

BALL SCREW CATALOGUE

Linear Motion Actuator

Ball Screws

Support Unit

Dust-preventive Grease

Slide Screws with Resin Nuts



For Safety Use

Be sure to read the following instructions before use.
For common instructions, refer to the text of this catalog.

The following safety precautions recommend the correct usage of our products to prevent an injury and a damage. These precautions are classified into 3 categories : "DANGER","WARNING" and "CAUTION" according to the degree of possible injury or damage and the degree of impendence of such injury or damage.
Be sure to follow all these precautions, as they include important contents regarding safety.

 DANGER	 WARNING	 CAUTION
Indicates an impending hazardous situation that may arise due to improper handling or operation and could result in a serious injury or death.	Indicates a potentially hazardous situation that may arise due to improper handling or operation and could result in a serious injury or death.	Indicates a potentially hazardous situation that may arise due to improper handling or operation and could result in an injury or property damage only.

Be sure to obey "Labor Safety and Sanitation Law" and other safety rules and regulations in addition to these precautions.
There is some situation that may lead to a serious result according to circumstances, even if it is mentioned in the category of "CAUTION". Be sure to follow these precautions, as they contain important matters.

 **WARNING**

- **Select a ballscrew properly.**
As operating conditions for products mentioned in this catalog are diversified, the applicability of ballscrew to the intended system should be determined by the total system designer or the person who determined specifications for such system after conducting an analysis and testing as necessary.
The person who determined the applicability of the system shall be responsible for assuring the intended system performance and safety. When configuring a system, the system designer should thoroughly examine all specifications for such a system by referring to the latest product catalog and data, and also take into consideration the possibility of equipment troubles.
- **The ballscrew should be handled by persons who have sufficient knowledge and rich experience.**
Thoroughly read this catalog and operation manual before use.
 - Never disassemble the ballscrew. Dust can enter the inside, degrading the accuracy of the module and causing an accident. When the ballscrew has been disassembled from necessity, return it to our company for repair and reassembling. (In this case, repairing charges are required.)
 - When mounting a ballscrew to a machine and dismounting it from machine, check that a fall prevention means has been taken and the moving part of the machine has been fixed beforehand.
- **When using the ballscrew in the following conditions or environments, take the proper safety measures and consult KURODA beforehand.**
 - Conditions and environments other than specified and outdoor use.
 - Applications to nuclear power equipment, railroads aircraft, vehicles, medical equipment, equipment connected with food and drink, and the likes.
 - Applications which require extreme safety and will also greatly affect men and property.
- **During operation, make sure to keep your hands away from screws and axis terminals of ball screw shaft, which are rotating parts, to prevent your hands from being caught.**
- **Pay adequate attention not to allow the products to be used for military purpose including for arms and weapons.**



BALL SCREW/Common INSTRUCTIONS (1)

Be sure to read the following instructions before use.
Also refer to "For Safety Use".

DESIGN

! WARNING

- **Rotational speed during operation**

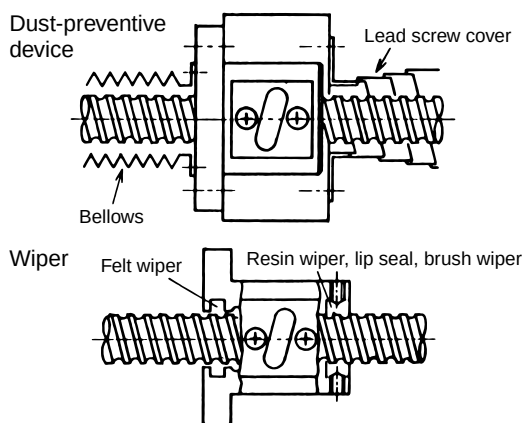
Referring to a section describing permissible rotational speed in this catalog, use a ball screw at or lower than the listed permissible rotational speed. Using the product above the listed DmN could cause a damage of its circulation component and result in inoperable condition. In the case of vertical shaft, the damage may lead to a dangerous accident such as fall off of a head due to dropped balls.

! CAUTION

- **Dust-preventive cover**

If it is likely that dust or other contaminant may enter inside the ball screw, be sure to attach a dust-preventive cover, such as bellows or lead screw cover (steel bellows). Attaching a wiper at both ends of a nut would be more effective for dust prevention.

The dust or contaminant caught in the ball screw could cause various defects including malfunction, extraordinary noise, abnormal vibration, accelerated wear-out, and early chipping.



- **Imbalanced load**

In your system design, ensure that a radial or moment load is not directly loaded to the ball screw. Otherwise, it may result in shorter product life due to concentrated load to a certain portion of balls in the screw.

- **Mounting of ball screw**

For mounting of the ball screw to a machine, the system design should allow its screw shaft to be mounted without taking off a nut. Removing and attaching the nut may cause some balls to drop outside of their circulation path, which may result in damage of circulation components. If such removal of a nut is inevitable, consult KURODA beforehand.

MOUNTING AND USE

! WARNING

- **Do not overrun the product.**

If a nut of the ball screw is overrun and receives an impact at a stroke end, a resulting impression created on a screw groove could cause malfunction. If an end of the screw groove has a portion with no flute, such overturn could damage ball circulation components, which may result in inoperable condition.

- **Pay careful attention to mounting accuracy.**

A moment load caused by misalignment of a ball screw, bearing, guide, nut, and housing and improper angularity may result in malfunction, extraordinary noise, abnormal vibration, shorter product life as well as breakage of screw shaft due to rotating bending fatigue. Be careful with such defects because they may lead to a serious accident.

- **Be careful with falling off of components due to their own weight.**

Since a ball screw has a low friction factor, its shaft or nut could potentially fall off due to its own weight. Be careful not to have your hand or fingers be caught under the fallen component.

! CAUTION

- **Do not remove a nut.**

When balls have been dropped off the nut or the nut has been removed from a shaft, do not attempt to reassemble them yourself and return them to our company for repair. (In this case, repairing charges are required.)

One of KURODA's standard in-stock ball screw series is designed to allow a nut to be separated for the purpose of additional shaft-end machining. The specific series product is provided with a sleeve for separating a nut. Read the operating instructions supplied with the product thoroughly before use.

- **Be careful with any dust or contaminant.**

While a machine is assembled, put a cover to prevent a screw shaft from catching any dust or contaminant. Such contamination could cause malfunction of the machine.

- **When a component such as bearing, gear, or pulley is attached to a screw shaft, handle them with care so that no hit or any other impact is applied.**

Such impact could cause the screw shaft being bent. If an impact is accidentally applied to the shaft, check it first to see if it is not bent by comparing a circumference of the coupling attaching part of the screw shaft against an indicator, before mounting the additional component.

- **Use the product below the operating temperature limit.**

The ball screws are designed to have a normal operating temperature limit at 60°C. Using them in an environment exceeding the temperature limit may result in a damaged lubrication or sealing component. If you need to use the screw in an unordinary environment, consult with KURODA beforehand.



BALL SCREW/COMMON INSTRUCTIONS (2)

Be sure to read the following instructions before use.
Also refer to "For Safety Use".

LUBRICANTS

⚠ CAUTION

• Type of lubricant

Unless specified, Alvania Grease S2 is contained in a nut as lubricant. Since rust preventive oil applied to a screw shaft also serves as lubricant, the ball screw can be used without additional application.

Do not replace the lubricant initially contained with any product not listed below. Do not remove the rust preventive oil, either.

Grease

Application	Product name	Maker
General purpose	Alvania Grease S2	SHOWA SHELL SEKIYU K.K.
	Multemp PS No.2 Grease	KYODO YUSHI CO., LTD
Wide temperature range	Multemp LRL3 Grease	KYODO YUSHI CO., LTD
Low dust generation	KURODA C Grease	KURODA PRECISION INDUSTRIES LTD.
	KURODA S Grease	KURODA PRECISION INDUSTRIES LTD.

Lubricating oil

Application	Product name	Maker
General purpose	Daphne Mechanic Oil	IDEMITSU KOSAN CO., LTD.
	Mobil Vactra Oil	EXXON MOBIL CORPORATION

All product name of greases and oils are registered trademarks of their respective companies.

STORAGE

⚠ CAUTION

• Storage method

Store the ball screw in an indoor place where temperature difference is as small as possible. It should be stored in a horizontal state in a package originally sent by KURODA. Do not open the outer package or any of internal packages unless necessary in order to prevent unnecessary contamination by dust or rusting of the ball screw.

CHECKUP AND CAUTION

⚠ CAUTION

• Checking lubricant status and application of grease

Lubricant for a ball screw is contained only in a nut, in consideration of workability and prevention of dust or other contaminant getting inside during machine assembly. Unless otherwise specified, no lubricant is applied to a screw shaft.

Depending on screw size and screw shaft length, amount of grease in the nut may not be sufficient. After a round-trip operation of the nut, check to see if a rolling side of the screw groove has enough grease on it. If the amount is not enough, apply additional grease to the screw shaft.

• Checkup and feeding of lubricant

Check the lubricant 2 to 3 months after the ball screw is used for the first time. If it is extremely dirty, it is recommend that you wipe off old grease and apply new grease. Then, check and supply the lubricant once every year as a general rule. However, as the service life of lubricants varies according to operating conditions and environment, adjust the intervals properly.

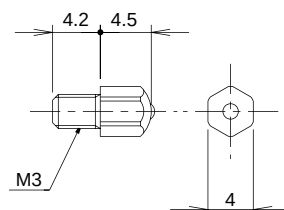
When feeding additional lubricant, use the same brand of lubricant as initially contained.

For a ball screw model provided with a nut which does not have a grease filler hole, supply sufficient amount of the grease directly to the screw shaft and screw groove, carefully applying it over the components until the grease goes into the nut. For a model provided with a nut having a filler hole, supply necessary amount of grease from the filler hole or a feeder (grease nipple, etc). After supplying additional grease, operate the table to the extent of full stroke to apply the grease over the component. Wipe off excess grease attached on the end of the screw shaft.

For more details on the size of the filler hole, refer to dimensions of each size of the ball screws.

As a grease nipple which can be attached to the grease filler hole, we provide grease nipples for M3, M6, and R1/8. Those M6 and R1/8 are in a JIS-compliant shape and dimensions, and the nipple for M3 is as shown below.

Grease nipple for M3



KURODA Ball Screws

Excellent reliability and high accuracy

KURODA ball screws can provide you with high accuracy as well as excellent reliability, as a result of our grinding, assembly, and inspection operations implemented in our plants under a strict temperature control, which is built on our gauge production expertise accumulated over years.

High transmission efficiency

Ball screws have outstanding transmission efficiency of over 90%, incomparably higher than slide screws. Their required torque is just less than a third of what the slide screws require. Therefore, it is easier to transfer a linear motion into a rotary motion.

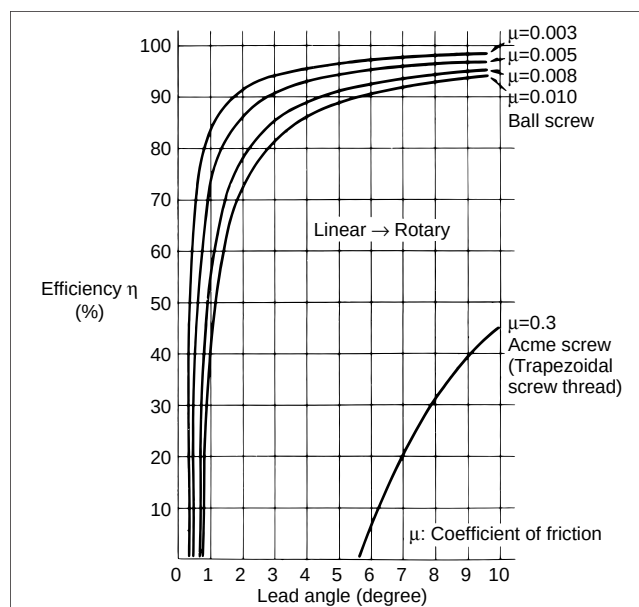
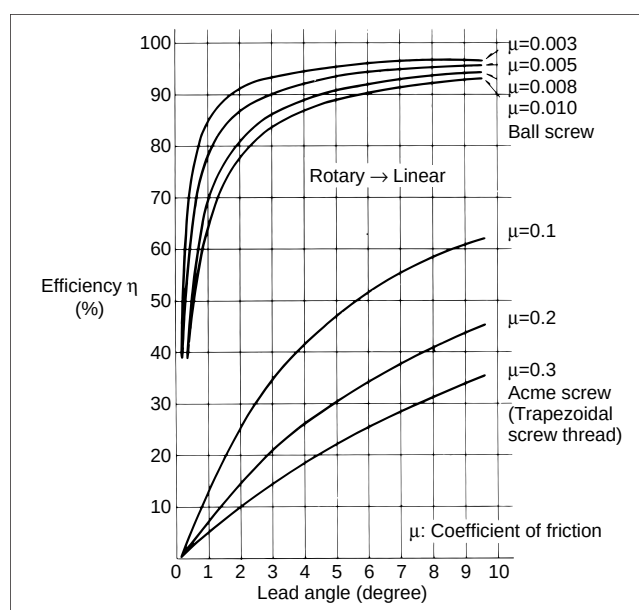


Figure 1: Mechanical efficiency of ball screws

Excellent durability

KURODA ball screws maintain excellent durability achieved by carefully selected materials, proper heat treatment, and machining with advanced product technologies.

Small axial clearance

Since KURODA ball screws adopt a gothic-arch groove profile, its axial clearance can be adjusted in a highly fine pitch as well as it can be lightly rotated. In addition, by giving a preload to the screw, the axial clearance could be adjusted to 0 to achieve advanced rigidity.



Figure 2: Ball screw groove profile

Fine pitch forwarding

Due to rolling contacts made by balls, the ball screws can accurately provide fine pitch forwarding, even with extremely small starting friction in low speed, without exhibiting a stick slip which is often seen with slide screws.

High-speed operation

With high transmission efficiency and a low rate of self heat generation, KURODA ball screws can provide a high speed rotation.

Easy maintenance

Due to rolling contacts made by balls, no special maintenance other than regular supply of grease is required under normal operating conditions.

Wide variation

In order to fulfill diverse needs for size reduction, advanced precision, and higher speed of various equipment and devices, KURODA ball screws are provided in a wide variety of series and models. They include super miniature ball screws, super large lead ball screw (nominal outside diameter:lead = 1:3), in-stock GE/GG/GP/DP/HG/FE/FG/GY/GW ball screw series (no machining made on shaft end) and more

Construction

Ball screws are configured to have steel balls enclosed between a screw shaft and a nut, wherein steel balls are rotating while they circulate in the device.

KURODA ball screws are designed to adopt one of the following four standard circulation systems.

■ Tube Method

This is a general circulation system for ball screws, using a curved tube as a circulation part. In this system, steel balls guided in the pick-up tube makes 1.5, 2.5, or 3.5 turns along a screw groove to return to the starting point, forming a circuit. To enhance load capacity of the screw, up to three circuits with 2.5 turns each can be incorporated into a nut.

■ End Cap Method

This circulation system has end caps attached to both ends of a nut, which are capable of scooping up the steel balls and forward them to a starting point. A through hole is provided in a body of the nut to allow the steel balls pass through. This system is adopted by ball screws with a large lead size (e.g. screw lead is twice or three times as large as an outside diameter of the screw shaft).

■ Deflector Method

This system has the most compactness and optimal rotational balance among all circulation systems of ball screw developed so far, and provides excellent reliability. Steel balls rotate between a screw shaft and a nut are guided by a deflector inserted in the nut to make a circulation per lead, forming a circuit.

■ End-deflector Method

This system has end deflectors incorporated at both end of a nut, which are capable of scooping up steel balls and forwarding them to the start point. A through hole is provided in a body of the nut to allow the steel balls pass through. The system is designed for an excellent smooth flow of the steel balls, allowing them to circulate without getting unnecessary burdens. The construction has successfully realized higher rotational speed and low-noise operation in a further compact body of the nut.

It is usually adopted by ball screws with medium sized lead (e.g. a screw lead is the same or 1.5 times as large as an outside diameter of the screw shaft).

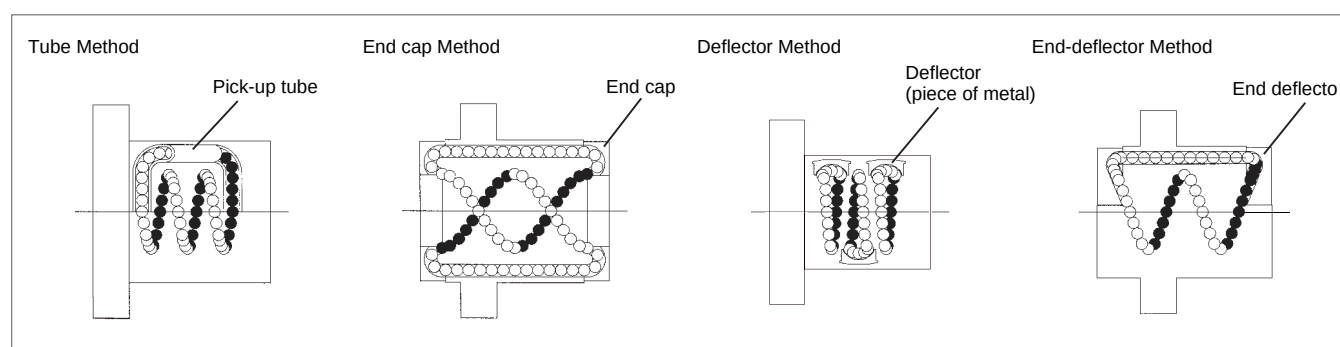


Figure 3: Circulation system

Material and heat treatment

Hardness of a screw groove surface is a crucial factor for the life of a ball screw in terms of its feature. Rigidity of the shaft must satisfy requirements as a transmission shaft. In order to fulfill such needs, KURODA ball screws are generally manufactured to maintain the minimum standard hardness at 58 HRC with the materials listed in Table 1. The screws also go through a surface hardening process to enhance their hardness to attain 58 to 62 HRC. Additionally, for some products which are required to have heat resistance and/or corrosion proof, stainless steel (SUS440C) may be used to achieve hardness of 56 to 59 HRC through a surface hardening process.

Table 1: Materials and heat treatment

• Ground ball screws

	Material	Heat treatment	Hardness
Nut	Chromium-molybdenum steel SCM420	Carburizing and quenching	58 ~ 62HRC
Screw shaft	Chromium-molybdenum steel SCM415 SCM420	Carburizing and quenching	58 ~ 62HRC
	Chromium-molybdenum steel AISI4150HV	Induction quenching	58 ~ 62HRC

• Rolled ball screws

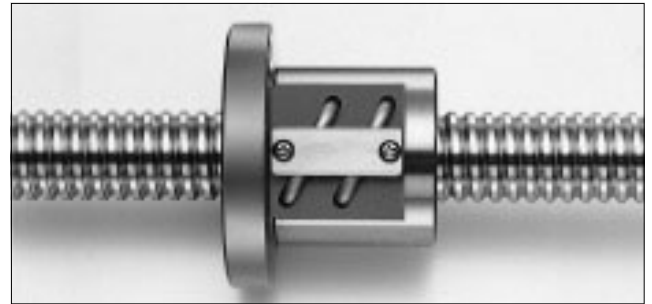
	Material	Heat treatment	Hardness
Screw shaft	S45C S55C	Induction quenching	56 ~ 62HRC
Nut	SCM420	Carburizing and quenching	58 ~ 62HRC
Steel balls	SUJ2	Quenching	More than 60 HRC

Type of nut and flange

■ Type of nut

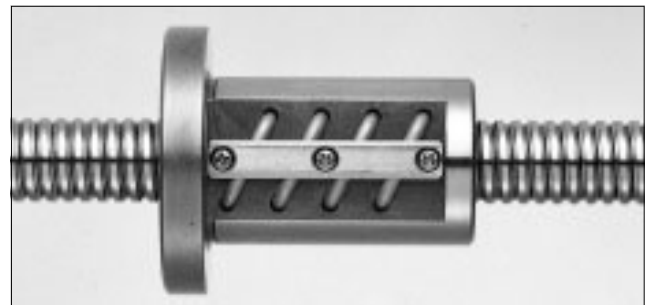
Single nut

This is the simplest construction comprised of one nut. It is usually used with a small axial clearance. With improved accuracy control of a screw groove between a screw shaft and nut, the axial clearance can be eliminated and a preload can be given. The single nut type with a preload is suitable for machines requiring small to medium load and light to normal preloading, including semiconductor fabrication devices, assembling robots, precision instruments, small NC machine tools, which require very high positioning accuracy.



Integral nut

This type of nut has a screw portion separated into a load side and preload side, and the preload is given after offsetting an expected amount of preload. It provides a feature of load side and preload side of a double nut integrated in one component. The integration into one body enables the nut to be shorter while maintaining stable rigidity and excellent operation performance.



The integral nut is suitable for all types of machines and equipment requiring medium to higher load and normal to higher preloading.

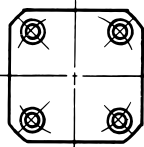
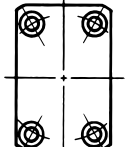
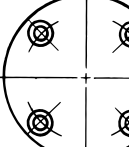
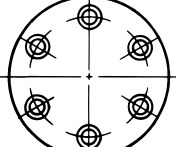
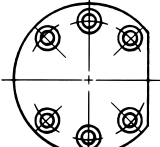
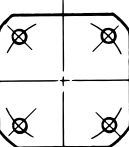
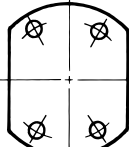
Double nut

Two separate nuts, one for a load side and the other for preload side, are provided. They have been rotated in opposite direction to each other, loaded with a predefined preload, and fixed by a pin inserted between them. A double nut is applicable to wider variety of sizes than an integral nut, and is suitable for an application with medium to higher preloading with medium to higher load, such as a machine or equipment requiring highly precise positioning as well as high rigidity.



■ Type of flange

Type of a flange is represented by a symbol provided for each nominal size as shown below.

Type symbol	A	B	C
Flange type			 
	Square flange	Rectangle flange	Circle flange
Type symbol	D	E	H
Flange type			
	Single side cut, circle flange	Square (without spot facing)	Double side cut, circle flange

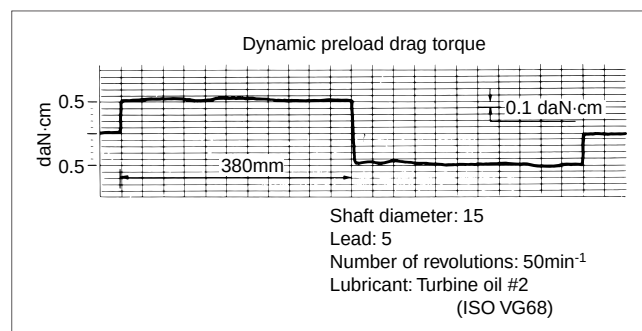
Specially customized products

In order to fulfill diversified needs of our customer in various industries such as mounting/placement machines, semiconductor fabrication equipment, liquid crystal (LC) manufacturing machines, clean robots, SEM equipment, small machine tools, medical instruments, automotive production facilities, etc., KURODA provides, upon your request, various customized ball screws with special specifications. Our customized products include a super precision screw (C0 grade or above), high rotational speed screw, stainless ball screw for special environment, screw without requiring maintenance for a long period of time, and screws compliant with various environmental requirements.

■ Super precision ball screw

(capable of fine pitch forwarding by a scale of 0.1 $\mu\text{m}/\text{pulse}$)

When a machine is required to make fine pitch forwarding with high accuracy, a torque variation of a ball screw contributes to a degraded accuracy and may result in failing to achieve an expected accuracy. With a laser scanner, SEM instrument, and test/analysis equipment, the torque variation causes fluctuated transfer speed of the machine. Under such conditions, a highly accurate continuous operation may not be achieved. However, building upon precision processing expertise acquired through years of gauge production business, KURODA has successfully developed in-house screw grinders to control a profile of a screw groove, circularity, and cylindricity in a high accurate manner. With the reduced torque variation achieved by the precise control, we have realized ball screws capable of fine pitch forwarding by a scale of 0.1 $\mu\text{m}/\text{pulse}$.



■ Super precision ball screw

((entire deflection of a screw shaft is 1/4 to 1/3 of C0 grade screw))

As far as deflection of a screw shaft is within a predefined tolerance, the shaft is straightened by rigid guides disposed at both ends of the ball screw in typical construction, and therefore, particular impacts on its running accuracy are usually eliminated. However, with a ball screw which is configured with a smaller and lighter guiding system or simplified guides based on a design for advanced compactness, the deflection of the screw shaft may adversely impact on the running accuracy, resulting in a pitching or yawing error. To prevent such a problem, KURODA provides customized ball screws manufactured through our unique processing method, with which the deflection of a screw shaft center is mitigated to 1/4 to 1/3 of permissible deflection for C0 grade screws. For more information, please contact KURODA.

■ High rotational speed ball screw

KURODA provides special ball screws capable of fulfilling our customers' needs for higher rotational speed with a DmN over 70,000, which are applicable to various machine tools, robots, and others. In a standard product line, F series ball screws described in this catalog are designed for high rotational speed and low noise. In addition, G series (for custom manufacturing only) can also be configured as high speed ball screws in order to meet your individual DmN needs. For more information, please contact KURODA.

■ Ball screw compliant with special environmental requirements

• All-stainless steel ball screw

Stainless steel ball screws which can be used in vacuum atmosphere, a clean room, or an environment with special requirements, such as chemical resistance, are also provided. The stainless screws show low-outgas property and excellent chemical resistance. For more information, please contact KUROMA.

• Customized surface treatment

If you intend to use a ball screw in an environment where rust-proof is necessary, we can accommodate your needs by applying an additional ant corrosive black coating for rust-proofing. The black coating, which has a thickness of 1-2 μm , may be partially removed at ball contacts in an early stage of the operation, however, it maintains the rust-proof feature thereafter. If you need more advanced anti-corrosiveness, further additional fluorine coating on top of the anti corrosive black coating can be applied. Other types of surface treatment will also be provided upon your request. For more information, please contact KUROMA.

Materials of all-stainless steel screws

· Screw shaft, nut, and balls	Martensitic stainless steel
· Circulation components	Austenitic stainless steel, precipitation hardening stainless steel, etc.
· Small screws and parts	Austenitic stainless steel

■ Ball screws with lubricating unit

LUBSEAL is a lubricating unit which supplies a proper amount of grease contained in a nut to a screw groove, by attaching the unit to both ends of the ball screw nut. Using the unit with your semiconductor fabrication equipment, liquid crystal manufacturing machine, test instrument, food processing machine, medical instrument, machine tool, automobile manufacturing facility, an interval between the grease filling maintenances can be prolonged. For more information on the lubricating unit LUBSEAL, refer to page C14 of this catalog.

■ Various types of grease

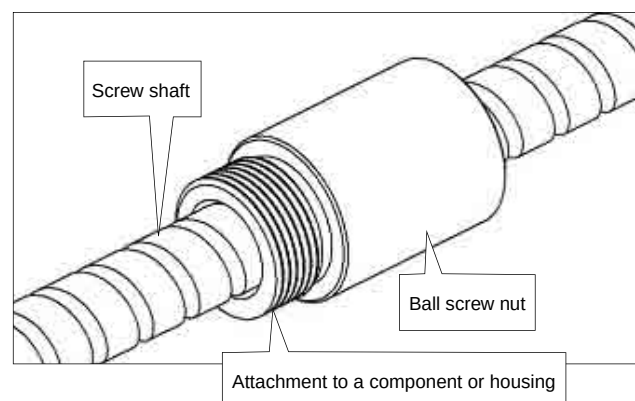
KUROMA also provides a wide range of grease which fulfill your requirements, including clean room compliance, anti-fretting corrosion, extreme pressure, low temperature, and wide temperature range. For more information, please contact KUROMA.

■ Examples of other custom ball screws with special dimensions and rating requirements

KUROMA provides custom ball screws with specific dimensions or specifications which are not listed as standard products in the catalog.

Various ball screws which require special profile and dimensions to accommodate a right and left screw, lead in inch length, hollow screw shaft, square nut can be provided. Ball screws which is configured with a screw shaft having a gear, spline, or serration, etc., or is capable of withstanding heavy load can also be produced upon your request. For more information, please contact KUROMA.

• Example of special nut dimensions



Ordering Instructions (How to Interpret Ball Screw Model No.)

Model No.	Model series	Screw shaft diameter	Lead	Number of circuits	Combination	Flange type	Ball recirculation system	Wiper material	Thread direction	Overall length of screw shaft	Shaft end dimension	Thread length	Accuracy grade	Axial clearance
	FR	15	10	P	S	-	H	P	N	R	-	1500	C5	F
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)

(1) Ball screw series

Series	In-stock series	Custom series	Remarks
F Series	FE/C7 class, FG/C5 class	FR, FM, FZ/C3-C7 classes	* ☐ R, ☐ M, and ☐ Z in the custom series indicate the following. ☐ R: Provided with the same dimensions as what are listed in the catalog ☐ M: Provided with a flange type different from the one in the catalog ☐ Z: Other than the above GT is applied for rolled screw having different dimensions from the dimensions in the catalog
D Series	DP/C3 class	DR, DM, DZ/C0-C7 classes	
G Series	GE/C7 class, GG/C5 class, GP/C3 class	GR, GM, GZ/C0-C10 classes	
	GY/C10 class (rolled screw), GW/C7 class (rolled screw)	GT/C7 or C10 class (rolled screw)	
H Series	HG/C5 class	-	

(2) Outside diameter of the screw shaft (unit: mm) is indicated in a two-digit number or alphabet.

- To show an outside diameter of screw shaft which is a 1-digit number, 0 needs to be added in front of the diameter to make it a two-digit code. (Example) Outside diameter of the screw shaft is 5 mm → 05
- Outside diameter of screw shaft which is a 3-digit number needs to be shown as follows: 100 mm → A0 125mm → C5

(4) Number of circuits of a ball screw nut

Symbol	Number of circuits	Applicable circulation system
A	1.5 turns, 1 circuit	Tube type system
B	1.5 turns, 2 circuits	
C	1.5 turns, 3 circuits	
D	2.5 turns, 1 circuit	
E	2.5 turns, 2 circuits	
F	2.5 turns, 3 circuits	
G	3.5 turns, 1 circuit	
R	3.5 turns, 2 circuits	

(5) The symbol Indicates a combination of ball screw nut

Symbol	Combination
S	Single nut
T	Integral nut
D	Double nut (pin type)
E	Double nut (spacer type)
F	Flange double nut (spacer type)
Z	Others (including a ball screw without a nut)

(7) Body type (ball recirculation system)

Symbol	Ball recirculation system
A	Round type (tube method)
T	Protruded tube type (tube method)
U	Inlaid tube type (tube method)
K	Square type (tube method)
D	Deflector method
G	Guide plate method
E	End cap method
P	End deflector method

(8) Wiper material

Symbol	Wiper material
P	Plastic wiper
L	Lip seal
F	Felt wiper
B	Brush wiper
N	No wiper
S	LUBSEAL
Z	Others (including a ball screw without a nut)

(9) Thread direction

Symbol	Description
R	Right hand thread
L	Left hand thread
Z	Others (including a ball screw without a nut)

(10) Overall length of screw shaft (shown in a 4-digit number)

- The shaft length needs to be indicated in metric system (unit: mm), rounding down to one decimal place.

(11) Shaft end dimension

Symbol	Description	Product line
A	Both ends unfinished	In-stock product line
B	One side finished	In-stock product line
X	Both ends finished	In-stock product line, custom product line
D	Both ends unfinished	For ordering screw shaft alone in GY series
Y	Both ends finished	

(12) Thread length (shown in a 4-digit number)

- The length needs to be indicated in metric system (unit: mm), rounding down to one decimal place.

(3) Lead size of a ball screw is indicated in a two-digit number or alphabet.

- To show a lead size which is a 1-digit number, 0 needs to be added in front of the size to make it a two-digit code. (Example) Lead size is 1 mm → 01
- Lead size of a number with decimal point needs to be shown as follows: 1.5 mm → 1F 2.5 mm → 2F

(6) The symbol indicates a flange type

Symbol	Flange type
A, B, C, D, E, F	Refer to page A7.
N	Without a flange (e.g. square nut)
Z	Others, for shapes and dimensions not listed in the catalog (including a ball screw without a nut)

(13) Accuracy grade

- The grade needs to be indicated by one of C0, C1, C2, C3, C4, C5, and C7. For C10 grade, indicate it with “CA”

(14) Axial clearance

Symbol	Clearance
S	0 mm (preloaded)
F	0.005 mm or smaller
H	0.010 mm or smaller
M	0.030 mm or smaller
L	0.200 mm or smaller
Y	Clearance for rolled ball screw (Refer to specifications for GY/GW series.)
Z	Others

Ordering instructions for in-stock ground ball screws

Unfinished shaft ends

■ GE, GG, FE, or FG series ball screws

- Without additional machining

<Example>

GE/FE --Overall length **A**

GG/FG --Overall length **A**

Model No

- With additional machining

Enter X as a symbol for the shaft end dimension, followed by overall length of screw shaft, thread length, accuracy grade, and axial clearance.

<Example>

GE/FE --Overall length **X** Thread length **-C7M**

GG/FG --Overall length **X** Thread length **-C5F**

■ HG series ball screws

- Without additional machining

<Example>

HG --Overall length **A**

Model No

- With additional machining

Enter X as a symbol for the shaft end dimension, followed by overall length of screw shaft, thread length, accuracy grade, and axial clearance.

<Example>

HG --Overall length **X** Thread length **-C5^F_H**

One finished end

■ GP/DP series ball screw

- Without additional machining

<Example>

GP --Overall length **B-C3^S_F**

DP --Overall length **B-C3^S_F**

Model No

- With additional machining

Enter X as a symbol for the shaft end dimension, followed by overall length of screw shaft, thread length, accuracy grade, and axial clearance.

<Example>

GP --Overall length **X** Thread length **C3^S_F**

DP --Overall length **X** Thread length **C3^S_F**

Ordering instructions for rolled ball screws

Unfinished shaft ends

■ GY series ball screws

[Set of shaft and nut]

- Without additional machining

<Example>

GY - - Overall length A

Model No

- With additional machining

Enter X as a symbol for the shaft end dimension, followed by overall length of screw shaft, thread length, accuracy grade, and axial clearance.

<Example>

GY - - Overall length X Thread length -CAY

[Nut alone]

No need to fill in after the section for overall length of screw shaft

<Example>

GY -

[Shaft alone]

- Without additional machining

Enter D as a symbol for the shaft end dimension.

<Example>

GY ZZ-ZZZZ - Overall length D

- With additional machining

Enter Y as a symbol for the shaft end dimension, followed by overall length of screw shaft, thread length, accuracy grade, and axial clearance.

<Example>

GY ZZ-ZZZZ - Overall length Y Thread length -CAY

Note) Screw shafts with the same outside diameter and lead size are compatible regardless of their nut types.

Unfinished shaft ends

■ GW series ball screws

[Set of shaft and nut]

- Without additional machining

<Example>

GW - - Overall length A

Model No

- With additional machining

Enter X as a symbol for the shaft end dimension, followed by overall length of screw shaft, thread length, accuracy grade, and axial clearance.

<Example>

GW - - Overall length X Thread length -C7Y

Ordering instructions for custom ball screws

■ For ball screws with a nut having dimensions exactly the same as those listed in the catalog

In this case, use the same Model No., and enter overall length of screw shaft, thread length, accuracy grade, and axial clearance following the Model No.

<Example>

GR/DR/FR - - Overall length X Thread length - Accuracy grade Axial clearance

Model No

■ For ball screws with a flange for nut attachment having dimensions different from those listed in the catalog

In this case, start the Model No. with GM/DM/FM followed by a symbol indicating flange material in either N or Z. After the Model No., enter overall length of screw shaft, thread length, accuracy grade, and axial clearance.

<Example>

GM/DM/FM - ^N/_Z - Overall length X Thread length - Accuracy grade Axial clearance

Model No

■ For other ball screws not listed above, which require modification of nut body type, with sizes not listed in the catalog, left screws, etc.

In this case, start the Model No. with GZ/DZ/FZ and make necessary changes. Following the Model No., enter overall length of screw shaft, thread length, accuracy grade, and axial clearance.

<Example>

GZ/DZ/FZ - Z - Overall length X Thread length - Accuracy grade Axial clearance

Model No

Ordering instructions for custom rolled ball screws

■ For ball screws with a nut having dimensions different from those listed in the catalog

In this case, start the Model No. with GT and make necessary modifications. Following the Model No., enter overall Length of screw shaft, thread length, accuracy grade, and axial clearance.

<Example>

GT - Z - Overall length X Thread length - Accuracy grade Axial clearance

Model No

Ultra-quiet ball screws

F series

	Page
Features and specifications of F series ball screws	B_ 2
Ordering instructions, shaft diameter and lead combinations	B_ 3

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

• 10 mm shaft diameter, Unfinished shaft-ends	B_ 4
• 12 mm shaft diameter, Unfinished shaft-ends	B_ 5 ~ 6
• 15 mm shaft diameter, Unfinished shaft-ends	B_ 7 ~ 9
• 20 mm shaft diameter, Unfinished shaft-ends	B_10 ~ 11
• 25 mm shaft diameter, Unfinished shaft-ends	B_12 ~ 14

* Refer to page E-1 and after for the shaft-end process drawings for the above sizes.

Custom product FR series, Single nut (C3 ~ C7 grade)

• 10 to 40 mm shaft diameter, Single nut	B_15 ~ 16

Custom product FR series, Double nut (C3 ~ C5 grade)

• 32 to 40 mm shaft diameter, Double nut	B_17

Ultra-quiet ball screws **F series**

Features

● High rotational speed achieved by inovative circulation system

- Delivers higher rotational speed up to 5,000 min⁻¹ based on new design and manufacturing technologies developed by KURODA.
- Provides maximum table speed of 2.5 m/sec. (The left seed is in the case of a ball screw with a 15 mm screw shaft diameter and 30 mm lead).

● Reduced sound pressure level and improved sound quality

- Delivers improved sound pressure level (down by up to 6 dB) and sound quality in a high frequency range, using KURODA's high-precision processing technologies developed during its history of gauge production and based on longstanding efforts toward quieter ball screws. (The above values are in the case of a ball screw with a 25 mm screw shaft diameter and 25 mm lead)

● Nut dimensions for more compactness

- With ball circulation components provided at both end of a nut and a circulation path developed by KURODA, substantial compactness in a overall length and outside diameter of the nut body has been realized.

● Longer lifetime achieved by bigger load rating

- With a load rating designed without changing a ball diameter in a KURODA's previous model, the F series ball screw provides improved basic dynamic load rating and basic static load rating, compared with previous models.

Summary of the specifications

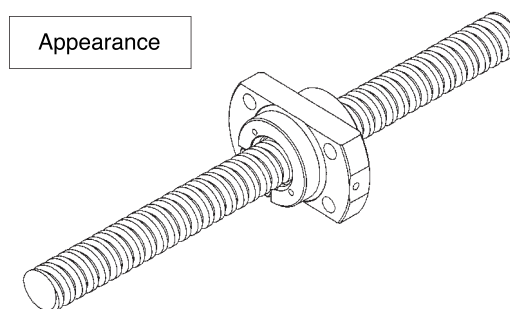
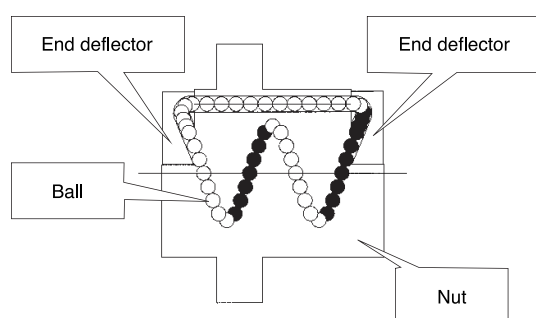
☐ Shaft diameter: ø10 to ø40 mm, lead: 5 to 30 mm

(Refer to the list of shaft diameters and lead combinations for more details.)

☐ Accuracy grade: C3 to C7 grades (C3 to C5 grades for ball screws with double nut)

☐ Nut combination: single nut, double nut (spacer type)

☐ Circulation system: end deflector method



☐ Series product line-up

Series name		Nut combination	Accuracy grade	Shaft diameter line-up	Shaft type	Product line
F series	FG series	Single nut	C5	ø10 ~ ø25	Both ends unfinished	Standard (in-stock) product line
	FE series		C7			
	FR series	Single nut	C3 ~ C7	ø10 ~ ø40	Free design	Custom product line
		Double nut	C3 ~ C5	ø32 ~ ø40		

- In the standard product line, both ends of the screw shaft are not finished. Additional end machining to fulfill your needs and operating conditions is required.

- Refer to page E-1 and after in this catalog for the shaft-end process drawings for standard (in-stock) products.

- For the custom ball screws, custom shaft design to fulfill your needs and operating conditions is required.

Model numbers of F series

Example of the model number	Model series	Screw shaft diameter	Lead	Number of circuits	Combination	-	Flange type	Ball recirculation system	Wiper material	Thread direction	-	Overall length of screw shaft	Shaft end dimension	Thread length	-	Accuracy grade	Axial clearance
	FR	12	20	P	S	-	H	P	N	R	-	0900	X	0840	-	C5	F
	FE	10 ~ 25	5 ~ 25	P	S	-	H	P	N	R	-	To be shown with a 4-digit number in metric unit (mm)	A, X	To be shown with a 4-digit number in metric unit (mm)	-	C7	M
	FG					-	See specifications.				-				-	C5	F
	FR	10 ~ 40	5 ~ 30		E	-	H				-				-	C3 ~ C7	S, F, H, M
	FR	32 ~ 40	8 ~ 16			-	H				-		X		-	C3 ~ C5	S

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

Shaft diameter and lead combinations

Screw shaft diameter (mm)	Lead (mm)							
	5	8	10	12	16	20	25	30
10			S					
12			S			S		
15	S		S			S		S
20			S			S		
25	S		S				S	
32	S	S	S	S	S			
		E	E	E	E			
36				S	S			
				E	E			
40		S	S	S	S			
		E	E	E	E			

- The symbols in the above table represent:
S: single nut, E: double nut (spacer type)
- The shaded areas indicate that the screws are standard (in-stock) products (S: single nut).

Options available for standard (in-stock) ball screws

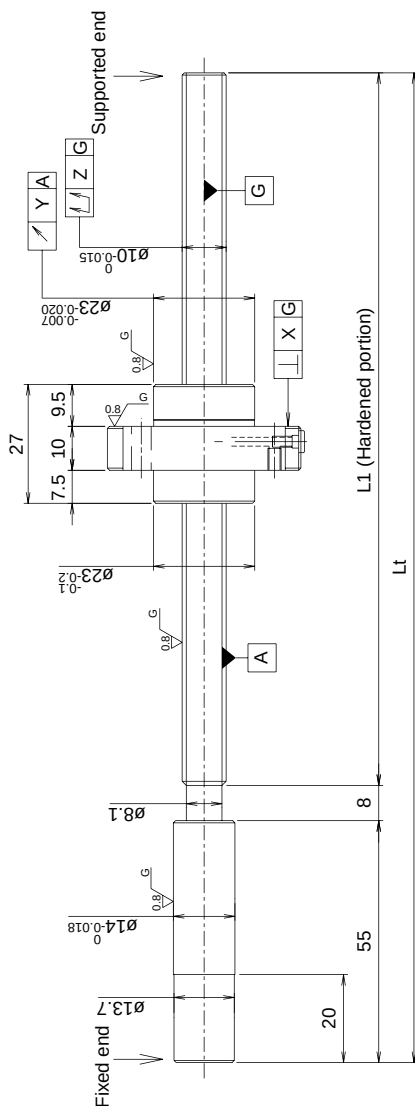
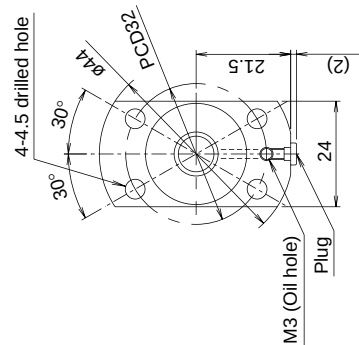
Series	Additional end machining	Axial clearance adjustment	Surface treatment	Grease	Direction of nut	Wiper detachment
FE series	o	x	o	o	o	---
FG series	o	o	o	o	o	---

- In FE/FG series, both ends of the screw shaft are not finished. Additional end machining to fulfill your needs and operating conditions is required.
- Contact KURODA for more information on axial clearance adjustment for FG series products.
- The surface treatment mentioned above is anti corrosive black coating (1 to 2 μm).
- Alvania Grease S2 is contained in a nut shipped from KURODA, unless otherwise specified. Contact KURODA if you want other greases to be contained.

UNFINISHED SHAFT ENDS

Screw shaft diameter $\varnothing 10$, Lead 10

(Unit: mm)



Notation of standard ground ball screw

- Standard length shaft without end machining
FE1010PS-HPNR-□□□□A
FG1010PS-HPNR-□□□□A
- With end machining specified on your drawing
FE1010PS-□PNR-□□□□X□□□-C7M
FG1010PS-□PNR-□□□□X□□□□-C5□

Overall length Thread length

Table of optional specifications for each model

Series	Additional machining of shaft end	Axial clearance adjustment (Note 2)	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
FE	○	×	○	○	○	-
FG	○	○	○	○	○	-

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Note 2: For axial clearance adjustment for FG series, consult KURODA.

Ball screw specifications

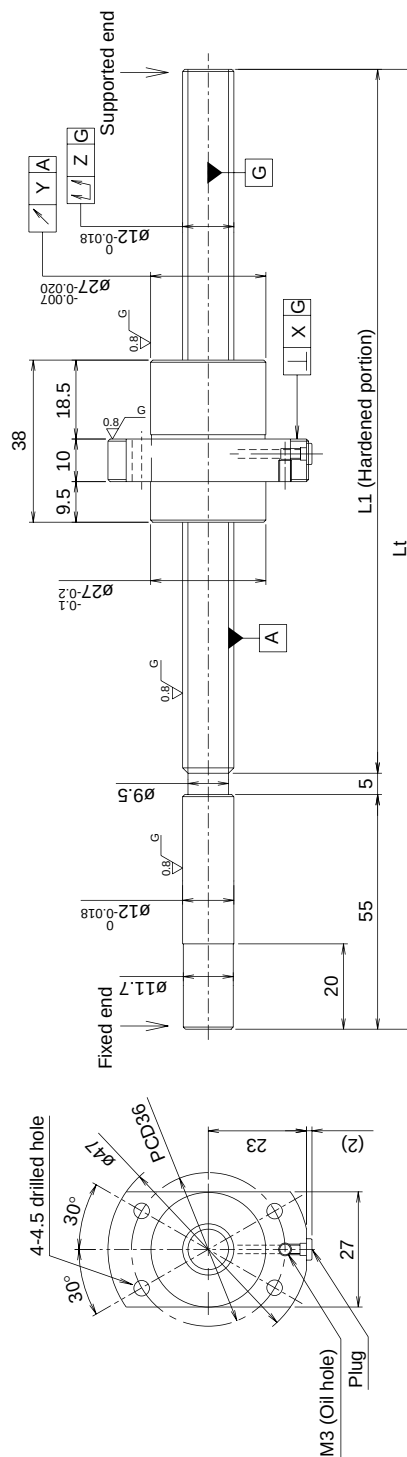
Screw shaft diameter	10	Axial clearance	~ 0.030 (M)	~ 0.005 (F)
Lead	10	Basic dynamic load rating	2600N	
Thread direction	Right-hand	Basic static load rating	3800N	
Number of circuits	1.7 turn 1 circuit	Spacer ball	None	
Ball diameter	2.381	Lubricant	Alvania Grease S2	

Model No.	Axial clearance	L ₁	L _t	X	Y	Z	Preload torque (N·cm)	Lead accuracy			Wiper	Mass (kg)
								±Ec	ec	e300		
FE1010PS-HPNR-0255A	~0.030(M)	192	255	0.014	0.020	0.080	-	0.05/300	-	-	0.29	
FE1010PS-HPNR-0455A		392	455			0.120					0.40	
FE1010PS-HPNR-0655A		592	655			0.150					0.52	
FG1010PS-HPNR-0255A	~0.005(F)	192	255	0.010	0.012	0.055	~1.0	0.023	0.018	-	0.29	
FG1010PS-HPNR-0455A		392	455			0.080		0.025	0.020		0.40	
FG1010PS-HPNR-0655A		592	655			0.090		0.030	0.023		0.52	

- Support unit: BUK/M-10F, BUK/M-8S or BUK/M-10 is recommended.
 - Product with axial clearance ~0.005(F) shown in the table may be partially preloaded.
 - Preload torque shown in the table is a value before greasing.
- The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.

Screw shaft diameter $\varnothing 12$, Lead 10

(Unit: mm)



Notation of standard ground ball screw

- Standard length shaft without end machining
FE1210PS-HPNR-□□□□A
FG1210PS-HPNR-□□□□A
- With end machining specified on your drawing
FE1210PS-□PNR-□□□□X□□□□-C7M
FG1210PS-□PNR-□□□□X□□□□-C5□

Overall length Thread length

Table of optional specifications for each model

Series	Additional machining of shaft end	Axial clearance adjustment (Note 2)	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
FE	o	x	o	o	o	-
FG	o	o	o	o	o	-

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Note 2: For axial clearance adjustment for FG series, consult KURODA.

Ball screw specifications

Screw shaft diameter	12	Axial clearance	~ 0.030 (M) ~ 0.005 (F)
Lead	10	Basic dynamic load rating	6700N
Thread direction	Right-hand	Basic static load rating	10700N
Number of circuits	2.7 turn 1 circuit	Spacer ball	None
Ball diameter	3.175	Lubricant	Alvania Grease S2

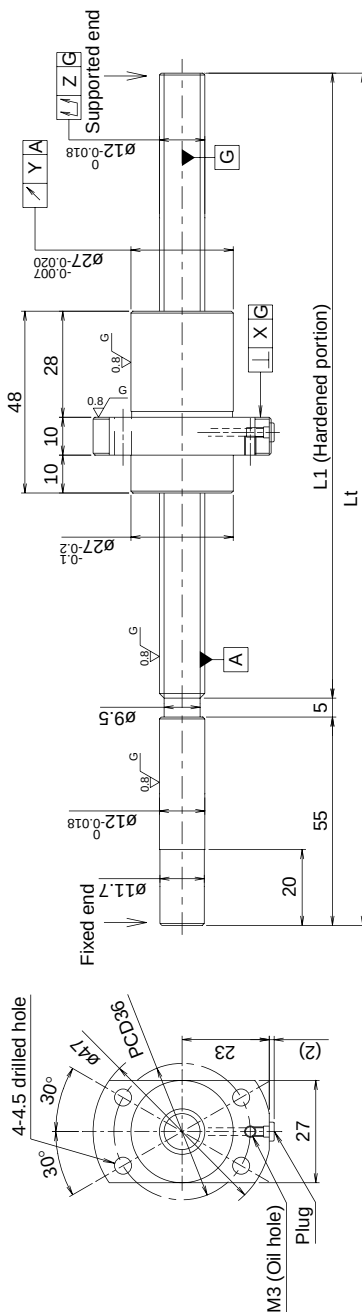
Model No.	Axial clearance	L ₁	L _t	X	Y	Z	Preload torque (N·cm)	Lead accuracy		Wiper	Mass (kg)
								±Ec	ec		
FE1210PS-HPNR-0455A	~0.030(M)	395	455	0.014	0.020	0.120	-	0.05/300	-		0.53
FE1210PS-HPNR-0605A		545	605			0.150					0.65
FG1210PS-HPNR-0455A	~0.005(F)	395	455	0.010	0.012	0.080	~2.0	0.025	0.020	-	0.53
FG1210PS-HPNR-0605A		545	605			0.090		0.030	0.023		0.018

- Support unit: BUK/M-10F, BUK/M-8S or BUK/M-10 is recommended.
 Product with axial clearance ~0.005(F) shown in the table may be partially preloaded.
 Preload torque shown in the table is a value before greasing.
 The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.

UNFINISHED SHAFT ENDS

Screw shaft diameter Ø12, Lead 20

(Unit: mm)



Notation of standard ground ball screw

- Standard length shaft without end machining
FE1220PS-HPNR-□□□□A
FG1220PS-HPNR-□□□□A
- With end machining specified on your drawing
FE1220PS-□□□□PNR-□□□□X□□□□-C7M
FG1220PS-□□□□PNR-□□□□X□□□□-C5□

Overall length Thread length

Model No.	Axial clearance	L ₁	L _t	X	Y	Z	Preload torque (N·cm)	Lead accuracy			Wiper	Mass (kg)
								±Ec	ec	e300		
FE1220PS-HPNR-0405A	~0.030(M)	345	405	0.018	0.030	0.120	-	0.05/300	-	-	0.54	
FE1220PS-HPNR-0605A		545	605			0.150					0.71	
FE1220PS-HPNR-0900A		840	900			0.170					0.95	
FG1220PS-HPNR-0405A	~0.005(F)	345	405	0.010	0.012	0.080	~2.5	0.025	0.020	-	0.54	
FG1220PS-HPNR-0605A		545	605			0.090		0.030	0.023		0.018	0.71
FG1220PS-HPNR-0900A		840	900			0.120		0.040	0.027		0.95	

- Support unit: BUK/M-10F, BUK/M-8S or BUK/M-10 is recommended.
 - Product with axial clearance $\sim 0.005(F)$ shown in the table may be partially preloaded.
 - Preload torque shown in the table is a value before greasing.
- The grease is contained inside of nut only at the time of delivery. When using it, apply

Table of optional specifications for each model

Series	Additional machining of shaft end	Axial clearance adjustment (Note 2)	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
FE	○	×	○	○	○	-
FG	○	○	○	○	○	-

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

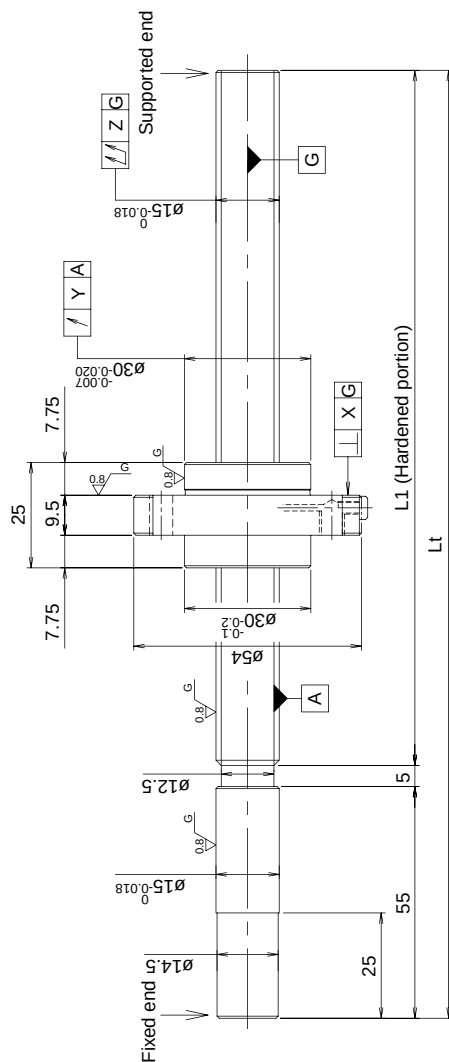
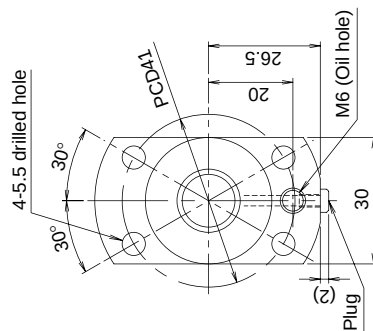
Note 2: For axial clearance adjustment for FG series, consult KURODA.

Ball screw specifications

Screw shaft diameter	12	Axial clearance	~ 0.030 (M) ~ 0.005 (F)
Lead	20	Basic dynamic load rating	4300N
Thread direction	Right-hand	Basic static load rating	6700N
Number of circuits	1.7 turn 1 circuit	Spacer ball	None
Ball diameter	3.175	Lubricant	Alvania Grease S2

Screw shaft diameter $\varnothing 15$, Lead 5

(Unit: mm)



Notation of standard ground ball screw

- Standard length shaft without end machining
FE1505PS-HPNR-□□□□A
FG1505PS-HPNR-□□□□A
- With end machining specified on your drawing
FE1505PS-P□R-□□□□X□□□-C7M
FG1505PS-P□R-□□□□X□□□-C5□
- Overall length Thread length

Model No.	Axial clearance	L ₁	L _t	X	Y	Z	Preload torque (N·cm)	Lead accuracy			Wiper	Mass (kg)
								±Ec	ec	e300		
FE1505PS-HPNR-0600A	~0.030(M)	540	600	0.014	0.020	0.110	-	0.05/300	-	-	0.83	
FE1505PS-HPNR-1100A		1040	1100									1.39
FG1505PS-HPNR-0600A	~0.005(F)	540	600	0.010	0.012	0.075	~2.0	0.030	0.023	0.018	0.83	
FG1505PS-HPNR-1100A		1040	1100					0.046	0.030		1.39	

• Support unit: BUK/M-12F, BUK/M-10S or BUK/M-12 is recommended.

Product with axial clearance $\sim 0.005(F)$ shown in the table may be partially preloaded.

• Preload torque shown in the table is a value before greasing.

The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.

Table of optional specifications for each model

Series	Additional machining of shaft end	Axial clearance adjustment (Note 2)	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
FE	o	x	o	o	o	-
FG	o	o	o	o	o	-

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Note 2: For axial clearance adjustment for FG series, consult KURODA.

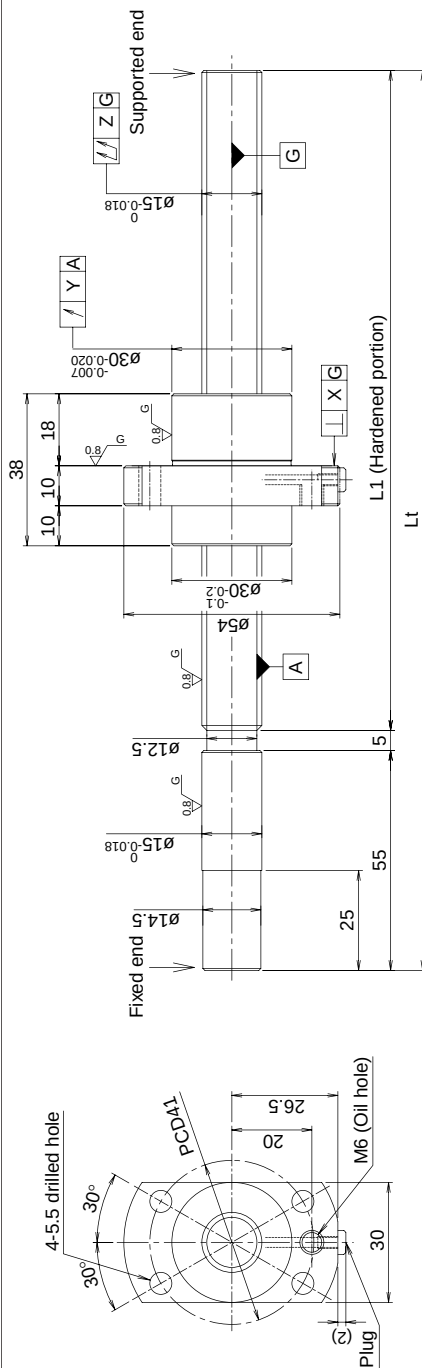
Ball screw specifications

Screw shaft diameter	15	Axial clearance	~ 0.030 (M) ~ 0.005 (F)
Lead	5	Basic dynamic load rating	7400N
Thread direction	Right-hand	Basic static load rating	12900N
Number of circuits	2.7 turn 1 circuit	Spacer ball	None
Ball diameter	3.175	Lubricant	Alvania Grease S2

UNFINISHED SHAFT ENDS

Screw shaft diameter Ø15, Lead 10

(Unit: mm)



Notation of standard ground ball screw

- Standard length shaft without end machining
FE1510PS-HPNR-□□□□A
FG1510PS-HPNR-□□□□A
- With end machining specified on your drawing
FE1510PS-□□□□PNR-□□□□X□□□□-C7M
FG1510PS-□□□□PNR-□□□□X□□□□-C5□

Overall length Thread length

Table of optional specifications for each model

Series	Additional machining of shaft end	Axial clearance adjustment (Note 2)	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
FE	o	x	o	o	o	-
FG	o	o	o	o	o	-

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Note 2: For axial clearance adjustment for FG series, consult KURODA.

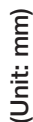
Ball screw specifications

Screw shaft diameter	15	Axial clearance	$\sim 0.030(\text{M})$	$\sim 0.005(\text{F})$
Lead	10	Basic dynamic load rating	7400N	
Thread direction	Right-hand	Basic static load rating	12900N	
Number of circuits	2.7 turn 1 circuit	Spacer ball	None	
Ball diameter	3.175	Lubricant	Alvania Grease S2	

Model No.	Axial clearance	L ₁	L _t	X	Y	Z	Preload torque (N·cm)	Lead accuracy			Wiper	Mass (kg)
								±Ec	ec	e300		
FE1510PS-HPNR-0600A	~0.030(M)	540	600	0.014	0.020	0.110	-	0.05/300			0.96	
FE1510PS-HPNR-0900A		840	900			0.170					1.34	
FE1510PS-HPNR-1100A		1040	1100			0.210					1.59	
FE1510PS-HPNR-1300A		1240	1300			0.270					1.84	
FE1510PS-HPNR-1500A		1440	1500			0.270					2.10	
FG1510PS-HPNR-0600A	~0.005(F)	540	600	0.010	0.012	0.075	~3.0	0.030	0.023	-	0.96	
FG1510PS-HPNR-0900A		840	900			0.120		0.040	0.027		1.34	
FG1510PS-HPNR-1100A		1040	1100			0.150		0.046	0.030		0.018	1.59
FG1510PS-HPNR-1300A		1240	1300			0.190		0.054	0.035		1.84	
FG1510PS-HPNR-1500A		1440	1500			0.190		0.054	0.035		2.10	

- Support unit: BUK/M-12F, BUK/M-10S or BUK/M-12 is recommended.
 - Product with axial clearance ~0.005(F) shown in the table may be partially preloaded.
 - Preload torque shown in the table is a value before greasing.
- The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.

Screw shaft diameter $\varnothing 15$, Lead 20



- Standard length shaft without end machining

FG1520PS-HPNR-□□□□A

FE1520PS-PNR-X-C7MFG1520PS-PNR-X-C5

Overall length Thread length

Ball screw specifications

Screw shaft diameter	15	Axial clearance	$\sim 0.030(\text{M})$	$\sim 0.005(\text{F})$
Lead	20	Basic dynamic load rating	4800N	
Thread direction	Right-hand	Basic static load rating	8200N	
Number of circuits	1.7 turn 1 circuit	Spacer ball	None	
Ball diameter	3.175	Lubricant	Alvania Grease S2	

Note 2: For axial clearance adjustment for FG series, consult KURODA.

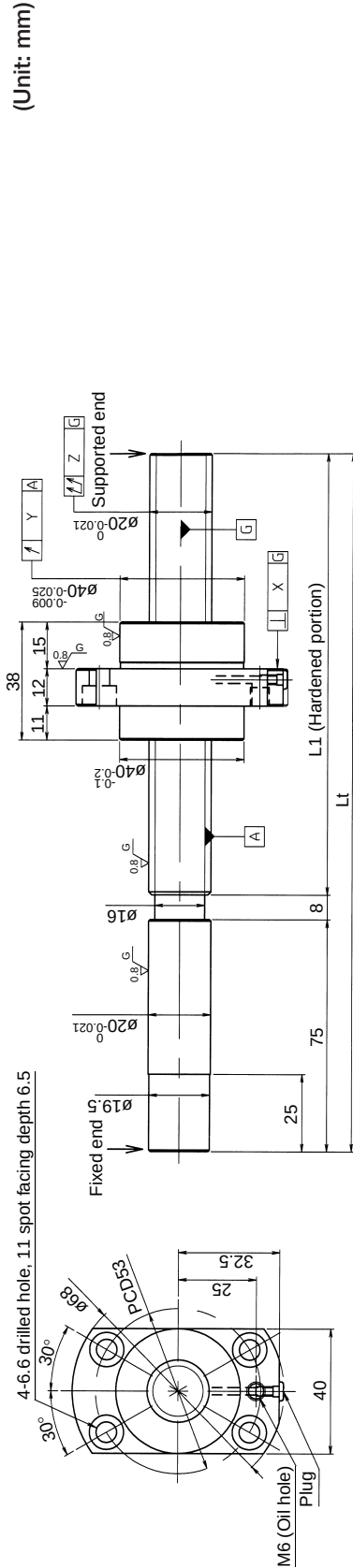
Product with axial clearance $\sim 0.005(F)$ shown in the table may be partially preloaded.

• The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.

Model No.	Axial clearance	L ₁	L _t	X	Y	Z	Preload torque (N·cm)	Lead accuracy	Wiper	Mass (kg)
								±Ec	ec	e300
FE1520PS-HPNR-0600A	~0.030(M)	540	600	0.014		0.110				1.04
FE1520PS-HPNR-0900A		840	900			0.170				1.44
FE1520PS-HPNR-1100A		1040	1100			0.210				1.71
FE1520AS-HPNR-1300A		1240	1300			0.270				1.97
FE1520PS-HPNR-1500A		1440	1500			0.270				2.24
FG1520PS-HPNR-0600A	~0.005(F)	540	600	0.010	0.012	0.075	~3.0	0.030	0.023	1.04
FG1520PS-HPNR-0900A		840	900			0.120		0.040	0.027	1.44
FG1520PS-HPNR-1100A		1040	1100			0.150		0.046	0.030	1.71
FG1520AS-HPNR-1300A		1240	1300			0.190		0.054	0.035	1.97
FG1520PS-HPNR-1500A		1440	1500			0.190		0.054	0.035	2.24

UNFINISHED SHAFT ENDS

Screw shaft diameter ø20, Lead 10



(Unit: mm)

Notation of standard ground ball screw

- Standard length shaft without end machining
FE2010PS-HPNR-□□□□A
FG2010PS-HPNR-□□□□A
- With end machining specified on your drawing
FE2010PS-□PNR-□□□□X□□□□-C7M
FG2010PS-□PNR-□□□□X□□□□-C5□

Overall length Thread length

- Support unit: BUK/M-15F, BUK/M-15S or BUK/M-15 is recommended.
- Product with axial clearance ~0.005(F) shown in the table may be partially preloaded.
- Preload torque shown in the table is a value before greasing.
- The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.

Table of optional specifications for each model

Series	Additional machining of shaft end	Axial clearance adjustment (Note 2)	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
FE	o	x	o	o	o	-
FG	o	o	o	o	o	-

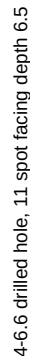
Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 µm).

Note 2: For axial clearance adjustment for FG series, consult KURODA.

Ball screw specifications

Screw shaft diameter		20	Axial clearance		~0.030(M)	~0.005(F)
Lead		10	Basic dynamic load rating		18000N	
Thread direction		Right-hand	Basic static load rating		33900N	
Number of circuits		2.7 turn 1 circuit	Spacer ball		None	
Ball diameter		4.7625	Lubricant		Alvania Grease S2	

Screw shaft diameter $\varnothing 20$, Lead 20



(Unit: mm)

Notation of standard ground ball screw

- Standard length shaft without end machining

- With end machining specific

FE2020PS-X-C7MFG2020PS-PNR-X-C5

Overall length Thread length

- The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.

Ball screw specifications

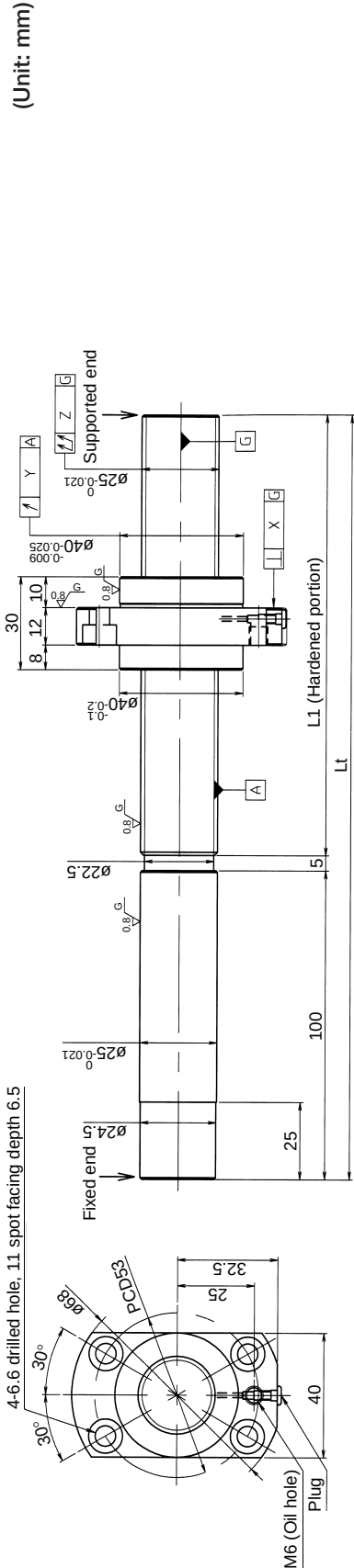
Screw shaft diameter	20	Axial clearance	~0.030(M) ~0.005(F)
Lead	20	Basic dynamic load rating	11600N
Thread direction	Right-hand	Basic static load rating	20600N
Number of circuits	1.7 turn 1 circuit	Spacer ball	None
Ball diameter	4.7625	Lubricant	Alvania Grease S2

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Note 2: For axial clearance adjustment for FG series, consult KURODA.

UNFINISHED SHAFT ENDS

Screw shaft diameter ø25, Lead 5



(Unit: mm)

Notation of standard ground ball screw

- Standard length shaft without end machining
FE2505PS-HPNR-□□□□A
FG2505PS-HPNR-□□□□A
- With end machining specified on your drawing
FE2505PS-□PNR-□□□□X□□□□-C7M
FG2505PS-□PNR-□□□□X□□□□-C5□

Overall length Thread length

- Support unit: BUK/M-20F, BUK/M-20S or BUK/M-20 is recommended.
- Product with axial clearance ~0.005(F) shown in the table may be partially preloaded.
- Preload torque shown in the table is a value before greasing.
- The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.

Table of optional specifications for each model

Series	Additional machining of shaft end	Axial clearance adjustment (Note 2)	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
FE	0	x	o	o	o	-
FG	o	o	o	o	o	-

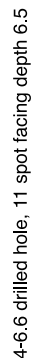
Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Note 2: For axial clearance adjustment for FG series, consult KURODA.

Ball screw specifications

Screw shaft diameter		25	Axial clearance		~0.030(M)	~0.005(F)
Lead		5	Basic dynamic load rating		13100N	
Thread direction		Right-hand	Basic static load rating		31800N	
Number of circuits		3.7 turn 1 circuit	Spacer ball		None	
Ball diameter		3.175	Lubricant		Alvania Grease S2	

Screw shaft diameter $\varnothing 25$, Lead 10



(Unit: mm)

Notation of standard ground ball screw

- Standard length shaft without end machining

- FE2510PS-HPNR-□□□□A

- With end machining specified on your drawing

- FE2510PS-
-
- PNR-
-
-
-
- X
-
-
-
-
- C7M

- FG2510PS-
-
- PNR-
-
-
-
-
- X
-
-
-
-
- C5
-

Overall length Thread length

- Product with axial clearance $\sim 0.005(F)$ shown in the table may be partially preloaded.

- Preload torque shown in the table is a value before greasing.

- The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.

Ball screw specifications

Series	Additional machining of shaft end	Axial clearance adjustment (Note 2)	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
FE	○	×	○	○	○	-
FG	○	○	○	○	○	-

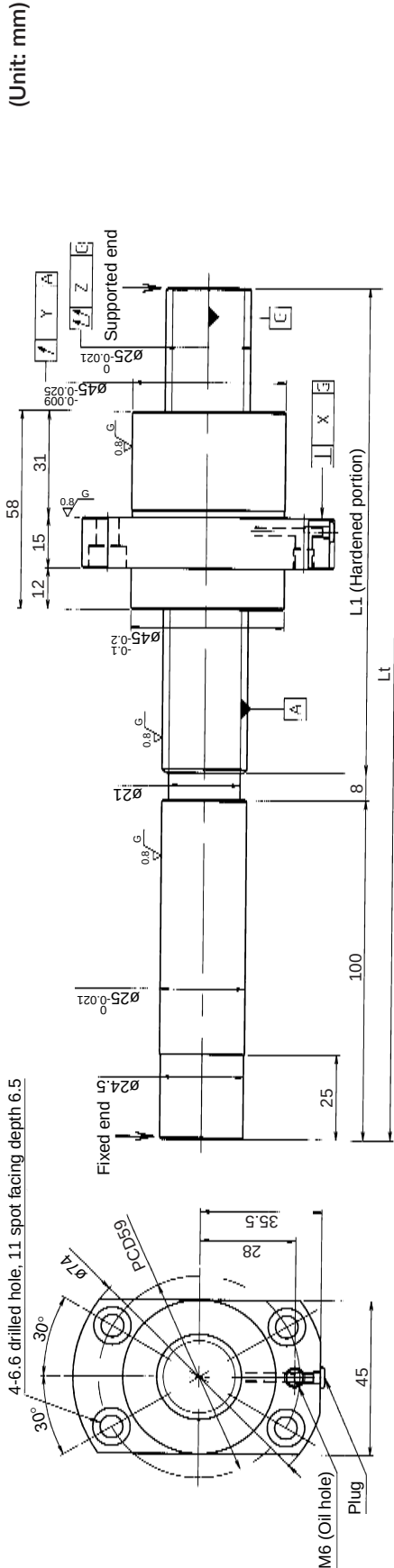
Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Note 2: For axial clearance adjustment for FG series, consult KUROMA.

Screw shaft diameter	25	Axial clearance	~ 0.030 (M) ~ 0.005 (F)
Lead	10	Basic dynamic load rating	20400N
Thread direction	Right-hand	Basic static load rating	42600N
Number of circuits	2.7 turn 1 circuit	Spacer ball	None
Ball diameter	4.7625	Lubricant	Alvania Grease S2

UNFINISHED SHAFT ENDS

Screw shaft diameter ø25, Lead 25



(Unit: mm)

Notation of standard ground ball screw

- Standard length shaft without end machining
FE2525PS-HPNR-□□□□A
FG2525PS-HPNR-□□□□A
- With end machining specified on your drawing
FE2525PS-□PNR-□□□□X□□□□-C7M
FG2525PS-□PNR-□□□□X□□□□-C5□

Overall length Thread length

• Support unit: BUK/M-20F, BUK/M-20S or BUK/M-20 is recommended.

• Product with axial clearance ~0.005(F) shown in the table may be partially preloaded.

• Preload torque shown in the table is a value before greasing.

• The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.

Table of optional specifications for each model

Series	Additional machining of shaft end	Axial clearance adjustment (Note 2)	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
FE	0	x	0	0	0	-
FG	0	0	0	0	0	-

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Note 2: For axial clearance adjustment for FG series, consult KURODA.

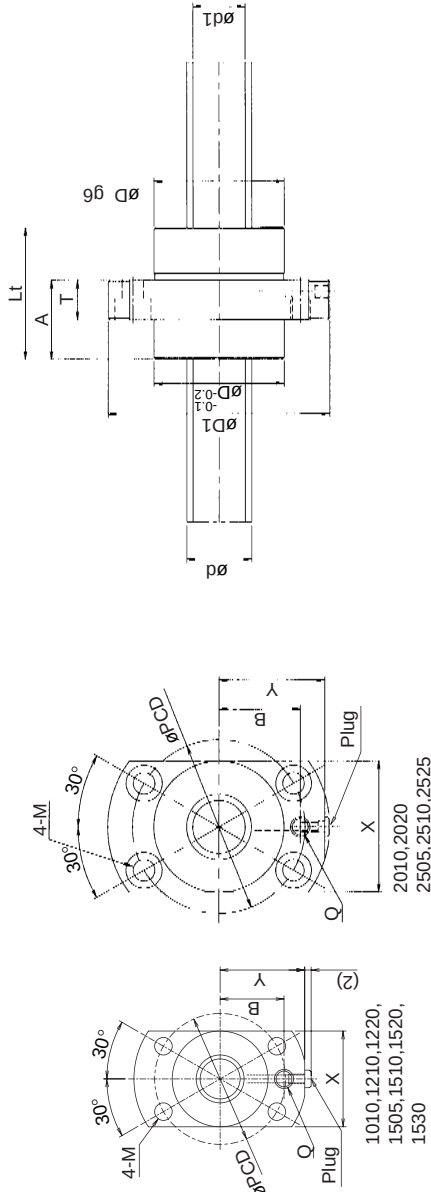
Ball screw specifications

Screw shaft diameter		25	Axial clearance		~0.030(M)	~0.005(F)
Lead		25	Basic dynamic load rating		13100N	
Thread direction		Right-hand	Basic static load rating		25900N	
Number of circuits		1.7 turn 1 circuit	Spacer ball		None	
Ball diameter		4.7625	Lubricant		Alvania Grease S2	

Screw shaft diameter ø10-ø25

END DEFLECTOR METHOD SINGLE NUT

(Unit: mm)



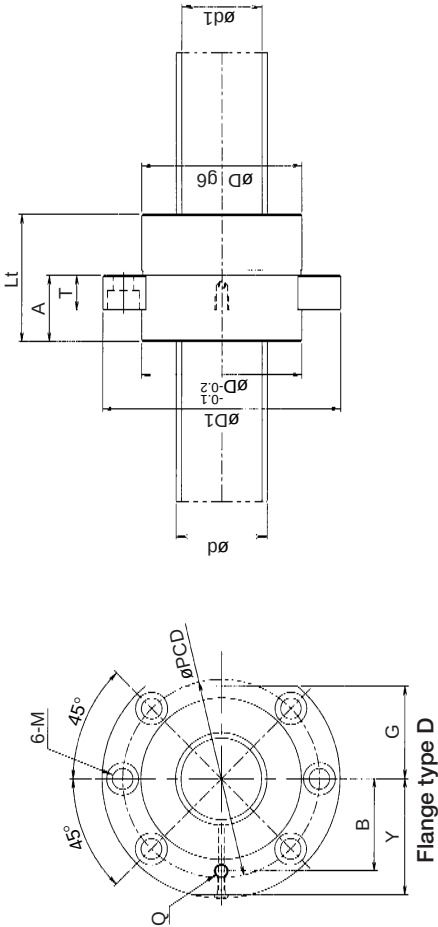
Flange type H

Model No.	Screw shaft diameter d	Lead L	Ball diameter D _b	Root diameter d _i	Number of circuits Turn x Circuit	Basic dynamic load rating C (N)	Basic static load rating C ₀ (N)	* Rigidity K _{NS} (N/μm)	Nut dimensions										Mass							
									Outer diameter D	Overall length L _t	Length A	Wiper material	Flange thickness T	Flange outer diameter D ₁	Flange type	Flange dimensions					Mounting hole			Nut (kg)	Screw shaft (kg/100mm)	
																X	Y	B	G	Q	PCD	M				
																						Drill	Spot facing			Depth
FR1010PS-HPNR	10	10	2.381	8.1	1.7X1	2600	3800	60	23	27	17.5	N	10	44	H	24	21.5	16	-	M3	32	4.5	-	-	0.11	0.06
FR1210PS-HPNR	12	10	3.175	9.5	2.7X1	6700	10700	110	27	38	19.5	N	10	47	H	27	23	18	-	M3	36	4.5	-	-	0.17	0.08
FR1220PS-HPNR	12	20	3.175	9.5	1.7X1	4300	6700	70	27	48	20	N	10	47	H	27	23	18	-	M3	36	4.5	-	-	0.20	0.08
FR1505PS-HPNR	15	5	3.175	12.5	2.7X1	7400	12900	120	30	25	17.3	N	9.5	54	H	30	26.5	20	-	M6	41	5.5	-	-	0.15	0.11
FR1510PS-HPNR	15	10	3.175	12.5	2.7X1	7400	12900	120	30	38	20	N	10	54	H	30	26.5	20	-	M6	41	5.5	-	-	0.20	0.13
FR1520PS-HPNR	15	20	3.175	12.5	1.7X1	4800	8200	80	30	48	20.5	N	10	54	H	30	26.5	20	-	M6	41	5.5	-	-	0.24	0.13
FR1530PS-HPNR	15	30	3.175	12.5	1.7X1	4800	8200	80	32	65	20.5	N	10	56	H	32	27.5	21	-	M6	43	5.5	-	-	0.36	0.14
FR2010PS-HPNR	20	10	4.763	16	2.7X1	18000	33900	160	40	38	23	N	12	68	H	40	32.5	25	-	M6	53	6.6	11	6.5	0.36	0.21
FR2020PS-HPNR	20	20	4.763	15.9	1.7X1	11600	20600	100	40	48	23	N	12	68	H	40	32.5	25	-	M6	53	6.6	11	6.5	0.43	0.23
FR2505PS-HPNR	25	5	3.175	22.5	3.7X1	13100	31800	240	40	30	20	N	12	68	H	40	32.5	25	-	M6	53	6.6	11	6.5	0.27	0.34
FR2510PS-HPNR	25	10	4.763	21	2.7X1	20400	42600	200	45	37	25	N	15	74	H	45	35.5	28	-	M6	59	6.6	11	6.5	0.44	0.34
FR2525PS-HPNR	25	25	4.763	21	1.7X1	13100	25900	130	45	58	27	N	15	74	H	45	35.5	28	-	M6	59	6.6	11	6.5	0.61	0.37

Note: - The rigidity indicated with the *mark in the above list represents the practical value based on the result of rigidity test. This value is calculated from the elastic displacement measured when the axial load equivalent to 30% of basic dynamic load rating (C) is applied between the screw thread and the balls.
 . Wiper material N: Without wiper

END DEFLECTOR METHOD SINGLE NUT

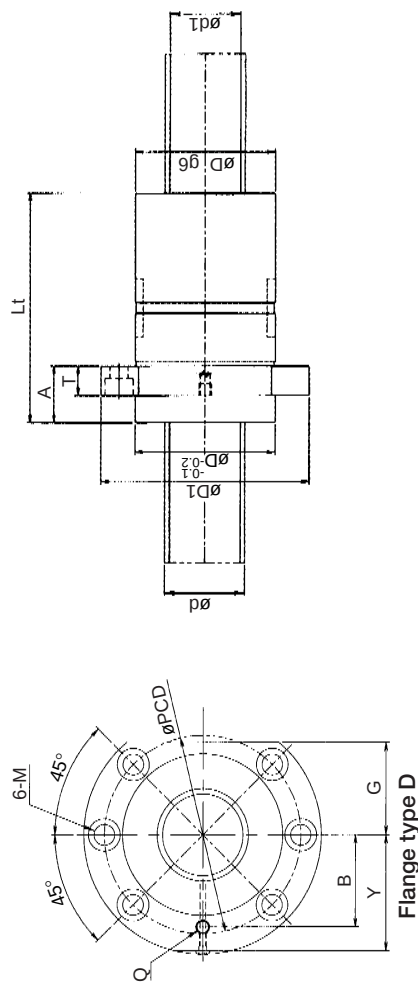
(Unit: mm)



Model No.	Screw shaft diameter d	Lead L	Ball diameter D _b	Root diameter d _i	Number of Turn x Circuit	Basic dynamic load rating C (N)	Basic static load rating C ₀ (N)	* Rigidity K _{NS} (N/μm)	Nut dimensions										Mass								
									Outer diameter D	Overall length L _t	Length A	Wiper material	Flange thickness T	Flange outer diameter D ₁	Flange type	Flange dimensions				Q	PCD	Mounting hole			Nut (kg)	Screw (kg/100mm)	
																X	Y	B	G			Drill	M	Spot facing			Depth
FR3205PS-DPNR	32	5	3.175	29.5	3.7X1	14700	41600	300	52	30	20	N	12	82	D	-	39.5	32	31	M6	67	6.6	11	6.5	6.5	0.52	0.58
FR3208PS-DPNR	32	8	4.763	28	3.7X1	30100	74600	330	56	42	25.5	N	15	84	D	-	40.5	34	32	M6	69	6.6	11	6.5	6.5	0.79	0.55
FR3210PS-DPNR	32	10	6.350	27.2	3.7X1	43100	97000	370	62	55	28.5	N	15	89	D	-	43	37	34	M6	75	6.6	11	6.5	6.5	1.17	0.52
FR3212PS-DPNR	32	12	6.350	27.2	3.7X1	43100	97000	370	62	65	31	N	15	89	D	-	43	37	34	M6	75	6.6	11	6.5	6.5	1.33	0.54
FR3216PS-DPNR	32	16	6.350	27.2	3.7X1	43100	97000	370	62	78	30	N	15	89	D	-	43	37	34	M6	75	6.6	11	6.5	6.5	1.54	0.56
FR3612PS-DPNR	36	12	7.144	30.6	3.7X1	59500	140500	400	70	62	32.5	N	18	104	D	-	50.5	41	40	M6	86	9	14	8.6	8.6	1.77	0.66
FR3616PS-DPNR	36	16	7.144	30.6	3.7X1	59500	140500	400	70	80	35	N	18	104	D	-	50.5	41	40	M6	86	9	14	8.6	8.6	2.14	0.70
FR4008PS-DPNR	40	8	4.763	36	3.7X1	34400	98300	410	64	44	26	N	15	98	D	-	47.5	38	38	M6	80	9	14	8.6	8.6	1.01	0.89
FR4010PS-DPNR	40	10	6.350	35.2	3.7X1	49400	125800	410	70	55	28.5	N	15	104	D	-	50.5	41	40	M6	86	9	14	8.6	8.6	1.43	0.85
FR4012PS-DPNR	40	12	7.144	34.6	3.7X1	64000	160700	460	74	63	33	N	18	108	D	-	52.5	43	41	M6	90	9	14	8.6	8.6	1.90	0.84
FR4016PS-DPNR	40	16	7.144	34.6	3.7X1	64000	160700	460	74	78	34	N	18	108	D	-	52.5	43	41	M6	90	9	14	8.6	8.6	2.23	0.88

Note: - The rigidity indicated with the *mark in the above list represents the practical value based on the result of rigidity test. This value is calculated from the elastic displacement measured when the axial load equivalent to 30% of basic dynamic load rating (C) is applied between the screw thread and the balls.
 - Wiper material N: Without wiper

(Unit: mm)



Model No.	Screw shaft diameter	Lead	Ball diameter	Root diameter	Number of circuits	Basic dynamic load rating C (N)	Basic static load rating C ₀ (N)	Rigidity K _{kw} (N/μm)	Nut dimensions											Mass												
									Outer diameter	Overall length	Length	Wiper material	Flange thickness T	Flange outer diameter D ₁	Flange type	Flange dimensions					Mounting hole			Nut (kg)	Screw shaft (kg/100mm)							
																D	L _t	A	N	T	D ₁	Flange type	X			Y	B	G	Q	PCD	M	
																															Drill	Spot facing
FR3208PE-DPNR	32	8	4.763	28	3.7X1	30100	74600	570	56	90	25.5	N	15	84	D	-	40.5	34	32	M6	69	6.6	11	6.5	1.43	0.55						
FR3210PE-DPNR	32	10	6.350	27.2	3.7X1	43100	97000	580	62	115	28.5	N	15	89	D	-	43	37	34	M6	75	6.6	11	6.5	2.18	0.52						
FR3212PE-DPNR	32	12	6.350	27.2	3.7X1	43100	97000	580	62	137	31	N	15	89	D	-	43	37	34	M6	75	6.6	11	6.5	2.54	0.54						
FR3216PE-DPNR	32	16	6.350	27.2	3.7X1	43100	97000	580	62	174	30	N	15	89	D	-	43	37	34	M6	75	6.6	11	6.5	3.13	0.56						
FR3612PE-DPNR	36	12	7.144	30.6	3.7X1	59500	140500	670	70	134	32.5	N	18	104	D	-	50.5	41	40	M6	86	9	14	8.6	3.34	0.66						
FR3616PE-DPNR	36	16	7.144	30.6	3.7X1	59500	140500	670	70	176	35	N	18	104	D	-	50.5	41	40	M6	86	9	14	8.6	4.21	0.70						
FR4008PE-DPNR	40	8	4.763	36	3.7X1	34400	98300	700	64	100	26	N	15	98	D	-	47.5	38	38	M6	80	9	14	8.6	1.91	0.89						
FR4010PE-DPNR	40	10	6.350	35.2	3.7X1	49400	125800	700	70	115	28.5	N	15	104	D	-	50.5	41	40	M6	86	9	14	8.6	2.64	0.85						
FR4012PE-DPNR	40	12	7.144	34.6	3.7X1	64000	160700	740	74	135	33	N	18	108	D	-	52.5	43	41	M6	90	9	14	8.6	3.59	0.84						
FR4016PE-DPNR	40	16	7.144	34.6	3.7X1	64000	160700	740	74	174	34	N	18	108	D	-	52.5	43	41	M6	90	9	14	8.6	4.45	0.88						

Note: · The rigidity K_{NW} indicated with the *mark in the above list represents the value applied to the axial load about 3 times or less of the preload, which is equivalent to 1/20 of basic dynamic load rating (C).

Wiper material N: Without wiper

Deflector method ball screws

D series

	Page
Features and specifications of D series ball screws	B_20
Ordering instructions, shaft diameter and lead combinations	B_21

Stocked DP series (C3 grade)

- 6 mm shaft diameter, One end finished B_22
- 8 mm shaft diameter, One end finished B_23 ~ 24
- 10 mm shaft diameter, One end finished B_25
- 12 mm shaft diameter, One end finished B_26 ~ 27
- 14 mm shaft diameter, One end finished B_28

* Refer to page E-1 and after for the shaft-end process drawings for the above sizes.

Custom product DR series, Single nut (C0 ~ C7 grade)

- 6 to 50 mm shaft diameter, Single nut B_29 ~ 30

Custom product DR series, Integral nut (C0 ~ C5 grade)

- 6 to 50 mm shaft diameter, Integral nut type B_31

Deflector method ball screws D series

Features

● Nut dimensions for more compactness

- Provided with an improved ball circulation system called deflector type system, which enables the nut dimensions to be as small as possible.

(Example) Comparison of nut body diameters between ball screws with different systems (when the screws have a $\phi 12$ mm shaft diameter, 3 mm lead, and 2.0 mm ball diameter)

Tube type system: GR1203DS Outside diameter of the body = $\phi 26$ mm

Deflector type system: DR1203JS Outside diameter of the body = $\phi 21$ mm

- Delivers excellent rotation balance achieved by distributing ball circulation components evenly along the circumference of the nut body.

● Nut dimensions for more compactness

- D series ball screws provided with 1 to 10 mm lead are suitable for machines and equipment which require small-pitch feeding and precise positioning.

Summary of the specifications

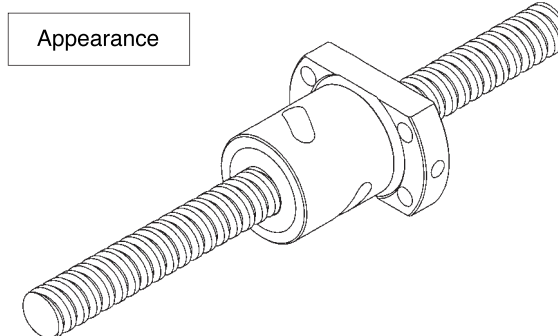
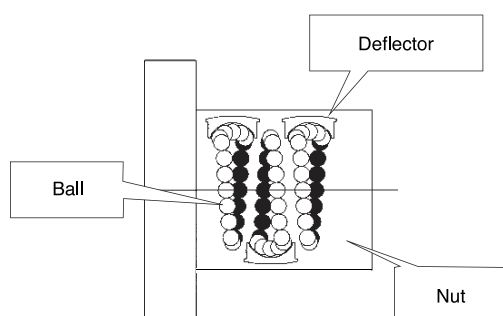
- ☐ Shaft diameter: $\phi 6$ to $\phi 50$ mm, lead: 1 to 10 mm

(Refer to the list of shaft diameters and lead combinations for more details.)

- ☐ Accuracy grade: C0 to C7 grades (C0 to C5 grades for screws with integral nut)

- ☐ Nut combination: single nut, integral nut

- ☐ Circulation system: deflector method



- ☐ Series product line-up

Series name		Nut combination	Accuracy grade	Shaft diameter line-up	Shaft type	Product line
D series	DP series	Single nut	C3	$\phi 6 \sim \phi 14$	One end finished	Standard (in-stock) product line
	DR series	Single nut	C0 ~ C7	$\phi 6 \sim \phi 50$	Free design	Custom product line
		Integral nut	C0 ~ C5	$\phi 16 \sim \phi 50$		

- In the standard (in-stock) product line, only the shaft end on the fixed side is finished. The other end on the supported side needs additional end machining to fulfill your needs and operating conditions.
- Refer to page E-1 and after in this catalog for the shaft-end process drawings for standard (in-stock) products.
- For the custom ball screws, custom shaft design to fulfill your needs and operating conditions is required.

□ Model numbers of D series

Example of the model number	Model series	Screw shaft diameter	Lead	Number of circuits	Combination	-	Flange type	Ball recirculation system	Wiper material	Thread direction	-	Overall length of screw shaft	Shaft end dimension	Thread length	-	Accuracy grade	Axial clearance
	DR	12	02	J	S	-	H	D	N	R	-	0400	X	0355	-	C3	F
	DP	6 ~ 14	1 ~ 4	J	S	-	H	D	See specifications.	R	-	To be shown with a 4-digit number in metric unit (mm)	B, X	To be shown with a 4-digit number in metric unit (mm)	-	C3	F, S
	DR	6 ~ 50	1 ~ 10	See specifications.		-	See specifications.				-		X		-	C0 ~ C7	S, F, H, M
	DR	16 ~ 50	5 ~ 10	See specifications.	T	-					-				-	C0 ~ C5	S

- For more details, refer to specifications and data for each size.
- Contact KURODA for specifications on left screws.

□ Shaft diameter and lead combinations

Screw shaft diameter (mm)	Lead (mm)					
	1	2	3	4	5	10
6	S					
8	S	S				
10		S				
12		S	S			
14				S		
16					S	
					T	
20					S	S
					T	
25					S	S
					T	
32					S	S
					T	T
40						S
						T
50						S
						T

- The symbols in the above table represent:
S: single nut, T: integral nut
- The shaded areas indicate that the screws are standard (in-stock) products (S: single nut).

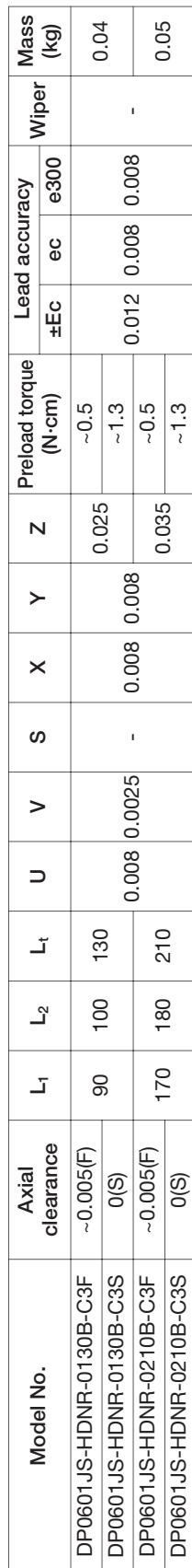
□ Options available for standard (in-stock) ball screws

Series	Additional end machining	Surface treatment	Grease	Direction of nut	Wiper detachment
DP series	o	See the notes below.	o	o	See the notes below.

- In DP series, only the shaft end on the fixed side is finished. The other end on the supported side needs additional end machining to fulfill your needs and operating conditions.
- Only the screw model with wiper is available in DP series.
- Contact KURODA for more information on the above mentioned surface treatment.
- Multemp PS2 Grease is contained in a nut shipped from KURODA, unless otherwise specified. Contact KURODA if you want other greases to be contained.

Screw shaft diameter ø6, Lead 1

(Unit: mm)



- Mounting accuracy of ball screw in case of shaft end machining is equivalent to JIS C5 grade.
Support unit: BUK-6 or BUM-6 is recommended.
Product with axial clearance $\sim 0.005(F)$ shown in the table may be partially preloaded.
Preload torque shown in the table is a value before greasing.
The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
○	△	○	○	-

Note 1: For the above-mentioned surface treatment, consult KUROMA.

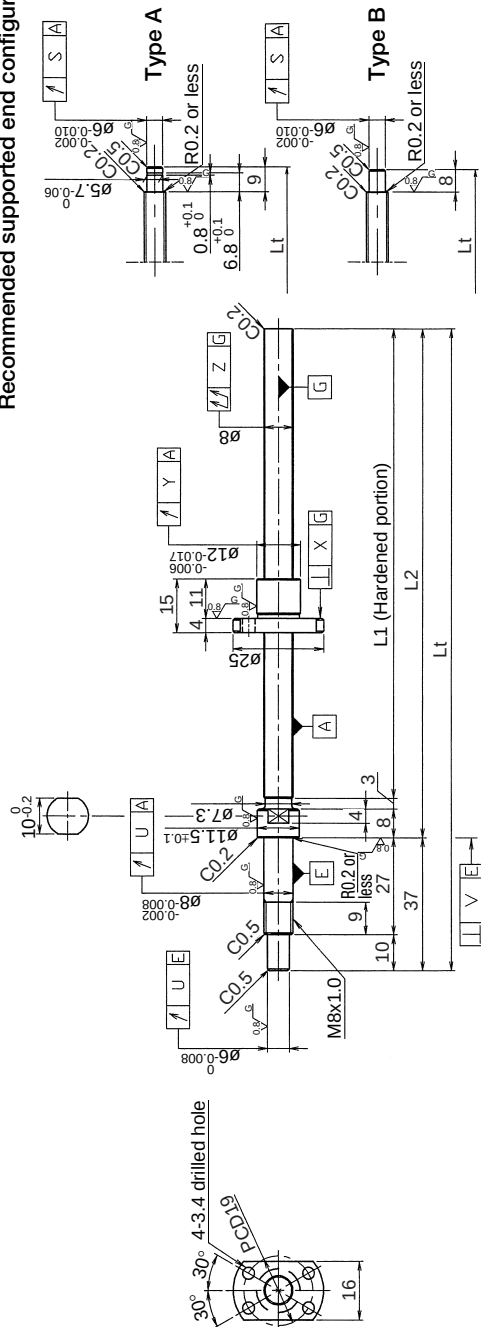
Ball screw specifications

Screw shaft diameter	6	Axial clearance	$\sim 0.005(F)$	O(S)
Lead	1	Basic dynamic load rating	550N	
Thread direction	Right-hand	Basic static load rating	1150N	
Number of circuits	1 turn 3 circuit	Spacer ball	None	
Ball diameter	0.800	Lubricant	Multitemp PS2	

Notation of standard ground ball screw

- Standard length shaft without end machining
 DP601 JS-HDNR-□□□□ B-C3F
 DP601 JS-HDNR-□□□□ B-C3S
 • With end machining specified on your drawing
 DP601 JS-□□□□ DNR-□□□□ X□□□□-C3F
 DP601 JS-□□□□ DNR-□□□□ X□□□□-C3S
- Overall length Thread length

Screw shaft diameter ø8, Lead 1



Model No.	Axial clearance	L ₁	L ₂	L _t	U	V	S	X	Y	Z	Preload torque (N-cm)	Lead accuracy	Wiper	Mass (kg)
												±Ec	ec	e300
DP0801JS-HDNR-0180B-C3F	~0.005(F)	132	143	180						0.030	~0.5			
DP0801JS-HDNR-0180B-C3S	0(S)										~1.8			
DP0801JS-HDNR-0260B-C3F	~0.005(F)	212	223	260	0.008	0.0025	0.010	0.008	0.008	0.035	~0.5	0.010	0.008	0.08
DP0801JS-HDNR-0260B-C3S	0(S)										~1.8			0.11

- Mounting accuracy of ball screw in case of shaft end machining is equivalent to JIS C5 grade.
 - Support unit: BUK-8A (BUK-8F, BUK-6S) or BUM-8 is recommended.
 - Product with axial clearance $\sim 0.005(F)$ shown in the table may be partially preloaded.
 - Preload torque shown in the table is a value before greasing.
- The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal

Note 1: For the above-mentioned surface treatment, consult KURODA.

