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

	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
Example model numbers	FG	15	10	P	S	–	H	P	N	R	–	0900	X	0840	–	C5	F
	DP	6 to 14	1 to 4	J			H	D	N			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				A, X			C5	F
	FE															C7	M
	GG	8 to 32	2 to 25	See specifications.			See specifications.	See specifications.	See specifications.				A, X			C5	F
	GE															C7	M
	GP	8 to 20	2 to 5					A					B, X			C3	F, S
	HG		12 to 60	Q				Q					A, X			C5	F, H

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

□ Screw shaft diameter and lead combinations

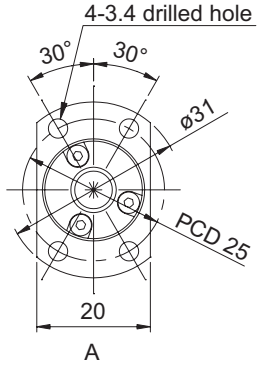
		Lead (mm)														
		1	2	3	4	5	10	12	15	16	20	25	30	32	40	60
Screw shaft diameter (mm)	6	○														
	8	○	● ○		●			□								
	10		● ○		●		● ♦									
	12		● ○	○	●	●	● ♦				● ♦		□			
	14				○											
	15		●		●	● ♦	● ♦		●		● □ ♦				□	
	16									●				□		
	20				●	●	● ♦				● □ ♦		□		□	□
	25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

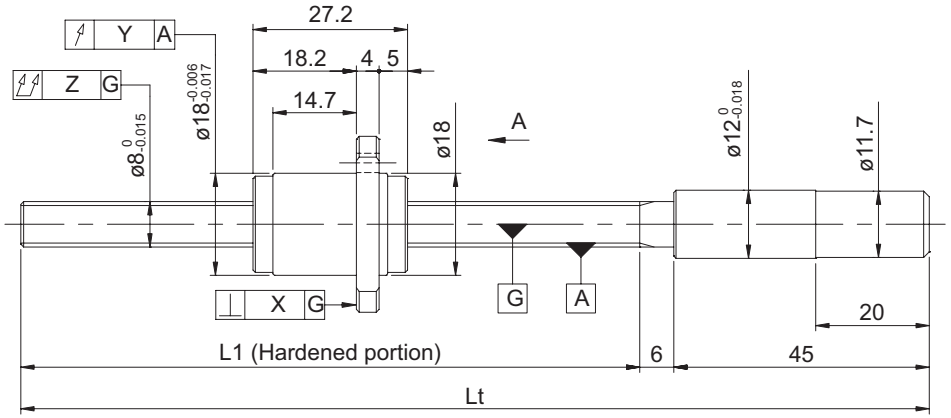
●: GP, GG, GE series
○: DP series (small lead)
□: HG series (large lead)
♦: FG, FE series (high rotational speed)

Screw shaft diameter ø8

● Ball screw specifications

Shaft diameter (mm) - Lead (mm)	8 - 12
Number of circuits / Thread direction	1.67 turns 2 circuits (2 threads) / Right-hand
Ball diameter (mm)	1.5875
Root diameter (mm)	6.6
Series	HG
Basic dynamic load rating C (N)	2490
Basic static load rating C0 (N)	3460
Accuracy grade / Axial clearance symbol	C5 / H
Axial clearance (mm)	0.010 or less
Preload torque (N·cm)	----
Spacer ball	None
Recirculation system	End cap method
Wiper	None
Lubricant	Multemp PS2





Model No. (Unfinished shaft ends)	Screw shaft length		Maximum stroke (L1 - nut length)	Lead accuracy		
	L1	Lt		±E_c	e_c	e_{300}
HG0812QS-HEZR-0340A	289	340	261	0.023	0.018	0.018

• 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.

● Shaft end finish type

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

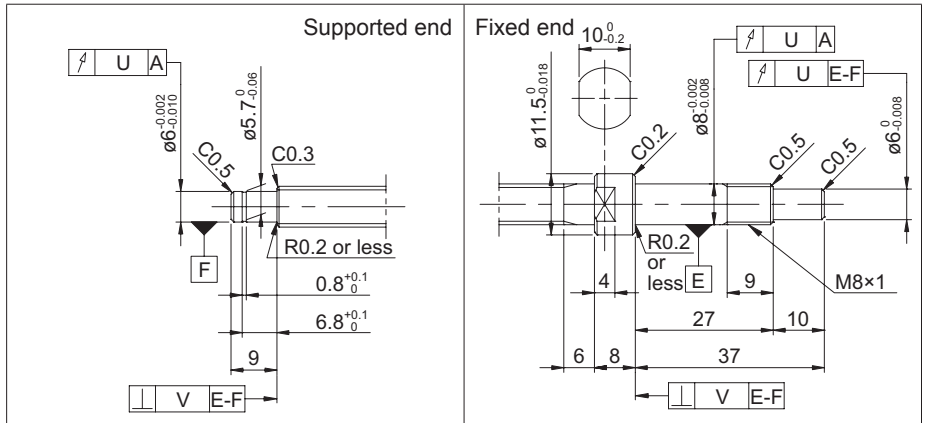
Other than KURODA's recommended shaft end finish types described below, additional machining including keyways, tapped holes, and D-cut processing are also available if requested. Please contact KURODA with your orders. Model examples for finished shaft ends are described below.

