# 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<br>C5 grade: FG, GG, HG<br>C7 grade: FE, GE |
| Axial clearance | Refer to each product specification table. |
| Shaft end type | One shaft end finished (C3 grade: GP, DP)<br>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<br>FG, GG, HG<br>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. | S | – | See specifications. | See specifications. | See specifications. | R | – | | 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.

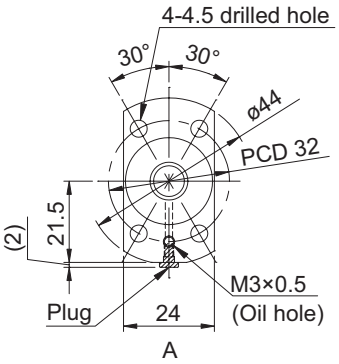
## □ Screw shaft diameter and lead combinations

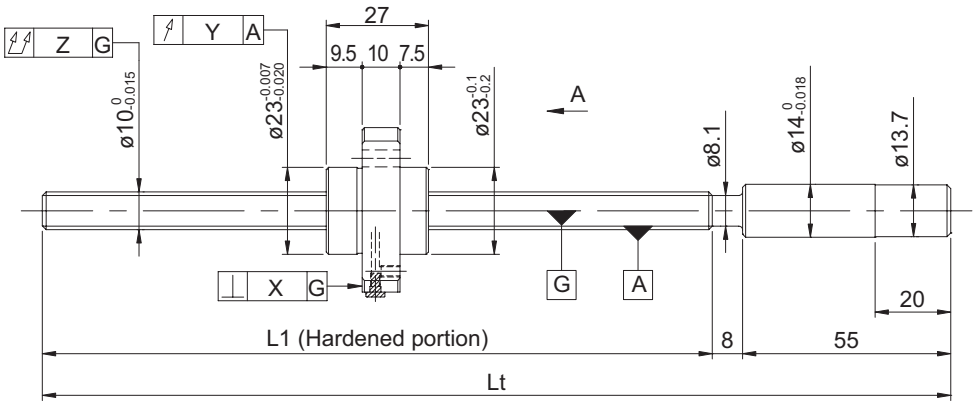
| | | Lead (mm) | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 10 | 12 | 15 | 16 | 20 | 25 | 30 | 32 | 40 | 60 |
| Screw shaft diameter (mm) | 6 | ○ | | | | | | | | | | | | | | |
| | 8 | ○ | ● ○ | | ● | | | □ | | | | | | |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

## ● 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 | | ±$E_c$ | $e_c$ | $e_{300}$ |
| 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

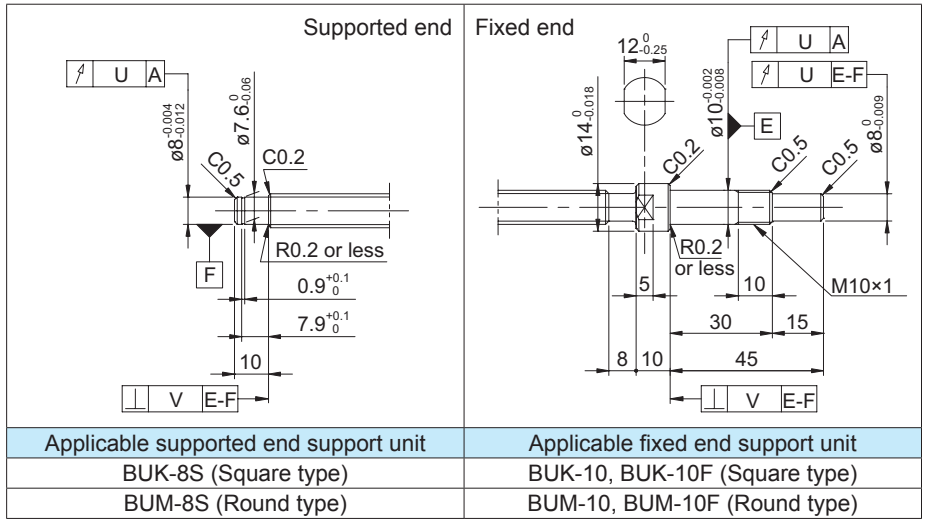
Standard precision ball screws are available with KURODA's recommended shaft end finish types for each size.

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

↳Thread length
↳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

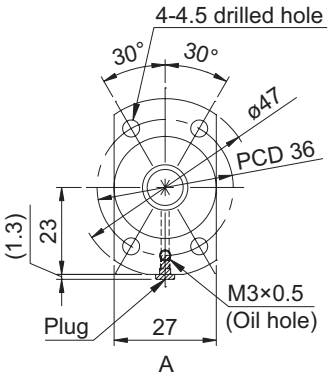
• Anticorrosive black coating (coating thickness: 1 to 2 µm) is available.

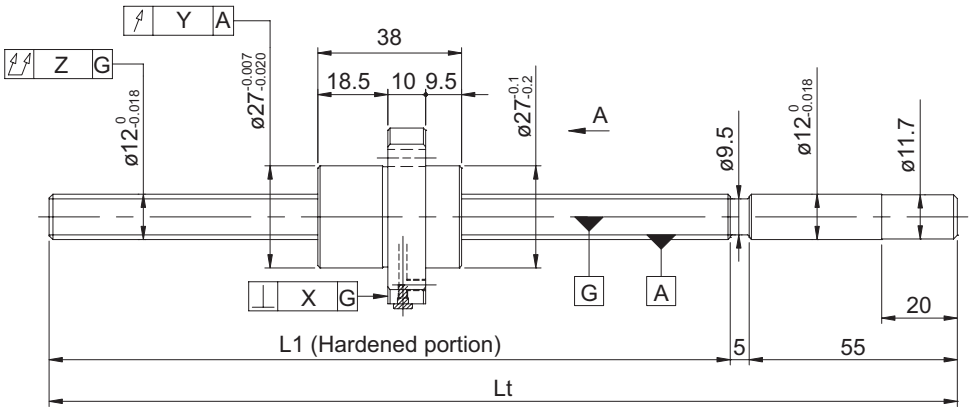
| Accuracy of each part | | | | | Preload torque (N·cm) | | Mass (kg) |
|---|---|---|---|---|---|---|---|
| X | Y | Z | U | V | Without clearance | With clearance | |
| 0.010 | 0.012 | 0.055 | 0.011 | 0.005 | 0.1 to 3.6 | Up to 1.0 | 0.29 |
| | | 0.080 | | | | | 0.40 |
| 0.014 | 0.020 | 0.080 | ---- | ---- | ---- | ---- | 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 L1 | Screw shaft length Lt | Maximum stroke (L1 - nut length) | Lead accuracy ±$E_c$ | Lead accuracy $e_c$ | Lead accuracy $e_{300}$ |
|---|---|---|---|---|---|---|
| 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.**