Ball screw specifications

Screw shaft diameter	8	Axial clearance	$\sim 0.005(F)$	0(S)
Lead	1	Basic dynamic load rating	650N	
Thread direction	Right-hand	Basic static load rating	1600N	
Number of circuits	1 turn 3 circuit	Spacer ball	None	
Ball diameter	0.800	Lubricant	Multitemp PS2	

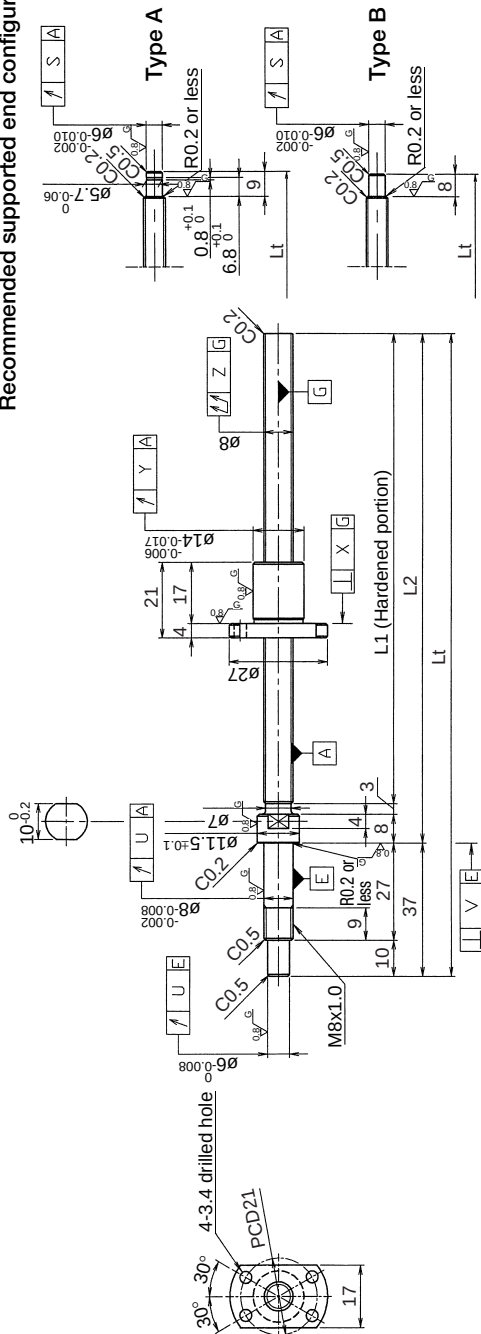
Notation of standard ground ball screw

- Standard length shaft without end machining
DP0801JS-HDNR-□□□□ B-C3F
DP0801JS-HDNR-□□□□ B-C3S
- With end machining specified on your drawing
DP0801JS-□□□□ DNR-□□□□ X□□□□-C3F
DP0801JS-□□□□ DNR-□□□□ X□□□□-C3S

Overall length Thread length

ONE SHAFT END FINISHED

Screw shaft diameter ø8, Lead 2



Model No.	Axial clearance	L ₁	L ₂	L _t	U	V	S	X	Y	Z	Preload torque (N·cm)	Lead accuracy			Wiper	Mass (kg)
												±Ec	ec	e300		
DP0802JS-HDNR-0180B-C3F	~0.005(F)	132	143	180	0.008	0.0025	0.010	0.008	0.009	0.030	~0.5	0.012	0.008	0.008	-	0.09
DP0802JS-HDNR-0180B-C3S	0(S)										~2.0					
DP0802JS-HDNR-0260B-C3F	~0.005(F)	212	223	260	0.008	0.0025	0.010	0.008	0.009	0.035	~0.5	0.012	0.008	0.008	-	0.11
DP0802JS-HDNR-0260B-C3S	0(S)										~2.0					

- Mounting accuracy of ball screw in case of shaft end machining is equivalent to JIS C5 grade.
Support unit: BUK-8F, BUK-6S) or BUM-8 is recommended.
Product with axial clearance $\sim 0.005(F)$ shown in the table may be partially preloaded.
Preload torque shown in the table is a value before greasing.
The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
○	△	○	○	-

Note 1: For the above-mentioned surface treatment, consult KUROMA.

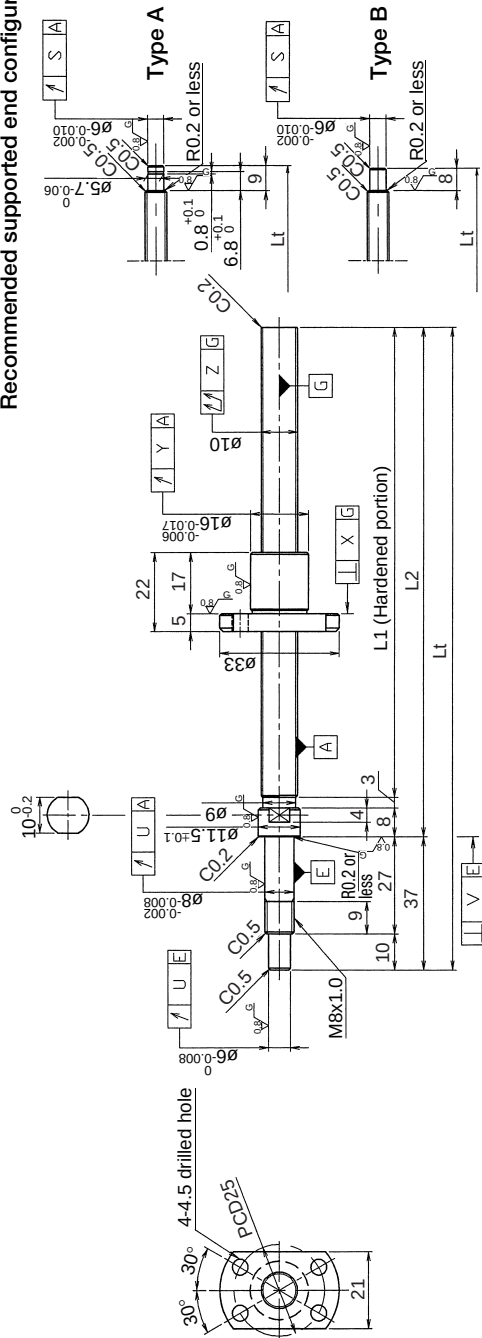
Ball screw specifications

Screw shaft diameter	8	Axial clearance	$\sim 0.005(F)$	$O(S)$
Lead	2	Basic dynamic load rating	1350N	
Thread direction	Right-hand	Basic static load rating	2300N	
Number of circuits	1 turn 3 circuit	Spacer ball	None	
Ball diameter	1,200	Lubricant	Multitemp PS2	

Notation of standard ground ball screw

- Standard length shaft without end machining
DP0802JS-HDNR-□□□□ B-C3F
DP0802JS-HDNR-□□□□ B-C3S
 - With end machining specified on your drawing
DP0802JS-□□DNR-□□□□ X□□□□-C3F
DP0802JS-□□DNR-□□□□ X□□□□-C3S
- Overall length Thread length

Screw shaft diameter ø10, Lead 2



Recommended supported end configuration

(Unit: mm)

Model No.	Axial clearance	L ₁	L ₂	L _t	U	V	S	X	Y	Z	Preload torque (N·cm)	Lead accuracy		Wiper	Mass (kg)	
												±Ec	ec e300			
DP1002JS-HDNR-0220B-C3F	~0.005(F)	172	183	220	0.007	0.0025	0.011	0.008	0.009	0.030	~0.5	0.010	0.008	-	0.15	
DP1002JS-HDNR-0220B-C3S	0(S)										0.1~2.4					
DP1002JS-HDNR-0320B-C3F	~0.005(F)	272	283	320							~0.5					0.012
DP1002JS-HDNR-0320B-C3S	0(S)										0.1~2.4					

- Mounting accuracy of ball screw in case of shaft end machining is equivalent to JIS C5 grade.
 - Support unit: BUK-8A (BUK-8F, BUK-6S) or BUM-8 is recommended.
 - Product with axial clearance $\sim 0.005(F)$ shown in the table may be partially preloaded.
 - Preload torque shown in the table is a value before greasing.
- The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal

Note 1: For the above-mentioned surface treatment, consult KURODA.

Ball screw specifications

Screw shaft diameter	10	Axial clearance	$\sim 0.005(F)$	$O(S)$
Lead	2	Basic dynamic load rating	1550N	
Thread direction	Right-hand	Basic static load rating	3000N	
Number of circuits	1 turn 3 circuit	Spacer ball	None	
Ball diameter	1.200	Lubricant	Multitemp PS2	

Notation of standard ground ball screw

- Standard length shaft without end machining
DP1002JS-HDNR-□□□□ B-C3F
DP1002JS-HDNR-□□□□ B-C3S
- With end machining specified on your drawing
DP1002JS-□□□□ DNR-□□□□ X□□□□-C3F
DP1002JS-□□□□ DNR-□□□□ X□□□□-C3S

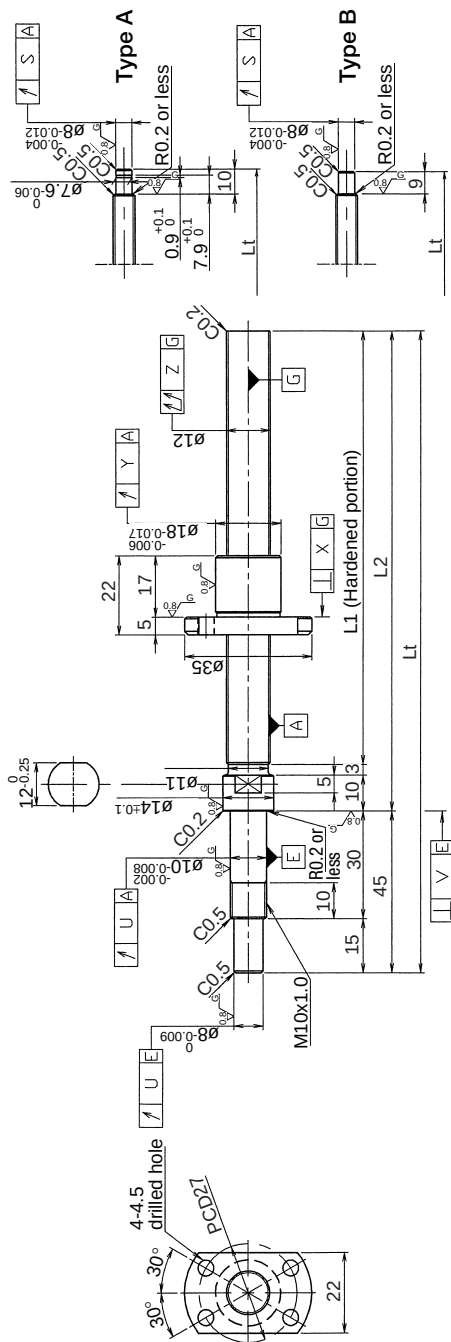
Overall length Thread length

ONE SHAFT END FINISHED

Screw shaft diameter ø12, Lead 2

Recommended supported end configuration

(Unit: mm)



Model No.	Axial clearance	L ₁	L ₂	L _t	U	V	S	X	Y	Z	Preload torque (N·cm)			Lead accuracy			Wiper	Mass (kg)
											±Ec	ec	e300	±Ec	ec	e300		
DP1202JS-HDNR-0300B-C3F	~0.005(F)	242	255	300	0.007	0.003	0.011	0.008	0.009	0.030	~0.5	0.4~3.4	0.012	0.008	0.008	-	0.28	
DP1202JS-HDNR-0300B-C3S	0(S)																	
DP1202JS-HDNR-0400B-C3F	~0.005(F)	342	355	400						~0.5	0.4~3.4	0.013	0.010	0.040				
DP1202JS-HDNR-0400B-C3S	0(S)																	

- Mounting accuracy of ball screw in case of shaft end machining is equivalent to JIS C5 grade.
Support unit: BUK-10A (BUK-10F, BUK-8S) or BUM-10 is recommended.
Product with axial clearance $\sim 0.005(F)$ shown in the table may be partially preloaded.
Preload torque shown in the table is a value before greasing.
The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
○	△	○	○	-

Note 1: For the above-mentioned surface treatment, consult KUROMA.

Ball screw specifications

Screw shaft diameter	12	Axial clearance	$\sim 0.005(F)$	$O(S)$
Lead	2	Basic dynamic load rating	1650N	
Thread direction	Right-hand	Basic static load rating	3600N	
Number of circuits	1 turn 3 circuit	Spacer ball	None	
Ball diameter	1,200	Lubricant	Multitemp PS2	

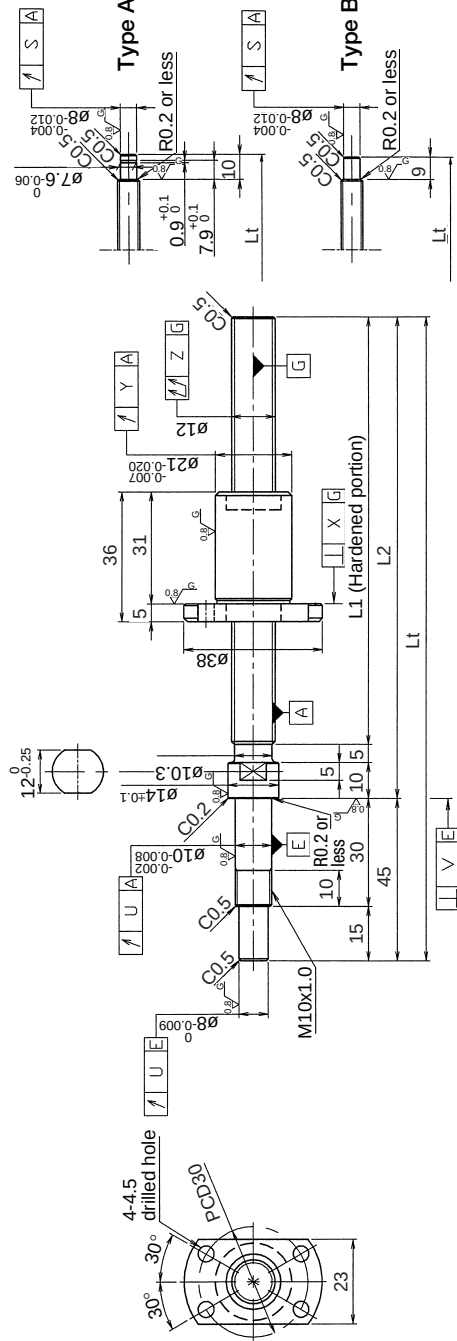
Notation of standard ground ball screw

- Standard length shaft without end machining
DP120JS-HDNR-□□□□-B-C3F
DP120JS-HDNR-□□□□-B-C3S
 - With end machining specified on your drawing
DP120JS-□DNR-□□□□-X□□□□-C3F
DP120JS-□DNR-□□□□-X□□□□-C3S
- Overall length Thread length

ONE SHAFT END FINISHED

Screw shaft diameter ø12, Lead 3

Recommended supported end configuration (Unit: mm)



Model No.	Axial clearance	L ₁	L ₂	L _t	U	V	S	X	Y	Z	Preload torque (N·cm)	Lead accuracy	Wiper	Mass (kg)
DP1203JS-HDPR-0300B-C3F	~0.005(F)	240	255	300						0.030	~1.0	±Ec		
DP1203JS-HDPR-0300B-C3S	0(S)										0.4~3.4	ec		0.29
DP1203JS-HDPR-0400B-C3F	~0.005(F)	340	355	400	0.007	0.003	0.011	0.008	0.010	0.040	~1.0		Plastic wiper	
DP1203JS-HDPR-0400B-C3S	0(S)										0.4~3.4			0.36

- Mounting accuracy of ball screw in case of shaft end machining is equivalent to JIS C5 grade.
- Support unit: BUK-10A (BUK-10F, BUK-8S) or BUM-10 is recommended.
- Product with axial clearance ~0.005(F) shown in the table may be partially preloaded.
- Preload torque shown in the table is a value before greasing.
- The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment of shaft (Note 1)	Difference of grease	Direction of nut	Wiper removal
o	Δ	o	o	o

Note 1: For the above-mentioned surface treatment, consult KURODA.

Ball screw specifications

Screw shaft diameter	Lead	Thread direction	Number of circuits	Ball diameter	Axial clearance	Basic dynamic load rating	Basic static load rating	Spacer ball	Lubricant	Multitemp PS2
12	3	Right-hand	1 turn 3 circuit	2.000	~0.005(F)	3450N	6100N	None		

Notation of standard ground ball screw

- Standard length shaft without end machining
DP1203JS-HDPR-□□□□B-C3F
- With end machining specified on your drawing
DP1203JS-□□□□R-□□□□X□□□□-C3F
- Overall length Thread length

Overall length Thread length

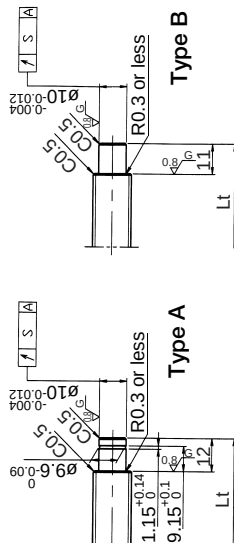
ONE SHAFT END FINISHED

Technical drawing of a mechanical part, likely a plug or pin, showing front, side, and cross-sectional views. The drawing includes dimensions for various sections, including a hardened portion (L1) and a total length (Lt). Key features include a 4-4.5 drilled hole, 8 spot facing depth 4.5, and a 30° chamfer. The part is made of PCD35 material. Dimensions are given in millimeters (mm).

Dimensions and Features:

- Front View (Top):**
 - Overall length: L_t
 - Hardened portion length: L_1
 - Section A-A: $\phi 14$, 0.026 ± 0.007 , 0.020
 - Section B-B: $\phi 15$, 0.012 ± 0.018
 - Section C-C: $\phi 10$, 0.010 ± 0.009
 - Section D-D: $\phi 12$, 0.012 ± 0.010
 - Section E-E: $\phi 10$, 0.010 ± 0.009
 - Section F-F: $\phi 10$, 0.010 ± 0.009
 - Section G-G: $\phi 10$, 0.010 ± 0.009
 - Section H-H: $\phi 10$, 0.010 ± 0.009
 - Section I-I: $\phi 10$, 0.010 ± 0.009
 - Section J-J: $\phi 10$, 0.010 ± 0.009
 - Section K-K: $\phi 10$, 0.010 ± 0.009
 - Section L-L: $\phi 10$, 0.010 ± 0.009
 - Section M-M: $\phi 10$, 0.010 ± 0.009
 - Section N-N: $\phi 10$, 0.010 ± 0.009
 - Section O-O: $\phi 10$, 0.010 ± 0.009
 - Section P-P: $\phi 10$, 0.010 ± 0.009
 - Section Q-Q: $\phi 10$, 0.010 ± 0.009
 - Section R-R: $\phi 10$, 0.010 ± 0.009
 - Section S-S: $\phi 10$, 0.010 ± 0.009
 - Section T-T: $\phi 10$, 0.010 ± 0.009
 - Section U-U: $\phi 10$, 0.010 ± 0.009
 - Section V-V: $\phi 10$, 0.010 ± 0.009
 - Section W-W: $\phi 10$, 0.010 ± 0.009
 - Section X-X: $\phi 10$, 0.010 ± 0.009
 - Section Y-Y: $\phi 10$, 0.010 ± 0.009
 - Section Z-Z: $\phi 10$, 0.010 ± 0.009
- Side View (Bottom):**
 - Overall length: L_t
 - Hardened portion length: L_1
 - Section A-A: $\phi 14$, 0.026 ± 0.007 , 0.020
 - Section B-B: $\phi 15$, 0.012 ± 0.018
 - Section C-C: $\phi 10$, 0.010 ± 0.009
 - Section D-D: $\phi 12$, 0.012 ± 0.010
 - Section E-E: $\phi 10$, 0.010 ± 0.009
 - Section F-F: $\phi 10$, 0.010 ± 0.009
 - Section G-G: $\phi 10$, 0.010 ± 0.009
 - Section H-H: $\phi 10$, 0.010 ± 0.009
 - Section I-I: $\phi 10$, 0.010 ± 0.009
 - Section J-J: $\phi 10$, 0.010 ± 0.009
 - Section K-K: $\phi 10$, 0.010 ± 0.009
 - Section L-L: $\phi 10$, 0.010 ± 0.009
 - Section M-M: $\phi 10$, 0.010 ± 0.009
 - Section N-N: $\phi 10$, 0.010 ± 0.009
 - Section O-O: $\phi 10$, 0.010 ± 0.009
 - Section P-P: $\phi 10$, 0.010 ± 0.009
 - Section Q-Q: $\phi 10$, 0.010 ± 0.009
 - Section R-R: $\phi 10$, 0.010 ± 0.009
 - Section S-S: $\phi 10$, 0.010 ± 0.009
 - Section T-T: $\phi 10$, 0.010 ± 0.009
 - Section U-U: $\phi 10$, 0.010 ± 0.009
 - Section V-V: $\phi 10$, 0.010 ± 0.009
 - Section W-W: $\phi 10$, 0.010 ± 0.009
 - Section X-X: $\phi 10$, 0.010 ± 0.009
 - Section Y-Y: $\phi 10$, 0.010 ± 0.009
 - Section Z-Z: $\phi 10$, 0.010 ± 0.009
- Cross-sectional View (Right):**
 - Material: PCD35
 - Dimensions: 16 , 29
 - Features: $M6 \times 1.0$ (Oil hole), $M12 \times 1.0$
 - Chamfer: 30°
 - Plug: $4-4.5$ drilled hole, 8 spot facing depth 4.5

Recommended supported end configuration



Model No.	Axial clearance	L ₁	L ₂	L _t	U	V	S	X	Y	Z	Preload torque (N·cm)	Lead accuracy			Wiper	Mass (kg)
												±Ec	ec	e300		
DP1404JS-HDPR-0230B-C3F	~0.005(F)	170	185	230	0.009	0.004	0.012	0.008	0.010	0.025	~1.5	0.012	0.008	Plastic wiper	0.38	
DP1404JS-HDPR-0230B-C3S	0(S)										1.0~6.9					
DP1404JS-HDPR-0280B-C3F	~0.005(F)	220	235	280						0.025	~1.5	0.012	0.008		0.43	
DP1404JS-HDPR-0280B-C3S	0(S)										1.0~6.9					
DP1404JS-HDPR-0330B-C3F	~0.005(F)	270	285	330						0.030	~1.5	0.012	0.008		0.48	
DP1404JS-HDPR-0330B-C3S	0(S)										1.0~6.9					
DP1404JS-HDPR-0430B-C3F	~0.005(F)	370	385	430						0.040	~1.5	0.013	0.010		0.59	
DP1404JS-HDPR-0430B-C3S	0(S)										1.0~6.9					
DP1404JS-HDPR-0530B-C3F	~0.005(F)	470	485	530						0.045	~1.5	0.015	0.010		0.69	
DP1404JS-HDPR-0530B-C3S	0(S)										1.0~6.9					

Mounting accuracy of ball screw in case of shaft end machining is equivalent to JIS C5 grade.

Product with axial clearance ~0.005(F) shown in the table may be partially preloaded.

The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.

Support unit: BUK-12A (BUK-12F, BUK-10S) or BUM-12 is recommended.

Preload torque shown in the table is a value before greasing.

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
○	△	○	○	○

Note 1: For the above-mentioned surface treatment, consult KUROMA.

Ball screw specifications

Screw shaft diameter	14	Axial clearance	$\sim 0.005(F)$	O(S)
Lead	4	Basic dynamic load rating	4600N	
Thread direction	Right-hand	Basic static load rating	8600N	
Number of circuits	1 turn 3 circuit	Spacer ball	None	
Ball diameter	2.3812	Lubricant	Multitemp PS2	

Notation of standard ground ball screw

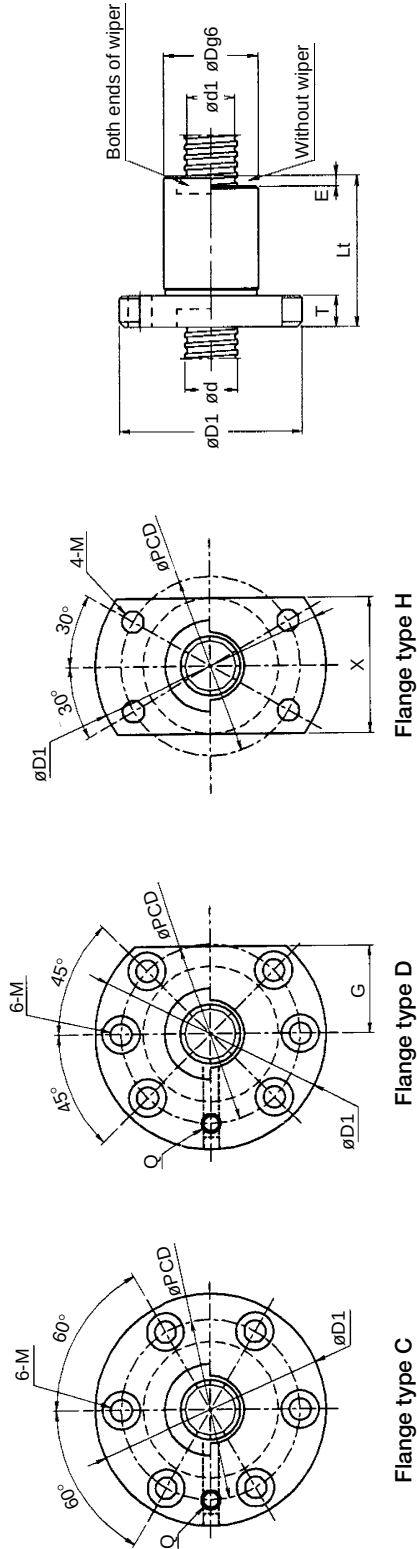
- Standard length shaft without end machining
DP1404JS-HDPR-□□□□ B-C3F
DP1404JS-HDPR-□□□□ B-C3S
- With end machining specified on your drawing
DP1404JS-□□ R-□□□□ X□□□ -C3F
DP1404JS-□□ R-□□□□ X□□□ -C3S

Overall length Thread length

DEFLECTOR METHOD SINGLE NUT

Screw shaft diameter ø6-ø20

(Unit: mm)



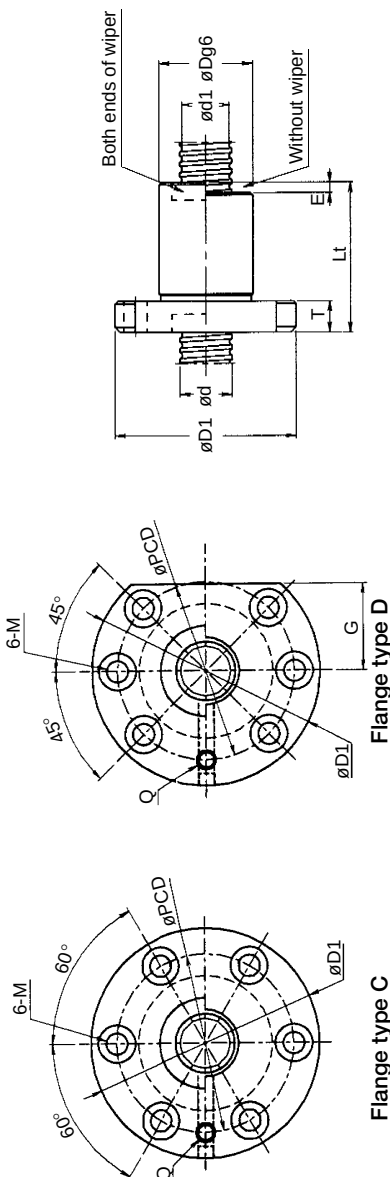
Model No.	Screw shaft diameter d	Lead	Ball diameter	Root diameter	Number of Turn x Circuit	Basic of dynamic rating C (N)	Basic static load rating C ₀ (N)	* Rigidity K _{NS} (N/μm)	Nut dimensions														Mass				
									Outer diameter D	Overall length L _t	Wiper material	Without wiper E	Flange thickness T	Flange outer diameter D ₁	Flange type	Flange dimensions							Mounting hole			Nut (kg)	Screw shaft (Kg/100mm)
																W	X	Y	A	B	G	Q	PCD	M			
																								Drill	Spot facing		
DR0601JS-HDNR	6	1	0.8000	5.3	1X3	550	1150	50	10	14.5	N	-	3.5	22	H	-	14	-	-	-	-	16	3.4	-	-	0.01	0.02
DR0801JS-HDNR	8	1	0.8000	7.3	1X3	650	1600	60	12	15	N	-	4	25	H	-	16	-	-	-	-	19	3.4	-	-	0.01	0.04
DR0802JS-HDNR	8	2	1.2000	7	1X3	1350	2300	60	14	21	N	-	4	27	H	-	17	-	-	-	-	21	3.4	-	-	0.02	0.04
DR1002JS-HDNR	10	2	1.2000	9	1X3	1550	3000	70	16	22	N	-	5	33	H	-	21	-	-	-	-	25	4.5	-	-	0.03	0.06
DR1202JS-HDNR	12	2	1.2000	11	1X3	1650	3600	85	18	22	N	-	5	35	H	-	22	-	-	-	-	27	4.5	-	-	0.04	0.09
DR1203JS-HDPR	12	3	2.0000	10.3	1X3	3450	6100	100	21	36	P	3	5	38	H	-	23	-	-	-	-	30	4.5	-	-	0.07	0.09
DR1404JS-HDPR	14	4	2.3812	12.1	1X3	4600	8600	110	26	40	P	3	10	45	H	-	29	-	-	16	-	35	4.5	8	4.5	0.15	0.12
DR1605JS-CDPR	16	5	3.1750	13.5	1X3	7700	14600	120	28	47	P	3	10	47	C	-	-	-	-	-	-	37	4.5	8	4.4	0.20	0.16
DR1605JS-DDPR	16	5	3.1750	13.5	1X3	7700	14600	120	28	47	P	3	10	47	D	-	-	-	-	18.5	-	37	4.5	8	4.4	0.19	0.16
DR2005JS-CDPR	20	5	3.1750	17.5	1X3	8900	18900	150	35	46	P	3	11	58	C	-	-	-	-	-	M6	46	5.5	9.5	5.4	0.33	0.25
DR2005JS-DDPR	20	5	3.1750	17.5	1X3	8900	18900	150	35	46	P	3	11	58	D	-	-	-	-	22.5	M6	46	5.5	9.5	5.4	0.31	0.25
DR2005KS-CDPR	20	5	3.1750	17.5	1X4	11400	25200	200	35	51	P	3	11	58	C	-	-	-	-	-	M6	46	5.5	9.5	5.4	0.35	0.25
DR2005KS-DDPR	20	5	3.1750	17.5	1X4	11400	25200	200	35	51	P	3	11	58	D	-	-	-	-	22.5	M6	46	5.5	9.5	5.4	0.33	0.25
DR2010JS-CDPR	20	10	3.9688	16.6	1X3	10000	19000	150	35	63	P	3	11	58	C	-	-	-	-	-	M6	46	5.5	9.5	5.4	0.38	0.25
DR2010JS-DDPR	20	10	3.9688	16.6	1X3	10000	19000	150	35	63	P	3	11	58	D	-	-	-	-	22.5	M6	46	5.5	9.5	5.4	0.36	0.25

Note: * The rigidity indicated with the *mark in the above list represents the practical value based on the result of rigidity test. This value is calculated from the elastic displacement measured when the axial load equivalent to 30% of basic dynamic load rating (C) is applied between the screw thread and the balls.

· Wiper material N: Without wiper P: Plastic wiper

DEFLECTOR METHOD SINGLE NUT**Screw shaft diameter ø25-ø50**

(Unit: mm)

**Flange type C****Flange type D**

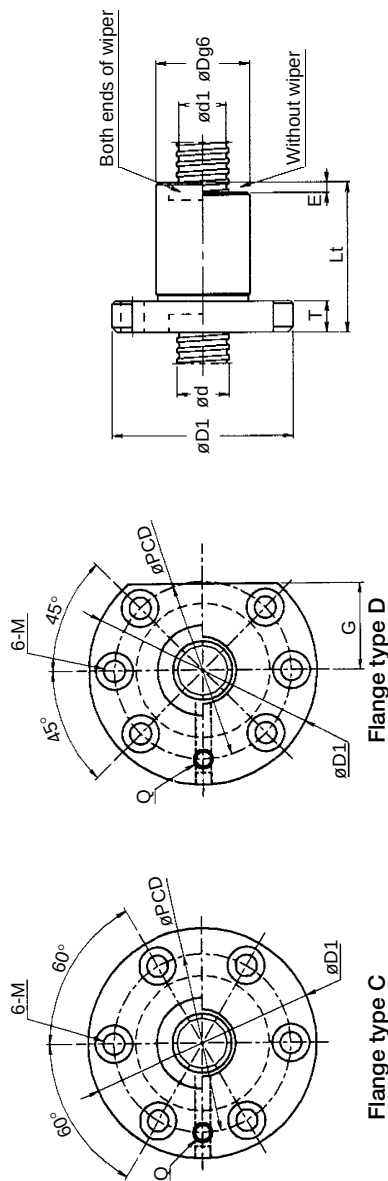
Model No.	Screw shaft diameter d	Lead L	Ball diameter D _b	Root diameter d ₁	Number of circuits Turn x Circuit	Basic dynamic load rating C (N)	Basic static load rating C ₀ (N)	* Rigidity K _{NS} (N/μm)	Nut dimensions										Mass									
									Outer diameter D	Overall length L _t	Wiper material	Without wiper E	Flange thickness T	Flange outer diameter D ₁	Flange type	Flange dimensions						Mounting hole			Nut (kg)	Screw shaft (kg/100mm)		
																W	X	Y	A	B	G	Q	PCD	M				
																								Drill			Spot facing	Depth
DR2505JS-CDPR	25	5	3.1750	22.5	1X3	9850	23450	180	40	46	P	3	11	63	C	-	-	-	-	-	-	M6	51	5.5	9.5	5.4	0.37	0.38
DR2505JS-DDPR	25	5	3.1750	22.5	1X3	9850	23450	180	40	46	P	3	11	63	D	-	-	-	-	-	-	M6	51	5.5	9.5	5.4	0.35	0.38
DR2510JS-CDPR	25	10	3.9688	21.6	1X3	12000	25800	190	40	63	P	3	11	63	C	-	-	-	-	-	-	M6	51	5.5	9.5	5.4	0.43	0.38
DR2510JS-DDPR	25	10	3.9688	21.6	1X3	12000	25800	190	40	63	P	3	11	63	D	-	-	-	-	-	-	M6	51	5.5	9.5	5.4	0.41	0.38
DR3205JS-CDPR	32	5	3.1750	29.5	1X3	11300	31100	220	48	47	P	3	12	75	C	-	-	-	-	-	-	M6	61	6.6	11	6.5	0.53	0.63
DR3205JS-DDPR	32	5	3.1750	29.5	1X3	11300	31100	220	48	47	P	3	12	75	D	-	-	-	-	-	-	M6	61	6.6	11	6.5	0.51	0.63
DR3205KS-CDPR	32	5	3.1750	29.5	1X4	14500	41500	290	48	52	P	3	12	75	C	-	-	-	-	-	-	M6	61	6.6	11	6.5	0.56	0.63
DR3205KS-DDPR	32	5	3.1750	29.5	1X4	14500	41500	290	48	52	P	3	12	75	D	-	-	-	-	-	-	M6	61	6.6	11	6.5	0.54	0.63
DR3210JS-CDPR	32	10	6.3500	27.2	1X3	26900	58400	250	50	78	P	8	15	84	C	-	-	-	-	-	-	M6	66	9	14	8.6	0.84	0.63
DR3210JS-DDPR	32	10	6.3500	27.2	1X3	26900	58400	250	50	78	P	8	15	84	D	-	-	-	-	-	-	M6	66	9	14	8.6	0.80	0.63
DR4010JS-CDPR	40	10	6.3500	35.2	1X3	31300	80300	300	62	83	P	8	18	104	C	-	-	-	-	-	-	Rc1/8	82	11	17.5	10.8	1.54	0.98
DR4010JS-DDPR	40	10	6.3500	35.2	1X3	31300	80300	300	62	83	P	8	18	104	D	-	-	-	-	-	-	Rc1/8	82	11	17.5	10.8	1.46	0.98
DR4010KS-CDPR	40	10	6.3500	35.2	1X4	40100	100000	400	62	93	P	8	18	104	C	-	-	-	-	-	-	Rc1/8	82	11	17.5	10.8	1.63	0.98
DR4010KS-DDPR	40	10	6.3500	35.2	1X4	40100	100000	400	62	93	P	8	18	104	D	-	-	-	-	-	-	Rc1/8	82	11	17.5	10.8	1.55	0.98
DR5010JS-CDPR	50	10	6.3500	45.2	1X3	35700	98150	370	72	83	P	8	18	114	C	-	-	-	-	-	-	Rc1/8	92	11	17.5	10.8	1.77	1.53
DR5010JS-DDPR	50	10	6.3500	45.2	1X3	35700	98150	370	72	83	P	8	18	114	D	-	-	-	-	-	-	Rc1/8	92	11	17.5	10.8	1.68	1.53
DR5010KS-CDPR	50	10	6.3500	45.2	1X4	45700	130000	490	72	93	P	8	18	114	C	-	-	-	-	-	-	Rc1/8	92	11	17.5	10.8	1.88	1.53
DR5010KS-DDPR	50	10	6.3500	45.2	1X4	45700	130000	490	72	93	P	8	18	114	D	-	-	-	-	-	-	Rc1/8	92	11	17.5	10.8	1.79	1.53

Note: * The rigidity indicated with the *mark in the above list represents the practical value based on the result of rigidity test. This value is calculated from the elastic displacement measured when the axial load equivalent to 30% of basic dynamic load rating (C) is applied between the screw thread and the balls.

Wiper material P: Plastic wiper

Screw shaft diameter Ø16-Ø50

(Unit: mm)



Model No.	Screw shaft diameter d	Lead	Ball diameter	Root diameter	Number of circuits	Turn x	Basic dynamic load rating C (N)	Basic static load rating C ₀ (N)	Rigidity K _{hw} (N/μm)	Outer diameter D	Overall length L _t	Wiper material	Without wiper E	Flange thickness T	Flange outer diameter D ₁	Flange type	Nut dimensions										Mass														
																	Flange dimensions						Mounting hole				PcD	Q	G	B	A	Y	X	W	Nut (kg)	Screw shaft (100mm)					
																	D _b	d ₁	Turn	C (N)	C ₀ (N)	K _{hw}	D	L _t	Wiper material	Without wiper E											Flange thickness T	Flange outer diameter D ₁	Flange type	M	
																																								Drill	Spot facing
DR1605JT-CDPR	16	5	3.1750	13.5	1X3	7700	14600	230	28	67	P	3	10	47	C	-	-	-	-	37	4.5	8	4.4	0.24	0.16																
DR1605JT-DDPR	16	5	3.1750	13.5	1X3	7700	14600	230	28	67	P	3	10	47	D	-	-	-	18.5	-	37	4.5	8	4.4	0.24	0.16															
DR2005JT-CDPR	20	5	3.1750	17.5	1X3	8900	18900	280	35	66	P	3	11	58	C	-	-	-	-	M6	46	5.5	9.5	5.4	0.41	0.25															
DR2005JT-DDPR	20	5	3.1750	17.5	1X3	8900	18900	280	35	66	P	3	11	58	D	-	-	-	22.5	M6	46	5.5	9.5	5.4	0.39	0.25															
DR2005KT-CDPR	20	5	3.1750	17.5	1X4	11400	25200	370	35	76	P	3	11	58	C	-	-	-	-	M6	46	5.5	9.5	5.4	0.44	0.25															
DR2005KT-DDPR	20	5	3.1750	17.5	1X4	11400	25200	370	35	76	P	3	11	58	D	-	-	-	22.5	M6	46	5.5	9.5	5.4	0.43	0.25															
DR2505JT-CDPR	25	5	3.1750	22.5	1X3	9850	23450	340	40	66	P	3	11	63	C	-	-	-	-	M6	51	5.5	9.5	5.4	0.46	0.38															
DR2505JT-DDPR	25	5	3.1750	22.5	1X3	9850	23450	340	40	66	P	3	11	63	D	-	-	-	24	M6	51	5.5	9.5	5.4	0.45	0.38															
DR3205JT-CDPR	32	5	3.1750	29.5	1X3	11300	31100	420	48	67	P	3	12	75	C	-	-	-	-	M6	61	6.6	11	6.5	0.66	0.63															
DR3205JT-DDPR	32	5	3.1750	29.5	1X3	11300	31100	420	48	67	P	3	12	75	D	-	-	-	29	M6	61	6.6	11	6.5	0.63	0.63															
DR3205KT-CDPR	32	5	3.1750	29.5	1X4	14500	41500	560	48	77	P	3	12	75	C	-	-	-	-	M6	61	6.6	11	6.5	0.72	0.63															
DR3205KT-DDPR	32	5	3.1750	29.5	1X4	14500	41500	560	48	77	P	3	12	75	D	-	-	-	29	M6	61	6.6	11	6.5	0.69	0.63															
DR3210JT-CDPR	32	10	6.3500	27.2	1X3	26900	58400	430	50	118	P	8	15	84	C	-	-	-	-	M6	66	9	14	8.6	1.05	0.63															
DR3210JT-DDPR	32	10	6.3500	27.2	1X3	26900	58400	430	50	118	P	8	15	84	D	-	-	-	33	M6	66	9	14	8.6	1.02	0.63															
DR4010JT-CDPR	40	10	6.3500	35.2	1X3	31300	80300	530	62	123	P	8	18	104	C	-	-	-	-	Rc1/8	82	11	17.5	10.8	1.91	0.98															
DR4010JT-DDPR	40	10	6.3500	35.2	1X3	31300	80300	530	62	123	P	8	18	104	D	-	-	-	40	Rc1/8	82	11	17.5	10.8	1.83	0.98															
DR4010KT-CDPR	40	10	6.3500	35.2	1X4	40100	100000	690	62	143	P	8	18	104	C	-	-	-	-	Rc1/8	82	11	17.5	10.8	2.09	0.98															
DR4010KT-DDPR	40	10	6.3500	35.2	1X4	40100	100000	690	62	143	P	8	18	104	D	-	-	-	40	Rc1/8	82	11	17.5	10.8	2.02	0.98															
DR5010JT-CDPR	50	10	6.3500	45.2	1X3	35700	98150	640	72	123	P	8	18	114	C	-	-	-	-	-	92	11	17.5	10.8	2.21	1.53															
DR5010JT-DDPR	50	10	6.3500	45.2	1X3	35700	98150	640	72	123	P	8	18	114	D	-	-	-	44	Rc1/8	92	11	17.5	10.8	2.12	1.53															
DR5010KT-CDPR	50	10	6.3500	45.2	1X4	45700	130000	850	72	143	P	8	18	114	C	-	-	-	-	Rc1/8	92	11	17.5	10.8	2.43	1.53															
DR5010KT-DDPR	50	10	6.3500	45.2	1X4	45700	130000	850	72	143	P	8	18	114	D	-	-	-	44	Rc1/8	92	11	17.5	10.8	2.34	1.53															

Note: - The rigidity indicated with the *mark in the above list represents the value applied to the axial load about 3 times or less of the preload, which is equivalent to 1/15 of basic dynamic load rating (C). It is the practical value based on the result of rigidity test for the rigidity of nut etc.

End-cap method ball screws

H series

	Page
Features and specifications of H series ball screws	B_34
Ordering instructions, shaft diameter and lead combinations	B_35

Stocked HG series (C5 grade)

• 6 mm shaft diameter, Unfinished shaft-ends	B_36
• 8 mm shaft diameter, Unfinished shaft-ends	B_37
• 12 mm shaft diameter, Unfinished shaft-ends	B_38
• 15 mm shaft diameter, Unfinished shaft-ends	B_39 ~ 40
• 16 mm shaft diameter, Unfinished shaft-ends	B_41
• 20 mm shaft diameter, Unfinished shaft-ends	B_42 ~ 45
• 25 mm shaft diameter, Unfinished shaft-ends	B_46
• 32 mm shaft diameter, Unfinished shaft-ends	B_47

* Refer to page E-1 and after for the shaft-end process drawings for the above sizes.

End-cap method ball screws H series

Features

● Optimal performance in high-speed conveyance achieved by larger lead

- Adoption of a larger lead has enabled a higher feed rate at a low rotational speed, effectively delivering lower vibration, noise, and heat generation.

(Example) To obtain a feed rate of 1000 mm/s,
a 20 mm lead requires a rotational speed of 3000 min⁻¹, however
a 60 mm lead requires a rotational speed of only 1000 min⁻¹

● More compact nut achieved by adoption of multi-start thread

- Using a multi-start thread, the nut length which tends to be longer in larger lead has been kept short. The improved structure has realized improved compactness and rated specifications.

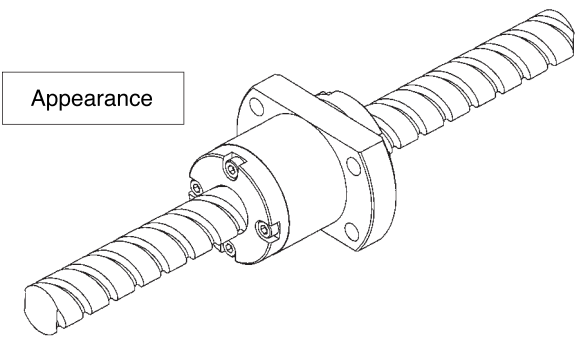
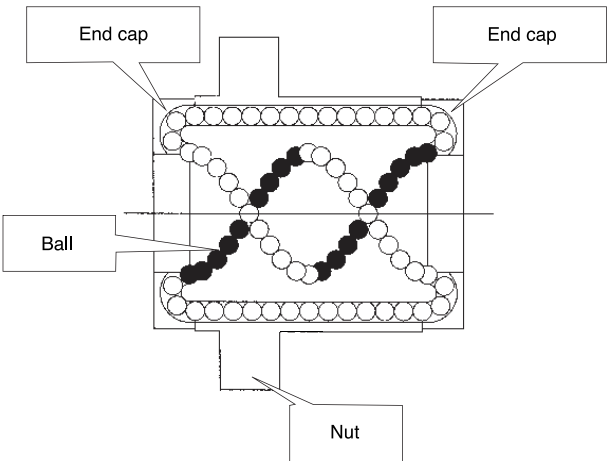
Summary of the specifications

- ☐ Shaft diameter: ø6 to ø32 mm, lead: 6 to 64 mm
(Refer to the list of shaft diameters and lead combinations for more details.)

- ☐ Accuracy grade: C5 grade

- ☐ Nut combination: single nut

- ☐ Circulation system: end-cap method



☐ Series product line-up

Series name		Nut combination	Accuracy grade	Shaft diameter line-up	Shaft type	Product line
H series	HG series	Single nut	C5	ø6 ~ ø32	Both ends unfinished	Standard (in-stock) product line

- In the standard (in-stock) product line, both ends of the screw shaft are not finished. Additional end machining to fulfill your needs and operating conditions is required.
- Refer to page E-1 and after in this catalog for the shaft-end process drawings for in-stock products.

□ Model numbers of H series

Example of the model number	Model series	Screw shaft diameter	Lead	Number of circuits	Combination	Flange type	Ball recirculation system	Wiper material	Thread direction	Overall length of screw shaft	Shaft end dimension	Thread length	Accuracy grade	Axial clearance
	HG	08	12	Q	S	H	Q	Z	R	0900	X	0840	C5	H
	HG	6 ~ 32	6 ~ 64	Q	S	See specifications.	Q	See specifications.	R	To be shown with a 4-digit number in metric unit (mm)	A, X	To be shown with a 4-digit number in metric unit (mm)	C5	F, H

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

□ Shaft diameter and lead combinations

Screw shaft diameter (mm)	Lead (mm)								
	6	12	20	30	32	40	50	60	64
6	S								
8		S							
12				S					
15			S			S			
16					S				
20			S	S		S		S	
25							S		
32									S

- The symbol in the above table represents:
S: single nut
- In H series, only the ball screws in standard (in-stock) line are available.

□ Options available for standard (in-stock) ball screws

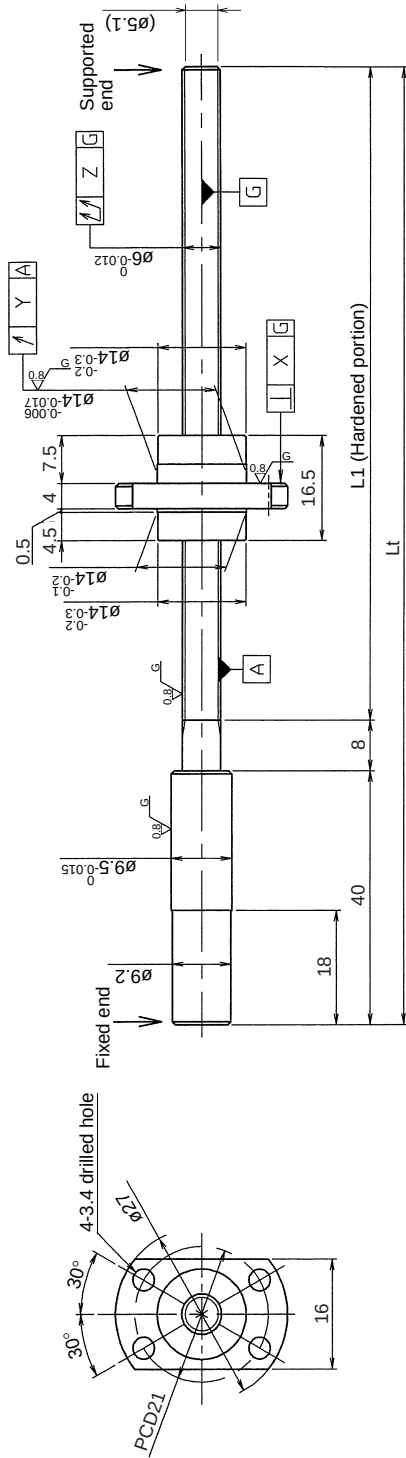
Series	Additional end machining	Axial clearance adjustment	Surface treatment	Grease	Direction of nut	Wiper detachment
HG series	o	See the notes below.	o	o	o	See the notes below.

- In HG series, both ends of the screw shaft are not finished. Additional end machining to fulfill your needs and operating conditions is required.
- Only the screw models with a wiper is available in HG series.
- Contact KURODA if you need an axial clearance adjustment.
- The surface treatment mentioned above is anti corrosive black coating (1 to 2 μm).
- Alvania Grease S2 is contained in a nut shipped from KURODA, unless otherwise specified. Contact KURODA if you want other greases to be contained.

UNFINISHED SHAFT ENDS

Screw shaft diameter $\phi 6$, Lead 6

(Unit: mm)



Notation of standard ground ball screw

- Standard length shaft without end machining
HG0606QS-HEZR-□□□□A
- With end machining specified on your drawing
HG0606QS-□EZR-□□□□X□□□□-C5H

Overall length Thread length

Model No.	Axial clearance	L ₁	L _t	X	Y	Z	Lead accuracy		Wiper	Mass (kg)
							±Ec	ec		
HG0606QS-HEZR-0210A	~0.010(H)	162	210	0.010	0.012	0.065	0.023	0.018	*	0.08

- * For the asterisked part, the lip of the end cap serves as a wiper.
- End cap is made of resin (PPS).
- Support unit: BUK-6 or BUM-6 is recommended.
- The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.

Table of optional specifications for each model

Additional machining of shaft end	Axial clearance adjustment (Note 2)	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
0	Δ	0	0	0	-

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm). In case of Anticorrosive black coating, treatment of end cap is omitted.

Note 2: For axial clearance adjustment, consult KURODA.

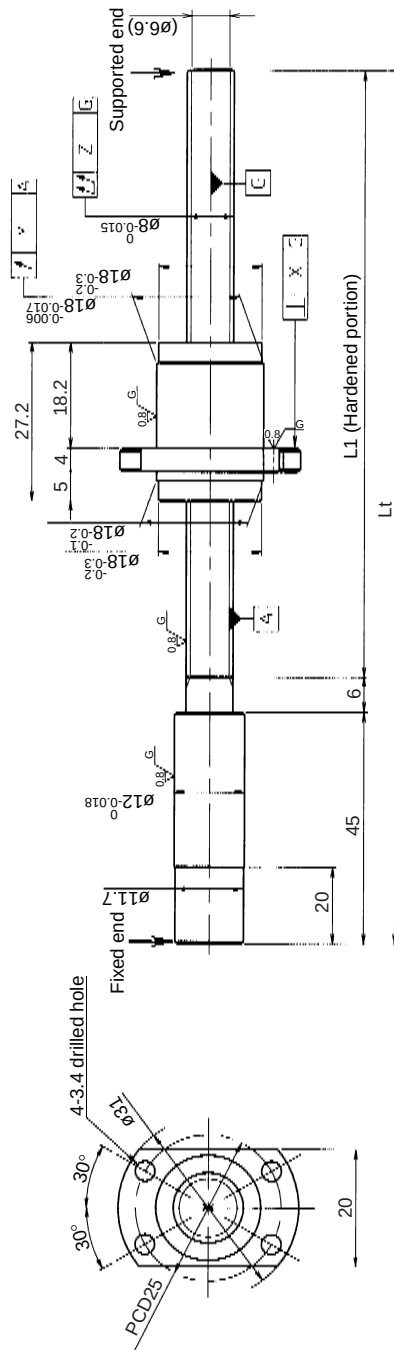
Ball screw specifications

Screw shaft diameter		6	Axial clearance		~0.010(H)
Lead		6	Basic dynamic load rating		760N
Thread direction		Right-hand	Basic static load rating		1140N
Number of circuits		1.5 turn 2 circuit	Spacer ball		None
Ball diameter		1.000	Lubricant		Multemp PS2
Number of threads		2			

UNFINISHED SHAFT ENDS

Screw shaft diameter $\varnothing 8$, Lead 12

(Unit: mm)



Notation of standard ground ball screw

- Standard length shaft without end machining
HG0812QS-HEZR-□□□□□A
 - With end machining specified on your drawing
HG0812QS-□EZR-□□□□X□□□□-C5H
- Overall length Thread length

Model No.	Axial clearance	L ₁	L _t	X	Y	Z	Lead accuracy		Wiper	Mass (kg)
							±Ec	ec		
HG0812QS-HEZR-0340A	~0.010(H)	289	340	0.010	0.012	0.075	0.023	0.018	*	0.20

* For the asterisked part, the lip of the end cap serves as a wiper.

• Support unit: BUK-8A (BUK-8F, BUK-6S) or BUM-8 is recommended.

• The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.

Table of optional specifications for each model

Additional machining of shaft end	Axial clearance adjustment (Note 2)	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
0	Δ	0	0	0	-

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm). In case of Anticorrosive black coating, treatment of end cap is omitted.

Note 2: For axial clearance adjustment, consult KURODA.

Ball screw specifications

Screw shaft diameter	8	Axial clearance	~0.010(H)
Lead	12	Basic dynamic load rating	2490N
Thread direction	Right-hand	Basic static load rating	3460N
Number of circuits	1.667 turn 2 circuit	Spacer ball	None
Ball diameter	1.5875	Lubricant	Multitemp PS2
Number of threads	2		

Screw shaft diameter ø12, Lead 30

(Unit: mm)



- Standard length shaft without end machining
 HG1230QS-BEZR-□□□□A
 • With end machining specified on your drawing
 HG1230QS-□EZR-□□□□X□□□□-C5H

Overall length Thread length

Model No.	Axial clearance	L ₁	L _t	X	Y	Z	Lead accuracy			Wiper	Mass (kg)
							±Ec	ec	e300		
HG1230QS-BEZR-0500A	~0.010(H)	430	500	0.010	0.012	0.080	0.027	0.020	0.018	*	0.62
HG1230QS-BEZR-0800A		730	800				0.090	0.035			0.025

* For the asterisked part, the lip of the end cap serves as a wiper.

• Support unit: BUK-10A (BUK-10F, BUK-8S) or BUM-10 is recommended.

• The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.

Table of optional specifications for each model

Additional machining of shaft end	Axial clearance adjustment (Note 2)	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
○	△	○	○	○	-

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Note 2: For axial clearance adjustment, consult KURODA.

Ball screw specifications

Screw shaft diameter	12	Axial clearance	~0.010(H)
Lead	30	Basic dynamic load rating	4800N
Thread direction	Right-hand	Basic static load rating	6650N
Number of circuits	0.67 turn 3 circuit	Spacer ball	None
Ball diameter	3.175	Lubricant	Alvania Grease S2
Number of threads	3		

Screw shaft diameter $\varnothing 15$, Lead 20



- Standard length shaft without end machining

- HG1520QS-HEZR-□□□□A
- With end machining specified on your drawing
- HG1520QS-□E□R-□□□□X□□□□C5F

6

• Support unit: BUK-12A (BUK-12F, BUK-10S) or BUM-12 is recommended.

- Product with axial clearance $\sim 0.005(F)$ shown in the table may be partially preloaded.
 - Preload torque shown in the table is a value before greasing.
- The grease is contained inside of nut only at the time of delivery. When using it, apply

Ball screw specifications

Screw shaft diameter	15	Axial clearance	~0.005(F)
Lead	20	Basic dynamic load rating	8740N
Thread direction	Right-hand	Basic static load rating	17550N
Number of circuits	1.67 turn 2 circuit	Spacer ball	None
Ball diameter	3.175	Lubricant	Alvania Grease S2
Number of threads	2		

thickness: 1 to 2 μm).

Lubricant

Screw shaft diameter $\varnothing 15$, Lead 40

[illegible]

• Standard length shaft without end machining
 HG1540QS-BEZR-□□□□A
 • With end machining specified on your drawing
 HG1540QS-□EZR-□□□□X□□□□-C5H

• The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.

• The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.

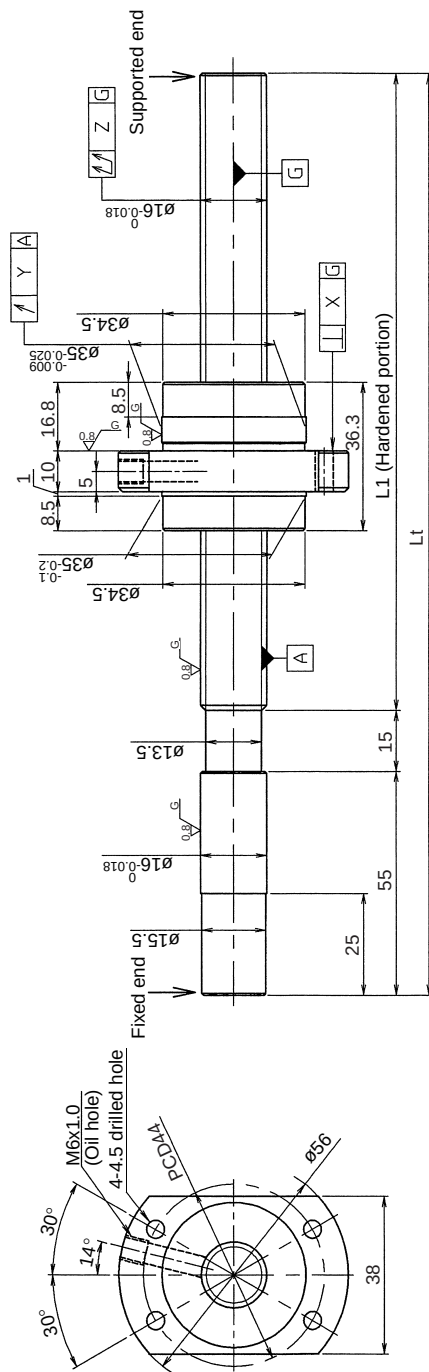
Ball screw specifications

Screw shaft diameter	15	Axial clearance	~0.010(H)
Lead	40	Basic dynamic load rating	5600N
Thread direction	Right-hand	Basic static load rating	8600N
Number of circuits	0.67 turn 3 circuit	Spacer ball	None
Ball diameter	3.175	Lubricant	Alvania Grease S2
Number of threads	3		

Note 2: For axial clearance adjustment, consult KURODA.

Screw shaft diameter ø16, Lead 32

(Unit: mm)



Notation of standard ground ball screw

- Standard length shaft without end machining
 HG1632QS-HEZR-□□□□A
 • With end machining specified on your drawing
 HG1632QS-□EZR-□□□□X□□□□-C5F

• Support unit: BUK-12A (BUK-12F, BUK-10S) or BUM-12 is recommended.

- Product with axial clearance $\sim 0.005(F)$ shown in the table may be partially preloaded.
 - Preload torque shown in the table is a value before greasing.
- The grease is contained inside of nut only at the time of delivery. When using it, apply

Ball screw specifications

Additional machining of shaft end	Axial clearance adjustment (Note 2)	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
○	△	○	○	○	-

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

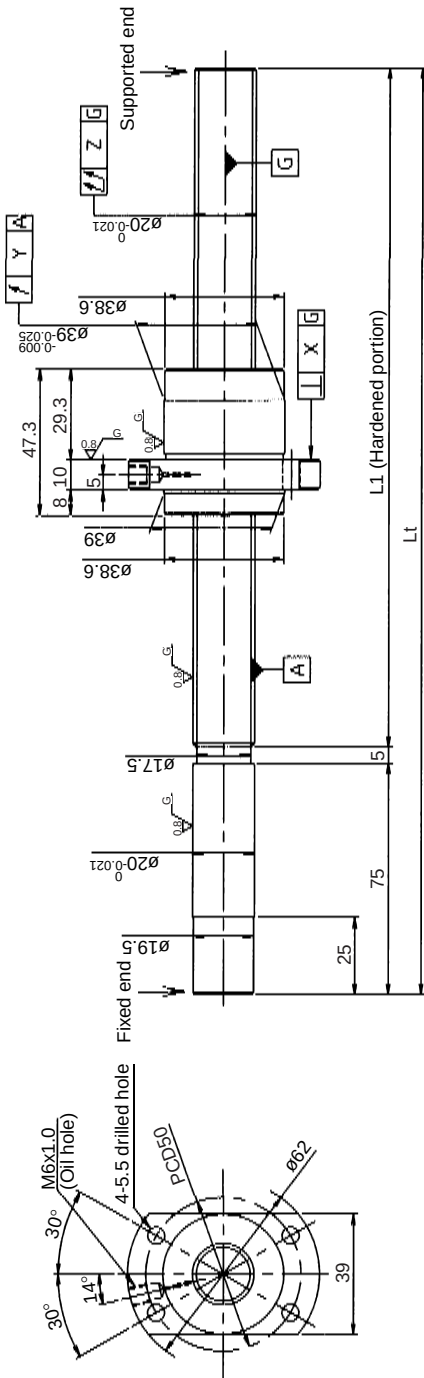
Note 2: For axial clearance adjustment, consult KURODA.

Screw shaft diameter	16	Axial clearance	~0.005(F)
Lead	32	Basic dynamic load rating	6100N
Thread direction	Right-hand	Basic static load rating	9100N
Number of circuits	0.67 turn 3 circuit	Spacer ball	None
Ball diameter	3.175	Lubricant	Alvania Grease S2
Number of threads	3		

UNFINISHED SHAFT ENDS

Screw shaft diameter ø20, Lead 20

(Unit: mm)



Notation of standard ground ball screw

- Standard length shaft without end machining
HG2020QS-HEZR-□□□□A
 - With end machining specified on your drawing
HG2020QS-□E□R-□□□□X□□□□-C5F
- Overall length Thread length

Model No.	Axial clearance	L ₁	L _t	X	Y	Z	Preload torque (N·cm)	Lead accuracy		Wiper	Mass (kg)
								±Ec	ec		
HG2020QS-HEZR-1000A	~0.005(F)	920	1000	0.011	0.015	0.120	~5.0	0.040	0.027	*	2.71
HG2020QS-HEZR-1500A		1420	1500			0.190	~7.0	0.054	0.035		3.86

* For the asterisked part, the lip of the end cap serves as a wiper.

- Support unit: BUK-15A (BUK-15F, BUK-15S) or BUM-15 is recommended.
- Product with axial clearance ~0.005(F) shown in the table may be partially preloaded.
- Preload torque shown in the table is a value before greasing.
- The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.

Table of optional specifications for each model

Additional machining of shaft end	Axial clearance adjustment (Note 2)	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
0	Δ	0	0	0	-

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Note 2: For axial clearance adjustment, consult KURODA.

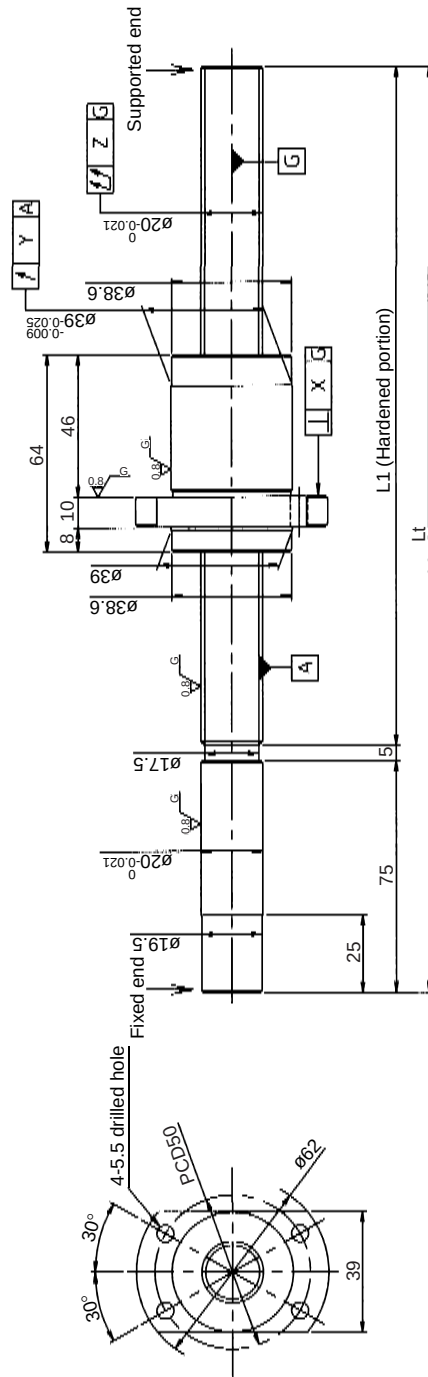
Ball screw specifications

Screw shaft diameter		20	Axial clearance		~0.005(F)
Lead		20	Basic dynamic load rating		10690N
Thread direction		Right-hand	Basic static load rating		23330N
Number of circuits		1.67 turn 2 circuit	Spacer ball		None
Ball diameter		3.175	Lubricant		Alvania Grease S2
Number of threads		2			

UNFINISHED SHAFT ENDS

Screw shaft diameter ø20, Lead 30

(Unit: mm)



Notation of standard ground ball screw

- Standard length shaft without end machining
HG2030QS-HEZR-□□□□□A
- With end machining specified on your drawing
HG2030QS-□E□R-□□□□□X□□□□□-C5F

Overall length Thread length

Model No.	Axial clearance	L ₁	L _t	X	Y	Z	Preload torque (N·cm)	Lead accuracy		Wiper	Mass (kg)
								±Ec	ec		
HG2030QS-HEZR-1000A	~0.005(F)	920	1000	0.011	0.015	0.120	~7.0	0.040	0.027	*	2.87
HG2030QS-HEZR-1500A		1420	1500			0.190	~9.0	0.054	0.035		4.06

* For the asterisked part, the lip of the end cap serves as a wiper.

• Support unit: BUK-15A (BUK-15F, BUK-15S) or BUM-15 is recommended.

• Product with axial clearance ~0.005(F) shown in the table may be partially preloaded.

• Preload torque shown in the table is a value before greasing.

• The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.

Table of optional specifications for each model

Additional machining of shaft end	Axial clearance adjustment (Note 2)	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
0	Δ	0	0	0	-

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Note 2: For axial clearance adjustment, consult KURODA.

Ball screw specifications

Screw shaft diameter	Lead	Thread direction	Number of circuits	Ball diameter	Number of threads	Axial clearance	
						Basic dynamic load rating	Basic static load rating
	20	Right-hand	1.67 turn 2 circuit			~0.005(F)	10690N
	30	Right-hand	1.67 turn 2 circuit			23330N	None
						Spacer ball	Alvania Grease S2
						Lubricant	

Screw shaft diameter $\varnothing 20$, Lead 40

(Unit: mm)



- Standard length shaft without end machining
HG2040QS-HEZR-□□□□A
- With end machining specified on your drawing
HG2040QS-□EZR-□□□□X□□□□-C5F

Overall length Thread length

Model No.	Axial clearance	L ₁	L _t	X	Y	Z	Preload torque (N-cm)	Lead accuracy			Wiper	Mass (kg)	
								±Ec	ec	e300			
HG2040QS-HEZR-1000A	~0.005(F)	910	1000	0.011	0.015	0.120	~5.0	0.040	0.027	0.018	*	2.73	
HG2040QS-HEZR-1500A		1410	1500					0.054	0.035				~7.0
HG2040QS-HEZR-1800A		1710	1800					0.065	0.040				

* For the asterisked part, the lip of the end cap serves as a wiper.

- Support unit: BUK-15A (BUK-15F, BUK-15S) or BUM-15 is recommended.
- Product with axial clearance ~0.005(F) shown in the table may be partially preloaded.
 - Preload torque shown in the table is a value before greasing.
- The grease is contained inside of nut only at the time of delivery. When using it, apply

Table of optional specifications for each model

Additional machining of shaft end	Axial clearance adjustment (Note 2)	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
○	△	○	○	○	-

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

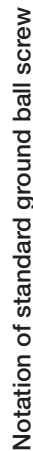
Note 2: For axial clearance adjustment, consult KURODA.

Ball screw specifications

Screw shaft diameter	20	Axial clearance	~0.005(F)
Lead	40	Basic dynamic load rating	6800N
Thread direction	Right-hand	Basic static load rating	12100N
Number of circuits	0.67 turn 3 circuit	Spacer ball	None
Ball diameter	3.175	Lubricant	Alvania Grease S2
Number of threads	3		

UNFINISHED SHAFT ENDS

(Unit: mm)



- Standard length shaft without end machining
 HG2060QS-BEZR-□□□□A
 • With end machining specified on your drawing
 HG2060QS-□EZR-□□□□X□□□□-C5H
- Overall length Thread length

Model No.	Axial clearance	L ₁	L _t	X	Y	Z	Lead accuracy			Wiper	Mass (kg)
							±Ec	ec	e300		
HG2060QS-BEZR-1000A	~0.010(H)	905	1000	0.011	0.015	0.120	0.040	0.027	0.018	*	2.87
HG2060QS-BEZR-1500A		1405	1500			0.190	0.054	0.035			4.06

* For the asterisked part, the lip of the end cap serves as a wiper.

- Support unit: BUK-15A (BUK-15F, BUK-15S) or BUM-15 is recommended.
The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.

Table of optional specifications for each model

Additional machining of shaft end	Axial clearance adjustment (Note 2)	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
○	△	○	○	○	-

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Note 2: For axial clearance adjustment, consult KURODA.

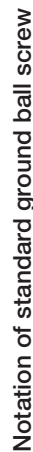
Ball screw specifications

Screw shaft diameter	20	Axial clearance	~0.010(H)
Lead	60	Basic dynamic load rating	6800N
Thread direction	Right-hand	Basic static load rating	12100N
Number of circuits	0.67 turn 3 circuit	Spacer ball	None
Ball diameter	3.175	Lubricant	Alvania Grease S2
Number of threads	3		

UNFINISHED SHAFT ENDS

Screw shaft diameter $\varnothing 25$, Lead 50

(Unit: mm)



- Standard length shaft without end machining
HG2550QS-HEFR-□□□□A
- With end machining specified on your drawing
HG2550QS-□□□□R-□□□□X□□□□-C5F

Overall length Thread length

Model No.	Axial clearance	L ₁	L _t	X	Y	Z	Preload torque (N·cm)	Lead accuracy			Wiper	Mass (kg)
								±Ec	ec	e300		
HG2550QS-HEFR-1015A	~0.005(F)	900	1015	0.011	0.015	0.100 0.170	~6.0 ~9.0	0.040	0.027	Felt wiper	4.89	
HG2550QS-HEFR-1715A		1600	1715					0.054	0.035		7.44	
HG2550QS-HEFR-2015A		1900	2015					0.065	0.040		8.54	

- Support unit: BUK-20A (BUK-20F, BUK-20S) or BUM-20 is recommended.
 Product with axial clearance ~0.005(F) shown in the table may be partially preloaded.
 Preload torque shown in the table is a value before greasing.
 The grease is contained inside of nut only at the time of delivery. When using it, apply

Table of optional specifications for each model

Additional machining of shaft end	Axial clearance adjustment (Note 2)	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
○	△	○	○	○	○

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Before anticorrosive black coating is performed, the wiper is removed.

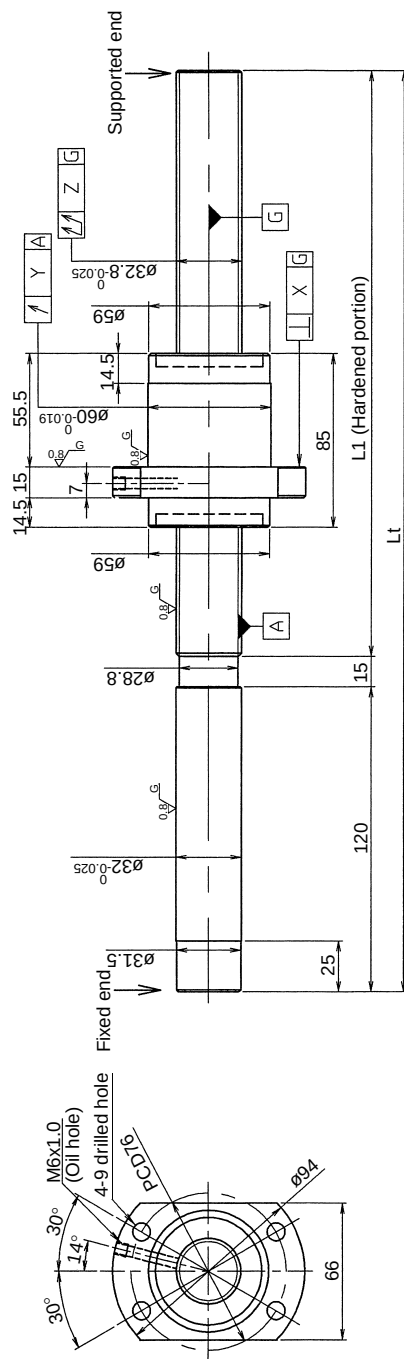
Note 2: For axial clearance adjustment, consult KURODA.

Ball screw specifications

Screw shaft diameter	25	Axial clearance	~0.005(F)
Lead	50	Basic dynamic load rating	1 0200N
Thread direction	Right-hand	Basic static load rating	1 9300N
Number of circuits	0.67 turn 3 circuit	Spacer ball	None
Ball diameter	3.9688	Lubricant	Alvania Grease S2
Number of threads	3		

Screw shaft diameter ø32, Lead 64

(Unit: mm)



Notation of standard ground ball screw

- Standard length shaft without end machining
HG3264QS-HEFR-□□□□A
 - With end machining specified on your drawing
HG3264QS-□E□R-□□□□X□□□□-C5F
- Overall length Thread length

Model No.	Axial clearance	L ₁	L _t	X	Y	Z	Preload torque (N-cm)	Lead accuracy	Wiper	Mass (kg)
								±Ec	ec	
HG3264QS-HEFR-1200A		1065	1200			0.100	~7.0	0.046	0.030	8.81
HG3264QS-HEFR-1700A	~0.005(F)	1565	1700	0.013	0.019			0.054	0.035	11.83
HG3264QS-HEFR-2200A		2065	2200			0.170	~9.0	0.077	0.046	14.85

- Support unit: BUK-25A (BUK-25F, BUM-25S) or BUM-25 is recommended.
 Product with axial clearance ~0.005(F) shown in the table may be partially preloaded.
 Preload torque shown in the table is a value before greasing.
 The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.

Table of optional specifications for each model

Additional machining of shaft end	Axial clearance adjustment (Note 2)	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
○	△	○	○	○	○

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Before anticorrosive black coating is performed, the wiper is removed.

Note 2: For axial clearance adjustment, consult KURODA.

Ball screw specifications

Screw shaft diameter	32	Axial clearance	~0.005(F)
Lead	64	Basic dynamic load rating	17200N
Thread direction	Right-hand	Basic static load rating	31900N
Number of circuits	0.67 turn 3 circuit	Spacer ball	None
Ball diameter	4.7625	Lubricant	Alvania Grease S2
Number of threads	3		

Tube method ball screws

G series

Page

Features and specifications of G series ball screws ————— B_50

Ordering instructions, shaft diameter and lead combinations ——— B_51

Stocked GP Series (C3 grade)

- 8 mm shaft diameter, One end finished ————— B_52 ~ 53
- 10 mm shaft diameter, One end finished ————— B_54 ~ 55
- 12 mm shaft diameter, One end finished ————— B_56 ~ 59
- 15 mm shaft diameter, One end finished ————— B_60 ~ 62
- 20 mm shaft diameter, One end finished ————— B_63 ~ 64

* Refer to page E-1 and after for the shaft-end process drawings for the above sizes.

Stocked GE series (C7 grade) / GG series (C5 grade)

- 8 mm shaft diameter, Unfinished shaft-ends ————— B_66 ~ 68
- 10 mm shaft diameter, Unfinished shaft-ends ————— B_69 ~ 72
- 12 mm shaft diameter, Unfinished shaft-ends ————— B_73 ~ 78
- 15 mm shaft diameter, Unfinished shaft-ends ————— B_79 ~ 85
- 16 mm shaft diameter, Unfinished shaft-ends ————— B_86
- 20 mm shaft diameter, Unfinished shaft-ends ————— B_87 ~ 90
- 25 mm shaft diameter, Unfinished shaft-ends ————— B_91 ~ 94
- 32 mm shaft diameter, Unfinished shaft-ends ————— B_95 ~ 96

* Refer to page E-1 and after for the shaft-end process drawings for the above sizes.

Custom product GR series, Single nut (C0 ~ C10 grade)

- 5 to 125 mm shaft diameter, Single nut ————— B_97 ~ 120

Custom product GR series, Integral nut (C0 ~ C5 grade)

- 20 to 63 mm shaft diameter, Integral nut ————— B_121 ~ 125

Custom product GR series, Double nut (C0 ~ C5 grade)

- 8 to 125 mm shaft diameter, Double nut ————— B_126 ~ 145

Features

● Various shaft diameters and leads are available for your selection

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

● Applicable to a wide range of machines and equipment for various applications, such as positioning and conveyance

- An appropriate precision can be selected from a wide variety of accuracy grades, eliminating unnecessary compromise in accuracy selection.

Summary of the specifications

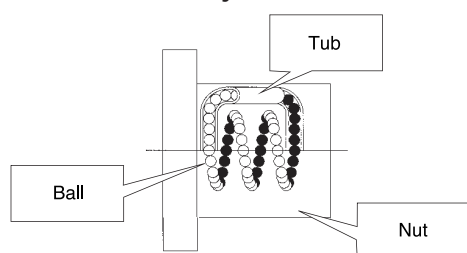
☐ Shaft diameter: $\phi 5$ to $\phi 125$ mm, lead: 1 to 50 mm

(Refer to the list of shaft diameters and lead combinations for more details.)

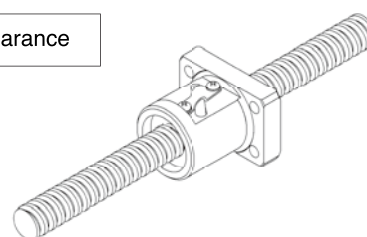
☐ Accuracy grade: C0 to C10 grades

☐ Nut combination: single nut, integral nut, and double nut (pin type)

☐ Circulation system: tube method



Appearance



☐ Series product line-up

Series name		Nut combination	Accuracy grade	Shaft diameter line-up	Shaft type	Product line
G series	GP series	Single nut	C3	ø8 ~ ø20	One end finished	Standard (in-stock) product line
	GG series		C5	ø8 ~ ø32	Both ends unfinished	
	GE series		C7			
	GR series	Single nut	C0 ~ C10	ø5 ~ ø125	Free design	Custom product line
		Integral nut	C0 ~ C5	ø20 ~ ø63		
		Double nut	C0 ~ C5	ø8 ~ ø125		

- In GP series, only the shaft end on the fixed side is finished. The other end on the supported side needs additional end machining to fulfill your needs and operating conditions.
- In GE/GG series, both ends of the screw shaft are not finished. Additional end machining to fulfill your needs and operating conditions is required.
- Refer to page E-1 and after in this catalog for the shaft-end process drawings for in-stock products.
- For the custom ball screws, custom shaft design to fulfill your needs and operating conditions is required.

☐ Options available for standard (in-stock) ball screws

Series	Additional end machining	Axial clearance adjustment	Surface treatment	Grease	Direction of nut	Wiper detachment
GE series	o	x	o	o	o	o
GG series	o	o	o	o	o	o
GP series	o	x	o	o	o	o

- Contact KURODA for more information on axial clearance adjustment for GG series products.
- In GP series, a standard axial clearance is set for either 0.005 mm or less (axial clearance symbol: F) or preloaded (axial clearance symbol: S).
- The surface treatment mentioned above is anti corrosive black coating (1 to 2 μm).
- Alvania Grease S2 is contained in a nut shipped from KURODA, unless otherwise specified. Contact KURODA if you want other greases to be contained.

□ Model numbers of G series

Example of the model number	Model series	Screw shaft diameter	Lead	Number of circuits	Combination	-	Flange type	Ball recirculation system	Wiper material	Thread direction	-	Overall length of screw shaft	Shaft end dimension	Thread length	-	Accuracy grade	Axial clearance									
	GR	40	10	E	D		C	A	L	R		3500	X	3000		C3	S									
	GE	8 ~ 32	1F ~ 25	See specifications.	S		See specifications.	See specifications.	See specifications.	R		To be shown with a 4-digit number in metric unit (mm)	A, X	To be shown with a 4-digit number in metric unit (mm)		C7	M									
	GG																	See specifications.	See specifications.	See specifications.	B, X	C5	F			
	GP	8 ~ 20	1F ~ 5				See specifications.	See specifications.	See specifications.				X											C0 ~ C10	S, F, H, M	
	GR	5 ~ C5	1 ~ 50															See specifications.	See specifications.	See specifications.	C0 ~ C5					S
	GR	20 ~ 63	8 ~ 16																							
	GR	8 ~ C5	8 ~ 16															See specifications.	See specifications.	See specifications.	C0 ~ C5					S

- For more details, refer to specifications and data for each size.
- Contact KURODA for specifications on left screws.

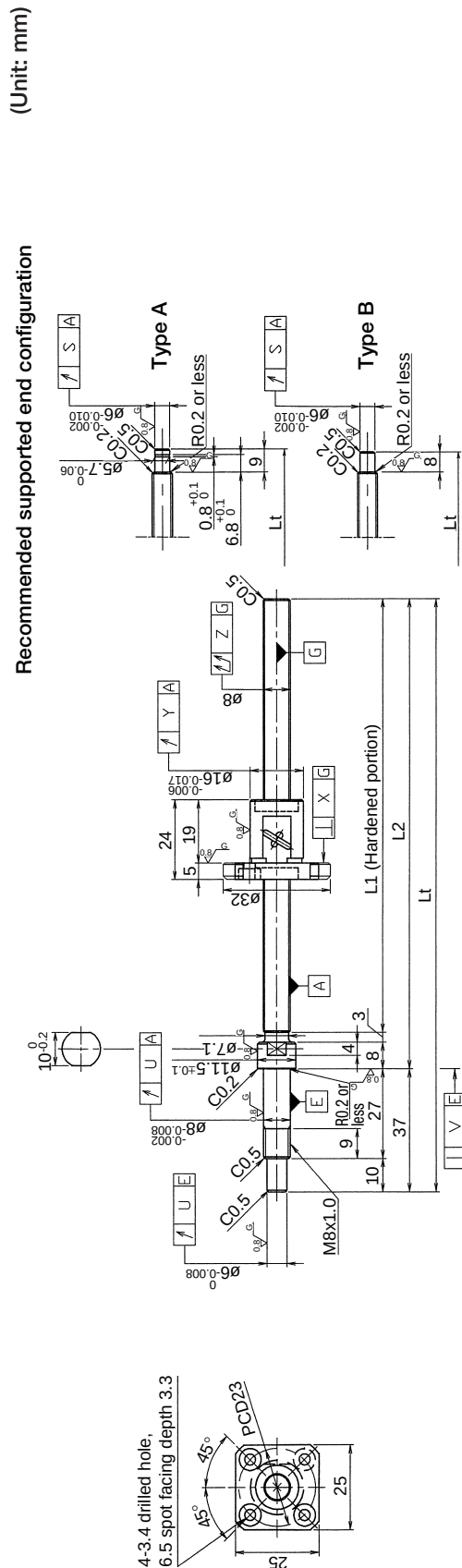
□ Shaft diameter and lead combinations

Screwshaftdiameter (mm)	Lead (mm)																			
	1	1.5	2	2.5	3	4	5	6	8	10	12	15	16	20	24	25	32	40	50	
5	S																			
8		S	S	S	S	S		S	S											
10			S	S		S	S			S										
12			S	S	S	S	S	S		S				S						
15			S	S	S	S	S	S	S	S		S	S	S		S				
16						S	S	S					S							
20				S		S	S	S	S	S				S		S	S			
25						S	S	S	S	S				S		S		S		
28						S	D			S				S						
32						S	S	S	S	S	S			S			S			
36						S	D	S	S	S	S			S	S					
40						S	S	S	S	S	S		S	S			S	S		
45						S	D	S	S	S	S			S						
50						S	S	S	S	S	S		S	S				S	S	
55									S	S	S		S	S						
63								S	S	S	S		S	S						
70										S	S		S	S						
80										S	S		S	S						
100										D	D		D	D						
125											S		S	S						

- The symbols in the above table represent:
S: single nut, D: double nut (pin type), and T: integral nut
- The shaded areas indicate that the screws are standard (in-stock) products (S: single nut).

ONE SHAFT END FINISHED

Screw shaft diameter ø8, Lead 1.5



Model No.	Axial clearance	L ₁	L ₂	L _t	U	V	S	X	Y	Z	Preload torque (N·cm)	Lead accuracy	Wiper	Mass (kg)
GP081FDS-AAFR-0170B-C3F	~0.005(F)	122	133	170						0.030	~0.5	±Ec ec	Felt wiper	0.10
GP081FDS-AAFR-0170B-C3S	0(S)								0.008		0.2~2.0	0.010	0.008	
GP081FDS-AAFR-0250B-C3F	~0.005(F)	202	213	250	0.008	0.0025	0.010	0.008		0.035	~0.5	0.012		0.13
GP081FDS-AAFR-0250B-C3S	0(S)										0.2~2.0			

- Mounting accuracy of ball screw in case of shaft end machining is equivalent to JIS C5 grade.
- Support unit: BUK-8A (BUK-8F, BUK-6S) or BUM-8 is recommended.
- Product with axial clearance $\sim 0.005(\text{F})$ shown in the table may be partially preloaded.
- Preload torque shown in the table is a value before greasing.
- The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
○	○	○	○	○

Note 1: The above-mentioned surface treatment is

Anticorrosive black coating (coating thickness: 1 to 2 μm). Before anticorrosive black coating is performed, the wiper is removed.

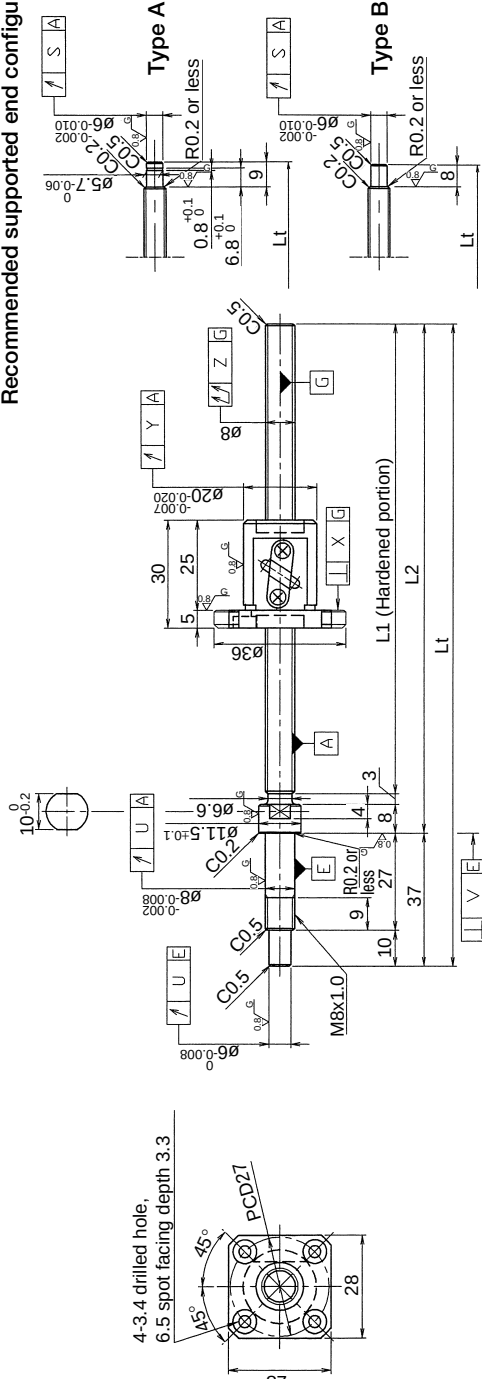
Ball screw specifications

Screw shaft diameter	8	Axial clearance	~0.005(F)	0(S)
Lead	1.5	Basic dynamic load rating	850N	530N
Thread direction	Right-hand	Basic static load rating	1900N	950N
Number of circuits	2.5 turn 1 circuit	Spacer ball	None	1 : 1
Ball diameter	1,000	Lubricant	Alvania Grease S2	

Notation of standard ground ball screw

- Standard length shaft without end machining
GP081FDS-AAFR-□□□□B-C3F
GP081FDS-AAFR-□□□□B-C3S
 - With end machining specified on your drawing
GP081FDS-□A-R-□□□□X□□□-C3F
GP081FDS-□A-R-□□□□X□□□-C3S
- Overall length Thread length

Screw shaft diameter ø8, Lead 2



Recommended supported end configuration

(Unit: mm)

Model No.	Axial clearance	L ₁	L ₂	L _t	U	V	S	X	Y	Z	Preload torque (N-cm)	Lead accuracy			Wiper	Mass (kg)
												±Ec	ec	e300		
GP0802DS-AAFR-0170B-C3F	~0.005(F)	122	133	170	0.008	0.0025	0.010	0.008	0.008	0.030	~0.5	0.010	0.008	0.008	Felt wiper	0.13
GP0802DS-AAFR-0170B-C3S	0(S)										0.3~2.0					
GP0802DS-AAFR-0250B-C3F	~0.005(F)	202	213	250							~0.5	0.012				
GP0802DS-AAFR-0250B-C3S	0(S)										0.3~2.0					

- Mounting accuracy of ball screw in case of shaft end machining is equivalent to JIS C5 grade.
- Support unit: BUK-8A (BUK-8F, BUK-6S) or BUM-8 is recommended.
- Product with axial clearance ~0.005(F) shown in the table may be partially preloaded.
- Preload torque shown in the table is a value before greasing.
- The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
○	○	○	○	○

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm). Before anticorrosive black coating is performed, the wiper is removed.

Ball screw specifications

Screw shaft diameter	8	Axial clearance	~0.005(F)	0(S)
Lead	2	Basic dynamic load rating	1950N	1220N
Thread direction	Right-hand	Basic static load rating	2600N	1300N
Number of circuits	2.5 turn 1 circuit	Spacer ball	None	1 : 1
Ball diameter	1.5875	Lubricant	Alvania Grease S2	

Notation of standard ground ball screw

- Standard length shaft without end machining
GP0802DS-AAFR-□□□□B-C3F
GP0802DS-AAFR-□□□□B-C3S
 - With end machining specified on your drawing
GP0802DS-□A□R-□□□□X□□□□-C3F
GP0802DS-□A□R-□□□□X□□□□-C3S
- Overall length Thread length

Screw shaft diameter ø10, Lead 2



- Mounting accuracy of ball screw in case of shaft end machining is equivalent to JIS C5 grade.

- Support unit: BUK-8A (BUK-8F, BUK-6S) or BUM-8 is recommended.
 - Product with axial clearance ~0.005(F) shown in the table may be partially preloaded.
 - Preload torque shown in the table is a value before greasing.
- The grease is contained inside of nut only at the time of delivery. When using it, apply

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
○	○	○	○	○

Note 1: The above-mentioned surface treatment is

Anticorrosive black coating (coating thickness: 1 to 2 μm). Before anticorrosive black coating is performed, the wiper is removed.

Ball screw specifications

Screw shaft diameter	10	Axial clearance	~0.005(F)	0(S)
Lead	2	Basic dynamic load rating	2250N	1410N
Thread direction	Right-hand	Basic static load rating	3300N	1650N
Number of circuits	2.5 turn 1 circuit	Spacer ball	None	1 : 1
Ball diameter	1.5875	Lubricant	Alvania Grease S2	

Notation of standard ground ball screw

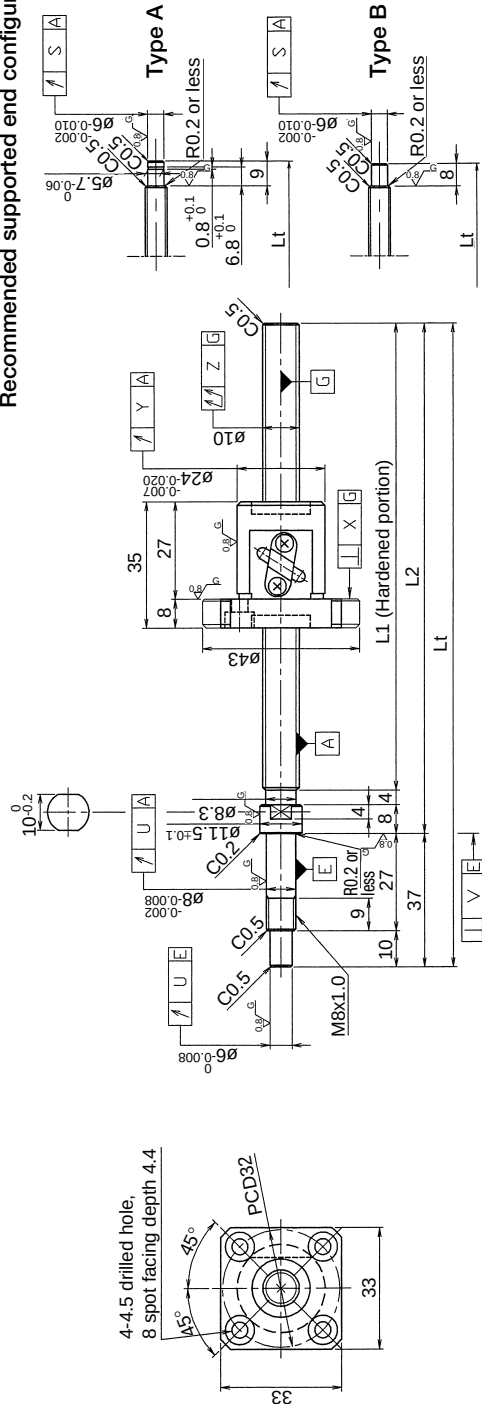
- Standard length shaft without end machining
GP1002DS-EAFR-□□□□ B-C3F
GP1002DS-EAFR-□□□□ B-C3S
- With end machining specified on your drawing
GP1002DS-□A R-□□□□ X□□□□-C3F
GP1002DS-□A R-□□□□ X□□□□-C3S

Overall length Thread length

ONE SHAFT END FINISHED

(Unit: mm)

Recommended supported end configuration



Model No.	Axial clearance	L ₁	L ₂	L _t	U	V	S	X	Y	Z	Preload torque (N·cm)		Lead accuracy		Wiper	Mass (kg)
											±Ec	ec	e300			
GP102FDS-AAFR-0210B-C3F	~0.005(F)	161	173	210	0.007	0.0025	0.011	0.008	0.010	0.030	~0.5	0.010	0.008	0.008	Felt wiper	0.23
GP102FDS-AAFR-0210B-C3S	0(S)										0.3~3.0					
GP102FDS-AAFR-0320B-C3F	~0.005(F)	271	283	320						~0.5	0.012					
GP102FDS-AAFR-0320B-C3S	0(S)									0.3~3.0						

- Mounting accuracy of ball screw in case of shaft end machining is equivalent to JIS C5 grade.
- Support unit: BUK-8A (BUK-8F, BUK-6S) or BUM-8 is recommended.
- Product with axial clearance ~0.005(F) shown in the table may be partially preloaded.
- Preload torque shown in the table is a value before greasing.
- The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
○	○	○	○	○

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm). Before anticorrosive black coating is performed, the wiper is removed.