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

HG0812QS-HEZR-0340A → HG0812QS-HEZR-0340X0280-C5H

↳Thread length

↳Overall screw shaft length



Applicable supported end support unit	Applicable fixed end support unit
BUK-6S (Square type)	BUK-8, BUK-8F (Square type)
BUM-6S (Round type)	BUM-8, BUM-8F (Round type)

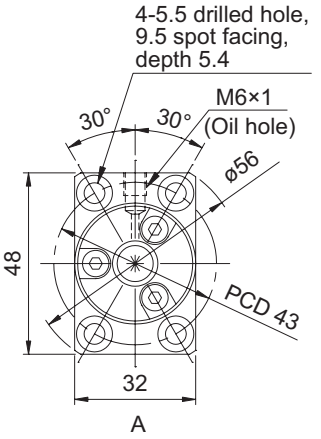
● Optional specifications

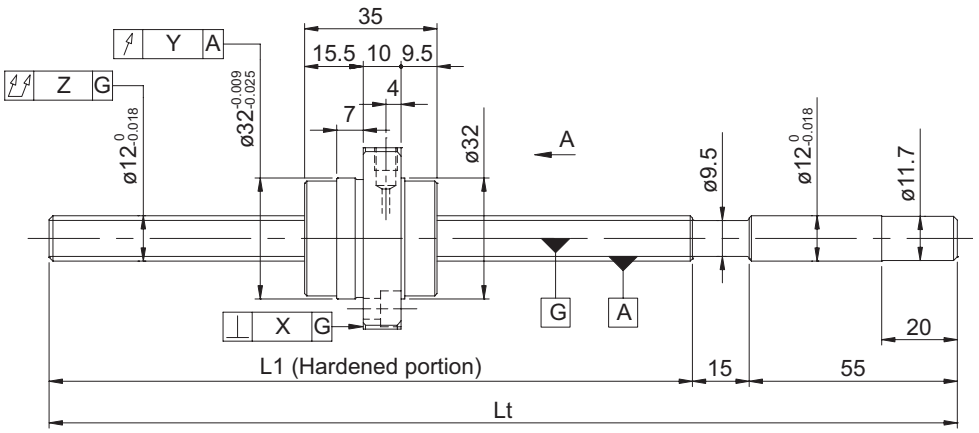
• Anticorrosive black coating (coating thickness: 1 to 2 μm) is available.

Accuracy of each part					Preload torque (N·cm)	Mass (kg)
X	Y	Z	U	V		
0.010	0.012	0.075	0.010	0.005	----	0.20

● Ball screw specifications

Shaft diameter (mm) - Lead (mm)	12 - 30
Number of circuits / Thread direction	0.67 turns 3 circuits (3 threads) / Right-hand
Ball diameter (mm)	3.175
Root diameter (mm)	9.5
Series	HG
Basic dynamic load rating C (N)	4800
Basic static load rating C0 (N)	6650
Accuracy grade / Axial clearance symbol	C5 / H
Axial clearance (mm)	0.010 or less
Preload torque (N·cm)	----
Spacer ball	None
Recirculation system	End cap method
Wiper	None
Lubricant	Alvania Grease S2





Model No. (Unfinished shaft ends)	Screw shaft length L1	Screw shaft length Lt	Maximum stroke (L1 - nut length)	Lead accuracy ±E_c	Lead accuracy e_c	Lead accuracy e_{300}
HG1230QS-BEZR-0500A	430	500	395	0.027	0.020	0.018
HG1230QS-BEZR-0800A	730	800	695	0.035	0.025	

• 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.

● Shaft end finish type

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

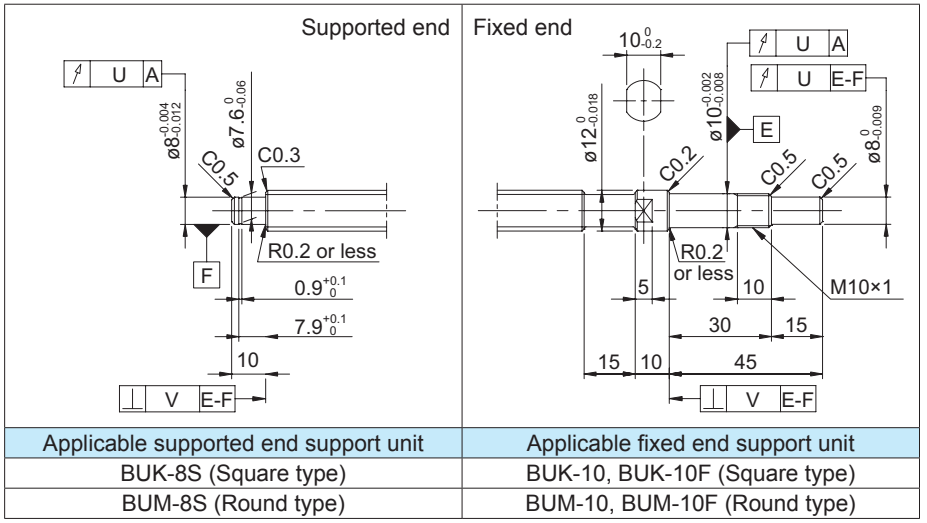
Other than KURODA's recommended shaft end finish types described below, additional machining including keyways, tapped holes, and D-cut processing are also available if requested. Please contact KURODA with your orders. Model examples for finished shaft ends are described below.

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

HG1230QS-BEZR-0800A → HG1230QS-BEZR-0800X0720-C5H

0720 → Thread length

0800 → Overall screw shaft length



Applicable supported end support unit	Applicable fixed end support unit
BUK-8S (Square type)	BUK-10, BUK-10F (Square type)
BUM-8S (Round type)	BUM-10, BUM-10F (Round type)