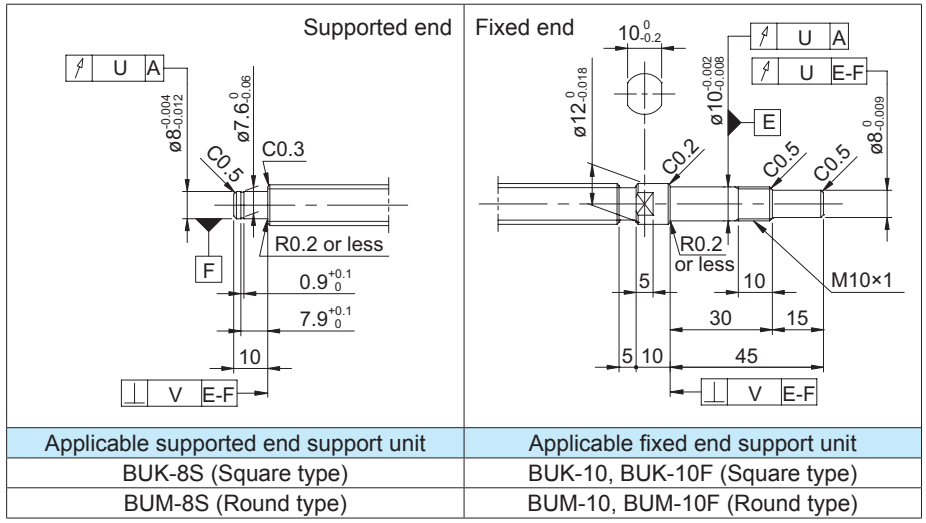
## ● Shaft end finish type

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
- 0605: Thread length
- 0535: 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

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

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

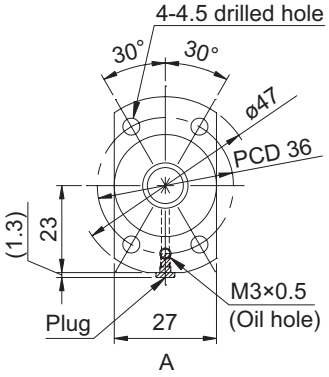
• Anticorrosive black coating (coating thickness: 1 to 2 μm) is available.

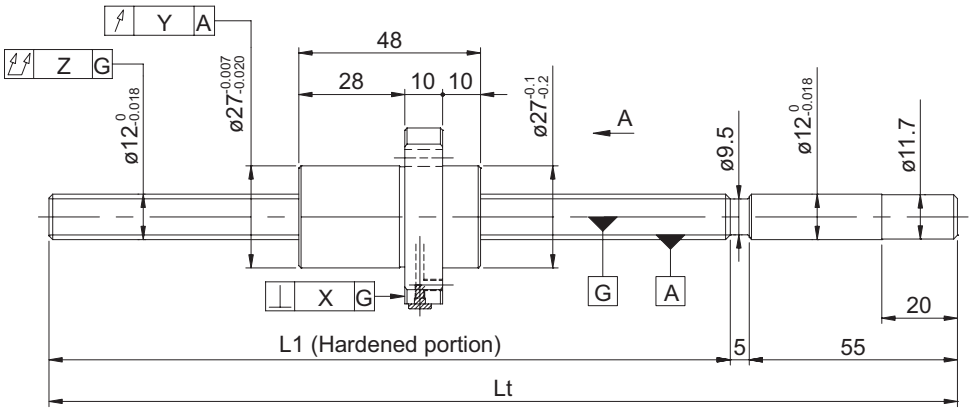
| Accuracy of each part X | Y | Z | U | V | Preload torque (N·cm) Without clearance | With clearance | Mass (kg) |
|---|---|---|---|---|---|---|---|
| 0.010 | 0.012 | 0.080 | 0.011 | 0.005 | 1.5 to 9.3 | Up to 2.0 | 0.53 |
| | | 0.090 | | | | | 0.65 |
| 0.014 | 0.020 | 0.120 | ---- | ---- | ---- | ---- | 0.53 |
| | | 0.150 | | | | | 0.65 |

**• 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 L1 | Screw shaft length Lt | Maximum stroke (L1 - nut length) | Lead accuracy ±$E_c$ | Lead accuracy $e_c$ | Lead accuracy $e_{300}$ |
|---|---|---|---|---|---|---|
| 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