Ball screw specifications

Screw shaft diameter	10	Axial clearance	~0.005(F)	0(S)
Lead	2.5	Basic dynamic load rating	2700N	1700N
Thread direction	Right-hand	Basic static load rating	4200N	2100N
Number of circuits	2.5 turn 1 circuit	Spacer ball	None	1 : 1
Ball diameter	2.000	Lubricant	Alvania Grease S2	

Notation of standard ground ball screw

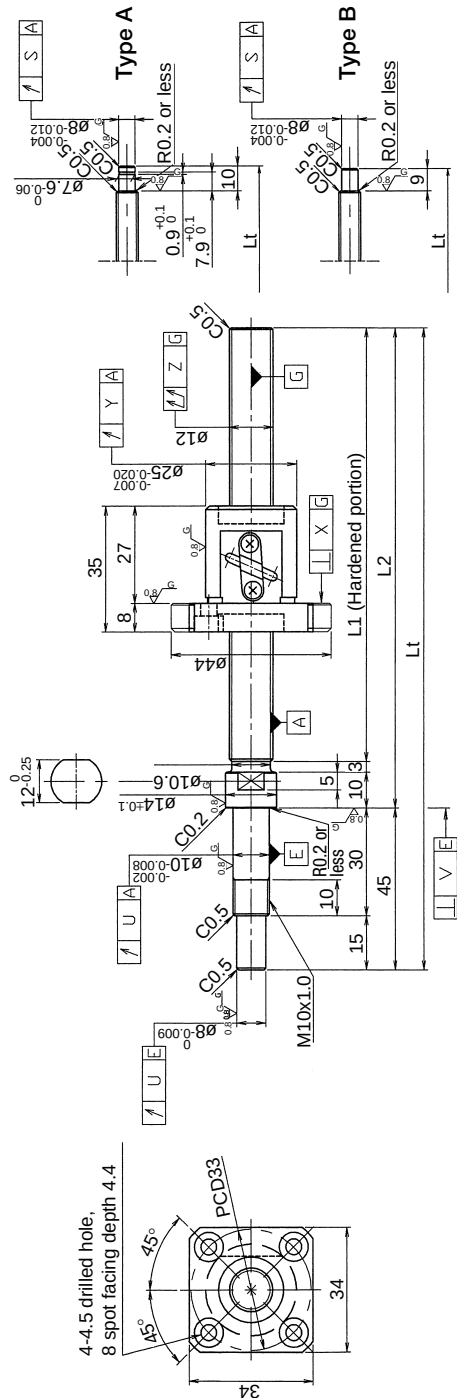
- Standard length shaft without end machining
GP102FDS-AAFR-□□□□B-C3F
GP102FDS-AAFR-□□□□B-C3S
 - With end machining specified on your drawing
GP102FDS-□A□R-□□□□X□□□□-C3F
GP102FDS-□A□R-□□□□X□□□□-C3S
- Overall length Thread length

ONE SHAFT END FINISHED

Screw shaft diameter ø12, Lead 2

(Unit: mm)

Recommended supported end configuration



Model No.	Axial clearance	L ₁	L ₂	L _t	U	V	S	X	Y	Z	Preload torque (N-cm)		Lead accuracy		Wiper	Mass (kg)
											±Ec	ec	e300			
GP1202DS-AAPR-0300B-C3F	~0.005(F)	242	255	300	0.007	0.003	0.011	0.008	0.010	0.030	~1.0	0.012	0.008	Plastic wiper	0.35	
GP1202DS-AAPR-0300B-C3S	0(S)									0.4~3.2						
GP1202DS-AAPR-0400B-C3F	~0.005(F)	342	355	400						0.040	~1.0	0.013	0.010			
GP1202DS-AAPR-0400B-C3S	0(S)									0.4~3.2						

- Mounting accuracy of ball screw in case of shaft end machining is equivalent to JIS C5 grade.
- Support unit: BUK-10A (BUK-10F, BUK-8S) or BUM-10 is recommended.
- Product with axial clearance ~0.005(F) shown in the table may be partially preloaded.
- Preload torque shown in the table is a value before greasing.
- The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
○	○	○	○	○

Note 1: The above-mentioned surface treatment is

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

Ball screw specifications

Screw shaft diameter	12	Axial clearance	~0.005(F)	0(S)
Lead	2	Basic dynamic load rating	2450N	1540N
Thread direction	Right-hand	Basic static load rating	4100N	2050N
Number of circuits	2.5 turn 1 circuit	Spacer ball	None	1 : 1
Ball diameter	1.5875	Lubricant	Alvania Grease S2	

Notation of standard ground ball screw

- Standard length shaft without end machining
 GP1202DS-AAPR-□□□□B-C3F
 GP1202DS-AAPR-□□□□B-C3S
- With end machining specified on your drawing
 GP1202DS-□A R-□□□□X□□□□-C3F
 GP1202DS-□A R-□□□□X□□□□-C3S

Overall length Thread length

Screw shaft diameter $\varnothing 12$, Lead 2.5



(Unit: mm)

Mounting accuracy of ball screw in case of shaft end machining is equivalent to JIS C5 grade.
Support unit: BUK-10A (BUK-10F, BUK-8S) or BUM-10 is recommended.
Product with axial clearance ~0.005(F) shown in the table may be partially preloaded.
Preload torque shown in the table is a value before greasing.
The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
○	○	○	○	○

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Ball screw specifications

Screw shaft diameter	12	Axial clearance	~0.005(F)	0(S)
Lead	2.5	Basic dynamic load rating	2950N	1850N
Thread direction	Right-hand	Basic static load rating	5100N	2550N
Number of circuits	2.5 turn 1 circuit	Spacer ball	None	1 : 1
Ball diameter	2,000	Lubricant	Avania Grease S2	

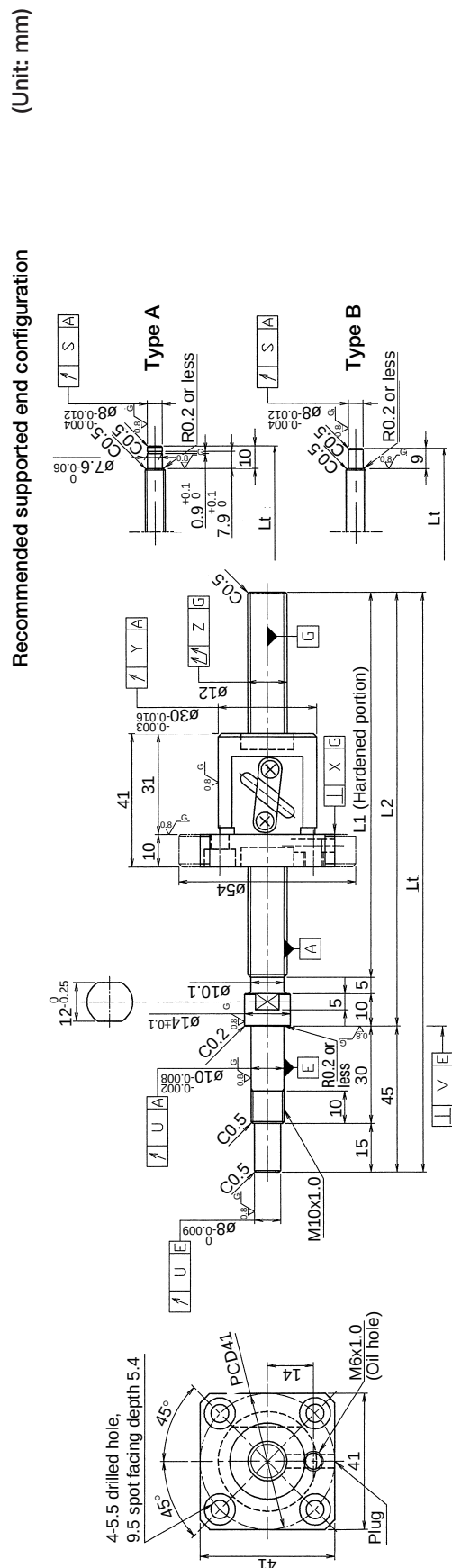
Notation of standard ground ball screw

- Standard length shaft without end machining
GPI122FDS-AAPR-□□□□B-C3F
GPI122FDS-AAPR-□□□□B-C3S
- With end machining specified on your drawing
GPI122FDS-□A□R□□□□X□□□□-C3F
GPI122FDS-□A□R□□□□X□□□□-C3S

Overall length Thread length

ONE SHAFT END FINISHED

Screw shaft diameter ø12, Lead 4



Model No.	Axial clearance	L ₁	L ₂	L _t	U	V	S	X	Y	Z	Preload torque (N-cm)		Lead accuracy		Wiper	Mass (kg)
											±Ec	ec	e300			
GP1204DS-AAPR-0300B-C3F	~0.005(F)	240	255	300	0.007	0.003	0.011	0.008	0.010	0.030	~1.0	0.012	0.008	0.008	Plastic wiper	0.47
GP1204DS-AAPR-0300B-C3S	0(S)										0.8~4.2					
GP1204DS-AAPR-0400B-C3F	~0.005(F)	340	355	400							~1.0	0.013	0.010			
GP1204DS-AAPR-0400B-C3S	0(S)										0.8~4.2					

- Mounting accuracy of ball screw in case of shaft end machining is equivalent to JIS C5 grade.
- Support unit: BUK-10A (BUK-10F, BUK-8S) or BUM-10 is recommended.
- Product with axial clearance ~0.005(F) shown in the table may be partially preloaded.
- Preload torque shown in the table is a value before greasing.
- The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
○	○	○	○	○

Note 1: The above-mentioned surface treatment is

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

Ball screw specifications

Screw shaft diameter	12	Axial clearance	~0.005(F)	0(S)
Lead	4	Basic dynamic load rating	3600N	2260N
Thread direction	Right-hand	Basic static load rating	6750N	3370N
Number of circuits	2.5 turn 1 circuit	Spacer ball	None	1 : 1
Ball diameter	2 3812	Lubricant	Alvania Grease S2	

Notation of standard ground ball screw

- Standard length shaft without end machining
GP1204DS-AAPR-□□□□B-C3F
GP1204DS-AAPR-□□□□B-C3S
- With end machining specified on your drawing
GP1204DS-□□AR-□□□□X□□□□-C3F
GP1204DS-□□AR-□□□□X□□□□-C3S

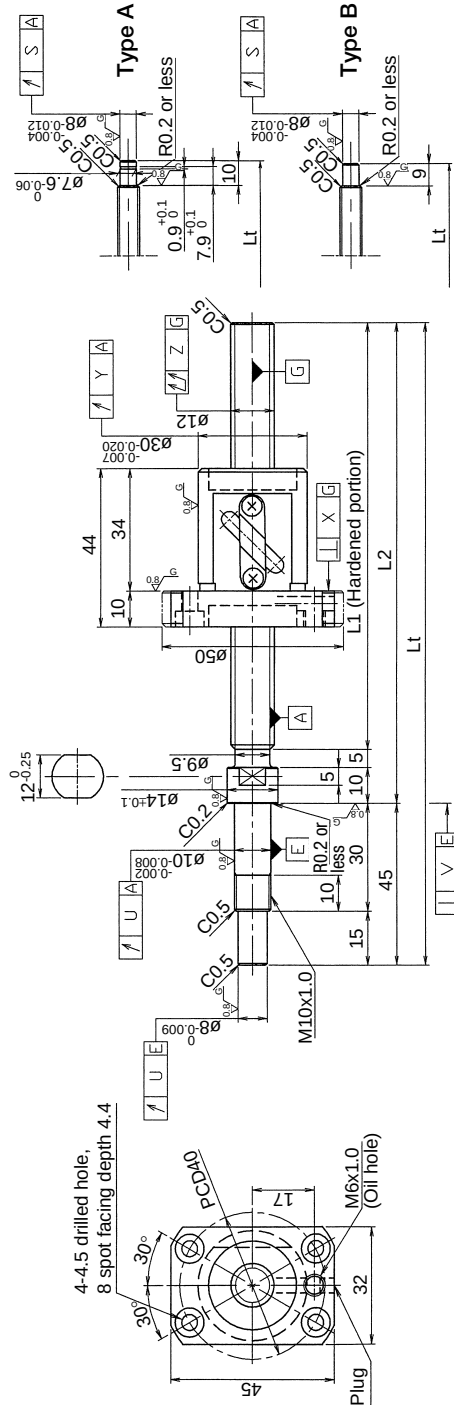
Overall length Thread length

ONE SHAFT END FINISHED

Screw shaft diameter ø12, Lead 5

(Unit: mm)

Recommended supported end configuration



Model No.	Axial clearance	L ₁	L ₂	L _t	U	V	S	X	Y	Z	Preload torque (N·cm)	Lead accuracy	Wiper	Mass (kg)
GP1205DS-BALR-0300B-C3F	~0.005(F)	240	255	300						0.030	~1.0	±Ec		
GP1205DS-BALR-0300B-C3S	0(S)										1.5~5.0	ec		0.43
GP1205DS-BALR-0450B-C3F	~0.005(F)	390	405	450	0.007	0.003	0.011	0.008	0.010	0.050	~1.0		Lip seal	
GP1205DS-BALR-0450B-C3S	0(S)										1.5~5.0			0.53

- Mounting accuracy of ball screw in case of shaft end machining is equivalent to JIS C5 grade.
- Support unit: BUK-10A (BUK-10F, BUK-8S) or BUM-10 is recommended.
- Product with axial clearance ~0.005(F) shown in the table may be partially preloaded.
- Preload torque shown in the table is a value before greasing.
- The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
○	○	○	○	○

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Ball screw specifications

Screw shaft diameter	12	Axial clearance	~0.005(F)	0(S)
Lead	5	Basic dynamic load rating	5950N	3740N
Thread direction	Right-hand	Basic static load rating	9800N	4900N
Number of circuits	2.5 turn 1 circuit	Spacer ball	None	1 : 1
Ball diameter	3.175	Lubricant	Alvania Grease S2	

Notation of standard ground ball screw

- Standard length shaft without end machining
GP1205DS-BALR-□□□□□□B-C3F
GP1205DS-BALR-□□□□□□B-C3S
- With end machining specified on your drawing
GP1205DS-□A□R-□□□□□□X□□□□□□-C3F
GP1205DS-□A□R-□□□□□□X□□□□□□-C3S

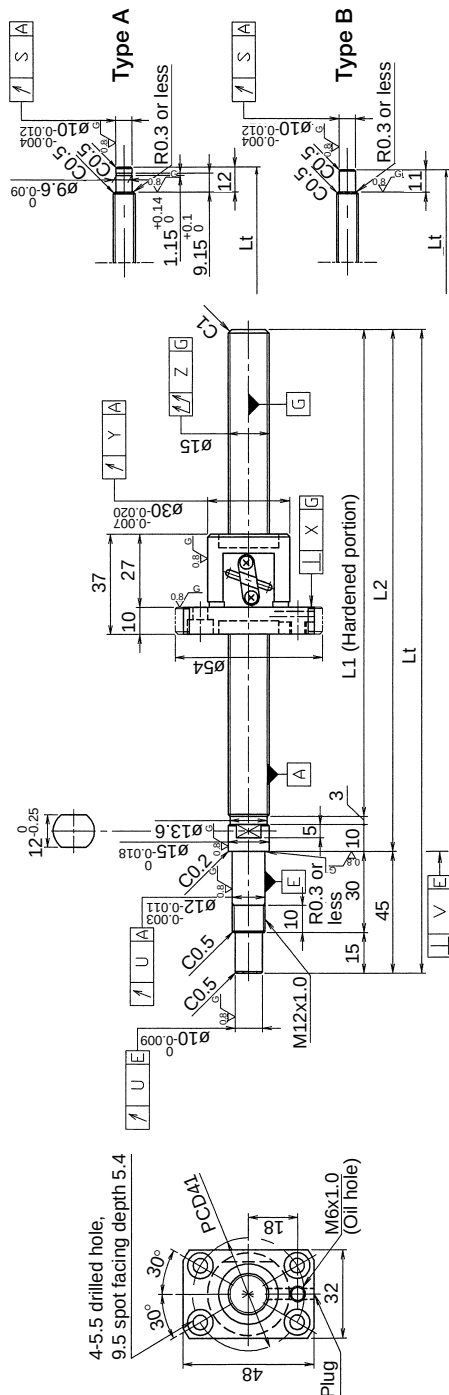
Overall length Thread length

ONE SHAFT END FINISHED

Screw shaft diameter ø15, Lead 2

Recommended supported end configuration

(Unit: mm)



Model No.	Axial clearance	L ₁	L ₂	L _t	U	V	S	X	Y	Z	Preload torque (N-cm)	Lead accuracy	Wiper	Mass (kg)
												±Ec	ec	e300
GP1502DS-BAPR-0300B-C3F	~0.005(F)	242	255	300						0.025	~1.5	0.012	0.008	
GP1502DS-BAPR-0300B-C3S	0(S)										0.5~4.5			
GP1502DS-BAPR-0600B-C3F	~0.005(F)	542	555	600	0.009	0.004	0.012	0.008	0.010	0.045	~1.5	0.016	0.012	0.55
GP1502DS-BAPR-0600B-C3S	0(S)										0.5~4.5			0.92

- Mounting accuracy of ball screw in case of shaft end machining is equivalent to JIS C5 grade.
- Support unit: BUK-12A (BUK-12F, BUK-10S) or BUM-12 is recommended.
- Product with axial clearance ~0.005(F) shown in the table may be partially preloaded.
- Preload torque shown in the table is a value before greasing.
- The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
○	○	○	○	○

Note 1: The above-mentioned surface treatment is

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

Ball screw specifications

Screw shaft diameter	15	Axial clearance	~0.005(F)	0(S)
Lead	2	Basic dynamic load rating	2700N	1700N
Thread direction	Right-hand	Basic static load rating	5500N	2750N
Number of circuits	2.5 turn 1 circuit	Spacer ball	None	1 : 1
Ball diameter	1.5875	Lubricant	Alvania Grease S2	

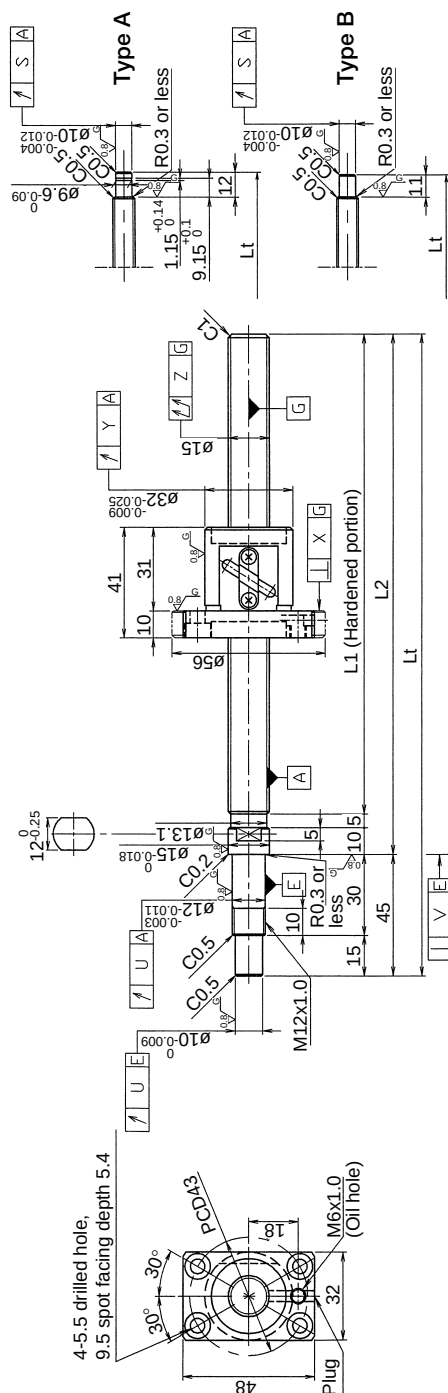
Notation of standard ground ball screw

- Standard length shaft without end machining
GP1502DS-BAPR-□□□□B-C3F
GP1502DS-BAPR-□□□□B-C3S
 - With end machining specified on your drawing
GP1502DS-□A□R-□□□□X□□□□-C3F
GP1502DS-□A□R-□□□□X□□□□-C3S
- Overall length Thread length

ONE SHAFT END FINISHED

Recommended supported end configuration

(Unit: mm)



Model No.	Axial clearance	L ₁	L ₂	L _t	U	V	S	X	Y	Z	Preload torque (N-cm)	Lead accuracy	Wiper	Mass (kg)
												±Ec	ec	e300
GP1504DS-BALR-0400B-C3F	~0.005(F)	340	355	400						0.035	~1.5	0.013	0.010	
GP1504DS-BALR-0400B-C3S	0(S)										1.0~5.0			
GP1504DS-BALR-0600B-C3F	~0.005(F)	540	555	600	0.009	0.004	0.012	0.008	0.010	0.045	~1.5	0.016	0.012	Lip seal
GP1504DS-BALR-0600B-C3S	0(S)										1.0~5.0			0.94

- Mounting accuracy of ball screw in case of shaft end machining is equivalent to JIS C5 grade.
- Support unit: BUK-12A (BUK-12F, BUK-10S) or BUM-12 is recommended.
- Product with axial clearance ~0.005(F) shown in the table may be partially preloaded.
- Preload torque shown in the table is a value before greasing.
- The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
○	○	○	○	○

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Ball screw specifications

Screw shaft diameter	15	Axial clearance	~0.005(F)	0(S)
Lead	4	Basic dynamic load rating	4100N	2580N
Thread direction	Right-hand	Basic static load rating	8550N	4270N
Number of circuits	2.5 turn 1 circuit	Spacer ball	None	1 : 1
Ball diameter	2 3812	Lubricant	Alvania Grease S2	

Notation of standard ground ball screw

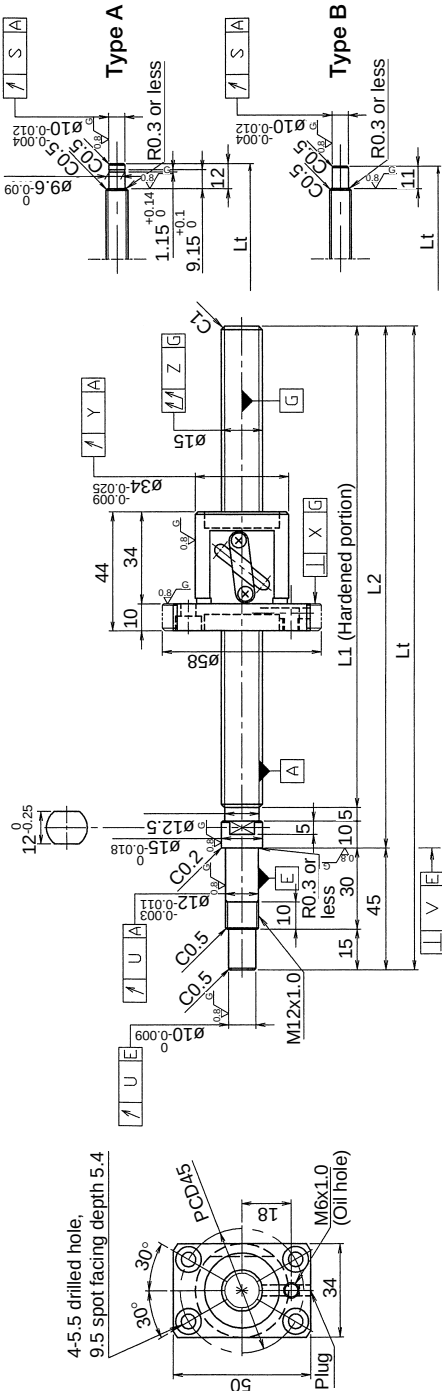
- Standard length shaft without end machining
 GP1504DS-BALR-□□□□B-C3F
 GP1504DS-BALR-□□□□B-C3S
- With end machining specified on your drawing
 GP1504DS-□A□R-□□□□X□□□□-C3F
 GP1504DS-□A□R-□□□□X□□□□-C3S
- Overall length Thread length

ONE SHAFT END FINISHED

Screw shaft diameter ø15, Lead 5

(Unit: mm)

Recommended supported end configuration



Model No.	Axial clearance	L ₁	L ₂	L _t	U	V	S	X	Y	Z	Preload torque (N·cm)		Lead accuracy		Wiper	Mass (kg)
											±Ec	ec	±Ec	ec		
GP1505DS-BALR-0400B-C3F	~0.005(F)	340	355	400						0.035	~2.0	~2.0	0.013	0.010	Lip seal	0.71
GP1505DS-BALR-0400B-C3S	0(S)				0.009	0.004	0.012	0.008	0.012		1.5~6.0	1.5~6.0	0.016	0.012		0.94
GP1505DS-BALR-0600B-C3F	~0.005(F)	540	555	600						0.045	~2.0	~2.0				
GP1505DS-BALR-0600B-C3S	0(S)										1.5~6.0	1.5~6.0				

- Mounting accuracy of ball screw in case of shaft end machining is equivalent to JIS C5 grade.
- Support unit: BUK-12A (BUK-12F, BUK-10S) or BUM-12 is recommended.
- Product with axial clearance ~0.005(F) shown in the table may be partially preloaded.
- Preload torque shown in the table is a value before greasing.
- The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
○	○	○	○	○

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Ball screw specifications

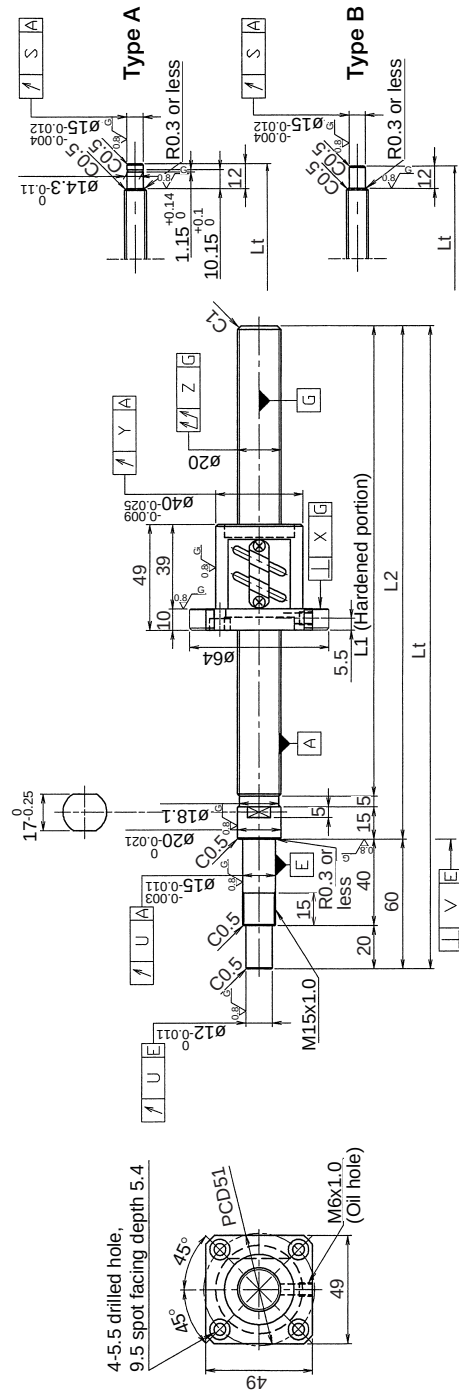
Screw shaft diameter	15	Axial clearance	~0.005(F)	0(S)
Lead	5	Basic dynamic load rating	6900N	4340N
Thread direction	Right-hand	Basic static load rating	12500N	6250N
Number of circuits	2.5 turn 1 circuit	Spacer ball	None	1 : 1
Ball diameter	3.175	Lubricant	Alvania Grease S2	

Notation of standard ground ball screw

- Standard length shaft without end machining
GP1505DS-BALR-□□□□B-C3F
GP1505DS-BALR-□□□□B-C3S
- With end machining specified on your drawing
GP1505DS-□A□R-□□□□X□□□□-C3F
GP1505DS-□A□R-□□□□X□□□□-C3S

Overall length Thread length

Screw shaft diameter $\varnothing 20$, Lead 4



Recommended supported end configuration

(Unit: mm)

Model No.	Axial clearance	L ₁	L ₂	L _t	U	V	S	X	Y	Z	Preload torque (N·cm)	Lead accuracy			Wiper	Mass (kg)
												±Ec	ec	e300		
GP2004ES-AALR-0605B-C3F	~0.005(F)	525	545	605	0.009	0.004	0.012	0.008	0.012	0.050	~3.0	0.016	0.012	Lip seal	1.70	
GP2004ES-AALR-0605B-C3S	0(S)															
GP2004ES-AALR-1005B-C3F	~0.005(F)	925	945	1005						~3.0	0.095	0.021	0.015		0.008	2.60
GP2004ES-AALR-1005B-C3S	0(S)															

- Mounting accuracy of ball screw in case of shaft end machining is equivalent to JIS C5 grade.
- Support unit: BUK-15A (BUK-15F, BUK-15S) or BUM-15 is recommended.
- Product with axial clearance ~0.005(F) shown in the table may be partially preloaded.
- Preload torque shown in the table is a value before greasing.
- The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
○	○	○	○	○

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Ball screw specifications

Screw shaft diameter	20	Axial clearance	~0.005(F)	0(S)
Lead	4	Basic dynamic load rating	8600N	5410N
Thread direction	Right-hand	Basic static load rating	23400N	11700N
Number of circuits	2.5 turn 2 circuit	Spacer ball	None	1 : 1
Ball diameter	2.3812	Lubricant	Alvania Grease S2	

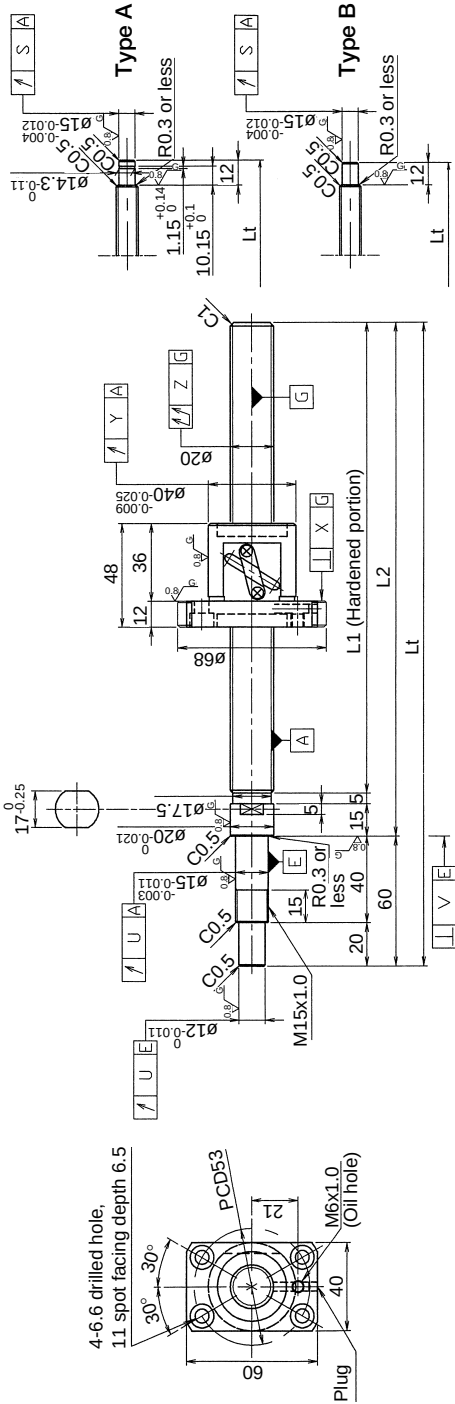
Notation of standard ground ball screw

- Standard length shaft without end machining
GP2004ES-AALR-□□□□B-C3F
GP2004ES-AALR-□□□□B-C3S
 - With end machining specified on your drawing
GP2004ES-□A□R-□□□□X□□□□-C3F
GP2004ES-□A□R-□□□□X□□□□-C3S
- Overall length Thread length

ONE SHAFT END FINISHED

Screw shaft diameter $\phi 20$, Lead 5

Recommended supported end configuration (Unit: mm)



Model No.	Axial clearance	L ₁	L ₂	L _t	U	V	S	X	Y	Z	Preload torque (N·cm)			Lead accuracy		Wiper	Mass (kg)
											±Ec	ec	e300				
GP2005DS-BALR-0605B-C3F	~0.005(F)	525	545	605						0.050	~3.0	0.016	0.012			Lip seal	1.64
GP2005DS-BALR-0605B-C3S	0(S)										3.0~10.0			0.008			
GP2005DS-BALR-1005B-C3F	~0.005(F)	925	945	1005	0.009	0.004	0.012	0.008	0.012	0.095	~3.0	0.021	0.015				2.49
GP2005DS-BALR-1005B-C3S	0(S)										3.0~10.0						

- Mounting accuracy of ball screw in case of shaft end machining is equivalent to JIS C5 grade.
- Support unit: BUK-15A (BUK-15F, BUK-15S) or BUM-15 is recommended.
- Product with axial clearance ~0.005(F) shown in the table may be partially preloaded.
- Preload torque shown in the table is a value before greasing.
- The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
○	○	○	○	○

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Ball screw specifications

Screw shaft diameter	20	Axial clearance	~0.005(F)	0(S)
Lead	5	Basic dynamic load rating	8350N	5260N
Thread direction	Right-hand	Basic static load rating	17500N	8750N
Number of circuits	2.5 turn 1 circuit	Spacer ball	None	1 : 1
Ball diameter	3.175	Lubricant	Alvania Grease S2	

Notation of standard ground ball screw

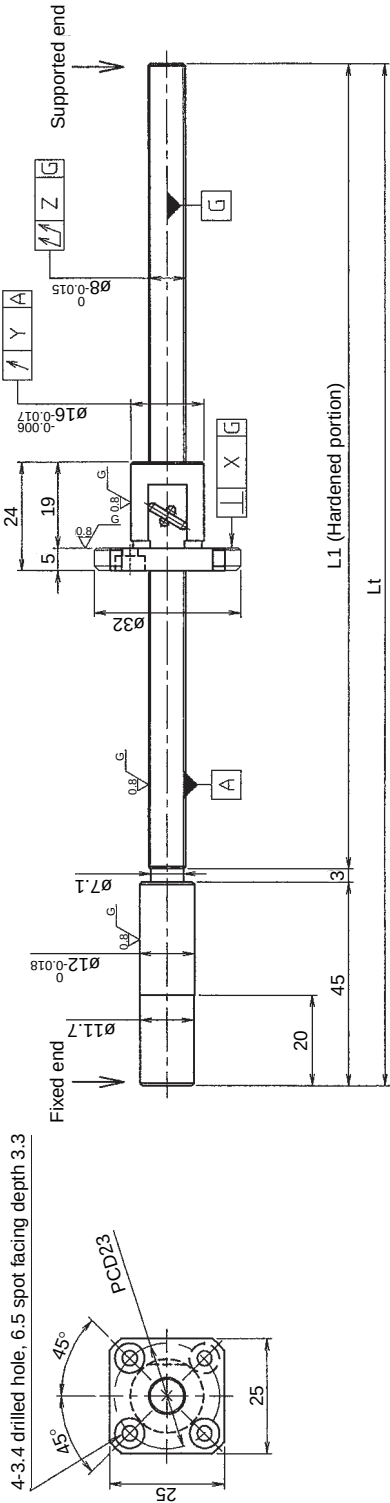
- Standard length shaft without end machining
GP2005DS-BALR-□□□□□□B-C3F
GP2005DS-BALR-□□□□□□B-C3S
- With end machining specified on your drawing
GP2005DS-□A□R-□□□□□□X□□□□□□-C3F
GP2005DS-□A□R-□□□□□□X□□□□□□-C3S

Overall length Thread length

UNFINISHED SHAFT ENDS

Screw shaft diameter $\varnothing 8$, Lead 1.5

(Unit: mm)



Notation of standard ground ball screw

- Standard length shaft without end machining
GE081FDS-AANR-□□□□A
GG081FDS-AANR-□□□□A
- With end machining specified on your drawing
GE081FDS-□ANR-□□□□X□□□□-C7M
GG081FDS-□ANR-□□□□X□□□□-C5□

Overall length Thread length

Table of optional specifications for each model

Series	Additional machining of shaft end	Axial clearance adjustment (Note 2)	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
GE	o	x	o	o	o	-
GG	o	o	o	o	o	-

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Note 2: For axial clearance adjustment for GG series, consult KURODA.

Ball screw specifications

Screw shaft diameter		8	Axial clearance		$\sim 0.030(\text{M})$	$\sim 0.005(\text{F})$
Lead		1.5	Basic dynamic load rating		850N	
Thread direction		Right-hand	Basic static load rating		1900N	
Number of circuits		2.5 turn 1 circuit	Spacer ball		None	
Ball diameter		1.000	Lubricant		Alvania Grease S2	

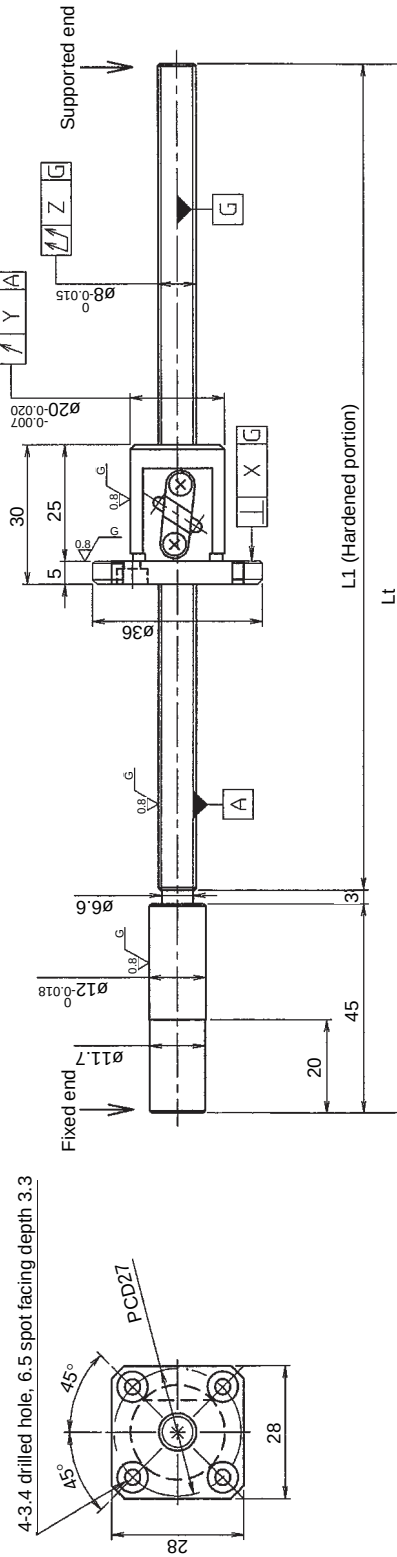
Model No.	Axial clearance	L ₁	L _t	X	Y	Z	Preload torque (N·cm)	Lead accuracy		Wiper	Mass (kg)
								$\pm \text{Ec}$	ec		
GE081FDS-AANR-0215A	$\sim 0.030(\text{M})$	167	215	0.014	0.020	0.100	-	0.05/300	-	-	0.14
*GG081FDS-AANR-0215A	$\sim 0.005(\text{F})$			0.010	0.012	0.065	~ 0.5	0.023	0.018	-	0.14

- Support unit: BUK-8A (BUK-8F, BUK-6S) or BUM-8 is recommended.
- Product with axial clearance $\sim 0.005(\text{F})$ shown in the table may be partially preloaded.
- Preload torque shown in the table is a value before greasing.
- The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.
- For asterisked *model with unfinished shaft ends equivalent to lead accuracy grade C3, consult KURODA.

UNFINISHED SHAFT ENDS

Screw shaft diameter ø8, Lead 2

(Unit: mm)



Notation of standard ground ball screw

- Standard length shaft without end machining
GE0802DS-AANR-□□□□□A
GG0802DS-AANR-□□□□□A
- With end machining specified on your drawing
GE0802DS-□ANR-□□□□□X□□□□□-C7M
GG0802DS-□ANR-□□□□□X□□□□□-C5□

Overall length Thread length

• Support unit: BUK-8A (BUK-8F, BUK-6S) or BUM-8 is recommended.

• Product with axial clearance ~0.005(F) shown in the table may be partially preloaded.

• Preload torque shown in the table is a value before greasing.

• The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.

• For asterisked *model with unfinished shaft ends equivalent to lead accuracy grade C3, consult KURODA.

Model No.	Axial clearance	L ₁	L _t	X	Y	Z	Preload torque (N·cm)	Lead accuracy	Wiper	Mass (kg)
GE0802DS-AANR-0215A	~0.030(M)	167	215	0.014	0.020	0.100	-	±Ec ec	e300 -	-
*GG0802DS-AANR-0215A	~0.005(F)			0.010	0.012	0.065	~0.5	0.023 0.018	0.018	0.13

Table of optional specifications for each model

Series	Additional machining of shaft end	Axial clearance adjustment (Note 2)	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
GE	0	x	o	o	o	-
GG	o	o	o	o	o	-

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

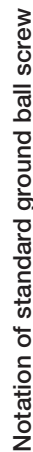
Note 2: For axial clearance adjustment for GG series, consult KURODA.

Ball screw specifications

Screw shaft diameter	8	Axial clearance	~0.030(M)	~0.005(F)
Lead	2	Basic dynamic load rating	1950N	
Thread direction	Right-hand	Basic static load rating	2600N	
Number of circuits	2.5 turn 1 circuit	Spacer ball	None	
Ball diameter	1.5875	Lubricant	Alvania Grease S2	

Screw shaft diameter ø8, Lead 4

4-3.4 drilled hole, 6.5 spot facing depth 3.3



- Standard length shaft without end machining
GE0804DS-BAFR-□□□□A
GG0804DS-BAFR-□□□□A
- With end machining specified on your drawing
GE0804DS-□AFR-□□□□X□□□□-C7M
GG0804DS-□AFR-□□□□X□□□□-C5□

Overall length Thread length

Model No.	Axial clearance	L ₁	L _t	X	Y	Z	Preload torque (N·cm)	Lead accuracy		Wiper	Mass (kg)
								±Ec	ec		
GE0804DS-BAFR-0215A	~0.030(M)	164	215	0.014	0.020	0.100	-	0.05/300	-		0.18
GE0804DS-BAFR-0340A		289	340								
*GG0804DS-BAFR-0215A	~0.005(F)	164	215	0.010	0.012	0.065	~0.5	0.023	0.018	wiper	0.18
*GG0804DS-BAFR-0340A		289	340								

- Support unit: BUK-8A (BUK-8F, BUK-6S) or BUM-8 is recommended.
- Product with axial clearance $\sim 0.005(F)$ shown in the table may be partially preloaded.
- Preload torque shown in the table is a value before greasing.
- The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.
- For asterisked *model with unfinished shaft ends equivalent to lead accuracy grade C3, consult KURODA.

Table of optional specifications for each model

Series	Additional machining of shaft end	Axial clearance adjustment (Note 2)	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
GE	o	x	o	o	o	o
GG	o	o	o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Before anticorrosive black coating is performed, the wiper is removed.

Note 2: For axial clearance adjustment for GG series, consult KURODA.

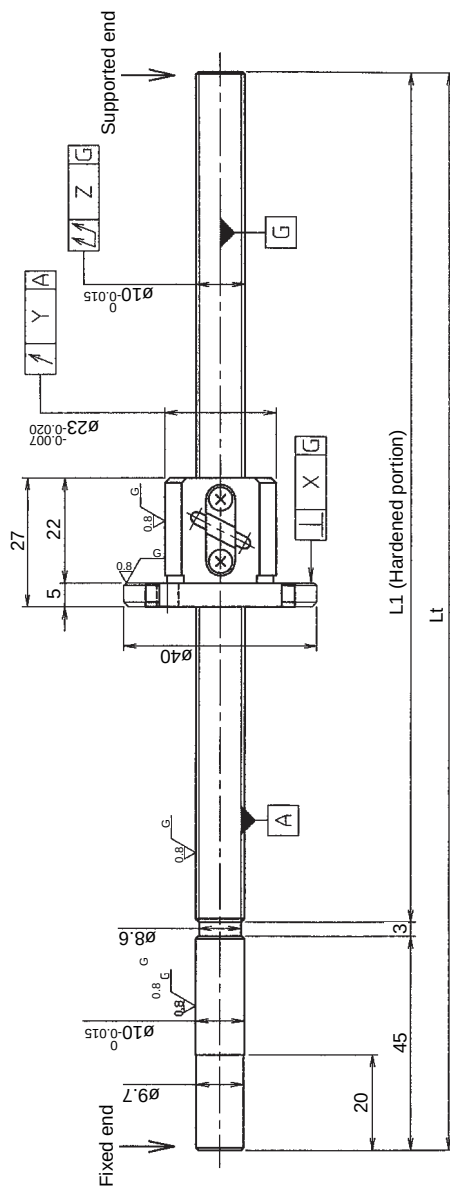
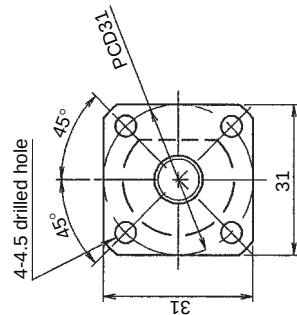
Ball screw specifications

Screw shaft diameter	8	Axial clearance	~ 0.030 (M) ~ 0.005 (F)
Lead	4	Basic dynamic load rating	2350N
Thread direction	Right-hand	Basic static load rating	3300N
Number of circuits	2.5 turn 1 circuit	Spacer ball	None
Ball diameter	2.000	Lubricant	Alvania Grease S2

UNFINISHED SHAFT ENDS

Screw shaft diameter $\varnothing 10$, Lead 2

(Unit: mm)



Notation of standard ground ball screw

- Standard length shaft without end machining
GE1002DS-EANR-□□□□A
GG1002DS-EANR-□□□□A
- With end machining specified on your drawing
GE1002DS-□ANR-□□□□X□□□□-C7M
GG1002DS-□ANR-□□□□X□□□□-C5□

Overall length Thread length

Table of optional specifications for each model

Series	Additional machining of shaft end	Axial clearance adjustment (Note 2)	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
GE	o	x	o	o	o	-
GG	o	o	o	o	o	-

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Note 2: For axial clearance adjustment for GG series, consult KUROMA.

Ball screw specifications

Screw shaft diameter	10	Axial clearance	~0.030(M) ~0.005(F)
Lead	2	Basic dynamic load rating	2250N
Thread direction	Right-hand	Basic static load rating	3300N
Number of circuits	2.5 turn 1 circuit	Spacer ball	None
Ball diameter	1.5875	Lubricant	Alvania Grease S2

• Support unit: BUK-8A (BUK-8F, BUK-6S) or BUM-8 is recommended.

Product with axial clearance $\sim 0.005(F)$ shown in the table may be partially preloaded.

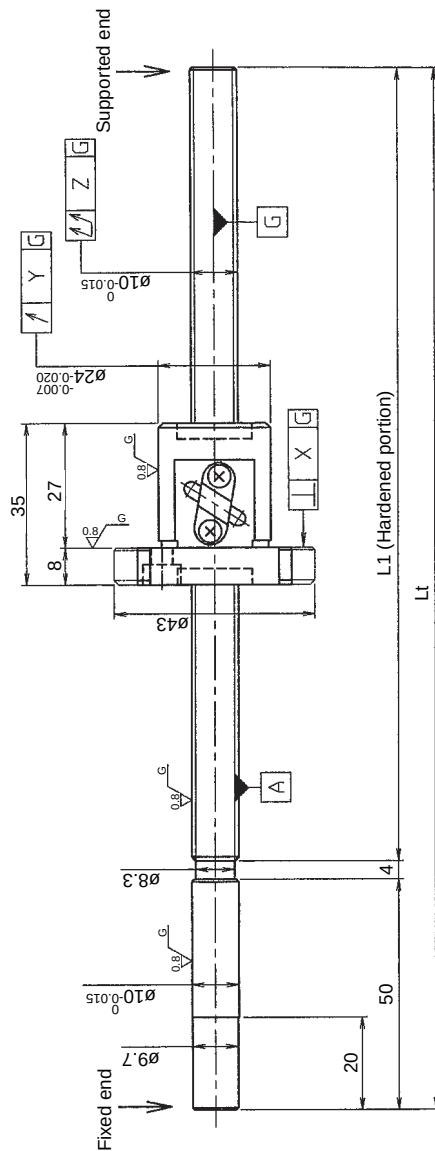
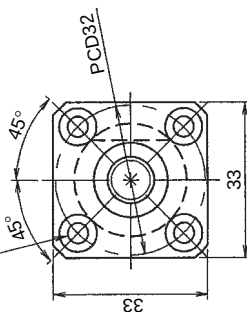
• Preload torque shown in the table is a value before greasing.

• The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.

· For asterisked *model with unfinished shaft ends equivalent to lead accuracy grade C3 consult KURODA.

Screw shaft diameter $\varnothing 10$, Lead 2.5

4-4.5 drilled hole, 8 spot facing depth 4.4



Overall length Thread length

For asterisked *model with unfinished shaft ends equivalent to lead accuracy grade C3, consult KURODA.

Ball screw specifications

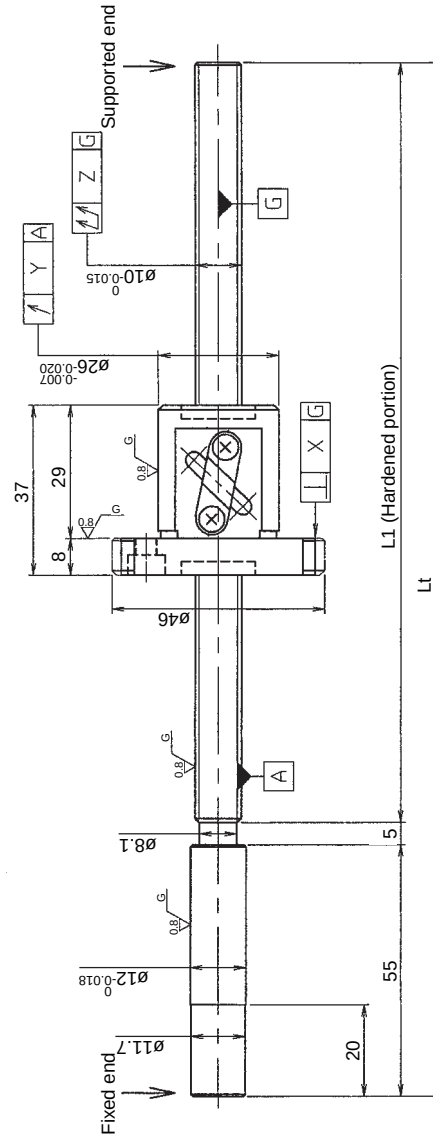
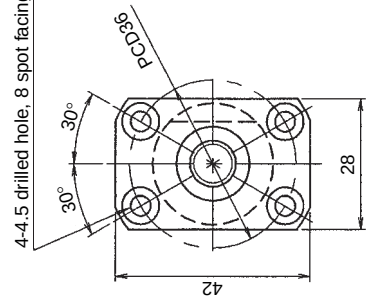
Screw shaft diameter	10	Axial clearance	~0.030(M) ~0.005(F)
Lead	2.5	Basic dynamic load rating	2700N
Thread direction	Right-hand	Basic static load rating	4200N
Number of circuits	2.5 turn 1 circuit	Spacer ball	None
Ball diameter	2.000	Lubricant	Alvania Grease S2

Note 2: For axial clearance adjustment for GG series, consult KURODA.

UNFINISHED SHAFT ENDS

Screw shaft diameter ø10, Lead 4

4-4.5 drilled hole, 8 spot facing depth 4.4



(Unit: mm)

Notation of standard ground ball screw

- Standard length shaft without end machining

GE1004DS-BAPR-□□□□A

GG1004DS-BAPR-□□□□A

- With end machining specified on your drawing

GE1004DS-□A□R-□□□□X□□□□-C7M

GG1004DS-□A□R-□□□□X□□□□-C5□

Overall length Thread length

Table of optional specifications for each model

Series	Additional machining of shaft end	Axial clearance adjustment (Note 2)	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
GE	o	x	o	o	o	o
GG	o	o	o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Note 2: For axial clearance adjustment for GG series, consult KURODA.

Model No.	Axial clearance	L ₁	L _t	X	Y	Z	Preload torque (N·cm)	Lead accuracy			Wiper	Mass (kg)
								±Ec	ec	e300		
GE1004DS-BAPR-0255A	~0.030(M)	195	255	0.014	0.020	0.080	-	0.05/300	-	Plastic wiper	0.30	
GE1004DS-BAPR-0385A		325	385			0.100					0.36	
GE1004DS-BAPR-0455A		395	455			0.120					0.39	
*GG1004DS-BAPR-0255A	~0.005(F)	195	255	0.010	0.012	0.055	~1.0	0.023	0.018	0.018	0.30	
*GG1004DS-BAPR-0385A		325	385			0.065		0.025	0.020		0.36	
*GG1004DS-BAPR-0455A		395	455			0.080					0.39	

- Support unit: BUK-8A (BUK-8F, BUK-6S) or BUM-8 is recommended.

- Product with axial clearance ~0.005(F) shown in the table may be partially preloaded.

- Preload torque shown in the table is a value before greasing.

- The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.

- For asterisked *model with unfinished shaft ends equivalent to lead accuracy grade C3, consult KURODA.

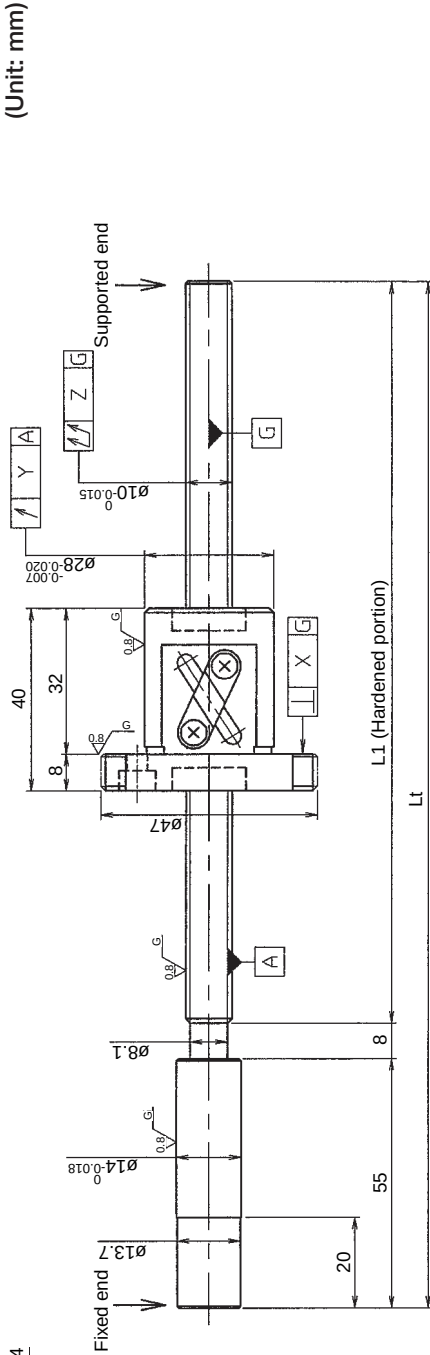
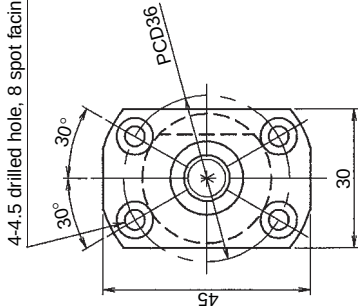
Ball screw specifications

Screw shaft diameter	10	Axial clearance	~0.030(M)	~0.005(F)
Lead	4	Basic dynamic load rating	3350N	
Thread direction	Right-hand	Basic static load rating	5900N	
Number of circuits	2.5 turn 1 circuit	Spacer ball	None	
Ball diameter	2.3812	Lubricant	Alvania Grease S2	

UNFINISHED SHAFT ENDS

Screw shaft diameter ø10, Lead 10

4-4.5 drilled hole, 8 spot facing depth 4.4



(Unit: mm)

Notation of standard ground ball screw

- Standard length shaft without end machining

GE1010AS-BAPR-□□□□A
GG1010AS-BAPR-□□□□A

- With end machining specified on your drawing

GE1010AS-□A□R-□□□□X□□□□-C7M
GG1010AS-□A□R-□□□□X□□□□-C5□

Overall length Thread length

Model No.	Axial clearance	L ₁	L _t	X	Y	Z	Preload torque (N·cm)	Lead accuracy	Wiper	Mass (kg)
GE1010AS-BAPR-0255A	~0.030(M)	192	255	0.014	0.020	0.120	-	0.05/300	-	0.38
GE1010AS-BAPR-0455A		392	455							
GE1010AS-BAPR-0655A		592	655							
*GG1010AS-BAPR-0255A	~0.005(F)	192	255	0.010	0.012	0.080	~1.0	0.023 0.018	Plastic wiper	0.61
*GG1010AS-BAPR-0455A		392	455							
GG1010AS-BAPR-0655A		592	655							

• Support unit: BUK-10A (BUK-10F, BUK-8S) or BUM-10 is recommended.

• Product with axial clearance ~0.005(F) shown in the table may be partially preloaded.

• Preload torque shown in the table is a value before greasing.

• The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.

• For asterisked *model with unfinished shaft ends equivalent to lead accuracy grade C3, consult KURODA.

Table of optional specifications for each model

Series	Additional machining of shaft end	Axial clearance adjustment (Note 2)	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
GE	o	x	o	o	o	o
GG	o	o	o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

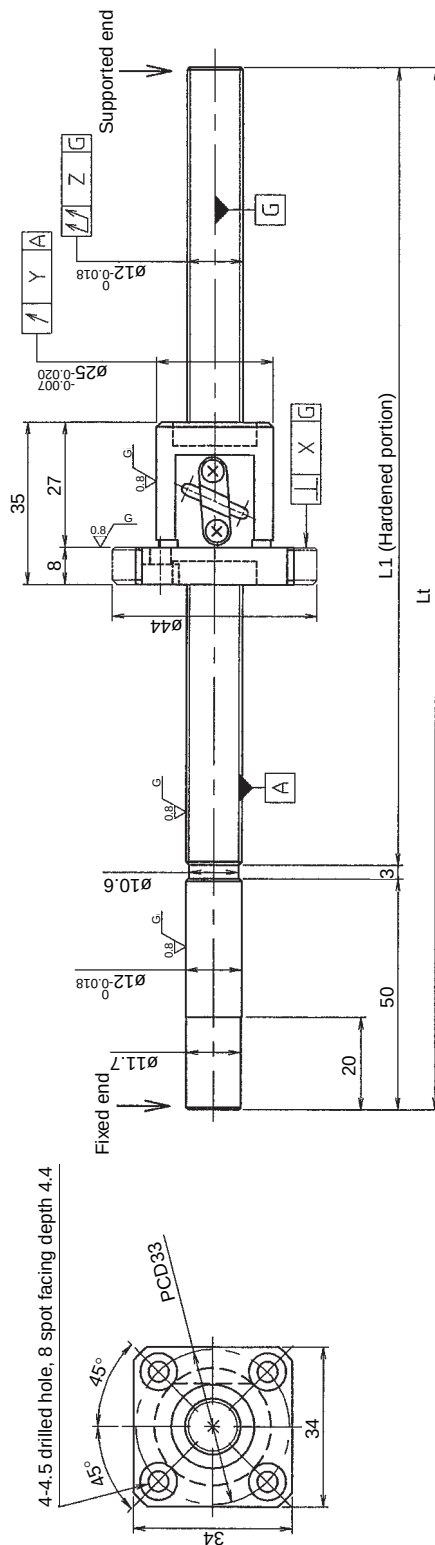
Note 2: For axial clearance adjustment for GG series, consult KURODA.

Ball screw specifications

Screw shaft diameter		10	Axial clearance		~0.030(M)	~0.005(F)
Lead		10	Basic dynamic load rating		2200N	
Thread direction		Right-hand	Basic static load rating		3500N	
Number of circuits		1.5 turn 1 circuit	Spacer ball		None	
Ball diameter		2.3812	Lubricant		Alvania Grease S2	

Screw shaft diameter $\varnothing 12$, Lead 2

(Unit: mm)



Notation of standard ground ball screw

- Standard length shaft without end machining
 GE1202DS-AAPR-□□□□A
 GG1202DS-AAPR-□□□□A
 • With end machining specified on your drawing
 GE1202DS-□A□R-□□□□X□□□□-C7M
 GG1202DS-□A□R-□□□□X□□□□-C5□
- Overall length Thread length
 |
 |

Model No.	Axial clearance		L ₁	L _t	X	Y	Z	Preload torque (N-cm)	Lead accuracy		Wiper	Mass (kg)
									±Ec	ec		
GE1202DS-AAPR-0300A	~0.030(M)		247	300	0.014	0.020	0.080	-	0.05/300	-		0.36
GE1202DS-AAPR-0455A			402	455			0.012					
*GG1202DS-AAPR-0300A	~0.005(F)		247	300	0.010	0.012	0.055	~1.0	0.023	0.018	Plastic wiper	0.36
*GG1202DS-AAPR-0455A			402	455			0.080		0.027	0.020		

Support unit: BUK-8A (BUK-8F, BUK-6S) or BUM-8 is recommended.
Product with axial clearance $\sim 0.005(F)$ shown in the table may be partially preloaded.
Preload torque shown in the table is a value before greasing.
The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.
For asterisked *model with unfinished shaft ends equivalent to lead accuracy grade C3, consult KURODA.

Table of optional specifications for each model

Series	Additional machining of shaft end	Axial clearance adjustment (Note 2)	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
GE	o	x	o	o	o	o
GG	o	o	o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

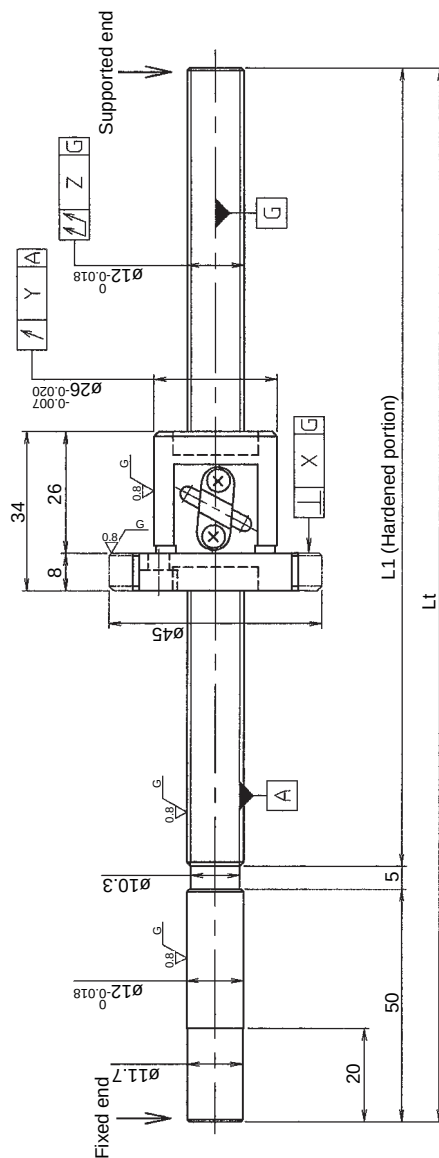
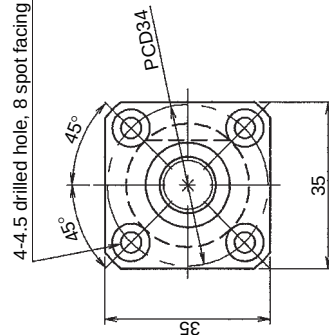
Note 2: For axial clearance adjustment for GG series, consult KURODA.

Ball screw specifications

Screw shaft diameter	12	Axial clearance	$\sim 0.030(\text{M})$	$\sim 0.005(\text{F})$
Lead	2	Basic dynamic load rating	2450N	
Thread direction	Right-hand	Basic static load rating	4100N	
Number of circuits	2.5 turn 1 circuit	Spacer ball	None	
Ball diameter	1.5875	Lubricant	Alvania Grease S2	

Screw shaft diameter $\varnothing 12$, Lead 2.5

4-4.5 drilled hole, 8 spot facing depth 4.4



Overall length Thread length

Overall length Thread length

· For asterisked *model with unfinished shaft ends equivalent to lead accuracy grade C3. consult KURODA.

Ball screw specifications

Series	Additional machining of shaft end	Axial clearance adjustment (Note 2)	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
GE	o	x	o	o	o	o
GG	o	o	o	o	o	o

Note 2: For axial clearance adjustment for GG series, consult KURODA.

Screw shaft diameter	12	Axial clearance	~0.030(M) ~0.005(F)
Lead	2.5	Basic dynamic load rating	2950N
Thread direction	Right-hand	Basic static load rating	5100N
Number of circuits	2.5 turn 1 circuit	Spacer ball	None
Ball diameter	2.000	Lubricant	Alvania Grease S2

Screw shaft diameter ø12, Lead 4



- Standard length shaft without end machining

- Overall length Thread length

Support Unit: BUK-10A (BUK-10E BUK-8S) or BUM-10 is recommended.

- Table of optional specifications for each model

Ball screw specifications

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating

Note 2: For axial clearance adjustment for GG series, consult KURODA.

Screw shaft diameter ø12, Lead 5

Notation of standard ground ball screw

- Standard length shaft without end machining
GE1205DS-BALR-□□□□A
GG1205DS-BALR-□□□□A
- With end machining specified on your drawing
GE1205DS-□A R-□□□□X□□□-C7M
GG1205DS-□A R-□□□□X□□□-C5□

• Support unit: BUK-10A (BUK-10F, BUK-8S) or BUM-10 is recommended.

• Product with axial clearance $\sim 0.005(F)$ shown in the table may be partially preloaded.

• Preload torque shown in the table is a value before greasing.

- The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.

· For asterisked *model with unfinished shaft ends equivalent to lead accuracy grade C3. consult KURODA.

Ball screw specifications

Screw shaft diameter	12	Axial clearance	~0.030(M) ~0.005(F)
Lead	5	Basic dynamic load rating	5950N
Thread direction	Right-hand	Basic static load rating	9800N
Number of circuits	2.5 turn 1 circuit	Spacer ball	None
Ball diameter	3.175	Lubricant	Alvania Grease S2

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Note 2: For axial clearance adjustment for GG series, consult KURODA.

Screw shaft diameter $\varnothing 12$, Lead 10



- Standard length shaft without end machining

GG1210AS-BALR-□□□□A

GE1210AS-AR-X-C7M

Overall length Thread length

Support unit: BUK-10A (BUK-10E, BUK-8S) or BUM-10 is recommended.

- Product with axial clearance $\sim 0.005(F)$ shown in the table may be partially preloaded.
- Preload torque shown in the table is a value before greasing.
- The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.
- For asterisked *model with unfinished shaft ends equivalent to lead accuracy grade C3, consult KURODA.

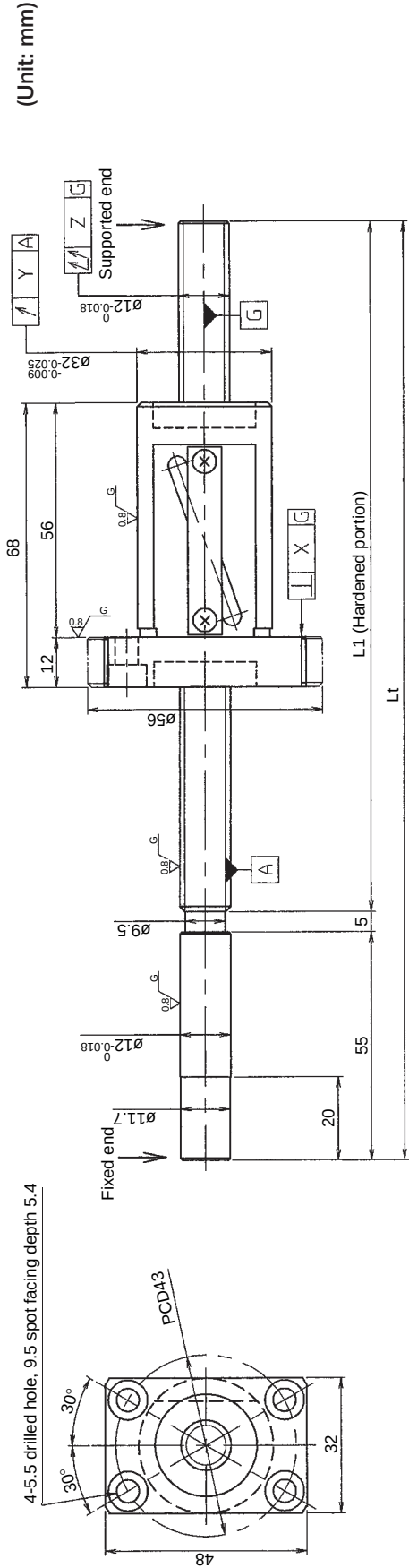
Ball screw specifications

Screw shaft diameter	12	Axial clearance	$\sim 0.030(\text{M})$	$\sim 0.005(\text{F})$
Lead	10	Basic dynamic load rating	3850N	
Thread direction	Right-hand	Basic static load rating	5900N	
Number of circuits	1.5 turn 1 circuit	Spacer ball	None	
Ball diameter	3.175	Lubricant	Alvania Grease S2	

Note 2: For axial clearance adjustment for GG series, consult KURODA.

UNFINISHED SHAFT ENDS

Screw shaft diameter ø12, Lead 20



Notation of standard ground ball screw

- Standard length shaft without end machining
GE1220AS-BALR-□□□□A
GG1220AS-BALR-□□□□A
- With end machining specified on your drawing
GE1220AS-□A□R-□□□□X□□□□-C7M
GG1220AS-□A□R-□□□□X□□□□-C5□

Overall length Thread length

Table of optional specifications for each model

Series	Additional machining of shaft end	Axial clearance adjustment (Note 2)	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
GE	o	x	o	o	o	o
GG	o	o	o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Note 2: For axial clearance adjustment for GG series, consult KURODA.

Ball screw specifications

Screw shaft diameter		12	Axial clearance		~0.030(M) ~0.005(F)
Lead		20	Basic dynamic load rating		3850N
Thread direction		Right-hand	Basic static load rating		5900N
Number of circuits		1.5 turn 1 circuit	Spacer ball		None
Ball diameter		3.175	Lubricant		Alvania Grease S2

Model No.	Axial clearance	L ₁	L _t	X	Y	Z	Preload torque (N·cm)	Lead accuracy		Wiper	Mass (kg)
								±Ec	ec		
GE1220AS-BALR-0405A	~0.030(M)	345	405	0.018	0.030	0.120	-	0.05/300	-	Lip seal	0.73
GE1220AS-BALR-0605A		545	605			0.150					0.90
GE1220AS-BALR-0900A		840	900			0.170					1.14
*GG1220AS-BALR-0405A	~0.005(F)	345	405	0.010	0.012	0.080	~2.5	0.025	0.020	0.018	0.73
*GG1220AS-BALR-0605A		545	605			0.090					0.90
GG1220AS-BALR-0900A		840	900			0.120					1.14

- Support unit: BUK-10A (BUK-10F, BUK-8S) or BUM-10 is recommended.
- Product with axial clearance ~0.005(F) shown in the table may be partially preloaded.
- Preload torque shown in the table is a value before greasing.
- The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.
- For asterisked *model with unfinished shaft ends equivalent to lead accuracy grade C3, consult KURODA.

Screw shaft diameter $\varnothing 15$, Lead 2



- Standard length shaft without end machining

- Overall length Thread length

• Support unit: BUK-12A (BUK-12F, BUK-10S) or BUM-12 is recommended.

- Product with axial clearance ~0.005(F) shown in the table may be partially preloaded.
Preload torque shown in the table is a value before greasing.
: The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.
For asterisked *model with unfinished shaft ends equivalent to lead accuracy grade C3, consult KURODA.

Ball screw specifications

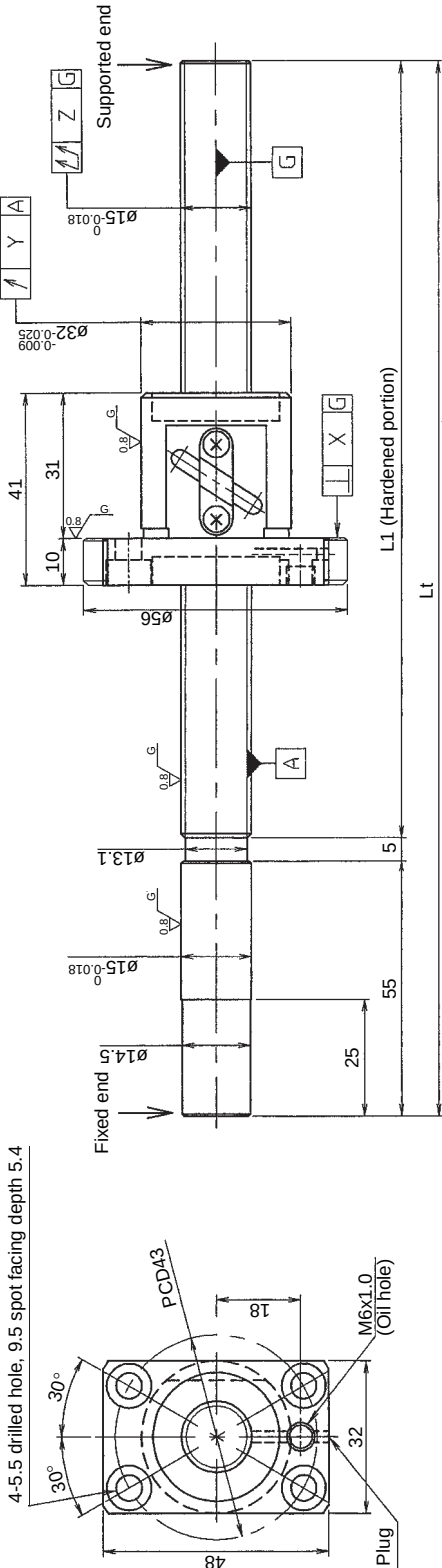
Screw shaft diameter	15	Axial clearance	$\sim 0.030(\text{M})$	$\sim 0.005(\text{F})$
Lead	2	Basic dynamic load rating	2700N	
Thread direction	Right-hand	Basic static load rating	5500N	
Number of circuits	2.5 turn 1 circuit	Spacer ball	None	
Ball diameter	1.5875	Lubricant	Alvania Grease S2	

Note 2: For axial clearance adjustment for GG series, consult KURODA.

UNFINISHED SHAFT ENDS

Screw shaft diameter $\phi 15$, Lead 4

(Unit: mm)



Notation of standard ground ball screw

- Standard length shaft without end machining
GE1504DS-BALR-□□□□A
GG1504DS-BALR-□□□□A
- With end machining specified on your drawing
GE1504DS-□A□R-□□□□X□□□□-C7M
GG1504DS-□A□R-□□□□X□□□□-C5□

Overall length Thread length

- Support unit: BUK-12A (BUK-12F, BUK-10S) or BUM-12 is recommended.
- Product with axial clearance $\sim 0.005(F)$ shown in the table may be partially preloaded.
- Preload torque shown in the table is a value before greasing.
- The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.
- For asterisked *model with unfinished shaft ends equivalent to lead accuracy grade C3, consult KURODA.

Table of optional specifications for each model

Series	Additional machining of shaft end	Axial clearance adjustment (Note 2)	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
GE	o	x	o	o	o	o
GG	o	o	o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Note 2: For axial clearance adjustment for GG series, consult KURODA.

Ball screw specifications

Screw shaft diameter		15	Axial clearance		$\sim 0.030(M)$	$\sim 0.005(F)$
Lead		4	Basic dynamic load rating		4100N	
Thread direction		Right-hand	Basic static load rating		8550N	
Number of circuits		2.5 turn 1 circuit	Spacer ball		None	
Ball diameter		2.3812	Lubricant		Alvania Grease S2	

Screw shaft diameter Ø15, Lead 5



- Standard length shaft without end machining

GG1505DS-BALR-□□□□A

GE1505DS-AR-X-C7M

Overall length Thread length

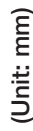
Ball screw specifications

Screw shaft diameter	15	Axial clearance	~ 0.030 (M) ~ 0.005 (F)
Lead	5	Basic dynamic load rating	6900N
Thread direction	Right-hand	Basic static load rating	12500N
Number of circuits	2.5 turn 1 circuit	Spacer ball	None
Ball diameter	3.175	Lubricant	Alvania Grease S2

Note 2: For axial clearance adjustment for GG series, consult KURODA.

· For asterisked *model with unfinished shaft ends equivalent to lead accuracy grade C3, consult KURODA.

Screw shaft diameter $\varnothing 15$, Lead 10



Overall length Thread length

- ### Table of optional specifications for each model

Series	Additional machining of shaft end	Axial clearance adjustment (Note 2)	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
GE	o	x	o	o	o	o
GG	o	o	o	o	o	o

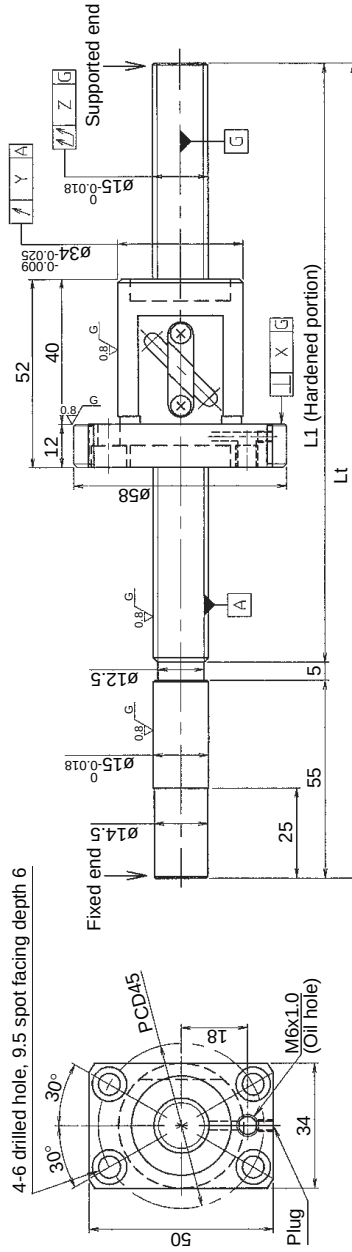
Note 2: For axial clearance adjustment for GG series, consult KURODA.

Screw shaft diameter	15	Axial clearance	~0.030(M) ~0.005(F)
Lead	10	Basic dynamic load rating	6900N
Thread direction	Right-hand	Basic static load rating	12500N
Number of circuits	2.5 turn 1 circuit	Spacer ball	None
Ball diameter	3.175	Lubricant	Alvania Grease S2

UNFINISHED SHAFT ENDS

Screw shaft diameter ø15, Lead 10

4-6 drilled hole, 9.5 spot facing depth 6



(Unit: mm)

Notation of standard ground ball screw

- Standard length shaft without end machining
GE1510AS-BALR-□□□□A
GG1510AS-BALR-□□□□A
- With end machining specified on your drawing
GE1510AS-□A□R-□□□□X□□□□-C7M
GG1510AS-□A□R-□□□□X□□□□-C5□

Overall length Thread length

Model No.	Axial clearance	L ₁	L _t	X	Y	Z	Preload torque (N·cm)	Lead accuracy	Wiper	Mass (kg)
GE1510AS-BALR-0600A		540	600			0.110		±Ec	e300	1.09
GE1510AS-BALR-0900A		840	900			0.170				1.47
GE1510AS-BALR-1100A	~0.030(M)	1040	1100	0.018	0.030	0.210	-	0.05/300	-	1.72
GE1510AS-BALR-1300A		1240	1300			0.270				1.97
GE1510AS-BALR-1500A		1440	1500						Lip seal	2.23
*GG1510AS-BALR-0600A		540	600			0.075		0.030	0.023	1.09
GG1510AS-BALR-0900A		840	900			0.120		0.040	0.027	1.47
GG1510AS-BALR-1100A	~0.005(F)	1040	1100	0.011	0.015	0.150	~3.0	0.046	0.030	1.72
GG1510AS-BALR-1300A		1240	1300					0.054	0.035	1.97
GG1510AS-BALR-1500A		1440	1500			0.190				2.23

• Support unit: BUK-12A (BUK-12F, BUK-10S) or BUM-12 is recommended.

• Product with axial clearance ~0.005(F) shown in the table may be partially preloaded.

• Preload torque shown in the table is a value before greasing.

• The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.

• For asterisked *model with unfinished shaft ends equivalent to lead accuracy grade C3, consult KURODA.

Table of optional specifications for each model

Series	Additional machining of shaft end	Axial clearance adjustment (Note 2)	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
GE	o	x	o	o	o	o
GG	o	o	o	o	o	o

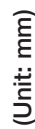
Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Note 2: For axial clearance adjustment for GG series, consult KURODA.

Ball screw specifications

Screw shaft diameter	Lead	Thread direction	Number of circuits	Ball diameter	Axial clearance	Basic dynamic load rating	Basic static load rating	Spacer ball	Lubricant
15	10	Right-hand	1.5 turn 1 circuit	3.175	~0.030(M)	4400N	7900N	None	Alvania Grease S2

Screw shaft diameter $\varnothing 15$, Lead 15



Overall length Thread length

· For asterisked *model with unfinished shaft ends equivalent to lead accuracy grade C3. consult KURODA.

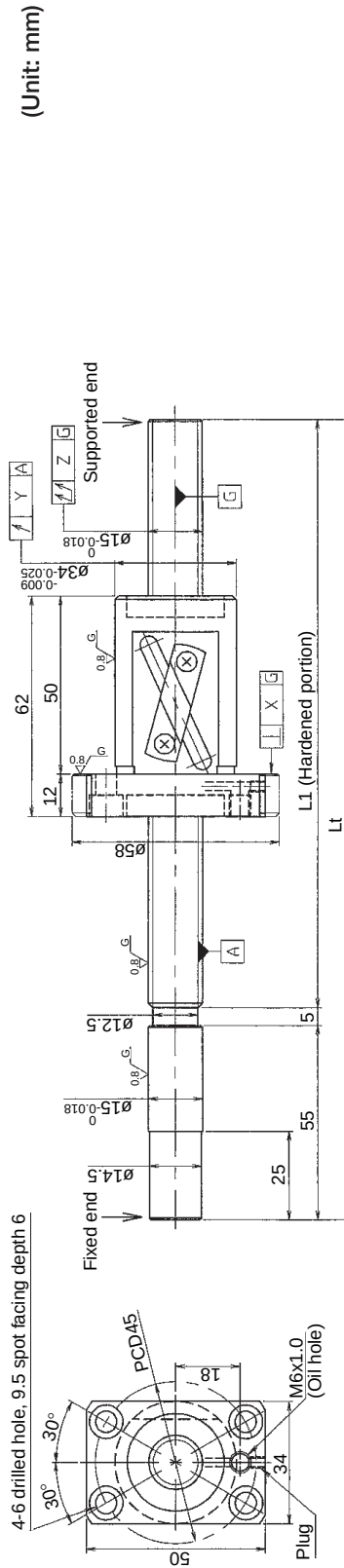
Ball screw specifications

Screw shaft diameter	15	Axial clearance	~0.030(M) ~0.005(F)
Lead	15	Basic dynamic load rating	4400N
Thread direction	Right-hand	Basic static load rating	7900N
Number of circuits	1.5 turn 1 circuit	Spacer ball	None
Ball diameter	3.175	Lubricant	Alvania Grease S2

Note 2: For axial clearance adjustment for GG series, consult KURODA.

UNFINISHED SHAFT ENDS

Screw shaft diameter ø15, Lead 20



(Unit: mm)

Notation of standard ground ball screw

- Standard length shaft without end machining
GE1520AS-BALR-□□□□A
- With end machining specified on your drawing
GE1520AS-□A□R-□□□□X□□□□-C7M
- Overall length Thread length
GG1520AS-□A□R-□□□□X□□□□-C5□

Overall length Thread length

Model No.	Axial clearance	L ₁	L _t	X	Y	Z	Preload torque (N·cm)	Lead accuracy	Wiper	Mass (kg)
GE1520AS-BALR-0600A		540	600			0.110		±Ec	e300	1.18
GE1520AS-BALR-0900A		840	900			0.170		ec		1.58
GE1520AS-BALR-1100A	~0.030(M)	1040	1100	0.018	0.030	0.210	-	0.05/300	-	1.85
GE1520AS-BALR-1300A		1240	1300			0.270				2.11
GE1520AS-BALR-1500A		1440	1500						Lip seal	2.38
*GG1520AS-BALR-0600A		540	600			0.075		0.030	0.023	1.18
GG1520AS-BALR-0900A		840	900			0.120		0.040	0.027	1.58
GG1520AS-BALR-1100A	~0.005(F)	1040	1100	0.011	0.015	0.150	~3.0	0.046	0.030	1.85
GG1520AS-BALR-1300A		1240	1300			0.190		0.054	0.035	2.11
GG1520AS-BALR-1500A		1440	1500							2.38

• Support unit: BUK-12A (BUK-12F, BUK-10S) or BUM-12 is recommended.

• Product with axial clearance ~0.005(F) shown in the table may be partially preloaded.

• Preload torque shown in the table is a value before greasing.

• The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.

• For asterisked *model with unfinished shaft ends equivalent to lead accuracy grade C3, consult KURODA.

Table of optional specifications for each model

Series	Additional machining of shaft end	Axial clearance adjustment (Note 2)	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
GE	o	x	o	o	o	o
GG	o	o	o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Note 2: For axial clearance adjustment for GG series, consult KURODA.

Ball screw specifications

Screw shaft diameter	Lead	Thread direction	Number of circuits	Ball diameter	Axial clearance	Basic dynamic load rating	Basic static load rating	Spacer ball	Lubricant
15	20	Right-hand	1.5 turn 1 circuit	3.175	~0.030(M)	4400N	7900N	None	Alvania Grease S2

Screw shaft diameter ø16, Lead 16



- Standard length shaft without end machining
GE1616AS-BTLR-□□□□A
GG1616AS-BTLR-□□□□A
- With end machining specified on your drawing
GE1616AS-□T□R-□□□□X□□□□-C7M
GG1616AS-□T□R-□□□□X□□□□-C5□

· For asterisked *model with unfinished shaft ends equivalent to lead accuracy grade C3 consult KURODA.

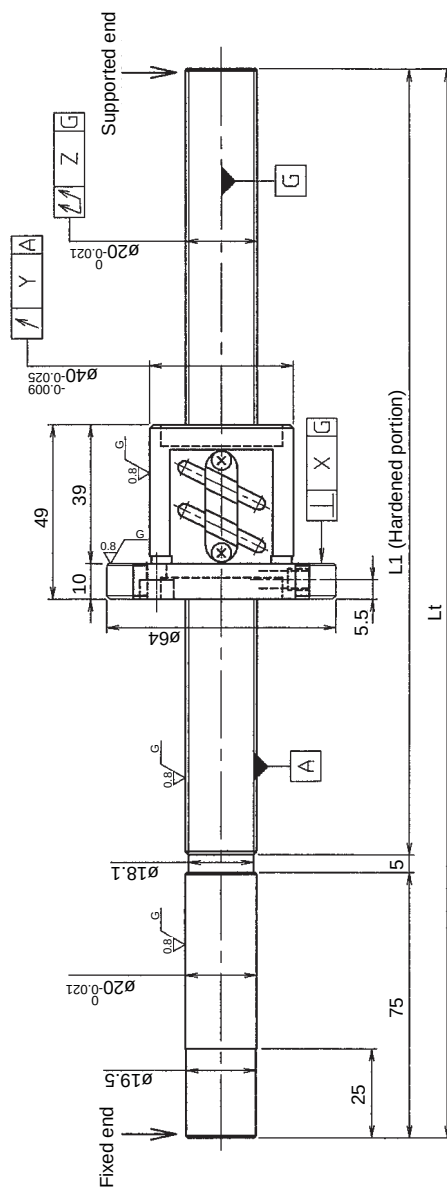
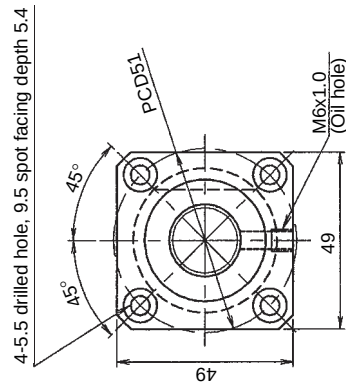
Ball screw specifications

Screw shaft diameter	16	Axial clearance	~ 0.030 (M) ~ 0.005 (F)
Lead	16	Basic dynamic load rating	4750N
Thread direction	Right-hand	Basic static load rating	8300N
Number of circuits	1.5 turn 1 circuit	Spacer ball	None
Ball diameter	3.175	Lubricant	Alvania Grease S2

Note 2: For axial clearance adjustment for GG series, consult KURODA.

UNFINISHED SHAFT ENDS

Screw shaft diameter $\varnothing 20$, Lead 4



(Unit: mm)

Notation of standard ground ball screw

- Standard length shaft without end machining
GE2004ES-AALR-□□□□A
GG2004ES-AALR-□□□□A
- With end machining specified on your drawing
GE2004ES-□A□R-□□□□X□□□□-C7M
GG2004ES-□A□R-□□□□X□□□□-C5□

Overall length Thread length

Table of optional specifications for each model

Series	Additional machining of shaft end	Axial clearance adjustment (Note 2)	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
GE	o	x	o	o	o	o
GG	o	o	o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Note 2: For axial clearance adjustment for GG series, consult KURODA.

Model No.	Axial clearance	L ₁	L _t	X	Y	Z	Preload torque (N·cm)	Lead accuracy	Wiper	Mass (kg)
								±Ec	ec	e300
GE2004ES-AALR-0605A	~0.030(M)	525	605	0.018	0.030	0.110	-	0.05/300	-	-
GE2004ES-AALR-1005A		925	1005			0.210				
*GG2004ES-AALR-0605A	~0.005(F)	525	605	0.011	0.015	0.075	~3.0	0.030	0.023	0.018
*GG2004ES-AALR-1005A		925	1005			0.150		0.040	0.027	

- Support unit: BUK-15A (BUK-15F, BUK-15S) or BUM-15 is recommended.
- Product with axial clearance ~0.005(F) shown in the table may be partially preloaded.
- Preload torque shown in the table is a value before greasing.
- The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.
- For asterisked *model with unfinished shaft ends equivalent to lead accuracy grade C3, consult KURODA.

Ball screw specifications

Screw shaft diameter	20	Axial clearance	~ 0.030 (M)	~ 0.005 (F)
Lead	4	Basic dynamic load rating	8600N	
Thread direction	Right-hand	Basic static load rating	23400N	
Number of circuits	2.5 turn 2 circuit	Spacer ball	None	
Ball diameter	2.3812	Lubricant	Alvania Grease S2	

Screw shaft diameter $\varnothing 20$, Lead 5



- Standard length shaft without end machining
GE2005DS-BALR-□□□□A
GG2005DS-BALR-□□□□A
- With end machining specified on your drawing
GE2005DS-□□A R-□□□□X□□□-C7M
GG2005DS-□□A R-□□□□X□□□□-C5□

• For asterisked *model with unfinished shaft ends equivalent to lead accuracy grade C3, consult KURODA.

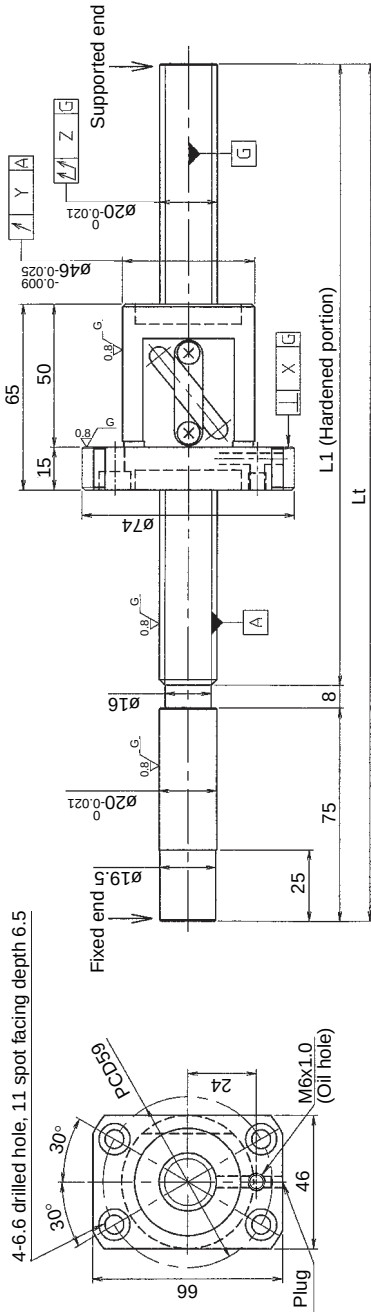
Ball screw specifications

Screw shaft diameter	20	Axial clearance	~0.030(M) ~0.005(F)
Lead	5	Basic dynamic load rating	8350N
Thread direction	Right-hand	Basic static load rating	17500N
Number of circuits	2.5 turn 1 circuit	Spacer ball	None
Ball diameter	3.175	Lubricant	Alvania Grease S2

Note 2: For axial clearance adjustment for GG series, consult KURODA.

UNFINISHED SHAFT ENDS

Screw shaft diameter ø20, Lead 10



(Unit: mm)

Notation of standard ground ball screw

- Standard length shaft without end machining
GE2010DS-BALR-□□□□A
- With end machining specified on your drawing
GE2010DS-BALR-□□□□X□□□□-C7M
- With end machining specified on your drawing
GG2010DS-BALR-□□□□X□□□□-C5□

Overall length Thread length

Table of optional specifications for each model

Series	Additional machining of shaft end	Axial clearance adjustment (Note 2)	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
GE	0	x	0	0	0	0
GG	0	0	0	0	0	0

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Note 2: For axial clearance adjustment for GG series, consult KURODA.

Model No.	Axial clearance	L ₁	L _t	X	Y	Z	Preload torque (N·cm)	Lead accuracy		Wiper	Mass (kg)						
								±Ec	ec								
GE2010DS-BALR-0605A	~0.030(M)	522	605	0.018	0.030	0.110	-	0.05/300	-	Lip seal	2.01						
GE2010DS-BALR-1005A		922	1005			0.210					2.84						
GE2010DS-BALR-1505A		1422	1505			0.270					3.87						
GE2010DS-BALR-1805A		1722	1805	0.011	0.015	0.075	~4.0	0.018	4.49								
*GG2010DS-BALR-0605A	~0.005(F)	522	605			0.150			2.01								
*GG2010DS-BALR-1005A		922	1005			0.190			2.84								
GG2010DS-BALR-1505A		1422	1505			0.030			0.023		0.040	0.027	0.054	0.035	0.065	0.040	3.87
GG2010DS-BALR-1805A		1722	1805			0.030			0.023		0.040	0.027	0.054	0.035	0.065	0.040	4.49

• Support unit: BUK-15A (BUK-15F, BUK-15S) or BUM-15 is recommended.

• Product with axial clearance ~0.005(F) shown in the table may be partially preloaded.

• Preload torque shown in the table is a value before greasing.

• The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.

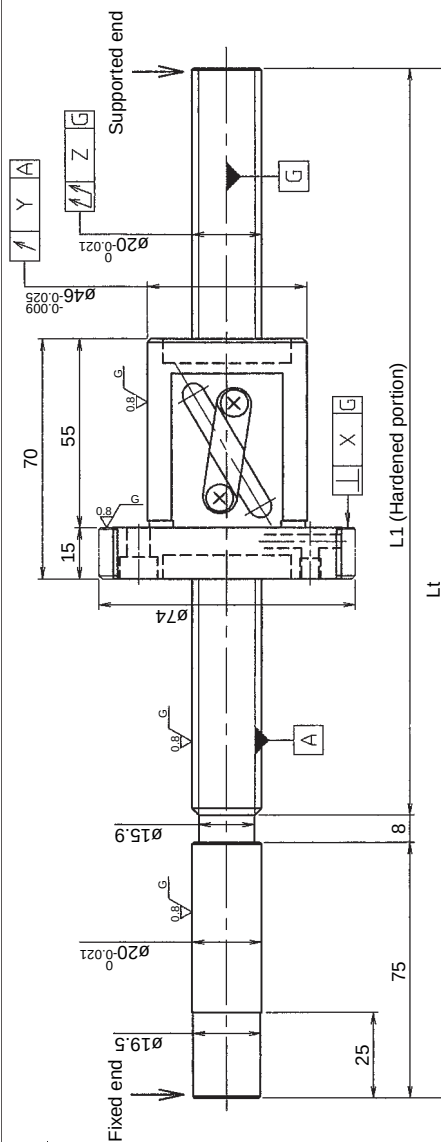
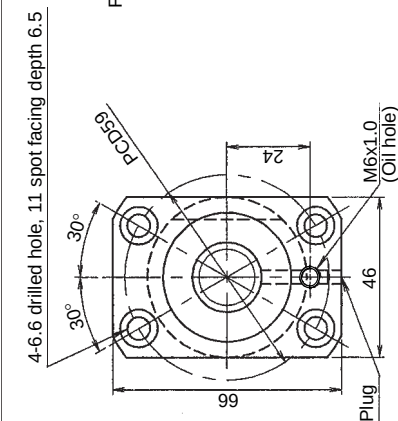
• For asterisked *model with unfinished shaft ends equivalent to lead accuracy grade C3, consult KURODA.

Ball screw specifications

Screw shaft diameter		20		Axial clearance		~0.030(M)		~0.005(F)	
Lead		10		Basic dynamic load rating		13500N		25100N	
Thread direction		Right-hand		Basic static load rating		25100N		None	
Number of circuits		2.5 turn 1 circuit		Spacer ball		None		Alvania Grease S2	
Ball diameter		4.7625		Lubricant		Alvania Grease S2			

UNFINISHED SHAFT ENDS

Screw shaft diameter ø20, Lead 20



(Unit: mm)

Notation of standard ground ball screw

- Standard length shaft without end machining
GE2020AS-BALR-□□□□A
GG2020AS-BALR-□□□□A
- With end machining specified on your drawing
GE2020AS-□A□R-□□□□X□□□-C7M
GG2020AS-□A□R-□□□□X□□□-C5□

Overall length Thread length

Model No.	Axial clearance	L ₁	L _t	X	Y	Z	Preload torque (N·cm)	Lead accuracy			Wiper	Mass (kg)
								±Ec	ec	e300		
GE2020AS-BALR-1005A	~0.030(M)	922	1005	0.018	0.030	0.210	-	0.05/300	-	-	3.08	
GE2020AS-BALR-1505A		1422	1505			0.270						
GE2020AS-BALR-1805A		1722	1805									
*GG2020AS-BALR-1005A	~0.005(F)	922	1005	0.011	0.015	0.150	~4.0	0.040	0.027	Lip seal	4.90	
GG2020AS-BALR-1505A		1422	1505			0.190						
GG2020AS-BALR-1805A		1722	1805									

- Support unit: BUK-15A (BUK-15F, BUK-15S) or BUM-15 is recommended.
- Product with axial clearance ~0.005(F) shown in the table may be partially preloaded.
- Preload torque shown in the table is a value before greasing.
- The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.
- For asterisked *model with unfinished shaft ends equivalent to lead accuracy grade C3, consult KURODA.

Table of optional specifications for each model

Series	Additional machining of shaft end	Axial clearance adjustment (Note 2)	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
GE	○	×	○	○	○	○
GG	○	○	○	○	○	○

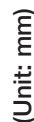
Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Note 2: For axial clearance adjustment for GG series, consult KURODA.

Ball screw specifications

Screw shaft diameter	20	Axial clearance	~0.030(M) ~0.005(F)
Lead	20	Basic dynamic load rating	9200N
Thread direction	Right-hand	Basic static load rating	16200N
Number of circuits	1.5 turn 1 circuit	Spacer ball	None
Ball diameter	4.7625	Lubricant	Alvania Grease S2

Screw shaft diameter ø25, Lead 5



- Standard length shaft without end machining

GE2505DS-AALR-□□□□A

GG2505DS-AALR-□□□□A

- With end machining specified on your drawing

GE2505DS-AR-X-C7MGG2505DS-AB-X-C5

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100

Overall length Thread length

- Support unit: BUK-20A (BUK-20F, BUK-20S) or BUM-20 is recommended.
- Product with axial clearance $\sim 0.005(F)$ shown in the table may be partially preloaded.
- Preload torque shown in the table is a value before greasing.
- The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.
- For asterisked *model with unfinished shaft ends equivalent to lead accuracy grade C3, consult KURODA.

Table of optional specifications for each model

Series	Additional machining of shaft end	Axial clearance adjustment (Note 2)	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
GE	o	x	o	o	o	o
GG	o	o	o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

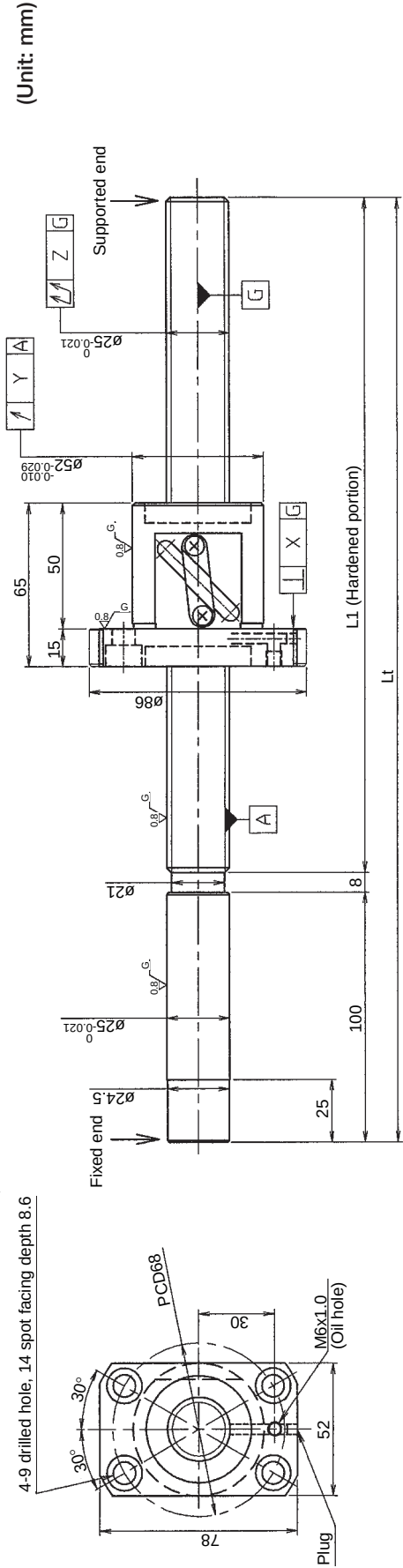
Note 2: For axial clearance adjustment for GG series, consult KURODA.