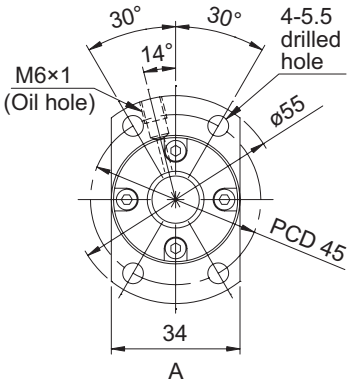
● Optional specifications

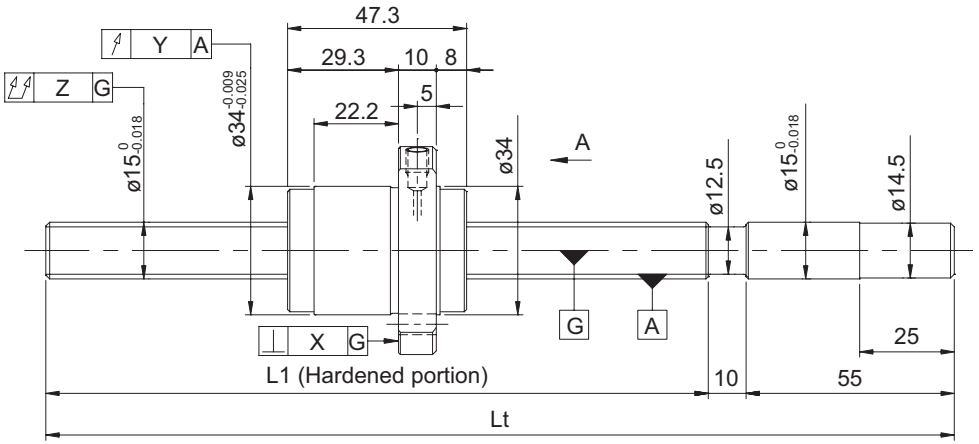
• Anticorrosive black coating (coating thickness: 1 to 2 μm) is available.

Accuracy of each part X	Y	Z	U	V	Preload torque (N·cm)	Mass (kg)
0.010	0.012	0.080	0.011	0.005	----	0.62
		0.090				0.85

● Ball screw specifications

Shaft diameter (mm) - Lead (mm)	15 - 20
Number of circuits / Thread direction	1.67 turns 2 circuits (2 threads) / Right-hand
Ball diameter (mm)	3.175
Root diameter (mm)	12.5
Series	HG
Basic dynamic load rating C (N)	8740
Basic static load rating C0 (N)	17550
Accuracy grade / Axial clearance symbol	C5 / F
Axial clearance (mm)	0.005 or less
Preload torque (N·cm)	Up to 6.0
Spacer ball	None
Recirculation system	End cap method
Wiper	None
Lubricant	Alvania Grease S2





Model No. (Unfinished shaft ends)	Screw shaft length L1	Screw shaft length Lt	Maximum stroke (L1 - nut length)	Lead accuracy ±E_c	Lead accuracy e_c	Lead accuracy e_{300}
HG1520QS-HEZR-0600A	535	600	487	0.030	0.023	0.018
HG1520QS-HEZR-1100A	1035	1100	987	0.046	0.030	

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

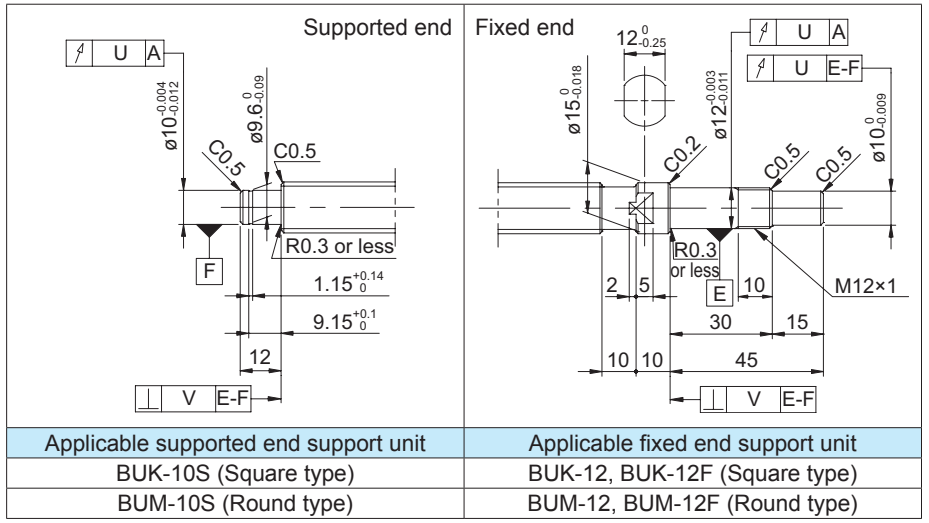
● Shaft end finish type

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

HG1520QS-HEZR-1100A → HG1520QS-HEZR-1100X1023-C5F
(1100: Thread length, 1023: 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)

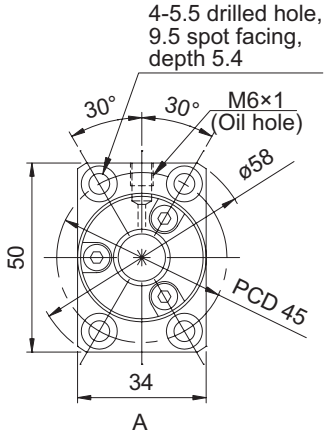
● Optional specifications

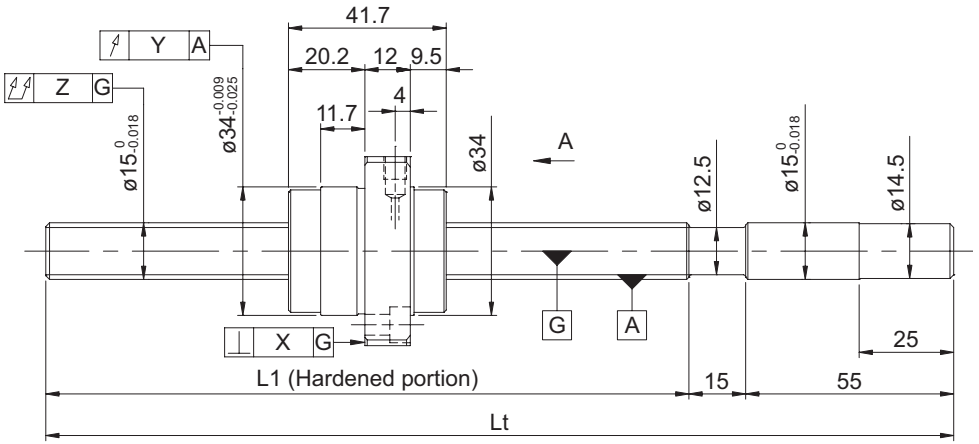
• Anticorrosive black coating (coating thickness: 1 to 2 μm) is available.