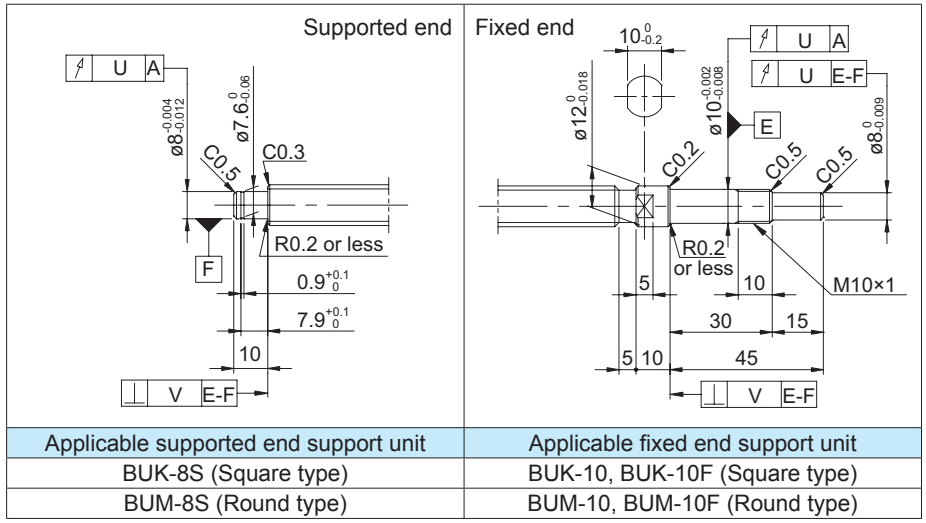
Standard precision ball screws are available with KURODA's recommended shaft end finish types for each size.

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

0605: Thread length
0535: 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

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

**Model example:** FG1220PS-HPSR-0605X0535-C5F

S: Wiper material S: LUBSEAL

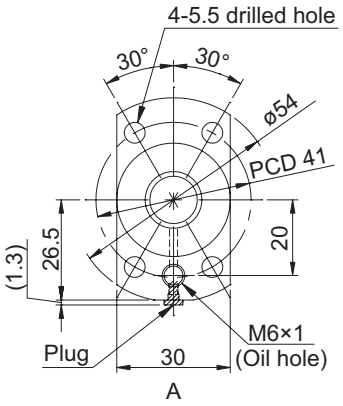
• Anticorrosive black coating (coating thickness: 1 to 2 μm) is available.

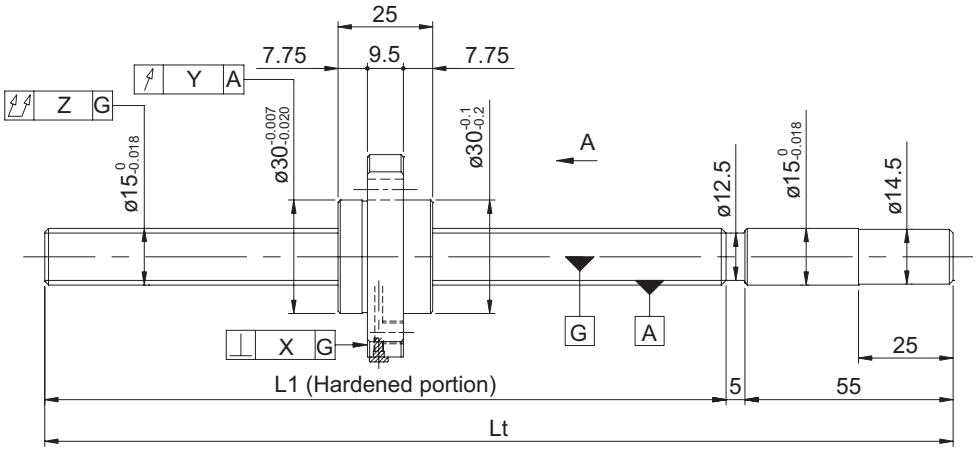
| Accuracy of each part X | Y | Z | U | V | Preload torque (N·cm) Without clearance | With clearance | Mass (kg) |
|---|---|---|---|---|---|---|---|
| 0.010 | 0.012 | 0.080 | 0.011 | 0.005 | 1.2 to 8.4 | Up to 2.5 | 0.54 |
| | | 0.090 | | | | | 0.71 |
| 0.018 | 0.030 | 0.120 | ---- | ---- | ---- | ----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




## • Shaft end finish type

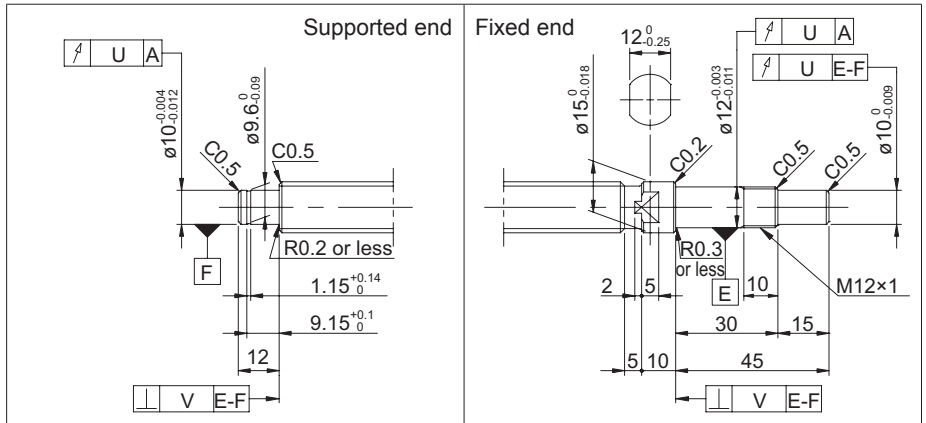
Standard precision ball screws are available with KURODA's recommended shaft end finish types for each size.