Ball screw specifications

Screw shaft diameter	25	Axial clearance	$\sim 0.030(\text{M})$	$\sim 0.005(\text{F})$
Lead	5	Basic dynamic load rating	9400N	
Thread direction	Right-hand	Basic static load rating	22200N	
Number of circuits	2.5 turn 1 circuit	Spacer ball	None	
Ball diameter	3.175	Lubricant	Alvania Grease S2	

UNFINISHED SHAFT ENDS

Screw shaft diameter ø25, Lead 10



Notation of standard ground ball screw

- Standard length shaft without end machining
GE2510DS-BALR-□□□□A
GG2510DS-BALR-□□□□A
- With end machining specified on your drawing
GE2510DS-□A□R-□□□□X□□□□-C7M
GG2510DS-□A□R-□□□□X□□□□-C5□

Overall length Thread length

Table of optional specifications for each model

Series	Additional machining of shaft end	Axial clearance adjustment (Note 2)	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
GE	o	x	o	o	o	o
GG	o	o	o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Note 2: For axial clearance adjustment for GG series, consult KURODA.

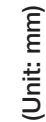
Ball screw specifications

Screw shaft diameter		25	Axial clearance		~0.030(M)	~0.005(F)
Lead		10	Basic dynamic load rating		16100N	
Thread direction		Right-hand	Basic static load rating		33400N	
Number of circuits		2.5 turn 1 circuit	Spacer ball		None	
Ball diameter		4.7625	Lubricant		Alvania Grease S2	

Model No.	Axial clearance	L ₁	L _t	X	Y	Z	Preload torque (N·cm)		Lead accuracy		Wiper	Mass (kg)
							±Ec	ec	±Ec	ec		
GE2510DS-BALR-1020A	~0.030(M)	912	1020	0.018	0.030	0.150	-	0.05/300	-	-	Lip seal	4.40
GE2510DS-BALR-1520A		1412	1520			0.190						6.08
GE2510DS-BALR-2220A		2112	2220			0.320						8.43
*GG2510DS-BALR-1020A	~0.005(F)	912	1020	0.013	0.019	0.100	~4.0	0.040	0.027	0.018	-	4.40
*GG2510DS-BALR-1520A		1412	1520			0.130						6.08
GG2510DS-BALR-2220A		2112	2220			0.170						8.43

- Support unit: BUK-20A (BUK-20F, BUK-20S) or BUM-20 is recommended.
- Product with axial clearance ~0.005(F) shown in the table may be partially preloaded.
- Preload torque shown in the table is a value before greasing.
- The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.
- For asterisked *model with unfinished shaft ends equivalent to lead accuracy grade C3, consult KURODA.

Screw shaft diameter ø25, Lead 20



- Standard length shaft without end machining

GG2520AS-BALR-□□□□A

GE2520AS-AR-X-C7M

Overall length Thread length

Overall length Thread length

Product with axial clearance $\sim 0.005(F)$ shown in the table may be partially preloaded.

The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.

For asterisked *model with unfinished shaft ends equivalent to lead accuracy grade C3, consult KURODA.

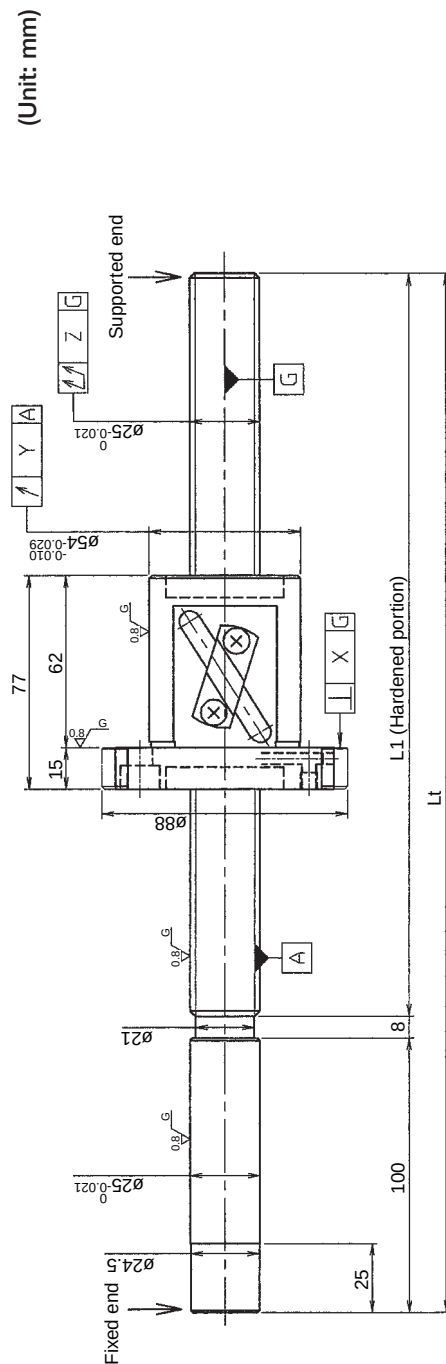
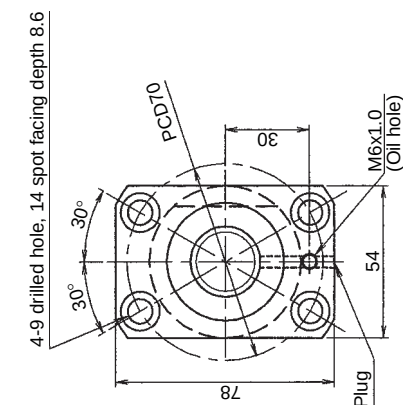
Ball screw specifications

Screw shaft diameter	25	Axial clearance	~0.030(N)	~0.005(F)
Lead	20	Basic dynamic load rating	10400N	
Thread direction	Right-hand	Basic static load rating	20100N	
Number of circuits	1.5 turn 1 circuit	Spacer ball	None	
Ball diameter	4.7625	Lubricant	Alvania Grease S2	

Note 2: For axial clearance adjustment for GG series, consult KUROMA.

UNFINISHED SHAFT ENDS

Screw shaft diameter $\varnothing 25$, Lead 25



Notation of standard ground ball screw

- Standard length shaft without end machining
GE2525AS-BALR-□□□□A
GG2525AS-BALR-□□□□A
- With end machining specified on your drawing
GE2525AS-□□A R-□□□□X□□□□-C7M
GG2525AS-□□A R-□□□□X□□□□-C5□

Overall length Thread length

Table of optional specifications for each model

Series	Additional machining of shaft end	Axial clearance adjustment (Note 2)	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
GE	o	x	o	o	o	o
GG	o	o	o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Note 2: For axial clearance adjustment for GG series, consult KURODA.

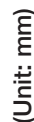
Ball screw specifications

Screw shaft diameter	25	Axial clearance	~0.030(M) ~0.005(F)
Lead	25	Basic dynamic load rating	10400N
Thread direction	Right-hand	Basic static load rating	20100N
Number of circuits	1.5 turn 1 circuit	Spacer ball	None
Ball diameter	4.7625	Lubricant	Alvania Grease S2

Model No.	Axial clearance	L ₁	L _t	X	Y	Z	Preload torque (N·cm)	Lead accuracy			Wiper	Mass (kg)			
								±Ec	ec	e300					
GE2525AS-BALR-1020A	~0.030(M)	912	1020	0.018	0.030	0.150	-	0.05/300	-	-	-	4.93			
GE2525AS-BALR-1520A		1412	1520			0.190						6.77			
GE2525AS-BALR-2020A		1912	2020			0.320						8.62			
*GG2525AS-BALR-1020A	~0.005(F)	912	1020	0.013	0.019	0.100	~4.0	0.040	0.027	Lip seal	-	4.93			
*GG2525AS-BALR-1520A		1412	1520			0.130						0.054	0.035	0.018	6.77
GG2525AS-BALR-2020A		1912	2020			0.170						0.077	0.046	0.018	8.62

- Support unit: BUK-20A (BUK-20F, BUK-20S) or BUM-20 is recommended.
- Product with axial clearance ~0.005(F) shown in the table may be partially preloaded.
- Preload torque shown in the table is a value before greasing.
- The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.
- For asterisked *model with unfinished shaft ends equivalent to lead accuracy grade C3, consult KURODA.

Screw shaft diameter $\varnothing 32$, Lead 5



- Standard length shaft without end machining

GG3205ES-DALR-□□□□A

GE3205ES-AR-X-C7M

Overall length Thread length

Ball screw specifications

Screw shaft diameter	32	Axial clearance	$\sim 0.030(\text{M})$	$\sim 0.005(\text{F})$
Lead	5	Basic dynamic load rating	19000N	
Thread direction	Right-hand	Basic static load rating	57200N	
Number of circuits	2.5 turn 2 circuit	Spacer ball	None	
Ball diameter	3.175	Lubricant	Alvania Grease S2	

Note 2: For axial clearance adjustment for GG series, consult KURODA.

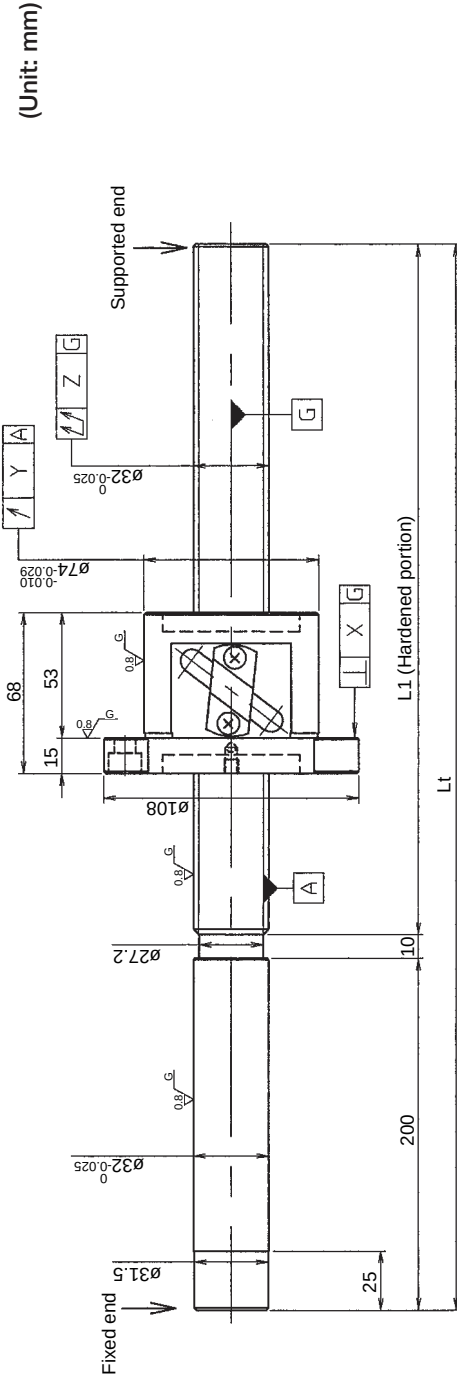
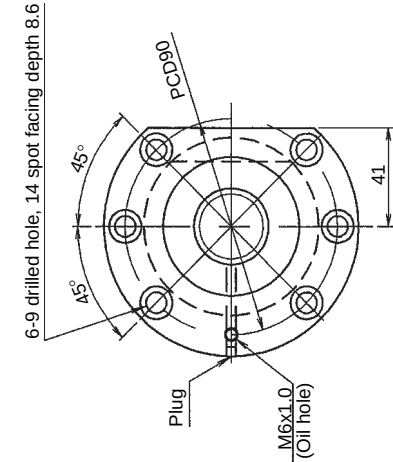
Product with axial clearance $\sim 0.005(F)$ shown in the table may be partially preloaded.

The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.

• For asterisked *model with unfinished shaft ends equivalent to lead accuracy grade C3, consult KURODA.

UNFINISHED SHAFT ENDS

Screw shaft diameter ø32, Lead 10



(Unit: mm)

Notation of standard ground ball screw

- Standard length shaft without end machining
GE3210DS-DALR-□□□□A
GG3210DS-DALR-□□□□A
- With end machining specified on your drawing
GE3210DS-□A□R-□□□□X□□□□-C7M
GG3210DS-□A□R-□□□□X□□□□-C5□

Overall length Thread length

Table of optional specifications for each model

Series	Additional machining of shaft end	Axial clearance adjustment (Note 2)	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
GE	o	x	o	o	o	o
GG	o	o	o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Note 2: For axial clearance adjustment for GG series, consult KURODA.

Ball screw specifications

Screw shaft diameter		32	Axial clearance		~0.030(M)	~0.005(F)
Lead		10	Basic dynamic load rating		25800N	
Thread direction		Right-hand	Basic static load rating		55600N	
Number of circuits		2.5 turn 1 circuit	Spacer ball		None	
Ball diameter		6.350	Lubricant		Alvania Grease S2	

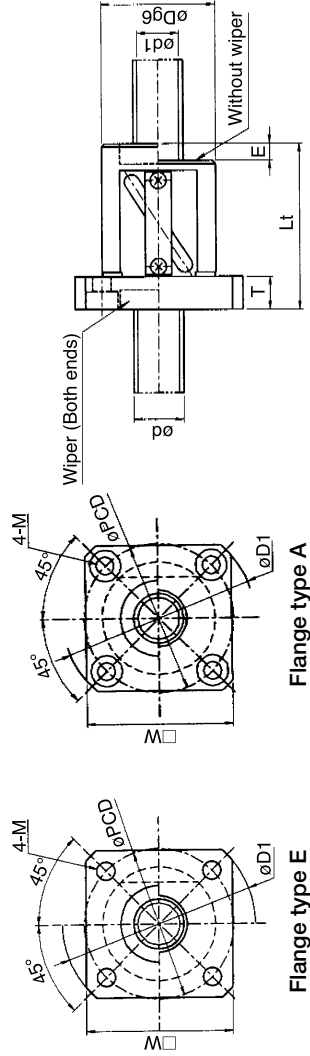
Model No.	Axial clearance	L ₁	L _t	X	Y	Z	Preload torque (N·cm)	Lead accuracy		Wiper	Mass (kg)
								±Ec	ec		
GE3210DS-DALR-1000A	~0.030(M)	790	1000	0.018	0.030	0.100	-	0.05/300	-	Lip seal	7.50
GE3210DS-DALR-1600A		1390	1600			0.140					10.59
GE3210DS-DALR-2000A		1790	2000			0.180					12.65
*GG3210DS-DALR-1000A	~0.005(F)	790	1000	0.013	0.019	0.085	~5.0	0.035	0.025	0.018	7.50
*GG3210DS-DALR-1600A		1390	1600			0.130					10.59
*GG3210DS-DALR-2000A		1790	2000			0.170					12.65

- Support unit: BUK-25A (BUK-25F, BUK-25S) or BUM-25 is recommended.
- Product with axial clearance ~0.005(F) shown in the table may be partially preloaded.
- Preload torque shown in the table is a value before greasing.
- The grease is contained inside of nut only at the time of delivery. When using it, apply lubricant where appropriate.
- For asterisked *model with unfinished shaft ends equivalent to lead accuracy grade C3, consult KURODA.

TUBE METHOD SINGLE NUT

Screw shaft diameter $\phi 5\text{--}\phi 8$

(Unit: mm)



Flange type A

Flange type E

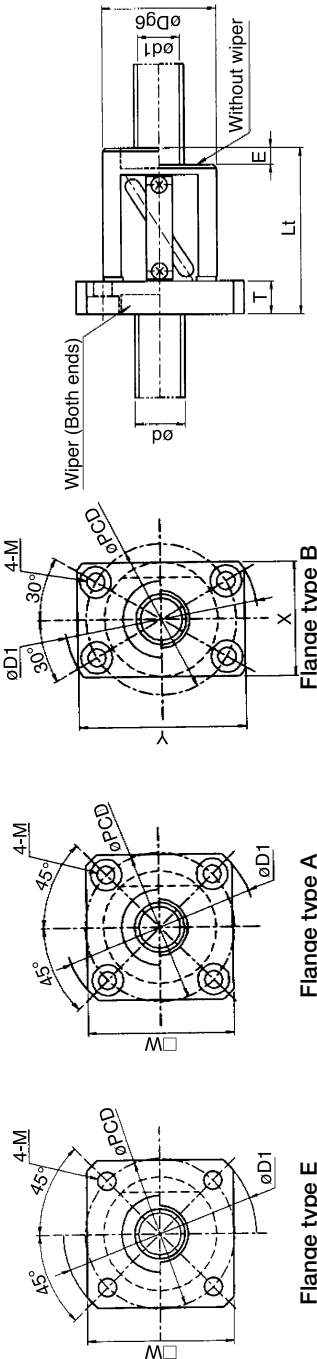
Model No.	Screw shaft diameter d	Lead L	Ball diameter D _b	Root diameter d ₁	Number of circuits Turn x Circuit	Basic dynamic load rating C (N)	Basic static load rating C ₀ (N)	Rigidity K _{NS} (N/μm)	Nut dimensions											Mass								
									Outer diameter D	Overall length L _t	Wiper material	Without wiper	Flange thickness T	Flange outer diameter D ₁	Flange type	Flange dimensions						Mounting hole						
																W	X	Y	A	B	G	Q	PCD	M				
																								Drill	Spot facing	Depth		
GR0501GS-EGNR	5	1	0.8000	4.3	3.5X1	600	1100	50	12	16	N	-	3	25	E	19	-	-	-	-	-	-	18	2.8	-	-	0.02	0.02
GR081FDS-AAFR	8	1.5	1.0000	7.1	2.5X1	850	1900	50	16	24	F	5	5	32	A	25	-	-	-	-	-	-	23	3.4	6.5	3.3	0.04	0.04
GR0802DS-AAFR	8	2	1.5875	6.6	2.5X1	1950	2600	60	20	30	F	3	5	36	A	28	-	-	-	-	-	-	27	3.4	6.5	3.3	0.07	0.04
GR082FDS-AAFR	8	2.5	2.0000	6.3	2.5X1	2350	3300	60	22	29	F	2	5	38	A	29	-	-	-	-	-	-	29	3.4	6.5	3.3	0.08	0.04
GR0803DS-AAFR	8	3	2.0000	6.3	2.5X1	2350	3300	60	22	30	F	3	5	38	A	29	-	-	-	-	-	-	29	3.4	6.5	3.3	0.09	0.04
GR0804DS-AAFR	8	4	2.0000	6.3	2.5X1	2350	3300	60	22	30	F	3	5	38	A	29	-	-	-	-	-	-	29	3.4	6.5	3.3	0.09	0.04
GR0806AS-AAFR	8	6	2.0000	6.3	1.5X1	1550	2000	40	22	29	F	3	5	38	A	29	-	-	-	-	-	-	29	3.4	6.5	3.3	0.08	0.04
GR0808AS-AAFR	8	8	2.0000	6.3	1.5X1	1550	2000	40	23	29	F	3	5	39	A	30	-	-	-	-	-	-	30	3.4	6.5	3.3	0.09	0.04

Note: · The rigidity indicated with the *mark in the above list represents the practical value based on the result of rigidity test. This value is calculated from the elastic displacement measured when the axial load equivalent to 30% of basic dynamic load rating (C) is applied between the screw thread and the balls.
· Wiper material F: Felt wiper N: Without wiper

TUBE METHOD SINGLE NUT

Screw shaft diameter Ø10, Ø12

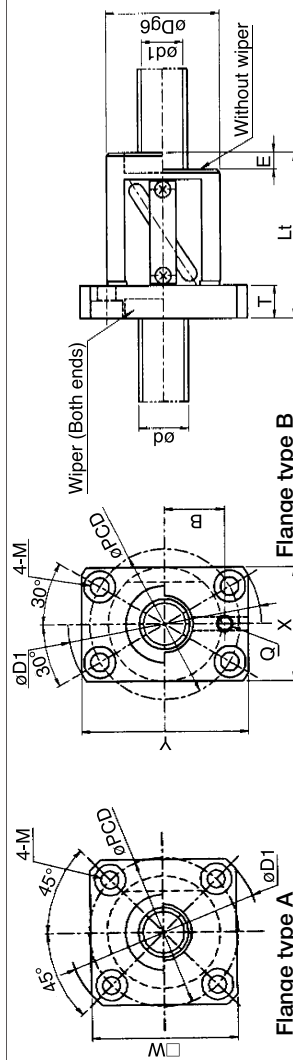
(Unit: mm)



Model No.	Screw shaft diameter	Lead	Ball diameter	Root diameter	Number of circuits	Basic dynamic load rating C (N)	Basic static load rating C ₀ (N)	* Rigidity K _{NS}	Nut dimensions										Mass									
									Outer diameter	Overall length	Wiper material	Without wiper	Flange thickness	Flange outer diameter	Flange type	Flange dimensions						Mounting hole			Nut (kg)	Screw shaft (kg/100mm)		
																D	L _i	E	T	D ₁	W	X	Y	A			B	G
GR1001JS-EDNR	10	1	0.8000	9.3	1X3	7150	1750	70	19	22	N	-	5	36	E	29	-	-	-	-	-	-	27	4.5	-	-	0.05	0.06
GR101FDS-EAFR	10	1.5	1.0000	9.1	2.5X1	850	2300	60	19	24	F	5	5	36	E	29	-	-	-	-	-	-	27	4.5	-	-	0.06	0.06
GR1002DS-EAFR	10	2	1.5875	8.6	2.5X1	2250	3300	70	23	30	F	3	5	40	E	31	-	-	-	-	-	-	31	4.5	-	-	0.09	0.06
GR102FDS-AAFR	10	2.5	2.0000	8.3	2.5X1	2700	4200	70	24	35	F	5	8	43	A	33	-	-	-	-	-	-	32	4.5	8	4.4	0.13	0.06
GR1003DS-AAPR	10	3	2.0000	8.3	2.5X1	2700	4200	70	24	36	P	6	8	43	A	33	-	-	-	-	-	-	32	4.5	8	4.4	0.13	0.06
GR1004DS-AAPR	10	4	2.3812	8.1	2.5X1	3350	5900	75	26	37	P	3	8	45	A	35	-	-	-	-	-	-	34	4.5	8	4.4	0.16	0.06
GR1004DS-BAPR	10	4	2.3812	8.1	2.5X1	3350	5900	75	26	37	P	3	8	46	B	-	28	42	-	-	-	-	36	4.5	8	4.4	0.15	0.06
GR1005DS-AAPR	10	5	2.3812	8.1	2.5X1	3350	5900	75	26	40	P	5	8	45	A	35	-	-	-	-	-	-	34	4.5	8	4.4	0.17	0.06
GR1005DS-BAPR	10	5	2.3812	8.1	2.5X1	3350	5900	75	26	40	P	5	8	46	B	-	28	42	-	-	-	-	36	4.5	8	4.4	0.16	0.06
GR1010AS-AAPR	10	10	2.3812	8.1	1.5X1	2200	3500	50	28	40	P	6	8	47	A	36	-	-	-	-	-	-	36	4.5	8	4.4	0.19	0.06
GR1010AS-BAPR	10	10	2.3812	8.1	1.5X1	2200	3500	50	28	40	P	6	8	47	B	-	30	45	-	-	-	-	36	4.5	8	4.4	0.20	0.06
GR1202DS-AAPR	12	2	1.5875	10.6	2.5X1	2450	4100	85	25	35	P	5	8	44	A	34	-	-	-	-	-	-	33	4.5	8	4.4	0.13	0.09
GR122FDS-AAPR	12	2.5	2.0000	10.3	2.5X1	2950	5100	85	26	34	P	4	8	45	A	35	-	-	-	-	-	-	34	4.5	8	4.4	0.14	0.09
GR1203DS-AAPR	12	3	2.0000	10.3	2.5X1	2950	5100	85	26	35	P	5	8	45	A	35	-	-	-	-	-	-	34	4.5	8	4.4	0.14	0.09
GR1204DS-AALR	12	4	2.3812	10.1	2.5X1	3600	6750	85	30	41	L	5	10	54	A	41	-	-	-	-	-	-	41	5.5	9.5	5.4	0.25	0.09
GR1205DS-AALR	12	5	3.1750	9.5	2.5X1	5950	9800	90	30	44	L	3	10	54	A	41	-	-	-	-	-	-	41	5.5	9.5	5.4	0.25	0.09
GR1205DS-BALR	12	5	3.1750	9.5	2.5X1	5950	9800	90	30	44	L	3	10	50	B	-	32	45	-	-	-	-	40	4.5	8	4.4	0.23	0.09
GR1206DS-AAPR	12	6	3.1750	9.5	2.5X1	5950	9800	90	30	45	P	3	10	54	A	41	-	-	-	-	-	-	41	5.5	9.5	5.4	0.25	0.09
GR1206DS-BAPR	12	6	3.1750	9.5	2.5X1	5950	9800	90	30	45	P	3	10	54	B	-	32	48	-	-	-	-	41	5.5	9.5	5.4	0.24	0.09
GR1210AS-AALR	12	10	3.1750	9.5	1.5X1	3850	5900	60	30	49	L	7	12	54	A	41	-	-	-	-	-	-	41	5.5	9.5	5.4	0.28	0.09
GR1210AS-BALR	12	10	3.1750	9.5	1.5X1	3850	5900	60	30	49	L	7	12	54	B	-	32	48	-	-	-	-	41	5.5	9.5	5.4	0.27	0.09
GR1220AS-AALR	12	20	3.1750	9.5	1.5X1	3850	5900	60	32	68	L	7	12	56	A	43	-	-	-	-	-	-	43	5.5	9.5	5.4	0.42	0.09
GR1220AS-BALR	12	20	3.1750	9.5	1.5X1	3850	5900	60	32	68	L	7	12	56	B	-	32	48	-	-	-	-	43	5.5	9.5	5.4	0.39	0.09

Note: - The rigidity indicated with the *mark in the above list represents the practical value based on the result of rigidity test. This value is calculated from the elastic displacement measured when the axial load equivalent to 30% of basic dynamic load rating (C) is applied between the screw thread and the balls.

(Unit: mm)



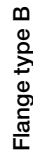
Model No.	Screw shaft diameter d	Lead	Ball diameter	Root diameter	Number of circuits	Basic dynamic load rating C(N)	Basic static load rating C ₀ (N)	Rigidity K _{NIS}	Nut dimensions												Mass										
									Outer diameter	Overall length	Wiper material	Without wiper thickness	Flange outer diameter	Flange dimensions						Mounting hole			Nut (kg)	Screw shaft (kg/100mm)							
														D	L _t	Wiper	E	T	D ₁	W	X	Y			A	B	G	Q	PCD	M	
																														Drill	Spot facing
GR1502DS-AAPR	15	2	1.5875	13.6	2.5X1	2700	5500	100	30	37	P	5	10	54	A	41	-	-	-	-	-	41	5.5	9.5	5.4	0.21	0.14				
GR1502DS-BAPR	15	2	1.5875	13.6	2.5X1	2700	5500	100	30	37	P	5	10	54	B	-	32	48	-	18	-	M6	41	5.5	9.5	5.4	0.20	0.14			
GR152FDS-AAPR	15	2.5	2.0000	13.3	2.5X1	3400	6500	100	30	36	P	4	10	54	A	41	-	-	-	-	-	41	5.5	9.5	5.4	0.21	0.14				
GR152FDS-BAPR	15	2.5	2.0000	13.3	2.5X1	3400	6500	100	30	36	P	4	10	54	B	-	32	48	-	-	-	41	5.5	9.5	5.4	0.20	0.14				
GR1503DS-AAPR	15	3	2.0000	13.3	2.5X1	3400	6500	100	30	37	P	5	10	54	A	41	-	-	-	-	-	41	5.5	9.5	5.4	0.21	0.14				
GR1503DS-BAPR	15	3	2.0000	13.3	2.5X1	3400	6500	100	30	37	P	5	10	54	B	-	32	48	-	-	-	41	5.5	9.5	5.4	0.20	0.14				
GR1504DS-AALR	15	4	2.3812	13.1	2.5X1	4100	8550	100	32	41	L	3	10	56	A	43	-	-	-	-	-	43	5.5	9.5	5.4	0.26	0.14				
GR1504DS-BALR	15	4	2.3812	13.1	2.5X1	4100	8550	100	32	41	L	3	10	56	B	-	32	48	-	18	-	M6	43	5.5	9.5	5.4	0.23	0.14			
GR1505DS-AALR	15	5	3.1750	12.5	2.5X1	6900	12500	110	34	44	L	3	10	58	A	44	-	-	-	-	-	45	5.5	9.5	5.4	0.29	0.14				
GR1505DS-BALR	15	5	3.1750	12.5	2.5X1	6900	12500	110	34	44	L	3	10	58	B	-	34	50	-	18	-	M6	45	5.5	9.5	5.4	0.28	0.14			
GR1506DS-AAPR	15	6	3.1750	12.5	2.5X1	6900	12500	110	34	45	P	3	10	58	A	44	-	-	-	-	-	45	5.5	9.5	5.4	0.30	0.14				
GR1506DS-BAPR	15	6	3.1750	12.5	2.5X1	6900	12500	110	34	45	P	3	10	58	B	-	34	50	-	-	-	45	5.5	9.5	5.4	0.28	0.14				
GR1508DS-AAFR	15	8	3.1750	12.5	2.5X1	6900	12500	110	34	52	F	7	12	58	A	44	-	-	-	-	-	45	5.5	9.5	5.4	0.35	0.14				
GR1508DS-BAFR	15	8	3.1750	12.5	2.5X1	6900	12500	110	34	52	F	7	12	58	B	-	34	50	-	-	-	45	5.5	9.5	5.4	0.33	0.14				
GR1510AS-AALR	15	10	3.1750	12.5	1.5X1	4400	7900	70	34	52	L	7	12	58	A	44	-	-	-	-	-	45	6	9.5	6	0.35	0.14				
GR1510AS-BALR	15	10	3.1750	12.5	1.5X1	4400	7900	70	34	52	L	7	12	58	B	-	34	50	-	18	-	M6	45	6	9.5	6	0.33	0.14			
GR1510DS-AALR	15	10	3.1750	12.5	2.5X1	6900	12500	110	34	52	L	5	12	58	A	44	-	-	-	-	-	45	5.5	9.5	5.4	0.35	0.14				
GR1510DS-BALR	15	10	3.1750	12.5	2.5X1	6900	12500	110	34	52	L	5	12	58	B	-	34	50	-	18	-	M6	45	5.5	9.5	5.4	0.33	0.14			
GR1515AS-AALR	15	15	3.1750	12.5	1.5X1	4400	7900	70	34	54	L	5	12	58	A	44	-	-	-	-	-	45	5.5	9.5	5.4	0.36	0.14				
GR1515AS-BALR	15	15	3.1750	12.5	1.5X1	4400	7900	70	34	54	L	5	12	58	B	-	34	50	-	18	-	M6	45	5.5	9.5	5.4	0.34	0.14			
GR1516AS-AAFR	15	16	3.1750	12.5	1.5X1	4400	7900	70	34	56	F	7	12	58	A	44	-	-	-	-	-	45	5.5	9.5	5.4	0.37	0.14				
GR1516AS-BAFR	15	16	3.1750	12.5	1.5X1	4400	7900	70	34	56	F	7	12	58	B	-	34	50	-	-	-	45	5.5	9.5	5.4	0.35	0.14				
GR1520AS-AALR	15	20	3.1750	12.5	1.5X1	4400	7900	70	34	62	L	7	12	58	A	44	-	-	-	-	-	45	6	9.5	6	0.40	0.14				
GR1520AS-BALR	15	20	3.1750	12.5	1.5X1	4400	7900	70	34	62	L	7	12	58	B	-	34	50	-	18	-	M6	45	6	9.5	6	0.38	0.14			
GR1525AS-AALR	15	25	3.1750	12.5	1.5X1	4400	7900	70	36	76	L	7	12	59	A	46	-	-	-	-	-	47	5.5	9.5	5.4	0.54	0.14				
GR1525AS-BALR	15	25	3.1750	12.5	1.5X1	4400	7900	70	36	76	L	7	12	59	B	-	36	53	-	-	-	47	5.5	9.5	5.4	0.52	0.14				

Note: - The rigidity indicated with the *mark in the above list represents the practical value based on the result of rigidity test. This value is calculated from the elastic displacement measured when the axial load equivalent to 30% of basic dynamic load rating (C) is applied between the screw thread and the balls.

TUBE METHOD SINGLE NUT

Screw shaft diameter Ø16

(Unit: mm)



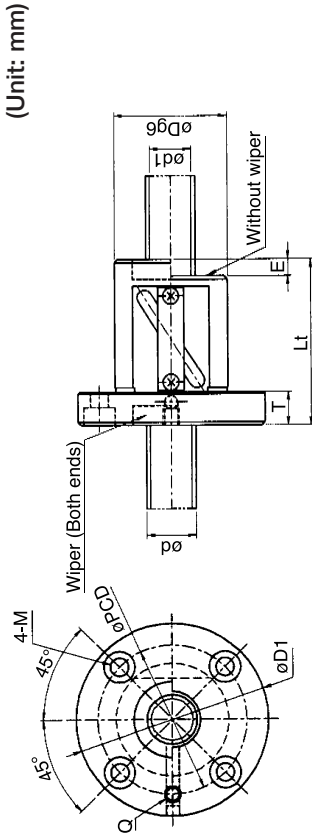
Flange type A

Model No.	Screw shaft diameter d	Lead	Ball diameter	Root diameter	Number of circuits	Turn x	Basic dynamic load rating C (N)	Basic static load rating C ₀ (N)	*Rigidity K _{NS}	Nut dimensions											Mass												
										Outer diameter	Overall length	Wiper material	Without wiper	Flange thickness	Flange outer diameter	Flange type	Flange dimensions						Mounting hole			Nut (kg)	Screw shaft (kg/100mm)						
																	D	L _t	E	T	D ₁	W	X	Y	A			B	G	Q	PCD	M	
																																Drill	Spot facing
GR1604DS-AAPR	16	4	2.3812	14.1	2.5X1	4200	9000	110	34	41	P	3	10	58	A	44	-	-	-	-	-	-	45	5.5	9.5	5.4	0.28	0.16					
GR1604DS-BAPR	16	4	2.3812	14.1	2.5X1	4200	9000	110	34	41	P	3	10	58	B	-	34	50	-	-	-	-	45	5.5	9.5	5.4	0.26	0.16					
GR1605DS-AALR	16	5	3.1750	13.5	2.5X1	7400	13900	110	36	44	L	3	10	59	A	46	-	-	-	-	-	-	47	5.5	9.5	5.4	0.33	0.16					
GR1605DS-BALR	16	5	3.1750	13.5	2.5X1	7400	13900	110	36	44	L	3	10	59	B	-	36	53	-	-	-	-	47	5.5	9.5	5.4	0.31	0.16					
GR1606DS-AAPR	16	6	3.1750	13.5	2.5X1	7400	13900	110	36	45	P	3	10	59	A	46	-	-	-	-	-	-	47	5.5	9.5	5.4	0.33	0.16					
GR1606DS-BAPR	16	6	3.1750	13.5	2.5X1	7400	13900	110	36	45	P	3	10	59	B	-	36	53	-	-	-	-	47	5.5	9.5	5.4	0.32	0.16					
GR1616AS-AALR	16	16	3.1750	13.5	1.5X1	4750	8300	80	36	54	L	3	12	59	A	46	-	-	-	-	-	-	47	5.5	9.5	5.4	0.40	0.16					
GR1616AS-BALR	16	16	3.1750	13.5	1.5X1	4750	8300	80	36	54	L	3	12	59	B	-	36	53	-	-	-	-	47	5.5	9.5	5.4	0.38	0.16					

Note: · The rigidity indicated with the *mark in the above list represents the practical value based on the result of rigidity test. This value is calculated from the elastic displacement measured when the axial load equivalent to 30% of basic dynamic load rating (C) is applied between the screw thread and the balls.

· Wiper material P: Plastic wiper L: Lip seal

Screw shaft diameter ø20



Flange type C

Flange type B

Model No.	Screw shaft diameter d	Lead	Ball diameter	Root diameter	Number of circuits	Basic dynamic load rating C (N)	Basic static load rating C ₀ (N)	Rigidity K _{NS} (N/μm)	Nut dimensions												Mass											
									Outer diameter	Overall length	Wiper material	Without wiper	Flange thickness	Flange outer diameter	Flange type	Flange dimensions						Mounting hole			Nut (kg)	Screw shaft (kg/100mm)						
																D	L _t	E	T	D ₁	W	X	Y	A			B	G	Q	PCD	M	
																															Drill	Spot facing
GR202FDS-AAPR	20	2.5	2.0000	18.3	2.5X1	3800	8800	130	38	36	P	4	10	62	A	47	-	-	5	-	-	M6	49	5.5	9.5	5.4	0.29	0.25				
GR202FDS-CAPR	20	2.5	2.0000	18.3	2.5X1	3800	8800	130	38	36	P	4	10	62	C	-	-	-	-	-	-	M6	49	5.5	9.5	5.4	0.35	0.25				
GR2004DS-AALR	20	4	2.3812	18.1	2.5X1	4700	11700	140	40	41	L	3	10	64	A	49	-	-	5.5	-	-	M6	51	5.5	9.5	5.4	0.36	0.25				
GR2004DS-CALR	20	4	2.3812	18.1	2.5X1	4700	11700	140	40	41	L	3	10	64	C	-	-	-	-	-	-	M6	51	5.5	9.5	5.4	0.42	0.25				
GR2004ES-AALR	20	4	2.3812	18.1	2.5X2	8600	23400	250	40	49	L	3	10	64	A	49	-	-	5.5	-	-	M6	51	5.5	9.5	5.4	0.41	0.25				
GR2004ES-CALR	20	4	2.3812	18.1	2.5X2	8600	23400	250	40	49	L	3	10	64	C	-	-	-	-	-	-	M6	51	5.5	9.5	5.4	0.47	0.25				
GR2005BS-AALR	20	5	3.1750	17.5	1.5X2	9800	21000	170	40	53	L	5	12	68	A	52	-	-	7	-	-	M6	53	6.6	11	6.5	0.47	0.25				
GR2005BS-CALR	20	5	3.1750	17.5	1.5X2	9800	21000	170	40	53	L	5	12	68	C	-	-	-	-	-	-	M6	53	6.6	11	6.5	0.55	0.25				
GR2005DS-BALR	20	5	3.1750	17.5	2.5X1	8350	17500	140	40	48	L	5	12	68	B	-	40	60	-	21	-	M6	53	6.6	11	6.5	0.41	0.25				
GR2005DS-CALR	20	5	3.1750	17.5	2.5X1	8350	17500	140	40	48	L	5	12	68	C	-	-	-	-	-	-	M6	53	6.6	11	6.5	0.52	0.25				
GR2005ES-AALR	20	5	3.1750	17.5	2.5X2	15150	35000	260	40	58	L	5	12	68	A	52	-	-	7	-	-	M6	53	6.6	11	6.5	0.50	0.25				
GR2005ES-CALR	20	5	3.1750	17.5	2.5X2	15150	35000	260	40	58	L	5	12	68	C	-	-	-	-	-	-	M6	53	6.6	11	6.5	0.58	0.25				
GR2006BS-AAPR	20	6	3.9888	16.6	1.5X2	12900	25600	170	44	61	P	5	12	72	A	55	-	-	7	-	-	M6	57	6.6	11	6.5	0.63	0.25				
GR2006BS-CAPR	20	6	3.9888	16.6	1.5X2	12900	25600	170	44	61	P	5	12	72	C	-	-	-	-	-	-	M6	57	6.6	11	6.5	0.73	0.25				
GR2006DS-AAPR	20	6	3.9888	16.6	2.5X1	11000	21300	140	44	49	P	5	12	72	A	55	-	-	7.5	-	-	M6	57	6.6	11	6.5	0.54	0.25				
GR2006DS-CAPR	20	6	3.9888	16.6	2.5X1	11000	21300	140	44	49	P	5	12	72	C	-	-	-	-	-	-	M6	57	6.6	11	6.5	0.63	0.25				
GR2008DS-AAPR	20	8	4.7625	16	2.5X1	13500	25100	140	46	63	P	5	15	74	A	56	-	-	10	-	-	M6	59	6.6	11	6.5	0.73	0.25				
GR2008DS-CAPR	20	8	4.7625	16	2.5X1	13500	25100	140	46	63	P	5	15	74	C	-	-	-	-	-	-	M6	59	6.6	11	6.5	0.87	0.25				

Note: The rigidity indicated with the *mark in the above list represents the practical value based on the result of rigidity test. This value is calculated from the elastic displacement measured when the axial load equivalent to 30% of basic dynamic load rating (C) is applied between the screw thread and the balls.

Screw shaft diameter $\varnothing 20$

The technical drawing illustrates a wiper seal assembly in three views:

- Side View (Top):** Shows the assembly with dimensions $\phi D1$ (inner diameter), $\phi Dg6$ (outer diameter), E (height), Lt (length), and T (thickness). It includes labels for "Without wiper" and "Wiper (Both ends)".
- Top View (Middle):** Shows the circular cross-section with dimensions $\phi D1$, $\phi Dg6$, B (width), X (offset), Q (radius), and Y (radius). It also indicates a $4-M$ thread and a 30° angle.
- Detail View (Bottom):** Shows a close-up of the wiper lip with dimensions $\phi D1$, $\phi Dg6$, Q , A , and W . It includes a $4-M$ thread and a 45° angle.

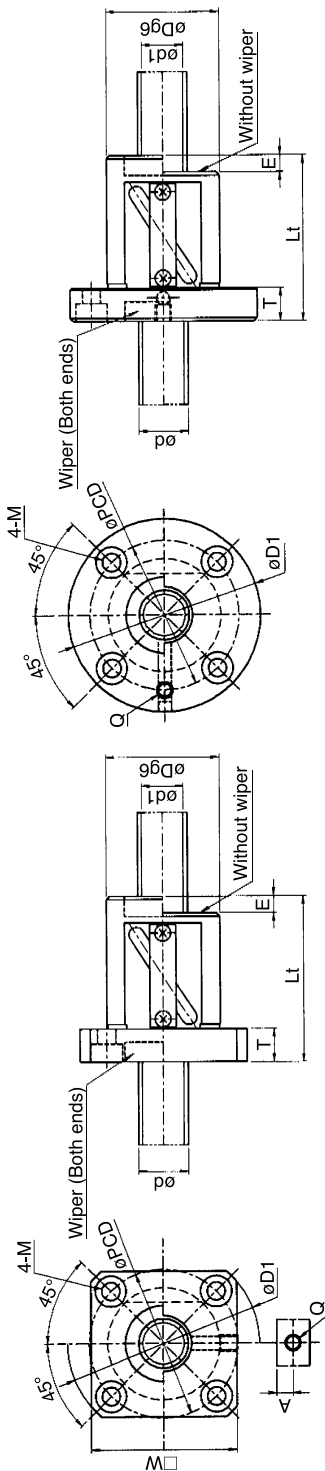
Flange type B

Model No.	Screw shaft diameter d	Lead L	Ball diameter d _b	Root diameter d _f	Number of circuits Turn x C (N)	Basic dynamic load rating C ₀ (N)	Basic static load rating C ₀ (N)	★ Rigidity K _{Ns}	Nut dimensions										Mass										
									Outer diameter D	Overall length L _t	Wiper material	Without wiper E	Flange thickness T	Flange outer diameter D ₁	Flange type	Flange dimensions						Mounting hole			Nut (kg)	Screw shaft (kg/100mm)			
																W	X	Y	A	B	G	Q	PCD	Drill			M Spot facing	Depth	
GR2010AS-AALR	20	10	4.7625	16	1.5X1	9200	16200	90	46	57	L	6	15	74	A	56	-	-	10	-	-	-	M6	59	6.6	11	6.5	0.68	0.25
GR2010AS-BALR	20	10	4.7625	16	1.5X1	9200	16200	90	46	57	L	6	15	74	B	-	46	66	-	24	-	-	M6	59	6.6	11	6.5	0.67	0.25
GR2010DS-AALR	20	10	4.7625	16	2.5X1	13500	25100	140	46	65	L	6	15	74	A	56	-	-	10	-	-	-	M6	59	6.6	11	6.5	0.75	0.25
GR2010DS-BALR	20	10	4.7625	16	2.5X1	13500	25100	140	46	65	L	6	15	74	B	-	46	66	-	24	-	-	M6	59	6.6	11	6.5	0.74	0.25
GR2020AS-AALR	20	20	4.7625	15.9	1.5X1	9200	16200	90	46	70	L	6	15	74	A	56	-	-	10	-	-	-	M6	59	6.6	11	6.5	0.79	0.25
GR2020AS-BALR	20	20	4.7625	15.9	1.5X1	9200	16200	90	46	70	L	6	15	74	B	-	46	66	-	24	-	-	M6	59	6.6	11	6.5	0.78	0.25
GR2025AS-AAPR	20	25	4.7625	16	1.5X1	9200	16200	90	46	77	P	6	15	74	A	56	-	-	10	-	-	-	M6	59	6.6	11	6.5	0.86	0.25
GR2025AS-BAPR	20	25	4.7625	16	1.5X1	9200	16200	90	46	77	P	6	15	74	B	-	46	66	-	24	-	-	M6	59	6.6	11	6.5	0.84	0.25
GR2032AS-AAPR	20	32	4.7625	16	1.5X1	9200	16200	90	46	96	P	8	15	74	A	56	-	-	10	-	-	-	M6	59	6.6	11	6.5	1.02	0.25
GR2032AS-BAPR	20	32	4.7625	16	1.5X1	9200	16200	90	46	96	P	8	15	74	B	-	46	66	-	24	-	-	M6	59	6.6	11	6.5	1.01	0.25

Note: · The rigidity indicated with the *mark in the above list represents the practical value based on the result of rigidity test. This value is calculated from the elastic displacement measured when the axial load equivalent to 30% of basic dynamic load rating (C) is applied between the screw thread and the balls.

· Wiper material P: Plastic wiper L: Lip seal

(Unit: mm)



Flange type C

Flange type A

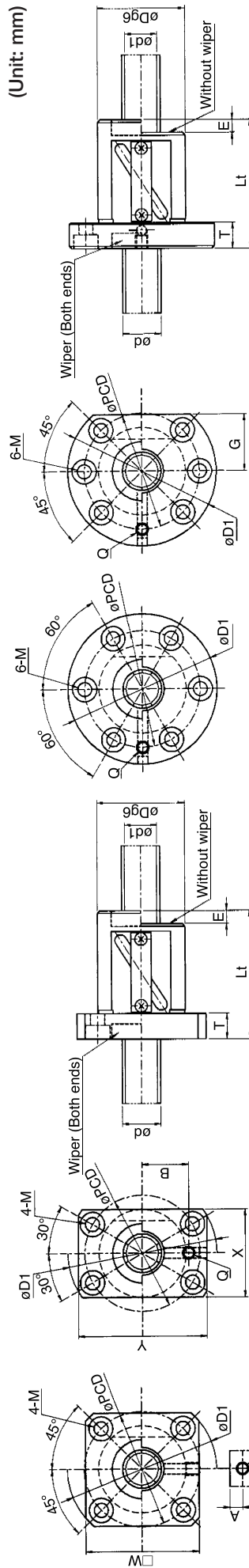
Model No.	Screw shaft diameter d	Lead	Ball diameter	Root diameter	Number of circuits	Basic dynamic load rating C (N)	Basic static load rating C ₀ (N)	Rigidity K _{NIS}	Outer diameter	Overall length	Wiper material	Without wiper	Flange thickness	Flange outer diameter	Nut dimensions										Mass			
															Flange type	Flange dimensions						Mounting hole				Nut (kg)	Screw shaft (kg/100mm)	
																W	X	Y	A	B	G	Q	PCD	M				
																								Drill	Spot facing			
GR2504DS-AAPR	25	4	2.3812	23.1	2.5X1	5200	14400	160	46	43	P	3	12	74	A	56	-	-	7.5	-	-	M6	59	6.6	11	6.5	0.49	0.38
GR2504DS-CAPR	25	4	2.3812	23.1	2.5X1	5200	14400	160	46	43	P	3	12	74	C	-	-	-	-	-	-	M6	59	6.6	11	6.5	0.60	0.38
GR2504ES-AAPR	25	4	2.3812	23.1	2.5X2	9400	28800	300	46	55	P	3	12	74	A	56	-	-	7	-	-	M6	59	6.6	11	6.5	0.59	0.38
GR2504ES-CAPR	25	4	2.3812	23.1	2.5X2	9400	28800	300	46	55	P	3	12	74	C	-	-	-	-	-	-	M6	59	6.6	11	6.5	0.69	0.38
GR2505BS-AALR	25	5	3.1750	22.5	1.5X2	11000	26600	210	47	53	L	5	12	74	A	57	-	-	7	-	-	M6	60	6.6	11	6.5	0.58	0.38
GR2505BS-CALR	25	5	3.1750	22.5	1.5X2	11000	26600	210	47	53	L	5	12	74	C	-	-	-	-	-	-	M6	60	6.6	11	6.5	0.68	0.38
GR2505DS-AALR	25	5	3.1750	22.5	2.5X1	9400	22200	170	47	48	L	5	12	74	A	57	-	-	7.5	-	-	M6	60	6.6	11	6.5	0.54	0.38
GR2505DS-CALR	25	5	3.1750	22.5	2.5X1	9400	22200	170	47	48	L	5	12	74	C	-	-	-	-	-	-	M6	60	6.6	11	6.5	0.64	0.38
GR2505ES-AALR	25	5	3.1750	22.5	2.5X2	17000	44400	320	47	58	L	5	12	74	A	57	-	-	7.5	-	-	M6	60	6.6	11	6.5	0.63	0.38
GR2505ES-CALR	25	5	3.1750	22.5	2.5X2	17000	44400	320	47	58	L	5	12	74	C	-	-	-	-	-	-	M6	60	6.6	11	6.5	0.72	0.38
GR2506BS-AALR	25	6	3.9688	21.6	1.5X2	14700	32400	210	50	61	L	5	12	78	A	59	-	-	7.5	-	-	M6	63	6.6	11	6.5	0.74	0.38
GR2506BS-CALR	25	6	3.9688	21.6	1.5X2	14700	32400	210	50	61	L	5	12	78	C	-	-	-	-	-	-	M6	63	6.6	11	6.5	0.86	0.38
GR2506DS-AALR	25	6	3.9688	21.6	2.5X1	12500	27000	180	50	49	L	5	12	78	A	59	-	-	7.5	-	-	M6	63	6.6	11	6.5	0.62	0.38
GR2506DS-CALR	25	6	3.9688	21.6	2.5X1	12500	27000	180	50	49	L	5	12	78	C	-	-	-	-	-	-	M6	63	6.6	11	6.5	0.75	0.38
GR2506ES-AALR	25	6	3.9688	21.6	2.5X2	22700	54000	330	50	67	L	5	12	78	A	59	-	-	7.5	-	-	M6	63	6.6	11	6.5	0.80	0.38
GR2506ES-CALR	25	6	3.9688	21.6	2.5X2	22700	54000	330	50	67	L	5	12	78	C	-	-	-	-	-	-	M6	63	6.6	11	6.5	0.92	0.38
GR2508DS-AAPR	25	8	4.7625	21	2.5X1	16100	33400	180	52	63	P	5	15	86	A	66	-	-	10	-	-	M6	68	9	14	8.6	0.94	0.38
GR2508DS-CAPR	25	8	4.7625	21	2.5X1	16100	33400	180	52	63	P	5	15	86	C	-	-	-	-	-	-	M6	68	9	14	8.6	1.11	0.38
GR2508GS-AAPR	25	8	4.7625	21	3.5X1	21400	48800	240	52	65	P	6	15	86	A	66	-	-	10	-	-	M6	68	9	14	8.6	0.96	0.38
GR2508GS-CAPR	25	8	4.7625	21	3.5X1	21400	48800	240	52	65	P	6	15	86	C	-	-	-	-	-	-	M6	68	9	14	8.6	1.13	0.38

Note: - The rigidity indicated with the *mark in the above list represents the practical value based on the result of rigidity test. This value is calculated from the elastic displacement measured when the axial load equivalent to 30% of basic dynamic load rating (C) is applied between the screw thread and the balls.

TUBE METHOD SINGLE NUT

Screw shaft diameter ø25, ø28

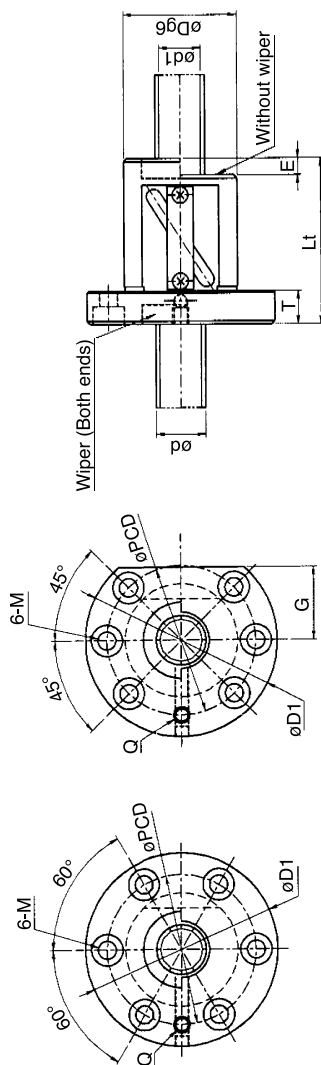
(Unit: mm)



Flange type A				Flange type B					Flange type C					Flange type D														
Model No.	Screw shaft diameter d	Lead diameter	Ball diameter	Root diameter	Number of circuits	Basic dynamic load rating C (N)	Basic static load rating C ₀ (N)	* Rigidity K _{NS}	Nut dimensions										Mass									
									Turn x	D _b	L	Overall length L _t	Wiper material	Without wiper thickness E	Flange thickness T	Flange outer diameter D _i	Flange dimensions					Mounting hole						
																	W	X		Y	A	B	G	Q	PCD	Drill	Spot facing M	Depth
GR2510DS-AALR	25	10	4.7625	21	2.5X1	16100	33400	180	52	65	L	5	15	86	A	66	-	-	10	-	-	M6	68	9	14	8.6	0.96	0.38
GR2510DS-BALR	25	10	4.7625	21	2.5X1	16100	33400	180	52	65	L	5	15	86	B	-	52	78	-	30	-	M6	68	9	14	8.6	0.92	0.38
GR2510GS-AALR	25	10	4.7625	21	3.5X1	21400	46800	240	52	75	L	5	15	86	A	66	-	-	10	-	-	M6	68	9	14	8.6	1.07	0.38
GR2510GS-BALR	25	10	4.7625	21	3.5X1	21400	46800	240	52	75	L	5	15	86	B	-	52	78	-	30	-	M6	68	9	14	8.6	1.03	0.38
GR2520AS-AALR	25	20	4.7625	21	1.5X1	10400	20100	110	52	70	L	8	15	86	A	66	-	-	10	-	-	M6	68	9	14	8.6	1.01	0.38
GR2520AS-BALR	25	20	4.7625	21	1.5X1	10400	20100	110	52	70	L	8	15	86	B	-	52	78	-	30	-	M6	68	9	14	8.6	0.98	0.38
GR2520DS-AALR	25	20	4.7625	21	2.5X1	16100	33400	180	52	90	L	8	15	86	A	66	-	-	10	-	-	M6	68	9	14	8.6	1.23	0.38
GR2520DS-BALR	25	20	4.7625	21	2.5X1	16100	33400	180	52	90	L	8	15	86	B	-	52	78	-	30	-	M6	68	9	14	8.6	1.19	0.38
GR2525AS-AALR	25	25	4.7625	21	1.5X1	10400	20100	110	54	77	L	7	15	88	A	67	-	-	10	-	-	M6	70	9	14	8.6	1.18	0.38
GR2525AS-BALR	25	25	4.7625	21	1.5X1	10400	20100	110	54	77	L	7	15	88	B	-	54	78	-	30	-	M6	70	9	14	8.6	1.15	0.38
GR2525DS-AALR	25	25	4.7625	21	2.5X1	16100	33400	180	54	102	L	7	15	88	A	67	-	-	10	-	-	M6	70	9	14	8.6	1.48	0.38
GR2525DS-BALR	25	25	4.7625	21	2.5X1	16100	33400	180	54	102	L	7	15	88	B	-	54	78	-	30	-	M6	70	9	14	8.6	1.45	0.38
GR2540AS-AAPR	25	40	4.7625	21	1.5X1	10400	20100	110	54	111	P	8	15	88	A	67	-	-	10	-	-	M6	70	9	14	8.6	1.59	0.38
GR2540AS-BAPR	25	40	4.7625	21	1.5X1	10400	20100	110	54	111	P	8	15	88	B	-	54	78	-	30	-	M6	70	9	14	8.6	1.56	0.38
GR2805DS-CAPR	28	5	3.1750	25.5	2.5X1	9800	24900	190	54	43	P	5	12	82	C	-	-	-	-	-	-	M6	67	6.6	11	6.5	0.78	0.48
GR2805DS-DAPR	28	5	3.1750	25.5	2.5X1	9800	24900	190	54	43	P	5	12	82	D	-	-	-	-	-	31	M6	67	6.6	11	6.5	0.74	0.48
GR2805ES-CAPR	28	5	3.1750	25.5	2.5X2	17900	49800	360	54	58	P	5	12	82	C	-	-	-	-	-	-	M6	67	6.6	11	6.5	0.95	0.48
GR2805ES-DAPR	28	5	3.1750	25.5	2.5X2	17900	49800	360	54	58	P	5	12	82	D	-	-	-	-	-	31	M6	67	6.6	11	6.5	0.92	0.48
GR2810DS-CAPR	28	10	4.7625	24	2.5X1	17000	37600	200	56	65	P	5	15	84	C	-	-	-	-	-	-	M6	69	6.6	11	6.5	1.15	0.48
GR2810DS-DAPR	28	10	4.7625	24	2.5X1	17000	37600	200	56	65	P	5	15	84	D	-	-	-	-	-	32	M6	69	6.6	11	6.5	1.11	0.48
GR2820DS-CAPR	28	20	4.7625	24	2.5X1	17000	37600	200	56	89	P	6	15	84	C	-	-	-	-	-	-	M6	69	6.6	11	6.5	1.45	0.48
GR2820DS-DAPR	28	20	4.7625	24	2.5X1	17000	37600	200	56	89	P	6	15	84	D	-	-	-	-	-	32	M6	69	6.6	11	6.5	1.40	0.48

Note: - The rigidity indicated with the *mark in the above list represents the practical value based on the result of rigidity test. This value is calculated from the elastic displacement measured when the axial load equivalent to 30% of basic dynamic load rating (C) is applied between the screw thread and the balls.

(Unit: mm)



Flange type D

Nut dimensions

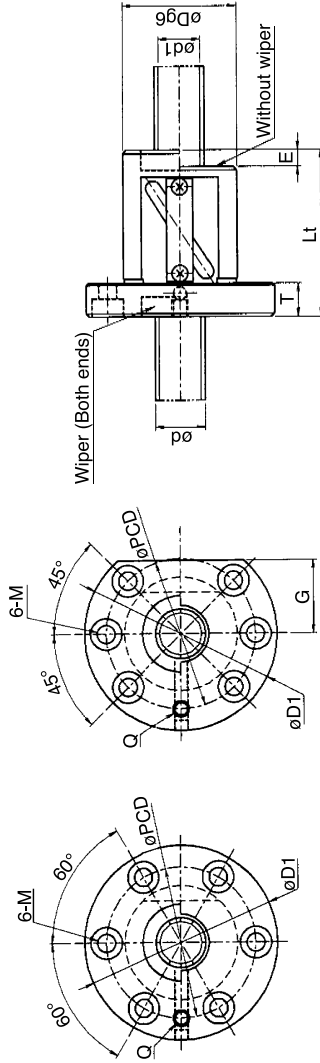
Model No.	Screw shaft diameter	Lead	Ball diameter	Root diameter	Number of circuits	Basic dynamic load rating C (N)	Basic static load rating C ₀ (N)	* Rigidity K _{NS} (N/μm)	Nut dimensions										Mass							
									Outer diameter	Overall length	Wiper material	Without wiper thickness	Flange outer diameter	Flange type	Flange dimensions						Mounting hole			Nut (kg)	Screw shaft (kg/100mm)	
															W	X	Y	A	B	G	Q	PCD	Drill			M
GR3204DS-CAPR	32	4	2.3812	30.1	2.5X1	5800	18900	200	54	43	P	3	12	81	C	-	-	-	-	M6	67	6.6	11	6.5	0.71	0.63
GR3204DS-DAPR	32	4	2.3812	30.1	2.5X1	5800	18900	200	54	43	P	3	12	81	D	-	-	-	-	M6	67	6.6	11	6.5	0.68	0.63
GR3204ES-CAPR	32	4	2.3812	30.1	2.5X2	10500	37800	370	54	51	P	3	12	81	C	-	-	-	-	M6	67	6.6	11	6.5	0.79	0.63
GR3204ES-DAPR	32	4	2.3812	30.1	2.5X2	10500	37800	370	54	51	P	3	12	81	D	-	-	-	-	M6	67	6.6	11	6.5	0.76	0.63
GR3205DS-CALR	32	5	3.1750	29.5	2.5X1	10500	28600	220	58	43	L	5	12	85	C	-	-	-	-	M6	71	6.6	11	6.5	0.83	0.63
GR3205DS-DALR	32	5	3.1750	29.5	2.5X1	10500	28600	220	58	43	L	5	12	85	D	-	-	-	-	M6	71	6.6	11	6.5	0.79	0.63
GR3205ES-CALR	32	5	3.1750	29.5	2.5X2	19000	57200	400	58	58	L	5	12	85	C	-	-	-	-	M6	71	6.6	11	6.5	1.02	0.63
GR3205ES-DALR	32	5	3.1750	29.5	2.5X2	19000	57200	400	58	58	L	5	12	85	D	-	-	-	-	M6	71	6.6	11	6.5	0.98	0.63
GR3205FS-CALR	32	5	3.1750	29.5	2.5X3	26900	85800	570	58	73	L	5	12	85	C	-	-	-	-	M6	71	6.6	11	6.5	1.21	0.63
GR3205FS-DALR	32	5	3.1750	29.5	2.5X3	26900	85800	570	58	73	L	5	12	85	D	-	-	-	-	M6	71	6.6	11	6.5	1.17	0.63
GR3206DS-CALR	32	6	3.9688	28.6	2.5X1	14400	35500	220	62	49	L	5	12	89	C	-	-	-	-	M6	75	6.6	11	6.5	1.05	0.63
GR3206DS-DALR	32	6	3.9688	28.6	2.5X1	14400	35500	220	62	49	L	5	12	89	D	-	-	-	-	M6	75	6.6	11	6.5	1.01	0.63
GR3206ES-CALR	32	6	3.9688	28.6	2.5X2	26000	71000	410	62	67	L	5	12	89	C	-	-	-	-	M6	75	6.6	11	6.5	1.32	0.63
GR3206ES-DALR	32	6	3.9688	28.6	2.5X2	26000	71000	410	62	67	L	5	12	89	D	-	-	-	-	M6	75	6.6	11	6.5	1.28	0.63
GR3208BS-CALR	32	8	4.7625	28	1.5X2	20900	50000	250	66	73	L	6	15	100	C	-	-	-	-	M6	82	9	14	8.6	1.83	0.63
GR3208BS-DALR	32	8	4.7625	28	1.5X2	20900	50000	250	66	73	L	6	15	100	D	-	-	-	-	M6	82	9	14	8.6	1.76	0.63
GR3208DS-CALR	32	8	4.7625	28	2.5X1	17800	41700	220	66	57	L	6	15	100	C	-	-	-	-	M6	82	9	14	8.6	1.54	0.63
GR3208DS-DALR	32	8	4.7625	28	2.5X1	17800	41700	220	66	57	L	6	15	100	D	-	-	-	-	M6	82	9	14	8.6	1.48	0.63
GR3208ES-CALR	32	8	4.7625	28	2.5X2	32300	83400	350	66	81	L	6	15	100	C	-	-	-	-	M6	82	9	14	8.6	1.97	0.63
GR3208ES-DALR	32	8	4.7625	28	2.5X2	32300	83400	350	66	81	L	6	15	100	D	-	-	-	-	M6	82	9	14	8.6	1.91	0.63

Note: - The rigidity indicated with the *mark in the above list represents the practical value based on the result of rigidity test. This value is calculated from the elastic displacement measured when the axial load equivalent to 30% of basic dynamic load rating (C) is applied between the screw thread and the balls.

TUBE METHOD SINGLE NUT

Screw shaft diameter ø32

(Unit: mm)



Flange type C

Flange type D

Model No.	Screw shaft diameter d	Lead L	Ball diameter D _b	Root diameter d ₁	Number of circuits Turn x Circuit	Basic dynamic load rating C (N)	Basic static load rating C ₀ (N)	* Rigidity K _{NS} (N/μm)	Nut dimensions											Mass									
									Outer diameter D	Overall length L _t	Wiper material	Without wiper E	Flange thickness T	Flange outer diameter D ₁	Flange type	Flange dimensions						Mounting hole							
																W	X	Y	A	B	G	Q	PCD	M					
																								Drill	Spot facing	Depth			
GR3210BS-CALR	32	10	6.3500	27.2	1.5X2	30300	66700	260	74	88	L	8	15	108	C	-	-	-	-	-	-	M6	90	9	14	8.6	8.6	2.65	0.63
GR3210BS-DALR	32	10	6.3500	27.2	1.5X2	30300	66700	260	74	88	L	8	15	108	D	-	-	-	-	-	-	M6	90	9	14	8.6	8.6	2.57	0.63
GR3210DS-CALR	32	10	6.3500	27.2	2.5X1	25800	55600	230	74	68	L	8	15	108	C	-	-	-	-	-	-	M6	90	9	14	8.6	8.6	2.17	0.63
GR3210DS-DALR	32	10	6.3500	27.2	2.5X1	25800	55600	230	74	68	L	8	15	108	D	-	-	-	-	-	-	M6	90	9	14	8.6	8.6	2.10	0.63
GR3210ES-CALR	32	10	6.3500	27.2	2.5X2	46900	111200	410	74	98	L	8	15	108	C	-	-	-	-	-	-	M6	90	9	14	8.6	8.6	2.88	0.63
GR3210ES-DALR	32	10	6.3500	27.2	2.5X2	46900	111200	410	74	98	L	8	15	108	D	-	-	-	-	-	-	M6	90	9	14	8.6	8.6	2.81	0.63
GR3212DS-CAPR	32	12	6.3500	27.2	2.5X1	25800	55600	240	74	81	P	8	18	108	C	-	-	-	-	-	-	M6	90	9	14	8.6	8.6	2.59	0.63
GR3212DS-DAPR	32	12	6.3500	27.2	2.5X1	25800	55600	240	74	81	P	8	18	108	D	-	-	-	-	-	-	M6	90	9	14	8.6	8.6	2.51	0.63
GR3212GS-CAPR	32	12	6.3500	27.2	3.5X1	34500	77800	330	74	93	P	8	18	108	C	-	-	-	-	-	-	M6	90	9	14	8.6	8.6	2.88	0.63
GR3212GS-DAPR	32	12	6.3500	27.2	3.5X1	34500	77800	330	74	93	P	8	18	108	D	-	-	-	-	-	-	M6	90	9	14	8.6	8.6	2.79	0.63
GR3220DS-CALR	32	20	6.3500	27.2	2.5X1	25800	55600	250	72	96	L	9	18	106	C	-	-	-	-	-	-	M6	88	9	14	8.6	8.6	2.76	0.63
GR3220DS-DALR	32	20	6.3500	27.2	2.5X1	25800	55600	250	72	96	L	9	18	106	D	-	-	-	-	-	-	M6	88	9	14	8.6	8.6	2.68	0.63
GR3232AS-CAPR	32	32	4.7625	28	1.5X1	11500	26300	150	64	95	P	9	18	98	C	-	-	-	-	-	-	M6	80	9	14	8.6	8.6	2.16	0.63
GR3232AS-DAPR	32	32	4.7625	28	1.5X1	11500	26300	150	64	95	P	9	18	98	D	-	-	-	-	-	-	M6	80	9	14	8.6	8.6	2.09	0.63
GR3232DS-CAPR	32	32	4.7625	28	2.5X1	17800	43900	230	64	127	P	9	18	98	C	-	-	-	-	-	-	M6	80	9	14	8.6	8.6	2.68	0.63
GR3232DS-DAPR	32	32	4.7625	28	2.5X1	17800	43900	230	64	127	P	9	18	98	D	-	-	-	-	-	-	M6	80	9	14	8.6	8.6	2.61	0.63

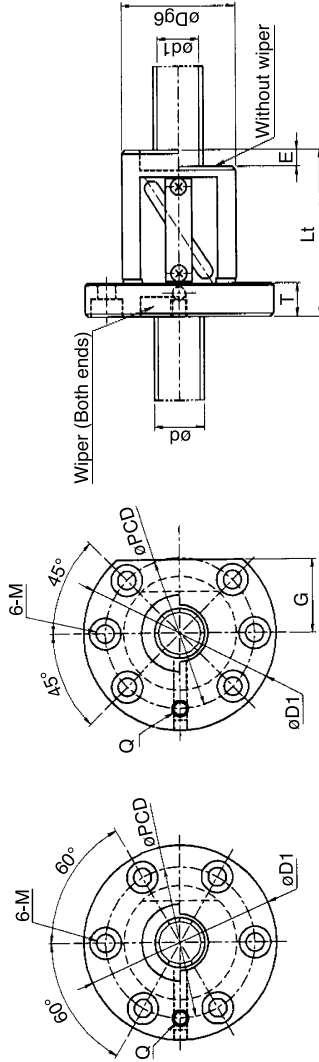
Note: · The rigidity indicated with the *mark in the above list represents the practical value based on the result of rigidity test. This value is calculated from the elastic displacement measured when the axial load equivalent to 30% of basic dynamic load rating (C) is applied between the screw thread and the balls.

· Wiper material P: Plastic wiper L: Lip seal

TUBE METHOD SINGLE NUT

Screw shaft diameter ø36

(Unit: mm)



Flange type C

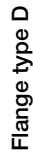
Flange type D

Model No.	Screw shaft diameter d	Lead	Ball diameter	Root diameter	Number of circuits	Basic dynamic load rating C (N)	Basic static load rating C ₀ (N)	Rigidity K _{NS} (N/μm)	Nut dimensions											Mass													
									Outer diameter	Overall length	Wiper material	Without wiper	Flange thickness	Flange outer diameter	Flange type	Flange dimensions						Mounting hole			Nut (kg)	Screw shaft (kg/100mm)							
																D	L _t	Wiper	E	T	D ₁	Q	G	B			A	Y	X	W	PCD	M	
																																Drill	Spot facing
GR3605DS-CAPR	36	5	3.1750	33.5	2.5X1	11000	32300	240	64	46	P	5	15	98	C	-	-	-	-	-	-	M6	80	9	14	8.6	1.21	0.79					
GR3605DS-DAPR	36	5	3.1750	33.5	2.5X1	11000	32300	240	64	46	P	5	15	98	D	-	-	-	-	-	-	M6	80	9	14	8.6	1.15	0.79					
GR3605ES-CAPR	36	5	3.1750	33.5	2.5X2	20100	64600	440	64	61	P	5	15	98	C	-	-	-	-	-	-	M6	80	9	14	8.6	1.44	0.79					
GR3605ES-DAPR	36	5	3.1750	33.5	2.5X2	20100	64600	440	64	61	P	5	15	98	D	-	-	-	-	-	-	M6	80	9	14	8.6	1.38	0.79					
GR3605FS-CAPR	36	5	3.1750	33.5	2.5X3	28300	96900	630	64	76	P	5	15	98	C	-	-	-	-	-	-	M6	80	9	14	8.6	1.67	0.79					
GR3605FS-DAPR	36	5	3.1750	33.5	2.5X3	28300	96900	630	64	76	P	5	15	98	D	-	-	-	-	-	-	M6	80	9	14	8.6	1.61	0.79					
GR3606DS-CAPR	36	6	3.9688	32.6	2.5X1	15100	39800	240	66	52	P	5	15	100	C	-	-	-	-	-	-	M6	82	9	14	8.6	1.37	0.79					
GR3606DS-DAPR	36	6	3.9688	32.6	2.5X1	15100	39800	240	66	52	P	5	15	100	D	-	-	-	-	-	-	M6	82	9	14	8.6	1.31	0.79					
GR3606ES-CAPR	36	6	3.9688	32.6	2.5X2	27200	79600	450	66	70	P	5	15	100	C	-	-	-	-	-	-	M6	82	9	14	8.6	1.67	0.79					
GR3606ES-DAPR	36	6	3.9688	32.6	2.5X2	27200	79600	450	66	70	P	5	15	100	D	-	-	-	-	-	-	M6	82	9	14	8.6	1.61	0.79					
GR3606FS-CAPR	36	6	3.9688	32.6	2.5X3	38500	119400	660	66	88	P	5	15	100	C	-	-	-	-	-	-	M6	82	9	14	8.6	1.97	0.79					
GR3606FS-DAPR	36	6	3.9688	32.6	2.5X3	38500	119400	660	66	88	P	5	15	100	D	-	-	-	-	-	-	M6	82	9	14	8.6	1.90	0.79					
GR3608DS-CAPR	36	8	4.7625	32	2.5X1	19200	47900	240	70	57	P	6	15	104	C	-	-	-	-	-	-	M6	86	9	14	8.6	1.64	0.79					
GR3608DS-DAPR	36	8	4.7625	32	2.5X1	19200	47900	240	70	57	P	6	15	104	D	-	-	-	-	-	-	M6	86	9	14	8.6	1.58	0.79					
GR3608ES-CAPR	36	8	4.7625	32	2.5X2	34700	95800	460	70	81	P	6	15	104	C	-	-	-	-	-	-	M6	86	9	14	8.6	2.11	0.79					
GR3608ES-DAPR	36	8	4.7625	32	2.5X2	34700	95800	460	70	81	P	6	15	104	D	-	-	-	-	-	-	M6	86	9	14	8.6	2.04	0.79					

Note: · The rigidity indicated with the *mark in the above list represents the practical value based on the result of rigidity test. This value is calculated from the elastic displacement measured when the axial load equivalent to 30% of basic dynamic load rating (C) is applied between the screw thread and the balls.
· Wiper material P: Plastic wiper

Screw shaft diameter ø36

(Unit: mm)



Flange type C

Model No.	Screw shaft diameter d	Lead	Ball diameter	Root diameter	Number of circuits	Basic dynamic load rating C (N)	Basic static load rating C ₀ (N)	* Rigidity K _{NIS} (N/μm)	Nut dimensions												Mass						
									Outer diameter	Overall length	Wiper material	Without wiper	Flange thickness	Flange outer diameter	Flange type	Flange dimensions						Mounting hole			Nut (kg)	Screw shaft (kg/100mm)	
																W	X	Y	A	B	G	Q	PCD	M			
																								Drill			Spot facing
GR3610DS-CALR	36	10	6.3500	31.2	2.5X1	27600	63000	240	76	68	L	8	15	110	C	-	-	-	-	-	M6	92	9	14	8.6	2.17	0.79
GR3610DS-DALR	36	10	6.3500	31.2	2.5X1	27600	63000	240	76	68	L	8	15	110	D	-	-	-	-	-	M6	92	9	14	8.6	2.10	0.79
GR3610ES-CALR	36	10	6.3500	31.2	2.5X2	50100	126000	460	76	98	L	8	15	110	C	-	-	-	-	-	M6	92	9	14	8.6	2.87	0.79
GR3610ES-DALR	36	10	6.3500	31.2	2.5X2	50100	126000	460	76	98	L	8	15	110	D	-	-	-	-	-	M6	92	9	14	8.6	2.80	0.79
GR3612DS-CAPR	36	12	7.1438	30.6	2.5X1	32800	69700	250	81	81	P	8	18	123	C	-	-	-	-	-	M6	101	11	17.5	10.8	3.18	0.79
GR3612DS-DAPR	36	12	7.1438	30.6	2.5X1	32800	69700	250	81	81	P	8	18	123	D	-	-	-	-	-	M6	101	11	17.5	10.8	3.07	0.79
GR3612GS-CAPR	36	12	7.1438	30.6	3.5X1	43700	97600	350	81	93	P	8	18	123	C	-	-	-	-	-	M6	101	11	17.5	10.8	3.52	0.79
GR3612GS-DAPR	36	12	7.1438	30.6	3.5X1	43700	97600	350	81	93	P	8	18	123	D	-	-	-	-	-	M6	101	11	17.5	10.8	3.41	0.79
GR3620DS-CALR	36	20	6.3500	31.2	2.5X1	27600	63000	240	74	96	L	9	18	108	C	-	-	-	-	-	M6	90	9	14	8.6	2.75	0.79
GR3620DS-DALR	36	20	6.3500	31.2	2.5X1	27600	63000	240	74	96	L	9	18	108	D	-	-	-	-	-	M6	90	9	14	8.6	2.66	0.79
GR3624DS-CAPR	36	24	6.3500	31.2	2.5X1	27600	63000	280	74	107	P	9	18	108	C	-	-	-	-	-	M6	90	9	14	8.6	2.99	0.79
GR3624DS-DAPR	36	24	6.3500	31.2	2.5X1	27600	63000	280	74	107	P	9	18	108	D	-	-	-	-	-	M6	90	9	14	8.6	2.90	0.79

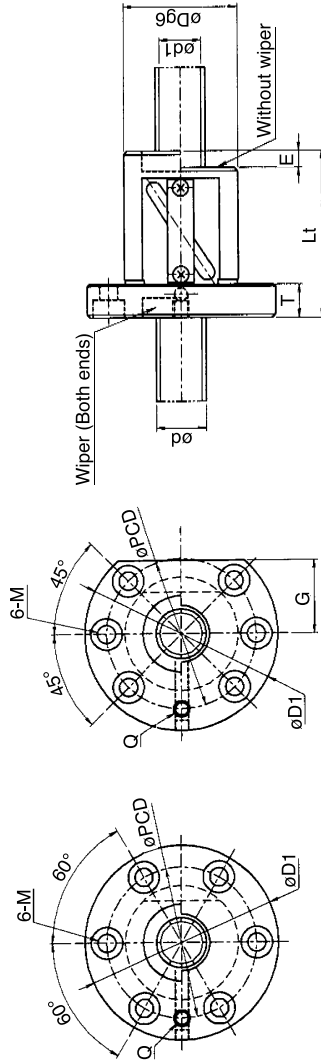
Note: - The rigidity indicated with the *mark in the above list represents the practical value based on the result of rigidity test. This value is calculated from the elastic displacement measured when the axial load equivalent to 30% of basic dynamic load rating (C) is applied between the screw thread and the balls.

· Wiper material P: Plastic wiper L: Lip seal

TUBE METHOD SINGLE NUT

Screw shaft diameter ø40

(Unit: mm)



Flange type C

Flange type D

Model No.	Screw shaft diameter d	Lead L	Ball diameter D _b	Root diameter d ₁	Number of circuits Turn x Circuit	Basic dynamic load rating C (N)	Basic static load rating C ₀ (N)	* Rigidity K _{NS} (N/μm)	Nut dimensions												Mass								
									Outer diameter D	Overall length L _t	Wiper material	Without wiper	Flange thickness T	Flange outer diameter D ₁	Flange type	Flange dimensions							Mounting hole						
																W	X	Y	A	B	G	Q				PCD	M		
																							Drill	Spot facing	Depth				
GR4005DS-CAPR	40	5	3.1750	37.5	2.5X1	11600	36000	260	67	46	P	5	15	101	C	-	-	-	-	-	-	-	Rc1/8	83	9	14	8.6	1.24	0.98
GR4005DS-DAPR	40	5	3.1750	37.5	2.5X1	11600	36000	260	67	46	P	5	15	101	D	-	-	-	-	-	-	-	Rc1/8	83	9	14	8.6	1.18	0.98
GR4005ES-CAPR	40	5	3.1750	37.5	2.5X2	21000	72000	480	67	61	P	5	15	101	C	-	-	-	-	-	-	-	Rc1/8	83	9	14	8.6	1.48	0.98
GR4005ES-DAPR	40	5	3.1750	37.5	2.5X2	21000	72000	480	67	61	P	5	15	101	D	-	-	-	-	-	-	-	Rc1/8	83	9	14	8.6	1.42	0.98
GR4005FS-CAPR	40	5	3.1750	37.5	2.5X3	29800	108000	700	67	76	P	5	15	101	C	-	-	-	-	-	-	-	Rc1/8	83	9	14	8.6	1.71	0.98
GR4005FS-DAPR	40	5	3.1750	37.5	2.5X3	29800	108000	700	67	76	P	5	15	101	D	-	-	-	-	-	-	-	Rc1/8	83	9	14	8.6	1.65	0.98
GR4006BS-CAPR	40	6	3.9688	36.6	1.5X2	18200	52800	310	70	64	P	5	15	104	C	-	-	-	-	-	-	-	Rc1/8	86	9	14	8.6	1.67	0.98
GR4006BS-DAPR	40	6	3.9688	36.6	1.5X2	18200	52800	310	70	64	P	5	15	104	D	-	-	-	-	-	-	-	Rc1/8	86	9	14	8.6	1.61	0.98
GR4006ES-CAPR	40	6	3.9688	36.6	2.5X2	28300	88000	490	70	70	P	5	15	104	C	-	-	-	-	-	-	-	Rc1/8	86	9	14	8.6	1.78	0.98
GR4006ES-DAPR	40	6	3.9688	36.6	2.5X2	28300	88000	490	70	70	P	5	15	104	D	-	-	-	-	-	-	-	Rc1/8	86	9	14	8.6	1.72	0.98
GR4006FS-CAPR	40	6	3.9688	36.6	2.5X3	40200	132000	710	70	88	P	5	15	104	C	-	-	-	-	-	-	-	Rc1/8	86	9	14	8.6	2.10	0.98
GR4006FS-DAPR	40	6	3.9688	36.6	2.5X3	40200	132000	710	70	88	P	5	15	104	D	-	-	-	-	-	-	-	Rc1/8	86	9	14	8.6	2.04	0.98
GR4008DS-CALR	40	8	4.7625	36	2.5X1	19600	54200	270	74	57	L	6	15	108	C	-	-	-	-	-	-	-	Rc1/8	90	9	14	8.6	1.75	0.98
GR4008DS-DALR	40	8	4.7625	36	2.5X1	19600	54200	270	74	57	L	6	15	108	D	-	-	-	-	-	-	-	Rc1/8	90	9	14	8.6	1.67	0.98
GR4008ES-CALR	40	8	4.7625	36	2.5X2	35600	108400	510	74	81	L	6	15	108	C	-	-	-	-	-	-	-	Rc1/8	90	9	14	8.6	2.24	0.98
GR4008ES-DALR	40	8	4.7625	36	2.5X2	35600	108400	510	74	81	L	6	15	108	D	-	-	-	-	-	-	-	Rc1/8	90	9	14	8.6	2.17	0.98

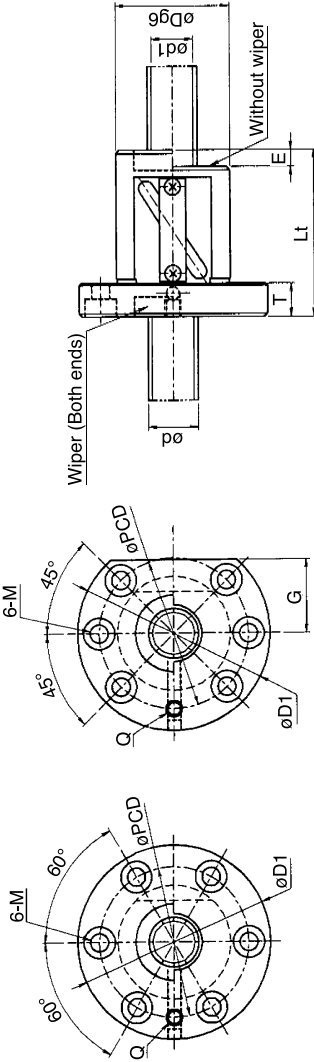
Note: · The rigidity indicated with the *mark in the above list represents the practical value based on the result of rigidity test. This value is calculated from the elastic displacement measured when the axial load equivalent to 30% of basic dynamic load rating (C) is applied between the screw thread and the balls.

· Wiper material P: Plastic wiper L: Lip seal

TUBE METHOD SINGLE NUT

Screw shaft diameter ø45

(Unit: mm)



Flange type C

Flange type D

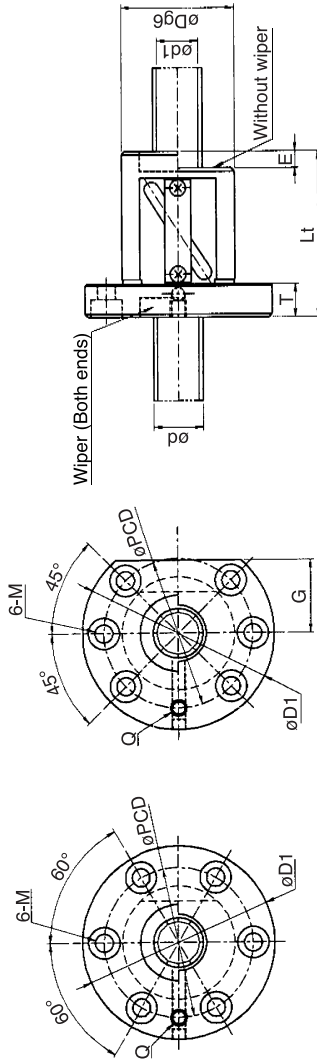
Model No.	Screw shaft diameter d	Lead	Ball diameter	Root diameter	Number of circuits	Basic dynamic load rating C (N)	Basic static load rating C ₀ (N)	Rigidity K _{NS} (N/μm)	Nut dimensions											Mass								
									Outer diameter	Overall length	Wiper material	Without wiper	Flange thickness	Flange outer diameter	Flange type	Flange dimensions												
																W	X	Y	A	B	G	Q	PCD	Mounting hole				
																								Drill	Spot facing	Depth		
GR4505BS-CAPR	45	5	3.1750	42.5	1.5X2	14100	48600	330	74	56	P	5	15	108	C	-	-	-	-	-	-	Rc1/8	90	9	14	8.6	1.62	1.24
GR4505BS-DAPR	45	5	3.1750	42.5	1.5X2	14100	48600	330	74	56	P	5	15	108	D	-	-	-	-	-	-	Rc1/8	90	9	14	8.6	1.55	1.24
GR4505CS-CAPR	45	5	3.1750	42.5	1.5X3	20100	72900	480	74	66	P	5	15	108	C	-	-	-	-	-	-	Rc1/8	90	9	14	8.6	1.81	1.24
GR4505CS-DAPR	45	5	3.1750	42.5	1.5X3	20100	72900	480	74	66	P	5	15	108	D	-	-	-	-	-	-	Rc1/8	90	9	14	8.6	1.74	1.24
GR4506BS-CAPR	45	6	3.9688	41.6	1.5X2	19300	59700	340	78	64	P	5	15	112	C	-	-	-	-	-	-	Rc1/8	94	9	14	8.6	2.00	1.24
GR4506BS-DAPR	45	6	3.9688	41.6	1.5X2	19300	59700	340	78	64	P	5	15	112	D	-	-	-	-	-	-	Rc1/8	94	9	14	8.6	1.93	1.24
GR4506ES-CAPR	45	6	3.9688	41.6	2.5X2	30000	99500	550	78	70	P	5	15	112	C	-	-	-	-	-	-	Rc1/8	94	9	14	8.6	2.14	1.24
GR4506ES-DAPR	45	6	3.9688	41.6	2.5X2	30000	99500	550	78	70	P	5	15	112	D	-	-	-	-	-	-	Rc1/8	94	9	14	8.6	2.06	1.24
GR4506FS-CAPR	45	6	3.9688	41.6	2.5X3	42500	149300	780	78	88	P	5	15	112	C	-	-	-	-	-	-	Rc1/8	94	9	14	8.6	2.53	1.24
GR4506FS-DAPR	45	6	3.9688	41.6	2.5X3	42500	149300	780	78	88	P	5	15	112	D	-	-	-	-	-	-	Rc1/8	94	9	14	8.6	2.46	1.24
GR4508BS-CAPR	45	8	4.7625	41	1.5X2	24000	72600	350	82	76	P	6	18	124	C	-	-	-	-	-	-	Rc1/8	102	11	17.5	10.8	2.88	1.24
GR4508BS-DAPR	45	8	4.7625	41	1.5X2	24000	72600	350	82	76	P	6	18	124	D	-	-	-	-	-	-	Rc1/8	102	11	17.5	10.8	2.76	1.24
GR4508ES-CAPR	45	8	4.7625	41	2.5X2	37300	121000	560	82	84	P	6	18	124	C	-	-	-	-	-	-	Rc1/8	102	11	17.5	10.8	3.08	1.24
GR4508ES-DAPR	45	8	4.7625	41	2.5X2	37300	121000	560	82	84	P	6	18	124	D	-	-	-	-	-	-	Rc1/8	102	11	17.5	10.8	2.97	1.24
GR4508FS-CAPR	45	8	4.7625	41	2.5X3	52700	181500	790	82	108	P	6	18	124	C	-	-	-	-	-	-	Rc1/8	102	11	17.5	10.8	3.69	1.24
GR4508FS-DAPR	45	8	4.7625	41	2.5X3	52700	181500	790	82	108	P	6	18	124	D	-	-	-	-	-	-	Rc1/8	102	11	17.5	10.8	3.58	1.24

Note: * The rigidity indicated with the *mark in the above list represents the practical value based on the result of rigidity test. This value is calculated from the elastic displacement measured when the axial load equivalent to 30% of basic dynamic load rating (C) is applied between the screw thread and the balls.
 . Wiper material P: Plastic wiper

TUBE METHOD SINGLE NUT

Screw shaft diameter Ø45

(Unit: mm)



Flange type C

Flange type D

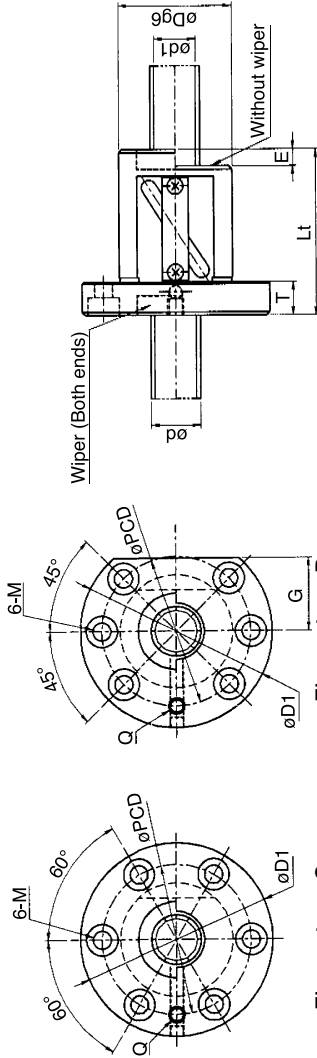
Model No.	Screw shaft diameter d	Lead diameter	Ball diameter	Root diameter	Number of circuits	Basic dynamic load rating C (N)	Basic static load rating C ₀ (N)	* Rigidity K _{NIS} (N/μm)	Nut dimensions												Mass							
									Outer diameter	Overall length	Wiper material	Without wiper	Flange thickness	Flange outer diameter	Flange type	Flange dimensions						Mounting hole				Nut (kg)	Screw shaft (kg/100mm)	
																W	X	Y	A	B	G	Q	PCD	M				
																								Drill	Spot facing			Depth
GR4510BS-CALR	45	10	6.3500	40.2	1.5X2	36800	97800	370	86	91	L	8	18	128	C	-	-	-	-	-	-	-	106	11	17.5	10.8	3.53	1.24
GR4510BS-DALR	45	10	6.3500	40.2	1.5X2	36800	97800	370	86	91	L	8	18	128	D	-	-	-	-	-	-	-	106	11	17.5	10.8	3.40	1.24
GR4510DS-CALR	45	10	6.3500	40.2	2.5X1	31500	81500	310	86	71	L	8	18	128	C	-	-	-	-	-	-	-	106	11	17.5	10.8	2.97	1.24
GR4510DS-DALR	45	10	6.3500	40.2	2.5X1	31500	81500	310	86	71	L	8	18	128	D	-	-	-	-	-	-	-	106	11	17.5	10.8	2.84	1.24
GR4510ES-CALR	45	10	6.3500	40.2	2.5X2	57200	163000	570	86	101	L	8	18	128	C	-	-	-	-	-	-	-	106	11	17.5	10.8	3.81	1.24
GR4510ES-DALR	45	10	6.3500	40.2	2.5X2	57200	163000	570	86	101	L	8	18	128	D	-	-	-	-	-	-	-	106	11	17.5	10.8	3.68	1.24
GR4510FS-CALR	45	10	6.3500	40.2	2.5X3	81000	244500	830	86	131	L	8	18	128	C	-	-	-	-	-	-	-	106	11	17.5	10.8	4.65	1.24
GR4510FS-DALR	45	10	6.3500	40.2	2.5X3	81000	244500	830	86	131	L	8	18	128	D	-	-	-	-	-	-	-	106	11	17.5	10.8	4.52	1.24
GR4512DS-CALR	45	12	7.9375	38.8	2.5X1	41200	98500	300	94	83	L	7	22	140	C	-	-	-	-	-	-	-	116	14	20	13	4.40	1.24
GR4512DS-DALR	45	12	7.9375	38.8	2.5X1	41200	98500	300	94	83	L	7	22	140	D	-	-	-	-	-	-	-	116	14	20	13	4.22	1.24
GR4512ES-CALR	45	12	7.9375	38.8	2.5X2	74900	197000	570	94	119	L	7	22	140	C	-	-	-	-	-	-	-	116	14	20	13	5.68	1.24
GR4512ES-DALR	45	12	7.9375	38.8	2.5X2	74900	197000	570	94	119	L	7	22	140	D	-	-	-	-	-	-	-	116	14	20	13	5.50	1.24
GR4512FS-CALR	45	12	7.9375	38.8	2.5X3	106200	295500	870	94	155	L	7	22	140	C	-	-	-	-	-	-	-	116	14	20	13	6.96	1.24
GR4512FS-DALR	45	12	7.9375	38.8	2.5X3	106200	295500	870	94	155	L	7	22	140	D	-	-	-	-	-	-	-	116	14	20	13	6.78	1.24
GR4520DS-CAPR	45	20	7.1438	39.7	2.5X1	37600	86200	520	105	105	P	8	22	155	C	-	-	-	-	-	-	-	130	14	20	13	6.95	1.24
GR4520DS-DAPR	45	20	7.1438	39.7	2.5X1	37600	86200	520	105	105	P	8	22	155	D	-	-	-	-	-	-	-	130	14	20	13	6.75	1.24
GR4520GS-CAPR	45	20	7.1438	39.7	3.5X1	49400	120600	720	105	125	P	8	22	155	C	-	-	-	-	-	-	-	130	14	20	13	7.94	1.24
GR4520GS-DAPR	45	20	7.1438	39.7	3.5X1	49400	120600	720	105	125	P	8	22	155	D	-	-	-	-	-	-	-	130	14	20	13	7.74	1.24

Note: The rigidity indicated with the *mark in the above list represents the practical value based on the result of rigidity test. This value is calculated from the elastic displacement measured when the axial load equivalent to 30% of basic dynamic load rating (C) is applied between the screw thread and the balls.

TUBE METHOD SINGLE NUT

Screw shaft diameter ø50

(Unit: mm)

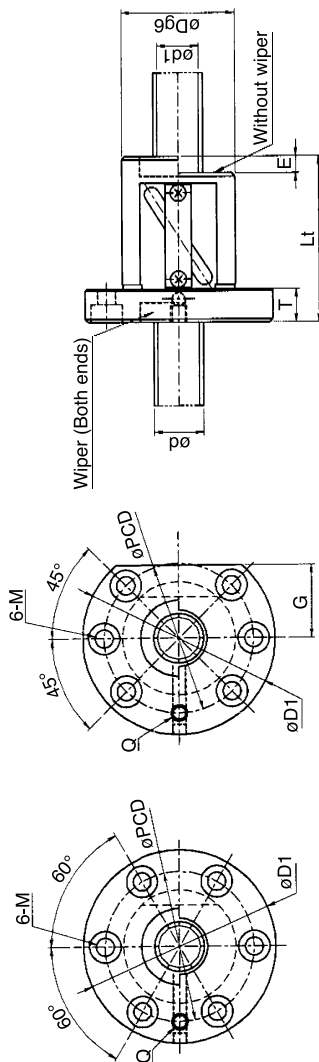


Flange type C										Flange type D										Nut dimensions										Mass			
Model No.	Screw shaft diameter d	Lead L	Ball diameter D _b	Root diameter d ₁	Number of circuits Turn x Circuit	Basic dynamic load rating C (N)	Basic static load rating C ₀ (N)	*Rigidity K _{NS} (N/μm)	Outer diameter				Flange dimensions				Mounting hole				Nut (kg)	Screw shaft (kg/100mm)											
									D	L _t	Wiper material	Without wiper	Flange thickness T	Flange outer diameter D ₁	Flange type	W	X	Y	A	B			G	Q	PCD	M							
																										Drill	Spot facing	Depth					
GR5005BS-CAPR	50	5	3.1750	47.5	1.5X2	14800	54200	370	80	56	P	5	15	114	C	-	-	-	-	Rc1/8	96	9	14	8.6	1.80	1.53							
GR5005BS-DAPR	50	5	3.1750	47.5	1.5X2	14800	54200	370	80	56	P	5	15	114	D	-	-	-	-	Rc1/8	96	9	14	8.6	1.71	1.53							
GR5005CS-CAPR	50	5	3.1750	47.5	1.5X3	21000	81300	530	80	66	P	5	15	114	C	-	-	-	-	Rc1/8	96	9	14	8.6	2.01	1.53							
GR5005CS-DAPR	50	5	3.1750	47.5	1.5X3	21000	81300	530	80	66	P	5	15	114	D	-	-	-	-	Rc1/8	96	9	14	8.6	1.93	1.53							
GR5006BS-CAPR	50	6	3.9688	46.6	1.5X2	20100	66500	380	84	64	P	5	15	118	C	-	-	-	-	Rc1/8	100	9	14	8.6	2.22	1.53							
GR5006BS-DAPR	50	6	3.9688	46.6	1.5X2	20100	66500	380	84	64	P	5	15	118	D	-	-	-	-	Rc1/8	100	9	14	8.6	2.13	1.53							
GR5006ES-CAPR	50	6	3.9688	46.6	2.5X2	31300	110800	590	84	70	P	5	15	118	C	-	-	-	-	Rc1/8	100	9	14	8.6	2.36	1.53							
GR5006ES-DAPR	50	6	3.9688	46.6	2.5X2	31300	110800	590	84	70	P	5	15	118	D	-	-	-	-	Rc1/8	100	9	14	8.6	2.28	1.53							
GR5006FS-CAPR	50	6	3.9688	46.6	2.5X3	44300	166200	860	84	88	P	5	15	118	C	-	-	-	-	Rc1/8	100	9	14	8.6	2.81	1.53							
GR5006FS-DAPR	50	6	3.9688	46.6	2.5X3	44300	166200	860	84	88	P	5	15	118	D	-	-	-	-	Rc1/8	100	9	14	8.6	2.73	1.53							
GR5008BS-CAPR	50	8	4.7625	46	1.5X2	24900	80100	380	87	76	P	6	18	129	C	-	-	-	-	Rc1/8	107	11	17.5	10.8	3.07	1.53							
GR5008BS-DAPR	50	8	4.7625	46	1.5X2	24900	80100	380	87	76	P	6	18	129	D	-	-	-	-	Rc1/8	107	11	17.5	10.8	2.95	1.53							
GR5008ES-CAPR	50	8	4.7625	46	2.5X2	38700	133400	590	87	84	P	6	18	129	C	-	-	-	-	Rc1/8	107	11	17.5	10.8	3.29	1.53							
GR5008ES-DAPR	50	8	4.7625	46	2.5X2	38700	133400	590	87	84	P	6	18	129	D	-	-	-	-	Rc1/8	107	11	17.5	10.8	3.16	1.53							
GR5008FS-CAPR	50	8	4.7625	46	2.5X3	55000	200100	860	87	108	P	6	18	129	C	-	-	-	-	Rc1/8	107	11	17.5	10.8	3.94	1.53							
GR5008FS-DAPR	50	8	4.7625	46	2.5X3	55000	200100	860	87	108	P	6	18	129	D	-	-	-	-	Rc1/8	107	11	17.5	10.8	3.82	1.53							
GR5010BS-CALR	50	10	6.3500	45.2	1.5X2	38300	106700	390	93	91	L	8	18	135	C	-	-	-	-	Rc1/8	113	11	17.5	10.8	3.98	1.53							
GR5010BS-DALR	50	10	6.3500	45.2	1.5X2	38300	106700	390	93	91	L	8	18	135	D	-	-	-	-	Rc1/8	113	11	17.5	10.8	3.84	1.53							
GR5010DS-CALR	50	10	6.3500	45.2	2.5X1	32800	88900	330	93	71	L	8	18	135	C	-	-	-	-	Rc1/8	113	11	17.5	10.8	3.34	1.53							
GR5010DS-DALR	50	10	6.3500	45.2	2.5X1	32800	88900	330	93	71	L	8	18	135	D	-	-	-	-	Rc1/8	113	11	17.5	10.8	3.20	1.53							
GR5010ES-CALR	50	10	6.3500	45.2	2.5X2	59400	177800	620	93	101	L	8	18	135	C	-	-	-	-	Rc1/8	113	11	17.5	10.8	4.31	1.53							
GR5010ES-DALR	50	10	6.3500	45.2	2.5X2	59400	177800	620	93	101	L	8	18	135	D	-	-	-	-	Rc1/8	113	11	17.5	10.8	4.17	1.53							
GR5010FS-CALR	50	10	6.3500	45.2	2.5X3	84100	266700	890	93	131	L	8	18	135	C	-	-	-	-	Rc1/8	113	11	17.5	10.8	5.27	1.53							
GR5010FS-DALR	50	10	6.3500	45.2	2.5X3	84100	266700	890	93	131	L	8	18	135	D	-	-	-	-	Rc1/8	113	11	17.5	10.8	5.13	1.53							

Note: * The rigidity indicated with the *mark in the above list represents the practical value based on the result of rigidity test. This value is calculated from the elastic displacement measured when the axial load equivalent to 30% of basic dynamic load rating (C) is applied between the screw thread and the balls.