Accuracy of each part X	Y	Z	U	V	Preload torque (N·cm)	Mass (kg)
0.011	0.015	0.075	0.012	0.005	Up to 6.0	1.07
		0.150				1.70

● Ball screw specifications

Shaft diameter (mm) - Lead (mm)	15 - 40
Number of circuits / Thread direction	0.67 turns 3 circuits (3 threads) / Right-hand
Ball diameter (mm)	3.175
Root diameter (mm)	12.5
Series	HG
Basic dynamic load rating C (N)	5600
Basic static load rating C0 (N)	8600
Accuracy grade / Axial clearance symbol	C5 / H
Axial clearance (mm)	0.010 or less
Preload torque (N·cm)	----
Spacer ball	None
Recirculation system	End cap method
Wiper	None
Lubricant	Alvania Grease S2





Model No. (Unfinished shaft ends)	Screw shaft length L1	Screw shaft length Lt	Maximum stroke (L1 - nut length)	Lead accuracy ±E_c	Lead accuracy e_c	Lead accuracy e_{300}
HG1540QS-BEZR-0600A	530	600	488	0.030	0.023	0.018
HG1540QS-BEZR-1100A	1030	1100	988	0.046	0.030	

• 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.

● Shaft end finish type

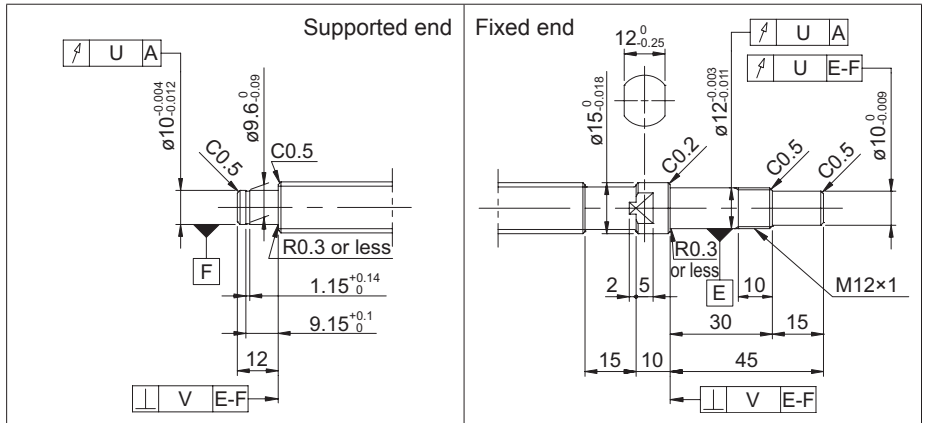
Standard precision ball screws are available with KURODA's recommended shaft end finish types for each size.

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

HG1540QS-BEZR-1100A → HG1540QS-BEZR-1100X1018-C5H

1100: Thread length
1018: 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)

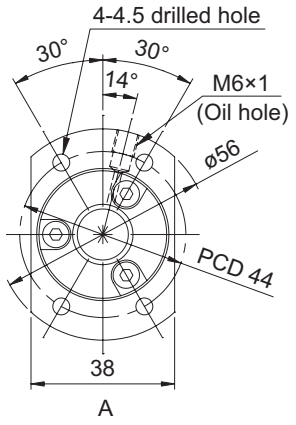
● Optional specifications

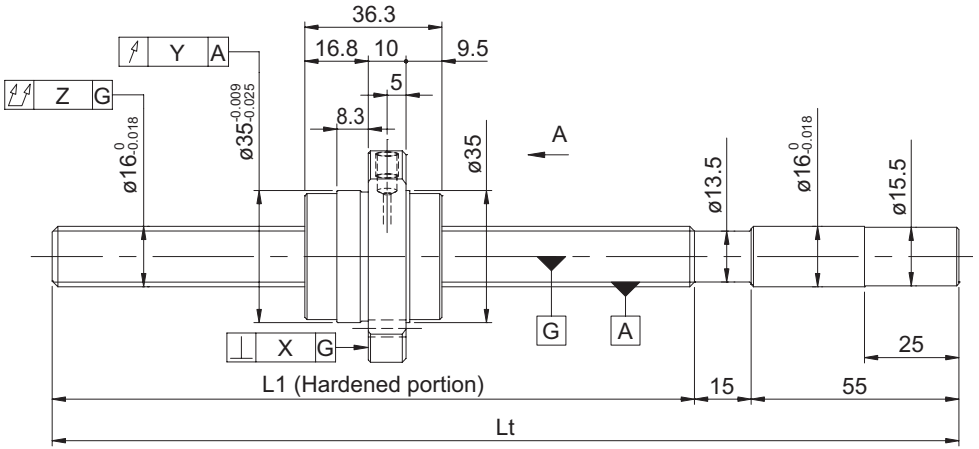
• Anticorrosive black coating (coating thickness: 1 to 2 μm) is available.