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

1100: Thread length
1028: 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:** FG1505PS-HPSR-1100X1028-C5F

S: Wiper material S: LUBSEAL

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

| Model No. (Unfinished shaft ends) | Screw shaft length | | Maximum stroke (L1 - nut length) | Lead accuracy | | |
|---|---|---|---|---|---|---|
| | L1 | Lt | | ±$E_c$ | $e_c$ | $e_{300}$ |
| 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 | | | |

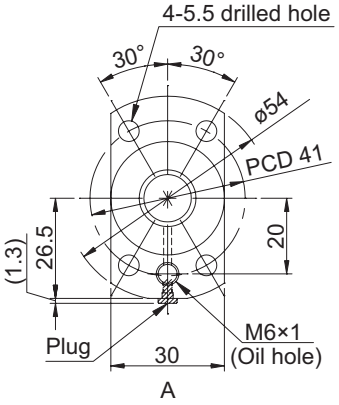
**• Product with axial clearance of 0.005 or less (F) shown may be partially preloaded.**
**• Preload torque is a value before applying grease.**

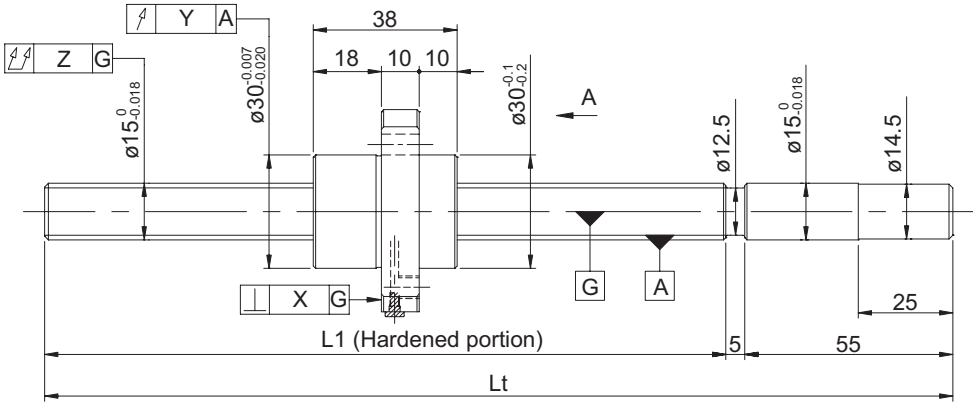
| Accuracy of each part | | | | | Preload torque (N·cm) | | Mass (kg) |
|---|---|---|---|---|---|---|---|
| X | Y | Z | U | V | Without clearance | With clearance | |
| 0.010 | 0.012 | 0.075 | 0.012 | 0.005 | 1.0 to 8.5 | Up to 2.0 | 0.83 |
| | | 0.150 | | | 1.0 to 11.0 | | 1.39 |
| 0.014 | 0.020 | 0.110 | ---- | ---- | ---- | ---- | 0.83 |
| | | 0.210 | | | | | 1.39 |

**• 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 | | |




## ● Shaft end finish type

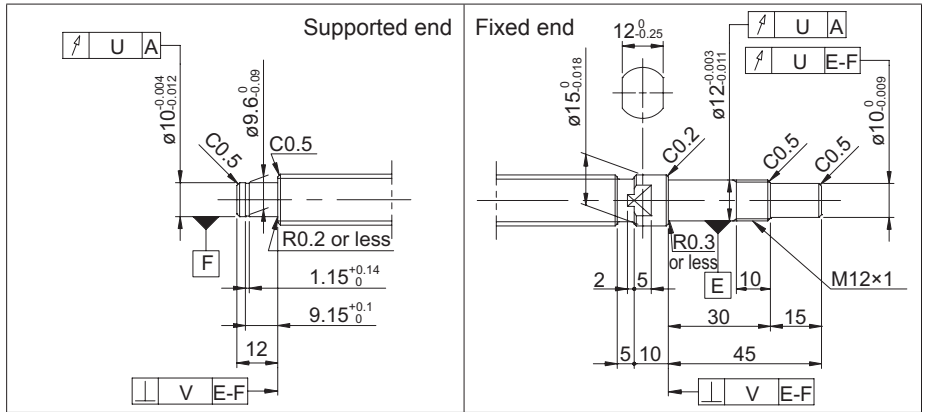
Standard precision ball screws are available with KURODA's recommended shaft end finish types for each size.

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

1100: Thread length
1028: 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:** FG1510PS-HPSR-1100X1028-C5F

S: Wiper material S: LUBSEAL

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

| Model No. (Unfinished shaft ends) | Screw shaft length | | Maximum stroke (L1 - nut length) | Lead accuracy | | |
|---|---|---|---|---|---|---|
| | L1 | Lt | | ±$E_c$ | $e_c$ | $e_{300}$ |
| 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 | | | |

| 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 |

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

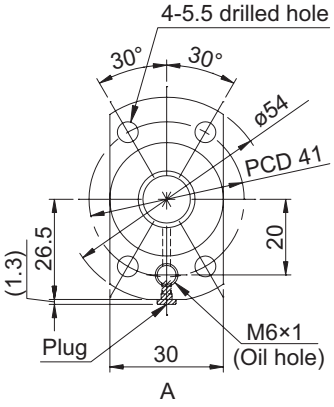
• At the time of delivery, grease is inserted inside of the nut, with rust-preventive oil also applied. Before and during use, apply lubricant where appropriate.
• For models with lead accuracy grade of C3 or higher and unfinished shaft ends, consult KURODA.