Wiper material P: Plastic wiper
L: Lip seal

(Unit: mm)



Flange type D

Nut dimensions

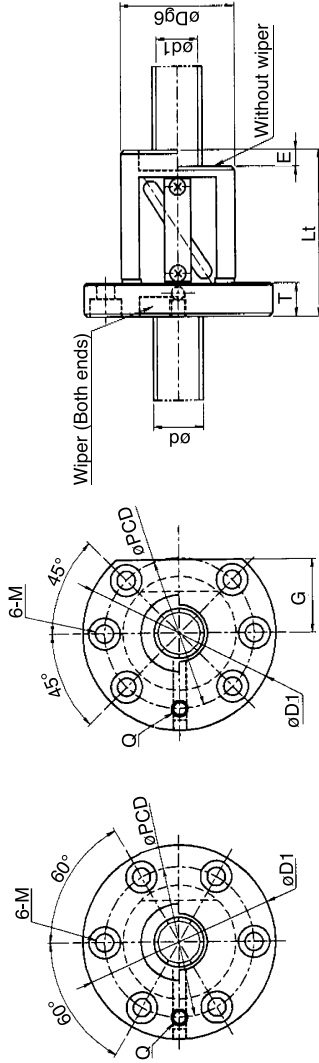
Model No.	Screw shaft diameter d	Lead diameter	Ball diameter	Root diameter	Number of circuits	Turn x	Basic dynamic load C (N)	Basic static load C ₀ (N)	* Rigidity K _{NIS} (N/μm)	Nut dimensions										Mass								
										Outer diameter	Overall length	Wiper material	Without wiper	Flange thickness	Flange outer diameter	Flange type	Flange dimensions						Mounting hole			Nut (kg)	Screw shaft (kg/100mm)	
																	W	X	Y	A	B	G	Q	PCD	M			
																									Drill			Spot facing
GRF5508ES-CAPR	55	8	4.7625	51	2.5X2	40100	145900	640	92	86	P	5	22	138	C	-	-	-	-	-	Rc1/8	114	14	20	13	3.93	1.85	
GRF5508ES-DAPR	55	8	4.7625	51	2.5X2	40100	145900	640	92	86	P	5	22	138	D	-	-	-	-	53	Rc1/8	114	14	20	13	3.77	1.85	
GRF5508FS-CAPR	55	8	4.7625	51	2.5X3	56900	218900	920	92	110	P	5	22	138	C	-	-	-	-	-	Rc1/8	114	14	20	13	4.63	1.85	
GRF5508FS-DAPR	55	8	4.7625	51	2.5X3	56900	218900	920	92	110	P	5	22	138	D	-	-	-	-	53	Rc1/8	114	14	20	13	4.47	1.85	
GRF5510BS-CALR	55	10	6.3500	50.2	1.5X2	40400	120100	450	100	95	L	8	22	146	C	-	-	-	-	-	Rc1/8	122	14	20	13	5.02	1.85	
GRF5510BS-DALR	55	10	6.3500	50.2	1.5X2	40400	120100	450	100	95	L	8	22	146	D	-	-	-	-	55	Rc1/8	122	14	20	13	4.81	1.85	
GRF5510ES-CALR	55	10	6.3500	50.2	2.5X2	62700	200200	680	100	105	L	8	22	146	C	-	-	-	-	-	Rc1/8	122	14	20	13	5.38	1.85	
GRF5510ES-DALR	55	10	6.3500	50.2	2.5X2	62700	200200	680	100	105	L	8	22	146	D	-	-	-	-	55	Rc1/8	122	14	20	13	5.18	1.85	
GRF5510FS-CALR	55	10	6.3500	50.2	2.5X3	89000	300300	980	100	135	L	8	22	146	C	-	-	-	-	-	Rc1/8	122	14	20	13	6.48	1.85	
GRF5510FS-DALR	55	10	6.3500	50.2	2.5X3	89000	300300	980	100	135	L	8	22	146	D	-	-	-	-	55	Rc1/8	122	14	20	13	6.28	1.85	
GRF5512ES-CAPR	55	12	7.9375	48.8	2.5X2	81200	243300	690	108	119	P	7	22	154	C	-	-	-	-	-	Rc1/8	130	14	20	13	7.04	1.85	
GRF5512ES-DAPR	55	12	7.9375	48.8	2.5X2	81200	243300	690	108	119	P	7	22	154	D	-	-	-	-	58	Rc1/8	130	14	20	13	6.82	1.85	
GRF5512FS-CAPR	55	12	7.9375	48.8	2.5X3	115100	365000	980	108	155	P	7	22	154	C	-	-	-	-	-	Rc1/8	130	14	20	13	8.68	1.85	
GRF5512FS-DAPR	55	12	7.9375	48.8	2.5X3	115100	365000	980	108	155	P	7	22	154	D	-	-	-	-	58	Rc1/8	130	14	20	13	8.46	1.85	
GRF5516DS-CAPR	55	16	9.5250	47.6	2.5X1	76700	207800	400	112	115	P	13	28	172	C	-	-	-	-	-	Rc1/8	140	18	26	17.5	8.60	1.85	
GRF5516DS-DAPR	55	16	9.5250	47.6	2.5X1	76700	207800	400	112	115	P	13	28	172	D	-	-	-	-	66	Rc1/8	140	18	26	17.5	8.27	1.85	
GRF5516ES-CAPR	55	16	9.5250	47.6	2.5X2	139100	415600	750	112	163	P	13	28	172	C	-	-	-	-	-	Rc1/8	140	18	26	17.5	10.96	1.85	
GRF5516ES-DAPR	55	16	9.5250	47.6	2.5X2	139100	415600	750	112	163	P	13	28	172	D	-	-	-	-	66	Rc1/8	140	18	26	17.5	10.63	1.85	
GRF5520DS-CALR	55	20	9.5250	47.6	2.5X1	76700	207800	420	112	115	L	12.5	28	172	C	-	-	-	-	-	Rc1/8	140	18	26	17.5	8.60	1.85	
GRF5520DS-DALR	55	20	9.5250	47.6	2.5X1	76700	207800	420	112	115	L	12.5	28	172	D	-	-	-	-	66	Rc1/8	140	18	26	17.5	8.27	1.85	
GRF5520ES-CALR	55	20	9.5250	47.6	2.5X2	139100	415600	780	112	175	L	12.5	28	172	C	-	-	-	-	-	Rc1/8	140	18	26	17.5	11.56	1.85	
GRF5520ES-DALR	55	20	9.5250	47.6	2.5X2	139100	415600	780	112	175	L	12.5	28	172	D	-	-	-	-	66	Rc1/8	140	18	26	17.5	11.23	1.85	

Note: - The rigidity indicated with the *mark in the above list represents the practical value based on the result of rigidity test. This value is calculated from the elastic displacement measured when the axial load equivalent to 30% of basic dynamic load rating (C) is applied between the screw thread and the balls.

TUBE METHOD SINGLE NUT

Screw shaft diameter ø63

(Unit: mm)



Flange type C

Flange type D

Model No.	Screw shaft diameter d	Lead L	Ball diameter D _b	Root diameter d ₁	Number of Turn x Circuit	Basic dynamic load rating C (N)	Basic static load rating C ₀ (N)	* Rigidity K _{NS} (N/μm)	Nut dimensions												Mass							
									Outer diameter D	Overall length L _t	Wiper material	Without wiper E	Flange thickness T	Flange outer diameter D ₁	Flange type	Flange dimensions						Mounting hole			Nut (kg)	Screw shaft (kg/100mm)		
																W	X	Y	A	B	G	Q	PCD	M				
																								Drill			Spot facing	Depth
GR6306BS-CAPR	63	6	3.9688	59.6	1.5X2	22100	83500	450	100	65	P	4	18	142	C	-	-	-	-	-	-	Rc1/8	120	11	17.5	10.8	3.27	2.43
GR6306BS-DAPR	63	6	3.9688	59.6	1.5X2	22100	83500	450	100	65	P	4	18	142	D	-	-	-	-	-	-	Rc1/8	120	11	17.5	10.8	3.10	2.43
GR6306CS-CAPR	63	6	3.9688	59.6	1.5X3	31300	125300	650	100	77	P	4	18	142	C	-	-	-	-	-	-	Rc1/8	120	11	17.5	10.8	3.66	2.43
GR6306CS-DAPR	63	6	3.9688	59.6	1.5X3	31300	125300	650	100	77	P	4	18	142	D	-	-	-	-	-	-	Rc1/8	120	11	17.5	10.8	3.50	2.43
GR6308BS-CAPR	63	8	4.7625	59	1.5X2	27800	102500	460	104	78	P	5	22	150	C	-	-	-	-	-	-	Rc1/8	126	14	20	13	4.48	2.43
GR6308BS-DAPR	63	8	4.7625	59	1.5X2	27800	102500	460	104	78	P	5	22	150	D	-	-	-	-	-	-	Rc1/8	126	14	20	13	4.27	2.43
GR6308CS-CAPR	63	8	4.7625	59	1.5X3	39300	153800	660	104	94	P	5	22	150	C	-	-	-	-	-	-	Rc1/8	126	14	20	13	5.07	2.43
GR6308CS-DAPR	63	8	4.7625	59	1.5X3	39300	153800	660	104	94	P	5	22	150	D	-	-	-	-	-	-	Rc1/8	126	14	20	13	4.87	2.43

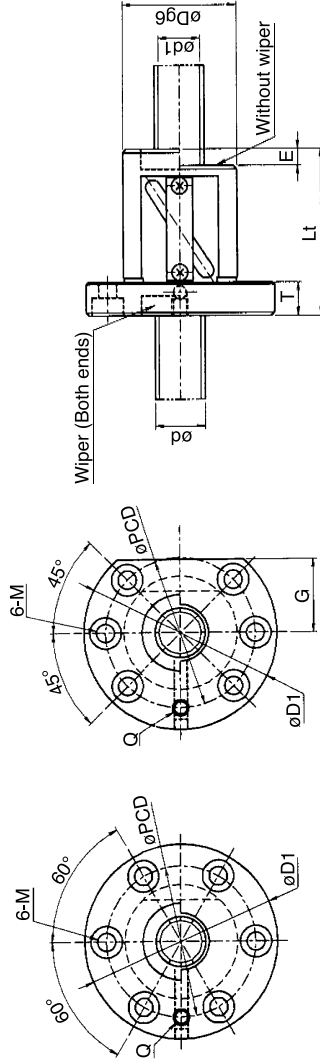
Note: * The rigidity indicated with the *mark in the above list represents the practical value based on the result of rigidity test. This value is calculated from the elastic displacement measured when the axial load equivalent to 30% of basic dynamic load rating (C) is applied between the screw thread and the balls.

· Wiper material P: Plastic wiper

TUBE METHOD SINGLE NUT

Screw shaft diameter ø63

(Unit: mm)



Flange type C

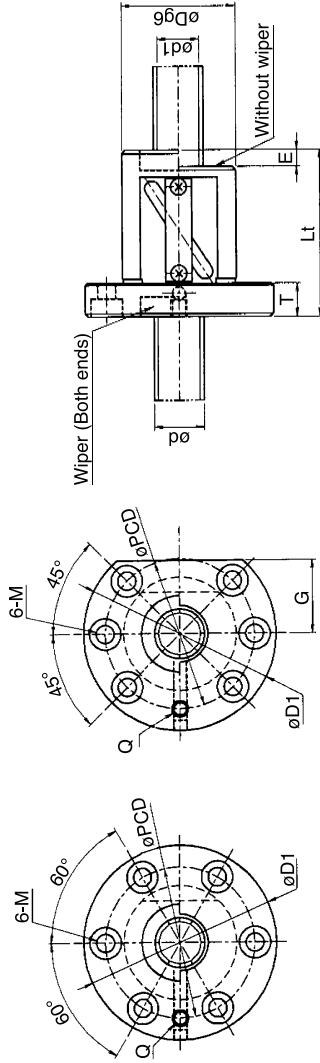
Flange type D

Model No.	Screw shaft diameter d	Lead L	Ball diameter D _b	Root diameter d ₁	Number of circuits Turn x Circuit	Basic dynamic load rating C (N)	Basic static load rating C ₀ (N)	★ Rigidity K _{NS} (N/μm)	Nut dimensions										Mass										
									Outer diameter D	Overall length L _t	Wiper material	Without wiper E	Flange thickness T	Flange outer diameter D ₁	Flange type	Flange dimensions						Mounting hole			Nut (kg)	Screw shaft (kg/100mm)			
																W	X	Y	A	B	G	Q	PCD	M					
																								Drill			Spot facing	Depth	
GR6310DS-CAPR	63	10	6.3500	58.2	2.5X1	36800	114900	400	108	75	P	8	22	154	C	-	-	-	-	-	-	-	Rc1/8	130	14	20	13	4.65	2.43
GR6310DS-DAPR	63	10	6.3500	58.2	2.5X1	36800	114900	400	108	75	P	8	22	154	D	-	-	-	-	-	-	58	Rc1/8	130	14	20	13	4.42	2.43
GR6310ES-CAPR	63	10	6.3500	58.2	2.5X2	66600	229800	760	108	105	P	8	22	154	C	-	-	-	-	-	-	-	Rc1/8	130	14	20	13	5.86	2.43
GR6310ES-DAPR	63	10	6.3500	58.2	2.5X2	66600	229800	760	108	105	P	8	22	154	D	-	-	-	-	-	-	58	Rc1/8	130	14	20	13	5.63	2.43
GR6310FS-CAPR	63	10	6.3500	58.2	2.5X3	94400	344700	1100	108	135	P	8	22	154	C	-	-	-	-	-	-	-	Rc1/8	130	14	20	13	7.07	2.43
GR6310FS-DAPR	63	10	6.3500	58.2	2.5X3	94400	344700	1100	108	135	P	8	22	154	D	-	-	-	-	-	-	58	Rc1/8	130	14	20	13	6.84	2.43
GR6312DS-CAPR	63	12	7.9375	56.8	2.5X1	48700	139000	400	115	83	P	7	22	161	C	-	-	-	-	-	-	-	Rc1/8	137	14	20	13	5.72	2.43
GR6312DS-DAPR	63	12	7.9375	56.8	2.5X1	48700	139000	400	115	83	P	7	22	161	D	-	-	-	-	-	-	61	Rc1/8	137	14	20	13	5.48	2.43
GR6312ES-CAPR	63	12	7.9375	56.8	2.5X2	88500	278000	760	115	119	P	7	22	161	C	-	-	-	-	-	-	-	Rc1/8	137	14	20	13	7.46	2.43
GR6312ES-DAPR	63	12	7.9375	56.8	2.5X2	88500	278000	760	115	119	P	7	22	161	D	-	-	-	-	-	-	61	Rc1/8	137	14	20	13	7.22	2.43
GR6312FS-CAPR	63	12	7.9375	56.8	2.5X3	125500	417000	1100	115	155	P	7	22	161	C	-	-	-	-	-	-	-	Rc1/8	137	14	20	13	9.20	2.43
GR6312FS-DAPR	63	12	7.9375	56.8	2.5X3	125500	417000	1100	115	155	P	7	22	161	D	-	-	-	-	-	-	61	Rc1/8	137	14	20	13	8.96	2.43
GR6316DS-CAPR	63	16	9.5250	55.6	2.5X1	80300	231000	450	122	115	P	13	28	180	C	-	-	-	-	-	-	-	Rc1/8	150	18	26	17.5	9.53	2.43
GR6316DS-DAPR	63	16	9.5250	55.6	2.5X1	80300	231000	450	122	115	P	13	28	180	D	-	-	-	-	-	-	69	Rc1/8	150	18	26	17.5	9.16	2.43
GR6316ES-CAPR	63	16	9.5250	55.6	2.5X2	145800	462000	850	122	163	P	13	28	180	C	-	-	-	-	-	-	-	Rc1/8	150	18	26	17.5	12.25	2.43
GR6316ES-DAPR	63	16	9.5250	55.6	2.5X2	145800	462000	850	122	163	P	13	28	180	D	-	-	-	-	-	-	69	Rc1/8	150	18	26	17.5	11.88	2.43
GR6320DS-CAPR	63	20	9.5250	55.6	2.5X1	80300	231000	460	122	115	P	13	28	180	C	-	-	-	-	-	-	-	Rc1/8	150	18	26	17.5	9.53	2.43
GR6320DS-DAPR	63	20	9.5250	55.6	2.5X1	80300	231000	460	122	115	P	13	28	180	D	-	-	-	-	-	-	69	Rc1/8	150	18	26	17.5	9.16	2.43
GR6320ES-CAPR	63	20	9.5250	55.6	2.5X2	145800	462000	860	122	175	P	13	28	180	C	-	-	-	-	-	-	-	Rc1/8	150	18	26	17.5	12.93	2.43
GR6320ES-DAPR	63	20	9.5250	55.6	2.5X2	145800	462000	860	122	175	P	13	28	180	D	-	-	-	-	-	-	69	Rc1/8	150	18	26	17.5	12.57	2.43

Note: * The rigidity indicated with the *mark in the above list represents the practical value based on the result of rigidity test. This value is calculated from the elastic displacement measured when the axial load equivalent to 30% of basic dynamic load rating (C) is applied between the screw thread and the balls. · Wiper material P: Plastic wiper

TUBE METHOD SINGLE NUT**Screw shaft diameter ø70**

(Unit: mm)

**Flange type C****Flange type D**

Model No.	Screw shaft diameter d	Lead L	Ball diameter D _b	Root diameter d ₁	Number of circuits x Turn	Basic dynamic load rating C (N)	Basic static load rating C ₀ (N)	* Rigidity K _{NS} (N/μm)	Nut dimensions										Mass									
									Outer diameter D	Overall length L _t	Wiper material	Without wiper E	Flange thickness T	Flange outer diameter D ₁	Flange type	Flange dimensions						Mounting hole			Nut (kg)	Screw shaft (kg/100mm)		
																W	X	Y	A	B	G	Q	PCD	M				
																								Drill			Spot facing	Depth
GR7010ES-CAPR	70	10	6.3500	65.2	2.5X2	69100	252100	820	120	103	P	7	22	166	C	-	-	-	-	-	-	Rc1/8	142	14	20	13	6.99	3.00
GR7010ES-DAPR	70	10	6.3500	65.2	2.5X2	69100	252100	820	120	103	P	7	22	166	D	-	-	-	-	-	63	Rc1/8	142	14	20	13	6.74	3.00
GR7010FS-CAPR	70	10	6.3500	65.2	2.5X3	97900	378200	1190	120	133	P	7	22	166	C	-	-	-	-	-	-	Rc1/8	142	14	20	13	8.51	3.00
GR7010FS-DAPR	70	10	6.3500	65.2	2.5X3	97900	378200	1190	120	133	P	7	22	166	D	-	-	-	-	-	-	Rc1/8	142	14	20	13	8.26	3.00
GR7012ES-CAPR	70	12	7.9375	63.8	2.5X2	93400	312700	840	124	119	P	7	22	170	C	-	-	-	-	-	-	Rc1/8	146	14	20	13	8.36	3.00
GR7012ES-DAPR	70	12	7.9375	63.8	2.5X2	93400	312700	840	124	119	P	7	22	170	D	-	-	-	-	-	64	Rc1/8	146	14	20	13	8.08	3.00
GR7012FS-CAPR	70	12	7.9375	63.8	2.5X3	132400	469100	1200	124	155	P	7	22	170	C	-	-	-	-	-	-	Rc1/8	146	14	20	13	10.34	3.00
GR7012FS-DAPR	70	12	7.9375	63.8	2.5X3	132400	469100	1200	124	155	P	7	22	170	D	-	-	-	-	-	64	Rc1/8	146	14	20	13	10.06	3.00
GR7016ES-CAPR	70	16	9.5250	62.6	2.5X2	152100	508000	920	130	163	P	13	28	190	C	-	-	-	-	-	-	Rc1/8	158	18	26	17.5	13.45	3.00
GR7016ES-DAPR	70	16	9.5250	62.6	2.5X2	152100	508000	920	130	163	P	13	28	190	D	-	-	-	-	-	72	Rc1/8	158	18	26	17.5	13.03	3.00
GR7016FS-CAPR	70	16	9.5250	62.6	2.5X3	215600	762000	1410	130	211	P	13	28	190	C	-	-	-	-	-	-	Rc1/8	158	18	26	17.5	16.44	3.00
GR7016FS-DAPR	70	16	9.5250	62.6	2.5X3	215600	762000	1410	130	211	P	13	28	190	D	-	-	-	-	-	72	Rc1/8	158	18	26	17.5	16.02	3.00
GR7020ES-CAPR	70	20	9.5250	62.6	2.5X2	152100	508000	920	130	175	P	13	28	190	C	-	-	-	-	-	-	Rc1/8	158	18	26	17.5	14.20	3.00
GR7020ES-DAPR	70	20	9.5250	62.6	2.5X2	152100	508000	920	130	175	P	13	28	190	D	-	-	-	-	-	72	Rc1/8	158	18	26	17.5	13.77	3.00
GR7020FS-CAPR	70	20	9.5250	62.6	2.5X3	215600	762000	1410	130	235	P	13	28	190	C	-	-	-	-	-	-	Rc1/8	158	18	26	17.5	17.94	3.00
GR7020FS-DAPR	70	20	9.5250	62.6	2.5X3	215600	762000	1410	130	235	P	13	28	190	D	-	-	-	-	-	72	Rc1/8	158	18	26	17.5	17.51	3.00

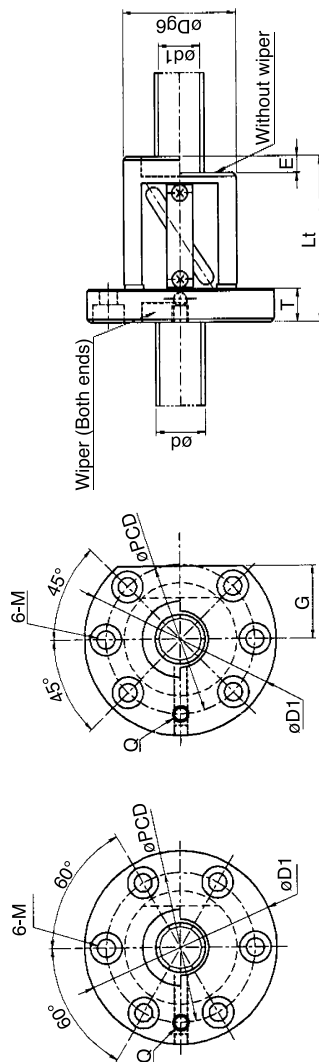
Note: · The rigidity indicated with the *mark in the above list represents the practical value based on the result of rigidity test. This value is calculated from the elastic displacement measured when the axial load equivalent to 30% of basic dynamic load rating (C) is applied between the screw thread and the balls.

· Wiper material P: Plastic wiper

TUBE METHOD SINGLE NUT

Screw shaft diameter ø80

(Unit: mm)



Flange type C

Flange type D

Model No.	Screw shaft diameter	Lead	Ball diameter	Root diameter	Number of circuits	Basic dynamic load C (N)	Basic static load C ₀ (N)	Rigidity K _{NS}	Nut dimensions											Mass							
									Outer diameter	Overall length	Wiper material	Without wiper	Flange thickness	Flange outer diameter	Flange type	Flange dimensions						Mounting hole			Nut (kg)	Screw shaft (kg/100mm)	
																W	X	Y	A	B	G	Q	PCD	M			
																								Drill			Spot facing
GR8010ES-CAPR	80	10	6.3500	75.2	2.5X2	73100	289100	910	130	103	P	7	22	176	C	-	-	-	-	Rc1/8	152	14	20	13	7.64	3.92	
GR8010ES-DAPR	80	10	6.3500	75.2	2.5X2	73100	289100	910	130	103	P	7	22	176	D	-	-	-	-	Rc1/8	152	14	20	13	7.34	3.92	
GR8010FS-CAPR	80	10	6.3500	75.2	2.5X3	103700	433700	1320	130	133	P	7	22	176	C	-	-	-	-	Rc1/8	152	14	20	13	9.32	3.92	
GR8010FS-DAPR	80	10	6.3500	75.2	2.5X3	103700	433700	1320	130	133	P	7	22	176	D	-	-	-	-	Rc1/8	152	14	20	13	9.02	3.92	
GR8012ES-CAPR	80	12	7.9375	73.8	2.5X2	99400	359100	940	136	119	P	7	22	182	C	-	-	-	-	Rc1/8	158	14	20	13	9.54	3.92	
GR8012ES-DAPR	80	12	7.9375	73.8	2.5X2	99400	359100	940	136	119	P	7	22	182	D	-	-	-	-	Rc1/8	158	14	20	13	9.22	3.92	
GR8012FS-CAPR	80	12	7.9375	73.8	2.5X3	140700	538700	1350	136	155	P	7	22	182	C	-	-	-	-	Rc1/8	158	14	20	13	11.83	3.92	
GR8012FS-DAPR	80	12	7.9375	73.8	2.5X3	140700	538700	1350	136	155	P	7	22	182	D	-	-	-	-	Rc1/8	158	14	20	13	11.51	3.92	
GR8016ES-CAPR	80	16	9.5250	72.6	2.5X2	165200	600500	1050	143	161	P	12	28	204	C	-	-	-	-	Rc1/8	172	18	26	17.5	15.45	3.92	
GR8016ES-DAPR	80	16	9.5250	72.6	2.5X2	165200	600500	1050	143	161	P	12	28	204	D	-	-	-	-	Rc1/8	172	18	26	17.5	14.95	3.92	
GR8016FS-CAPR	80	16	9.5250	72.6	2.5X3	234100	900800	1520	143	209	P	12	28	204	C	-	-	-	-	Rc1/8	172	18	26	17.5	18.97	3.92	
GR8016FS-DAPR	80	16	9.5250	72.6	2.5X3	234100	900800	1520	143	209	P	12	28	204	D	-	-	-	-	Rc1/8	172	18	26	17.5	18.47	3.92	
GR8020ES-CAPR	80	20	9.5250	72.6	2.5X2	165200	600500	1050	143	173	P	12	28	204	C	-	-	-	-	Rc1/8	172	18	26	17.5	16.33	3.92	
GR8020ES-DAPR	80	20	9.5250	72.6	2.5X2	165200	600500	1050	143	173	P	12	28	204	D	-	-	-	-	Rc1/8	172	18	26	17.5	15.93	3.92	
GR8020FS-CAPR	80	20	9.5250	72.6	2.5X3	234100	900800	1620	143	233	P	12	28	204	C	-	-	-	-	Rc1/8	172	18	26	17.5	20.73	3.92	
GR8020FS-DAPR	80	20	9.5250	72.6	2.5X3	234100	900800	1620	143	233	P	12	28	204	D	-	-	-	-	Rc1/8	172	18	26	17.5	20.23	3.92	

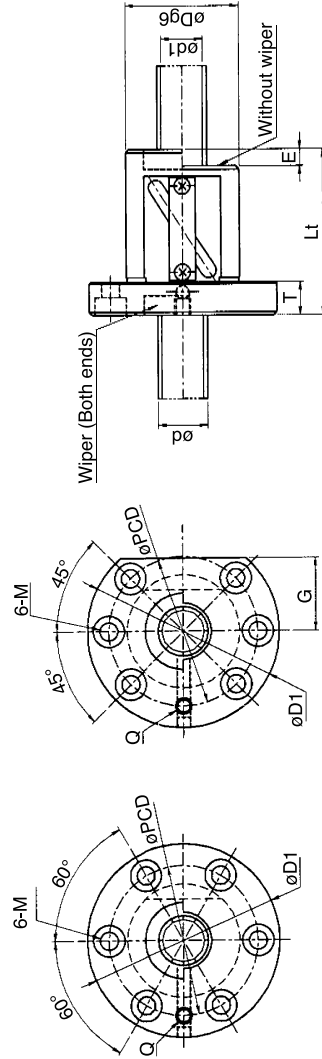
Note: · The rigidity indicated with the *mark in the above list represents the practical value based on the result of rigidity test. This value is calculated from the elastic displacement measured when the axial load equivalent to 30% of basic dynamic load rating (C) is applied between the screw thread and the balls.

· Wiper material P: Plastic wiper

TUBE METHOD SINGLE NUT

Screw shaft diameter ø100, ø125

(Unit: mm)



Flange type C

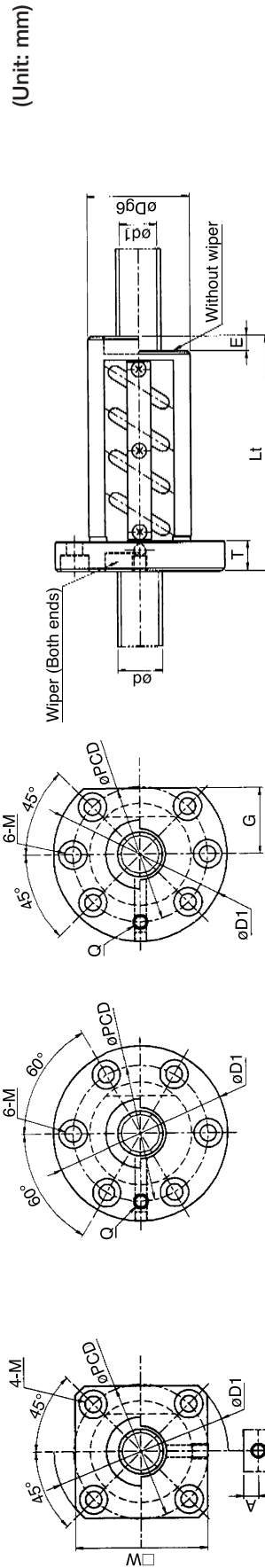
Flange type D

Model No.	Screw shaft diameter d	Lead	Ball diameter	Root diameter	Number of circuits	Basic dynamic load rating C (N)	Basic static load rating C ₀ (N)	* Rigidity K _{Ns} (N/μm)	Nut dimensions											Mass												
									Outer diameter	Overall length	Wiper material	Without wiper	Flange thickness	Flange outer diameter	Flange type	Flange dimensions						Mounting hole			Nut (kg)	Screw shaft (kg/100mm)						
																D	L _t	E	T	D ₁	W	X	Y	A			B	G	Q	PCD	M	
																															Drill	Spot facing
GRA012ES-CAPR	100	12	7.9375	93.8	2.5X2	109450451800	1130	160	123	P	6	28	220	C	-	-	-	-	-	-	-	Rc1/8	188	18	26	17.5	14.07	6.13				
GRA012ES-DAPR	100	12	7.9375	93.8	2.5X2	109450451800	1130	160	123	P	6	28	220	D	-	-	-	-	-	82	-	Rc1/8	188	18	26	17.5	13.46	6.13				
GRA012FS-CAPR	100	12	7.9375	93.8	2.5X3	155000677700	1630	160	159	P	6	28	220	C	-	-	-	-	-	-	-	Rc1/8	188	18	26	17.5	17.05	6.13				
GRA012FS-DAPR	100	12	7.9375	93.8	2.5X3	155000677700	1630	160	159	P	6	28	220	D	-	-	-	-	-	82	-	Rc1/8	188	18	26	17.5	16.43	6.13				
GRA016ES-CAPR	100	16	9.5250	92.6	2.5X2	180000739000	1250	170	165	P	12	32	243	C	-	-	-	-	-	-	-	Rc1/8	205	22	32	21.5	22.44	6.13				
GRA016ES-DAPR	100	16	9.5250	92.6	2.5X2	180000739000	1250	170	165	P	12	32	243	D	-	-	-	-	-	91	-	Rc1/8	205	22	32	21.5	21.60	6.13				
GRA016FS-CAPR	100	16	9.5250	92.6	2.5X3	2550001108500	1800	170	213	P	12	32	243	C	-	-	-	-	-	-	-	Rc1/8	205	22	32	21.5	27.25	6.13				
GRA016FS-DAPR	100	16	9.5250	92.6	2.5X3	2550001108500	1800	170	213	P	12	32	243	D	-	-	-	-	-	91	-	Rc1/8	205	22	32	21.5	26.41	6.13				
GRA020ES-CAPR	100	20	9.5250	92.6	2.5X2	180000739000	1250	170	177	P	12	32	243	C	-	-	-	-	-	-	-	Rc1/8	205	22	32	21.5	23.64	6.13				
GRA020ES-DAPR	100	20	9.5250	92.6	2.5X2	180000739000	1250	170	177	P	12	32	243	D	-	-	-	-	-	91	-	Rc1/8	205	22	32	21.5	22.80	6.13				
GRA020FS-CAPR	100	20	9.5250	92.6	2.5X3	2550001108500	1910	170	237	P	12	32	243	C	-	-	-	-	-	-	-	Rc1/8	205	22	32	21.5	29.65	6.13				
GRA020FS-DAPR	100	20	9.5250	92.6	2.5X3	2550001108500	1910	170	237	P	12	32	243	D	-	-	-	-	-	91	-	Rc1/8	205	22	32	21.5	28.81	6.13				
GRG516ES-CAPR	125	16	9.5250	117.6	2.5X2	200400946900	1520	200	169	P	12	36	290	C	-	-	-	-	-	-	-	Rc1/8	243	26	39	25.5	31.70	9.57				
GRG516ES-DAPR	125	16	9.5250	117.6	2.5X2	200400946900	1520	200	169	P	12	36	290	D	-	-	-	-	-	109	-	Rc1/8	243	26	39	25.5	30.38	9.57				
GRG516FS-CAPR	125	16	9.5250	117.6	2.5X3	2841001420400	2190	200	217	P	12	36	290	C	-	-	-	-	-	-	-	Rc1/8	243	26	39	25.5	37.94	9.57				
GRG516FS-DAPR	125	16	9.5250	117.6	2.5X3	2841001420400	2190	200	217	P	12	36	290	D	-	-	-	-	-	109	-	Rc1/8	243	26	39	25.5	36.62	9.57				
GRG520ES-CAPR	125	20	9.5250	117.6	2.5X2	200400946900	1520	200	181	P	12	36	290	C	-	-	-	-	-	-	-	Rc1/8	243	26	39	25.5	33.26	9.57				
GRG520ES-DAPR	125	20	9.5250	117.6	2.5X2	200400946900	1520	200	181	P	12	36	290	D	-	-	-	-	-	109	-	Rc1/8	243	26	39	25.5	31.94	9.57				
GRG520FS-CAPR	125	20	9.5250	117.6	2.5X3	2841001420400	2190	200	241	P	12	36	290	C	-	-	-	-	-	-	-	Rc1/8	243	26	39	25.5	41.06	9.57				
GRG520FS-DAPR	125	20	9.5250	117.6	2.5X3	2841001420400	2190	200	241	P	12	36	290	D	-	-	-	-	-	109	-	Rc1/8	243	26	39	25.5	39.74	9.57				

Note: · The rigidity indicated with the *mark in the above list represents the practical value based on the result of rigidity test. This value is calculated from the elastic displacement measured when the axial load equivalent to 30% of basic dynamic load rating (C) is applied between the screw thread and the balls. · Wiper material P: Plastic wiper

TUBE METHOD INTEGRAL NUT

Screw shaft diameter $\phi 20\text{-}\phi 28$



(Unit: mm)

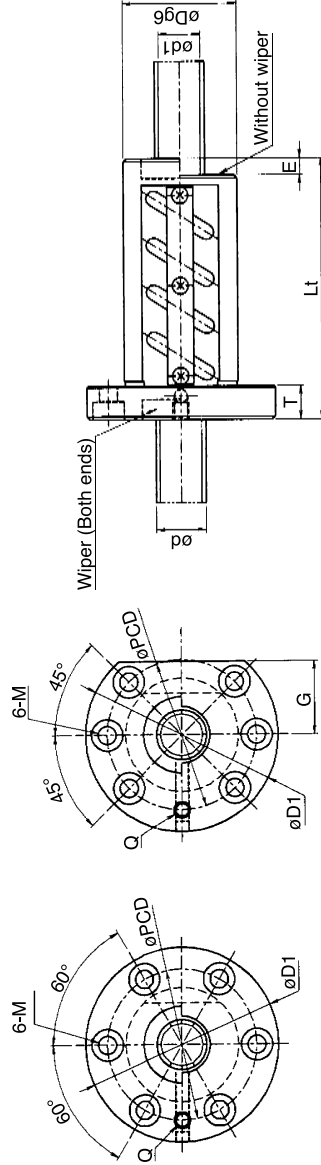
Model No.	Screw shaft diameter d	Lead	Ball diameter	Root diameter	Number of circuits	Basic dynamic load rating C (N)	Basic static load rating C ₀ (N)	* Rigidity K _{hw} (N/μm)	Nut dimensions												Mass											
									Outer diameter	Overall length	Wiper material	Without wiper	Flange thickness	Flange outer diameter	Flange type	Flange dimensions						Mounting hole			Nut (kg)	Screw shaft (kg/100mm)						
																D	L _t	E	T	D ₁	W	X	Y	A			B	G	Q	PCD	M	
																															Drill	Spot facing
GR2004DT-AALR	20	4	2.3812	18.1	2.5X1	4700	11700	240	40	49	L	3	10	64	A	49	-	-	5.5	-	-	M6	51	5.5	9.5	5.4	0.41	0.25				
GR2004DT-CALR	20	4	2.3812	18.1	2.5X1	4700	11700	240	40	49	L	3	10	64	C	-	-	-	-	-	-	M6	51	5.5	9.5	5.4	0.47	0.25				
GR2004ET-AALR	20	4	2.3812	18.1	2.5X2	8600	23400	440	40	73	L	3	10	64	A	49	-	-	5.5	-	-	M6	51	5.5	9.5	5.4	0.57	0.25				
GR2004ET-CALR	20	4	2.3812	18.1	2.5X2	8600	23400	440	40	73	L	3	10	64	C	-	-	-	-	-	-	M6	51	5.5	9.5	5.4	0.63	0.25				
GR2005DT-AALR	20	5	3.1750	17.5	2.5X1	8350	17500	240	40	58	L	5	12	68	A	52	-	-	7	-	-	M6	53	6.6	11	6.5	0.50	0.25				
GR2005DT-CALR	20	5	3.1750	17.5	2.5X1	8350	17500	240	40	58	L	5	12	68	C	-	-	-	-	-	-	M6	53	6.6	11	6.5	0.58	0.25				
GR2005ET-AALR	20	5	3.1750	17.5	2.5X2	15150	35000	460	40	88	L	5	12	68	A	52	-	-	7	-	-	M6	53	6.6	11	6.5	0.69	0.25				
GR2005ET-CALR	20	5	3.1750	17.5	2.5X2	15150	35000	460	40	88	L	5	12	68	C	-	-	-	-	-	-	M6	53	6.6	11	6.5	0.77	0.25				
GR2504DT-AAPR	25	4	2.3812	23.1	2.5X1	5200	14400	280	46	55	P	3	12	74	A	56	-	-	7.5	-	-	M6	59	6.6	11	6.5	0.59	0.38				
GR2504DT-CAPR	25	4	2.3812	23.1	2.5X1	5200	14400	280	46	55	P	3	12	74	C	-	-	-	-	-	-	M6	59	6.6	11	6.5	0.69	0.38				
GR2504ET-AAPR	25	4	2.3812	23.1	2.5X2	9400	28800	520	46	79	P	3	12	74	A	56	-	-	7.5	-	-	M6	59	6.6	11	6.5	0.78	0.38				
GR2504ET-CAPR	25	4	2.3812	23.1	2.5X2	9400	28800	520	46	79	P	3	12	74	C	-	-	-	-	-	-	M6	59	6.6	11	6.5	0.89	0.38				
GR2505DT-AALR	25	5	3.1750	22.5	2.5X1	9400	22200	300	47	58	L	5	12	74	A	57	-	-	7.5	-	-	M6	60	6.6	11	6.5	0.63	0.38				
GR2505DT-CALR	25	5	3.1750	22.5	2.5X1	9400	22200	300	47	58	L	5	12	74	C	-	-	-	-	-	-	M6	60	6.6	11	6.5	0.72	0.38				
GR2505ET-AALR	25	5	3.1750	22.5	2.5X2	17000	44400	560	47	88	L	5	12	74	A	57	-	-	7.5	-	-	M6	60	6.6	11	6.5	0.88	0.38				
GR2505ET-CALR	25	5	3.1750	22.5	2.5X2	17000	44400	560	47	88	L	5	12	74	C	-	-	-	-	-	-	M6	60	6.6	11	6.5	0.98	0.38				
GR2508DT-AAPR	25	8	4.7625	21	2.5X1	16100	33400	310	52	81	P	6	15	86	A	66	-	-	10	-	-	M6	68	9	14	8.6	1.13	0.38				
GR2508DT-CAPR	25	8	4.7625	21	2.5X1	16100	33400	310	52	81	P	6	15	86	C	-	-	-	-	-	-	M6	68	9	14	8.6	1.30	0.38				
GR2805DT-CAPR	28	5	3.1750	25.5	2.5X1	9800	24900	330	54	58	P	5	12	82	C	-	-	-	-	-	-	M6	67	6.6	11	6.5	0.95	0.48				
GR2805DT-DAPR	28	5	3.1750	25.5	2.5X1	9800	24900	330	54	58	P	5	12	82	D	-	-	-	-	-	31	M6	67	6.6	11	6.5	0.92	0.48				
GR2805ET-CAPR	28	5	3.1750	25.5	2.5X2	17900	49800	610	54	88	P	5	12	82	C	-	-	-	-	-	-	M6	67	6.6	11	6.5	1.30	0.48				
GR2805ET-DAPR	28	5	3.1750	25.5	2.5X2	17900	49800	610	54	88	P	5	12	82	D	-	-	-	-	-	31	M6	67	6.6	11	6.5	1.26	0.48				
GR2810DT-CAPR	28	10	4.7625	24	2.5X1	17000	37600	340	56	95	P	5	15	84	C	-	-	-	-	-	-	M6	69	6.6	11	6.5	1.52	0.48				
GR2810DT-DAPR	28	10	4.7625	24	2.5X1	17000	37600	340	56	95	P	5	15	84	D	-	-	-	-	-	32	M6	69	6.6	11	6.5	1.47	0.48				

Note: * The rigidity indicated with the *mark in the above list represents the value applied to the axial load about 3 times or less of the preload, which is equivalent to 1/15 of basic dynamic load rating (C). It is the practical value based on the result of rigidity test for the rigidity of nut etc.

Wiper material P: Plastic wiper
L: Lip seal

TUBE METHOD INTEGRAL NUT**Screw shaft diameter ø32**

(Unit: mm)

**Flange type C****Flange type D**

Model No.	Screw shaft diameter d	Lead L	Ball diameter D _b	Root diameter d ₁	Number of circuits Turn x Circuit	Basic dynamic load rating C (N)	Basic static load rating C ₀ (N)	* Rigidity K _{hw} (N/μm)	Nut dimensions												Mass							
									Outer diameter D	Overall length L _t	Wiper material	Without wiper E	Flange thickness T	Flange outer diameter D ₁	Flange type	Flange dimensions							Mounting hole					
																W	X	Y	A	B	G	Q	PCD	M				
																								Drill	Spot facing	Depth		
GR3205DT-CALR	32	5	3.1750	29.5	2.5X1	10500	28600	370	58	58	L	5	12	85	C	-	-	-	-	-	-	M6	71	6.6	11	6.5	1.02	0.63
GR3205DT-DALR	32	5	3.1750	29.5	2.5X1	10500	28600	370	58	58	L	5	12	85	D	-	-	-	-	-	-	M6	71	6.6	11	6.5	0.98	0.63
GR3205ET-CALR	32	5	3.1750	29.5	2.5X2	19000	57200	690	58	88	L	5	12	85	C	-	-	-	-	-	-	M6	71	6.6	11	6.5	1.40	0.63
GR3205ET-DALR	32	5	3.1750	29.5	2.5X2	19000	57200	690	58	88	L	5	12	85	D	-	-	-	-	-	-	M6	71	6.6	11	6.5	1.36	0.63
GR3206DT-CALR	32	6	3.9688	28.6	2.5X1	14400	35500	380	62	67	L	5	12	89	C	-	-	-	-	-	-	M6	75	6.6	11	6.5	1.32	0.63
GR3206DT-DALR	32	6	3.9688	28.6	2.5X1	14400	35500	380	62	67	L	5	12	89	D	-	-	-	-	-	-	M6	75	6.6	11	6.5	1.28	0.63
GR3206ET-CALR	32	6	3.9688	28.6	2.5X2	26000	71000	710	62	103	L	5	12	89	C	-	-	-	-	-	-	M6	75	6.6	11	6.5	1.87	0.63
GR3206ET-DALR	32	6	3.9688	28.6	2.5X2	26000	71000	710	62	103	L	5	12	89	D	-	-	-	-	-	-	M6	75	6.6	11	6.5	1.83	0.63
GR3208DT-CALR	32	8	4.7625	28	2.5X1	17800	41700	380	66	81	L	6	15	100	C	-	-	-	-	-	-	M6	82	9	14	8.6	1.97	0.63
GR3208DT-DALR	32	8	4.7625	28	2.5X1	17800	41700	380	66	81	L	6	15	100	D	-	-	-	-	-	-	M6	82	9	14	8.6	1.91	0.63
GR3208BT-CALR	32	8	4.7625	28	1.5X2	20900	50000	440	66	105	L	6	15	100	C	-	-	-	-	-	-	M6	82	9	14	8.6	2.40	0.63
GR3208BT-DALR	32	8	4.7625	28	1.5X2	20900	50000	440	66	105	L	6	15	100	D	-	-	-	-	-	-	M6	82	9	14	8.6	2.34	0.63
GR3210AT-CALR	32	10	6.3500	27.2	1.5X1	16600	33400	230	74	88	L	8	15	108	C	-	-	-	-	-	-	M6	90	9	14	8.6	2.65	0.63
GR3210AT-DALR	32	10	6.3500	27.2	1.5X1	16600	33400	230	74	88	L	8	15	108	D	-	-	-	-	-	-	M6	90	9	14	8.6	2.57	0.63
GR3210DT-CALR	32	10	6.3500	27.2	2.5X1	25800	55600	380	74	98	L	8	15	108	C	-	-	-	-	-	-	M6	90	9	14	8.6	2.88	0.63
GR3210DT-DALR	32	10	6.3500	27.2	2.5X1	25800	55600	380	74	98	L	8	15	108	D	-	-	-	-	-	-	M6	90	9	14	8.6	2.81	0.63

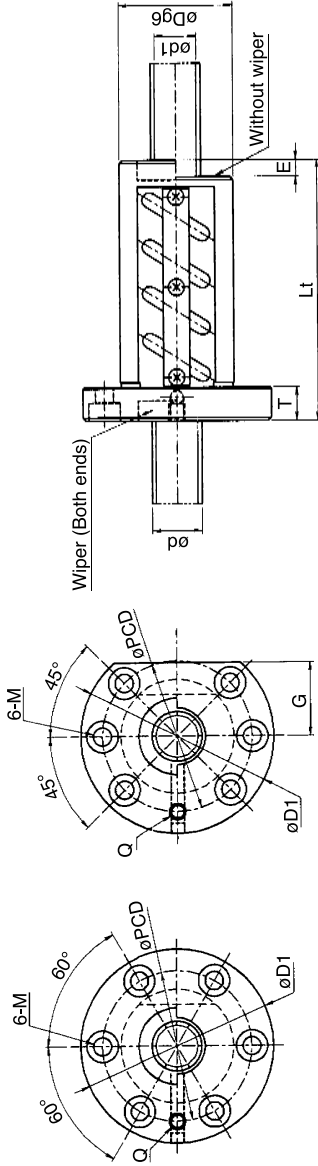
Note: * The rigidity indicated with the *mark in the above list represents the value applied to the axial load about 3 times or less of the preload, which is equivalent to 1/15 of basic dynamic load rating (C). It is the practical value based on the result of rigidity test for the rigidity of nut etc.

Wiper material L: Lip seal

TUBE METHOD INTEGRAL NUT

Screw shaft diameter ø36

(Unit: mm)



Flange type C

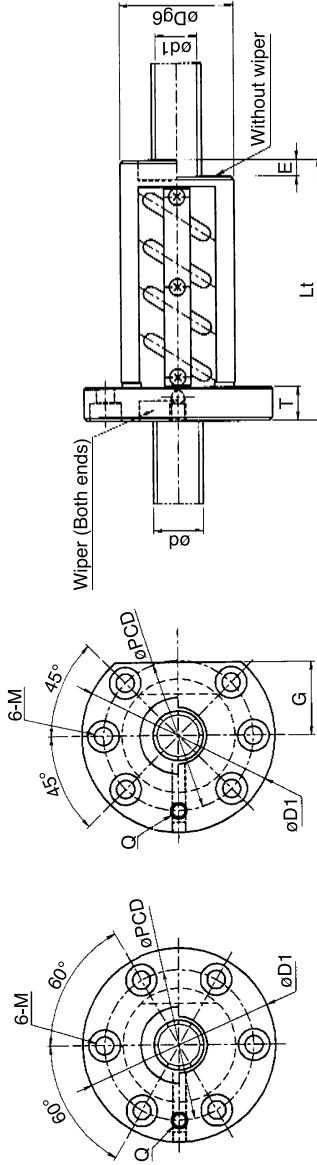
Flange type D

Model No.	Screw shaft diameter d	Lead L	Ball diameter D _b	Root diameter d ₁	Number of circuits Turn x Circuit	Basic dynamic load rating C (N)	Basic static load rating C ₀ (N)	* Rigidity K _{rw} (N/μm)	Nut dimensions													Mass					
									Outer diameter D	Overall length L _t	Wiper material	Without wiper E	Flange thickness T	Flange outer diameter D ₁	Flange type	Flange dimensions								Mounting hole			
																W	X	Y	A	B	G	Q	PCD	M			
																								Drill	Spot facing	Depth	
GR3605DT-CAPR	36	5	3.1750	33.5	2.5X1	11000	32300	400	64	61	P	5	15	98	C	-	-	-	-	-	M6	80	9	14	8.6	1.44	0.79
GR3605DT-DAPR	36	5	3.1750	33.5	2.5X1	11000	32300	400	64	61	P	5	15	98	D	-	-	-	-	-	M6	80	9	14	8.6	1.38	0.79
GR3605ET-CAPR	36	5	3.1750	33.5	2.5X2	20100	64600	750	64	91	P	5	15	98	C	-	-	-	-	-	M6	80	9	14	8.6	1.89	0.79
GR3605ET-DAPR	36	5	3.1750	33.5	2.5X2	20100	64600	750	64	91	P	5	15	98	D	-	-	-	-	-	M6	80	9	14	8.6	1.84	0.79
GR3606DT-CAPR	36	6	3.9688	32.6	2.5X1	15100	39800	410	66	70	P	5	15	100	C	-	-	-	-	-	M6	82	9	14	8.6	1.67	0.79
GR3606DT-DAPR	36	6	3.9688	32.6	2.5X1	15100	39800	410	66	70	P	5	15	100	D	-	-	-	-	-	M6	82	9	14	8.6	1.61	0.79
GR3606ET-CAPR	36	6	3.9688	32.6	2.5X2	27200	79600	770	66	106	P	5	15	100	C	-	-	-	-	-	M6	82	9	14	8.6	2.26	0.79
GR3606ET-DAPR	36	6	3.9688	32.6	2.5X2	27200	79600	770	66	106	P	5	15	100	D	-	-	-	-	-	M6	82	9	14	8.6	2.20	0.79
GR3610AT-CAPR	36	10	6.3500	31.2	1.5X1	17800	37800	260	76	88	P	8	15	110	C	-	-	-	-	-	M6	92	9	14	8.6	2.64	0.79
GR3610AT-DAPR	36	10	6.3500	31.2	1.5X1	17800	37800	260	76	88	P	8	15	110	D	-	-	-	-	-	M6	92	9	14	8.6	2.56	0.79
GR3610DT-CAPR	36	10	6.3500	31.2	2.5X1	27600	63000	420	76	98	P	8	15	110	C	-	-	-	-	-	M6	92	9	14	8.6	2.87	0.79
GR3610DT-DAPR	36	10	6.3500	31.2	2.5X1	27600	63000	420	76	98	P	8	15	110	D	-	-	-	-	-	M6	92	9	14	8.6	2.80	0.79
GR3610GT-CAPR	36	10	6.3500	31.2	3.5X1	36900	88200	580	76	118	P	8	15	110	C	-	-	-	-	-	M6	92	9	14	8.6	3.34	0.79
GR3610GT-DAPR	36	10	6.3500	31.2	3.5X1	36900	88200	580	76	118	P	8	15	110	D	-	-	-	-	-	M6	92	9	14	8.6	3.27	0.79

Note: - The rigidity indicated with the *mark in the above list represents the value applied to the axial load about 3 times or less of the preload, which is equivalent to 1/15 of basic dynamic load rating (C). It is the practical value based on the result of rigidity test for the rigidity of nut etc.
 - Wiper material P: Plastic wiper

TUBE METHOD INTEGRAL NUT**Screw shaft diameter ø40, ø45**

(Unit: mm)

**Flange type C****Flange type D**

Model No.	Screw shaft diameter d	Lead	Ball diameter	Root diameter	Number of circuits	Basic dynamic load rating C (N)	Basic static load rating C ₀ (N)	* Rigidity K _{HW} (N/μm)	Nut dimensions											Mass								
									Outer diameter	Overall length	Wiper material	Without wiper	Flange thickness	Flange outer diameter	Flange type	Flange dimensions						Mounting hole			Nut (kg)	Screw shaft (kg/100mm)		
																W	X	Y	A	B	G	Q	PCD	M				
																								Drill			Spot facing	Depth
GR4006DT-CAPR	40	6	3.9688	36.6	2.5X1	14200	44000	430	70	70	P	5	15	104	C	-	-	-	-	-	-	Rc1/8	86	9	14	8.6	1.78	0.98
GR4006DT-DAPR	40	6	3.9688	36.6	2.5X1	14200	44000	430	70	70	P	5	15	104	D	-	-	-	-	-	-	Rc1/8	86	9	14	8.6	1.72	0.98
GR4006ET-CAPR	40	6	3.9688	36.6	2.5X2	28300	88000	850	70	106	P	5	15	104	C	-	-	-	-	-	-	Rc1/8	86	9	14	8.6	2.42	0.98
GR4006ET-DAPR	40	6	3.9688	36.6	2.5X2	28300	88000	850	70	106	P	5	15	104	D	-	-	-	-	-	-	Rc1/8	86	9	14	8.6	2.35	0.98
GR4008DT-CALR	40	8	4.7625	36	2.5X1	19600	54200	460	74	81	L	6	15	108	C	-	-	-	-	-	-	Rc1/8	90	9	14	8.6	2.24	0.98
GR4008DT-DALR	40	8	4.7625	36	2.5X1	19600	54200	460	74	81	L	6	15	108	D	-	-	-	-	-	-	Rc1/8	90	9	14	8.6	2.17	0.98
GR4008ET-CALR	40	8	4.7625	36	2.5X2	35600	108400	870	74	129	L	6	15	108	C	-	-	-	-	-	-	Rc1/8	90	9	14	8.6	3.23	0.98
GR4008ET-DALR	40	8	4.7625	36	2.5X2	35600	108400	870	74	129	L	6	15	108	D	-	-	-	-	-	-	Rc1/8	90	9	14	8.6	3.16	0.98
GR4010DT-CALR	40	10	6.3500	35.2	2.5X1	29300	74300	460	82	101	L	8	18	124	C	-	-	-	-	-	-	Rc1/8	102	11	17.5	10.8	3.67	0.98
GR4010DT-DALR	40	10	6.3500	35.2	2.5X1	29300	74300	460	82	101	L	8	18	124	D	-	-	-	-	-	-	Rc1/8	102	11	17.5	10.8	3.56	0.98
GR4010BT-CALR	40	10	6.3500	35.2	1.5X2	34200	89200	560	82	131	L	8	18	124	C	-	-	-	-	-	-	Rc1/8	102	11	17.5	10.8	4.48	0.98
GR4010BT-DALR	40	10	6.3500	35.2	1.5X2	34200	89200	560	82	131	L	8	18	124	D	-	-	-	-	-	-	Rc1/8	102	11	17.5	10.8	4.36	0.98
GR4010GT-CALR	40	10	6.3500	35.2	3.5X1	39100	104000	640	82	121	L	8	18	124	C	-	-	-	-	-	-	Rc1/8	102	11	17.5	10.8	4.21	0.98
GR4010GT-DALR	40	10	6.3500	35.2	3.5X1	39100	104000	640	82	121	L	8	18	124	D	-	-	-	-	-	-	Rc1/8	102	11	17.5	10.8	4.09	0.98
GR4012DT-CALR	40	12	7.1438	34.6	2.5X1	35100	79000	490	86	117	L	8	18	128	C	-	-	-	-	-	-	Rc1/8	106	11	17.5	10.8	4.55	0.98
GR4012DT-DALR	40	12	7.1438	34.6	2.5X1	35100	79000	490	86	117	L	8	18	128	D	-	-	-	-	-	-	Rc1/8	106	11	17.5	10.8	4.42	0.98
GR4510DT-CALR	45	10	6.3500	40.2	2.5X1	31500	81500	530	86	101	L	8	18	128	C	-	-	-	-	-	-	Rc1/8	106	11	17.5	10.8	3.81	1.24
GR4510DT-DALR	45	10	6.3500	40.2	2.5X1	31500	81500	530	86	101	L	8	18	128	D	-	-	-	-	-	-	Rc1/8	106	11	17.5	10.8	3.68	1.24
GR4510ET-CALR	45	10	6.3500	40.2	2.5X2	57200	163000	990	86	161	L	8	18	128	C	-	-	-	-	-	-	Rc1/8	106	11	17.5	10.8	5.49	1.24
GR4510ET-DALR	45	10	6.3500	40.2	2.5X2	57200	163000	990	86	161	L	8	18	128	D	-	-	-	-	-	-	Rc1/8	106	11	17.5	10.8	5.36	1.24
GR4512DT-CALR	45	12	7.9375	38.8	2.5X1	41200	98500	520	94	119	L	7	22	140	C	-	-	-	-	-	-	Rc1/8	116	14	20	13	5.68	1.24
GR4512DT-DALR	45	12	7.9375	38.8	2.5X1	41200	98500	520	94	119	L	7	22	140	D	-	-	-	-	-	-	Rc1/8	116	14	20	13	5.50	1.24

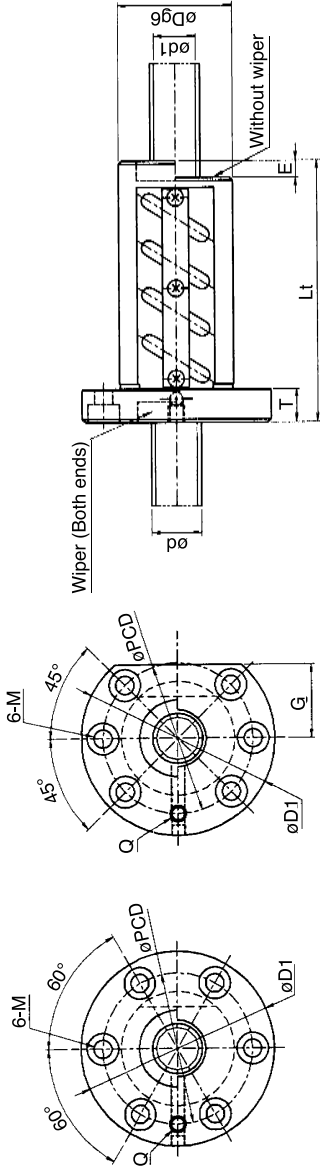
Note: · The rigidity indicated with the *mark in the above list represents the value applied to the axial load about 3 times or less of the preload, which is equivalent to 1/15 of basic dynamic load rating (C). It is the practical value based on the result of rigidity test for the rigidity of nut etc.

· Wiper material P: Plastic wiper
L: Lip seal

TUBE METHOD INTEGRAL NUT

Screw shaft diameter ø50-ø63

(Unit: mm)



Flange type C

Flange type D

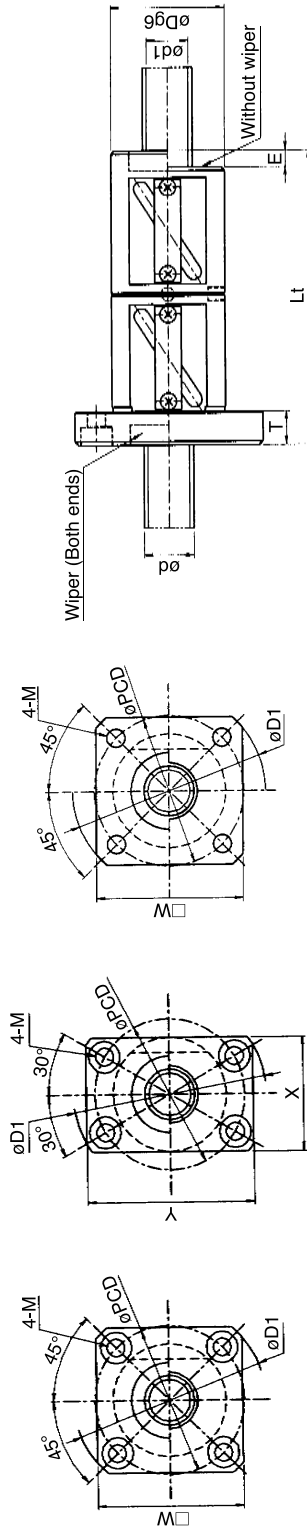
Model No.	Screw shaft diameter d	Lead	Ball diameter	Root diameter	Number of circuits Turn x Circuit	Basic dynamic load rating C (N)	Basic static load rating C ₀ (N)	Rigidity K _{rw} (N/μm)	Nut dimensions											Mass												
									Outer diameter	Overall length	Wiper material	Without wiper	Flange thickness	Flange outer diameter	Flange type	Flange dimensions						Mounting hole			Nut (kg)	Screw shaft (kg/100mm)						
																D	L _t	E	T	D ₁	W	X	Y	A			B	G	Q	PCD	M	
																															Drill	Spot facing
GR5010DT-CALR	50	10	6.3500	45.2	2.5X1	32800	89900	560	93	101	L	8	18	135	C	-	-	-	-	-	-	Rc1/8	113	11	17.5	10.8	4.31	1.53				
GR5010DT-DALR	50	10	6.3500	45.2	2.5X1	32800	89900	560	93	101	L	8	18	135	D	-	-	-	-	-	51	Rc1/8	113	11	17.5	10.8	4.17	1.53				
GR5010ET-CALR	50	10	6.3500	45.2	2.5X2	59400	177800	1060	93	161	L	8	18	135	C	-	-	-	-	-	-	Rc1/8	113	11	17.5	10.8	6.24	1.53				
GR5010ET-DALR	50	10	6.3500	45.2	2.5X2	59400	177800	1060	93	161	L	8	18	135	D	-	-	-	-	-	51	Rc1/8	113	11	17.5	10.8	6.10	1.53				
GR5012DT-CALR	50	12	7.9375	43.8	2.5X1	42600	110000	560	100	119	L	7	22	146	C	-	-	-	-	-	-	Rc1/8	122	14	20	13	6.19	1.53				
GR5012DT-DALR	50	12	7.9375	43.8	2.5X1	42600	110000	560	100	119	L	7	22	146	D	-	-	-	-	-	55	Rc1/8	122	14	20	13	5.98	1.53				
GR5510DT-CALR	55	10	6.3500	50.2	2.5X1	31400	100100	600	100	105	L	8	22	146	C	-	-	-	-	-	-	Rc1/8	122	14	20	13	5.38	1.85				
GR5510DT-DALR	55	10	6.3500	50.2	2.5X1	31400	100100	600	100	105	L	8	22	146	D	-	-	-	-	-	55	Rc1/8	122	14	20	13	5.18	1.85				
GR5510ET-CALR	55	10	6.3500	50.2	2.5X2	62700	200200	1170	100	165	L	8	22	146	C	-	-	-	-	-	-	Rc1/8	122	14	20	13	7.59	1.85				
GR5510ET-DALR	55	10	6.3500	50.2	2.5X2	62700	200200	1170	100	165	L	8	22	146	D	-	-	-	-	-	55	Rc1/8	122	14	20	13	7.38	1.85				
GR6310DT-CAPR	63	10	6.3500	58.2	2.5X1	36800	114900	700	108	105	P	8	22	154	C	-	-	-	-	-	-	Rc1/8	130	14	20	13	5.86	2.43				
GR6310DT-DAPR	63	10	6.3500	58.2	2.5X1	36800	114900	700	108	105	P	8	22	154	D	-	-	-	-	-	58	Rc1/8	130	14	20	13	5.63	2.43				
GR6310ET-CAPR	63	10	6.3500	58.2	2.5X2	66600	229800	1310	108	165	P	8	22	154	C	-	-	-	-	-	-	Rc1/8	130	14	20	13	8.28	2.43				
GR6310ET-DAPR	63	10	6.3500	58.2	2.5X2	66600	229800	1310	108	165	P	8	22	154	D	-	-	-	-	-	58	Rc1/8	130	14	20	13	8.05	2.43				
GR6312DT-CAPR	63	12	7.9375	56.8	2.5X1	48700	139000	700	115	119	P	7	22	161	C	-	-	-	-	-	-	Rc1/8	137	14	20	13	7.46	2.43				
GR6312DT-DAPR	63	12	7.9375	56.8	2.5X1	48700	139000	700	115	119	P	7	22	161	D	-	-	-	-	-	61	Rc1/8	137	14	20	13	7.22	2.43				

Note: · The rigidity indicated with the *mark in the above list represents the value applied to the axial load about 3 times or less of the preload, which is equivalent to 1/15 of basic dynamic load rating (C). It is the practical value based on the result of rigidity test for the rigidity of nut etc.

· Wiper material P: Plastic wiper L: Lip seal

TUBE METHOD DOUBLE NUT**Screw shaft diameter ø8-ø12**

(Unit: mm)

**Flange type A****Flange type B****Flange type E**

Model No.	Screw shaft diameter d	Lead L	Ball diameter D _b	Root diameter d ₁	Number of circuits Turn x Circuit	Basic dynamic load rating C (N)	Basic static load rating C ₀ (N)	* Rigidity K _{hw} (N/μm)	Nut dimensions											Mass							
									Outer diameter D	Overall length L _t	Wiper material	Without wiper	Flange thickness T	Flange outer diameter D ₁	Flange type	Flange dimensions						Mounting hole			Nut (kg)	Screw shaft (kg/100mm)	
																W	X	Y	A	B	G	Q	PCD	M			
																								Drill			Spot facing
GR0802DD-AAFR	8	2	1.5875	6.6	2.5X1	1950	2600	100	20	54	F	3	5	36	A	28	-	-	-	-	-	27	3.4	6.5	3.3	0.12	0.04
GR082FDD-AAFR	8	2.5	2.0000	6.3	2.5X1	2350	3300	100	22	54	F	2	5	38	A	29	-	-	-	-	-	29	3.4	6.5	3.3	0.14	0.04
GR0803DD-AAFR	8	3	2.0000	6.3	2.5X1	2350	3300	100	22	54	F	3	5	38	A	29	-	-	-	-	-	29	3.4	6.5	3.3	0.14	0.04
GR0804DD-AAFR	8	4	2.0000	6.3	2.5X1	2350	3300	100	22	54	F	3	5	38	A	29	-	-	-	-	-	29	3.4	6.5	3.3	0.14	0.04
GR1002DD-EAFR	10	2	1.5875	8.6	2.5X1	2250	3300	120	23	54	F	3	5	40	E	31	-	-	-	-	-	31	4.5	-	-	0.15	0.06
GR102FDD-AAFR	10	2.5	2.0000	8.3	2.5X1	2700	4200	120	24	60	F	5	8	43	A	33	-	-	-	-	-	32	4.5	8	4.4	0.19	0.06
GR1003DD-AAPR	10	3	2.0000	8.3	2.5X1	2700	4200	120	24	60	P	6	8	43	A	33	-	-	-	-	-	32	4.5	8	4.4	0.19	0.06
GR1004DD-AAPR	10	4	2.3812	8.1	2.5X1	3350	5900	120	26	65	P	3	8	45	A	35	-	-	-	-	-	34	4.5	8	4.4	0.24	0.06
GR1004DD-BAPR	10	4	2.3812	8.1	2.5X1	3350	5900	120	26	65	P	3	8	46	B	-	28	42	-	-	-	36	4.5	8	4.4	0.24	0.06
GR1005DD-AAPR	10	5	2.3812	8.1	2.5X1	3350	5900	120	26	70	P	5	8	45	A	35	-	-	-	-	-	34	4.5	8	4.4	0.26	0.06
GR1005DD-BAPR	10	5	2.3812	8.1	2.5X1	3350	5900	120	26	70	P	5	8	46	B	-	28	42	-	-	-	36	4.5	8	4.4	0.26	0.06
GR1202DD-AAPR	12	2	1.5875	10.6	2.5X1	2450	4100	140	25	59	P	5	8	44	A	34	-	-	-	-	-	33	4.5	8	4.4	0.20	0.09
GR122FDD-AAPR	12	2.5	2.0000	10.3	2.5X1	2950	5100	140	26	59	P	4	8	45	A	35	-	-	-	-	-	34	4.5	8	4.4	0.21	0.09
GR1203DD-AAPR	12	3	2.0000	10.3	2.5X1	2950	5100	140	26	59	P	5	8	45	A	35	-	-	-	-	-	34	4.5	8	4.4	0.21	0.09
GR1204DD-AALR	12	4	2.3812	10.1	2.5X1	3600	6750	140	30	69	L	5	10	54	A	41	-	-	-	-	-	41	5.5	9.5	5.4	0.36	0.09
GR1205DD-AALR	12	5	3.1750	9.5	2.5X1	5950	9800	150	30	79	L	3	10	54	A	41	-	-	-	-	-	41	5.5	9.5	5.4	0.39	0.09
GR1205DD-BALR	12	5	3.1750	9.5	2.5X1	5950	9800	150	30	79	L	3	10	50	B	-	32	45	-	-	-	40	4.5	8	4.4	0.37	0.09
GR1206DD-AAPR	12	6	3.1750	9.5	2.5X1	5950	9800	150	30	81	P	3	10	54	A	41	-	-	-	-	-	41	5.5	9.5	5.4	0.39	0.09
GR1206DD-BAPR	12	6	3.1750	9.5	2.5X1	5950	9800	150	30	81	P	3	10	54	B	-	32	48	-	-	-	41	5.5	9.5	5.4	0.38	0.09

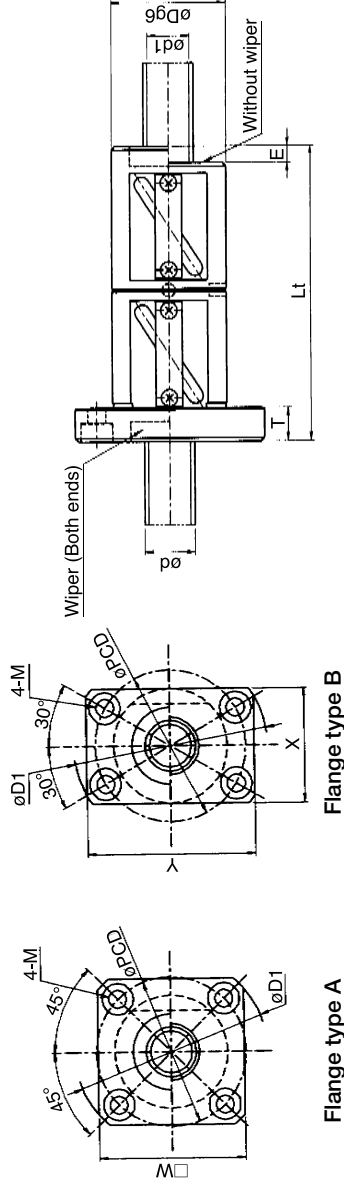
Note: · The rigidity indicated with the *mark in the above list represents the value applied to the axial load about 3 times or less of the preload, which is equivalent to 1/15 of basic dynamic load rating (C). It is the practical value based on the result of rigidity test for the rigidity of nut etc.

· Wiper material F: Felt wiper P: Plastic wiper
L: Lip seal

TUBE METHOD DOUBLE NUT

Screw shaft diameter $\phi 15$, $\phi 16$

(Unit: mm)



Flange type A

Flange type B

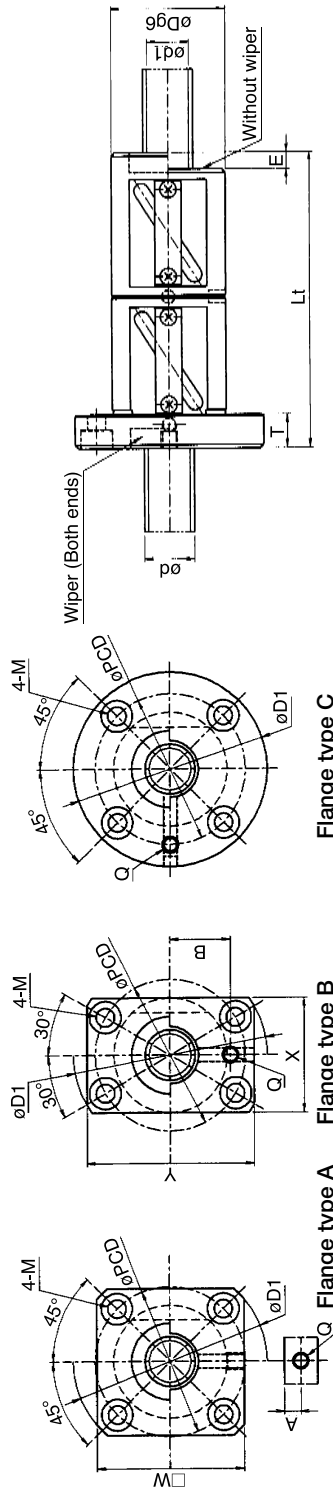
Model No.	Screw shaft diameter d	Lead L	Ball diameter D _b	Root diameter d ₁	Number of circuits Turn x Circuit	Basic dynamic load rating C (N)	Basic static load rating C ₀ (N)	* Rigidity K _{hw} (N/μm)	Nut dimensions													Mass						
									Outer diameter D	Overall length L _t	Wiper material	Without wiper E	Flange thickness T	Flange outer diameter D ₁	Flange type	Flange dimensions						Mounting hole			Nut (kg)	Screw shaft (kg/100mm)		
																W	X	Y	A	B	G	Q	PCD	M				
																								Drill			Spot facing	Depth
GR1502DD-AAPR	15	2	1.5875	13.6	2.5X1	2700	5500	180	30	61	P	5	10	54	A	41	-	-	-	-	-	-	41	5.5	9.5	5.4	0.30	0.14
GR1502DD-BAPR	15	2	1.5875	13.6	2.5X1	2700	5500	180	30	61	P	5	10	54	B	-	32	48	-	-	-	-	41	5.5	9.5	5.4	0.29	0.14
GR152FDD-AAPR	15	2.5	2.0000	13.3	2.5X1	3400	6500	180	30	61	P	4	10	54	A	41	-	-	-	-	-	-	41	5.5	9.5	5.4	0.30	0.14
GR152FDD-BAPR	15	2.5	2.0000	13.3	2.5X1	3400	6500	180	30	61	P	4	10	54	B	-	32	48	-	-	-	-	41	5.5	9.5	5.4	0.29	0.14
GR1503DD-AAPR	15	3	2.0000	13.3	2.5X1	3400	6500	180	30	61	P	5	10	54	A	41	-	-	-	-	-	-	41	5.5	9.5	5.4	0.30	0.14
GR1503DD-BAPR	15	3	2.0000	13.3	2.5X1	3400	6500	180	30	61	P	5	10	54	B	-	32	48	-	-	-	-	41	5.5	9.5	5.4	0.29	0.14
GR1504DD-AALR	15	4	2.3812	13.1	2.5X1	4100	8550	180	32	73	L	3	10	56	A	43	-	-	-	-	-	-	43	5.5	9.5	5.4	0.39	0.14
GR1504DD-BALR	15	4	2.3812	13.1	2.5X1	4100	8550	180	32	73	L	3	10	56	B	-	32	48	-	-	-	-	43	5.5	9.5	5.4	0.37	0.14
GR1505DD-AALR	15	5	3.1750	12.5	2.5X1	6900	12500	190	34	79	L	3	10	58	A	44	-	-	-	-	-	-	45	5.5	9.5	5.4	0.46	0.14
GR1505DD-BALR	15	5	3.1750	12.5	2.5X1	6900	12500	190	34	79	L	3	10	58	B	-	34	50	-	-	-	-	45	5.5	9.5	5.4	0.45	0.14
GR1506DD-AAPR	15	6	3.1750	12.5	2.5X1	6900	12500	190	34	81	P	3	10	58	A	44	-	-	-	-	-	-	45	5.5	9.5	5.4	0.47	0.14
GR1506DD-BAPR	15	6	3.1750	12.5	2.5X1	6900	12500	190	34	81	P	3	10	58	B	-	34	50	-	-	-	-	45	5.5	9.5	5.4	0.45	0.14
GR1604DD-AAPR	16	4	2.3812	14.1	2.5X1	4200	9000	190	34	73	P	3	10	58	A	44	-	-	-	-	-	-	45	5.5	9.5	5.4	0.43	0.16
GR1604DD-BAPR	16	4	2.3812	14.1	2.5X1	4200	9000	190	34	73	P	3	10	58	B	-	34	50	-	-	-	-	45	5.5	9.5	5.4	0.42	0.16
GR1605DD-AALR	16	5	3.1750	13.5	2.5X1	7400	13900	200	36	79	L	3	10	59	A	46	-	-	-	-	-	-	47	5.5	9.5	5.4	0.52	0.16
GR1605DD-BALR	16	5	3.1750	13.5	2.5X1	7400	13900	200	36	79	L	3	10	59	B	-	36	53	-	-	-	-	47	5.5	9.5	5.4	0.50	0.16
GR1606DD-AAPR	16	6	3.1750	13.5	2.5X1	7400	13900	200	36	81	P	3	10	59	A	46	-	-	-	-	-	-	47	5.5	9.5	5.4	0.53	0.16
GR1606DD-BAPR	16	6	3.1750	13.5	2.5X1	7400	13900	200	36	81	P	3	10	59	B	-	36	53	-	-	-	-	47	5.5	9.5	5.4	0.51	0.16

Note: * The rigidity indicated with the *mark in the above list represents the value applied to the axial load about 3 times or less of the preload, which is equivalent to 1/15 of basic dynamic load rating (C). It is the practical value based on the result of rigidity test for the rigidity of nut etc.

· Wiper material P: Plastic wiper
L: Lip seal

TUBE METHOD DOUBLE NUT**Screw shaft diameter ø20**

(Unit: mm)



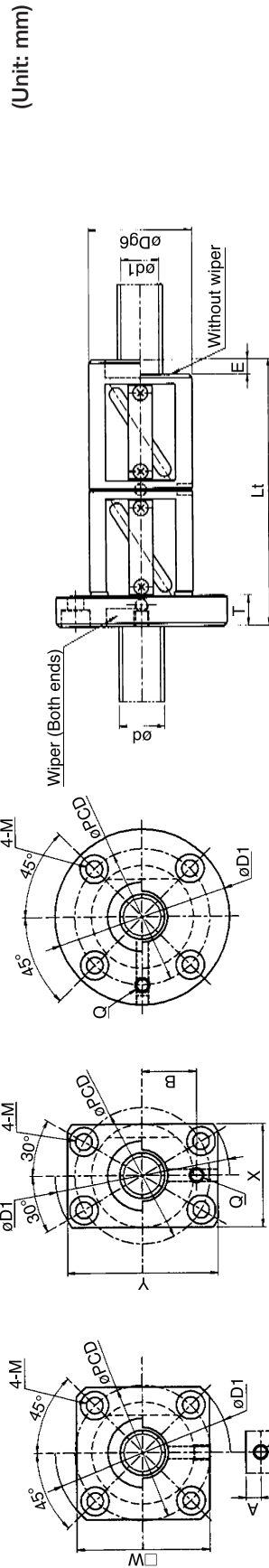
Model No.	Screw shaft diameter d	Lead	Ball diameter	Root diameter	Number of circuits	Basic dynamic load rating C (N)	Basic static load rating C ₀ (N)	* Rigidity K _{NW} (N/μm)	Nut dimensions											Mass									
									Outer diameter	Overall length	Wiper material	Without wiper	Flange thickness	Flange outer diameter	Flange type	Flange dimensions						Mounting hole			Nut (kg)	Screw shaft (kg/100mm)			
																W	X	Y	A	B	G	Q	PCD	M					
																								Drill			Spot facing	Depth	
GR202FDD-AAPR	20	2.5	2.0000	18.3	2.5X1	3800	8800	230	38	61	P	4	10	62	A	47	-	-	5	-	-	-	M6	49	5.5	9.5	5.4	0.43	0.25
GR202FDD-CAPR	20	2.5	2.0000	18.3	2.5X1	3800	8800	230	38	61	P	4	10	62	C	-	-	-	-	-	-	-	M6	49	5.5	9.5	5.4	0.50	0.25
GR2004DD-AALR	20	4	2.3812	18.1	2.5X1	4700	11700	240	40	73	L	3	10	64	A	49	-	-	5.5	-	-	-	M6	51	5.5	9.5	5.4	0.57	0.25
GR2004DD-CALR	20	4	2.3812	18.1	2.5X1	4700	11700	240	40	73	L	3	10	64	C	-	-	-	-	-	-	-	M6	51	5.5	9.5	5.4	0.63	0.25
GR2004ED-AALR	20	4	2.3812	18.1	2.5X2	8600	23400	440	40	89	L	3	10	64	A	49	-	-	5.5	-	-	-	M6	51	5.5	9.5	5.4	0.67	0.25
GR2004ED-CALR	20	4	2.3812	18.1	2.5X2	8600	23400	440	40	89	L	3	10	64	C	-	-	-	-	-	-	-	M6	51	5.5	9.5	5.4	0.74	0.25
GR2005BD-AALR	20	5	3.1750	17.5	1.5X2	9800	21000	290	40	93	L	5	12	68	A	52	-	-	7	-	-	-	M6	53	6.6	11	6.5	0.72	0.25
GR2005BD-CALR	20	5	3.1750	17.5	1.5X2	9800	21000	290	40	93	L	5	12	68	C	-	-	-	-	-	-	-	M6	53	6.6	11	6.5	0.80	0.25
GR2005DD-BALR	20	5	3.1750	17.5	2.5X1	8350	17500	240	40	83	L	5	12	68	B	-	40	60	-	21	-	-	M6	53	6.6	11	6.5	0.63	0.25
GR2005DD-CALR	20	5	3.1750	17.5	2.5X1	8350	17500	240	40	83	L	5	12	68	C	-	-	-	-	-	-	-	M6	53	6.6	11	6.5	0.74	0.25
GR2005ED-AALR	20	5	3.1750	17.5	2.5X2	15150	35000	460	40	103	L	5	12	68	A	52	-	-	7	-	-	-	M6	53	6.6	11	6.5	0.78	0.25
GR2005ED-CALR	20	5	3.1750	17.5	2.5X2	15150	35000	460	40	103	L	5	12	68	C	-	-	-	-	-	-	-	M6	53	6.6	11	6.5	0.87	0.25
GR2006BD-AAPR	20	6	3.9688	16.6	1.5X2	12900	25600	290	44	109	P	5	12	72	A	55	-	-	7	-	-	-	M6	57	6.6	11	6.5	1.02	0.25
GR2006BD-CAPR	20	6	3.9688	16.6	1.5X2	12900	25600	290	44	109	P	5	12	72	C	-	-	-	-	-	-	-	M6	57	6.6	11	6.5	1.12	0.25
GR2006DD-AAPR	20	6	3.9688	16.6	2.5X1	11000	21300	240	44	85	P	5	12	72	A	55	-	-	7.5	-	-	-	M6	57	6.6	11	6.5	0.83	0.25
GR2006DD-CAPR	20	6	3.9688	16.6	2.5X1	11000	21300	240	44	85	P	5	12	72	C	-	-	-	-	-	-	-	M6	57	6.6	11	6.5	0.92	0.25
GR2008DD-AAPR	20	8	4.7625	16	2.5X1	13500	25100	240	46	111	P	5	15	74	A	56	-	-	10	-	-	-	M6	59	6.6	11	6.5	1.16	0.25
GR2008DD-CAPR	20	8	4.7625	16	2.5X1	13500	25100	240	46	111	P	5	15	74	C	-	-	-	-	-	-	-	M6	59	6.6	11	6.5	1.29	0.25
GR2010AD-AALR	20	10	4.7625	16	1.5X1	9200	16200	160	46	97	L	6	15	74	A	56	-	-	10	-	-	-	M6	59	6.6	11	6.5	1.03	0.25
GR2010AD-BALR	20	10	4.7625	16	1.5X1	9200	16200	160	46	97	L	6	15	74	B	-	46	66	-	24	-	-	M6	59	6.6	11	6.5	1.02	0.25
GR2010DD-AALR	20	10	4.7625	16	2.5X1	13500	25100	240	46	115	L	6	15	74	A	56	-	-	10	-	-	-	M6	59	6.6	11	6.5	1.19	0.25
GR2010DD-BALR	20	10	4.7625	16	2.5X1	13500	25100	240	46	115	L	6	15	74	B	-	46	66	-	24	-	-	M6	59	6.6	11	6.5	1.18	0.25

Note: · The rigidity indicated with the *mark in the above list represents the value applied to the axial load about 3 times or less of the preload, which is equivalent to 1/15 of basic dynamic load rating (C). It is the practical value based on the result of rigidity test for the rigidity of nut etc.

· Wiper material P: Plastic wiper
L: Lip seal

TUBE METHOD DOUBLE NUT

Screw shaft diameter ø25



Model No.	Screw shaft diameter d	Lead	Ball diameter	Root diameter	Number of circuits Turn x Circuit	Basic dynamic load rating C (N)	Basic static load rating C ₀ (N)	* Rigidity K _{hw} (N/μm)	Nut dimensions													Mass											
									Outer diameter	Overall length	Wiper material	Without wiper	Flange thickness	Flange outer diameter	Flange type	Flange dimensions						Mounting hole			Nut (kg)	Screw shaft (kg/100mm)							
																D	L _t	Wiper	E	T	D ₁	W	X	Y			A	B	G	Q	PCD	M	
																																Drill	Spot facing
GR2504DD-AAPR	25	4	2.3812	23.1	2.5X1	5200	14400	280	46	75	P	3	12	74	A	56	-	-	7.5	-	-	M6	59	6.6	11	6.5	0.38						
GR2504DD-CAPR	25	4	2.3812	23.1	2.5X1	5200	14400	280	46	75	P	3	12	74	C	-	-	-	-	-	-	M6	59	6.6	11	6.5	0.38						
GR2504ED-AAPR	25	4	2.3812	23.1	2.5X2	9400	28800	520	46	99	P	3	12	74	A	56	-	-	7	-	-	M6	59	6.6	11	6.5	0.38						
GR2504ED-CAPR	25	4	2.3812	23.1	2.5X2	9400	28800	520	46	99	P	3	12	74	C	-	-	-	-	-	-	M6	59	6.6	11	6.5	0.38						
GR2505BD-AALR	25	5	3.1750	22.5	1.5X2	11000	26600	350	47	93	L	5	12	74	A	57	-	-	7	-	-	M6	60	6.6	11	6.5	0.38						
GR2505BD-CALR	25	5	3.1750	22.5	1.5X2	11000	26600	350	47	93	L	5	12	74	C	-	-	-	-	-	-	M6	60	6.6	11	6.5	0.38						
GR2505DD-AALR	25	5	3.1750	22.5	2.5X1	9400	22200	300	47	83	L	5	12	74	A	57	-	-	7.5	-	-	M6	60	6.6	11	6.5	0.38						
GR2505DD-CALR	25	5	3.1750	22.5	2.5X1	9400	22200	300	47	83	L	5	12	74	C	-	-	-	-	-	-	M6	60	6.6	11	6.5	0.38						
GR2505ED-AALR	25	5	3.1750	22.5	2.5X2	17000	44400	560	47	103	L	5	12	74	A	57	-	-	7.5	-	-	M6	60	6.6	11	6.5	0.38						
GR2505ED-CALR	25	5	3.1750	22.5	2.5X2	17000	44400	560	47	103	L	5	12	74	C	-	-	-	-	-	-	M6	60	6.6	11	6.5	0.38						
GR2506BD-AALR	25	6	3.9688	21.6	1.5X2	14700	32400	360	50	109	L	5	12	78	A	59	-	-	7.5	-	-	M6	63	6.6	11	6.5	0.38						
GR2506BD-CALR	25	6	3.9688	21.6	1.5X2	14700	32400	360	50	109	L	5	12	78	C	-	-	-	-	-	-	M6	63	6.6	11	6.5	0.38						
GR2506DD-AALR	25	6	3.9688	21.6	2.5X1	12500	27000	300	50	85	L	5	12	78	A	59	-	-	7.5	-	-	M6	63	6.6	11	6.5	0.38						
GR2506DD-CALR	25	6	3.9688	21.6	2.5X1	12500	27000	300	50	85	L	5	12	78	C	-	-	-	-	-	-	M6	63	6.6	11	6.5	0.38						
GR2506ED-AALR	25	6	3.9688	21.6	2.5X2	22700	54000	560	50	121	L	5	12	78	A	59	-	-	7.5	-	-	M6	63	6.6	11	6.5	0.38						
GR2506ED-CALR	25	6	3.9688	21.6	2.5X2	22700	54000	560	50	121	L	5	12	78	C	-	-	-	-	-	-	M6	63	6.6	11	6.5	0.38						
GR2508DD-AAPR	25	8	4.7625	21	2.5X1	16100	33400	310	52	111	P	5	15	86	A	66	-	-	10	-	-	M6	68	9	14	8.6	1.45	0.38					
GR2508DD-CAPR	25	8	4.7625	21	2.5X1	16100	33400	310	52	111	P	5	15	86	C	-	-	-	-	-	-	M6	68	9	14	8.6	1.62	0.38					
GR2508GD-AAPR	25	8	4.7625	21	3.5X1	21400	46800	420	52	113	P	6	15	86	A	66	-	-	10	-	-	M6	68	9	14	8.6	1.47	0.38					
GR2508GD-CAPR	25	8	4.7625	21	3.5X1	21400	46800	420	52	113	P	6	15	86	C	-	-	-	-	-	-	M6	68	9	14	8.6	1.64	0.38					
GR2510DD-AALR	25	10	4.7625	21	2.5X1	16100	33400	310	52	115	L	6	15	86	A	66	-	-	10	-	-	M6	68	9	14	8.6	1.50	0.38					
GR2510DD-BALR	25	10	4.7625	21	2.5X1	16100	33400	310	52	115	L	6	15	86	B	-	52	78	-	30	-	M6	68	9	14	8.6	1.46	0.38					
GR2510GD-AALR	25	10	4.7625	21	3.5X1	21400	46800	420	52	135	L	6	15	86	A	66	-	-	10	-	-	M6	68	9	14	8.6	1.71	0.38					
GR2510GD-BALR	25	10	4.7625	21	3.5X1	21400	46800	420	52	135	L	6	15	86	B	-	52	78	-	30	-	M6	68	9	14	8.6	1.68	0.38					

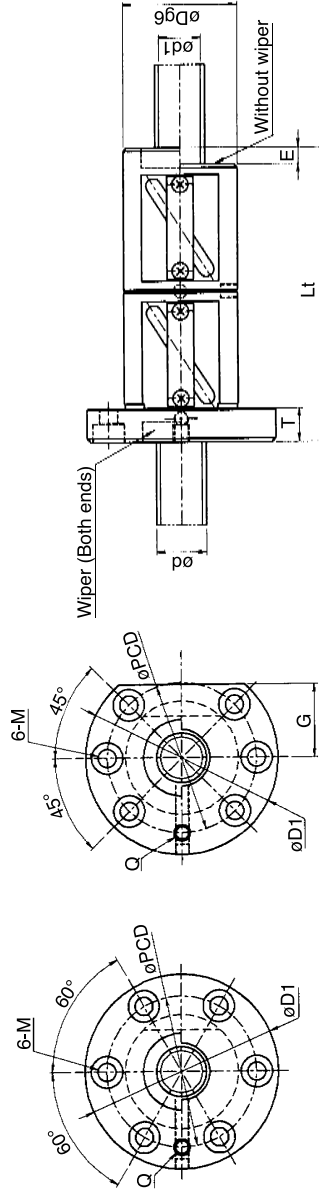
Note: * The rigidity indicated with the *mark in the above list represents the value applied to the axial load about 3 times or less of the preload, which is equivalent to 1/15 of basic dynamic load rating (C). It is the practical value based on the result of rigidity test for the rigidity of nut etc.

Wiper material P: Plastic wiper
L: Lip seal

TUBE METHOD DOUBLE NUT

Screw shaft diameter ø28

(Unit: mm)



Flange type C

Flange type D

Model No.	Screw shaft diameter d	Lead L	Ball diameter D _b	Root diameter d ₁	Number of Turn x Circuit	Basic dynamic load rating C (N)	Basic static load rating C ₀ (N)	* Rigidity K _{rw} (N/μm)	Nut dimensions														Mass					
									Outer diameter D	Overall length L _t	Wiper material	Without wiper E	Flange thickness T	Flange outer diameter D ₁	Flange type	Flange dimensions						Mounting hole						
																W	X	Y	A	B	G	Q	PCD	M				
																								Drill	Spot facing	Depth		
GR2805DD-CAPR	28	5	3.1750	25.5	2.5X1	9800	24900	330	54	73	P	5	12	82	C	-	-	-	-	-	-	M6	67	6.6	11	6.5	1.12	0.48
GR2805DD-DAPR	28	5	3.1750	25.5	2.5X1	9800	24900	330	54	73	P	5	12	82	D	-	-	-	-	-	31	M6	67	6.6	11	6.5	1.09	0.48
GR2805ED-CAPR	28	5	3.1750	25.5	2.5X2	17900	49800	610	54	103	P	5	12	82	C	-	-	-	-	-	-	M6	67	6.6	11	6.5	1.47	0.48
GR2805ED-DAPR	28	5	3.1750	25.5	2.5X2	17900	49800	610	54	103	P	5	12	82	D	-	-	-	-	-	31	M6	67	6.6	11	6.5	1.44	0.48
GR2810DD-CAPR	28	10	4.7625	24	2.5X1	17000	37600	340	56	115	P	5	15	84	C	-	-	-	-	-	-	M6	69	6.6	11	6.5	1.76	0.48
GR2810DD-DAPR	28	10	4.7625	24	2.5X1	17000	37600	340	56	115	P	5	15	84	D	-	-	-	-	-	32	M6	69	6.6	11	6.5	1.72	0.48

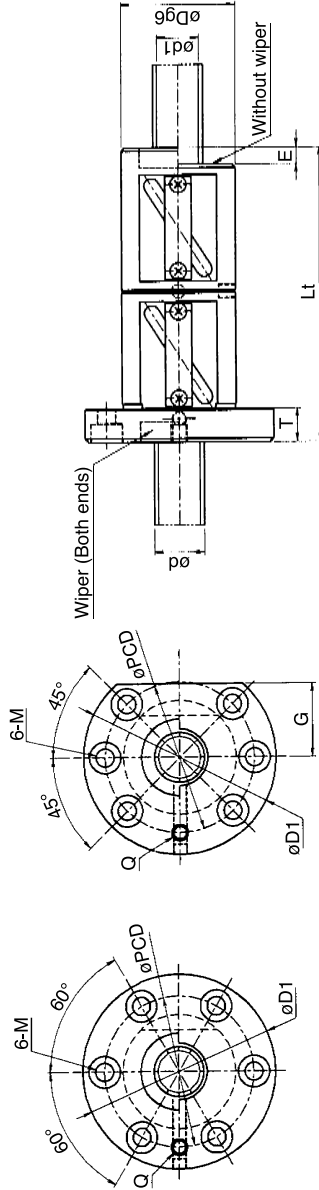
Note: · The rigidity indicated with the *mark in the above list represents the value applied to the axial load about 3 times or less of the preload, which is equivalent to 1/15 of basic dynamic load rating (C). It is the practical value based on the result of rigidity test for the rigidity of nut etc.