Accuracy of each part X	Y	Z	U	V	Preload torque (N·cm)	Mass (kg)
0.011	0.015	0.075	0.012	0.005	----	1.06
		0.150				1.70

● Ball screw specifications

Shaft diameter (mm) - Lead (mm)	16 - 32
Number of circuits / Thread direction	0.67 turns 3 circuits (3 threads) / Right-hand
Ball diameter (mm)	3.175
Root diameter (mm)	13.5
Series	HG
Basic dynamic load rating C (N)	6100
Basic static load rating C0 (N)	9100
Accuracy grade / Axial clearance symbol	C5 / F
Axial clearance (mm)	0.005 or less
Preload torque (N·cm)	Up to 6.0
Spacer ball	None
Recirculation system	End cap method
Wiper	None
Lubricant	Alvania Grease S2





Model No. (Unfinished shaft ends)	Screw shaft length L1	Screw shaft length Lt	Maximum stroke (L1 - nut length)	Lead accuracy ±E_c	Lead accuracy e_c	Lead accuracy e_{300}
HG1632QS-HEZR-0600A	530	600	493	0.030	0.023	0.018
HG1632QS-HEZR-1100A	1030	1100	993	0.046	0.030	

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

● Shaft end finish type

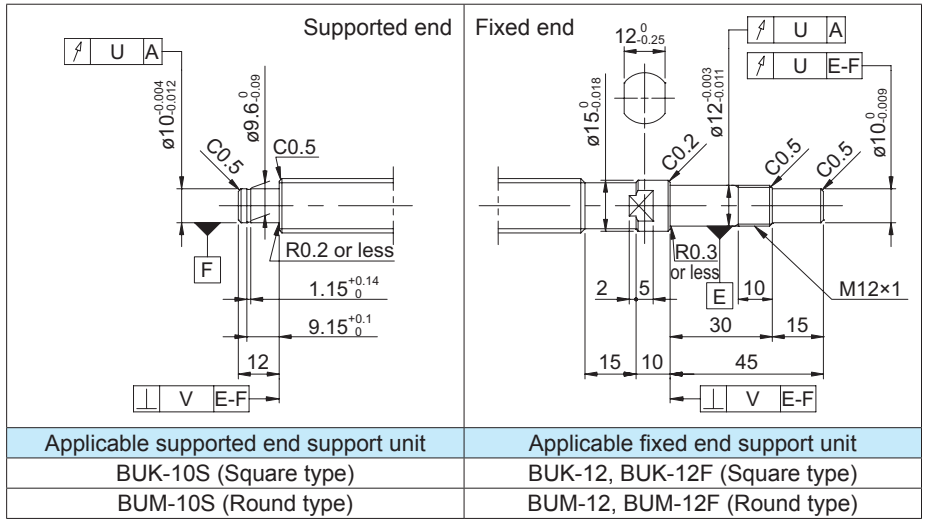
Standard precision ball screws are available with KURODA's recommended shaft end finish types for each size.

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

HG1632QS-HEZR-1100A → HG1632QS-HEZR-1100X1023-C5F

1100: Thread length
1023: 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)

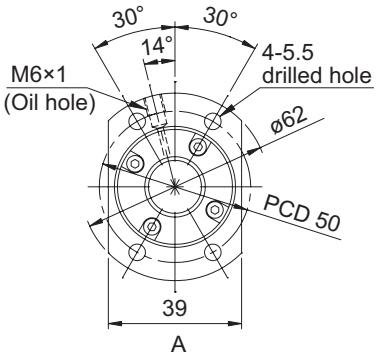
● Optional specifications

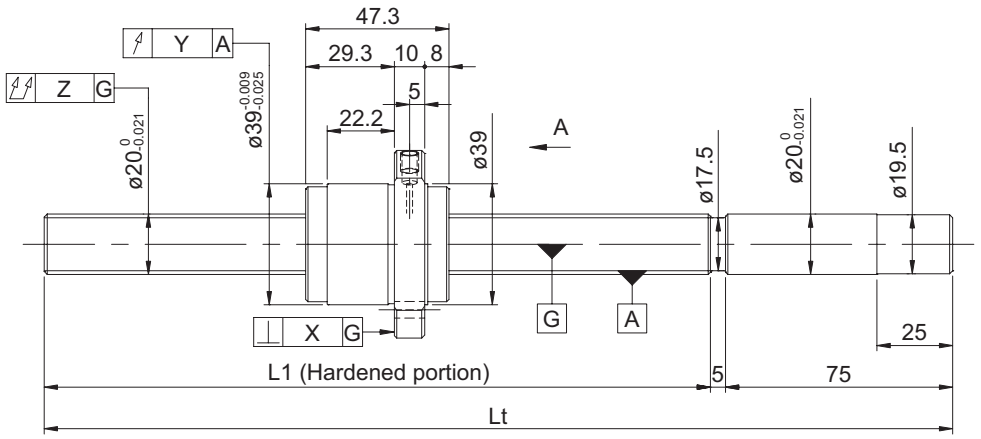
- Anticorrosive black coating (coating thickness: 1 to 2 μm) is available.

Accuracy of each part X	Y	Z	U	V	Preload torque (N·cm)	Mass (kg)
0.011	0.015	0.075	0.012	0.005	Up to 6.0	1.14
		0.150				1.86

● Ball screw specifications

Shaft diameter (mm) - Lead (mm)	20 - 20
Number of circuits / Thread direction	1.67 turns 2 circuits (2 threads) / Right-hand
Ball diameter (mm)	3.175
Root diameter (mm)	17.5
Series	HG
Basic dynamic load rating C (N)	10690
Basic static load rating C0 (N)	23330
Accuracy grade / Axial clearance symbol	C5 / F
Axial clearance (mm)	0.005 or less
Preload torque (N·cm)	Up to 7.0
Spacer ball	None
Recirculation system	End cap method
Wiper	None
Lubricant	Alvania Grease S2





