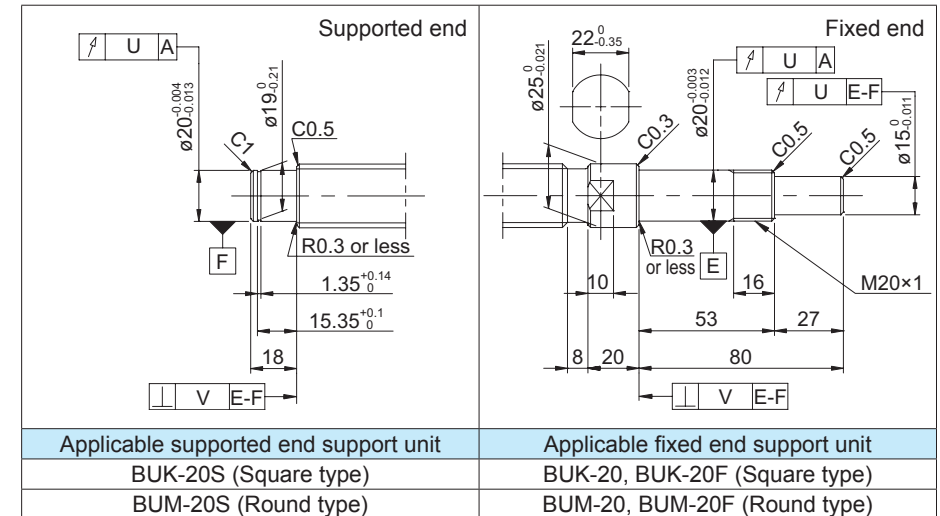
● Shaft end finish type

Standard precision ball screws are available with KURODA's recommended shaft end finish types for each size.

Other than KURODA's recommended shaft end finish types described below, additional machining including keyways, tapped holes, and D-cut processing are also available if requested. Please contact KURODA with your orders. Model examples for finished shaft ends are described below.

Model example: Unfinished shaft ends (See left figure) → Finished shaft ends

FG2510PS-HPNR-1520A → FG2510PS-HPNR-1520X1394-C5F
 ↳ Thread length
 ↳ Overall screw shaft length



● Optional specifications

- Ball screw lubricating unit LUBSEAL can be equipped. The overall nut length will be 11 mm longer.

Model example: FG2510PS-HPNR-1520X1394-C5F

↳ Wiper material S: LUBSEAL

- Anticorrosive black coating (coating thickness: 1 to 2 μm) is available.

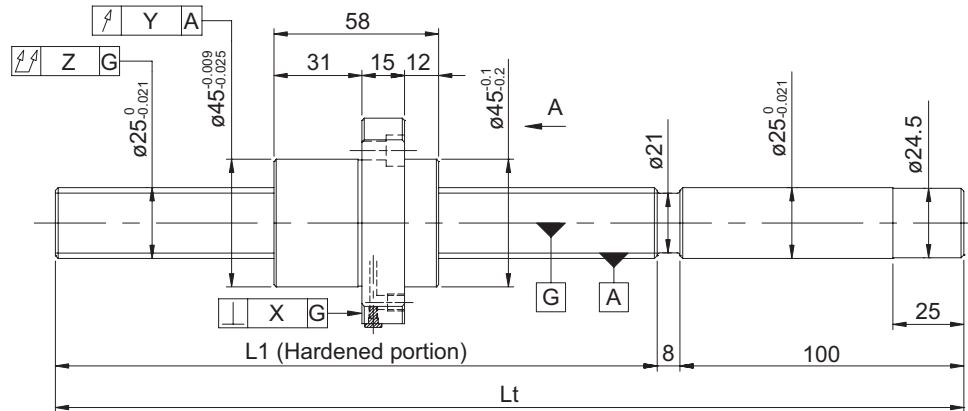
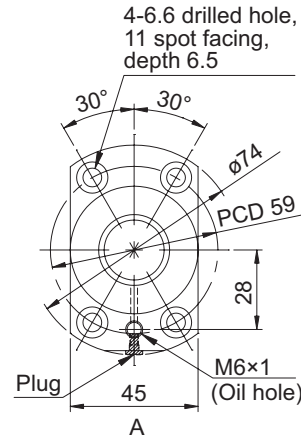
Accuracy of each part					Preload torque (N·cm)		Mass (kg)
X	Y	Z	U	V	Without clearance	With clearance	
0.011	0.015	0.100	0.013	0.005	9.0 to 38.0	Up to 6.0	3.92
		0.130					5.60
0.018	0.030	0.150	----	----	----	----	3.92
		0.190					5.60

- At the time of delivery, grease is inserted inside of the nut, with rust-preventive oil also applied. Before and during use, apply lubricant where appropriate.
- For models with lead accuracy grade of C3 or higher and unfinished shaft ends, consult KURODA.