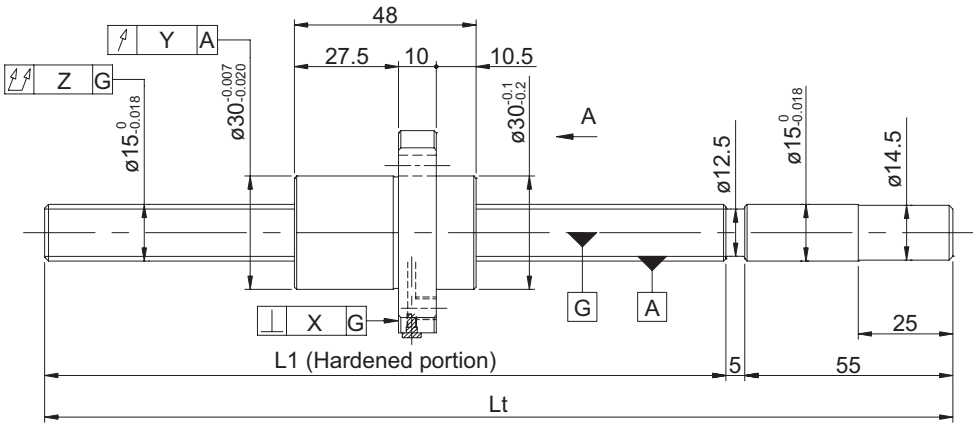


Screw shaft diameter ø15

## ● 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 | | |




## ● Shaft end finish type

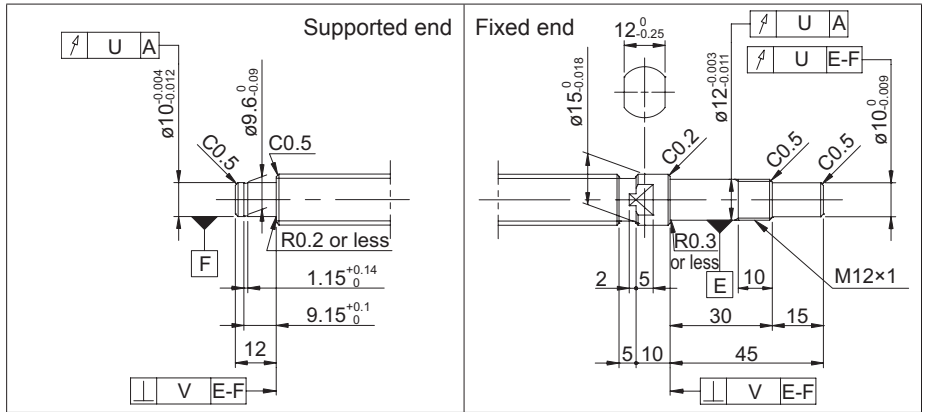
Standard precision ball screws are available with KURODA's recommended shaft end finish types for each size.

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

1100: Thread length
1028: 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

S: LUBSEAL (Wiper material)

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

| Model No. (Unfinished shaft ends) | Screw shaft length | | Maximum stroke (L1 - nut length) | Lead accuracy | | |
|---|---|---|---|---|---|---|
| | L1 | Lt | | ±$E_c$ | $e_c$ | $e_{300}$ |
| 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 | | | |

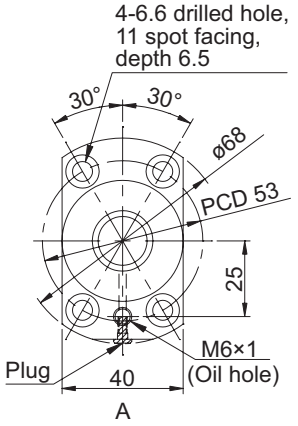
**• Product with axial clearance of 0.005 or less (F) shown may be partially preloaded.**
**• Preload torque is a value before applying grease.**

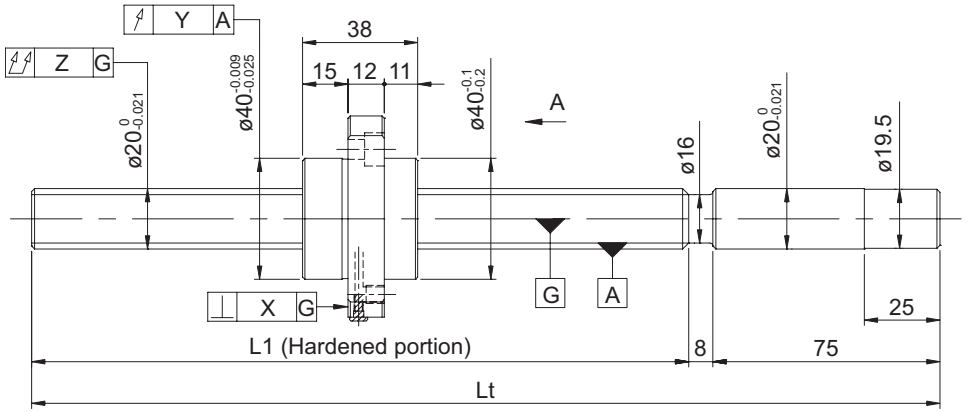
| Accuracy of each part | | | | | Preload torque (N·cm) | | Mass (kg) |
|---|---|---|---|---|---|---|---|
| X | Y | Z | U | V | Without clearance | With clearance | |
| 0.010 | 0.012 | 0.075 | 0.012 | 0.005 | 1.0 to 11.0 | Up to 3.0 | 1.04 |
| | | 0.120 | | | | | 1.44 |
| | | 0.150 | | | | | 1.71 |
| 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 L1 | Screw shaft length Lt | Maximum stroke (L1 - nut length) | Lead accuracy ±$E_c$ | Lead accuracy $e_c$ | Lead accuracy $e_{300}$ |
|---|---|---|---|---|---|---|
| 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

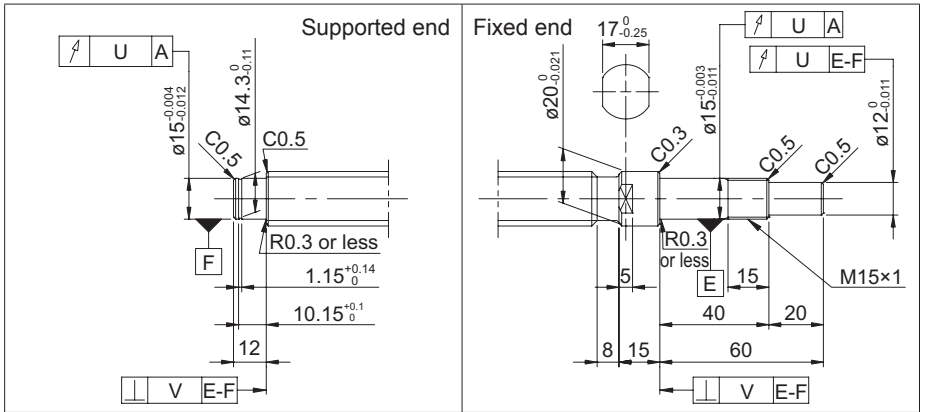
Standard precision ball screws are available with KURODA's recommended shaft end finish types for each size.