· Wiper material P: Plastic wiper

TUBE METHOD DOUBLE NUT

Screw shaft diameter ø32

(Unit: mm)



Flange type C

Flange type D

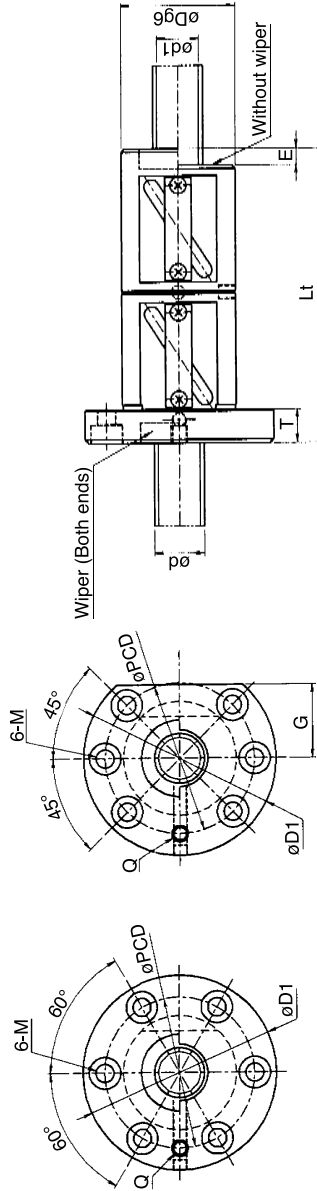
Model No.	Screw shaft diameter d	Lead L	Ball diameter D _b	Root diameter d ₁	Number of circuits Turn x	Basic dynamic load rating C (N)	Basic static load rating C ₀ (N)	* Rigidity K _{hw} (N/μm)	Nut dimensions													Mass						
									Outer diameter D	Overall length L _t	Wiper material	Without wiper E	Flange thickness T	Flange outer diameter D ₁	Flange type	Flange dimensions						Mounting hole			Nut (kg)	Screw shaft (kg/100mm)		
																W	X	Y	A	B	G	Q	PCD	M				
																								Drill			Spot facing	Depth
GR3204DD-CAPR	32	4	2.3812	30.1	2.5X1	5800	18900	330	54	75	P	3	12	81	C	-	-	-	-	-	-	M6	67	6.6	11	6.5	1.04	0.63
GR3204DD-DAPR	32	4	2.3812	30.1	2.5X1	5800	18900	330	54	75	P	3	12	81	D	-	-	-	-	-	-	M6	67	6.6	11	6.5	1.01	0.63
GR3204ED-CAPR	32	4	2.3812	30.1	2.5X2	10500	37800	610	54	91	P	3	12	81	C	-	-	-	-	-	-	M6	67	6.6	11	6.5	1.21	0.63
GR3204ED-DAPR	32	4	2.3812	30.1	2.5X2	10500	37800	610	54	91	P	3	12	81	D	-	-	-	-	-	-	M6	67	6.6	11	6.5	1.18	0.63
GR3205DD-CALR	32	5	3.1750	29.5	2.5X1	10500	28600	370	58	73	L	5	12	85	C	-	-	-	-	-	-	M6	71	6.6	11	6.5	1.21	0.63
GR3205DD-DALR	32	5	3.1750	29.5	2.5X1	10500	28600	370	58	73	L	5	12	85	D	-	-	-	-	-	-	M6	71	6.6	11	6.5	1.17	0.63
GR3205ED-CALR	32	5	3.1750	29.5	2.5X2	19000	57200	690	58	103	L	5	12	85	C	-	-	-	-	-	-	M6	71	6.6	11	6.5	1.59	0.63
GR3205ED-DALR	32	5	3.1750	29.5	2.5X2	19000	57200	690	58	103	L	5	12	85	D	-	-	-	-	-	-	M6	71	6.6	11	6.5	1.55	0.63
GR3205FD-CALR	32	5	3.1750	29.5	2.5X3	26900	85800	990	58	133	L	5	12	85	C	-	-	-	-	-	-	M6	71	6.6	11	6.5	1.96	0.63
GR3205FD-DALR	32	5	3.1750	29.5	2.5X3	26900	85800	990	58	133	L	5	12	85	D	-	-	-	-	-	-	M6	71	6.6	11	6.5	1.93	0.63
GR3206DD-CALR	32	6	3.9688	28.6	2.5X1	14400	35500	380	62	85	L	5	12	89	C	-	-	-	-	-	-	M6	75	6.6	11	6.5	1.59	0.63
GR3206DD-DALR	32	6	3.9688	28.6	2.5X1	14400	35500	380	62	85	L	5	12	89	D	-	-	-	-	-	-	M6	75	6.6	11	6.5	1.55	0.63
GR3206ED-CALR	32	6	3.9688	28.6	2.5X2	26000	71000	710	62	121	L	5	12	89	C	-	-	-	-	-	-	M6	75	6.6	11	6.5	2.14	0.63
GR3206ED-DALR	32	6	3.9688	28.6	2.5X2	26000	71000	710	62	121	L	5	12	89	D	-	-	-	-	-	-	M6	75	6.6	11	6.5	2.10	0.63
GR3208BD-CALR	32	8	4.7625	28	1.5X2	20900	50000	440	66	129	L	6	15	100	C	-	-	-	-	-	-	M6	82	9	14	8.6	2.83	0.63
GR3208BD-DALR	32	8	4.7625	28	1.5X2	20900	50000	440	66	129	L	6	15	100	D	-	-	-	-	-	-	M6	82	9	14	8.6	2.77	0.63
GR3208DD-CALR	32	8	4.7625	28	2.5X1	17800	41700	380	66	97	L	6	15	100	C	-	-	-	-	-	-	M6	82	9	14	8.6	2.26	0.63
GR3208DD-DALR	32	8	4.7625	28	2.5X1	17800	41700	380	66	97	L	6	15	100	D	-	-	-	-	-	-	M6	82	9	14	8.6	2.19	0.63
GR3208ED-CALR	32	8	4.7625	28	2.5X2	32300	83400	590	66	145	L	6	15	100	C	-	-	-	-	-	-	M6	82	9	14	8.6	3.12	0.63
GR3208ED-DALR	32	8	4.7625	28	2.5X2	32300	83400	590	66	145	L	6	15	100	D	-	-	-	-	-	-	M6	82	9	14	8.6	3.05	0.63

Note: * The rigidity indicated with the *mark in the above list represents the value applied to the axial load about 3 times or less of the preload, which is equivalent to 1/15 of basic dynamic load rating (C). It is the practical value based on the result of rigidity test for the rigidity of nut etc.

· Wiper material P: Plastic wiper
L: Lip seal

TUBE METHOD DOUBLE NUT**Screw shaft diameter ø32**

(Unit: mm)

**Flange type C****Flange type D**

Model No.	Screw shaft diameter d	Lead L	Ball diameter D _b	Root diameter d ₁	Number of circuits x Turn	Basic dynamic load rating C (N)	Basic static load rating C ₀ (N)	* Rigidity K _{hw} (N/μm)	Nut dimensions											Mass								
									Outer diameter D	Overall length L _t	Wiper material	Without wiper E	Flange thickness T	Flange outer diameter D ₁	Flange type	Flange dimensions						PCD	Mounting hole		Nut (kg)	Screw shaft (kg/100mm)		
																W	X	Y	A	B	G		Q	M				
																								Drill			Spot facing	Depth
GR3210BD-CALR	32	10	6.3500	27.2	1.5X2	30300	66700	450	74	158	L	8	15	108	C	-	-	-	-	-	-	M6	90	9	14	8.6	4.30	0.63
GR3210BD-DALR	32	10	6.3500	27.2	1.5X2	30300	66700	450	74	158	L	8	15	108	D	-	-	-	-	-	-	M6	90	9	14	8.6	4.23	0.63
GR3210DD-CALR	32	10	6.3500	27.2	2.5X1	25800	55600	380	74	118	L	8	15	108	C	-	-	-	-	-	-	M6	90	9	14	8.6	3.35	0.63
GR3210DD-DALR	32	10	6.3500	27.2	2.5X1	25800	55600	380	74	118	L	8	15	108	D	-	-	-	-	-	-	M6	90	9	14	8.6	3.28	0.63
GR3210ED-CALR	32	10	6.3500	27.2	2.5X2	46900	111200	720	74	178	L	8	15	108	C	-	-	-	-	-	-	M6	90	9	14	8.6	4.77	0.63
GR3210ED-DALR	32	10	6.3500	27.2	2.5X2	46900	111200	720	74	178	L	8	15	108	D	-	-	-	-	-	-	M6	90	9	14	8.6	4.70	0.63
GR3212DD-CAPR	32	12	6.3500	27.2	2.5X1	25800	55600	420	74	141	P	8	18	108	C	-	-	-	-	-	-	M6	90	9	14	8.6	4.01	0.63
GR3212DD-DAPR	32	12	6.3500	27.2	2.5X1	25800	55600	420	74	141	P	8	18	108	D	-	-	-	-	-	-	M6	90	9	14	8.6	3.92	0.63
GR3212GD-CAPR	32	12	6.3500	27.2	3.5X1	34500	77800	570	74	165	P	8	18	108	C	-	-	-	-	-	-	M6	90	9	14	8.6	4.58	0.63
GR3212GD-DAPR	32	12	6.3500	27.2	3.5X1	34500	77800	570	74	165	P	8	18	108	D	-	-	-	-	-	-	M6	90	9	14	8.6	4.49	0.63

Note: . The rigidity indicated with the *mark in the above list represents the value applied to the axial load about 3 times or less of the preload, which is equivalent to 1/15 of basic dynamic load rating (C). It is the practical value based on the result of rigidity test for the rigidity of nut etc.

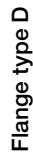
. Wiper material P: Plastic wiper L: Lip seal

Flange type C																											Flange type D																
Model No.	Screw shaft diameter	Lead	Ball diameter	Root diameter	Number of circuits	Basic dynamic load rating	Basic static load rating	Rigidity K _{NW}	Nut dimensions										Mass																								
									Flange dimensions						Mounting hole																												
									L	D _b	d ₁	Turn x	Circuit	C ₀ (N)	Outer diameter	Overall length	Wiper material	Without wiper	Flange thickness	Flange outer diameter	Flange type	W	X	Y	A	B	G	Q	PCD	Drill	M	Spot facing	Depth	Nut (kg)	Screw shaft (kg/100mm)								
GR3605DD-CAPR	36	5	3.1750	33.5	2.5X1	11000	32300	400	64	76	P	5	15	98	C	-	-	-	-	-	M6	80	9	14	8.6	1.67	0.79																
GR3605DD-DAPR	36	5	3.1750	33.5	2.5X1	11000	32300	400	64	76	P	5	15	98	D	-	-	-	-	-	M6	80	9	14	8.6	1.61	0.79																
GR3605ED-CAPR	36	5	3.1750	33.5	2.5X2	20100	64600	750	64	106	P	5	15	98	C	-	-	-	-	-	M6	80	9	14	8.6	2.12	0.79																
GR3605ED-DAPR	36	5	3.1750	33.5	2.5X2	20100	64600	750	64	106	P	5	15	98	D	-	-	-	-	-	M6	80	9	14	8.6	2.07	0.79																
GR3605FD-CAPR	36	5	3.1750	33.5	2.5X3	28300	96900	1080	64	136	P	5	15	98	C	-	-	-	-	-	M6	80	9	14	8.6	2.58	0.79																
GR3605FD-DAPR	36	5	3.1750	33.5	2.5X3	28300	96900	1080	64	136	P	5	15	98	D	-	-	-	-	-	M6	80	9	14	8.6	2.53	0.79																
GR3606DD-CAPR	36	6	3.9688	32.6	2.5X1	15100	39800	410	66	88	P	5	15	100	C	-	-	-	-	-	M6	82	9	14	8.6	1.97	0.79																
GR3606DD-DAPR	36	6	3.9688	32.6	2.5X1	15100	39800	410	66	88	P	5	15	100	D	-	-	-	-	-	M6	82	9	14	8.6	1.90	0.79																
GR3606ED-CAPR	36	6	3.9688	32.6	2.5X2	27200	79600	770	66	124	P	5	15	100	C	-	-	-	-	-	M6	82	9	14	8.6	2.56	0.79																
GR3606ED-DAPR	36	6	3.9688	32.6	2.5X2	27200	79600	770	66	124	P	5	15	100	D	-	-	-	-	-	M6	82	9	14	8.6	2.49	0.79																
GR3606FD-CAPR	36	6	3.9688	32.6	2.5X3	38500	119400	1090	66	160	P	5	15	100	C	-	-	-	-	-	M6	82	9	14	8.6	3.15	0.79																
GR3606FD-DAPR	36	6	3.9688	32.6	2.5X3	38500	119400	1090	66	160	P	5	15	100	D	-	-	-	-	-	M6	82	9	14	8.6	3.09	0.79																
GR3608DD-CAPR	36	8	4.7625	32	2.5X1	19200	47900	410	70	97	P	6	15	104	C	-	-	-	-	-	M6	86	9	14	8.6	2.41	0.79																
GR3608DD-DAPR	36	8	4.7625	32	2.5X1	19200	47900	410	70	97	P	6	15	104	D	-	-	-	-	-	M6	86	9	14	8.6	2.35	0.79																
GR3608ED-CAPR	36	8	4.7625	32	2.5X2	34700	95800	780	70	145	P	6	15	104	C	-	-	-	-	-	M6	86	9	14	8.6	3.34	0.79																
GR3608ED-DAPR	36	8	4.7625	32	2.5X2	34700	95800	780	70	145	P	6	15	104	D	-	-	-	-	-	M6	86	9	14	8.6	3.28	0.79																
GR3610DD-CALR	36	10	6.3500	31.2	2.5X1	27600	63000	420	76	118	L	8	15	110	C	-	-	-	-	-	M6	92	9	14	8.6	3.34	0.79																
GR3610DD-DALR	36	10	6.3500	31.2	2.5X1	27600	63000	420	76	118	L	8	15	110	D	-	-	-	-	-	M6	92	9	14	8.6	3.27	0.79																
GR3610ED-CALR	36	10	6.3500	31.2	2.5X2	50100	126000	800	76	178	L	8	15	110	C	-	-	-	-	-	M6	92	9	14	8.6	4.74	0.79																
GR3610ED-DALR	36	10	6.3500	31.2	2.5X2	50100	126000	800	76	178	L	8	15	110	D	-	-	-	-	-	M6	92	9	14	8.6	4.67	0.79																
GR3612DD-CAPR	36	12	7.1438	30.6	2.5X1	32800	69700	440	81	141	P	8	18	123	C	-	-	-	-	-	M6	101	11	17.5	10.8	4.84	0.79																
GR3612DD-DAPR	36	12	7.1438	30.6	2.5X1	32800	69700	440	81	141	P	8	18	123	D	-	-	-	-	-	M6	101	11	17.5	10.8	4.73	0.79																
GR3612GD-CAPR	36	12	7.1438	30.6	3.5X1	43700	97600	600	81	165	P	8	18	123	C	-	-	-	-	-	M6	101	11	17.5	10.8	5.51	0.79																
GR3612GD-DAPR	36	12	7.1438	30.6	3.5X1	43700	97600	600	81	165	P	8	18	123	D	-	-	-	-	-	M6	101	11	17.5	10.8	5.40	0.79																

Note: - The rigidity indicated with the *mark in the above list represents the value applied to the axial load about 3 times or less of the preload, which is equivalent to 1/15 of basic dynamic load rating (C). It is the practical value based on the result of rigidity test for the rigidity of nut etc.

Screw shaft diameter $\varnothing 40$

(Unit: mm)



Flange type C

Model No.	Screw shaft diameter d	Lead	Ball diameter	Root diameter	Number of circuits Turn	Basic dynamic load rating C (N)	Basic static load rating C ₀ (N)	Rigidity K _W (N/μm)	Nut dimensions											Mass							
									Outer diameter	Overall length	Wiper material	Without wiper	Flange thickness	Flange outer diameter	Flange type	Flange dimensions						Mounting hole			Nut (kg)	Screw shaft (kg/100mm)	
																W	X	Y	A	B	G	Q	PCD	M			
																								Drill			Spot facing
GR4005DD-CAPR	40	5	3.1750	37.5	2.5X1	11600	36000	430	67	76	P	5	15	101	C	-	-	-	-	-	Rc1/8	83	9	14	8.6	1.71	0.98
GR4005DD-DAPR	40	5	3.1750	37.5	2.5X1	11600	36000	430	67	76	P	5	15	101	D	-	-	-	-	-	Rc1/8	83	9	14	8.6	1.65	0.98
GR4005ED-CAPR	40	5	3.1750	37.5	2.5X2	21000	72000	800	67	106	P	5	15	101	C	-	-	-	-	-	Rc1/8	83	9	14	8.6	2.18	0.98
GR4005ED-DAPR	40	5	3.1750	37.5	2.5X2	21000	72000	800	67	106	P	5	15	101	D	-	-	-	-	-	Rc1/8	83	9	14	8.6	2.12	0.98
GR4005FD-CAPR	40	5	3.1750	37.5	2.5X3	29800	108000	1150	67	136	P	5	15	101	C	-	-	-	-	-	Rc1/8	83	9	14	8.6	2.65	0.98
GR4005FD-DAPR	40	5	3.1750	37.5	2.5X3	29800	108000	1150	67	136	P	5	15	101	D	-	-	-	-	-	Rc1/8	83	9	14	8.6	2.59	0.98
GR4006BD-CAPR	40	6	3.9688	36.6	1.5X2	18200	52800	540	70	112	P	5	15	104	C	-	-	-	-	-	Rc1/8	86	9	14	8.6	2.52	0.98
GR4006BD-DAPR	40	6	3.9688	36.6	1.5X2	18200	52800	540	70	112	P	5	15	104	D	-	-	-	-	-	Rc1/8	86	9	14	8.6	2.46	0.98
GR4006ED-CAPR	40	6	3.9688	36.6	2.5X2	28300	88000	850	70	124	P	5	15	104	C	-	-	-	-	-	Rc1/8	86	9	14	8.6	2.74	0.98
GR4006ED-DAPR	40	6	3.9688	36.6	2.5X2	28300	88000	850	70	124	P	5	15	104	D	-	-	-	-	-	Rc1/8	86	9	14	8.6	2.67	0.98
GR4006FD-CAPR	40	6	3.9688	36.6	2.5X3	40200	132000	1200	70	160	P	5	15	104	C	-	-	-	-	-	Rc1/8	86	9	14	8.6	3.37	0.98
GR4006FD-DAPR	40	6	3.9688	36.6	2.5X3	40200	132000	1200	70	160	P	5	15	104	D	-	-	-	-	-	Rc1/8	86	9	14	8.6	3.31	0.98
GR4008DD-CALR	40	8	4.7625	36	2.5X1	19600	54200	460	74	97	L	6	15	108	C	-	-	-	-	-	Rc1/8	90	9	14	8.6	2.57	0.98
GR4008DD-DALR	40	8	4.7625	36	2.5X1	19600	54200	460	74	97	L	6	15	108	D	-	-	-	-	-	Rc1/8	90	9	14	8.6	2.50	0.98
GR4008ED-CALR	40	8	4.7625	36	2.5X2	35600	108400	870	74	145	L	6	15	108	C	-	-	-	-	-	Rc1/8	90	9	14	8.6	3.57	0.98
GR4008ED-DALR	40	8	4.7625	36	2.5X2	35600	108400	870	74	145	L	6	15	108	D	-	-	-	-	-	Rc1/8	90	9	14	8.6	3.49	0.98

Note: · The rigidity indicated with the *mark in the above list represents the value applied to the axial load about 3 times or less of the preload, which is equivalent to 1/15 of basic dynamic load rating

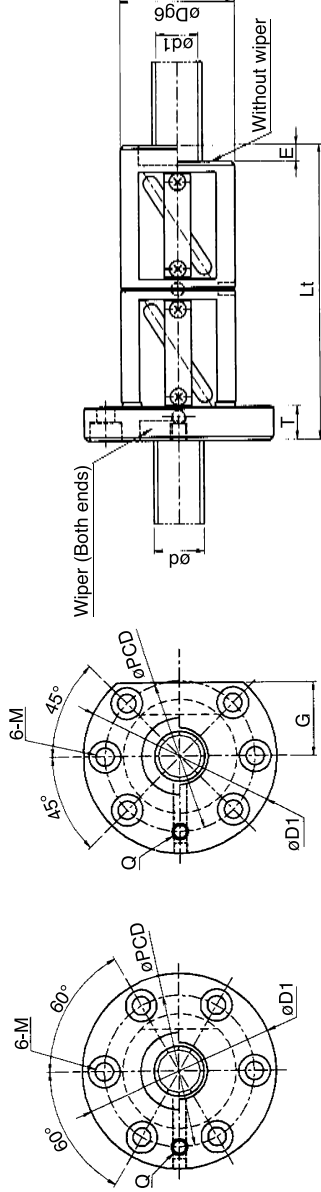
(C). It is the practical value based on the result of rigidity test for the rigidity of nut etc.

· Wiper material P: Plastic wiper L: Lip seal

TUBE METHOD DOUBLE NUT

Screw shaft diameter ø40

(Unit: mm)



Flange type C

Flange type D

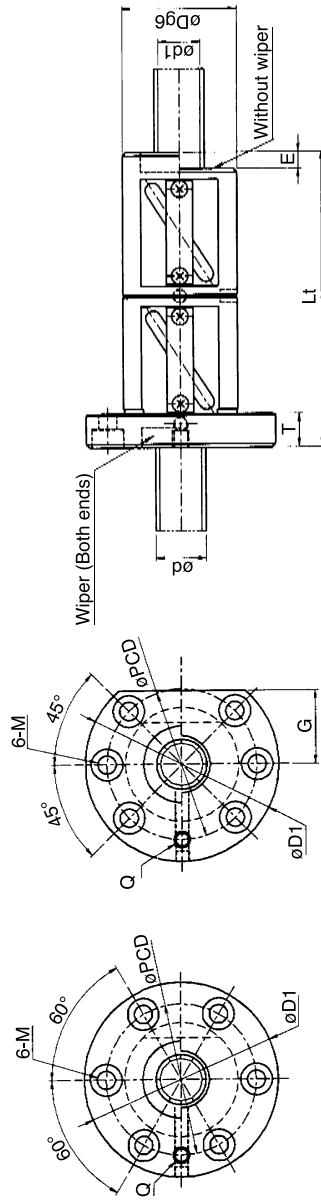
Model No.	Screw shaft diameter d	Lead	Ball diameter	Root diameter	Number of circuits	Basic dynamic load rating C (N)	Basic static load rating C ₀ (N)	* Rigidity K _{hw} (N/μm)	Nut dimensions												Mass								
									Outer diameter	Overall length	Wiper material	Without wiper	Flange thickness	Flange outer diameter	Flange type	Flange dimensions						Mounting hole			Nut (kg)	Screw shaft (kg/100mm)			
																D	L _t	W	X	Y	A	B	G	Q			PCD	M	
																												Drill	Spot facing
GR4010BD-CALR	40	10	6.3500	35.2	1.5X2	34200	89200	560	82	161	L	8	18	124	C	-	-	-	-	-	-	Rc1/8	102	11	17.5	10.8	5.29	0.98	
GR4010BD-DALR	40	10	6.3500	35.2	1.5X2	34200	89200	560	82	161	L	8	18	124	D	-	-	-	-	-	-	Rc1/8	102	11	17.5	10.8	5.17	0.98	
GR4010DD-CALR	40	10	6.3500	35.2	2.5X1	29300	74300	460	82	121	L	8	18	124	C	-	-	-	-	-	-	Rc1/8	102	11	17.5	10.8	4.21	0.98	
GR4010DD-DALR	40	10	6.3500	35.2	2.5X1	29300	74300	460	82	121	L	8	18	124	D	-	-	-	-	-	-	Rc1/8	102	11	17.5	10.8	4.09	0.98	
GR4010ED-CALR	40	10	6.3500	35.2	2.5X2	53000	140800	880	82	181	L	8	18	124	C	-	-	-	-	-	-	Rc1/8	102	11	17.5	10.8	5.83	0.98	
GR4010ED-DALR	40	10	6.3500	35.2	2.5X2	53000	140800	880	82	181	L	8	18	124	D	-	-	-	-	-	-	Rc1/8	102	11	17.5	10.8	5.71	0.98	
GR4012DD-CALR	40	12	7.1438	34.6	2.5X1	35100	79000	490	86	141	L	8	18	128	C	-	-	-	-	-	-	Rc1/8	106	11	17.5	10.8	5.28	0.98	
GR4012DD-DALR	40	12	7.1438	34.6	2.5X1	35100	79000	490	86	141	L	8	18	128	D	-	-	-	-	-	-	Rc1/8	106	11	17.5	10.8	5.15	0.98	
GR4012ED-CALR	40	12	7.1438	34.6	2.5X2	63700	158000	930	86	213	L	8	18	128	C	-	-	-	-	-	-	Rc1/8	106	11	17.5	10.8	7.48	0.98	
GR4012ED-DALR	40	12	7.1438	34.6	2.5X2	63700	158000	930	86	213	L	8	18	128	D	-	-	-	-	-	-	Rc1/8	106	11	17.5	10.8	7.35	0.98	
GR4016DD-CAPR	40	16	7.1438	34.6	2.5X1	35100	79000	490	86	155	P	9	22	128	C	-	-	-	-	-	-	Rc1/8	106	11	17.5	10.8	5.93	0.98	
GR4016DD-DAPR	40	16	7.1438	34.6	2.5X1	35100	79000	490	86	155	P	9	22	128	D	-	-	-	-	-	-	Rc1/8	106	11	17.5	10.8	5.77	0.98	
GR4016GD-CALR	40	16	7.1438	34.6	3.5X1	46800	110600	670	86	187	L	9	22	128	C	-	-	-	-	-	-	Rc1/8	106	11	17.5	10.8	6.91	0.98	
GR4016GD-DALR	40	16	7.1438	34.6	3.5X1	46800	110600	670	86	187	L	9	22	128	D	-	-	-	-	-	-	Rc1/8	106	11	17.5	10.8	6.75	0.98	
GR4020DD-CAPR	40	20	7.1438	34.6	2.5X1	35100	79000	490	86	185	P	9	22	128	C	-	-	-	-	-	-	Rc1/8	106	11	17.5	10.8	6.84	0.98	
GR4020DD-DAPR	40	20	7.1438	34.6	2.5X1	35100	79000	490	86	185	P	9	22	128	D	-	-	-	-	-	-	Rc1/8	106	11	17.5	10.8	6.69	0.98	
GR4020GD-CAPR	40	20	7.1438	34.6	3.5X1	46800	110600	670	86	225	P	9	22	128	C	-	-	-	-	-	-	Rc1/8	106	11	17.5	10.8	8.06	0.98	
GR4020GD-DAPR	40	20	7.1438	34.6	3.5X1	46800	110600	670	86	225	P	9	22	128	D	-	-	-	-	-	-	Rc1/8	106	11	17.5	10.8	7.90	0.98	

Note: * The rigidity indicated with the *mark in the above list represents the value applied to the axial load about 3 times or less of the preload, which is equivalent to 1/15 of basic dynamic load rating (C). It is the practical value based on the result of rigidity test for the rigidity of nut etc.

· Wiper material P: Plastic wiper
L: Lip seal

TUBE METHOD DOUBLE NUT**Screw shaft diameter ø45**

(Unit: mm)

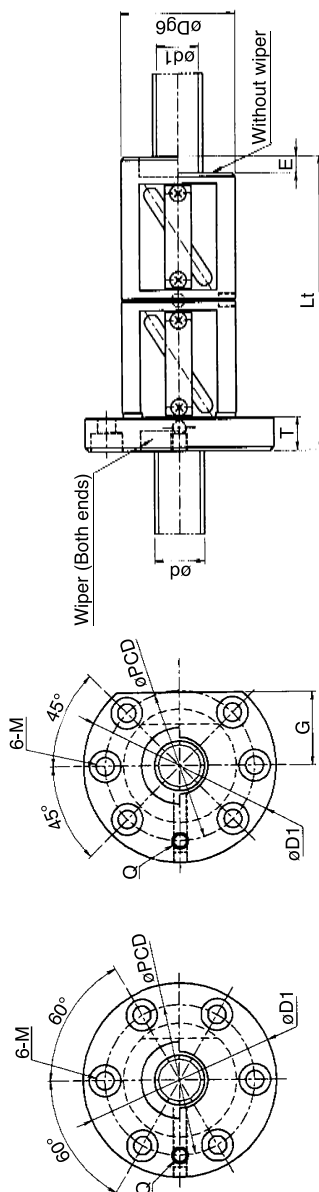
**Flange type C****Flange type D**

Model No.	Screw shaft diameter d	Lead L	Ball diameter D _b	Root diameter d ₁	Number of circuits Turn x Circuit	Basic dynamic load rating C (N)	Basic static load rating C ₀ (N)	* Rigidity K _{hw} (N/μm)	Nut dimensions												Mass							
									Outer diameter D	Overall length L _t	Wiper material P	Without wiper E	Flange thickness T	Flange outer diameter D ₁	Flange type	Flange dimensions							PCD	Mounting hole			Nut (kg)	Screw shaft (kg/100mm)
																W	X	Y	A	B	G	Q		Drill	Spot facing	Depth		
GR4505BD-CAPR	45	5	3.1750	42.5	1.5X2	14100	48600	570	74	96	P	5	15	108	C	-	-	-	-	-	-	Rc1/8	9	14	8.6	2.37	1.24	
GR4505BD-DAPR	45	5	3.1750	42.5	1.5X2	14100	48600	570	74	96	P	5	15	108	D	-	-	-	-	-	-	Rc1/8	9	14	8.6	2.30	1.24	
GR4505CD-CAPR	45	5	3.1750	42.5	1.5X3	20100	72900	830	74	116	P	5	15	108	C	-	-	-	-	-	-	Rc1/8	9	14	8.6	2.75	1.24	
GR4505CD-DAPR	45	5	3.1750	42.5	1.5X3	20100	72900	830	74	116	P	5	15	108	D	-	-	-	-	-	-	Rc1/8	9	14	8.6	2.68	1.24	
GR4506BD-CAPR	45	6	3.9688	41.6	1.5X2	19300	59700	580	78	112	P	5	15	112	C	-	-	-	-	-	-	Rc1/8	9	14	8.6	3.06	1.24	
GR4506BD-DAPR	45	6	3.9688	41.6	1.5X2	19300	59700	580	78	112	P	5	15	112	D	-	-	-	-	-	-	Rc1/8	9	14	8.6	2.99	1.24	
GR4506ED-CAPR	45	6	3.9688	41.6	2.5X2	30000	99500	910	78	124	P	5	15	112	C	-	-	-	-	-	-	Rc1/8	9	14	8.6	3.32	1.24	
GR4506ED-DAPR	45	6	3.9688	41.6	2.5X2	30000	99500	910	78	124	P	5	15	112	D	-	-	-	-	-	-	Rc1/8	9	14	8.6	3.25	1.24	
GR4506FD-CAPR	45	6	3.9688	41.6	2.5X3	42500	149300	1300	78	160	P	5	15	112	C	-	-	-	-	-	-	Rc1/8	9	14	8.6	4.12	1.24	
GR4506FD-DAPR	45	6	3.9688	41.6	2.5X3	42500	149300	1300	78	160	P	5	15	112	D	-	-	-	-	-	-	Rc1/8	9	14	8.6	4.04	1.24	
GR4508BD-CAPR	45	8	4.7625	41	1.5X2	24000	72600	590	82	132	P	6	18	124	C	-	-	-	-	-	-	Rc1/8	11	17.5	10.8	4.30	1.24	
GR4508BD-DAPR	45	8	4.7625	41	1.5X2	24000	72600	590	82	132	P	6	18	124	D	-	-	-	-	-	-	Rc1/8	11	17.5	10.8	4.18	1.24	
GR4508ED-CAPR	45	8	4.7625	41	2.5X2	37300	121000	950	82	148	P	6	18	124	C	-	-	-	-	-	-	Rc1/8	11	17.5	10.8	4.71	1.24	
GR4508ED-DAPR	45	8	4.7625	41	2.5X2	37300	121000	950	82	148	P	6	18	124	D	-	-	-	-	-	-	Rc1/8	11	17.5	10.8	4.59	1.24	
GR4508FD-CAPR	45	8	4.7625	41	2.5X3	52700	181500	1310	82	196	P	6	18	124	C	-	-	-	-	-	-	Rc1/8	11	17.5	10.8	5.92	1.24	
GR4508FD-DAPR	45	8	4.7625	41	2.5X3	52700	181500	1310	82	196	P	6	18	124	D	-	-	-	-	-	-	Rc1/8	11	17.5	10.8	5.81	1.24	

Note: * The rigidity indicated with the *mark in the above list represents the value applied to the axial load about 3 times or less of the preload, which is equivalent to 1/15 of basic dynamic load rating (C). It is the practical value based on the result of rigidity test for the rigidity of nut etc.

· Wiper material P: Plastic wiper

(Unit: mm)



Flange type D

Model No.	Screw shaft diameter d	Lead	Ball diameter	Root diameter	Number of circuits	Basic dynamic load rating C (N)	Basic static load rating C ₀ (N)	Rigidity K _{NW} (N/μm)	Outer diameter	Overall length	Wiper material	Without wiper thickness	Flange outer diameter	Flange type	Nut dimensions										Mass	
															Flange dimensions							Mounting hole			Nut (kg)	Screw shaft (kg/100mm)
															W	X	Y	A	B	G	Q	PCD	M			
																							Drill	Spot facing		
GR4510BD-CALR	45	10	6.3500	40.2	1.5X2	36800	97800	620	86	161	L	8	18	C	-	-	-	-	-	Rc1/8	106	11	17.5	10.8	5.49	1.24
GR4510BD-DALR	45	10	6.3500	40.2	1.5X2	36800	97800	620	86	161	L	8	18	D	-	-	-	-	-	Rc1/8	106	11	17.5	10.8	5.36	1.24
GR4510DD-CALR	45	10	6.3500	40.2	2.5X1	31500	81500	530	86	121	L	8	18	C	-	-	-	-	-	Rc1/8	106	11	17.5	10.8	4.37	1.24
GR4510DD-DALR	45	10	6.3500	40.2	2.5X1	31500	81500	530	86	121	L	8	18	D	-	-	-	-	-	Rc1/8	106	11	17.5	10.8	4.24	1.24
GR4510ED-CALR	45	10	6.3500	40.2	2.5X2	57200	163000	990	86	181	L	8	18	C	-	-	-	-	-	Rc1/8	106	11	17.5	10.8	6.05	1.24
GR4510ED-DALR	45	10	6.3500	40.2	2.5X2	57200	163000	990	86	181	L	8	18	D	-	-	-	-	-	Rc1/8	106	11	17.5	10.8	5.91	1.24
GR4510FD-CALR	45	10	6.3500	40.2	2.5X3	81000	244500	1420	86	241	L	8	18	C	-	-	-	-	-	Rc1/8	106	11	17.5	10.8	7.72	1.24
GR4510FD-DALR	45	10	6.3500	40.2	2.5X3	81000	244500	1420	86	241	L	8	18	D	-	-	-	-	-	Rc1/8	106	11	17.5	10.8	7.59	1.24
GR4512DD-CALR	45	12	7.9375	38.8	2.5X1	41200	98500	520	94	143	L	7	22	C	-	-	-	-	-	Rc1/8	116	14	20	13	6.54	1.24
GR4512DD-DALR	45	12	7.9375	38.8	2.5X1	41200	98500	520	94	143	L	7	22	D	-	-	-	-	-	Rc1/8	116	14	20	13	6.35	1.24
GR4512ED-CALR	45	12	7.9375	38.8	2.5X2	74900	197000	980	94	215	L	7	22	C	-	-	-	-	-	Rc1/8	116	14	20	13	9.10	1.24
GR4512ED-DALR	45	12	7.9375	38.8	2.5X2	74900	197000	980	94	215	L	7	22	D	-	-	-	-	-	Rc1/8	116	14	20	13	8.91	1.24
GR4512FD-CALR	45	12	7.9375	38.8	2.5X3	106200	295500	1410	94	287	L	7	22	C	-	-	-	-	-	Rc1/8	116	14	20	13	11.66	1.24
GR4512FD-DALR	45	12	7.9375	38.8	2.5X3	106200	295500	1410	94	287	L	7	22	D	-	-	-	-	-	Rc1/8	116	14	20	13	11.47	1.24

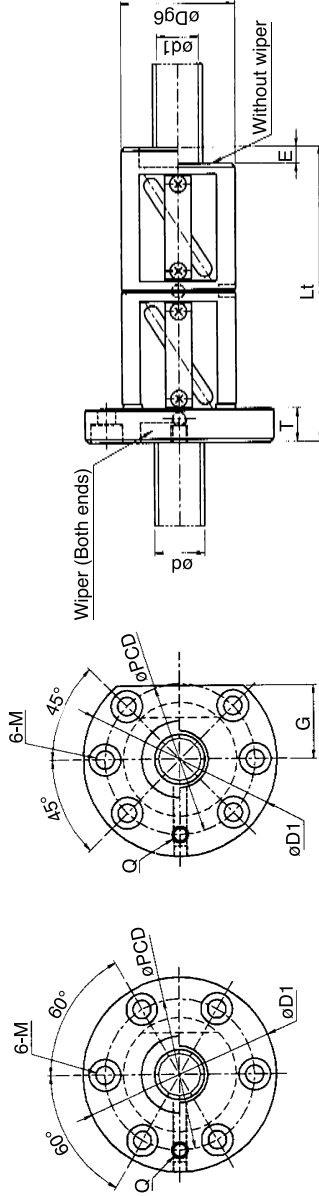
Note: The rigidity indicated with the *mark in the above list represents the value applied to the axial load about 3 times or less of the preload, which is equivalent to 1/15 of basic dynamic load rating (C). It is the practical value based on the result of rigidity test for the rigidity of nut etc.

Wiper material L: Lip seal

TUBE METHOD DOUBLE NUT

Screw shaft diameter ø50

(Unit: mm)



Flange type C

Flange type D

Model No.	Screw shaft diameter d	Lead L	Ball diameter D _b	Root diameter d ₁	Number of circuits Turn x Circuit	Basic dynamic load rating C (N)	Basic static load rating C ₀ (N)	* Rigidity K _{hw} (N/μm)	Nut dimensions											Mass								
									Outer diameter D	Overall length L _t	Wiper material	Without wiper E	Flange thickness T	Flange outer diameter D ₁	Flange type	Flange dimensions						Mounting hole			Nut (kg)	Screw shaft (kg/100mm)		
																W	X	Y	A	B	G	Q	PCD	M				
																								Drill			Spot facing	Depth
GR5005BD-CAPR	50	5	3.1750	47.5	1.5X2	14800	54200	620	80	96	P	5	15	114	C	-	-	-	-	-	-	Rc1/8	96	9	14	8.6	2.65	1.53
GR5005BD-DAPR	50	5	3.1750	47.5	1.5X2	14800	54200	620	80	96	P	5	15	114	D	-	-	-	-	-	-	Rc1/8	96	9	14	8.6	2.57	1.53
GR5005CD-CAPR	50	5	3.1750	47.5	1.5X3	21000	81300	890	80	116	P	5	15	114	C	-	-	-	-	-	-	Rc1/8	96	9	14	8.6	3.08	1.53
GR5005CD-DAPR	50	5	3.1750	47.5	1.5X3	21000	81300	890	80	116	P	5	15	114	D	-	-	-	-	-	-	Rc1/8	96	9	14	8.6	2.99	1.53
GR5006BD-CAPR	50	6	3.9688	46.6	1.5X2	20100	66500	640	84	112	P	5	15	118	C	-	-	-	-	-	-	Rc1/8	100	9	14	8.6	3.41	1.53
GR5006BD-DAPR	50	6	3.9688	46.6	1.5X2	20100	66500	640	84	112	P	5	15	118	D	-	-	-	-	-	-	Rc1/8	100	9	14	8.6	3.32	1.53
GR5006ED-CAPR	50	6	3.9688	46.6	2.5X2	31300	110800	990	84	124	P	5	15	118	C	-	-	-	-	-	-	Rc1/8	100	9	14	8.6	3.70	1.53
GR5006ED-DAPR	50	6	3.9688	46.6	2.5X2	31300	110800	990	84	124	P	5	15	118	D	-	-	-	-	-	-	Rc1/8	100	9	14	8.6	3.62	1.53
GR5006FD-CAPR	50	6	3.9688	46.6	2.5X3	44300	166200	1420	84	160	P	5	15	118	C	-	-	-	-	-	-	Rc1/8	100	9	14	8.6	4.59	1.53
GR5006FD-DAPR	50	6	3.9688	46.6	2.5X3	44300	166200	1420	84	160	P	5	15	118	D	-	-	-	-	-	-	Rc1/8	100	9	14	8.6	4.51	1.53
GR5008BD-CAPR	50	8	4.7625	46	1.5X2	24900	80100	650	87	132	P	6	18	129	C	-	-	-	-	-	-	Rc1/8	107	11	17.5	10.8	4.60	1.53
GR5008BD-DAPR	50	8	4.7625	46	1.5X2	24900	80100	650	87	132	P	6	18	129	D	-	-	-	-	-	-	Rc1/8	107	11	17.5	10.8	4.47	1.53
GR5008ED-CAPR	50	8	4.7625	46	2.5X2	38700	133400	1030	87	148	P	6	18	129	C	-	-	-	-	-	-	Rc1/8	107	11	17.5	10.8	5.03	1.53
GR5008ED-DAPR	50	8	4.7625	46	2.5X2	38700	133400	1030	87	148	P	6	18	129	D	-	-	-	-	-	-	Rc1/8	107	11	17.5	10.8	4.91	1.53
GR5008FD-CAPR	50	8	4.7625	46	2.5X3	55000	200100	1480	87	196	P	6	18	129	C	-	-	-	-	-	-	Rc1/8	107	11	17.5	10.8	6.34	1.53
GR5008FD-DAPR	50	8	4.7625	46	2.5X3	55000	200100	1480	87	196	P	6	18	129	D	-	-	-	-	-	-	Rc1/8	107	11	17.5	10.8	6.22	1.53

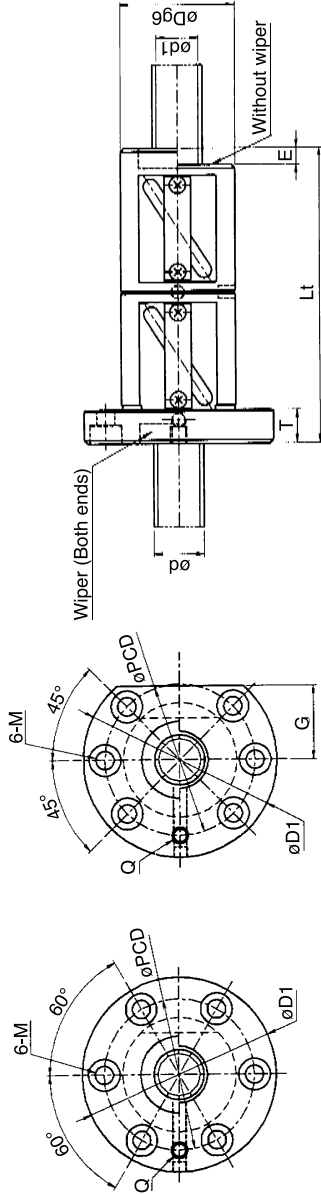
Note: * The rigidity indicated with the *mark in the above list represents the value applied to the axial load about 3 times or less of the preload, which is equivalent to 1/15 of basic dynamic load rating (C). It is the practical value based on the result of rigidity test for the rigidity of nut etc.

Wiper material P: Plastic wiper

TUBE METHOD DOUBLE NUT

Screw shaft diameter ø50

(Unit: mm)



Flange type C

Flange type D

Model No.	Screw shaft diameter d	Lead L	Ball diameter D _b	Root diameter d ₁	Number of circuits Turn x Circuit	Basic dynamic load rating C (N)	Basic static load rating C ₀ (N)	* Rigidity K _{rw} (N/μm)	Nut dimensions											Mass							
									Outer diameter D	Overall length L _t	Wiper material	Without wiper E	Flange thickness T	Flange outer diameter D ₁	Flange type	Flange dimensions						Mounting hole			Nut (kg)	Screw shaft (kg/100mm)	
																W	X	Y	A	B	G	Q	PCD	M			
																								Drill			Spot facing
GR5010BD-CALR	50	10	6.3500	45.2	1.5X2	38300	106700	670	93	161	L	8	18	135	C	-	-	-	-	-	Rc1/8	113	11	17.5	10.8	6.24	1.53
GR5010BD-DALR	50	10	6.3500	45.2	1.5X2	38300	106700	670	93	161	L	8	18	135	D	-	-	-	-	51	Rc1/8	113	11	17.5	10.8	6.10	1.53
GR5010DD-CALR	50	10	6.3500	45.2	2.5X1	32800	88900	560	93	121	L	8	18	135	C	-	-	-	-	-	Rc1/8	113	11	17.5	10.8	4.95	1.53
GR5010DD-DALR	50	10	6.3500	45.2	2.5X1	32800	88900	560	93	121	L	8	18	135	D	-	-	-	-	51	Rc1/8	113	11	17.5	10.8	4.81	1.53
GR5010ED-CALR	50	10	6.3500	45.2	2.5X2	59400	177800	1060	93	181	L	8	18	135	C	-	-	-	-	-	Rc1/8	113	11	17.5	10.8	6.88	1.53
GR5010ED-DALR	50	10	6.3500	45.2	2.5X2	59400	177800	1060	93	181	L	8	18	135	D	-	-	-	-	51	Rc1/8	113	11	17.5	10.8	6.74	1.53
GR5010FD-CALR	50	10	6.3500	45.2	2.5X3	84100	266700	1520	93	241	L	8	18	135	C	-	-	-	-	-	Rc1/8	113	11	17.5	10.8	8.81	1.53
GR5010FD-DALR	50	10	6.3500	45.2	2.5X3	84100	266700	1520	93	241	L	8	18	135	D	-	-	-	-	51	Rc1/8	113	11	17.5	10.8	8.67	1.53
GR5012DD-CALR	50	12	7.9375	43.8	2.5X1	42600	110000	570	100	143	L	7	22	146	C	-	-	-	-	-	Rc1/8	122	14	20	13	7.13	1.53
GR5012DD-DALR	50	12	7.9375	43.8	2.5X1	42600	110000	570	100	143	L	7	22	146	D	-	-	-	-	55	Rc1/8	122	14	20	13	6.92	1.53
GR5012ED-CALR	50	12	7.9375	43.8	2.5X2	77400	220000	1070	100	215	L	7	22	146	C	-	-	-	-	-	Rc1/8	122	14	20	13	9.95	1.53
GR5012ED-DALR	50	12	7.9375	43.8	2.5X2	77400	220000	1070	100	215	L	7	22	146	D	-	-	-	-	55	Rc1/8	122	14	20	13	9.74	1.53
GR5012FD-CALR	50	12	7.9375	43.8	2.5X3	109600	330000	1540	100	287	L	7	22	146	C	-	-	-	-	-	Rc1/8	122	14	20	13	12.77	1.53
GR5012FD-DALR	50	12	7.9375	43.8	2.5X3	109600	330000	1540	100	287	L	7	22	146	D	-	-	-	-	55	Rc1/8	122	14	20	13	12.56	1.53
GR5016DD-CAPR	50	16	7.9375	43.8	2.5X1	42600	110000	570	100	183	P	7	22	146	C	-	-	-	-	-	Rc1/8	122	14	20	13	8.69	1.53
GR5016DD-DAPR	50	16	7.9375	43.8	2.5X1	42600	110000	570	100	183	P	7	22	146	D	-	-	-	-	55	Rc1/8	122	14	20	13	8.49	1.53
GR5016ED-CAPR	50	16	7.9375	43.8	2.5X2	77400	220000	1080	100	279	P	7	22	146	C	-	-	-	-	-	Rc1/8	122	14	20	13	12.45	1.53
GR5016ED-DAPR	50	16	7.9375	43.8	2.5X2	77400	220000	1080	100	279	P	7	22	146	D	-	-	-	-	55	Rc1/8	122	14	20	13	12.25	1.53
GR5020DD-CAPR	50	20	7.9375	43.8	2.5X1	42600	110000	650	100	189	P	7	28	146	C	-	-	-	-	-	Rc1/8	122	14	20	13	9.34	1.53
GR5020DD-DAPR	50	20	7.9375	43.8	2.5X1	42600	110000	650	100	189	P	7	28	146	D	-	-	-	-	55	Rc1/8	122	14	20	13	9.09	1.53
GR5020ED-CAPR	50	20	7.9375	43.8	2.5X2	77400	220000	1210	100	309	P	7	28	146	C	-	-	-	-	-	Rc1/8	122	14	20	13	14.04	1.53
GR5020ED-DAPR	50	20	7.9375	43.8	2.5X2	77400	220000	1210	100	309	P	7	28	146	D	-	-	-	-	55	Rc1/8	122	14	20	13	13.79	1.53

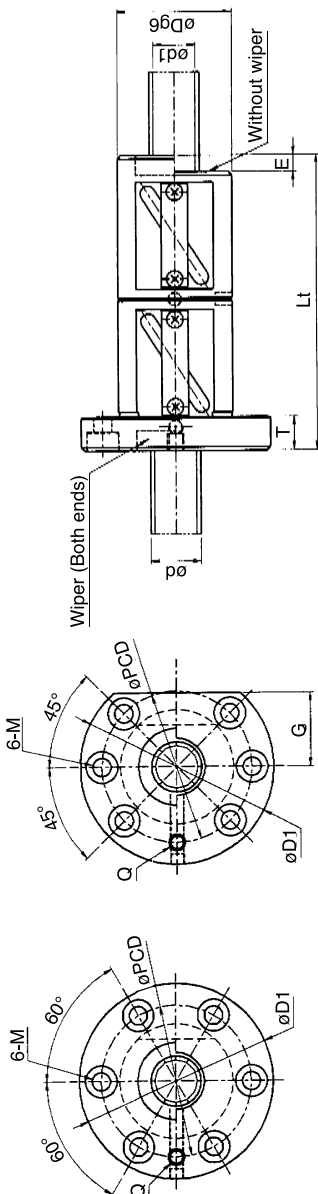
Note: * The rigidity indicated with the *mark in the above list represents the value applied to the axial load about 3 times or less of the preload, which is equivalent to 1/15 of basic dynamic load rating (C). It is the practical value based on the result of rigidity test for the rigidity of nut etc.

Wiper material P: Plastic wiper
L: Lip seal

TUBE METHOD DOUBLE NUT

Screw shaft diameter Ø55

(Unit: mm)



Flange type C

Flange type D

Model No.	Screw shaft diameter	Lead	Ball diameter	Root diameter	Number of circuits	Basic dynamic load rating C (N)	Basic static load rating C ₀ (N)	Rigidity K _{hw}	Nut dimensions												Mass							
									Outer diameter	Overall length	Wiper material	Without wiper	Flange thickness	Flange outer diameter	Flange type	Flange dimensions						Mounting hole				Nut (kg)	Screw shaft (kg/100mm)	
																W	X	Y	A	B	G	Q	PCD	M				
																								Drill	Spot facing			Depth
GR5508ED-CAPR	55	8	4.7625	51	2.5X2	40100	145900	1100	92	150	P	5	22	138	C	-	-	-	-	-	-	Rc1/8	114	14	20	13	5.80	1.85
GR5508ED-DAPR	55	8	4.7625	51	2.5X2	40100	145900	1100	92	150	P	5	22	138	D	-	-	-	-	-	-	Rc1/8	114	14	20	13	5.63	1.85
GR5508FD-CAPR	55	8	4.7625	51	2.5X3	56900	218900	1580	92	198	P	5	22	138	C	-	-	-	-	-	-	Rc1/8	114	14	20	13	7.20	1.85
GR5508FD-DAPR	55	8	4.7625	51	2.5X3	56900	218900	1580	92	198	P	5	22	138	D	-	-	-	-	-	-	Rc1/8	114	14	20	13	7.03	1.85
GR5510BD-CALR	55	10	6.3500	50.2	1.5X2	40400	120100	760	100	165	L	8	22	146	C	-	-	-	-	-	-	Rc1/8	122	14	20	13	7.59	1.85
GR5510BD-DALR	55	10	6.3500	50.2	1.5X2	40400	120100	760	100	165	L	8	22	146	D	-	-	-	-	-	-	Rc1/8	122	14	20	13	7.38	1.85
GR5510ED-CALR	55	10	6.3500	50.2	2.5X2	62700	200200	1170	100	185	L	8	22	146	C	-	-	-	-	-	-	Rc1/8	122	14	20	13	8.32	1.85
GR5510ED-DALR	55	10	6.3500	50.2	2.5X2	62700	200200	1170	100	185	L	8	22	146	D	-	-	-	-	-	-	Rc1/8	122	14	20	13	8.12	1.85
GR5510FD-CALR	55	10	6.3500	50.2	2.5X3	89000	300300	1690	100	245	L	8	22	146	C	-	-	-	-	-	-	Rc1/8	122	14	20	13	10.53	1.85
GR5510FD-DALR	55	10	6.3500	50.2	2.5X3	89000	300300	1690	100	245	L	8	22	146	D	-	-	-	-	-	-	Rc1/8	122	14	20	13	10.32	1.85
GR5512ED-CAPR	55	12	7.9375	48.8	2.5X2	81200	243300	1170	108	215	P	7	22	154	C	-	-	-	-	-	-	Rc1/8	130	14	20	13	11.41	1.85
GR5512ED-DAPR	55	12	7.9375	48.8	2.5X2	81200	243300	1170	108	215	P	7	22	154	D	-	-	-	-	-	-	Rc1/8	130	14	20	13	11.19	1.85
GR5512FD-CAPR	55	12	7.9375	48.8	2.5X3	115100	365000	1680	108	287	P	7	22	154	C	-	-	-	-	-	-	Rc1/8	130	14	20	13	14.69	1.85
GR5512FD-DAPR	55	12	7.9375	48.8	2.5X3	115100	365000	1680	108	287	P	7	22	154	D	-	-	-	-	-	-	Rc1/8	130	14	20	13	14.46	1.85
GR5516DD-CAPR	55	16	9.5250	47.6	2.5X1	76700	207800	690	112	195	P	13	28	172	C	-	-	-	-	-	-	Rc1/8	140	18	26	17.5	12.54	1.85
GR5516DD-DAPR	55	16	9.5250	47.6	2.5X1	76700	207800	690	112	195	P	13	28	172	D	-	-	-	-	-	-	Rc1/8	140	18	26	17.5	12.21	1.85
GR5516ED-CAPR	55	16	9.5250	47.6	2.5X2	139100	415600	1080	112	291	P	13	28	172	C	-	-	-	-	-	-	Rc1/8	140	18	26	17.5	17.28	1.85
GR5516ED-DAPR	55	16	9.5250	47.6	2.5X2	139100	415600	1080	112	291	P	13	28	172	D	-	-	-	-	-	-	Rc1/8	140	18	26	17.5	16.95	1.85
GR5520DD-CAPR	55	20	9.5250	47.6	2.5X1	76700	207800	720	112	195	L	12.5	28	172	C	-	-	-	-	-	-	Rc1/8	140	18	26	17.5	12.54	1.85
GR5520DD-DALR	55	20	9.5250	47.6	2.5X1	76700	207800	720	112	195	L	12.5	28	172	D	-	-	-	-	-	-	Rc1/8	140	18	26	17.5	12.21	1.85
GR5520ED-CALR	55	20	9.5250	47.6	2.5X2	139100	415600	1340	112	315	L	12.5	28	172	C	-	-	-	-	-	-	Rc1/8	140	18	26	17.5	18.46	1.85
GR5520ED-DALR	55	20	9.5250	47.6	2.5X2	139100	415600	1340	112	315	L	12.5	28	172	D	-	-	-	-	-	-	Rc1/8	140	18	26	17.5	18.13	1.85

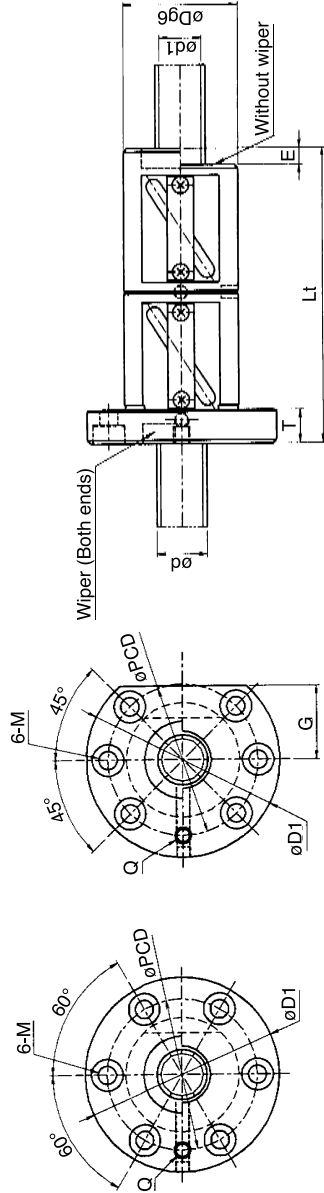
Note: · The rigidity indicated with the *mark in the above list represents the value applied to the axial load about 3 times or less of the preload, which is equivalent to 1/15 of basic dynamic load rating (C). It is the practical value based on the result of rigidity test for the rigidity of nut etc.

- Wiper material P: Plastic wiper
- L: Lip seal

TUBE METHOD DOUBLE NUT

Screw shaft diameter ø63

(Unit: mm)



Flange type C

Flange type D

Model No.	Screw shaft diameter d	Lead L	Ball diameter D _b	Root diameter d ₁	Number of circuits Turn x Circuit	Basic dynamic load rating C (N)	Basic static load rating C ₀ (N)	Rigidity K _{rw} (N/μm)	Nut dimensions											Mass								
									Outer diameter D	Overall length L _t	Wiper material	Without wiper E	Flange thickness T	Flange outer diameter D ₁	Flange type	Flange dimensions						Mounting hole						
																W	X	Y	A	B	G	Q	PCD	M				
																								Drill	Spot facing	Depth		
GR6306BD-CAPR	63	6	3.9688	59.6	1.5X2	22100	83500	850	100	113	P	4	18	142	C	-	-	-	-	-	-	Rc1/8	120	11	17.5	10.8	4.85	2.43
GR6306BD-DAPR	63	6	3.9688	59.6	1.5X2	22100	83500	850	100	113	P	4	18	142	D	-	-	-	-	-	53	Rc1/8	120	11	17.5	10.8	4.69	2.43
GR6306CD-CAPR	63	6	3.9688	59.6	1.5X3	31300	125300	1100	100	137	P	4	18	142	C	-	-	-	-	-	-	Rc1/8	120	11	17.5	10.8	5.65	2.43
GR6306CD-DAPR	63	6	3.9688	59.6	1.5X3	31300	125300	1100	100	137	P	4	18	142	D	-	-	-	-	-	53	Rc1/8	120	11	17.5	10.8	5.48	2.43
GR6308BD-CAPR	63	8	4.7625	59	1.5X2	27800	102500	790	104	134	P	5	22	150	C	-	-	-	-	-	-	Rc1/8	126	14	20	13	6.56	2.43
GR6308BD-DAPR	63	8	4.7625	59	1.5X2	27800	102500	790	104	134	P	5	22	150	D	-	-	-	-	-	57	Rc1/8	126	14	20	13	6.36	2.43
GR6308CD-CAPR	63	8	4.7625	59	1.5X3	39300	153800	1140	104	166	P	5	22	150	C	-	-	-	-	-	-	Rc1/8	126	14	20	13	7.75	2.43
GR6308CD-DAPR	63	8	4.7625	59	1.5X3	39300	153800	1140	104	166	P	5	22	150	D	-	-	-	-	-	57	Rc1/8	126	14	20	13	7.55	2.43

Note: - The rigidity indicated with the *mark in the above list represents the value applied to the axial load about 3 times or less of the preload, which is equivalent to 1/15 of basic dynamic load rating (C). It is the practical value based on the result of rigidity test for the rigidity of nut etc.
 . Wiper material P: Plastic wiper

Screw shaft diameter Ø63

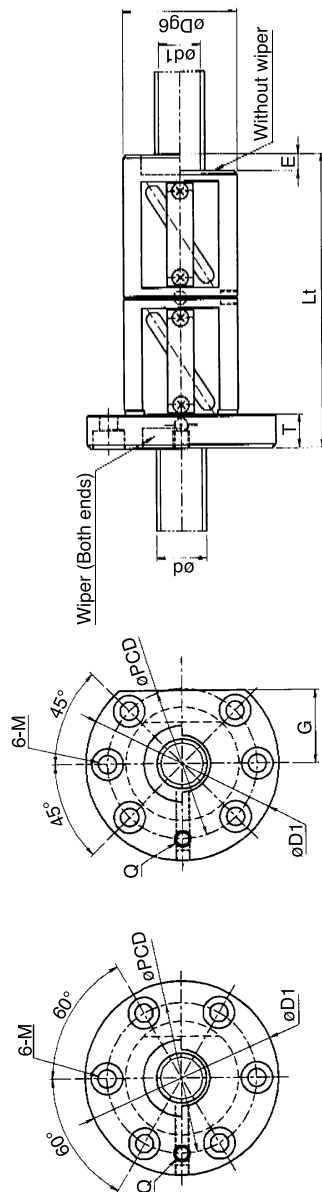
(Unit: mm)



Note: - The rigidity indicated with the *mark in the above list represents the value applied to the axial load about 3 times or less of the preload, which is equivalent to 1/15 of basic dynamic load rating (C). It is the practical value based on the result of rigidity test for the rigidity of nut etc.

- Wiper material P: Plastic wiper

(Unit: mm)



Flange type D

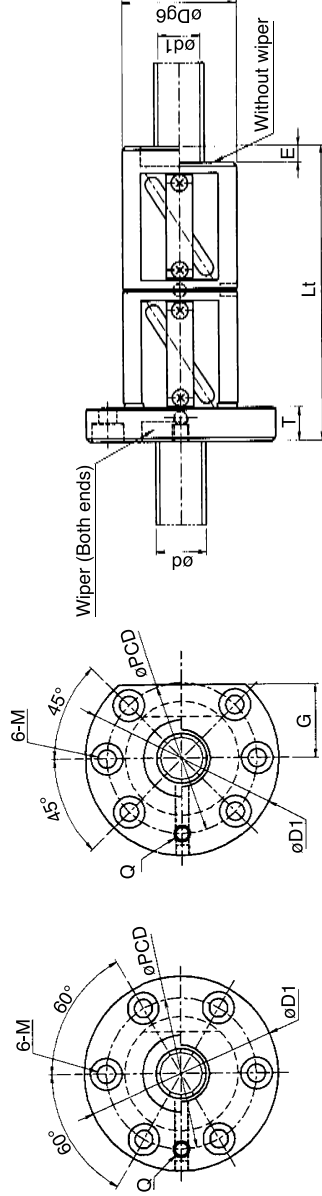
Model No.	Screw shaft diameter	Lead	Ball diameter	Root diameter	Number of circuits	Basic dynamic load rating C (N)	Basic static load rating C ₀ (N)	Rigidity K _{NW}	Nut dimensions															Mass							
									Outer diameter	Overall length	Wiper material	Without wiper thickness	Flange outer diameter	Flange type	Flange dimensions						Mounting hole				Nut (kg)	Screw shaft (Kg/100mm)					
															D	L _t	E	T	D ₁	W	X	Y	A	B			G	Q	PCD	M	
																														Drill	Spot facing
GR7010ED-CAPR	70	10	6.3500	65.2	2.5X2	69100	252100	1400	120	183	P	7	22	166	C	-	-	-	-	-	Rc1/8	14	20	13	11.05	3.00					
GR7010ED-DAPR	70	10	6.3500	65.2	2.5X2	69100	252100	1400	120	183	P	7	22	166	D	-	-	-	-	63	Rc1/8	14	20	13	10.79	3.00					
GR7010FD-CAPR	70	10	6.3500	65.2	2.5X3	97900	378200	2020	120	243	P	7	22	166	C	-	-	-	-	-	Rc1/8	14	20	13	14.09	3.00					
GR7010FD-DAPR	70	10	6.3500	65.2	2.5X3	97900	378200	2020	120	243	P	7	22	166	D	-	-	-	-	63	Rc1/8	14	20	13	13.84	3.00					
GR7012ED-CAPR	70	12	7.9375	63.8	2.5X2	93400	312700	1440	124	215	P	7	22	170	C	-	-	-	-	-	Rc1/8	14	20	13	13.63	3.00					
GR7012ED-DAPR	70	12	7.9375	63.8	2.5X2	93400	312700	1440	124	215	P	7	22	170	D	-	-	-	-	64	Rc1/8	14	20	13	13.36	3.00					
GR7012FD-CAPR	70	12	7.9375	63.8	2.5X3	132400	469100	2070	124	287	P	7	22	170	C	-	-	-	-	-	Rc1/8	14	20	13	17.59	3.00					
GR7012FD-DAPR	70	12	7.9375	63.8	2.5X3	132400	469100	2070	124	287	P	7	22	170	D	-	-	-	-	64	Rc1/8	14	20	13	17.31	3.00					
GR7016ED-CAPR	70	16	9.5250	62.6	2.5X2	152100	508000	1570	130	291	P	13	28	190	C	-	-	-	-	-	Rc1/8	18	26	17.5	21.43	3.00					
GR7016ED-DAPR	70	16	9.5250	62.6	2.5X2	152100	508000	1570	130	291	P	13	28	190	D	-	-	-	-	72	Rc1/8	18	26	17.5	21.00	3.00					
GR7016FD-CAPR	70	16	9.5250	62.6	2.5X3	215600	762000	2330	130	387	P	13	28	190	C	-	-	-	-	-	Rc1/8	18	26	17.5	27.41	3.00					
GR7016FD-DAPR	70	16	9.5250	62.6	2.5X3	215600	762000	2330	130	387	P	13	28	190	D	-	-	-	-	72	Rc1/8	18	26	17.5	26.98	3.00					
GR7020ED-CAPR	70	20	9.5250	62.6	2.5X2	152100	508000	1580	130	315	P	13	28	190	C	-	-	-	-	-	Rc1/8	18	26	17.5	22.92	3.00					
GR7020ED-DAPR	70	20	9.5250	62.6	2.5X2	152100	508000	1580	130	315	P	13	28	190	D	-	-	-	-	72	Rc1/8	18	26	17.5	22.50	3.00					
GR7020FD-CAPR	70	20	9.5250	62.6	2.5X3	215600	762000	2340	130	435	P	13	28	190	C	-	-	-	-	-	Rc1/8	18	26	17.5	30.40	3.00					
GR7020FD-DAPR	70	20	9.5250	62.6	2.5X3	215600	762000	2340	130	435	P	13	28	190	D	-	-	-	-	72	Rc1/8	18	26	17.5	29.98	3.00					

Note: · The rigidity indicated with the *mark in the above list represents the value applied to the axial load about 3 times or less of the preload, which is equivalent to 1/15 of basic dynamic load rating (C). It is the practical value based on the result of rigidity test for the rigidity of nut etc.

- Wiper material P: Plastic wiper

TUBE METHOD DOUBLE NUT**Screw shaft diameter ø80**

(Unit: mm)

**Flange type D****Flange type C**

Model No.	Screw shaft diameter d	Lead L	Ball diameter D _b	Root diameter d ₁	Number of circuits Turn x Circuit	Basic dynamic load rating C (N)	Basic static load rating C ₀ (N)	* Rigidity K _{hw} (N/μm)	Nut dimensions										Mass									
									Outer diameter D	Overall length L _t	Wiper material	Without wiper E	Flange thickness T	Flange outer diameter D ₁	Flange type	Flange dimensions						Mounting hole			Nut (kg)	Screw shaft (kg/100mm)		
																W	X	Y	A	B	G	Q	PCD	M				
																								Drill			Spot facing	Depth
GR8010ED-CAPR	80	10	6.3500	75.2	2.5X2	73100	289100	1570	130	183	P	7	22	176	C	-	-	-	-	-	-	Rc1/8	152	14	20	13	12.11	3.92
GR8010ED-DAPR	80	10	6.3500	75.2	2.5X2	73100	289100	1570	130	183	P	7	22	176	D	-	-	-	-	-	66	Rc1/8	152	14	20	13	11.81	3.92
GR8010FD-CAPR	80	10	6.3500	75.2	2.5X3	103700	433700	2260	130	243	P	7	22	176	C	-	-	-	-	-	-	Rc1/8	152	14	20	13	15.46	3.92
GR8010FD-DAPR	80	10	6.3500	75.2	2.5X3	103700	433700	2260	130	243	P	7	22	176	D	-	-	-	-	-	66	Rc1/8	152	14	20	13	15.15	3.92
GR8012ED-CAPR	80	12	7.9375	73.8	2.5X2	99400	359100	1610	136	215	P	7	22	182	C	-	-	-	-	-	-	Rc1/8	158	14	20	13	15.65	3.92
GR8012ED-DAPR	80	12	7.9375	73.8	2.5X2	99400	359100	1610	136	215	P	7	22	182	D	-	-	-	-	-	68	Rc1/8	158	14	20	13	15.32	3.92
GR8012FD-CAPR	80	12	7.9375	73.8	2.5X3	140700	538700	2320	136	287	P	7	22	182	C	-	-	-	-	-	-	Rc1/8	158	14	20	13	20.23	3.92
GR8012FD-DAPR	80	12	7.9375	73.8	2.5X3	140700	538700	2320	136	287	P	7	22	182	D	-	-	-	-	-	68	Rc1/8	158	14	20	13	19.91	3.92
GR8016ED-CAPR	80	16	9.5250	72.6	2.5X2	165200	600500	1810	143	289	P	12	28	204	C	-	-	-	-	-	-	Rc1/8	172	18	26	17.5	24.84	3.92
GR8016ED-DAPR	80	16	9.5250	72.6	2.5X2	165200	600500	1810	143	289	P	12	28	204	D	-	-	-	-	-	77	Rc1/8	172	18	26	17.5	24.34	3.92
GR8016FD-CAPR	80	16	9.5250	72.6	2.5X3	234100	900800	2610	143	385	P	12	28	204	C	-	-	-	-	-	-	Rc1/8	172	18	26	17.5	31.89	3.92
GR8016FD-DAPR	80	16	9.5250	72.6	2.5X3	234100	900800	2610	143	385	P	12	28	204	D	-	-	-	-	-	77	Rc1/8	172	18	26	17.5	31.39	3.92
GR8020ED-CAPR	80	20	9.5250	72.6	2.5X2	165200	600500	1810	143	313	P	12	28	204	C	-	-	-	-	-	-	Rc1/8	172	18	26	17.5	26.60	3.92
GR8020ED-DAPR	80	20	9.5250	72.6	2.5X2	165200	600500	1810	143	313	P	12	28	204	D	-	-	-	-	-	77	Rc1/8	172	18	26	17.5	26.10	3.92
GR8020FD-CAPR	80	20	9.5250	72.6	2.5X3	234100	900800	2680	143	433	P	12	28	204	C	-	-	-	-	-	-	Rc1/8	172	18	26	17.5	35.41	3.92
GR8020FD-DAPR	80	20	9.5250	72.6	2.5X3	234100	900800	2680	143	433	P	12	28	204	D	-	-	-	-	-	77	Rc1/8	172	18	26	17.5	34.91	3.92

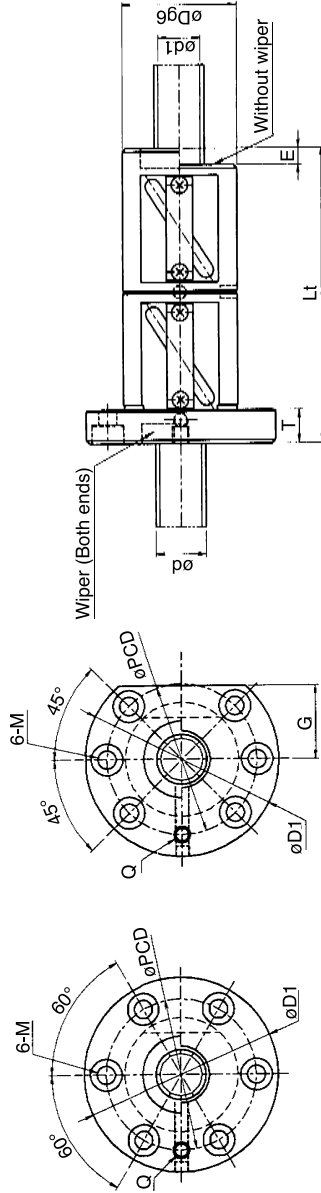
Note: . The rigidity indicated with the *mark in the above list represents the value applied to the axial load about 3 times or less of the preload, which is equivalent to 1/15 of basic dynamic load rating (C). It is the practical value based on the result of rigidity test for the rigidity of nut etc.

. Wiper material P: Plastic wiper

TUBE METHOD DOUBLE NUT

Screw shaft diameter ø100, ø125

(Unit: mm)



Flange type C

Flange type D

Model No.	Screw shaft diameter d	Lead L	Ball diameter D _b	Root diameter d ₁	Number of circuits Turn x Circuit	Basic dynamic load rating C (N)	Basic static load rating C ₀ (N)	★ Rigidity K _{hw} (N/μm)	Nut dimensions											Mass								
									Outer diameter D	Overall length L _t	Wiper material	Without wiper E	Flange thickness T	Flange outer diameter D ₁	Flange type	Flange dimensions						Mounting hole			Nut (kg)	Screw shaft (kg/100mm)		
																W	X	Y	A	B	G	Q	PCD	M				
																								Drill			Spot facing	Depth
GRA012ED-CAPR	100	12	7.9375	93.8	2.5X2	109450451800	1940	1940	160	219	P	6	28	220	C	-	-	-	-	-	-	Rc1/8	188	18	26	17.5	22.01	6.13
GRA012ED-DAPR	100	12	7.9375	93.8	2.5X2	109450451800	1940	1940	160	219	P	6	28	220	D	-	-	-	-	-	82	Rc1/8	188	18	26	17.5	21.39	6.13
GRA012FD-CAPR	100	12	7.9375	93.8	2.5X3	155000677700	2790	2790	160	291	P	6	28	220	C	-	-	-	-	-	-	Rc1/8	188	18	26	17.5	27.96	6.13
GRA012FD-DAPR	100	12	7.9375	93.8	2.5X3	155000677700	2790	2790	160	291	P	6	28	220	D	-	-	-	-	-	82	Rc1/8	188	18	26	17.5	27.34	6.13
GRA016ED-CAPR	100	16	9.5250	92.6	2.5X2	180000739000	2140	2140	170	293	P	12	32	243	C	-	-	-	-	-	-	Rc1/8	205	22	32	21.5	35.26	6.13
GRA016ED-DAPR	100	16	9.5250	92.6	2.5X2	180000739000	2140	2140	170	293	P	12	32	243	D	-	-	-	-	-	91	Rc1/8	205	22	32	21.5	34.42	6.13
GRA016FD-CAPR	100	16	9.5250	92.6	2.5X3	2550001108500	3080	3080	170	389	P	12	32	243	C	-	-	-	-	-	-	Rc1/8	205	22	32	21.5	44.88	6.13
GRA016FD-DAPR	100	16	9.5250	92.6	2.5X3	2550001108500	3080	3080	170	389	P	12	32	243	D	-	-	-	-	-	91	Rc1/8	205	22	32	21.5	44.04	6.13
GRA020ED-CAPR	100	20	9.5250	92.5	2.5X2	180000739000	2140	2140	170	317	P	12	32	243	C	-	-	-	-	-	-	Rc1/8	205	22	32	21.5	37.66	6.13
GRA020ED-DAPR	100	20	9.5250	92.5	2.5X2	180000739000	2140	2140	170	317	P	12	32	243	D	-	-	-	-	-	91	Rc1/8	205	22	32	21.5	36.82	6.13
GRA020FD-CAPR	100	20	9.5250	92.5	2.5X3	2550001108500	3170	3170	170	437	P	12	32	243	C	-	-	-	-	-	-	Rc1/8	205	22	32	21.5	49.69	6.13
GRA020FD-DAPR	100	20	9.5250	92.5	2.5X3	2550001108500	3170	3170	170	437	P	12	32	243	D	-	-	-	-	-	91	Rc1/8	205	22	32	21.5	48.84	6.13
GRC516ED-CAPR	125	16	9.5250	117.6	2.5X2	200400946900	2620	2620	200	297	P	12	36	290	C	-	-	-	-	-	-	Rc1/8	243	26	39	25.5	48.34	9.57
GRC516ED-DAPR	125	16	9.5250	117.6	2.5X2	200400946900	2620	2620	200	297	P	12	36	290	D	-	-	-	-	-	109	Rc1/8	243	26	39	25.5	47.02	9.57
GRC516FD-CAPR	125	16	9.5250	117.6	2.5X3	2841001420400	3720	3720	200	393	P	12	36	290	C	-	-	-	-	-	-	Rc1/8	243	26	39	25.5	60.83	9.57
GRC516FD-DAPR	125	16	9.5250	117.6	2.5X3	2841001420400	3720	3720	200	393	P	12	36	290	D	-	-	-	-	-	109	Rc1/8	243	26	39	25.5	59.50	9.57
GRC520ED-CAPR	125	20	9.5250	117.6	2.5X2	200400946900	2620	2620	200	321	P	12	36	290	C	-	-	-	-	-	-	Rc1/8	243	26	39	25.5	51.47	9.57
GRC520ED-DAPR	125	20	9.5250	117.6	2.5X2	200400946900	2620	2620	200	321	P	12	36	290	D	-	-	-	-	-	109	Rc1/8	243	26	39	25.5	50.14	9.57
GRC520FD-CAPR	125	20	9.5250	117.6	2.5X3	2841001420400	3760	3760	200	441	P	12	36	290	C	-	-	-	-	-	-	Rc1/8	243	26	39	25.5	67.07	9.57
GRC520FD-DAPR	125	20	9.5250	117.6	2.5X3	2841001420400	3760	3760	200	441	P	12	36	290	D	-	-	-	-	-	109	Rc1/8	243	26	39	25.5	65.74	9.57

Note: * The rigidity indicated with the *mark in the above list represents the value applied to the axial load about 3 times or less of the preload, which is equivalent to 1/15 of basic dynamic load rating (C). It is the practical value based on the result of rigidity test for the rigidity of nut etc.

Wiper material P: Plastic wiper

Rolled ball screws

GY/GW series

Page

Features and specifications of GY/GW series ball screws ——— B_148

Ordering instructions, shaft diameter and lead combinations ——— B_149

Stocked Rolled GW series (C7 grade)

- 8 mm shaft diameter, Unfinished shaft-ends ——— B_150
- 10 mm shaft diameter, Unfinished shaft-ends ——— B_151 ~ 154
- 12 mm shaft diameter, Unfinished shaft-ends ——— B_155 ~ 157
- 15 mm shaft diameter, Unfinished shaft-ends ——— B_158 ~ 164
- 16 mm shaft diameter, Unfinished shaft-ends ——— B_165
- 20 mm shaft diameter, Unfinished shaft-ends ——— B_166 ~ 172
- 25 mm shaft diameter, Unfinished shaft-ends ——— B_173 ~ 179

* Refer to page E-1 and after for the shaft-end process drawings for the above sizes.

Stocked Rolled GY series (C10 grade)

- 8 mm shaft diameter, Unfinished shaft-ends ——— B_180 ~ 183
- 10 mm shaft diameter, Unfinished shaft-ends ——— B_184 ~ 190
- 12 mm shaft diameter, Unfinished shaft-ends ——— B_191 ~ 195
- 15 mm shaft diameter, Unfinished shaft-ends ——— B_196 ~ 205
- 16 mm shaft diameter, Unfinished shaft-ends ——— B_206
- 20 mm shaft diameter, Unfinished shaft-ends ——— B_207 ~ 216
- 25 mm shaft diameter, Unfinished shaft-ends ——— B_217 ~ 226
- 28 mm shaft diameter, Unfinished shaft-ends ——— B_227 ~ 228
- 32 mm shaft diameter, Unfinished shaft-ends ——— B_229 ~ 233
- 36 mm shaft diameter, Unfinished shaft-ends ——— B_234 ~ 237
- 40 mm shaft diameter, Unfinished shaft-ends ——— B_238 ~ 243

* Refer to page E-1 and after for the shaft-end process drawings for the above sizes.

Rolled ball screws GY/GW series

Features

● Various shaft diameters and leads are available for your selection

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

● Selection based on nut type appropriate for mounting area is available

- Three types of nut (round, projection, and square types) are available for your selection.

Summary of the specifications

☐ Shaft diameter: $\varnothing 8$ to $\varnothing 40$ mm, lead: 2 to 40 mm
(Refer to the list of shaft diameters and lead combinations for more details.)

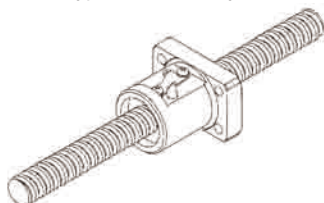
☐ Accuracy grade: C7 grade and C10 grade

☐ Nut combination: single nut

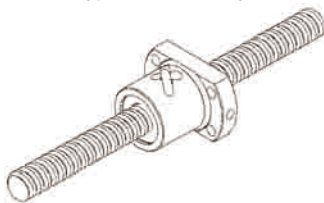
☐ Nut type: round, projection, and square types

Round type: cylindrical nut body without a projection

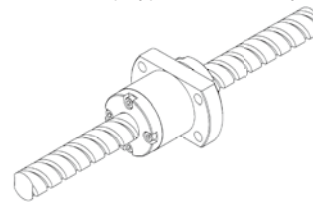
- With a tube type circulation system



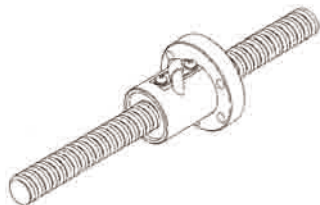
- With a tube type circulation system



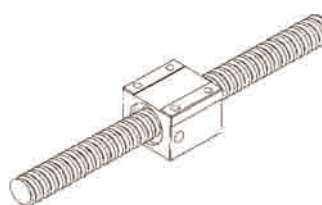
- With an end-cap type circulation system



Projection type: one or two projections on the circumference of the nut body



Square type: square nut



☐ Series product line-up

Series name		Nut combination	Accuracy grade	Shaft diameter line-up	Shaft type	Product line
Rolled screw series	GW series	Single nut	C7	$\varnothing 8 \sim \varnothing 25$	Both ends unfinished	Standard (in-stock) product line
	GY series		C10	$\varnothing 8 \sim \varnothing 40$		

- In standard (in-stock) product line, both ends of the screw shaft are not finished. Additional end machining to fulfill your needs and operating conditions is required.
- Refer to page E-1 and after in this catalog for the shaft-end process drawings for in-stock products.

☐ Options available for standard (in-stock) ball screws

Series	Additional end machining	Surface treatment	Grease	Direction of nut	Wiper detachment
GY series	o	o	o	o	See the notes below.
GW series	o	o	o	o	See the notes below.

- In GY/GW series, both ends of the screw shaft are not finished. Additional end machining to fulfill your needs and operating conditions is required.
- The surface treatment mentioned above is anti corrosive black coating (1 to 2 μm).
- Only the screw models with a wiper is available.
- Alvania Grease S2 is contained in a nut shipped from KURODA, unless otherwise specified. Contact KURODA if you want other greases to be contained.

□ Model numbers of GY/GW series

Example of the model number	Model series	Screw shaft diameter	Lead	Number of circuits	Combination	-	Flange type	Ball recirculation system	Wiper material	Thread direction	-	Overall length of screw shaft	Shaft end dimension	Thread length	-	Accuracy grade	Axial clearance
	GY	40	40	R	S	-	C	T	B	R	-	4000	X	3500	-	CA	Y
	GY	8 ~ 40	2 ~ 40	See specifications.	S	-	See specifications.	See specifications.	See specifications.	R	-	To be shown with a 4-digit number in metric unit (mm)	A, X	To be shown with a 4-digit number in metric unit (mm)	-	CA	Y
	GW	8 ~ 25	2 ~ 40	See specifications.	S	-	See specifications.	See specifications.	See specifications.	R	-	To be shown with a 4-digit number in metric unit (mm)	A, X	To be shown with a 4-digit number in metric unit (mm)	-	C7	Y

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

□ Shaft diameter and lead combinations

- **Rolled GY series /accuracy grade C10** Screw shaft and lead combinations

Screw shaft diameter (mm)	Lead (mm)											
	2	2.5	4	5	6	8	10	16	20	25	32	40
8	M		M	M		M						
10	M	M	M	M	M		M					
12	M		M			M	M					
15				M			M	M	M			
				T			T		T			
				K			K					
16											M	
20				M			M		M			M
				T			T		T			
				K			K					
25				M			M			M		
				T			T			T		
				K			K					
28					M							
					T							
32							M				M	
							T				T	
							K					
36							M		M			
							T		T			
40							M		M			M
							T		T			T

- The symbols in the above table represent:
M: round type nut, T: projection type nut, K: square type nut
- The nut combination for rolled GY series is single nut.

- **Rolled GW series /accuracy grade C7** Screw shaft and lead combinations

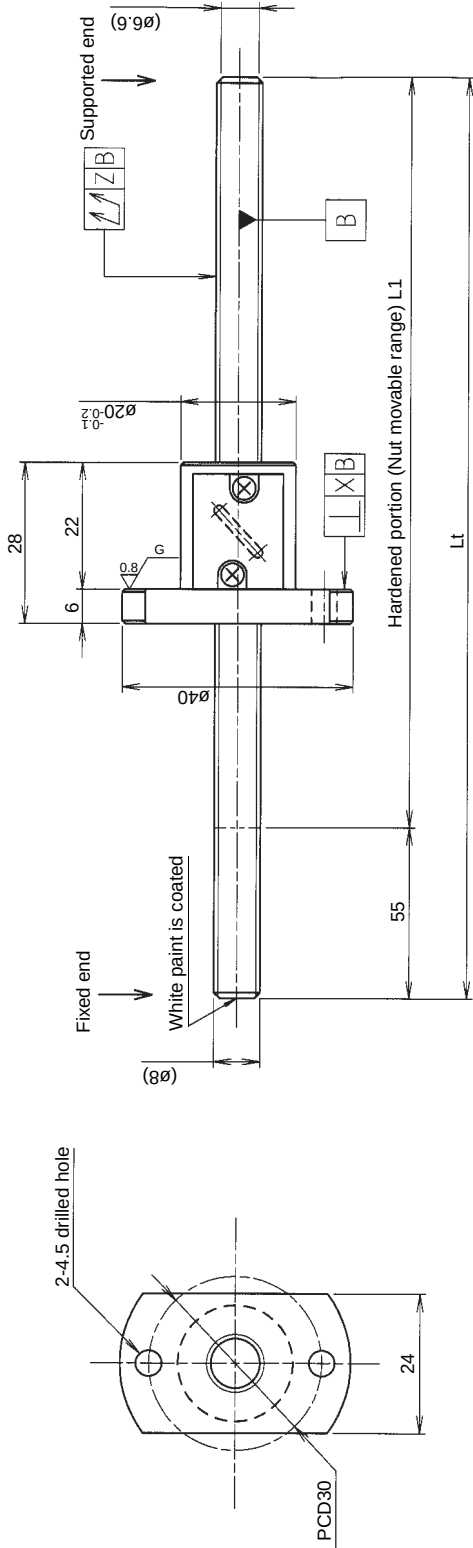
Screw shaft diameter (mm)	Lead (mm)									
	2	2.5	4	5	10	16	20	25	32	40
8	M									
10		M	M		M					
12			M		M					
15				M	M	M	M			
				K	K					
16									M	
20				M	M		M			M
				K	K					
25				M	M			M		
				K	K					

- The symbols in the above table represent:
M: round type nut, K: square type nut
- The nut combination for rolled GW series is limited to single nut.