Model No. (Unfinished shaft ends)	Screw shaft length L1	Screw shaft length Lt	Maximum stroke (L1 - nut length)	Lead accuracy ±E_c	Lead accuracy e_c	Lead accuracy e_{300}
HG2020QS-HEZR-1000A	920	1000	872	0.040	0.027	0.018
HG2020QS-HEZR-1500A	1420	1500	1372	0.054	0.035	

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

● Shaft end finish type

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

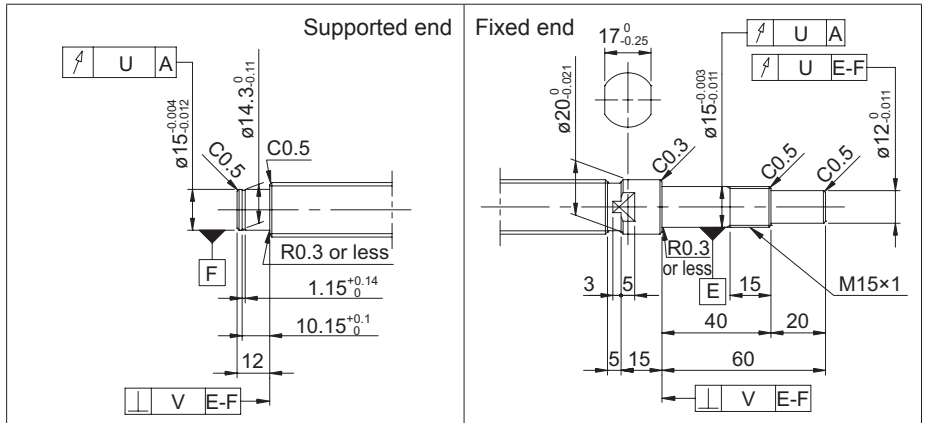
Other than KURODA's recommended shaft end finish types described below, additional machining including keyways, tapped holes, and D-cut processing are also available if requested. Please contact KURODA with your orders. Model examples for finished shaft ends are described below.

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

HG2020QS-HEZR-1500A → HG2020QS-HEZR-1500X1408-C5F

1408 → Thread length

1500 → Overall screw shaft length



Applicable supported end support unit	Applicable fixed end support unit
BUK-15S (Square type)	BUK-15, BUK-15F (Square type)
BUM-15S (Round type)	BUM-15, BUM-15F (Round type)

● Optional specifications

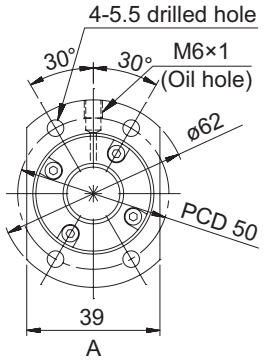
- Anticorrosive black coating (coating thickness: 1 to 2 μm) is available.

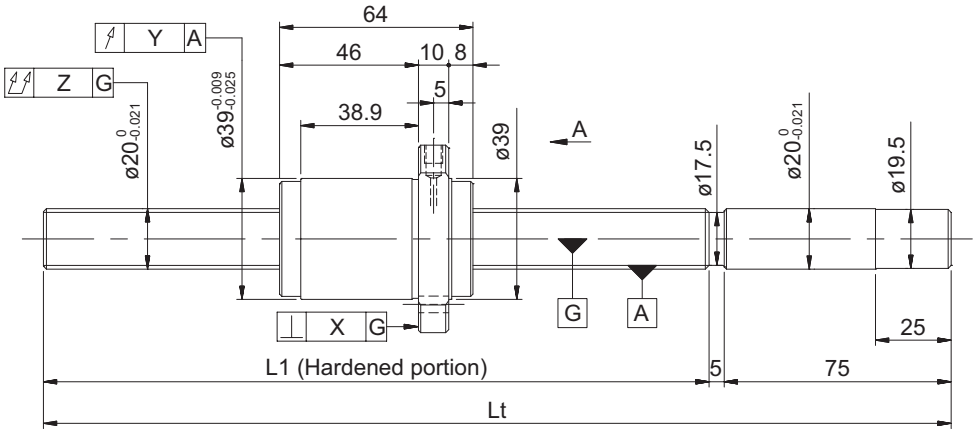
Accuracy of each part X	Y	Z	U	V	Preload torque (N·cm)	Mass (kg)
0.011	0.015	0.120	0.012	0.005	Up to 7.0	2.71
		0.190				3.86

Screw shaft diameter ø20

● Ball screw specifications

Shaft diameter (mm) - Lead (mm)	20 - 30
Number of circuits / Thread direction	1.67 turns 2 circuits (2 threads) / Right-hand
Ball diameter (mm)	3.175
Root diameter (mm)	17.5
Series	HG
Basic dynamic load rating C (N)	10690
Basic static load rating C0 (N)	23330
Accuracy grade / Axial clearance symbol	C5 / F
Axial clearance (mm)	0.005 or less
Preload torque (N·cm)	Up to 9.0
Spacer ball	None
Recirculation system	End cap method
Wiper	None
Lubricant	Alvania Grease S2





Model No. (Unfinished shaft ends)	Screw shaft length L1	Screw shaft length Lt	Maximum stroke (L1 - nut length)	Lead accuracy ±E_c	Lead accuracy e_c	Lead accuracy e_{300}
HG2030QS-HEZR-1000A	920	1000	856	0.040	0.027	0.018
HG2030QS-HEZR-1500A	1420	1500	1356	0.054	0.035	