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

- 1410: Overall screw shaft length
- 1505X: 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

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

**Model example:** FG2010PS-HPSR-1505X1410-C5F

- S: LUBSEAL

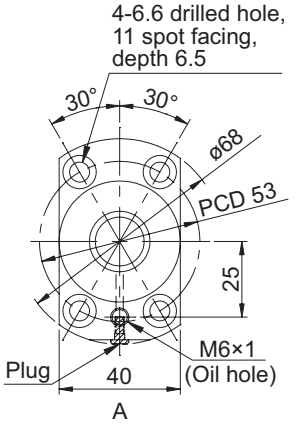
• Anticorrosive black coating (coating thickness: 1 to 2 μm) is available.

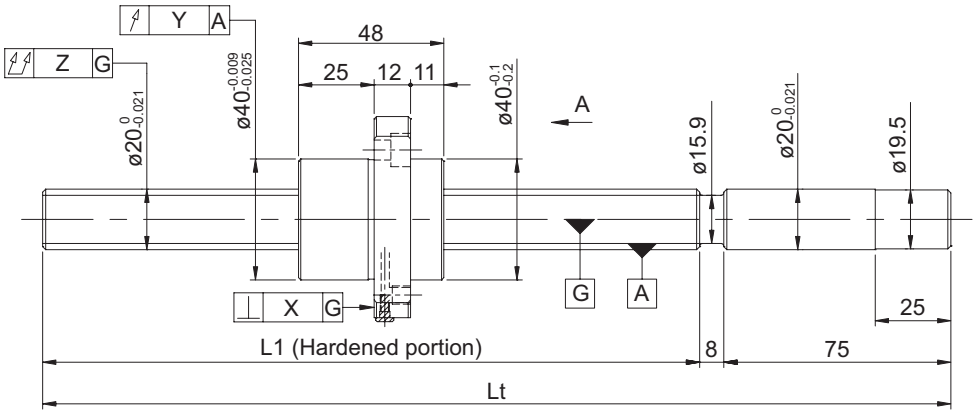
| Accuracy of each part X | Y | Z | U | V | Preload torque (N·cm) Without clearance | With clearance | Mass (kg) |
|---|---|---|---|---|---|---|---|
| 0.011 | 0.015 | 0.075 | 0.012 | 0.005 | 7.0 to 30.0 | Up to 4.0 | 1.63 |
| | | 0.150 | | | 6.5 to 30.0 | | 2.46 |
| | | 0.190 | | | 6.5 to 30.0 | | 3.49 |
| 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 L1 | Screw shaft length Lt | Maximum stroke (L1 - nut length) | Lead accuracy ±$E_c$ | Lead accuracy $e_c$ | Lead accuracy $e_{300}$ |
|---|---|---|---|---|---|---|
| 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.**

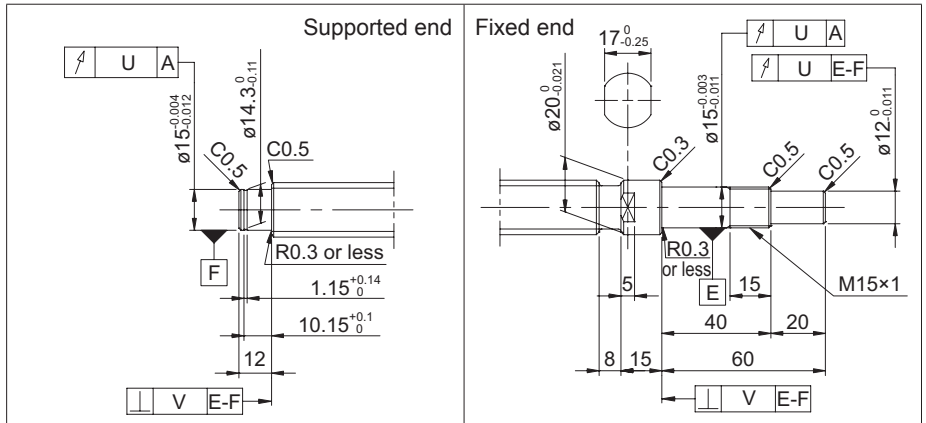
## ● Shaft end finish type

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
- 1505: Overall screw shaft length
- 1410: 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

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

**Model example:** FG2020PS-HPSR-1505X1410-C5F
- S: LUBSEAL

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

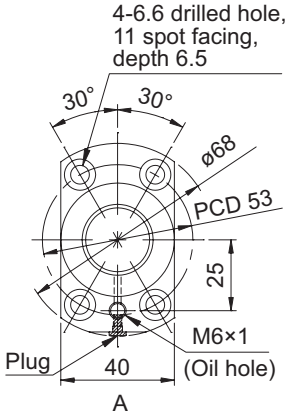
| Accuracy of each part X | Y | Z | U | V | Preload torque (N·cm) Without clearance | With clearance | Mass (kg) |
|---|---|---|---|---|---|---|---|
| 0.011 | 0.015 | 0.150 | 0.012 | 0.005 | 5.5 to 21.0 | Up to 4.0 | 2.73 |
| | | 0.190 | | | 4.5 to 22.5 | | 3.87 |
| 0.018 | 0.030 | 0.210 | ---- | ----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