UNFINISHED SHAFT ENDS

Screw shaft diameter ø8, Lead 2 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	8	Basic dynamic load rating	1800N
Lead	2	Basic static load rating	3200N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	3.5 turn 1 circuit	Surface treatment	Phosphate coating (only nut)
Ball diameter	1.5875		

Model No.	Axial clearance	L ₁	L _t	X	Z	Wiper	Mass (kg)
GW0802GS-HGMR-0200A	~0.030	145	200	0.020	0.040	None	0.17
GW0802GS-HGMR-0400A		345	400		0.120		0.25

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut
o	o	o	o

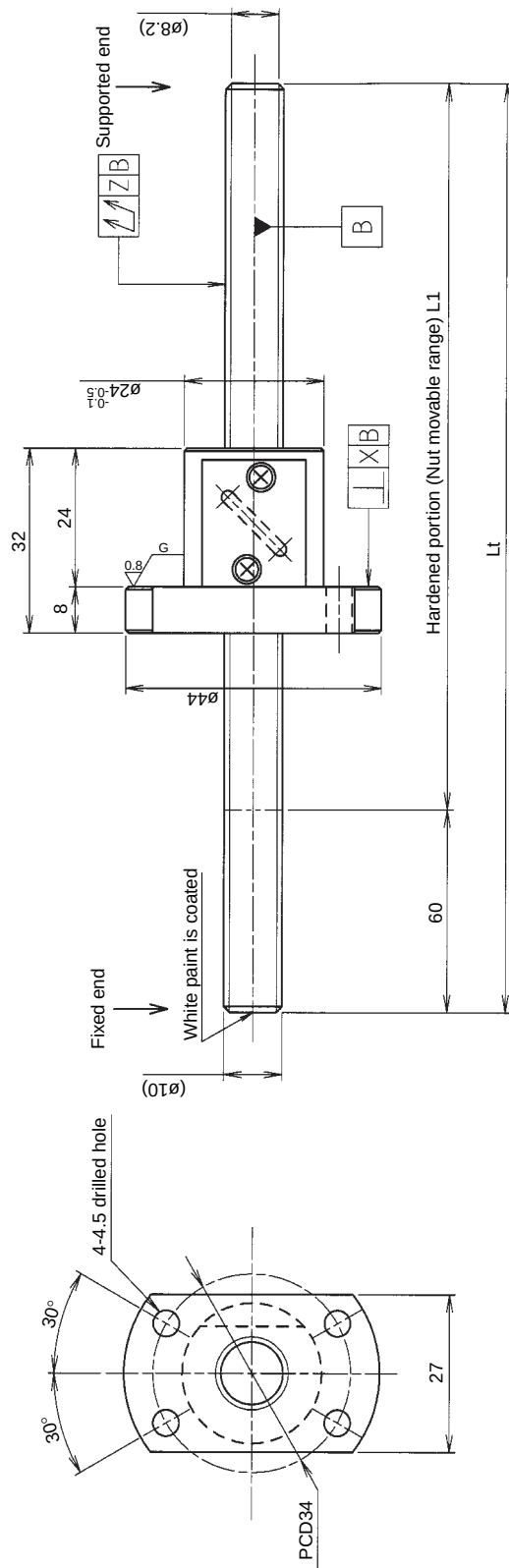
Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

- Notation of standard rolled ball screw**
- Standard length shaft without end machining
 - GW0802GS-HGMR-□□□□A
 - With end machining specified on your drawing
 - GW0802GS-HGMR-□□□□X□□□□-C7Y

Overall length Thread length

Screw shaft diameter $\varnothing 10$, Lead 2.5 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	10	Basic dynamic load rating	2600N
Lead	2.5		
Thread direction	Right-hand	Basic static load rating	5200N
Number of circuits	3.5 turn 1 circuit	Lubricant	Alvania Grease S2
Ball diameter	2.000		
		Surface treatment	Phosphate coating (only nut)

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut
○	○	○	○

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Notation of standard rolled ball screw

- Standard length shaft without end machining
GW102FGS-HGNR-□□□□A
- With end machining specified on your drawing
GW102FGS-HGNR-□□□□X□□□□-C7Y

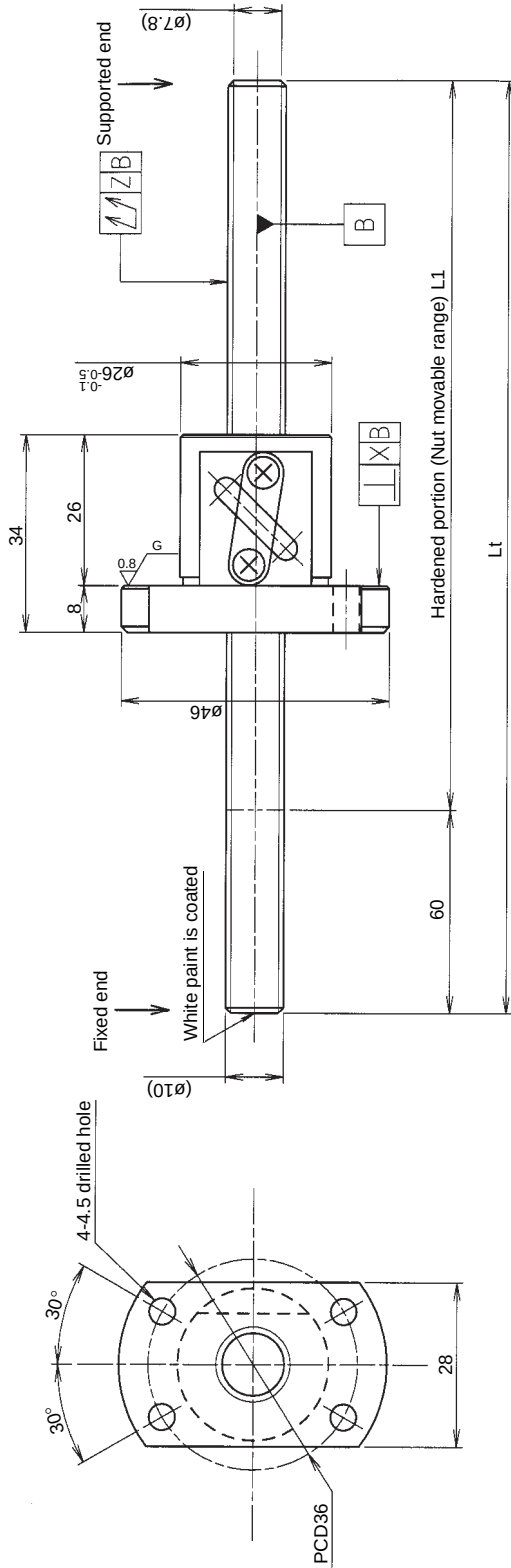
Overall length Thread length

Model No.	Axial clearance	L ₁	L _t	X	Z	Wiper	Mass (kg)
GW102FGS-HG1NR-0400A	~0.030	340	400	0.020	0.080	None	0.41
GW102FGS-HG1NR-0600A		540	600		0.120		0.53

UNFINISHED SHAFT ENDS

Screw shaft diameter $\phi 10$, Lead 4 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	10	Basic dynamic load rating	2300N
Lead	4	Basic static load rating	4800N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 1 circuit	Surface treatment	Phosphate coating (only nut)
Ball diameter	2.3812		

Model No.	Axial clearance	L ₁	L _t	X	Z	Wiper	Mass (kg)
GW1004DS-HANR-0400A	~0.030	340	400	0.020	0.080	None	0.42
GW1004DS-HANR-0600A		540	600		0.120		0.54

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut
O	O	O	O

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Notation of standard rolled ball screw

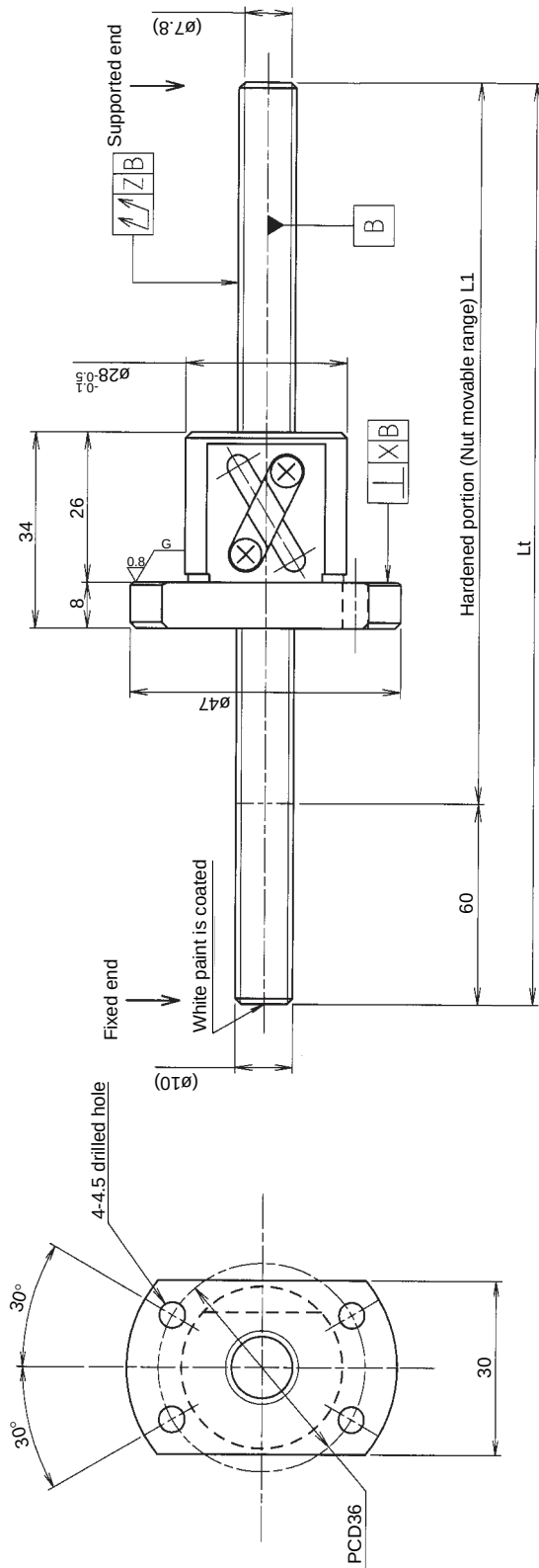
- Standard length shaft without end machining GW1004DS-HANR-□□□□A
- With end machining specified on your drawing GW1004DS-HANR-□□□□X□□□□-C7Y

Overall length Thread length

UNFINISHED SHAFT ENDS

Screw shaft diameter $\phi 10$, Lead 10 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	10	Basic dynamic load rating	1850N
Lead	10	Basic static load rating	3200N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	1.5 turn 1 circuit	Surface treatment	Phosphate coating (only nut)
Ball diameter	2.3812		

Model No.	Axial clearance	L ₁	L _t	X	Z	Wiper	Mass (kg)
GW1010AS-HANR-0400A	~0.030	340	400	0.020	0.080	None	0.43
GW1010AS-HANR-0600A		540	600		0.120		0.55

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut
0	0	0	0

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Notation of standard rolled ball screw

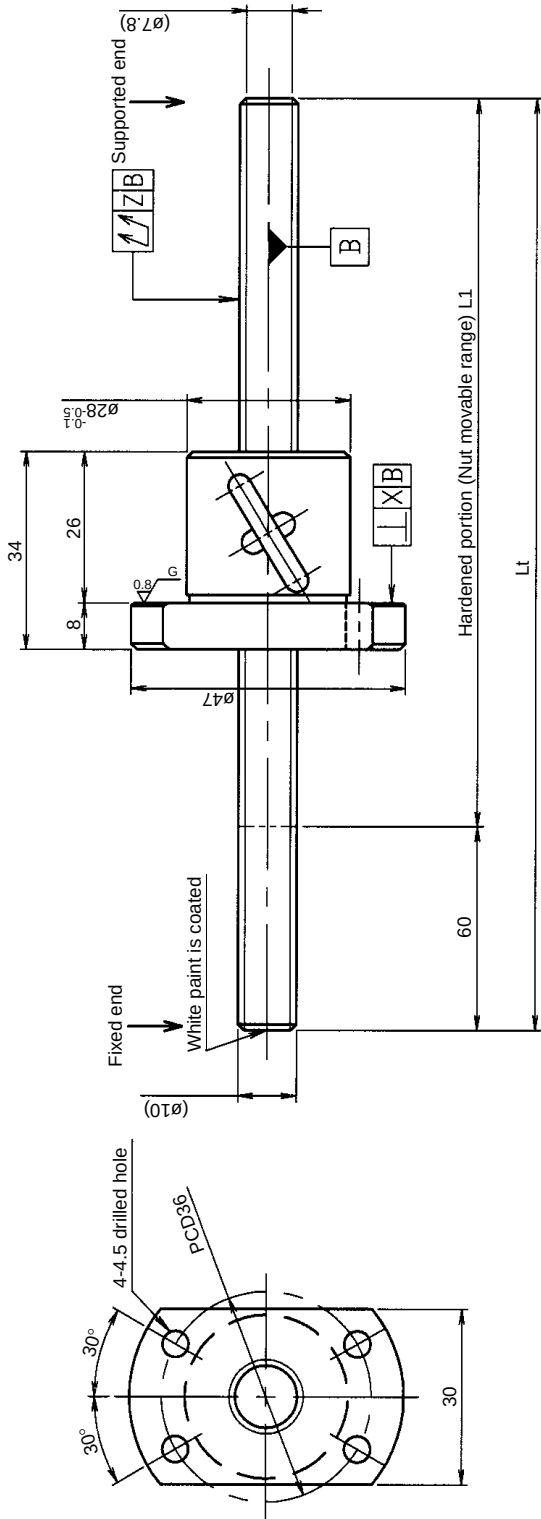
- Standard length shaft without end machining
GW1010AS-HANR-A
- With end machining specified on your drawing
GW1010AS-HANR-X-C7Y

Overall length Thread length

UNFINISHED SHAFT ENDS

Screw shaft diameter $\phi 10$, Lead 10 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	10	Basic dynamic load rating	3300N
Lead	10	Basic static load rating	6400N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	1.5 turn 2 circuit	Surface treatment	Phosphate coating (only nut)
Ball diameter	2.3812		

Model No.	Axial clearance	L ₁	L _t	X	Z	Wiper	Mass (kg)
GW1010BS-HUNR-0400A	~0.030	340	400	0.020	0.080	None	0.43
GW1010BS-HUNR-0600A		540	600		0.120		0.55

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut
0	0	0	0

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Notation of standard rolled ball screw

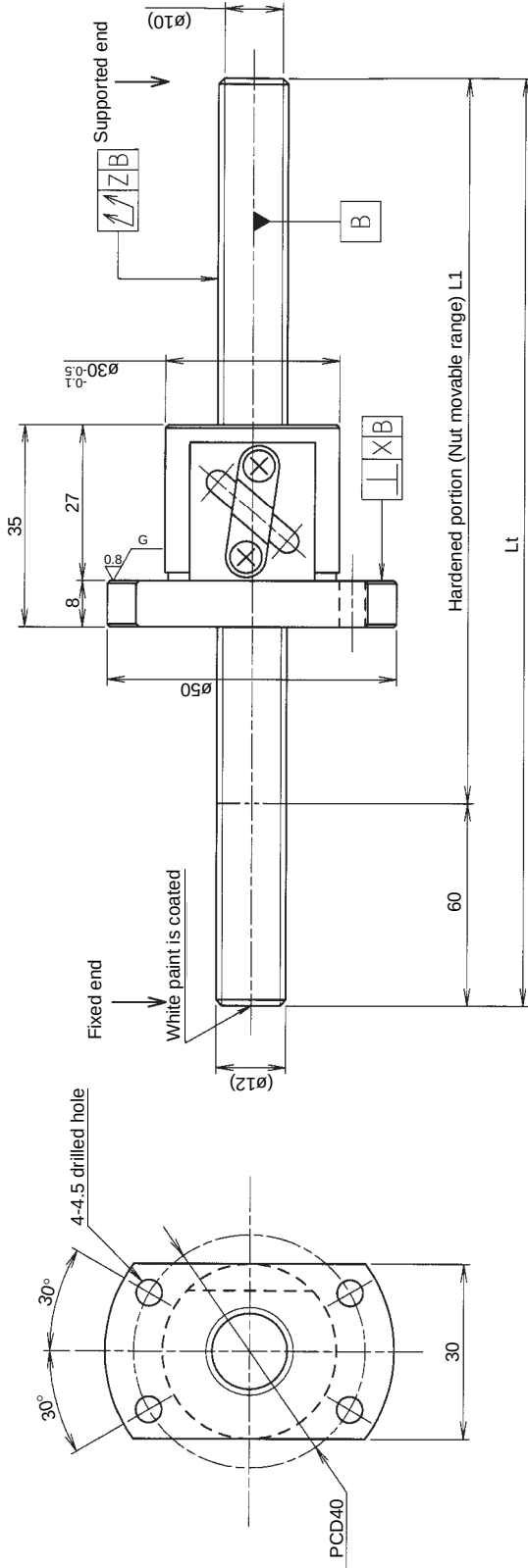
- Standard length shaft without end machining GW1010BS-HUNR-A
- With end machining specified on your drawing GW1010BS-HUNR-X-C7Y

Overall length Thread length

UNFINISHED SHAFT ENDS

Screw shaft diameter $\varnothing 12$, Lead 4 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	12	Basic dynamic load rating	2600N
Lead	4	Basic static load rating	5800N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 1 circuit	Surface treatment	Phosphate coating (only nut)
Ball diameter	2.3812		

Model No.	Axial clearance	L_1	L_t	X	Z	Wiper	Mass (kg)
GW1204DS-HANR-0400A	~0.030	340	400	0.020	0.080	None	0.57
GW1204DS-HANR-0800A		740	800	0.200	0.200		0.92

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut
0	0	0	0

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

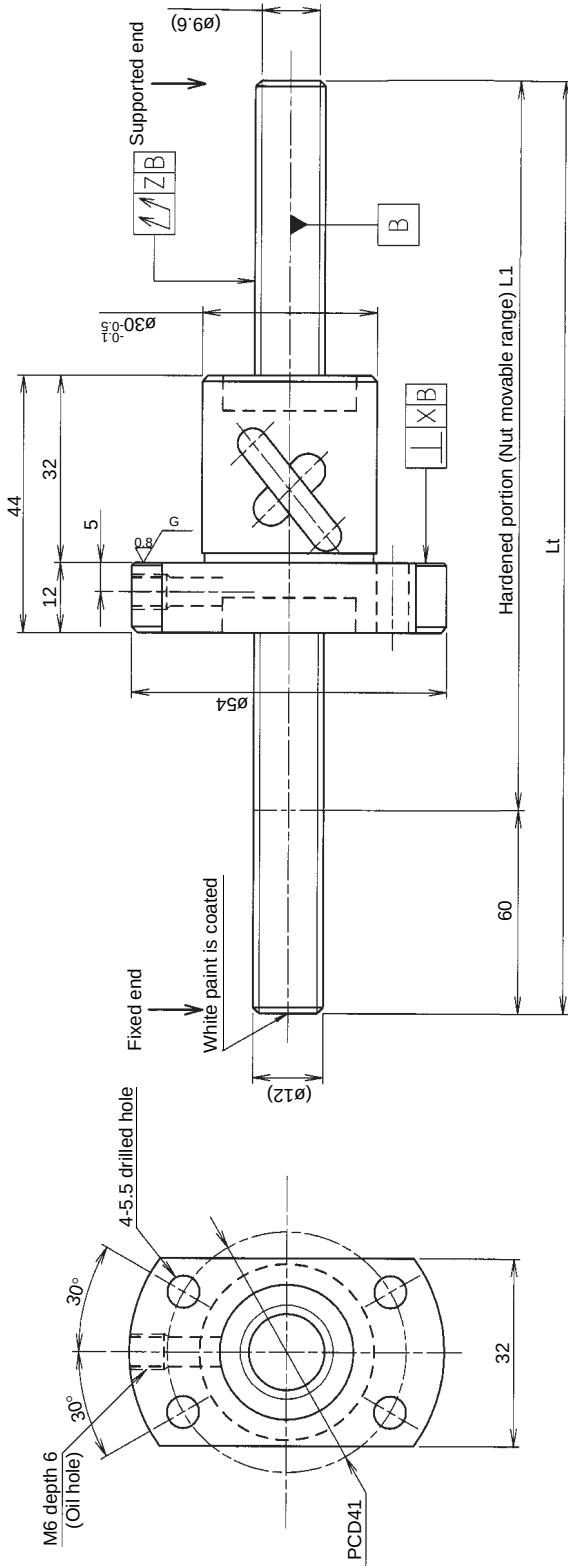
- Notation of standard rolled ball screw**
- Standard length shaft without end machining
GW1204DS-HANR-A
 - With end machining specified on your drawing
GW1204DS-HANR-X-C7Y

Overall length Thread length

UNFINISHED SHAFT ENDS

Screw shaft diameter $\phi 12$, Lead 10 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	12	Basic dynamic load rating	2850N
Lead	10	Basic static load rating	4950N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	1.5 turn 1 circuit	Surface treatment	Phosphate coating (only nut)
Ball diameter	3.175		

Model No.	Axial clearance	L ₁	L _t	X	Z	Wiper	Mass (kg)
GW1210AS-HULR-0400A	~0.030	340	400	0.020	0.080	Lip	0.62
GW1210AS-HULR-0800A		740	800		0.200	seal	0.98

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
o	o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

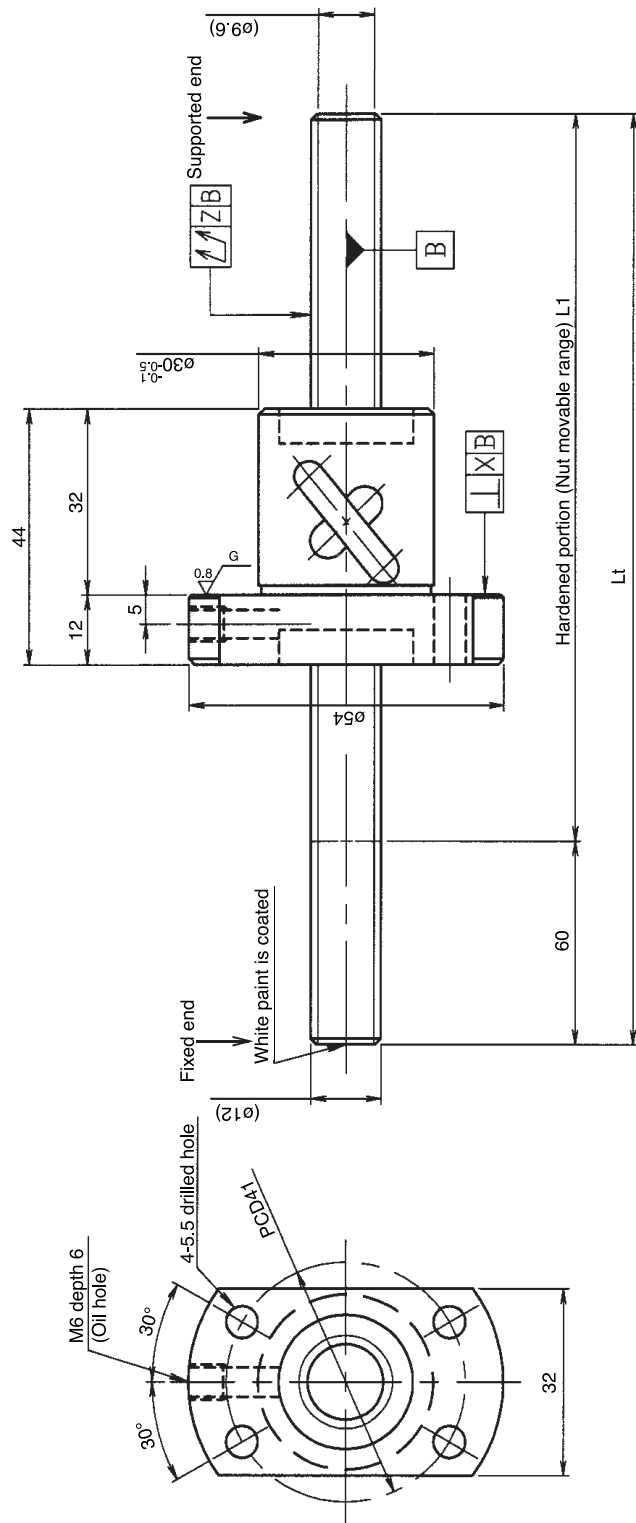
Notation of standard rolled ball screw

- Standard length shaft without end machining GW1210AS-HULR-□□□□A
- With end machining specified on your drawing GW1210AS-HULR-□□□□X□□□□-C7Y

Overall length Thread length

Screw shaft diameter $\varnothing 12$, Lead 10 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	12	Basic dynamic load rating	5100N
Lead	10		
Thread direction	Right-hand	Basic static load rating	9900N
Number of circuits	1.5 turn 2 circuit	Lubricant	Alvania Grease S2
Ball diameter	3,175		
		Surface treatment	Phosphate coating (only nut)

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
○	○	○	○	○

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Notation of standard rolled ball screw

- Standard length shaft without end machining
GW1210BS-HULR-□□□□A
- With end machining specified on your drawing
GW1210BS-HULR-□□□□X□□□□-C7Y

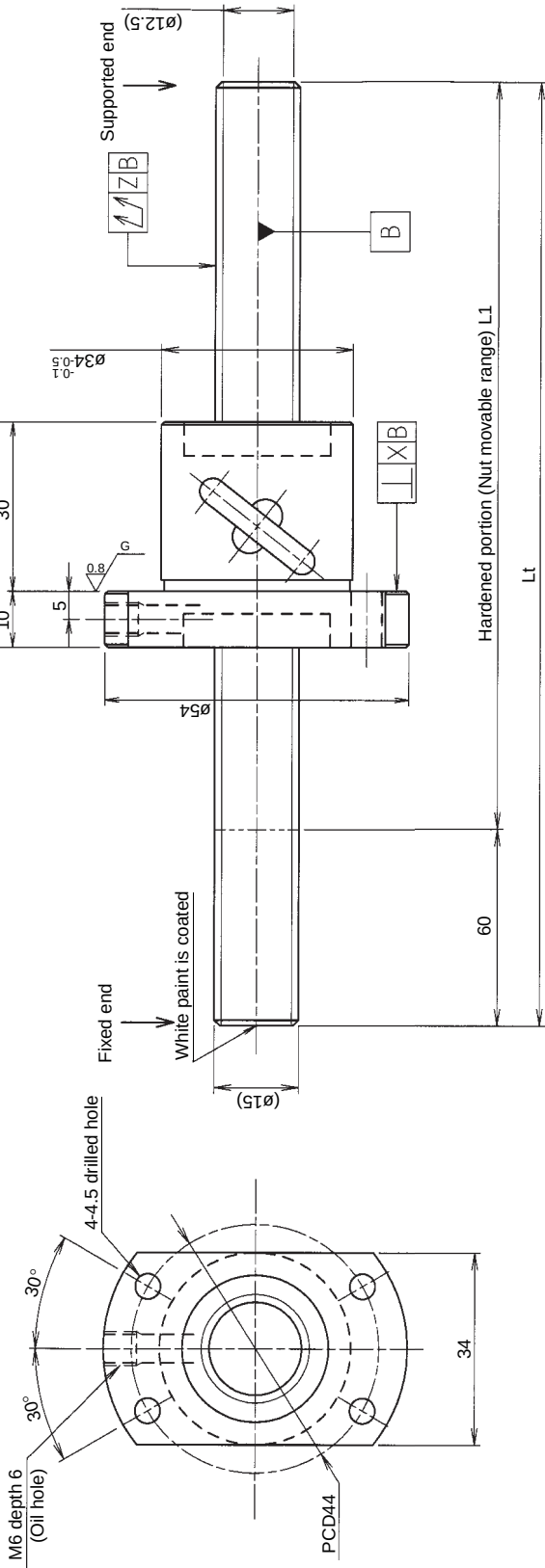
Overall length Thread length

Model No.	Axial clearance	L ₁	L _t	X	Z	Wiper	Mass (kg)
GW1210BS-HULR-0400A	~0.030	340	400	0.020	0.080	Lip	0.62
GW1210BS-HULR-0800A		740	800		0.200	seal	0.98

UNFINISHED SHAFT ENDS

Screw shaft diameter $\varnothing 15$, Lead 5 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	15	Basic dynamic load rating	5100N
Lead	5	Basic static load rating	10500N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 1 circuit	Surface treatment	Phosphate coating (only nut)
Ball diameter	3.175		

Model No.	Axial clearance	L ₁	L _t	X	Z	Wiper	Mass (kg)
GW1505DS-HULR-0600A	~0.030	540	600	0.025	0.070	Lip	1.13
GW1505DS-HULR-1200A		1140	1200		0.170	seal	1.96

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
o	o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

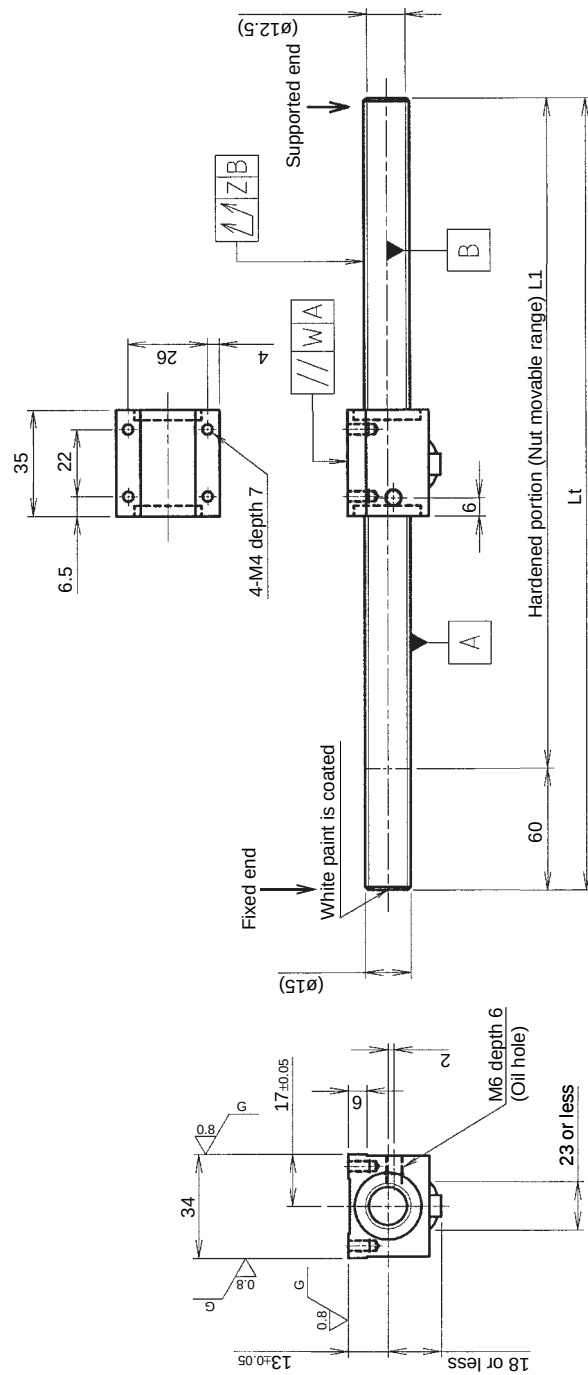
Notation of standard rolled ball screw

- Standard length shaft without end machining
GW1505DS-HULR-□□□□A
- With end machining specified on your drawing
GW1505DS-HULR-□□□□X□□□□-C7Y

Overall length Thread length

Screw shaft diameter $\varnothing 15$, Lead 5 (Square nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	15	Basic dynamic load rating	5100N
Lead	5	Basic static load rating	10500N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 1 circuit	Surface treatment	Phosphate coating (only nut)
Ball diameter	3,175		

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
○	○	○	○	○

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Notation of standard rolled ball screw

- Standard length shaft without end machining
GW1505DS-NKLR-□□□□A
- With end machining specified on your drawing
GW1505DS-NKLR-□□□□X□□□□-C7Y

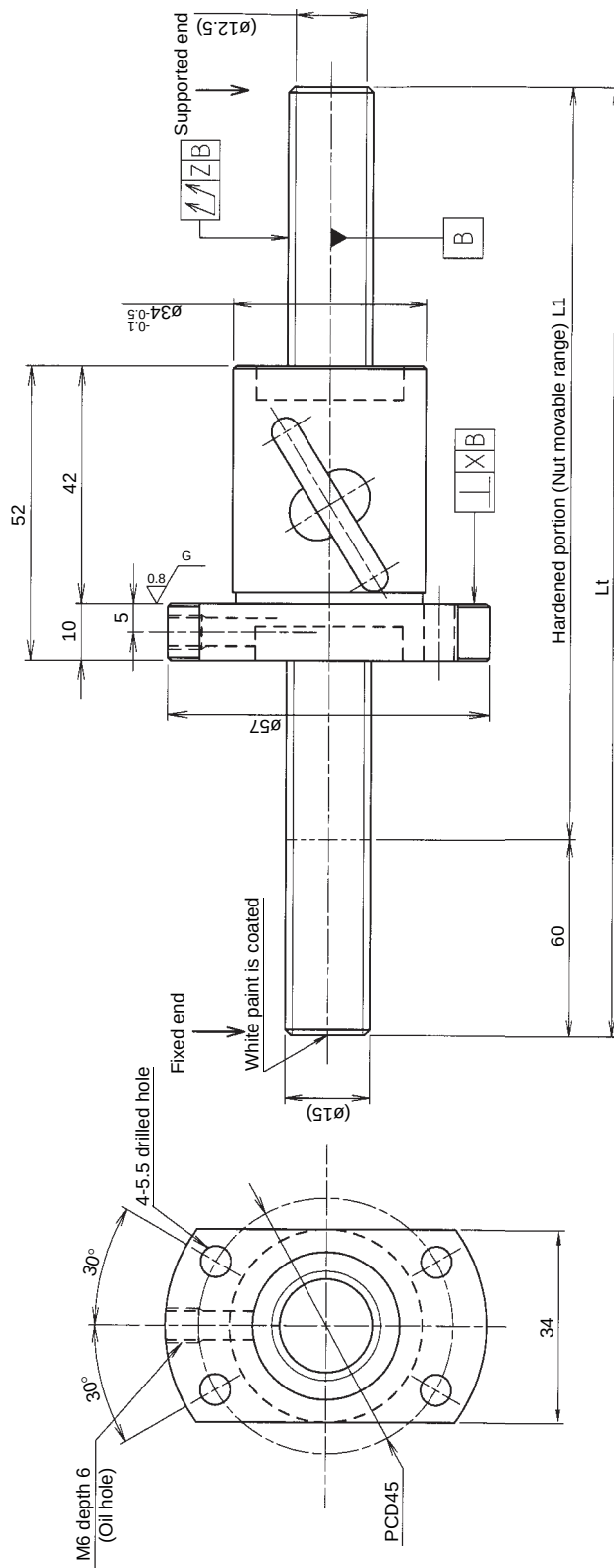
Overall length Thread length

Model No.	Axial clearance	L ₁	L _t	W	Z	Wiper	Mass (kg)
GW1505DS-NKLR-0600A	~0.030	540	600	0.017	0.070	Lip	1.05
GW1505DS-NKLR-1200A		1140	1200		0.170	seal	1.88

UNFINISHED SHAFT ENDS

Screw shaft diameter $\varnothing 15$, Lead 10 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	15	Basic dynamic load rating	5100N
Lead	10	Basic static load rating	10500N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 1 circuit	Surface treatment	Phosphate coating (only nut)
Ball diameter	3.175		

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
○	○	○	○	○

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Notation of standard rolled ball screw

- Standard length shaft without end machining
GW1510DS-HULR-□□□□A
- With end machining specified on your drawing
GW1510DS-HULR-□□□□X□□□□-C7Y

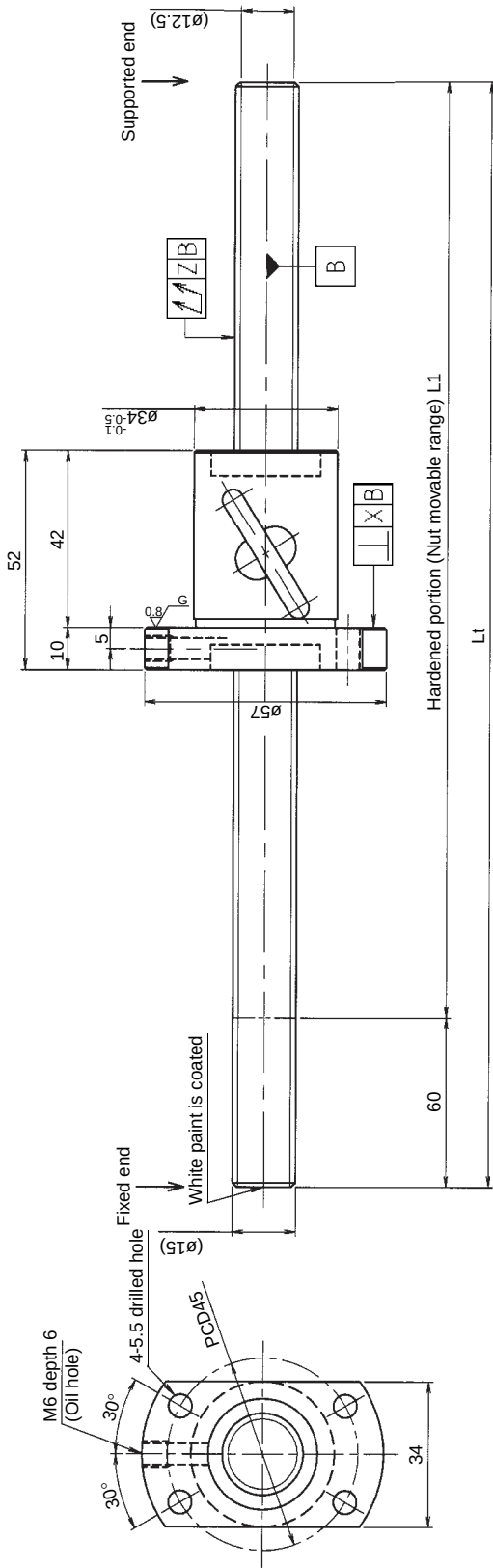


Model No.	Axial clearance	L ₁	L _t	X	Z	Wiper	Mass (kg)
GW1510DS-HULR-0600A	~0.030	540	600	0.025	0.070	Lip	1.18
GW1510DS-HULR-1200A		1140	1200		0.170	seal	2.01

UNFINISHED SHAFT ENDS

Screw shaft diameter ø15, Lead 10 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	15	Basic dynamic load rating	9200N
Lead	10	Basic static load rating	21000N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 2 circuit	Surface treatment	Phosphate coating (only nut)
Ball diameter	3.175		

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
o	o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 µm).

Model No.	Axial clearance	L ₁	X	Z	Wiper	Mass (kg)
GW1510ES-HULR-0600A	~0.030	540	0.025	0.070	Lip	1.18
GW1510ES-HULR-1200A		1140	0.025	0.170	seal	2.01

Notation of standard rolled ball screw

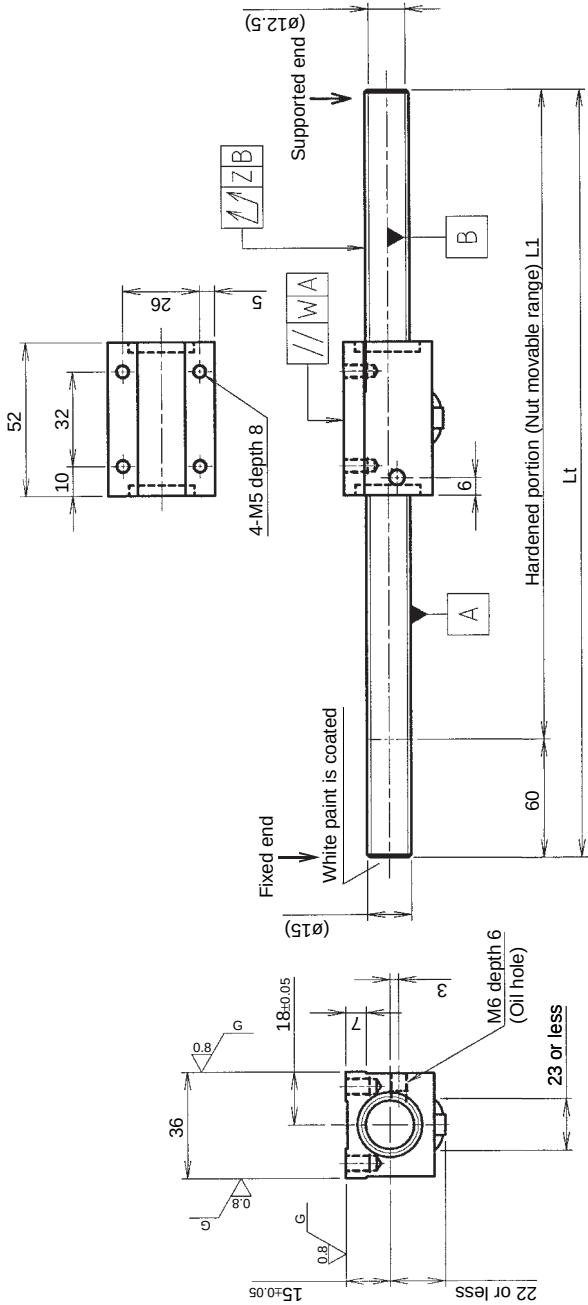
- Standard length shaft without end machining GW1510ES-HULR-□□□□A
- With end machining specified on your drawing GW1510ES-HULR-□□□□X□□□□-C7Y

Overall length Thread length

UNFINISHED SHAFT ENDS

Screw shaft diameter $\phi 15$, Lead 10 (Square nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	15	Basic dynamic load rating	5100N
Lead	10	Basic static load rating	10500N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 1 circuit	Surface treatment	Phosphate coating (only nut)
Ball diameter	3.175		

Model No.	Axial clearance	L ₁	L _t	W	Z	Wiper	Mass (kg)
GW1510DS-NKLR-0600A	~0.030	540	600	0.017	0.070	Lip	1.24
GW1510DS-NKLR-1200A		1140	1200		0.170	seal	2.07

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
o	o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Notation of standard rolled ball screw

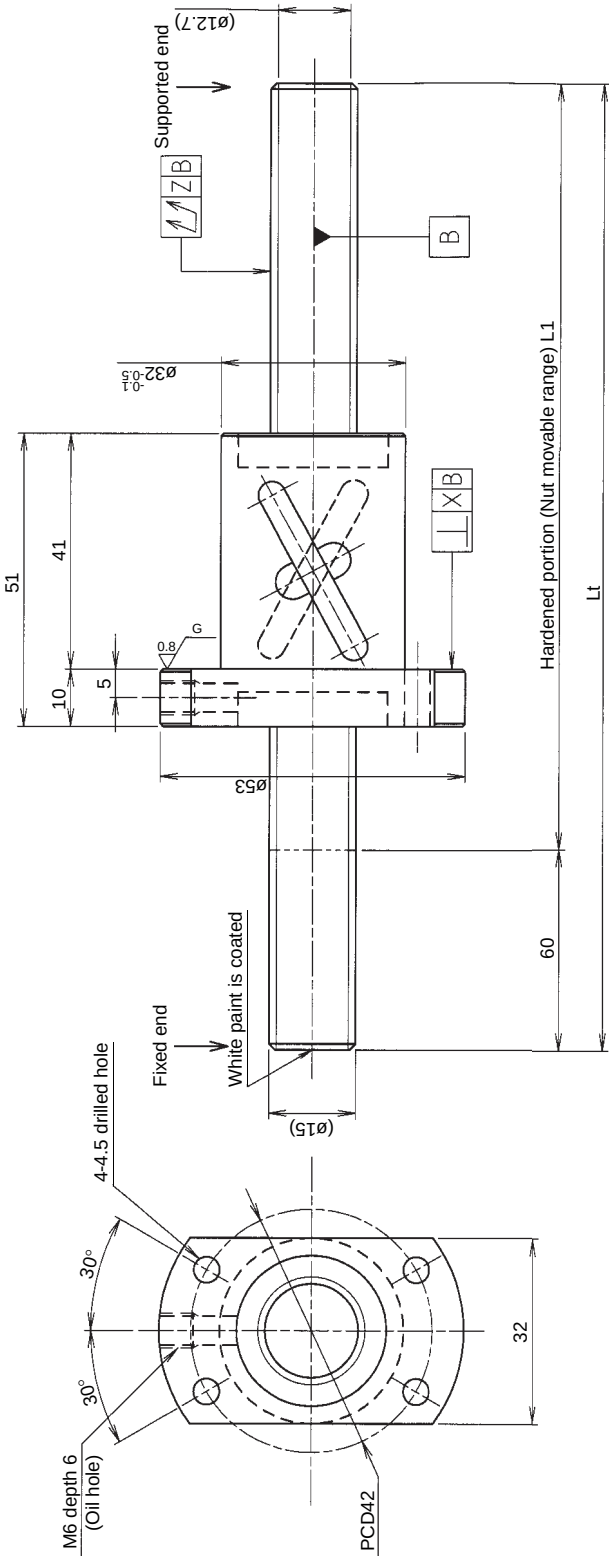
- Standard length shaft without end machining
GW1510DS-NKLR-□□□□A
- With end machining specified on your drawing
GW1510DS-NKLR-□□□□X□□□□-C7Y

Overall length Thread length

UNFINISHED SHAFT ENDS

Screw shaft diameter ø15, Lead 16 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	15	Basic dynamic load rating	4300N
Lead	16	Basic static load rating	10200N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	1.5 turn 2 circuit	Surface treatment	Phosphate coating (only nut)
Ball diameter	2.778		

Model No.	Axial clearance	L ₁	L _t	X	Z	Wiper	Mass (kg)
GW1516BS-HULR-0600A	~0.030	540	600	0.020	0.070	Lip	1.15
GW1516BS-HULR-1200A		1140	1200		0.170	seal	1.98

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
o	o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 µm).

Notation of standard rolled ball screw

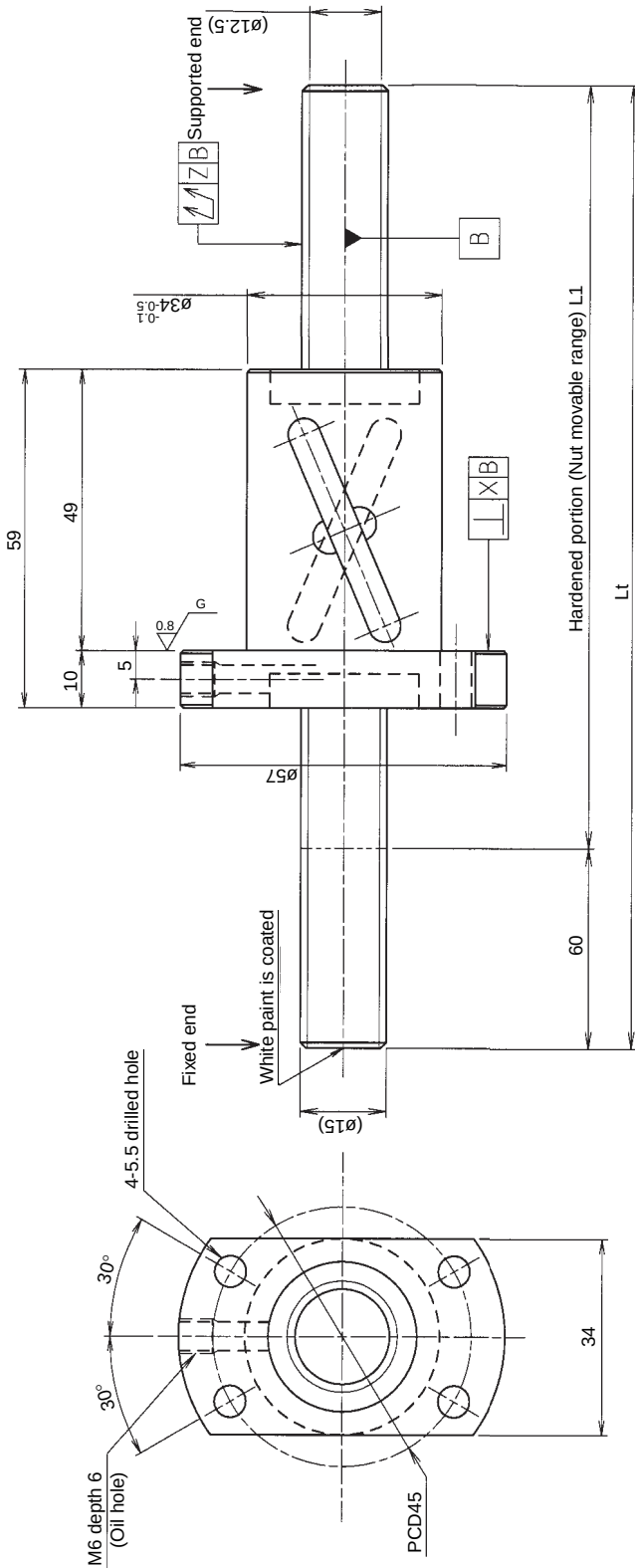
- Standard length shaft without end machining GW1516BS-HULR-□□□□A
- With end machining specified on your drawing GW1516BS-HULR-□□□□X□□□□-C7Y

Overall length Thread length

UNFINISHED SHAFT ENDS

Screw shaft diameter $\phi 15$, Lead 20 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	15	Basic dynamic load rating	5800N
Lead	20	Basic static load rating	13300N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	1.5 turn 2 circuit	Surface treatment	Phosphate coating (only nut)
Ball diameter	3.175		

Model No.	Axial clearance	L ₁	L _t	X	Z	Wiper	Mass (kg)
GW1520BS-HULR-0600A	~0.030	540	600	0.025	0.070	Lip	1.24
GW1520BS-HULR-1200A		1140	1200		0.170	seal	2.07

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
o	o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Notation of standard rolled ball screw

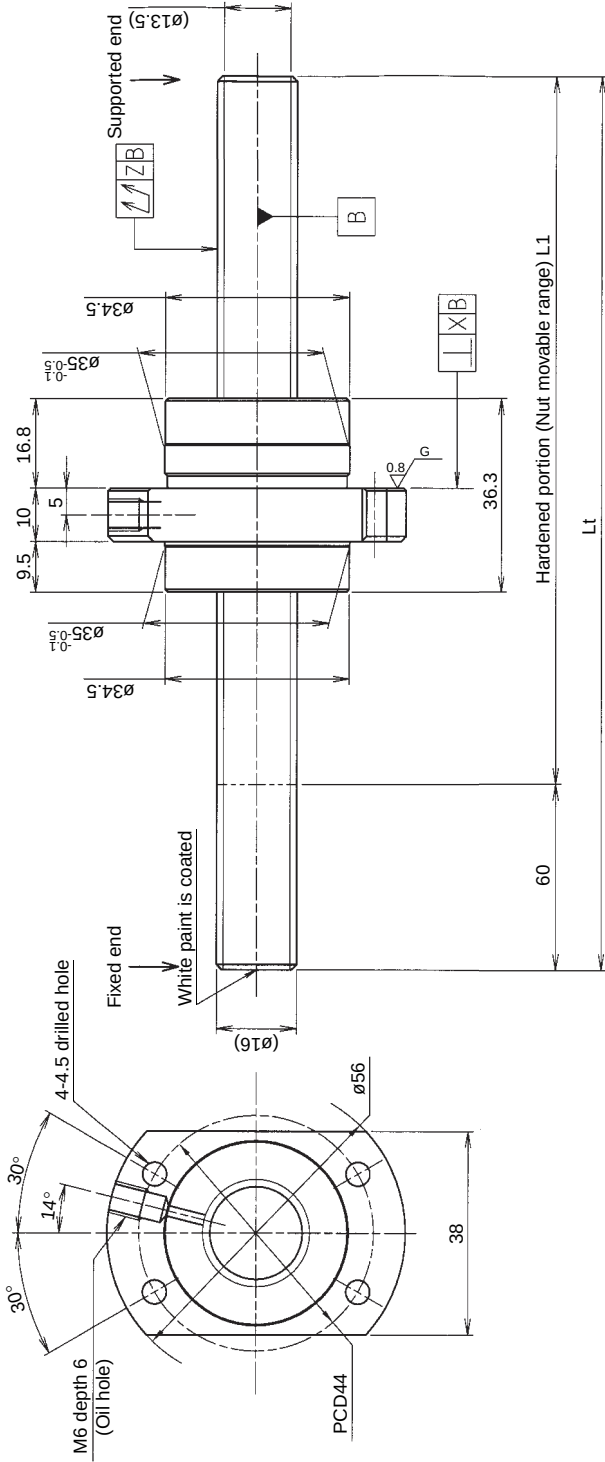
- Standard length shaft without end machining
GW1520BS-HULR-□□□□A
- With end machining specified on your drawing
GW1520BS-HULR-□□□□X□□□□-C7Y

Overall length Thread length

UNFINISHED SHAFT ENDS

Screw shaft diameter ø16, Lead 32 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	16	Basic dynamic load rating	4200N
Lead	32	Basic static load rating	7700N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	0.67 turn 3 circuit	Surface treatment	Phosphate coating (only nut)
Ball diameter	3.175		

Model No.	Axial clearance	L ₁	L _t	X	Z	Wiper	Mass (kg)
GW1632QS-HEZR-0600A	~0.030	540	600	0.025	0.070	*	1.24
GW1632QS-HEZR-1200A		1140	1200		0.170		2.19

* For the asterisked part, the lip of the end cap serves as a wiper.

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
o	o	o	o	x

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 µm).

Notation of standard rolled ball screw

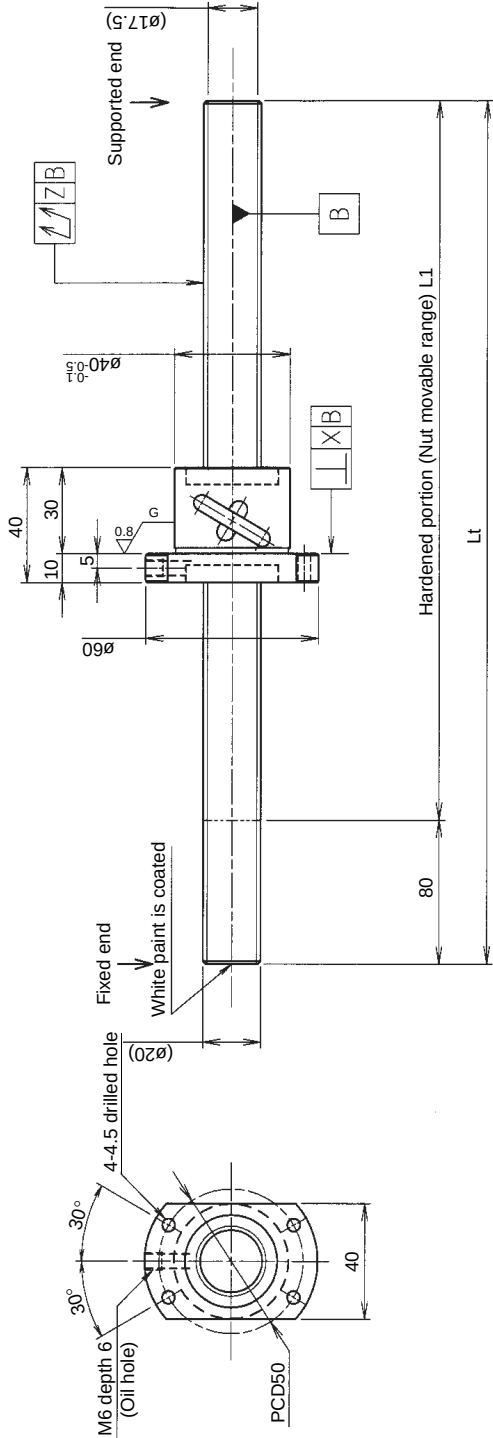
- Standard length shaft without end machining
GW1632QS-HEZR-□□□□A
- With end machining specified on your drawing
GW1632QS-HEZR-□□□□X□□□□-C7Y

Overall length Thread length

UNFINISHED SHAFT ENDS

Screw shaft diameter $\varnothing 20$, Lead 5 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	20	Basic dynamic load rating	6200N
Lead	5	Basic static load rating	14700N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 1 circuit	Surface treatment	Phosphate coating (only nut)
Ball diameter	3.175		

Model No.	Axial clearance	L ₁	L _t	X	Z	Wiper	Mass (kg)
GW2005DS-HULR-0600A	~0.030	520	600	0.025	0.070	Lip seal	1.85
GW2005DS-HULR-1200A		1120	1200		0.120		3.33
GW2005DS-HULR-2000A		1920	2000		0.270		5.29

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
o	o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

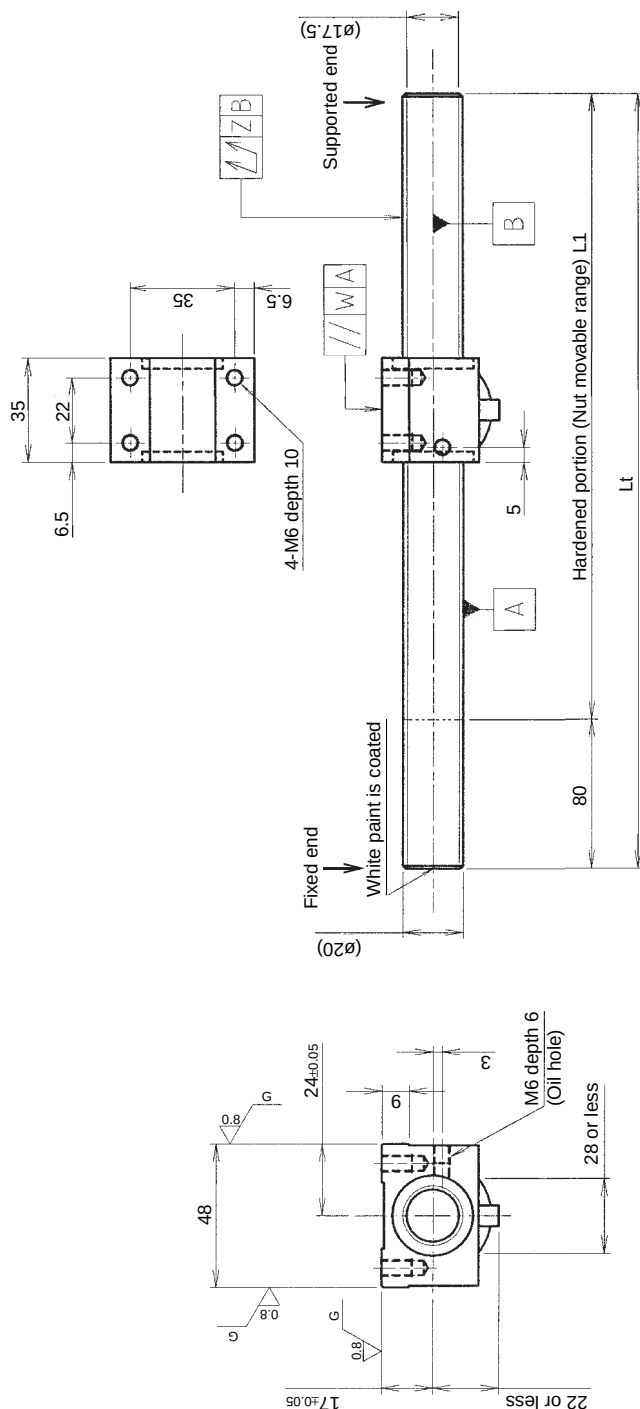
Notation of standard rolled ball screw

- Standard length shaft without end machining
GW2005DS-HULR-□□□□A
- With end machining specified on your drawing
GW2005DS-HULR-□□□□X□□□□-C7Y

Overall length Thread length

Screw shaft diameter $\varnothing 20$, Lead 5 (Square nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	20	Basic dynamic load rating	6200N
Lead	5	Basic static load rating	14700N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 1 circuit	Surface treatment	Phosphate coating (only nut)
Ball diameter	3.175		

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
○	○	○	○	○

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Notation of standard rolled ball screw

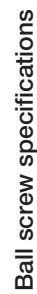
- Standard length shaft without end machining
GW2005DS-NKLR-□□□□A
- With end machining specified on your drawing
GW2005DS-NKLR-□□□□X□□□□-C7Y

Model No.	Axial clearance	L ₁	L _t	W	Z	Wiper	Mass (kg)
GW2005DS-NKLR-0600A	~0.030	520	600	0.017	0.070	Lip seal	1.87
GW2005DS-NKLR-1200A		1120	1200		0.120		3.34
GW2005DS-NKLR-2000A		1920	2000	0.270	5.31		

UNFINISHED SHAFT ENDS

Screw shaft diameter ø20, Lead 10 (Round nut)

(Unit: mm)



Screw shaft diameter	20	Basic dynamic load rating	10600N
Lead	10	Basic static load rating	22700N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 1 circuit	Surface treatment	Phosphate coating (only nut)
Ball diameter	4.7625		

Model No.	Axial clearance	L ₁	L _t	X	Z	Wiper	Mass (kg)
GW2010DS-HULR-0600A	~0.050	520	600		0.070	Lip seal	2.47
GW2010DS-HULR-1200A		1120	1200	0.025	0.120		3.95
GW2010DS-HULR-2000A		1920	2000			0.270	5.92

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
○	○	○	○	○

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

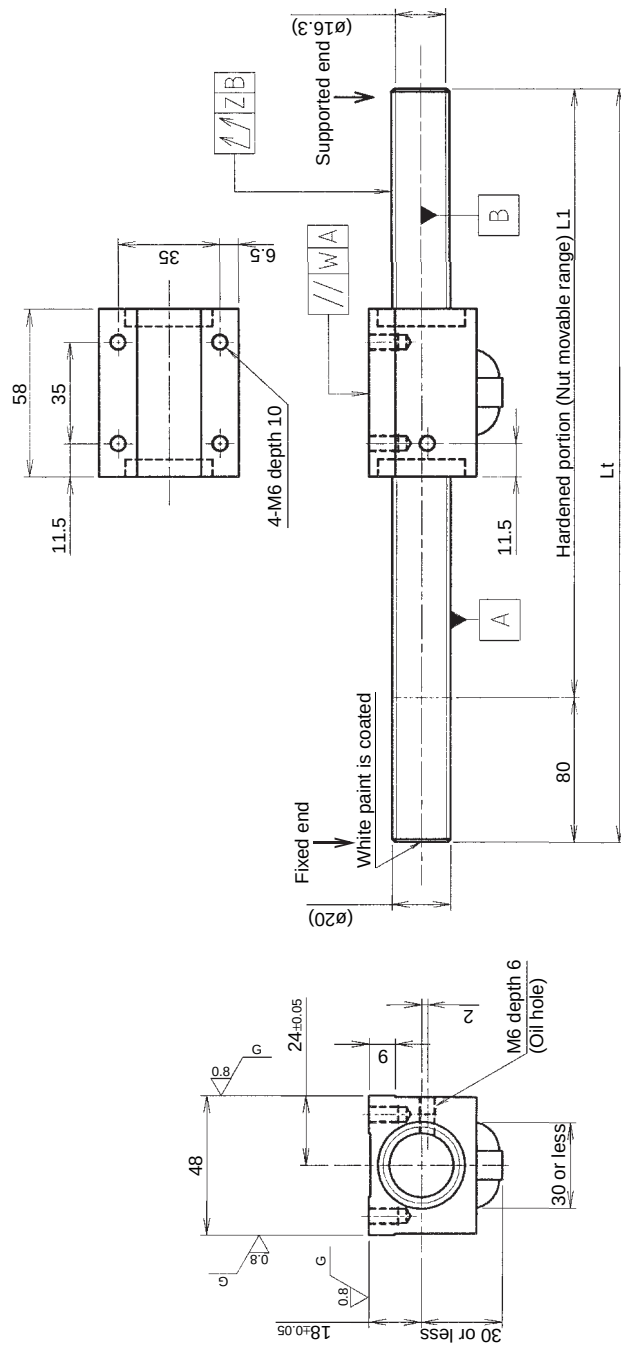
Notation of standard rolled ball screw

- Standard length shaft without end machining
GW2010DS-HULR-□□□□A
- With end machining specified on your drawing
GW2010DS-HULR-□□□□X□□□□-C7Y

Overall length Thread length

Screw shaft diameter $\varnothing 20$, Lead 10 (Square nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	20	Basic dynamic load rating	10600N
Lead	10		
Thread direction	Right-hand	Basic static load rating	22700N
Number of circuits	2.5 turn 1 circuit	Lubricant	Alvania Grease S2
Ball diameter	4.7625		
		Surface treatment	Phosphate coating (only nut)

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
○	○	○	○	○

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Notation of standard rolled ball screw

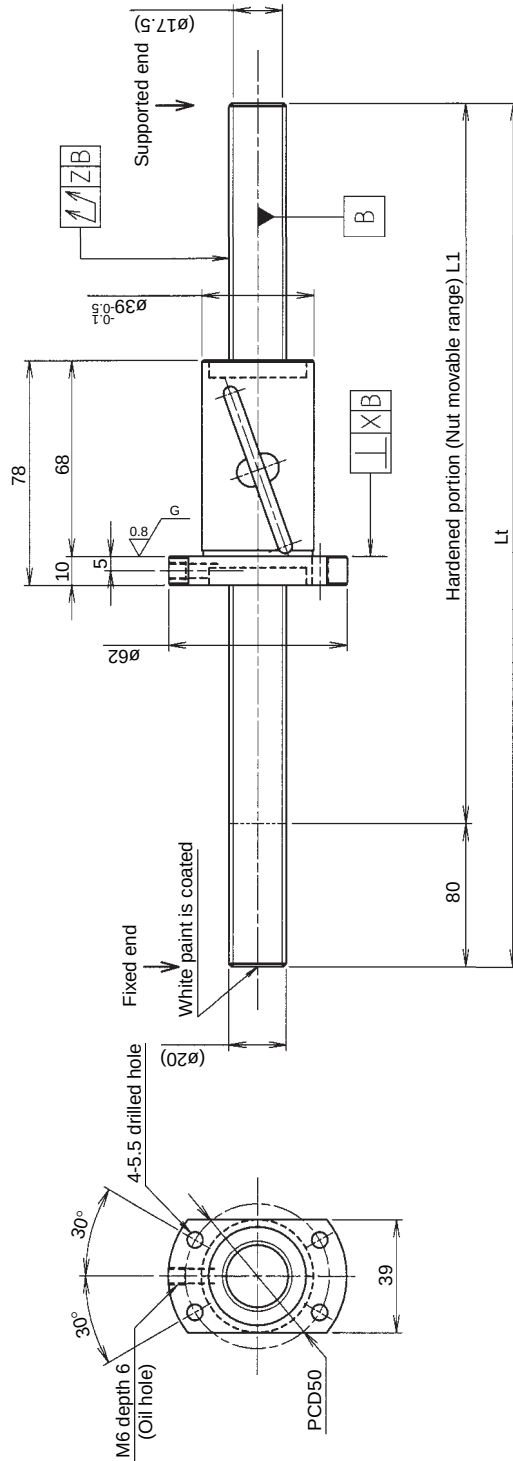
- Standard length shaft without end machining
GW2010DS-NKLR-□□□□A
- With end machining specified on your drawing
GW2010DS-NKLR-□□□□X□□□□-C7Y

Model No.	Axial clearance	L ₁	L _t	W	Z	Wiper	Mass (kg)
GW2010DS-NKLR-0600A	~0.050	520	600	0.017	0.070	Lip seal	2.20
GW2010DS-NKLR-1200A		1120	1200		0.120		3.67
GW2010DS-NKLR-2000A		1920	2000		0.270		5.64

UNFINISHED SHAFT ENDS

Screw shaft diameter $\varnothing 20$, Lead 20 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	20	Basic dynamic load rating	6200N
Lead	20		
Thread direction	Right-hand	Basic static load rating	14700N
Number of circuits	2.5 turn 1 circuit	Lubricant	Alvania Grease S2
Ball diameter	3.175		
		Surface treatment	Phosphate coating (only nut)

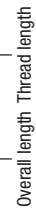
Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
○	○	○	○	○

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Notation of standard rolled ball screw

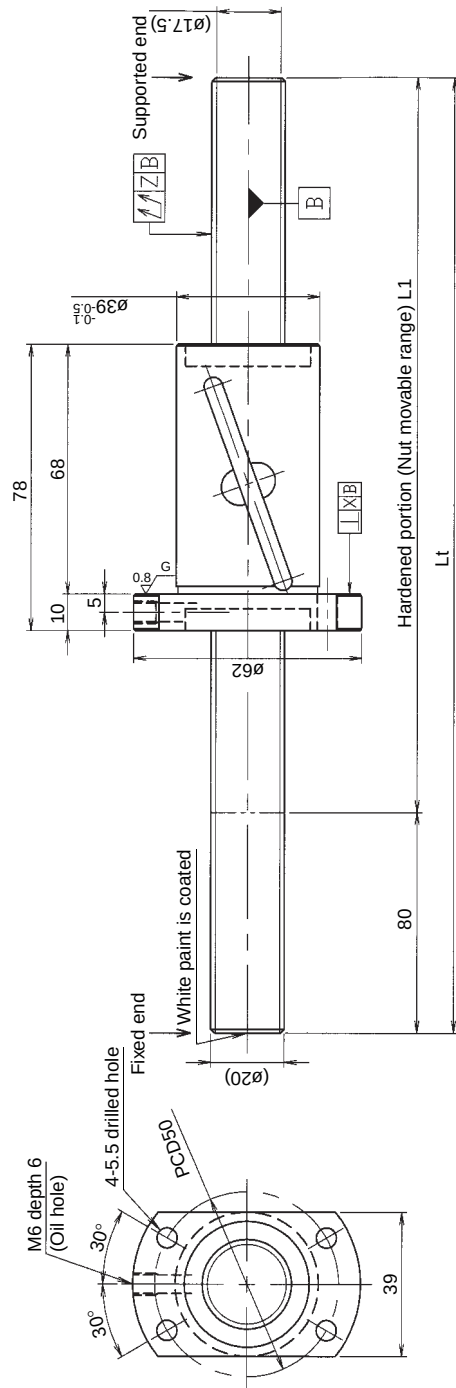
- Standard length shaft without end machining
GW2020DS-HULR-□□□□A
- With end machining specified on your drawing
GW2020DS-HULR-□□□□X□□□□-C7Y



Model No.	Axial clearance	L ₁	L _t	X	Z	Wiper	Mass (kg)
GW2020DS-HULR-0600A	~0.030	520	600		0.070	Lip seal	2.06
GW2020DS-HULR-1200A		1120	1200	0.025	0.120		3.53
GW2020DS-HULR-2000A		1920	2000		0.270		5.50

Screw shaft diameter $\varnothing 20$, Lead 20 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	20	Basic dynamic load rating	11200N
Lead	20		
Thread direction	Right-hand	Basic static load rating	29400N
Number of circuits	2.5 turn 2 circuit	Lubricant	Alvania Grease S2
Ball diameter	3.175		
		Surface treatment	Phosphate coating (only nut)

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
○	○	○	○	○

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Notation of standard rolled ball screw

- Standard length shaft without end machining
GW2020ES-HULR-□□□□A
- With end machining specified on your drawing
GW2020ES-HULR-□□□□X□□□□-C7Y

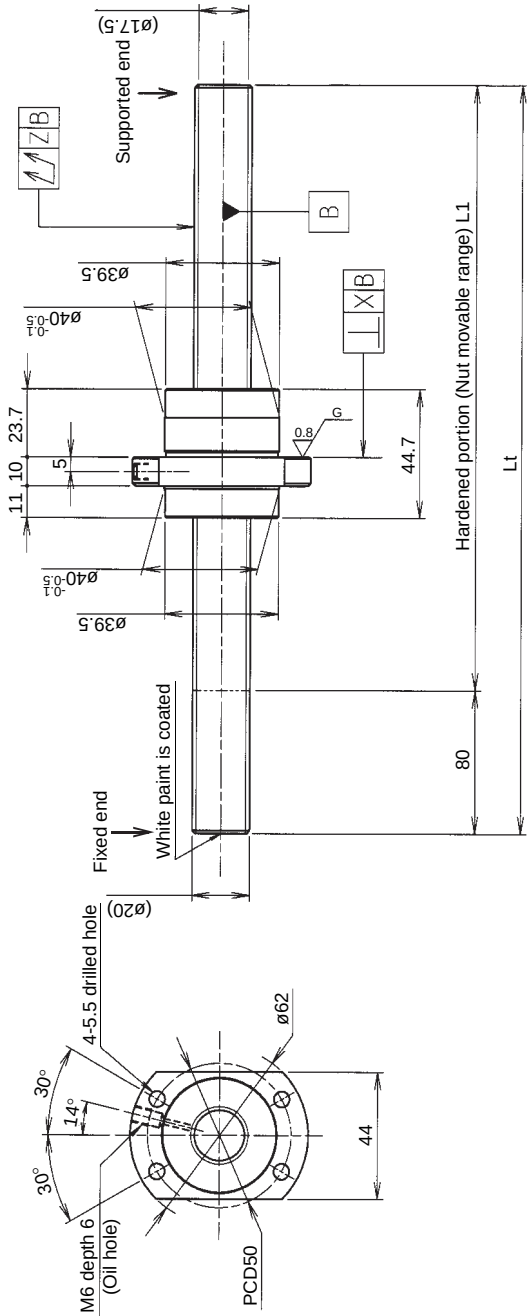
Overall length Thread length

Model No.	Axial clearance	L ₁	L _t	X	Z	Wiper	Mass (kg)
GW2020ES-HULR-0600A	~0.030	520	600	0.025	0.070	Lip seal	2.06
GW2020ES-HULR-1200A		1120	1200		0.120		3.53
GW2020ES-HULR-2000A		1920	2000		0.270		5.50

UNFINISHED SHAFT ENDS

Screw shaft diameter ø20, Lead 40 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	20	Basic dynamic load rating	4700N
Lead	40	Basic static load rating	10300N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	0.67 turn 3 circuit	Surface treatment	Phosphate coating (only nut)
Ball diameter	3.175		

Model No.	Axial clearance	L ₁	L _t	X	Z	Wiper	Mass (kg)
GW2040QS-HEZR-0600A	~0.030	520	600	0.025	0.070	*	1.90
GW2040QS-HEZR-1200A		1120	1200		0.120		3.37
GW2040QS-HEZR-2000A		1920	2000		0.270		5.34

* For the asterisked part, the lip of the end cap serves as a wiper.

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
O	O	O	O	X

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Notation of standard rolled ball screw

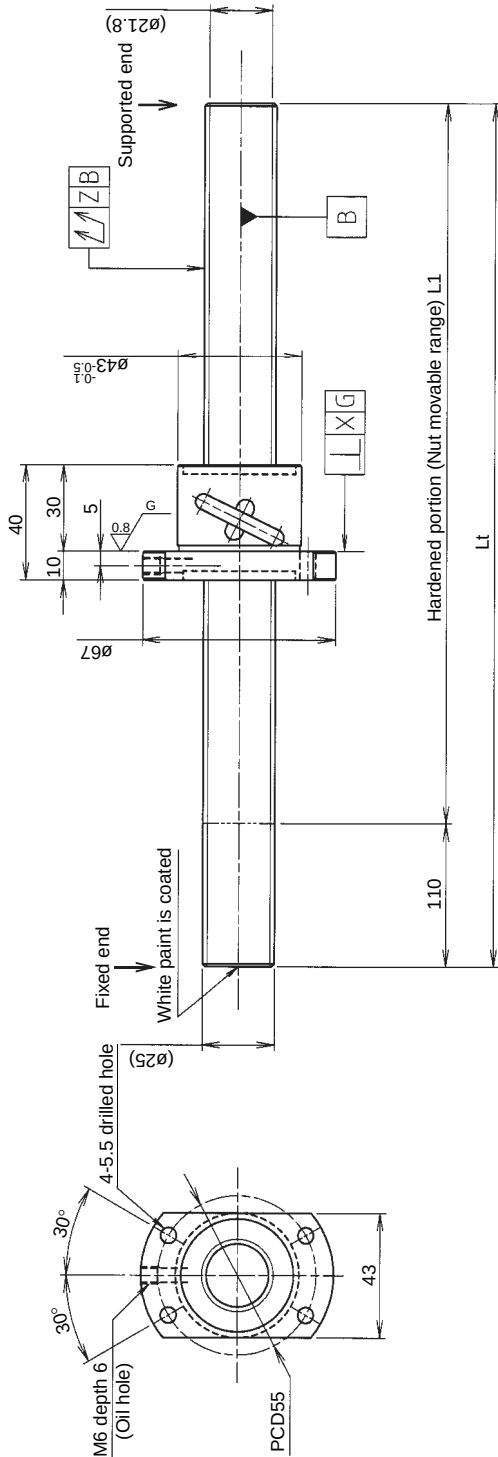
- Standard length shaft without end machining
GW2040QS-HEZR-□□□□A
- With end machining specified on your drawing
GW2040QS-HEZR-□□□□X□□□□-C7Y

Overall length Thread length

UNFINISHED SHAFT ENDS

Screw shaft diameter ø25, Lead 5 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	25	Basic dynamic load rating	6600N
Lead	5	Basic static load rating	18700N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 1 circuit	Surface treatment	Phosphate coating (only nut)
Ball diameter	3.175		

Model No.	Axial clearance	L ₁	L _t	X	Z	Wiper	Mass (kg)
GW2505DS-HULR-1000A	~0.030	890	1000	0.025	0.080	Lip seal	4.22
GW2505DS-HULR-2000A		1890	2000		0.200		8.07
GW2505DS-HULR-2500A		2390	2500		0.260		9.99

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
o	o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 µm).

Notation of standard rolled ball screw

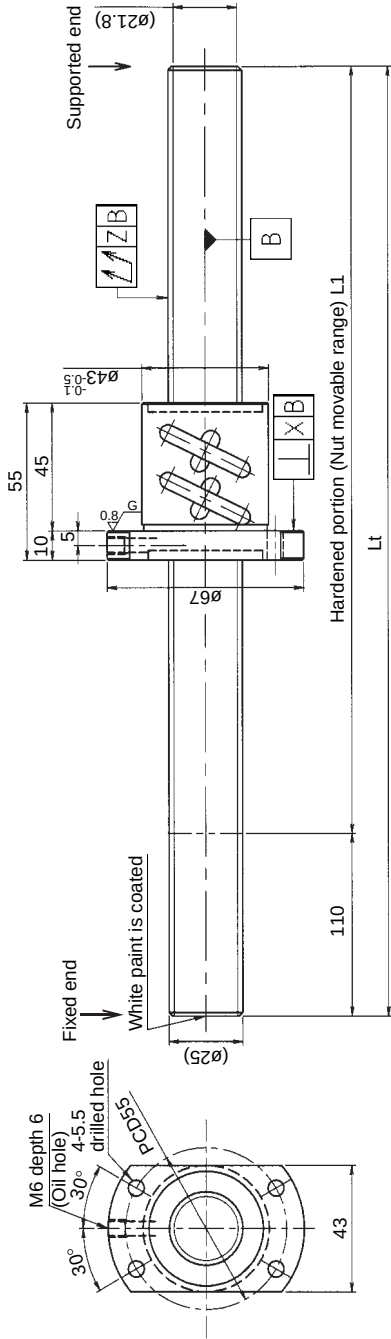
- Standard length shaft without end machining
GW2505DS-HULR-□□□□A
- With end machining specified on your drawing
GW2505DS-HULR-□□□□X□□□□-C7Y

Overall length Thread length

UNFINISHED SHAFT ENDS

Screw shaft diameter $\varnothing 25$, Lead 5 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	25	Basic dynamic load rating	11900N
Lead	5	Basic static load rating	37300N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 2 circuit	Surface treatment	Phosphate coating (only nut)
Ball diameter	3.175		

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
o	o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Model No.	Axial clearance	L ₁	L _t	X	Z	Wiper	Mass (kg)
GW2505ES-HULR-1000A	~0.030	890	1000	0.025	0.080	Lip seal	4.33
GW2505ES-HULR-2000A		1890	2000		0.200		8.18
GW2505ES-HULR-2500A		2390	2500		0.260		10.10

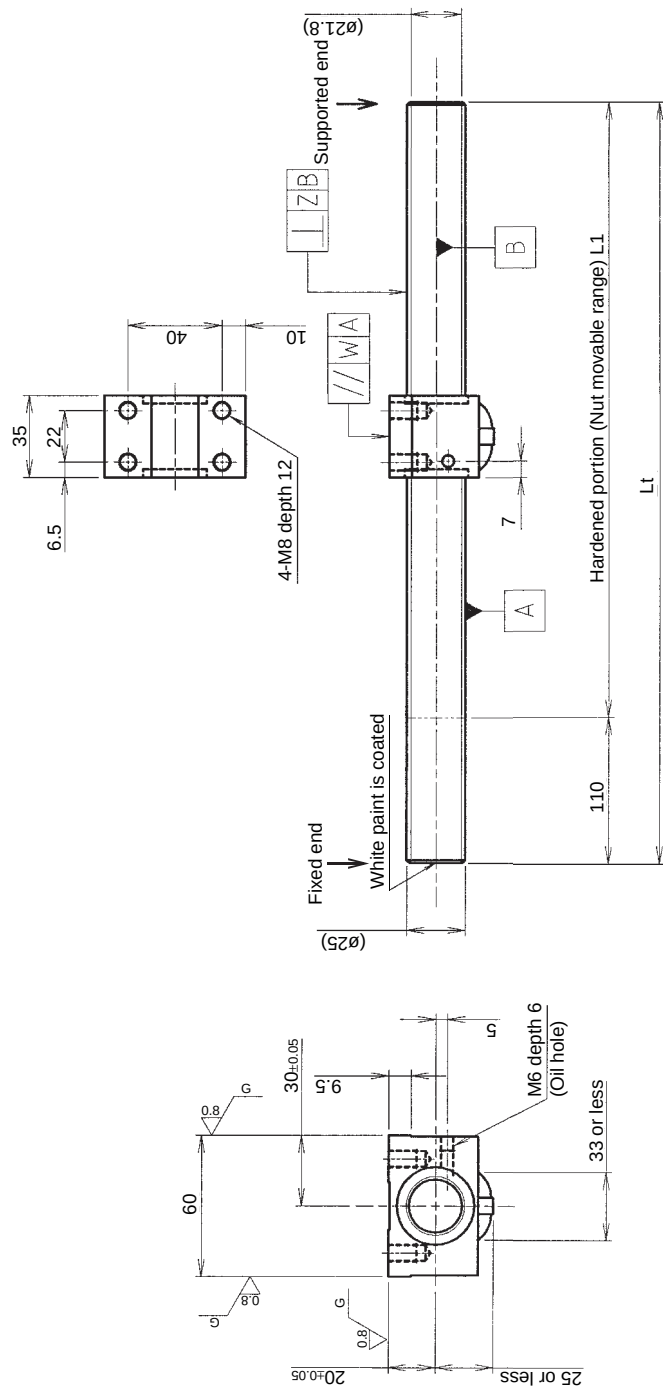
Notation of standard rolled ball screw

- Standard length shaft without end machining GW2505ES-HULR-□□□□A
- With end machining specified on your drawing GW2505ES-HULR-□□□□X□□□□-C7Y

Overall length Thread length

Screw shaft diameter ø25, Lead 5 (Square nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	25	Basic dynamic load rating	6600N
Lead	5	Basic static load rating	18700N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 1 circuit	Surface treatment	Phosphate coating (only nut)
Ball diameter	3.175		

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
○	○	○	○	○

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Notation of standard rolled ball screw

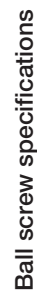
- Standard length shaft without end machining
GW2505DS-NKLR-□□□□A
- With end machining specified on your drawing
GW2505DS-NKLR-□□□□X□□□□-C7Y

Model No.	Axial clearance	L ₁	L _t	W	Z	Wiper	Mass (kg)
GW2505DS-NKLR-1000A	~0.030	890	1000	0.017	0.080	Lip seal	4.40
GW2505DS-NKLR-2000A		1890	2000		0.200		8.24
GW2505DS-NKLR-2500A		2390	2500		0.260		10.17

UNFINISHED SHAFT ENDS

Screw shaft diameter $\varnothing 25$, Lead 10 (Round nut)

(Unit: mm)



Screw shaft diameter	25	Basic dynamic load rating	27500N
Lead	10		
Thread direction	Right-hand	Basic static load rating	76300N
Number of circuits	2.5 turn 2 circuit	Lubricant	Alvania Grease S2
Ball diameter	6.350		
		Surface treatment	Phosphate coating (only nut)

Model No.	Axial clearance	L ₁	L _t	X	Z	Wiper	Mass (kg)
GW2510ES-HULR-1000A	~0.070	890	1000	0.025	0.080	Lip seal	5.70
GW2510ES-HULR-2000A		1890	2000		0.200		9.54
GW2510ES-HULR-2500A		2390	2500		0.260		11.46

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
○	○	○	○	○

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

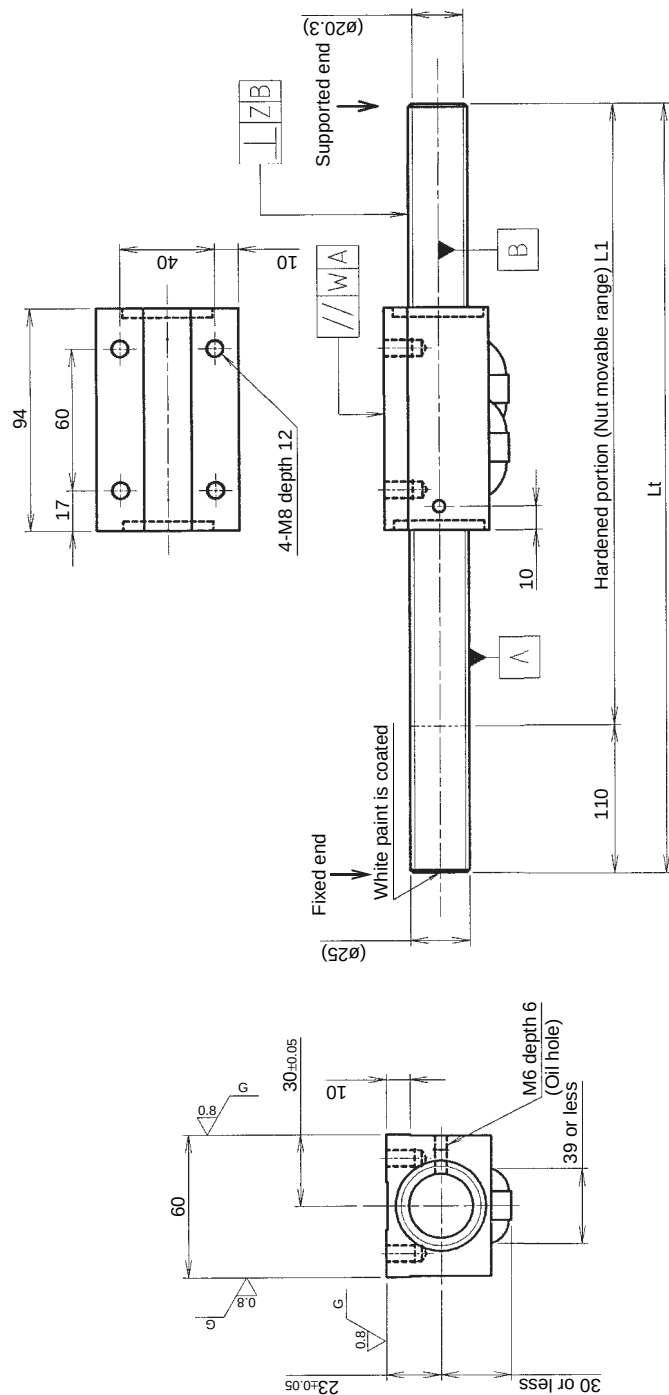
Notation of standard rolled ball screw

- Standard length shaft without end machining
GW2510ES-HULR-□□□□A
- With end machining specified on your drawing
GW2510ES-HULR-□□□□X□□□□-C7Y

Overall length Thread length

Screw shaft diameter ø25, Lead 10 (Square nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	25	Basic dynamic load rating	27500N
Lead	10		
Thread direction	Right-hand	Basic static load rating	76300N
Number of circuits	2.5 turn 2 circuit	Lubricant	Alvania Grease S2
Ball diameter	6.350		
		Surface treatment	Phosphate coating (only nut)

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
○	○	○	○	○

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Notation of standard rolled ball screw

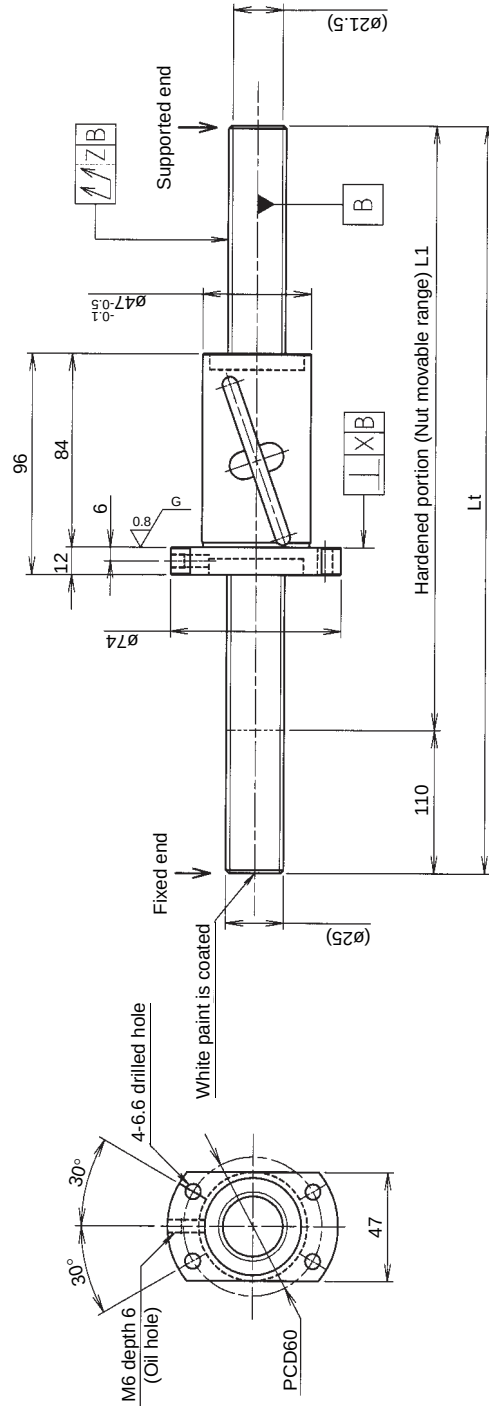
- Standard length shaft without end machining
GW2510ES-NKLR-□□□□A
- With end machining specified on your drawing
GW2510ES-NKLR-□□□□X□□□□-C7Y

Model No.	Axial clearance	L ₁	L _t	W	Z	Wiper	Mass (kg)
GW2510ES-NKLR-1000A	~0.070	890	1000	0.017	0.080	Lip seal	5.74
GW2510ES-NKLR-2000A		1890	2000		0.200		9.59
GW2510ES-NKLR-2500A		2390	2500		0.260		11.51

UNFINISHED SHAFT ENDS

Screw shaft diameter $\varnothing 25$, Lead 25 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	25	Basic dynamic load rating	9300N
Lead	25		
Thread direction	Right-hand	Basic static load rating	22700N
Number of circuits	2.5 turn 1 circuit		
Ball diameter	3.9688	Lubricant	Alvania Grease S2
		Surface treatment	Phosphate coating (only nut)

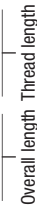
Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
○	○	○	○	○

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Notation of standard rolled ball screw

- Standard length shaft without end machining
GW2525DS-HULR-□□□□A
- With end machining specified on your drawing
GW2525DS-HULR-□□□□X□□□□-C7Y

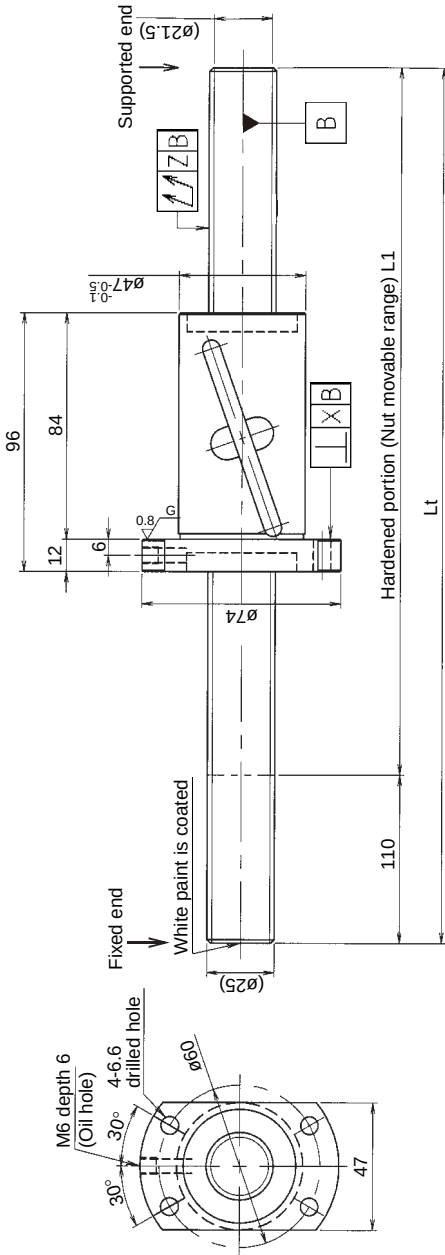


Model No.	Axial clearance	L ₁	L _t	X	Z	Wiper	Mass (kg)
GW2525DS-HULR-1000A	~0.050	890	1000	0.025	0.080	Lip seal	4.87
GW2525DS-HULR-2000A		1890	2000		0.200		8.71
GW2525DS-HULR-2500A		2390	2500		0.260		10.63

UNFINISHED SHAFT ENDS

Screw shaft diameter $\phi 25$, Lead 25 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	25	Basic dynamic load rating	16800N
Lead	25	Basic static load rating	45400N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 2 circuit	Surface treatment	Phosphate coating (only nut)
Ball diameter	3.9688		

Model No.	Axial clearance	L ₁	L _t	X	Z	Wiper	Mass (kg)
GW2525ES-HULR-1000A	~0.050	890	1000	0.025	0.080	Lip seal	4.87
GW2525ES-HULR-2000A		1890	2000		0.200		8.71
GW2525ES-HULR-2500A		2390	2500		0.260		10.63

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
o	o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

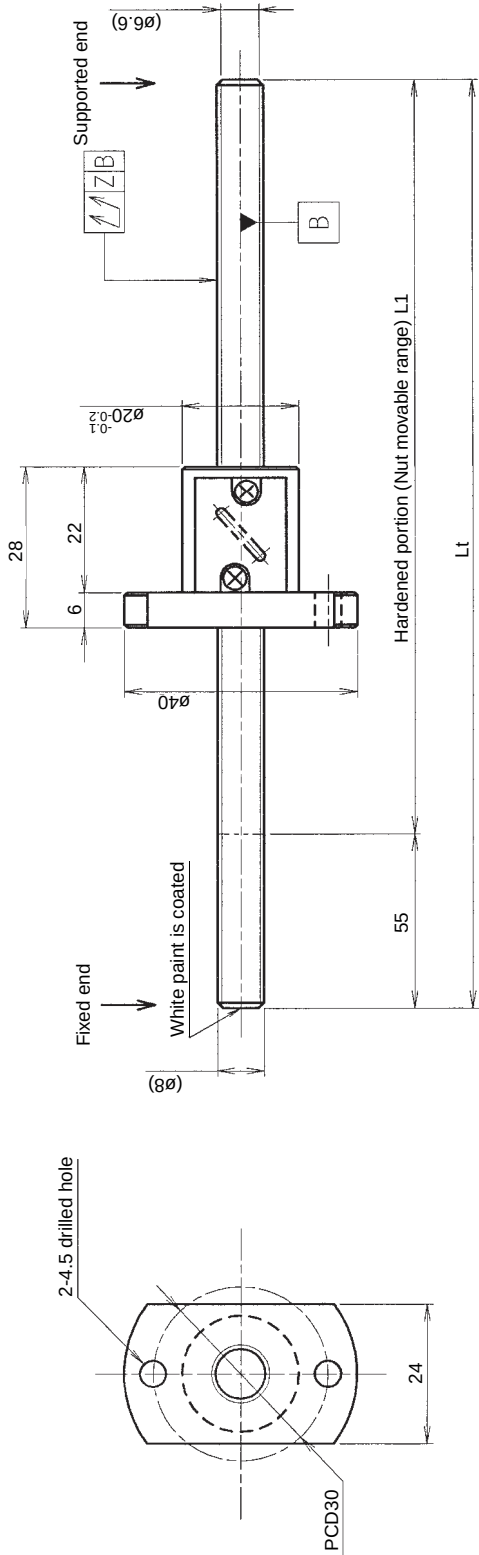
- Notation of standard rolled ball screw**
- Standard length shaft without end machining
GW2525ES-HULR-□□□□A
 - With end machining specified on your drawing
GW2525ES-HULR-□□□□X□□□□-C7Y

Overall length Thread length

UNFINISHED SHAFT ENDS

Screw shaft diameter ø8, Lead 2 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	8	Basic dynamic load rating	1800N
Lead	2	Basic static load rating	3200N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	3.5 turn 1 circuit	Surface treatment	Phosphate coating
Ball diameter	1.5875		

ModelNo.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY0802GS-HG NR-0200A	~0.050	145	200	0.080	None	0.17
GY0802GS-HG NR-0400A		345	400	0.200		0.25

Notation of standard rolled ball screw

- A set of shaft and nut without additional end machining
GY0802GS-HG NR-□□□□A
- Nut only without additional end machining
GY0802GS-HG NR
- Screw shaft only without additional end machining
GY0802ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY0802GS-HG NR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY0802ZZ-ZZZZ-□□□□Y□□□□-CAY

Overall length Thread length

Table of optional specifications for each model

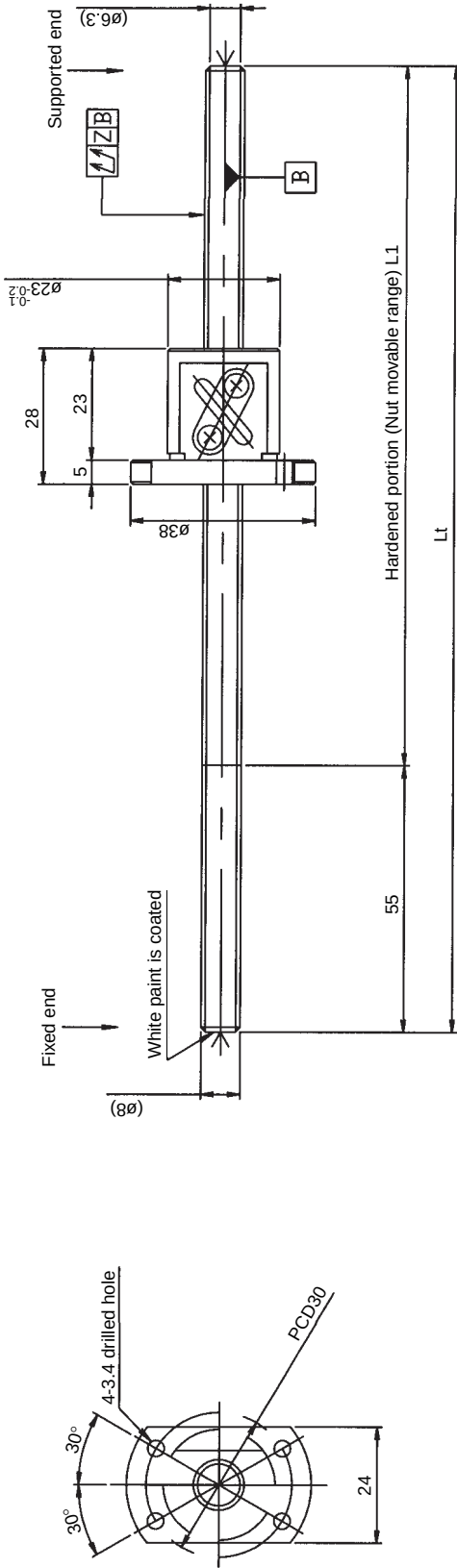
Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut
o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

UNFINISHED SHAFT ENDS

Screw shaft diameter ø8, Lead 4 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	8	Basic dynamic load rating	1900N
Lead	4	Basic static load rating	3100N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 1 circuit	Surface treatment	Phosphate coating
Ball diameter	2.0000		

ModelNo.	Axial clearance	L ₁	Z	Wiper	Mass (kg)
GY0804DS-HANR-0200A	~0.050	145	0.080	None	0.18
GY0804DS-HANR-0400A		345	0.200		0.26

Notation of standard rolled ball screw

- A set of shaft and nut without additional end machining
GY0804DS-HANR-□□□□A
- Nut only without additional end machining
GY0804DS-HANR
- Screw shaft only without additional end machining
GY0804ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY0804DS-HANR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY0804ZZ-ZZZZ-□□□□Y□□□□-CAY

Overall length Thread length

Table of optional specifications for each model

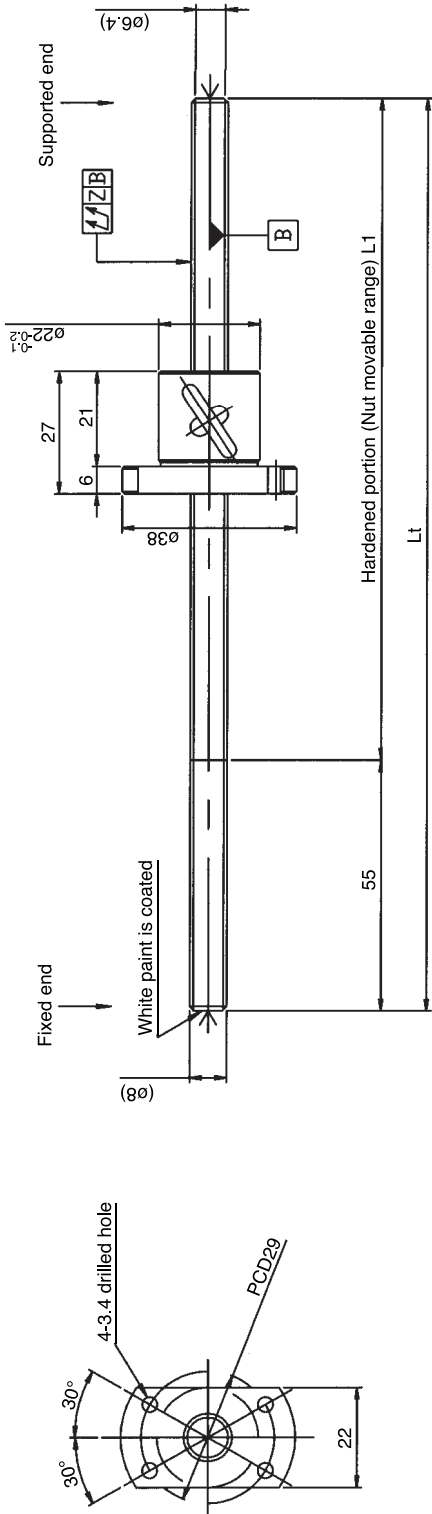
Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut
o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

UNFINISHED SHAFT ENDS

Screw shaft diameter ø8, Lead 5 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	8	Basic dynamic load rating	1900N
Lead	5	Basic static load rating	3100N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 1 circuit	Surface treatment	Phosphate coating
Ball diameter	2.0000		

Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY0805DS-HUNR-0200A	~0.050	145	200	0.080	None	0.17
GY0805DS-HUNR-0400A		345	400	0.200		0.25

Notation of standard rolled ball screw

- A set of shaft and nut without additional end machining
GY0805DS-HUNR-□□□□A
- Nut only without additional end machining
GY0805DS-HUNR
- Screw shaft only without additional end machining
GY0805ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY0805DS-HUNR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY0805ZZ-ZZZZ-□□□□Y□□□□-CAY

Overall length Thread length

Table of optional specifications for each model

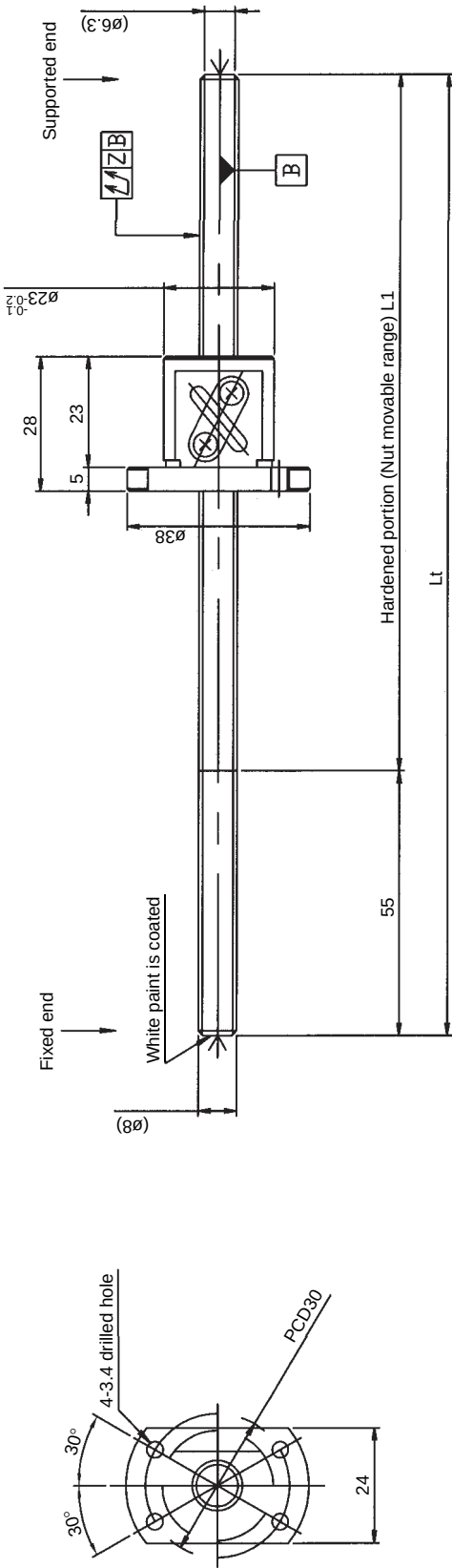
Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut
o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

UNFINISHED SHAFT ENDS

Screw shaft diameter ø8, Lead 8 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	8	Basic dynamic load rating	1200N
Lead	8	Basic static load rating	1800N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	1.5 turn 1 circuit	Surface treatment	Phosphate coating
Ball diameter	2.0000		

Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY0808AS-HANR-0200A	~0.050	145	200	0.080	None	0.18
GY0808AS-HANR-0400A		345	400	0.200		0.26

Notation of standard rolled ball screw

- A set of shaft and nut without additional end machining
GY0808AS-HANR-□□□□A
- Nut only without additional end machining
GY0808AS-HANR
- Screw shaft only without additional end machining
GY0808ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY0808AS-HANR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY0808ZZ-ZZZZ-□□□□Y□□□□-CAY

Overall length Thread length

Table of optional specifications for each model

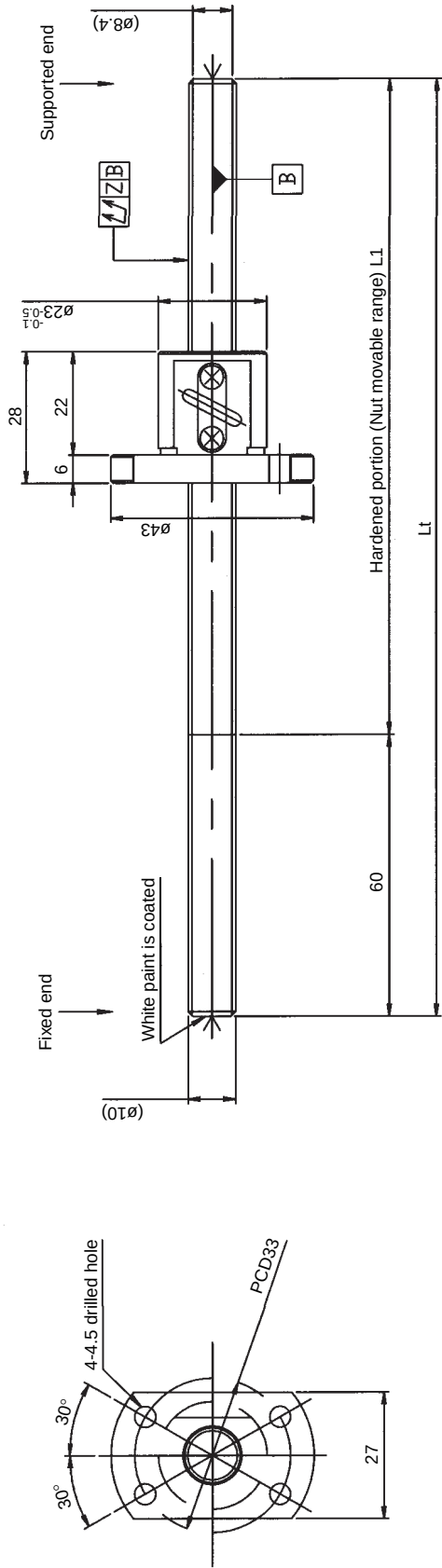
Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut
o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

UNFINISHED SHAFT ENDS

Screw shaft diameter ø10, Lead 2 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	10	Basic dynamic load rating	1700N
Lead	2	Basic static load rating	3000N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 1 circuit	Surface treatment	Phosphate coating
Ball diameter	1.5875		

Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY1002DS-HANR-0400A	~0.050	340	400	0.150	None	0.35
GY1002DS-HANR-0600A		540	600	0.240		0.48

Notation of standard rolled ball screw

- A set of shaft and nut without additional end machining
GY1002DS-HANR-□□□□A
- Nut only without additional end machining
GY1002DS-HANR
- Screw shaft only without additional end machining
GY1002ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY1002DS-HANR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY1002ZZ-ZZZZ-□□□□Y□□□□-CAY

Overall length Thread length

Table of optional specifications for each model

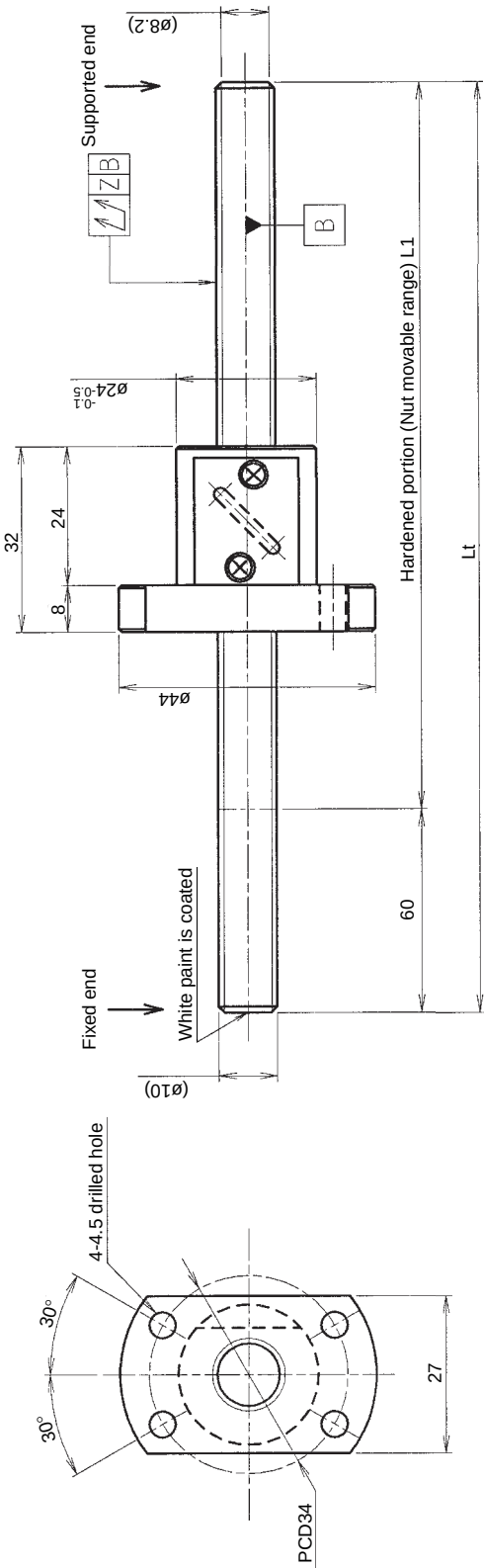
Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut
o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

UNFINISHED SHAFT ENDS

Screw shaft diameter $\phi 10$, Lead 2.5 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	10	Basic dynamic load rating	2600N
Lead	2.5	Basic static load rating	5200N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	3.5 turn 1 circuit	Surface treatment	Phosphate coating
Ball diameter	2.000		

Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY102FGS-HG NR-0400A	~0.050	340	400	0.150	None	0.41
GY102FGS-HG NR-0600A		540	600	0.240		0.53

Notation of standard rolled ball screw

- A set of shaft and nut without additional end machining
GY102FGS-HG NR-□□□□A
- Nut only without additional end machining
GY102FGS-HG NR
- Screw shaft only without additional end machining
GY102FZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY102FGS-HG NR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY102FZZ-ZZZZ-□□□□Y□□□□-CAY

Overall length Thread length

Table of optional specifications for each model

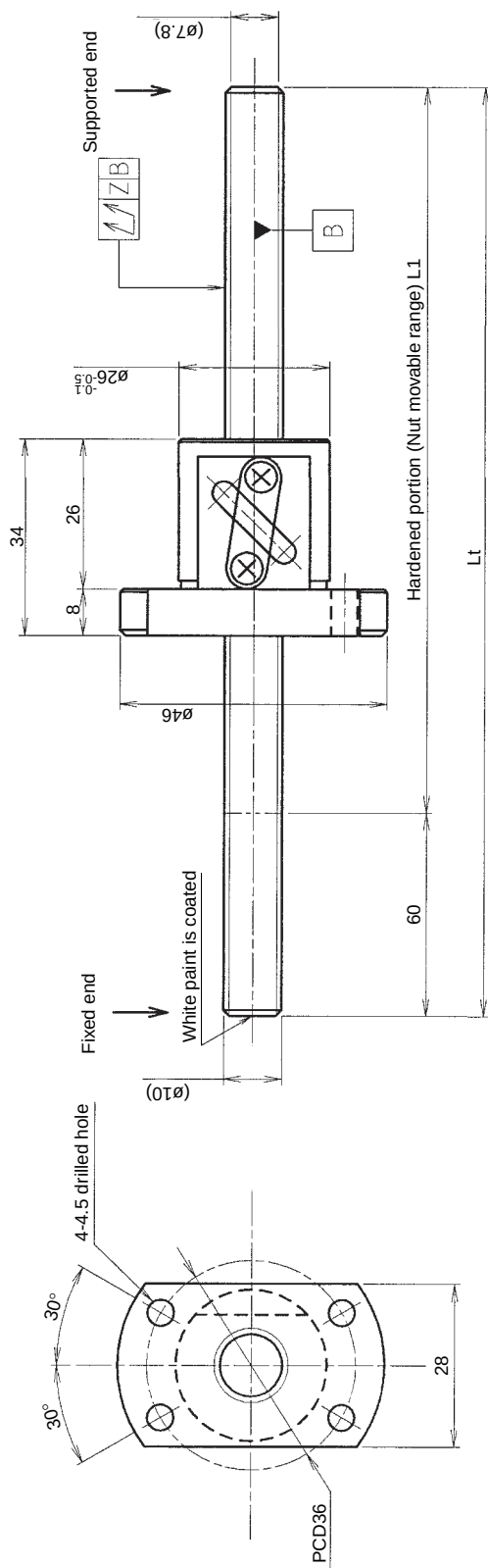
Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut
o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μ m).