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

● Shaft end finish type

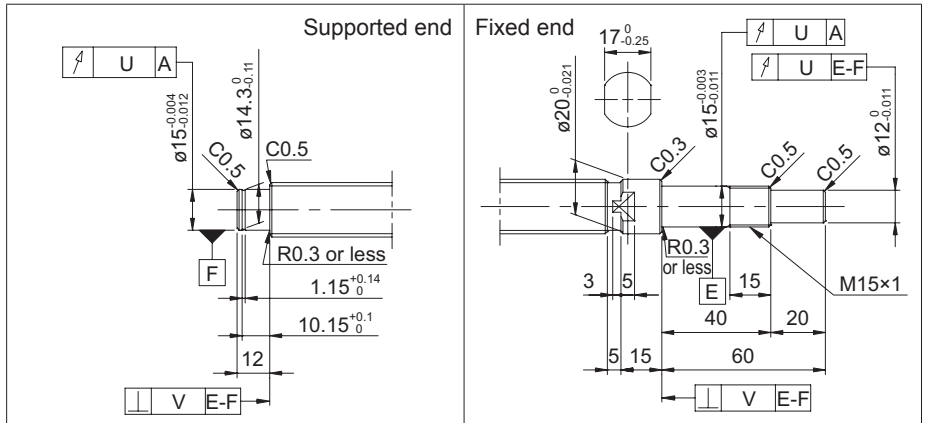
Standard precision ball screws are available with KURODA's recommended shaft end finish types for each size.

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

HG2030QS-HEZR-1500A → HG2030QS-HEZR-1500X1408-C5F

1500: Overall screw shaft length
1408: Thread length



Applicable supported end support unit	Applicable fixed end support unit
BUK-15S (Square type)	BUK-15, BUK-15F (Square type)
BUM-15S (Round type)	BUM-15, BUM-15F (Round type)

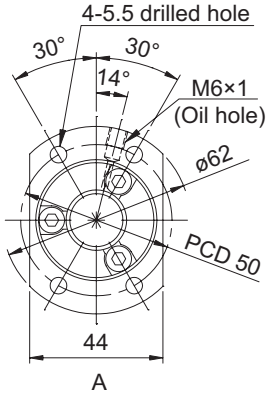
● Optional specifications

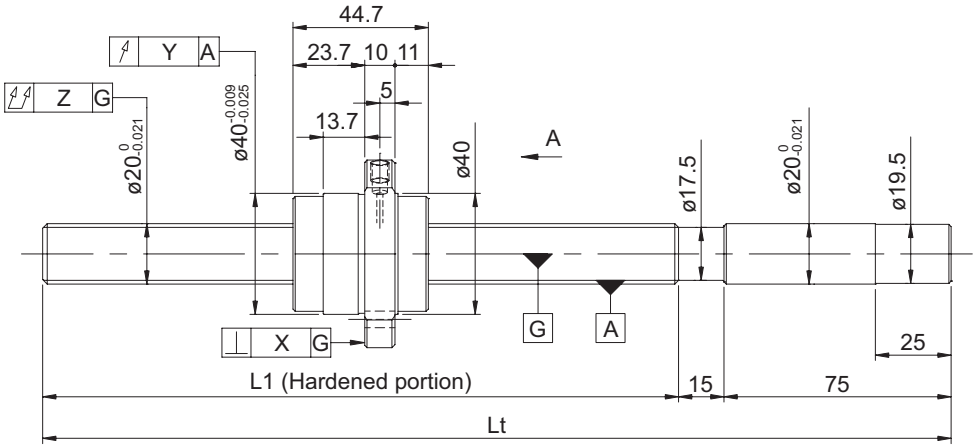
- Anticorrosive black coating (coating thickness: 1 to 2 μm) is available.

Accuracy of each part X	Y	Z	U	V	Preload torque (N·cm)	Mass (kg)
0.011	0.015	0.120	0.012	0.005	Up to 9.0	2.87
		0.190				4.06

● Ball screw specifications

Shaft diameter (mm) - Lead (mm)	20 - 40
Number of circuits / Thread direction	0.67 turns 3 circuits (3 threads) / Right-hand
Ball diameter (mm)	3.175
Root diameter (mm)	17.5
Series	HG
Basic dynamic load rating C (N)	6800
Basic static load rating C0 (N)	12100
Accuracy grade / Axial clearance symbol	C5 / F
Axial clearance (mm)	0.005 or less
Preload torque (N·cm)	Up to 7.0
Spacer ball	None
Recirculation system	End cap method
Wiper	None
Lubricant	Alvania Grease S2





Model No. (Unfinished shaft ends)	Screw shaft length L1	Screw shaft length Lt	Maximum stroke (L1 - nut length)	Lead accuracy ±E_c	Lead accuracy e_c	Lead accuracy e_{300}
HG2040QS-HEZR-1000A	910	1000	865	0.040	0.027	0.018
HG2040QS-HEZR-1500A	1410	1500	1365	0.054	0.035	

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

● Shaft end finish type

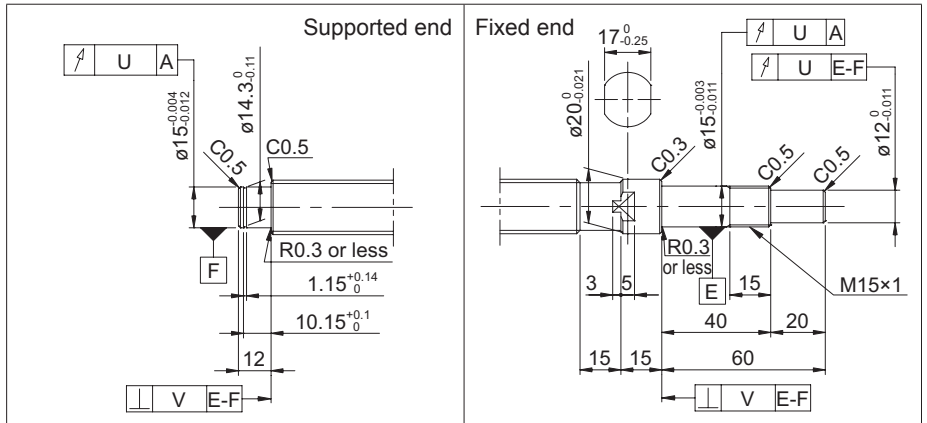
Standard precision ball screws are available with KURODA's recommended shaft end finish types for each size.