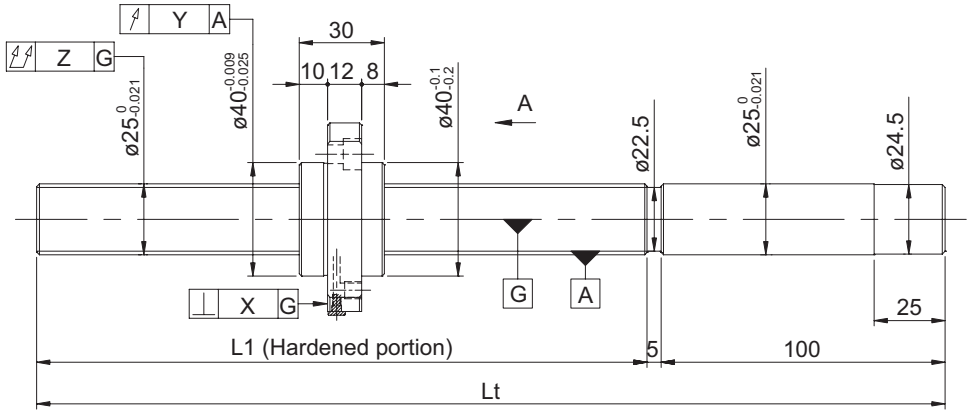
**• At the time of delivery, grease is inserted inside of the nut, with rust-preventive oil also applied. Before and during use, apply lubricant where appropriate.**
**• For models with lead accuracy grade of C3 or higher and unfinished shaft ends, consult KURODA.**

# 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 L1 | Screw shaft length Lt | Maximum stroke (L1 - nut length) | Lead accuracy ±$E_c$ | Lead accuracy $e_c$ | Lead accuracy $e_{300}$ |
|---|---|---|---|---|---|---|
| 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.**





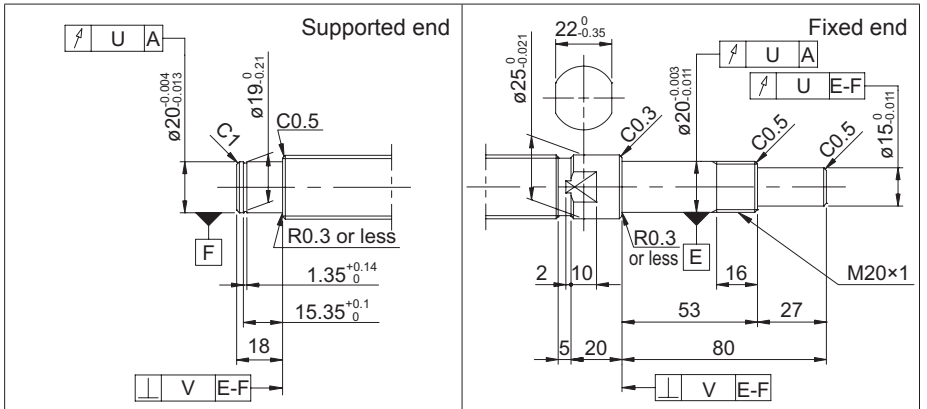
## ● Shaft end finish type

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
- 1505: Overall screw shaft length
- 1382: Thread 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
- S: LUBSEAL

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

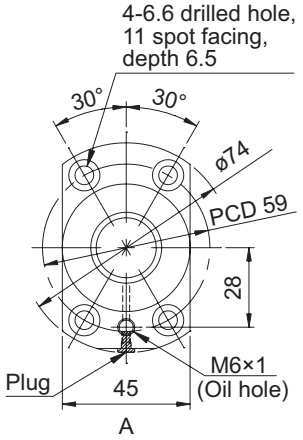
| Accuracy of each part X | Y | Z | U | V | Preload torque (N·cm) Without clearance | With clearance | Mass (kg) |
|---|---|---|---|---|---|---|---|
| 0.011 | 0.015 | 0.060 | 0.013 | 0.005 | 2.0 to 25.0 | Up to 6.0 | 2.37 |
| | | 0.085 | | | | | 3.74 |
| | | 0.130 | | | | | 5.47 |
| 0.018 | 0.030 | 0.090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

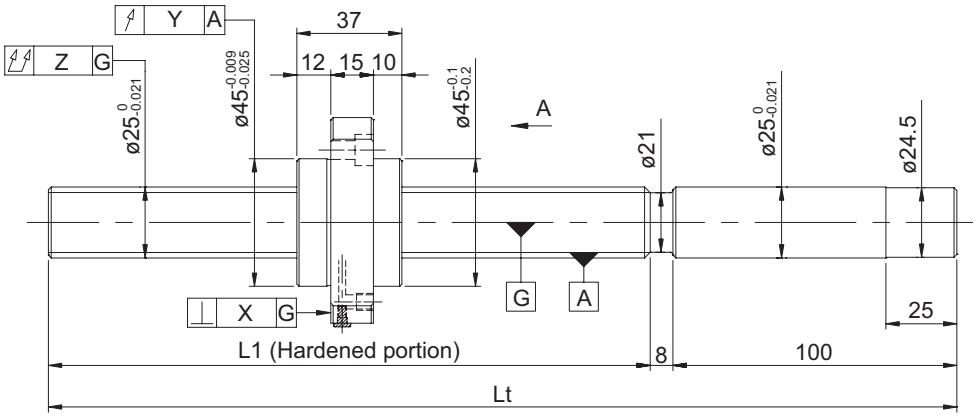
**• At the time of delivery, grease is inserted inside of the nut, with rust-preventive oil also applied. Before and during use, apply lubricant where appropriate.**
**• For models with lead accuracy grade of C3 or higher and unfinished shaft ends, consult KURODA.**

# 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 L1 | Screw shaft length Lt | Maximum stroke (L1 - nut length) | Lead accuracy ±$E_c$ | Lead accuracy $e_c$ | Lead accuracy $e_{300}$ |
|---|---|---|---|---|---|---|
| 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.**