FG series (Accuracy grade C5) / FE series (Accuracy grade C7)

● Ball screw specifications

Shaft diameter (mm) - Lead (mm)	25 - 25		
Number of circuits / Thread direction	1.7 turns 1 circuit / Right-hand		
Ball diameter (mm)	4.7625		
Root diameter (mm)	21.0		
Series	FG	FE	
Basic dynamic load rating C (N)	13100		
Basic static load rating C0 (N)	25900		
Accuracy grade / Axial clearance symbol	C5 / S	C5 / F	C7 / M
Axial clearance (mm)	0	0.005 or less	0.030 or less
Preload torque (N·cm)	6.0 to 32.0	Up to 6.0	----
Spacer ball	None		
Recirculation system	End deflector method		
Wiper	None		
Lubricant	Alvania Grease S2		



Model No. (Unfinished shaft ends)	Screw shaft length		Maximum stroke (L1 - nut length)	Lead accuracy		
	L1	Lt		$\pm E_c$	e_c	e_{300}
FG2525PS-HPNR-1020A	912	1020	854	0.040	0.027	0.018
FG2525PS-HPNR-1520A	1412	1520	1354	0.054	0.035	
FE2525PS-HPNR-1020A	912	1020	854	0.05/300	----	----
FE2525PS-HPNR-1520A	1412	1520	1354			

- Product with axial clearance of 0.005 or less (F) shown may be partially preloaded.
- Preload torque is a value before applying grease.

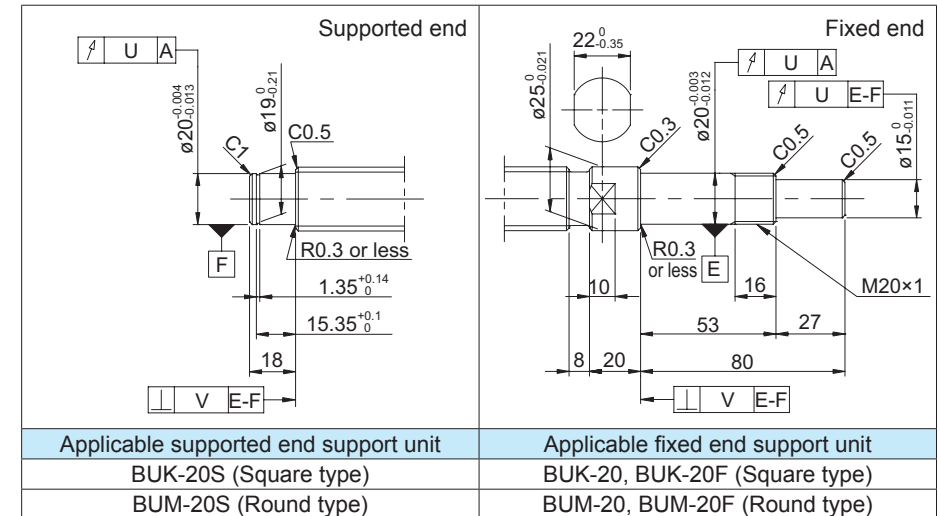
Screw shaft diameter $\phi 25$, Lead 25

● Shaft end finish type

Standard precision ball screws are available with KURODA's recommended shaft end finish types for each size.

Other than KURODA's recommended shaft end finish types described below, additional machining including keyways, tapped holes, and D-cut processing are also available if requested. Please contact KURODA with your orders. Model examples for finished shaft ends are described below.

Model example: Unfinished shaft ends (See left figure) → Finished shaft ends
 FG2525PS-HPNR-1520A → FG2525PS-HPNR-1520X1394-C5F
 ↳ Thread length
 ↳ Overall screw shaft length



● Optional specifications

- Ball screw lubricating unit LUBSEAL can be equipped. The overall nut length will be 11 mm longer.

Model example: FG2525PS-HPSR-1520X1394-C5F
 ↳ Wiper material S: LUBSEAL

- Anticorrosive black coating (coating thickness: 1 to 2 μm) is available.

Accuracy of each part					Preload torque (N·cm)		Mass (kg)
X	Y	Z	U	V	Without clearance	With clearance	
0.011	0.015	0.100	0.013	0.005	6.0 to 32.0	Up to 6.0	4.39
		0.130			6.0 to 32.0		6.23
0.018	0.030	0.150	----	----	----	----	4.39
		0.190					6.23

- At the time of delivery, grease is inserted inside of the nut, with rust-preventive oil also applied. Before and during use, apply lubricant where appropriate.
- For models with lead accuracy grade of C3 or higher and unfinished shaft ends, consult KURODA.