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

HG2040QS-HEZR-1500A → HG2040QS-HEZR-1500X1398-C5F

1500: Thread length
1398: Overall screw shaft length



Applicable supported end support unit	Applicable fixed end support unit
BUK-15S (Square type)	BUK-15, BUK-15F (Square type)
BUM-15S (Round type)	BUM-15, BUM-15F (Round type)

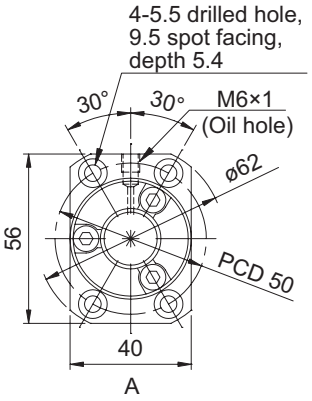
● Optional specifications

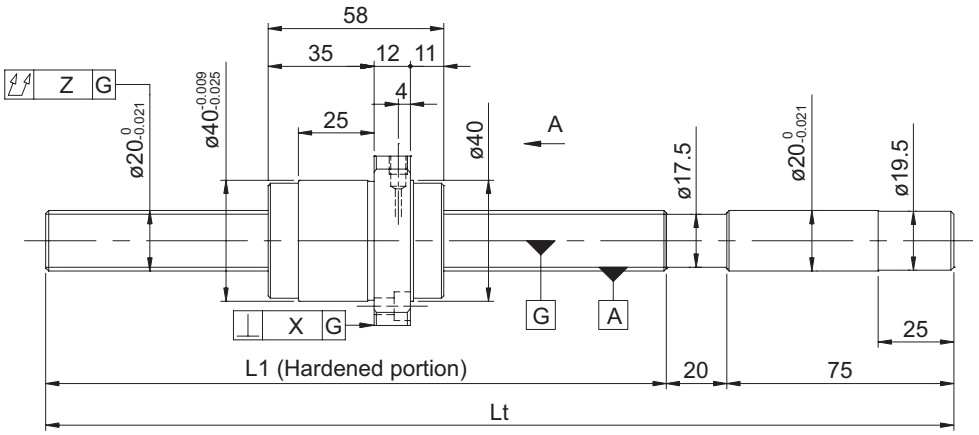
- Anticorrosive black coating (coating thickness: 1 to 2 μm) is available.

Accuracy of each part X	Y	Z	U	V	Preload torque (N·cm)	Mass (kg)
0.011	0.015	0.120	0.012	0.005	Up to 7.0	2.73
		0.190				3.90

● Ball screw specifications

Shaft diameter (mm) - Lead (mm)	20 - 60
Number of circuits / Thread direction	0.67 turns 3 circuits (3 threads) / Right-hand
Ball diameter (mm)	3.175
Root diameter (mm)	17.5
Series	HG
Basic dynamic load rating C (N)	6800
Basic static load rating C0 (N)	12100
Accuracy grade / Axial clearance symbol	C5 / H
Axial clearance (mm)	0.010 or less
Preload torque (N·cm)	----
Spacer ball	None
Recirculation system	End cap method
Wiper	None
Lubricant	Alvania Grease S2





Model No. (Unfinished shaft ends)	Screw shaft length L1	Screw shaft length Lt	Maximum stroke (L1 - nut length)	Lead accuracy ±E_c	Lead accuracy e_c	Lead accuracy e_{300}
HG2060QS-BEZR-1000A	905	1000	847	0.040	0.027	0.018
HG2060QS-BEZR-1500A	1405	1500	1347	0.054	0.035	

• 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.

● Shaft end finish type

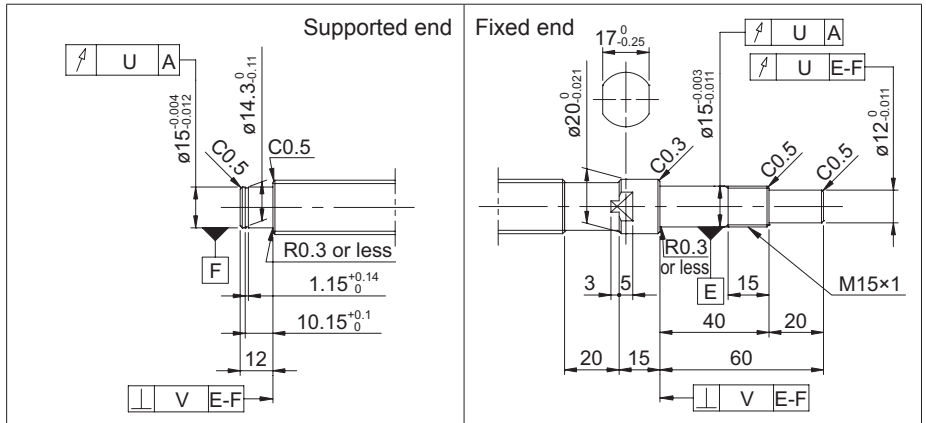
Standard precision ball screws are available with KURODA's recommended shaft end finish types for each size.

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

HG2060QS-BEZR-1500A → HG2060QS-BEZR-1500X1393-C5H

1500: Thread length
1393: Overall screw shaft length



Applicable supported end support unit	Applicable fixed end support unit
BUK-15S (Square type)	BUK-15, BUK-15F (Square type)
BUM-15S (Round type)	BUM-15, BUM-15F (Round type)

● Optional specifications

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

Accuracy of each part X	Y	Z	U	V	Preload torque (N·cm)	Mass (kg)
0.011	0.015	0.120	0.012	0.005	----	2.87
		0.190				4.06