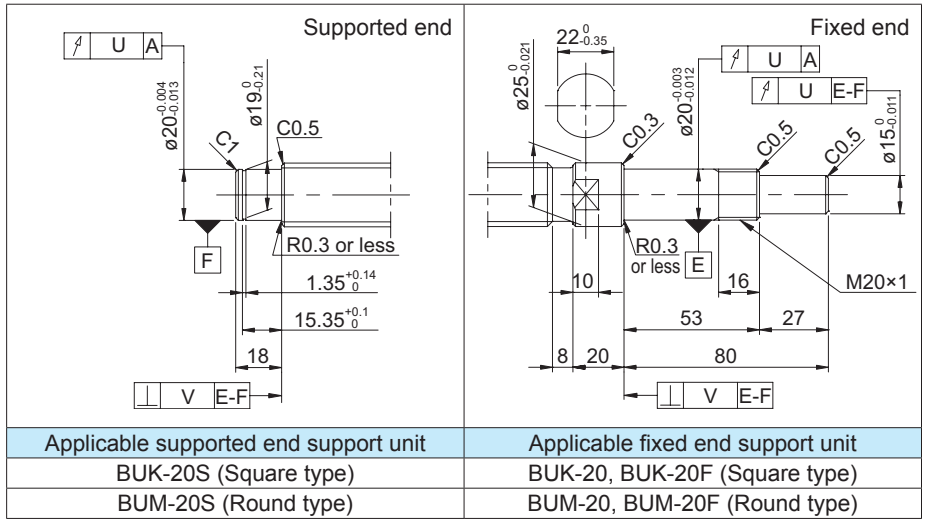
## • Shaft end finish type

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
(1520: Thread length, 1394: 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:** FG2510PS-HPSR-1520X1394-C5F
(S: Wiper material LUBSEAL)

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

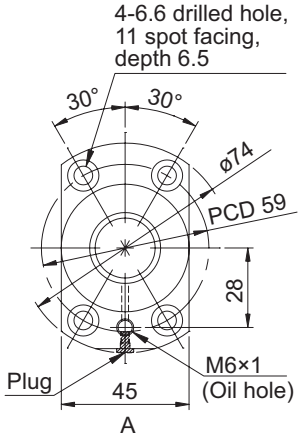
| Accuracy of each part X | Y | Z | U | V | Preload torque (N·cm) Without clearance | With clearance | Mass (kg) |
|---|---|---|---|---|---|---|---|
| 0.011 | 0.015 | 0.100 | 0.013 | 0.005 | 9.0 to 38.0 | Up to 6.0 | 3.92 |
| | | 0.130 | | | | | 5.60 |
| 0.018 | 0.030 | 0.150 | ---- | ---- | ---- | ----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

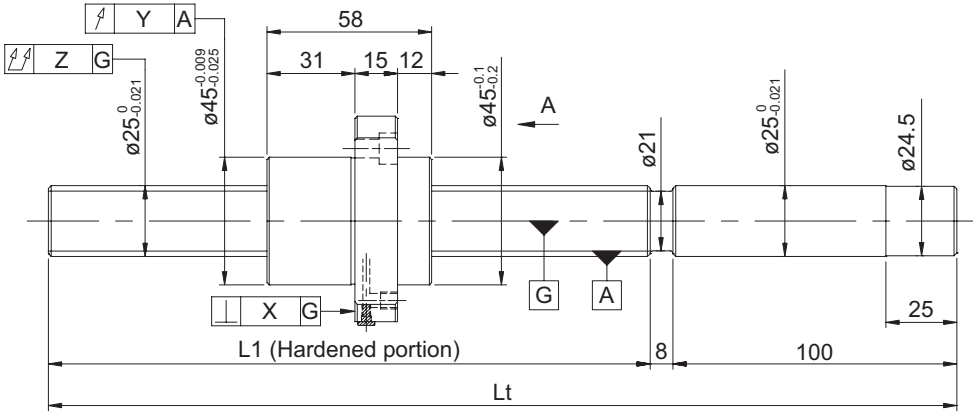
**• At the time of delivery, grease is inserted inside of the nut, with rust-preventive oil also applied. Before and during use, apply lubricant where appropriate.**
**• For models with lead accuracy grade of C3 or higher and unfinished shaft ends, consult KURODA.**

# 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 L1 | Screw shaft length Lt | Maximum stroke (L1 - nut length) | Lead accuracy ±$E_c$ | Lead accuracy $e_c$ | Lead accuracy $e_{300}$ |
|---|---|---|---|---|---|---|
| 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 ø25, Lead 25

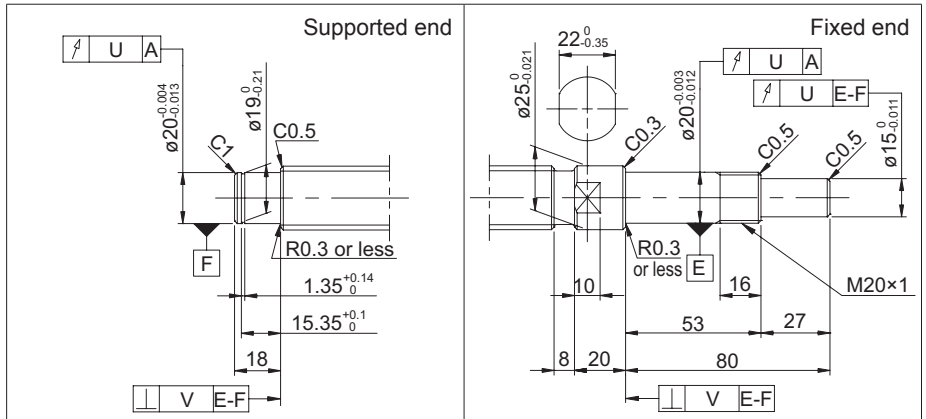
## • Shaft end finish type

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
- 1520: Thread length
- 1394: 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:** FG2525PS-HPSR-1520X1394-C5F
- S: Wiper material S: LUBSEAL

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

| Accuracy of each part X | Y | Z | U | V | Preload torque (N·cm) Without clearance | With clearance | Mass (kg) |
|---|---|---|---|---|---|---|---|
| 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.**