UNFINISHED SHAFT ENDS

Screw shaft diameter ø10, Lead 4 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	10	Basic dynamic load rating	2300N
Lead	4	Basic static load rating	4800N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 1 circuit	Surface treatment	Phosphate coating
Ball diameter	2.3812		

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut
○	○	○	○

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Notation of standard rolled ball screw

- A set of shaft and nut without additional end machining
GY1004DS-HANR-□□□□A
- Nut only without additional end machining
GY1004DS-HANR
- Screw shaft only without additional end machining
GY1004ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY1004DS-HANR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY1004ZZ-ZZZZ-□□□□Y□□□□-CAY

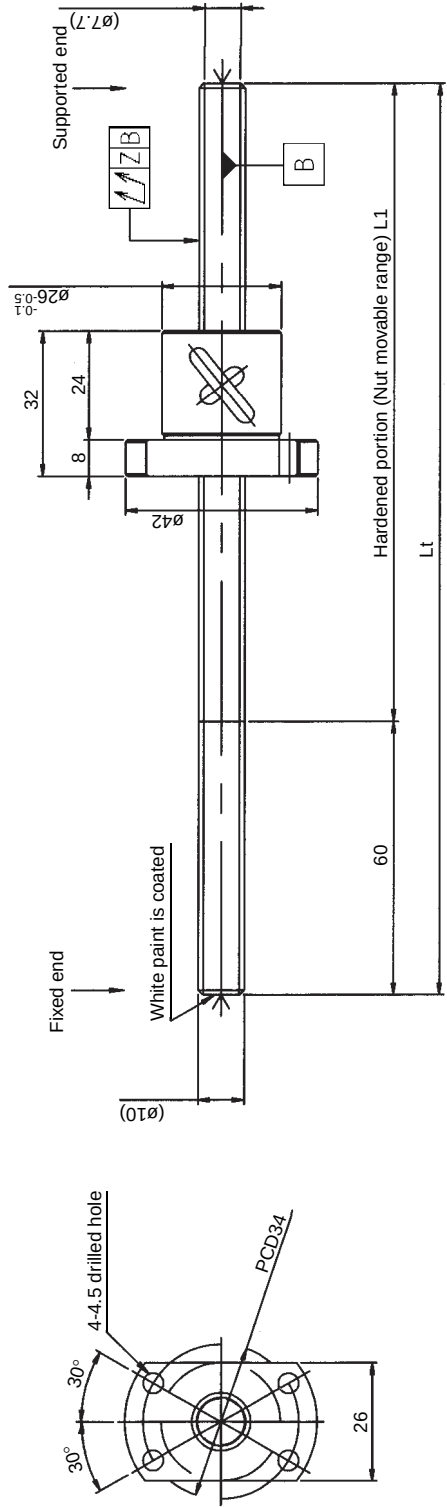
Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY1004DS-HANR-0400A	~ 0.050	340	400	0.150	None	0.42
GY1004DS-HANR-0600A		540	600	0.240		0.54

Overall length Thread length

UNFINISHED SHAFT ENDS

Screw shaft diameter $\phi 10$, Lead 5 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	10	Basic dynamic load rating	2300N
Lead	5	Basic static load rating	4800N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 1 circuit	Surface treatment	Phosphate coating
Ball diameter	2.3812		

Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY1005DS-HUNR-0400A	~0.050	340	400	0.150	None	0.39
GY1005DS-HUNR-0600A		540	600	0.240		0.52

Notation of standard rolled ball screw

- A set of shaft and nut without additional end machining
GY1005DS-HUNR-□□□□□A
- Nut only without additional end machining
GY1005DS-HUNR
- Screw shaft only without additional end machining
GY1005ZZ-ZZZZ-□□□□□D
- A set of shaft and nut with optional specifications
GY1005DS-HUNR-□□□□□X□□□□□-CAY
- Screw shaft only with optional specifications
GY1005ZZ-ZZZZ-□□□□□Y□□□□□-CAY

Overall length Thread length

Table of optional specifications for each model

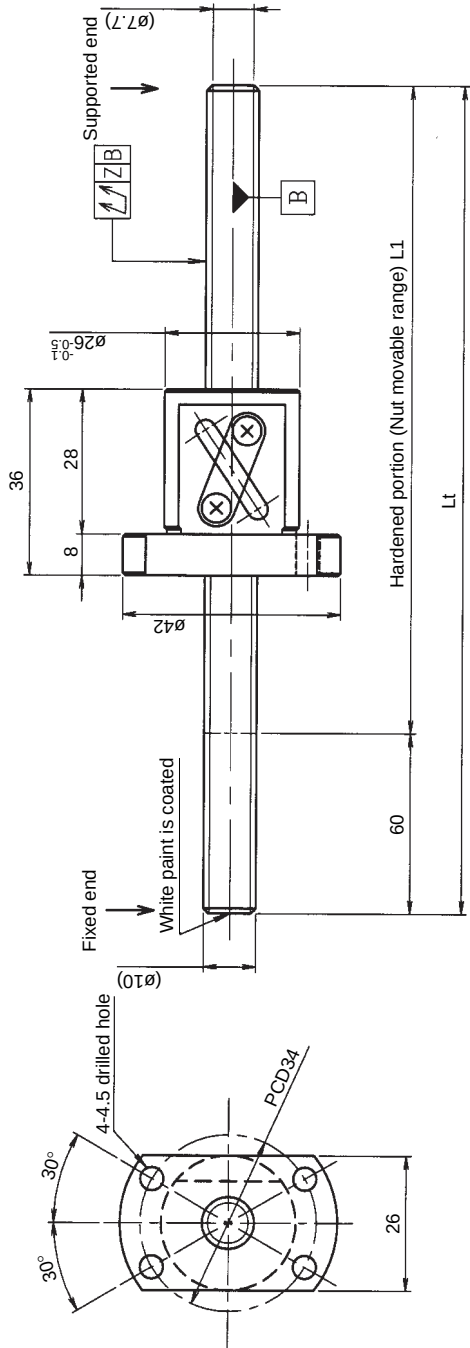
Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut
o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

UNFINISHED SHAFT ENDS

Screw shaft diameter $\phi 10$, Lead 6 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	10	Basic dynamic load rating	2300N
Lead	6	Basic static load rating	4800N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 1 circuit	Surface treatment	Phosphate coating
Ball diameter	2.3812		

Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY1006DS-HANR-0400A	~0.050	340	400	0.150	None	0.40
GY1006DS-HANR-0600A		540	600	0.240		0.52

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut
o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Notation of standard rolled ball screw

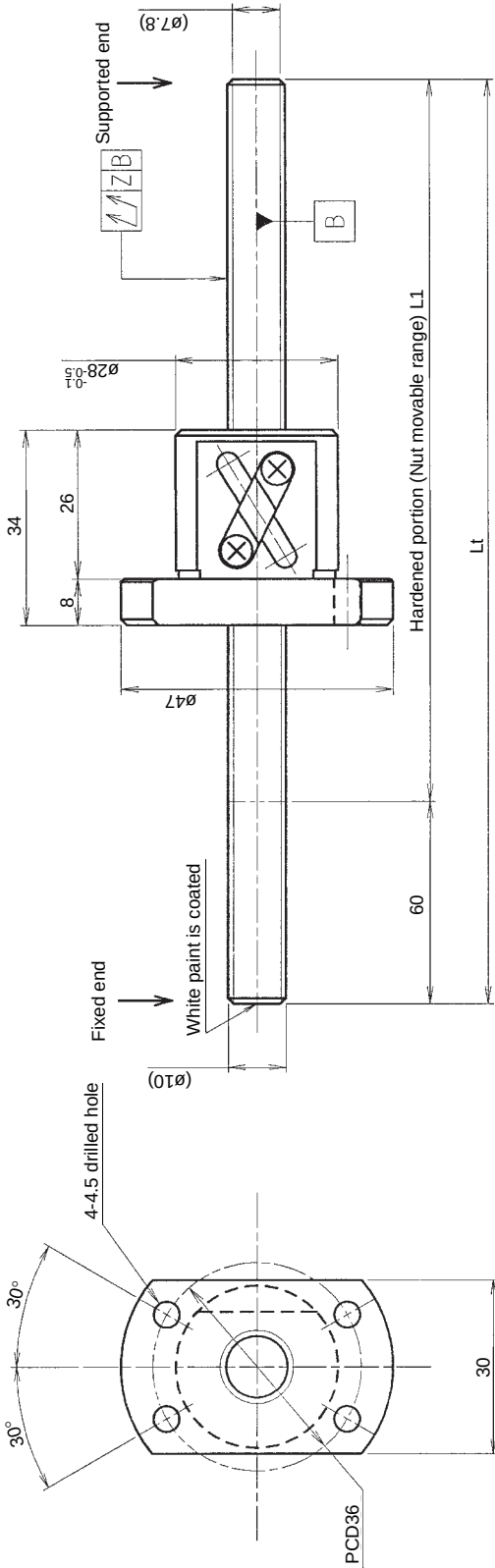
- A set of shaft and nut without additional end machining
GY1006DS-HANR-□□□□A
- Nut only without additional end machining
GY1006DS-HANR
- Screw shaft only without additional end machining
GY1006ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY1006DS-HANR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY1006ZZ-ZZZZ-□□□□Y□□□□-CAY

Overall length Thread length

UNFINISHED SHAFT ENDS

Screw shaft diameter $\phi 10$, Lead 10 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	10	Basic dynamic load rating	1850N
Lead	10	Basic static load rating	3200N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	1.5 turn 1 circuit	Surface treatment	Phosphate coating
Ball diameter	2.3812		

Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY1010AS-HANR-0400A	~0.050	340	400	0.150	None	0.43
GY1010AS-HANR-0600A		540	600	0.240		0.55

Notation of standard rolled ball screw

- A set of shaft and nut without additional end machining
GY1010AS-HANR-□□□□A
- Nut only without additional end machining
GY1010AS-HANR
- Screw shaft only without additional end machining
GY1010ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY1010AS-HANR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY1010ZZ-ZZZZ-□□□□Y□□□□-CAY

Overall length Thread length

Table of optional specifications for each model

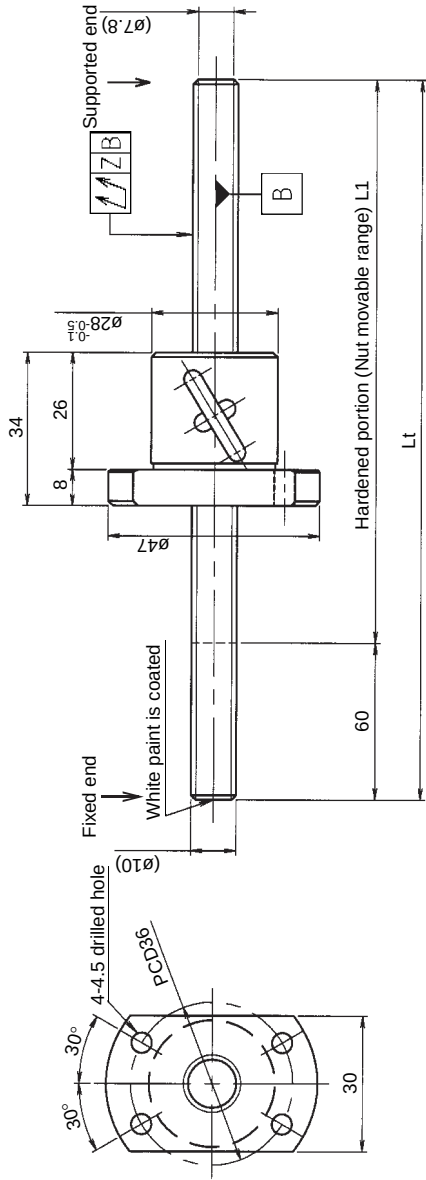
Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut
o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μ m).

UNFINISHED SHAFT ENDS

Screw shaft diameter ø10, Lead 10 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	10	Basic dynamic load rating	3300N
Lead	10	Basic static load rating	6400N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	1.5 turn 2 circuit	Surface treatment	Phosphate coating
Ball diameter	2.3812		

Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY1010BS-HUNR-0400A	~0.050	340	400	0.150	None	0.43
GY1010BS-HUNR-0600A		540	600	0.240		0.55

Notation of standard rolled ball screw

- A set of shaft and nut without additional end machining
GY1010BS-HUNR-□□□□A
- Nut only without additional end machining
GY1010BS-HUNR
- Screw shaft only without additional end machining
GY1010ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY1010BS-HUNR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY1010ZZ-ZZZZ-□□□□Y□□□□-CAY

Overall length Thread length

Table of optional specifications for each model

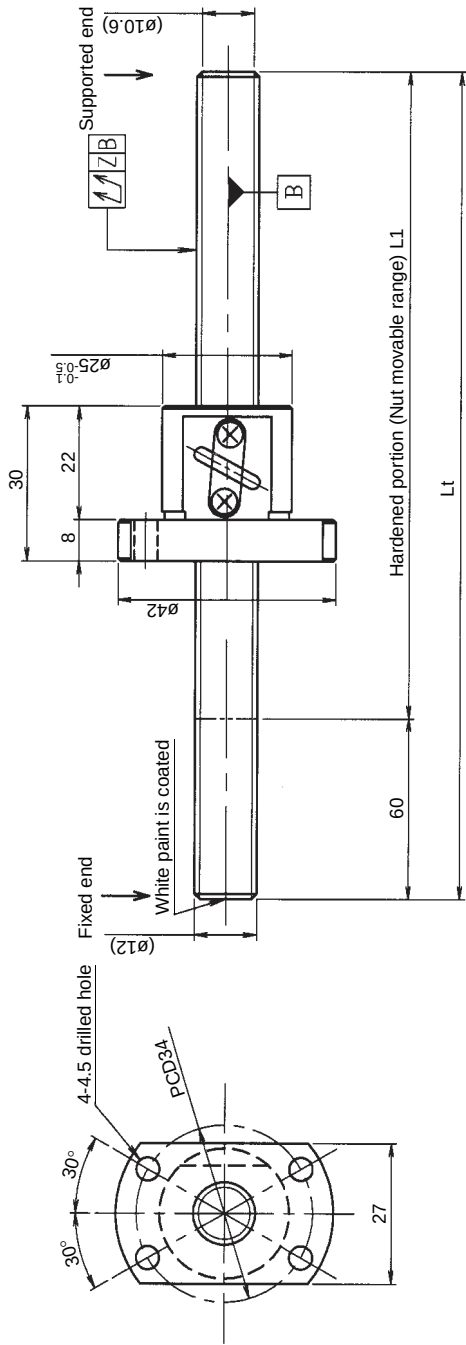
Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut
o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

UNFINISHED SHAFT ENDS

Screw shaft diameter $\phi 12$, Lead 2 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	12	Basic dynamic load rating	2000N
Lead	2	Basic static load rating	3600N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 1 circuit	Surface treatment	Phosphate coating
Ball diameter	1.5875		

Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY1202DS-HANR-0400A	~0.050	340	400	0.150	None	0.47
GY1202DS-HANR-0800A		740	800	0.320		0.83

Notation of standard rolled ball screw

- A set of shaft and nut without additional end machining
GY1202DS-HANR-□□□□A
- Nut only without additional end machining
GY1202DS-HANR
- Screw shaft only without additional end machining
GY1202ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY1202DS-HANR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY1202ZZ-ZZZZ-□□□□Y□□□□-CAY

Overall length Thread length

Table of optional specifications for each model

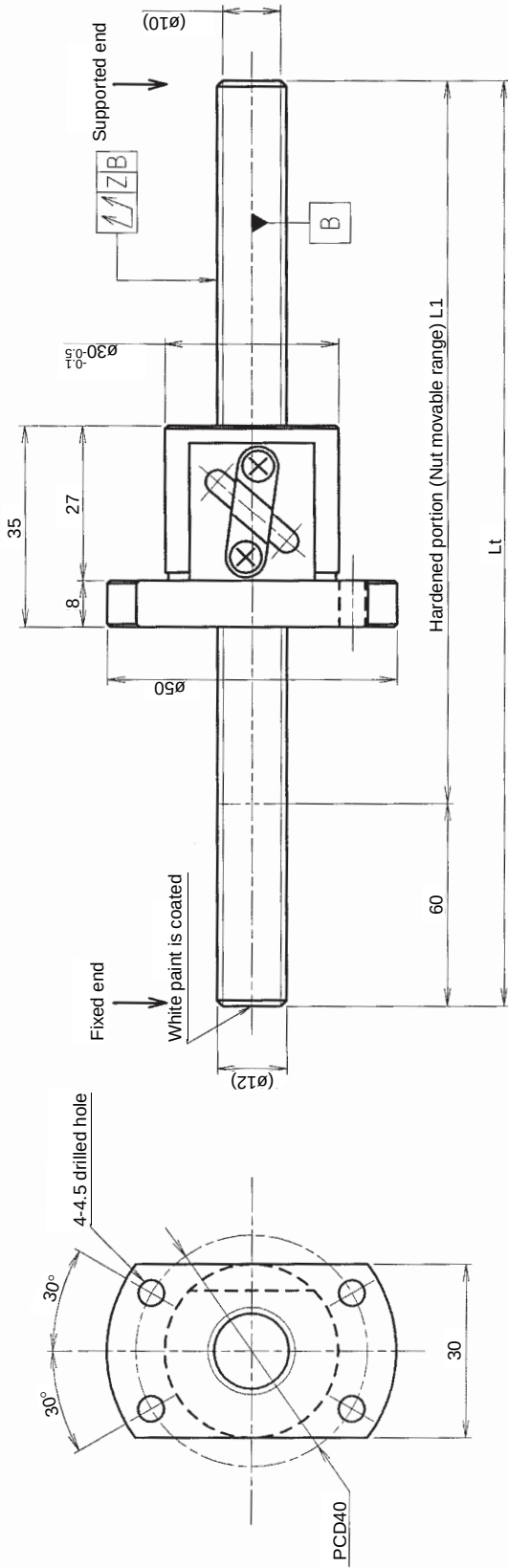
Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut
o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μ m).

UNFINISHED SHAFT ENDS

Screw shaft diameter $\phi 12$, Lead 4 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	12	Basic dynamic load rating	2600N
Lead	4	Basic static load rating	5800N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 1 circuit	Surface treatment	Phosphate coating
Ball diameter	2.3812		

Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY1204DS-HANR-0400A	~0.050	340	400	0.150	None	0.57
GY1204DS-HANR-0800A		740	800	0.320		0.92

Notation of standard rolled ball screw

- A set of shaft and nut without additional end machining
GY1204DS-HANR-□□□□□A
- Nut only without additional end machining
GY1204DS-HANR
- Screw shaft only without additional end machining
GY1204ZZ-ZZZZ-□□□□□D
- A set of shaft and nut with optional specifications
GY1204DS-HANR-□□□□□X□□□□□-CAY
- Screw shaft only with optional specifications
GY1204ZZ-ZZZZ-□□□□□Y□□□□□-CAY

Overall length Thread length

Table of optional specifications for each model

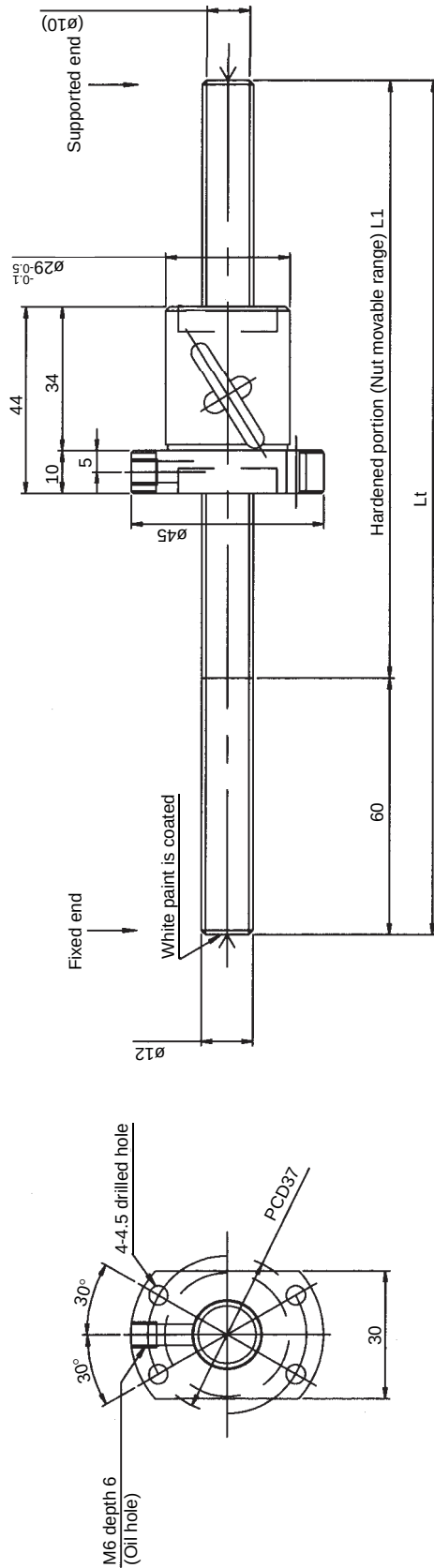
Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut
o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

UNFINISHED SHAFT ENDS

Screw shaft diameter $\phi 12$, Lead 8 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	12	Basic dynamic load rating	3800N
Lead	8	Basic static load rating	6700N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 1 circuit	Surface treatment	Phosphate coating
Ball diameter	2.778		

Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY1208DS-HULR-0400A	~0.050	340	400	0.150	Lip	0.58
GY1208DS-HULR-0800A		740	800	0.320	seal	0.94

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
o	o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μ m).

Notation of standard rolled ball screw

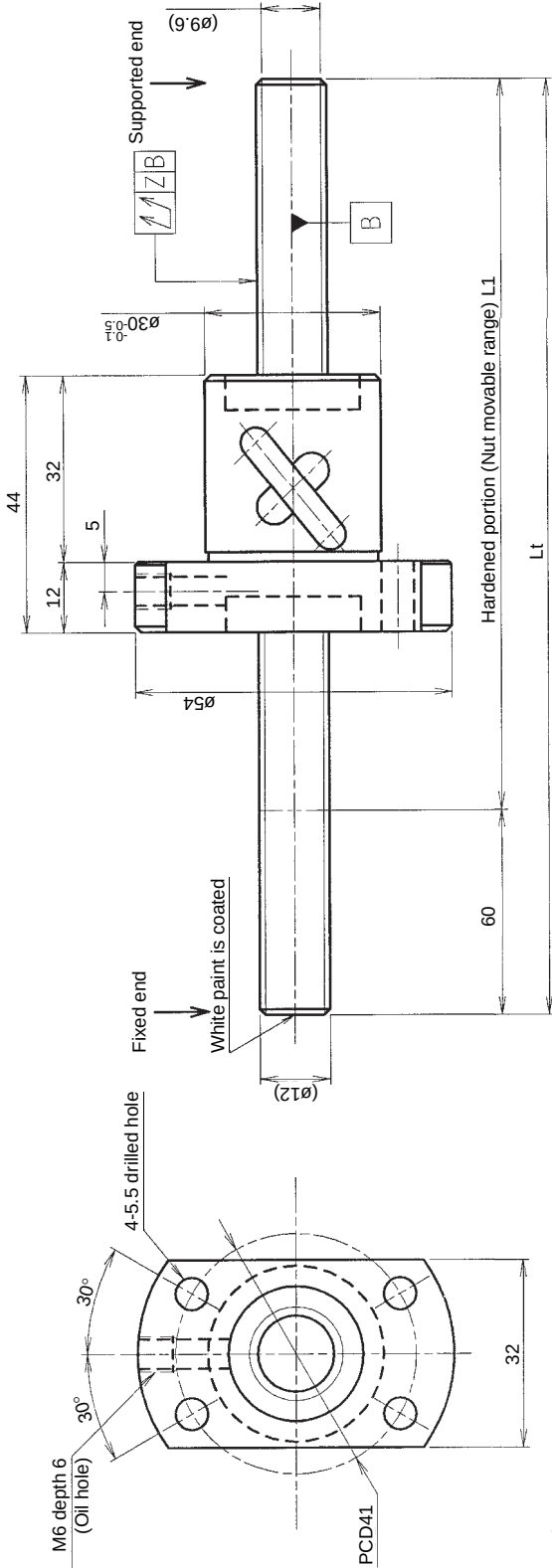
- A set of shaft and nut without additional end machining
GY1208DS-HULR-□□□□A
- Nut only without additional end machining
GY1208DS-HULR
- Screw shaft only without additional end machining
GY1208ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY1208DS-HULR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY1208ZZ-ZZZZ-□□□□Y□□□□-CAY

Overall length Thread length

UNFINISHED SHAFT ENDS

Screw shaft diameter $\phi 12$, Lead 10 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	12	Basic dynamic load rating	2850N
Lead	10	Basic static load rating	4950N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	1.5 turn 1 circuit	Surface treatment	Phosphate coating
Ball diameter	3.175		

Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY1210AS-HULR-0400A	~0.050	340	400	0.150	Lip	0.62
GY1210AS-HULR-0800A		740	800	0.320	seal	0.98

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
o	o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μ m).

Notation of standard rolled ball screw

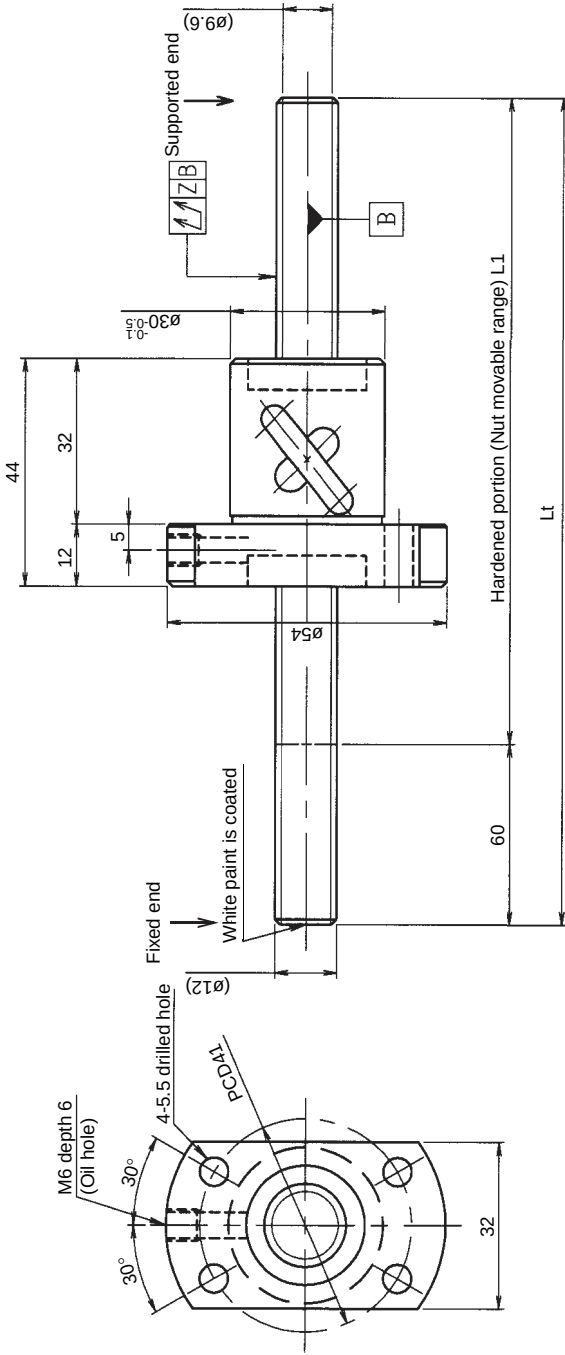
- A set of shaft and nut without additional end machining
GY1210AS-HULR-□□□□A
- Nut only without additional end machining
GY1210AS-HULR
- Screw shaft only without additional end machining
GY1210ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY1210AS-HULR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY1210ZZ-ZZZZ-□□□□Y□□□□-CAY

Overall length Thread length

UNFINISHED SHAFT ENDS

Screw shaft diameter $\phi 12$, Lead 10 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	12	Basic dynamic load rating	5100N
Lead	10	Basic static load rating	9900N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	1.5 turn 2 circuit	Surface treatment	Phosphate coating
Ball diameter	3.175		

Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY1210BS-HULR-0400A	~0.050	340	400	0.150	Lip	0.62
GY1210BS-HULR-0800A		740	800	0.320	seal	0.98

Notation of standard rolled ball screw

- A set of shaft and nut without additional end machining
GY1210BS-HULR-□□□□A
- Nut only without additional end machining
GY1210BS-HULR
- Screw shaft only without additional end machining
GY1210ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY1210BS-HULR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY1210ZZ-ZZZZ-□□□□Y□□□□-CAY

Overall length Thread length

Table of optional specifications for each model

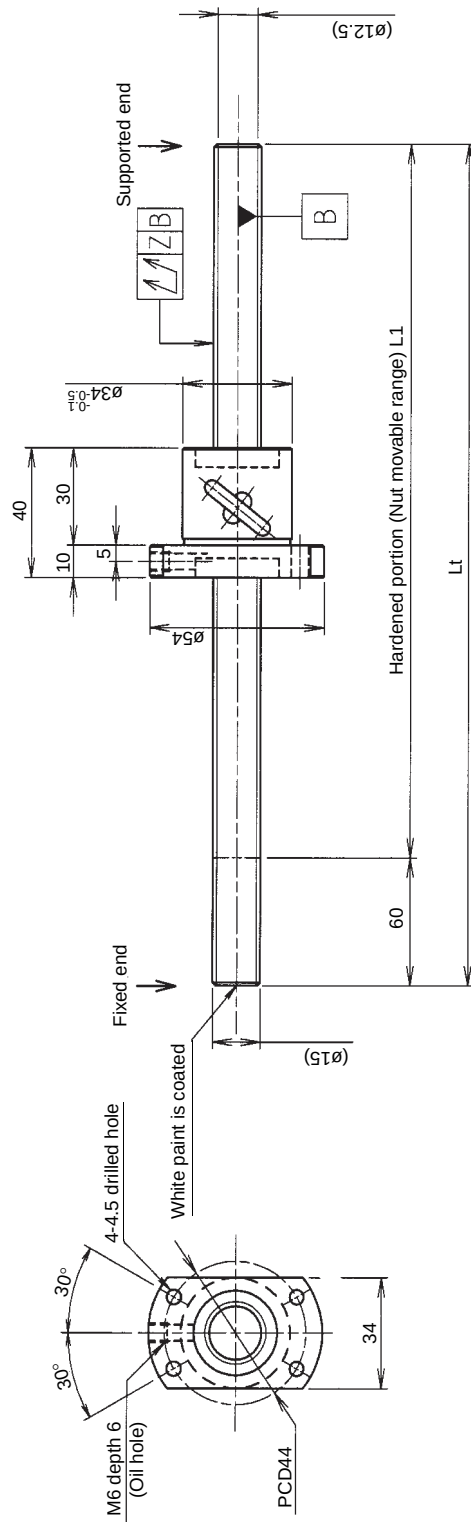
Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
o	o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μ m).

UNFINISHED SHAFT ENDS

Screw shaft diameter $\varnothing 15$, Lead 5 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	15	Basic dynamic load rating	5100N
Lead	5	Basic static load rating	10500N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 1 circuit	Surface treatment	Phosphate coating
Ball diameter	3.175		

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
○	○	○	○	○

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Notation of standard rolled ball screw

- A set of shaft and nut without additional end machining
GY1505DS-HULR-□□□□A
- Nut only without additional end machining
GY1505DS-HULR
- Screw shaft only without additional end machining
GY1505ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY1505DS-HULR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY1505ZZ-ZZZZ-□□□□Y□□□□-CAY

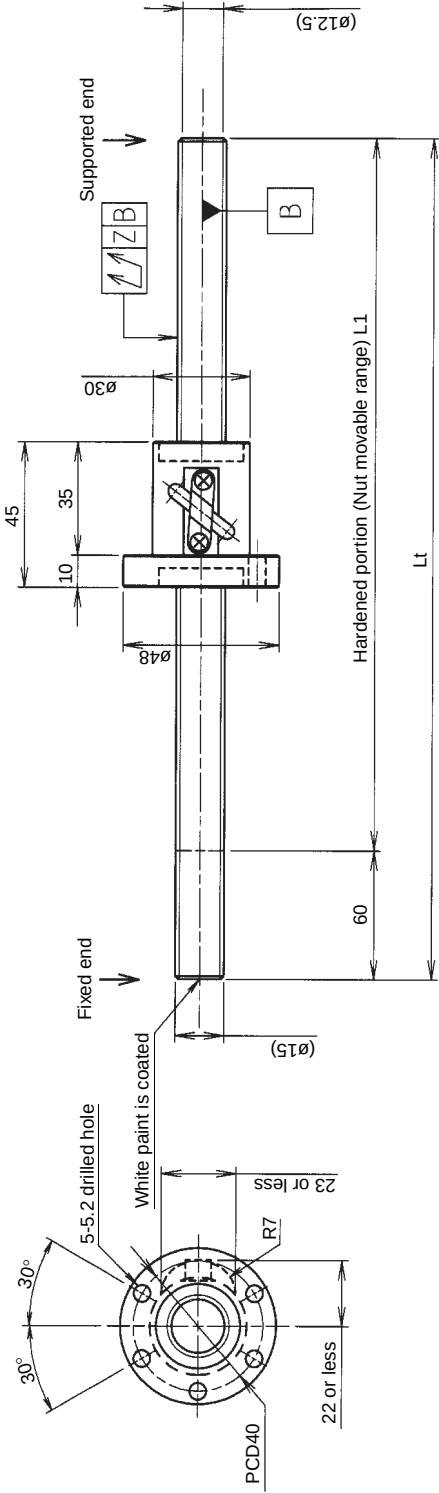
Overall length Thread length

Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY1505DS-HULR-0600A	~0.100	540	600	0.140	Lip	1.08
GY1505DS-HULR-1200A		1140	1200	0.400	seal	1.91

UNFINISHED SHAFT ENDS

Screw shaft diameter $\phi 15$, Lead 5 (Protruded tube type nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	15	Basic dynamic load rating	5100N
Lead	5	Basic static load rating	10500N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 1 circuit	Surface treatment	Phosphate coating
Ball diameter	3.175		

Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY1505DS-CTLR-0600A	~0.100	540	600	0.140	Lip	1.13
GY1505DS-CTLR-1200A		1140	1200	0.400	seal	1.96

Notation of standard rolled ball screw

- A set of shaft and nut without additional end machining
GY1505DS-CTLR-□□□□A
- Nut only without additional end machining
GY1505DS-CTLR
- Screw shaft only without additional end machining
GY1505ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY1505DS-CTLR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY1505ZZ-ZZZZ-□□□□Y□□□□-CAY

Overall length Thread length

Table of optional specifications for each model

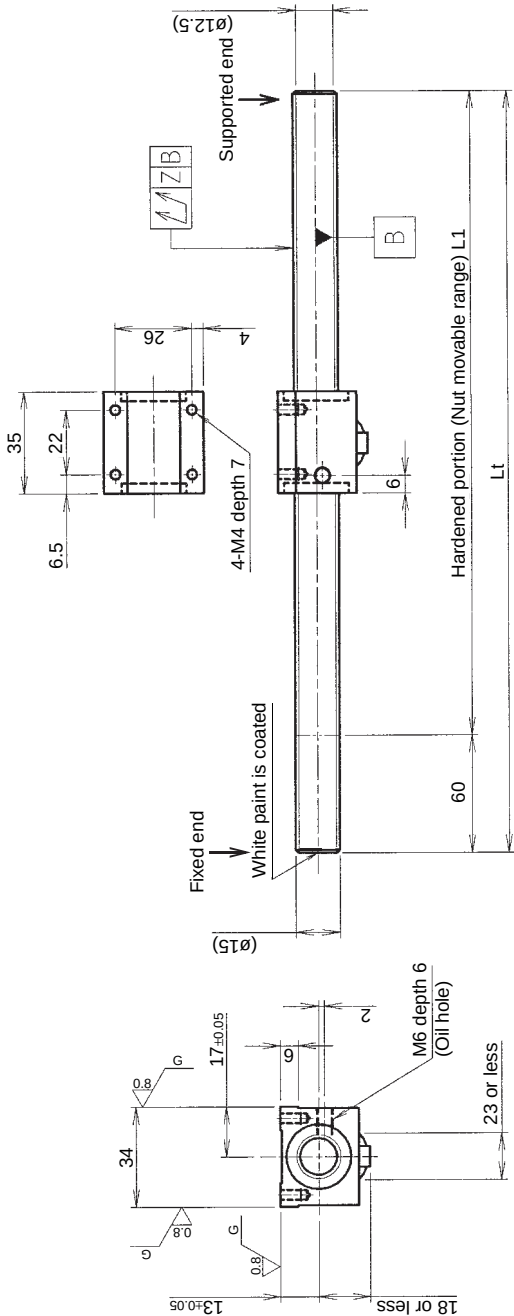
Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
o	o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

UNFINISHED SHAFT ENDS

Screw shaft diameter $\phi 15$, Lead 5 (Square nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	15	Basic dynamic load rating	5100N
Lead	5	Basic static load rating	10500N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 1 circuit	Surface treatment	Phosphate coating
Ball diameter	3.175		

Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY1505DS-NKLR-0600A	~0.100	540	600	0.140	Lip	1.05
GY1505DS-NKLR-1200A		1140	1200	0.400	seal	1.88

Notation of standard rolled ball screw

- A set of shaft and nut without additional end machining
GY1505DS-NKLR-□□□□A
- Nut only without additional end machining
GY1505DS-NKLR
- Screw shaft only without additional end machining
GY1505ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY1505DS-NKLR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY1505ZZ-ZZZZ-□□□□Y□□□□-CAY

Overall length Thread length

Table of optional specifications for each model

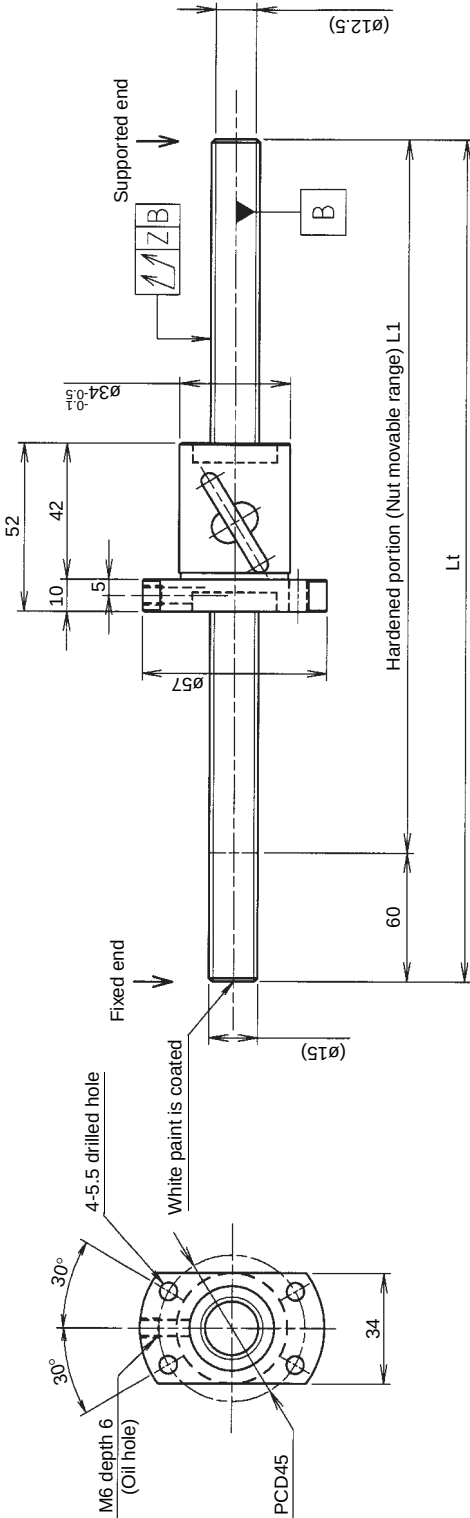
Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
o	o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

UNFINISHED SHAFT ENDS

Screw shaft diameter $\phi 15$, Lead 10 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	15	Basic dynamic load rating	5100N
Lead	10	Basic static load rating	10500N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 1 circuit	Surface treatment	Phosphate coating
Ball diameter	3.175		

Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY1510DS-HULR-0600A	~0.100	540	600	0.140	Lip	1.18
GY1510DS-HULR-1200A		1140	1200	0.400	seal	2.01

Notation of standard rolled ball screw

- A set of shaft and nut without additional end machining
GY1510DS-HULR-□□□□A
- Nut only without additional end machining
GY1510DS-HULR
- Screw shaft only without additional end machining
GY1510ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY1510DS-HULR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY1510ZZ-ZZZZ-□□□□Y□□□□-CAY

Overall length Thread length

Table of optional specifications for each model

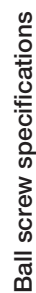
Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
o	o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

UNFINISHED SHAFT ENDS

Screw shaft diameter $\varnothing 15$, Lead 10 (Round nut)

(Unit: mm)



Screw shaft diameter	15	Basic dynamic load rating	9200N
Lead	10	Basic static load rating	21000N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 2 circuit	Surface treatment	Phosphate coating
Ball diameter	3.175		

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
○	○	○	○	○

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY1510ES-HULR-0600A	~0.100	540	600	0.140	Lip	1.18
GY1510ES-HULR-1200A		1140	1200	0.400	seal	2.01

Notation of standard rolled ball screw

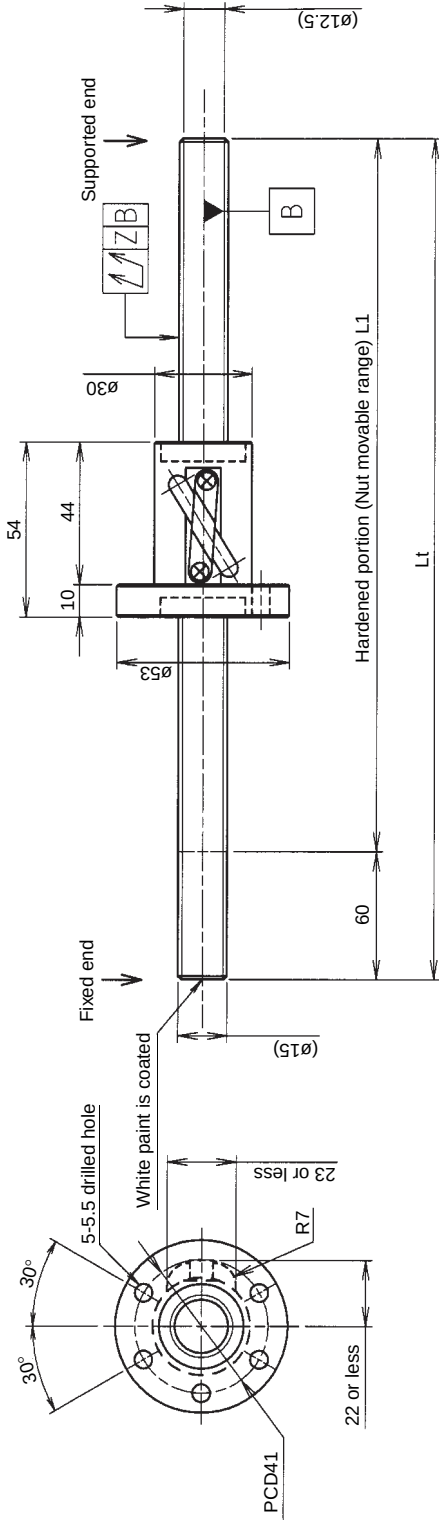
- A set of shaft and nut without additional end machining
GY1510ES-HULR-□□□□A
- Nut only without additional end machining
GY1510ES-HULR
- Screw shaft only without additional end machining
GY1510ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY1510ES-HULR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY1510ZZ-ZZZZ-□□□□Y□□□□-CAY

Overall length Thread length

UNFINISHED SHAFT ENDS

Screw shaft diameter $\phi 15$, Lead 10 (Protruded tube type nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	15	Basic dynamic load rating	5100N
Lead	10	Basic static load rating	10500N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 1 circuit	Surface treatment	Phosphate coating
Ball diameter	3.175		

Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY1510DS-CTLR-0600A	~0.100	540	600	0.140	Lip	1.18
GY1510DS-CTLR-1200A		1140	1200	0.400	seal	2.01

Notation of standard rolled ball screw

- A set of shaft and nut without additional end machining
GY1510DS-CTLR-□□□□A
- Nut only without additional end machining
GY1510DS-CTLR
- Screw shaft only without additional end machining
GY1510ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY1510DS-CTLR-□□□□X□□□□□-CAY
- Screw shaft only with optional specifications
GY1510ZZ-ZZZZ-□□□□Y□□□□□-CAY

Overall length Thread length

Table of optional specifications for each model

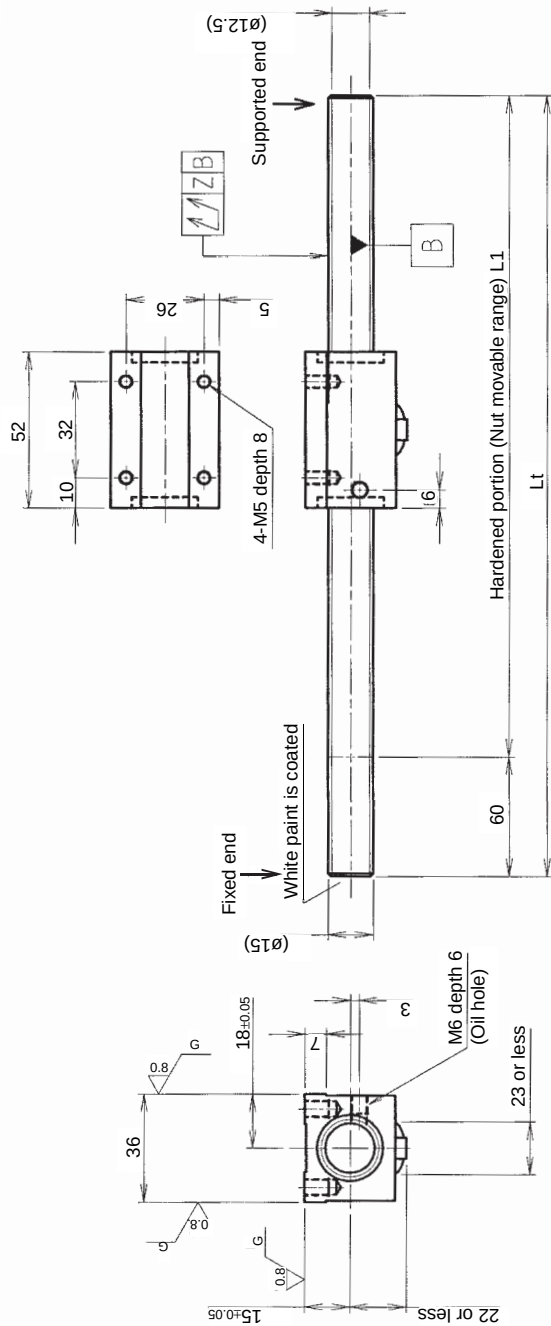
Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
o	o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

UNFINISHED SHAFT ENDS

Screw shaft diameter $\varnothing 15$, Lead 10 (Square nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	15	Basic dynamic load rating	5100N
Lead	10	Basic static load rating	1 0500N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 1 circuit	Surface treatment	Phosphate coating
Ball diameter	3.175		

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
○	○	○	○	○

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY1510DS-NKLR-0600A	~0.100	540	600	0.140	Lip	1.24
GY1510DS-NKLR-1200A		1140	1200	0.400	seal	2.07

Notation of standard rolled ball screw

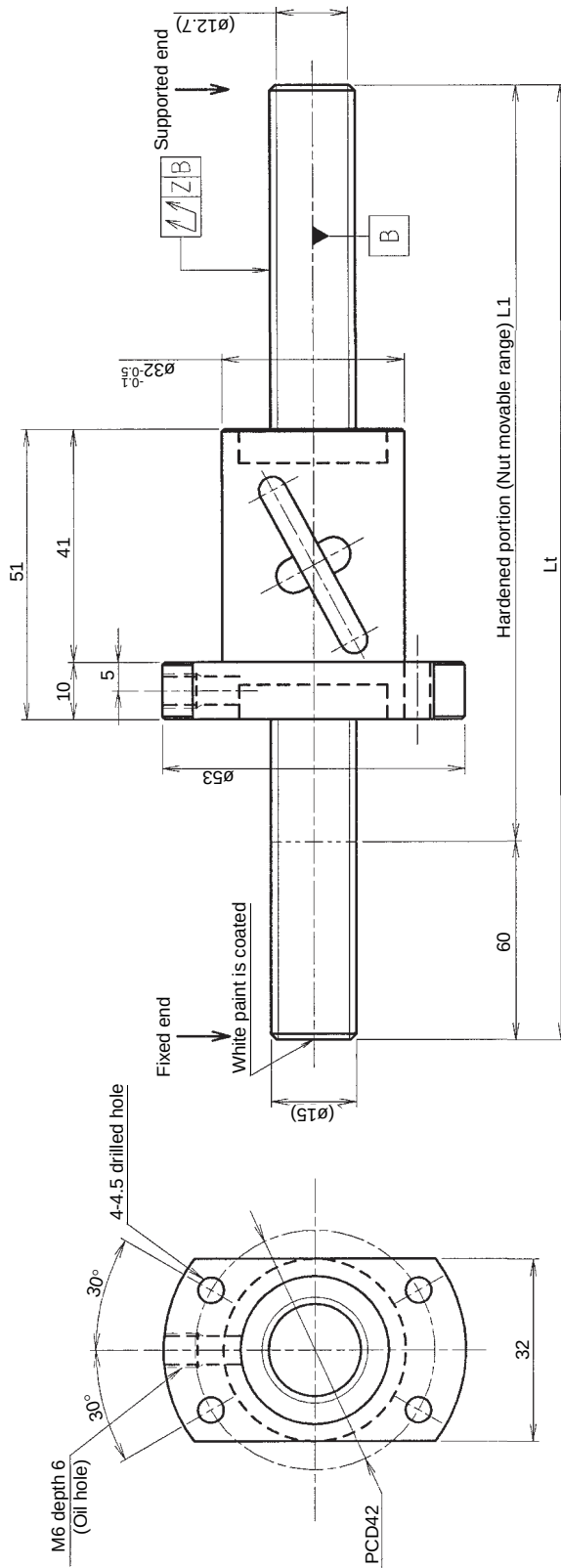
- A set of shaft and nut without additional end machining
GY1510DS-NKLR-□□□□A
- Nut only without additional end machining
GY1510DS-NKLR
- Screw shaft only without additional end machining
GY1510ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY1510DS-NKLR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY1510ZZ-ZZZZ-□□□□Y□□□□-CAY

Overall length Thread length

UNFINISHED SHAFT ENDS

Screw shaft diameter $\phi 15$, Lead 16 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	15	Basic dynamic load rating	4300N
Lead	16	Basic static load rating	10200N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	1.5 turn 2 circuit	Surface treatment	Phosphate coating
Ball diameter	2.778		

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
o	o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY1516BS-HULR-0600A	~0.100	540	600	0.140	Lip	1.15
GY1516BS-HULR-1200A		1140	1200	0.400	seal	1.98

Notation of standard rolled ball screw

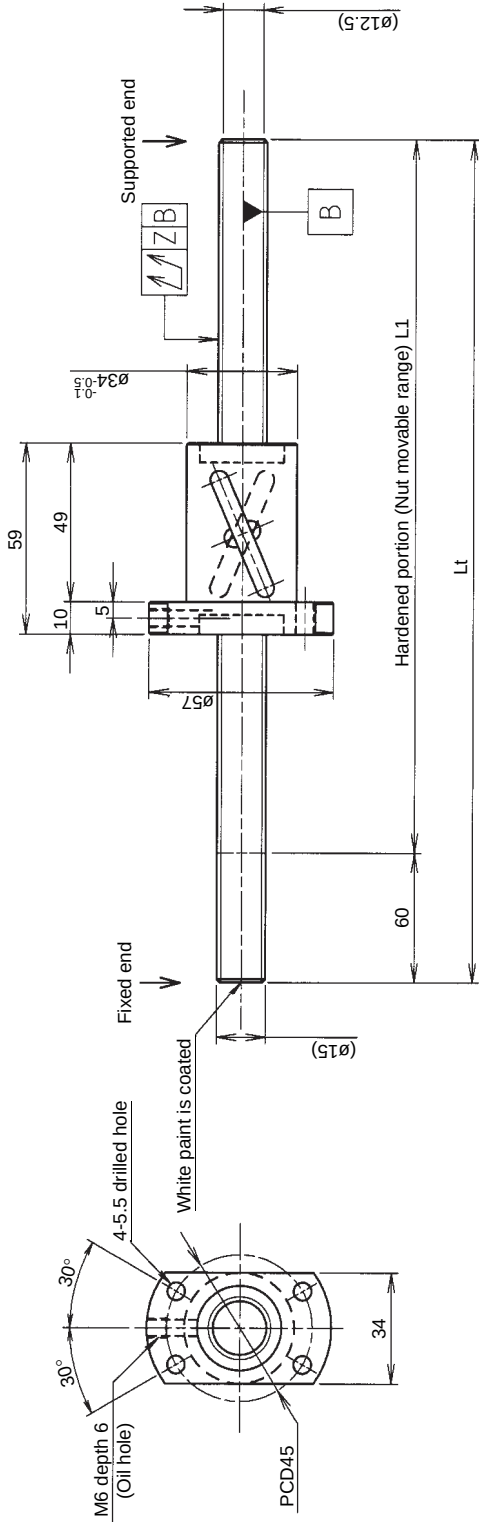
- A set of shaft and nut without additional end machining
GY1516BS-HULR-□□□□A
- Nut only without additional end machining
GY1516BS-HULR
- Screw shaft only without additional end machining
GY1516ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY1516BS-HULR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY1516ZZ-ZZZZ-□□□□Y□□□□-CAY

Overall length Thread length

UNFINISHED SHAFT ENDS

Screw shaft diameter $\phi 15$, Lead 20 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	15	Basic dynamic load rating	5800N
Lead	20	Basic static load rating	13300N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	1.5 turn 2 circuit	Surface treatment	Phosphate coating
Ball diameter	3.175		

Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY1520BS-HULR-0600A	~0.100	540	600	0.140	Lip	1.24
GY1520BS-HULR-1200A		1140	1200	0.400	seal	2.07

Notation of standard rolled ball screw

- A set of shaft and nut without additional end machining
GY1520BS-HULR-□□□□A
- Nut only without additional end machining
GY1520BS-HULR
- Screw shaft only without additional end machining
GY1520ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY1520BS-HULR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY1520ZZ-ZZZZ-□□□□Y□□□□-CAY

Overall length Thread length

Table of optional specifications for each model

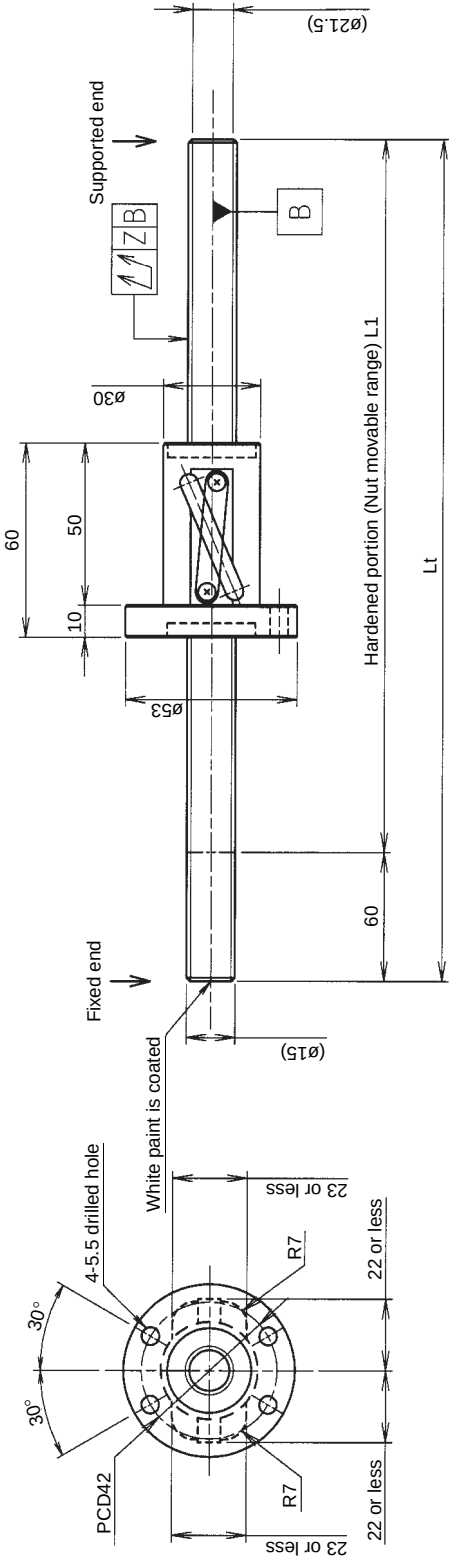
Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
o	o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

UNFINISHED SHAFT ENDS

Screw shaft diameter ø15, Lead 20 (Protruded tube type nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	15	Basic dynamic load rating	5800N
Lead	20	Basic static load rating	13300N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	1.5 turn 2 circuit	Surface treatment	Phosphate coating
Ball diameter	3.175		

Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY1520BS-CTLR-0600A	~0.100	540	600	0.140	Lip	1.17
GY1520BS-CTLR-1200A		1140	1200	0.400	seal	2.00

Notation of standard rolled ball screw

- A set of shaft and nut without additional end machining
GY1520BS-CTLR-□□□□A
- Nut only without additional end machining
GY1520BS-CTLR
- Screw shaft only without additional end machining
GY1520ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY1520BS-CTLR-□□□□X□□□□□-CAY
- Screw shaft only with optional specifications
GY1520ZZ-ZZZZ-□□□□Y□□□□□-CAY

Overall length Thread length

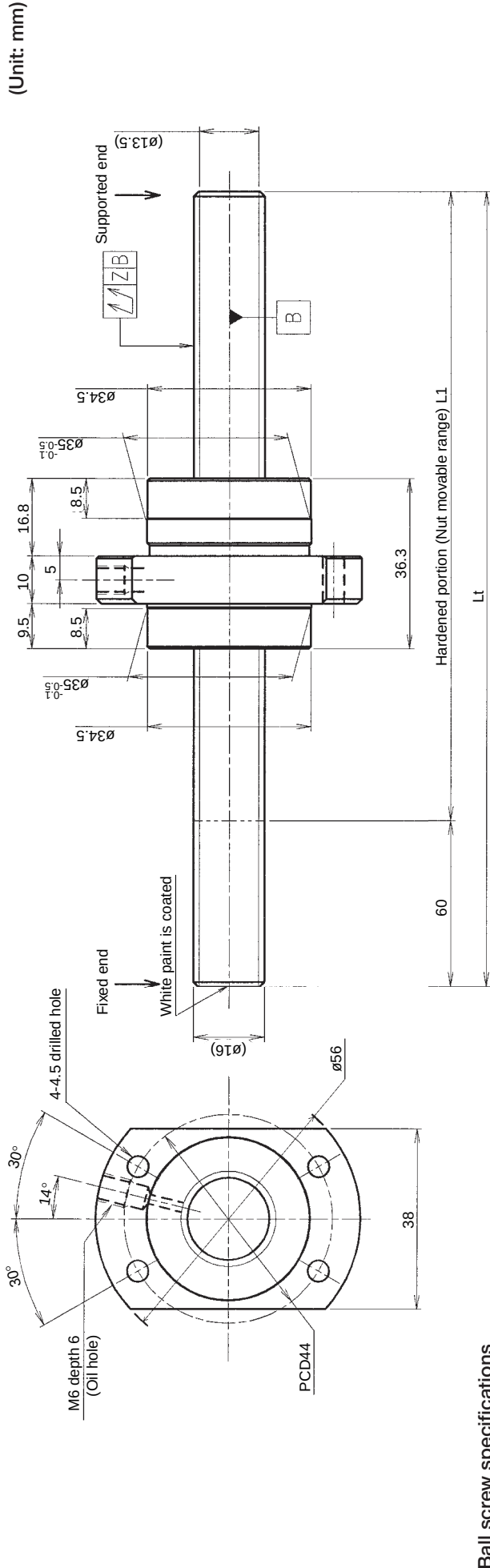
Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
o	o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

UNFINISHED SHAFT ENDS

Screw shaft diameter $\phi 16$, Lead 32 (Round nut)



Ball screw specifications

Screw shaft diameter	16	Basic dynamic load rating	4200N
Lead	32	Basic static load rating	7700N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	0.67 turn 3 circuit	Surface treatment	Phosphate coating
Ball diameter	3.175		

Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY1632QS-HEZR-0600A	~0.100	540	600	0.140	*	1.24
GY1632QS-HEZR-1200A		1140	1200	0.400		2.19

* For the asterisked part, the lip of the end cap serves as a wiper.

Notation of standard rolled ball screw

- A set of shaft and nut without additional end machining
GY1632QS-HEZR-□□□□A
- Nut only without additional end machining
GY1632QS-HEZR
- Screw shaft only without additional end machining
GY1632ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY1632QS-HEZR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY1632ZZ-ZZZZ-□□□□Y□□□□-CAY

Overall length Thread length

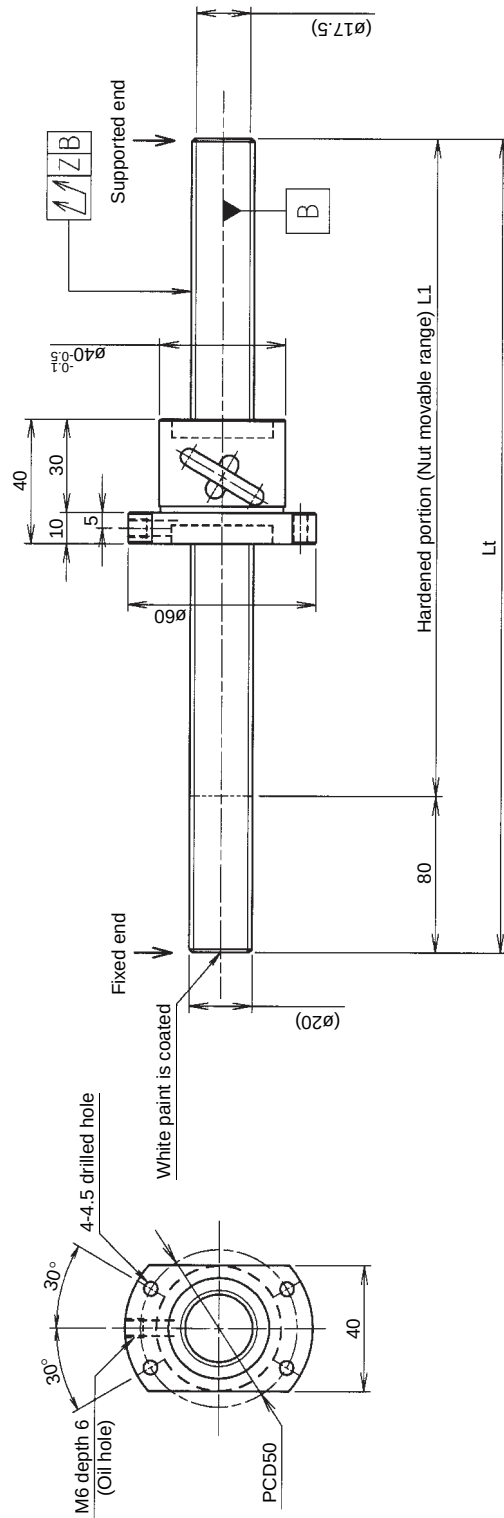
Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
o	o	o	o	x

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Screw shaft diameter $\varnothing 20$, Lead 5 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	20	Basic dynamic load rating	6200N
Lead	5	Basic static load rating	14700N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 1 circuit	Surface treatment	Phosphate coating
Ball diameter	3.175		

Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY2005DS-HULR-0600A	~0.100	520	600	0.140	Lip seal	1.85
GY2005DS-HULR-1200A		1120	1200	0.240		3.33
GY2005DS-HULR-2000A		1920	2000	0.640		5.29

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
○	○	○	○	○

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Notation of standard rolled ball screw

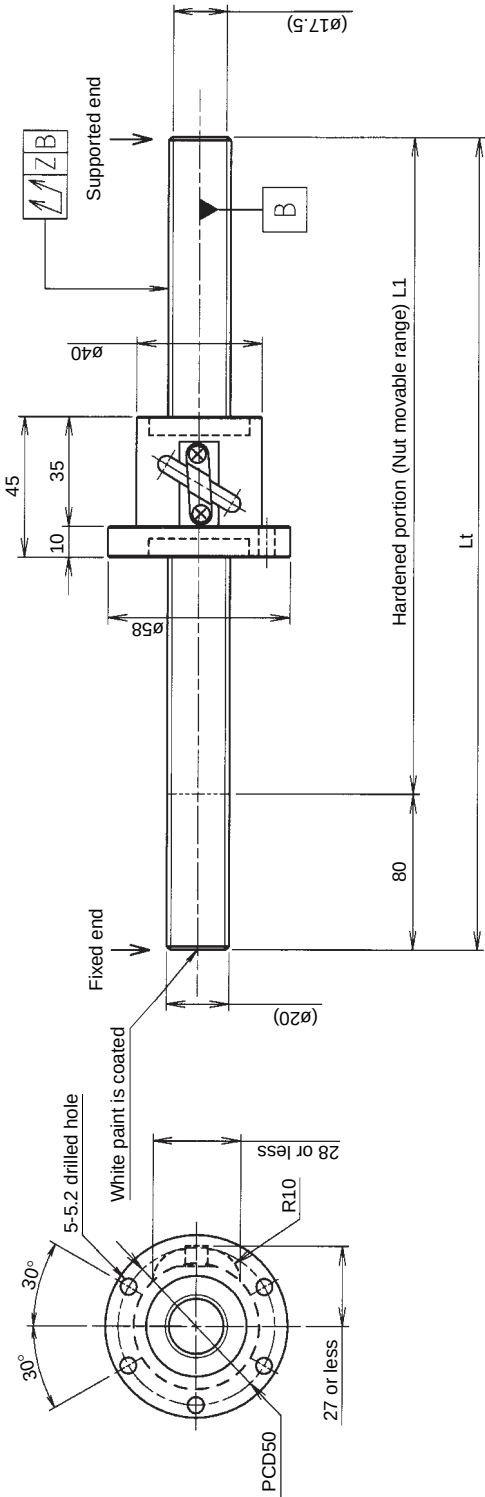
- A set of shaft and nut without additional end machining
GY2005DS-HULR-□□□□A
- Nut only without additional end machining
GY2005DS-HULR
- Screw shaft only without additional end machining
GY2005ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY2005DS-HULR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY2005ZZ-ZZZZ-□□□□Y□□□□-CAY

Overall length Thread length

UNFINISHED SHAFT ENDS

Screw shaft diameter ø20, Lead 5 (Protruded tube type nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	20	Basic dynamic load rating	6200N
Lead	5	Basic static load rating	14700N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 1 circuit	Surface treatment	Phosphate coating
Ball diameter	3.175		

Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY2005DS-CTLR-0600A	~0.100	520	600	0.140	Lip seal	1.89
GY2005DS-CTLR-1200A		1120	1200	0.240		3.37
GY2005DS-CTLR-2000A		1920	2000	0.640		5.34

Notation of standard rolled ball screw

- A set of shaft and nut without additional end machining
GY2005DS-CTLR-□□□□A
- Nut only without additional end machining
GY2005DS-CTLR
- Screw shaft only without additional end machining
GY2005ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY2005DS-CTLR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY2005ZZ-ZZZZ-□□□□Y□□□□-CAY

Overall length Thread length

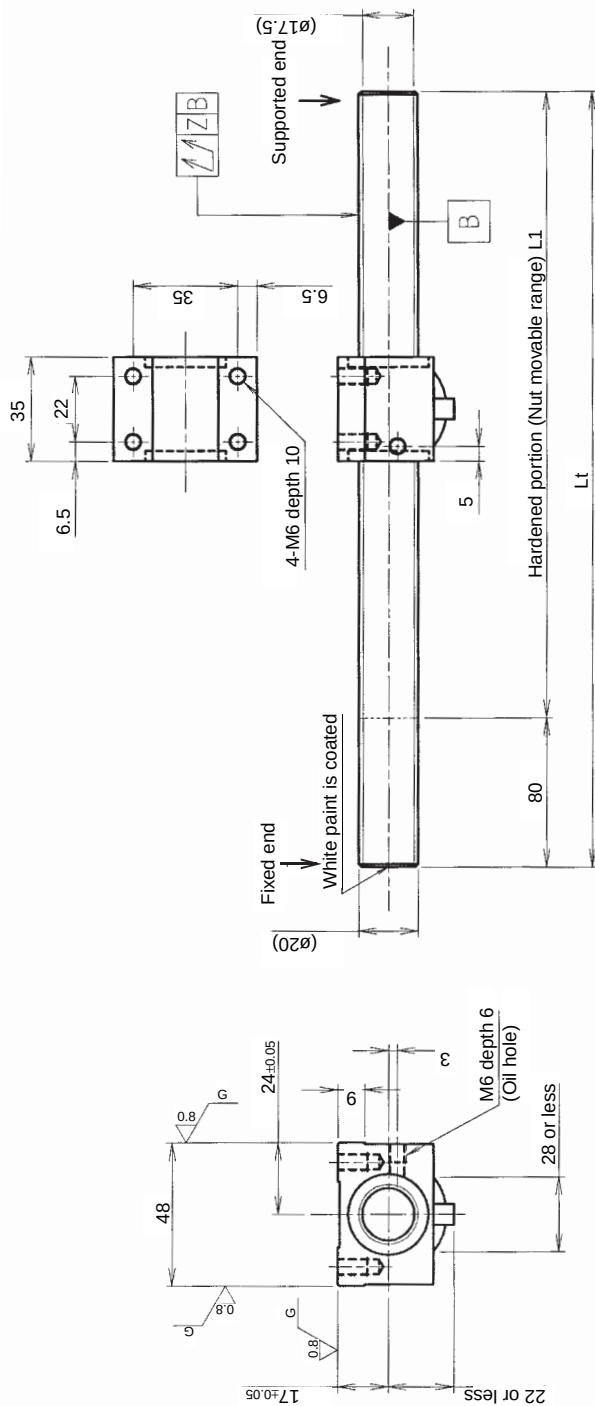
Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
o	o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Screw shaft diameter $\varnothing 20$, Lead 5 (Square nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	20	Basic dynamic load rating	6200N
Lead	5	Basic static load rating	14700N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 1 circuit	Surface treatment	Phosphate coating
Ball diameter	3.175		

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
○	○	○	○	○

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Notation of standard rolled ball screw

- A set of shaft and nut without additional end machining
GY2005DS-NKLR-□□□□A
- Nut only without additional end machining
GY2005DS-NKLR
- Screw shaft only without additional end machining
GY2005ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY2005DS-NKLR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY2005ZZ-ZZZZ-□□□□Y□□□□-CAY

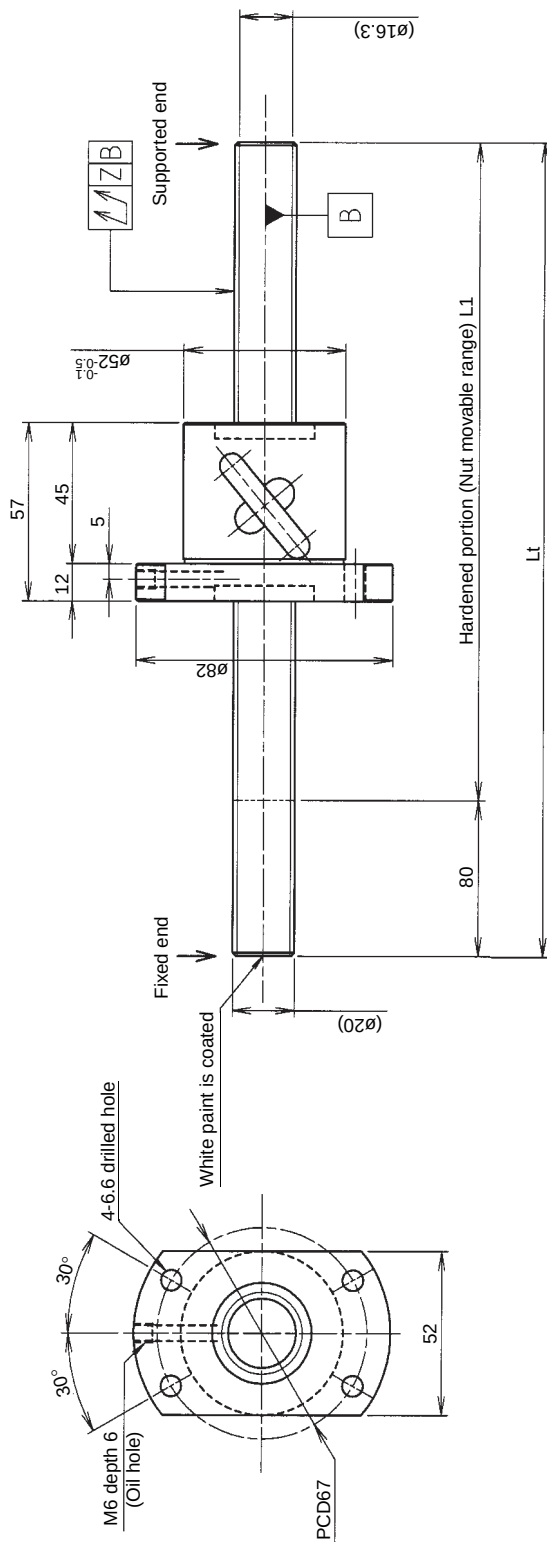
Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY2005DS-NKLR-0600A	~0.100	520	600	0.140	Lip seal	1.87
GY2005DS-NKLR-1200A		1120	1200	0.240		3.34
GY2005DS-NKLR-2000A		1920	2000	0.640		5.31

Overall length Thread length

UNFINISHED SHAFT ENDS

Screw shaft diameter ø20, Lead 10 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	20	Basic dynamic load rating	1 0600N
Lead	10	Basic static load rating	22700N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 1 circuit	Surface treatment	Phosphate coating
Ball diameter	4.7625		

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
○	○	○	○	○

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Notation of standard rolled ball screw

- A set of shaft and nut without additional end machining
GY2010DS-HULR-□□□□A
- Nut only without additional end machining
GY2010DS-HULR
- Screw shaft only without additional end machining
GY2010ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY2010DS-HULR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY2010ZZ-ZZZZ-□□□□Y□□□□-CAY

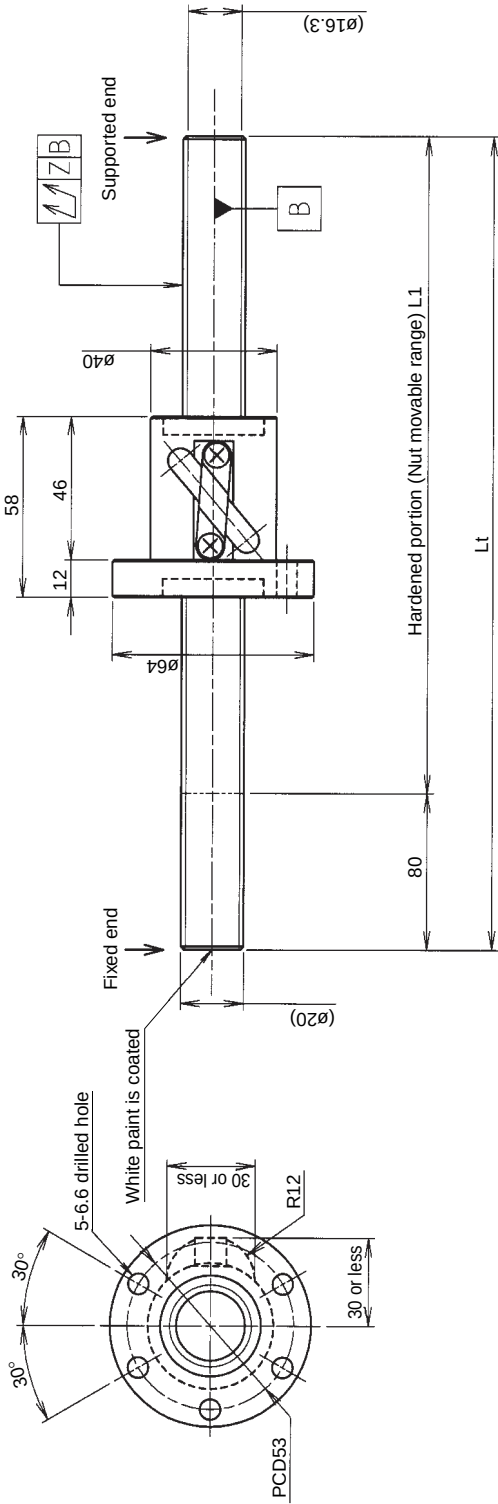
Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY2010DS-HULR-0600A	~0.150	520	600	0.140	Lip seal	2.47
GY2010DS-HULR-1200A		1120	1200	0.240		3.95
GY2010DS-HULR-2000A		1920	2000	0.640		5.92

Overall length Thread length

UNFINISHED SHAFT ENDS

Screw shaft diameter ø20, Lead 10 (Protruded tube type nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	20	Basic dynamic load rating	10600N
Lead	10	Basic static load rating	22700N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 1 circuit	Surface treatment	Phosphate coating
Ball diameter	4.7625		

Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY2010DS-CTLR-0600A	~0.150	520	600	0.140	Lip seal	2.04
GY2010DS-CTLR-1200A		1120	1200	0.240		3.52
GY2010DS-CTLR-2000A		1920	2000	0.640		5.48

Notation of standard rolled ball screw

- A set of shaft and nut without additional end machining
GY2010DS-CTLR-□□□□A
- Nut only without additional end machining
GY2010DS-CTLR
- Screw shaft only without additional end machining
GY2010ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY2010DS-CTLR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY2010ZZ-ZZZZ-□□□□Y□□□□-CAY

Overall length Thread length

Table of optional specifications for each model

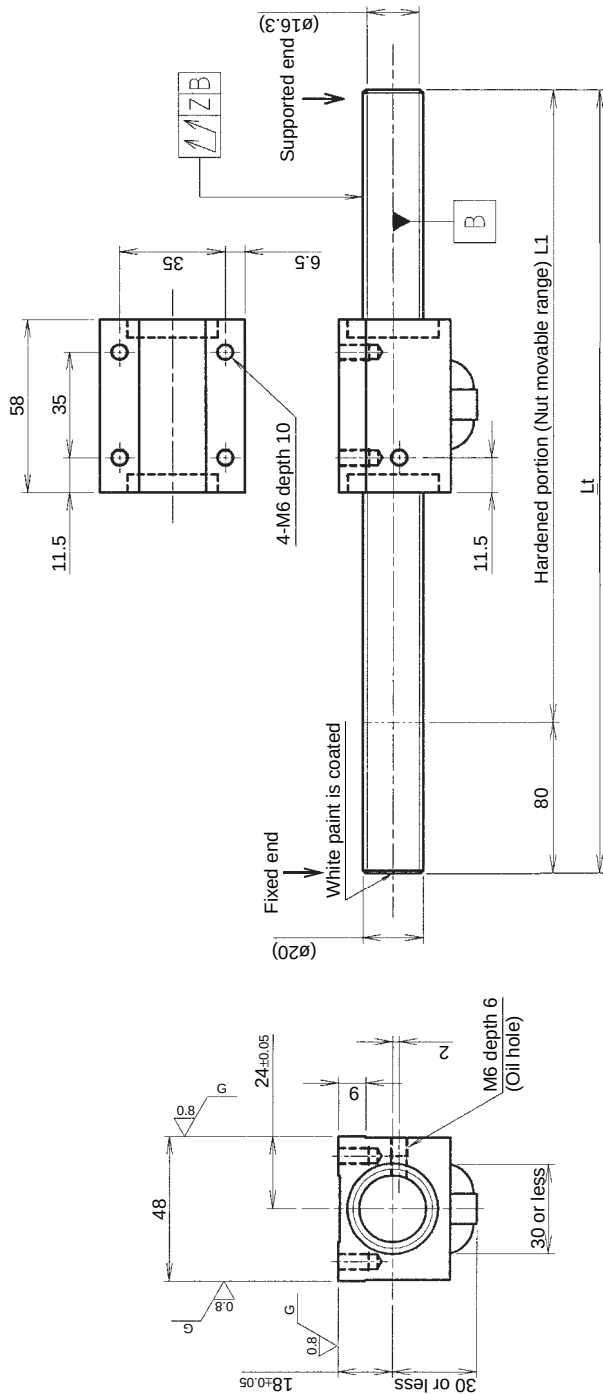
Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
o	o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

UNFINISHED SHAFT ENDS

Screw shaft diameter $\varnothing 20$, Lead 10 (Square nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	20	Basic dynamic load rating	10600N
Lead	10	Basic static load rating	22700N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 1 circuit	Surface treatment	Phosphate coating
Ball diameter	4.7625		

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
○	○	○	○	○

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Notation of standard rolled ball screw

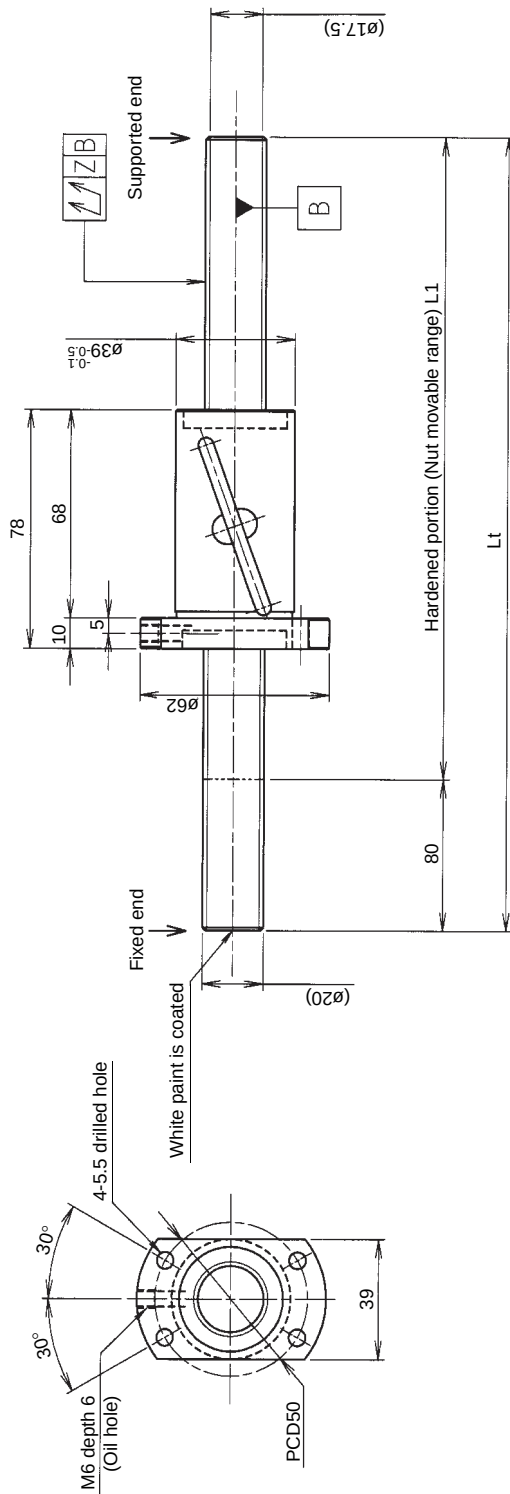
- A set of shaft and nut without additional end machining
GY2010DS-NKLR-□□□□A
- Nut only without additional end machining
GY2010DS-NKLR
- Screw shaft only without additional end machining
GY2010ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY2010DS-NKLR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY2010ZZ-ZZZZ-□□□□Y□□□□-CAY

Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY2010DS-NKLR-0600A	~0.150	520	600	0.140	Lip seal	2.20
GY2010DS-NKLR-1200A		1120	1200	0.240		3.67
GY2010DS-NKLR-2000A		1920	2000	0.640		5.64

Overall length Thread length

Screw shaft diameter ø20, Lead 20 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	20	Basic dynamic load rating	6200N
Lead	20	Basic static load rating	14700N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 1 circuit	Surface treatment	Phosphate coating
Ball diameter	3.175		

Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY2020DS-HULR-0600A	~0.100	520	600	0.140	Lip seal	2.06
GY2020DS-HULR-1200A		1120	1200	0.240		3.53
GY2020DS-HULR-2000A		1920	2000	0.640		5.50

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
○	○	○	○	○

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Notation of standard rolled ball screw

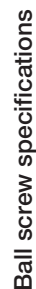
- A set of shaft and nut without additional end machining
GY202DS-HULR-□□□□A
- Nut only without additional end machining
GY202DS-HULR
- Screw shaft only without additional end machining
GY202ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY202DS-HULR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY202ZZ-ZZZZ-□□□□Y□□□□-CAY

Overall length Thread length

UNFINISHED SHAFT ENDS

Screw shaft diameter ø20, Lead 20 (Round nut)

(Unit: mm)



Screw shaft diameter	20	Basic dynamic load rating	11200N
Lead	20	Basic static load rating	29400N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 2 circuit	Surface treatment	Phosphate coating
Ball diameter	3.175		

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
○	○	○	○	○

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY2020ES-HULR-0600A	~0.100	520	600	0.140	Lip seal	2.06
GY2020ES-HULR-1200A		1120	1200	0.240		3.53
GY2020ES-HULR-2000A		1920	2000	0.640		5.50

Notation of standard rolled ball screw

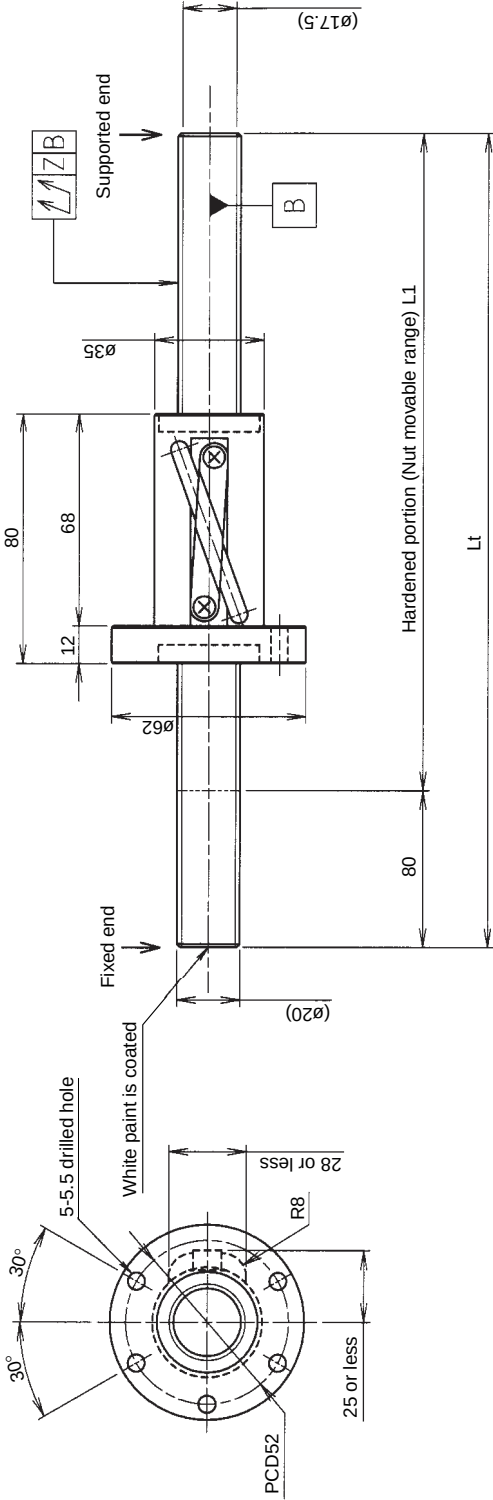
- A set of shaft and nut without additional end machining
GY2020ES-HULR-□□□□A
- Nut only without additional end machining
GY2020ES-HULR
- Screw shaft only without additional end machining
GY2020ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY2020ES-HULR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY2020ZZ-ZZZZ-□□□□Y□□□□-CAY

Overall length Thread length

UNFINISHED SHAFT ENDS

Screw shaft diameter ø20, Lead 20 (Protruded tube type nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	20	Basic dynamic load rating	6200N
Lead	20	Basic static load rating	14700N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 1 circuit	Surface treatment	Phosphate coating
Ball diameter	3.175		

Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY2020DS-CTLR-0600A	~0.100	520	600	0.140	Lip seal	2.03
GY2020DS-CTLR-1200A		1120	1200	0.240		3.51
GY2020DS-CTLR-2000A		1920	2000	0.640		5.48

Notation of standard rolled ball screw

- A set of shaft and nut without additional end machining
GY2020DS-CTLR-□□□□A
- Nut only without additional end machining
GY2020DS-CTLR
- Screw shaft only without additional end machining
GY2020ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY2020DS-CTLR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY2020ZZ-ZZZZ-□□□□Y□□□□-CAY

Overall length Thread length

Table of optional specifications for each model

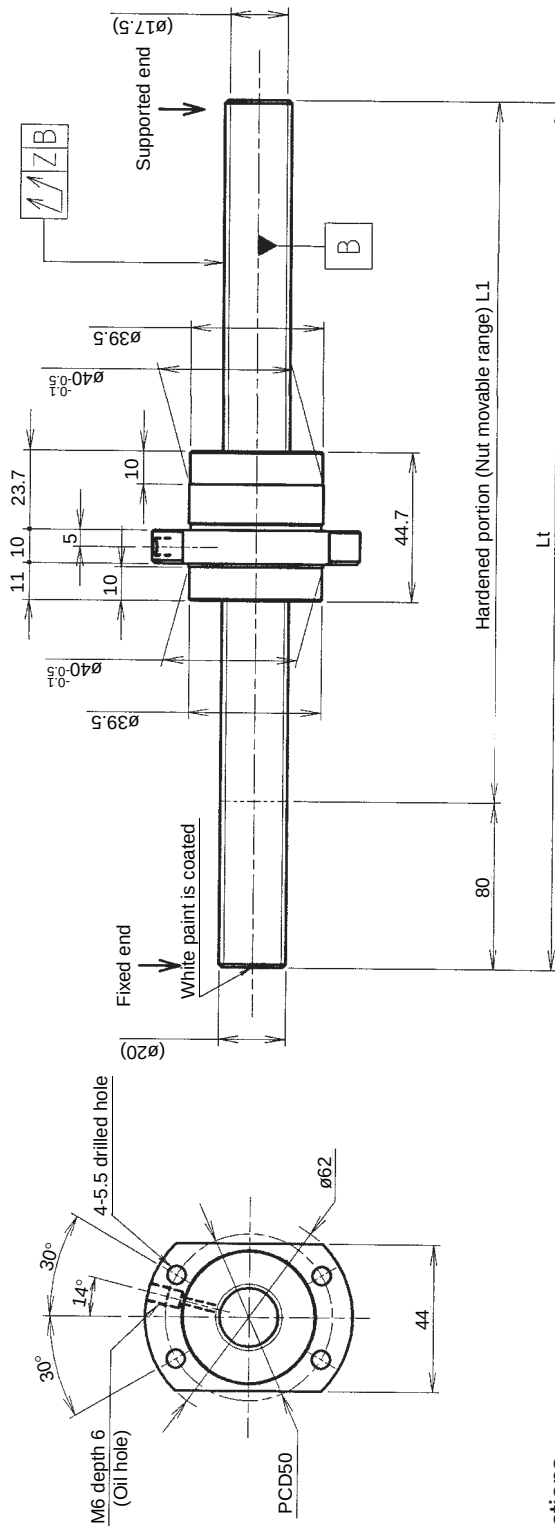
Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
o	o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

UNFINISHED SHAFT ENDS

Screw shaft diameter ø20, Lead 40 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	20	Basic dynamic load rating	4700N
Lead	40	Basic static load rating	10300N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	0.67 turn 3 circuit	Surface treatment	Phosphate coating
Ball diameter	3.175		

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
○	○	○	○	×

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Notation of standard rolled ball screw

- A set of shaft and nut without additional end machining
GY2040QS-HEZR-□□□□A
- Nut only without additional end machining
GY2040QS-HEZR
- Screw shaft only without additional end machining
GY2040ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY2040QS-HEZR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY2040ZZ-ZZZZ-□□□□Y□□□□-CAY

* For the asterisked part, the lip of the end cap serves as a wiper.

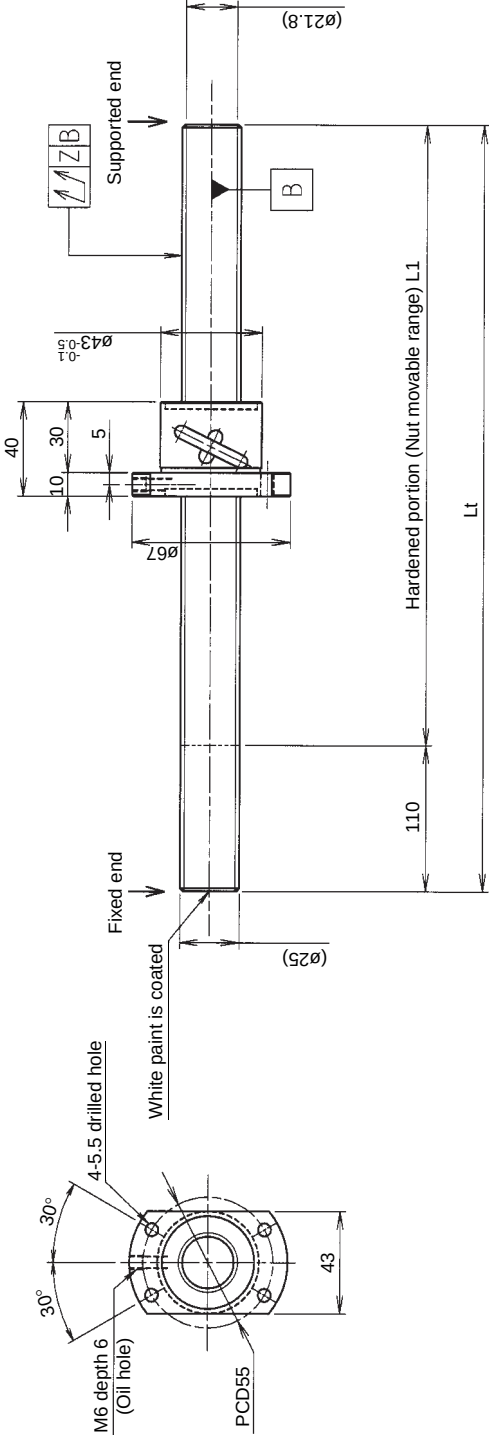
Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY2040QS-HEZR-0600A	~0.100	520	600	0.140	*	1.90
GY2040QS-HEZR-1200A		1120	1200	0.240		3.37
GY2040QS-HEZR-2000A		1920	2000	0.640		5.34

Overall length Thread length

UNFINISHED SHAFT ENDS

Screw shaft diameter ø25, Lead 5 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	25	Basic dynamic load rating	6600N
Lead	5	Basic static load rating	18700N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 1 circuit	Surface treatment	Phosphate coating
Ball diameter	3.175		

Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY2505DS-HULR-1000A	~0.100	890	1000	0.160	Lip seal	4.26
GY2505DS-HULR-2000A		1890	2000	0.400		8.10
GY2505DS-HULR-2500A		2390	2500	0.640		10.02

Notation of standard rolled ball screw

- A set of shaft and nut without additional end machining
GY2505DS-HULR-□□□□A
- Nut only without additional end machining
GY2505DS-HULR
- Screw shaft only without additional end machining
GY2505ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY2505DS-HULR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY2505ZZ-ZZZZ-□□□□Y□□□□-CAY

Overall length Thread length

Table of optional specifications for each model

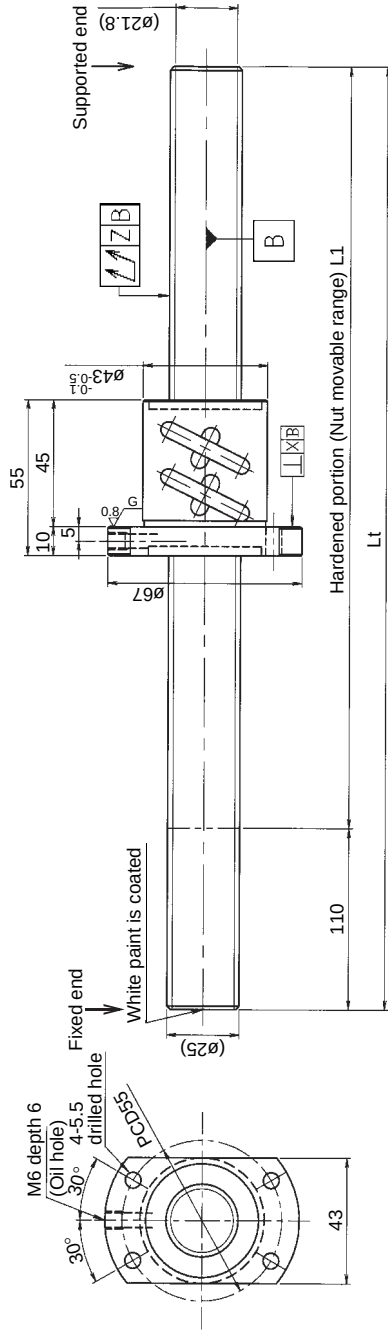
Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
o	o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

UNFINISHED SHAFT ENDS

Screw shaft diameter ø25, Lead 5 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	25	Basic dynamic load rating	11900N
Lead	5	Basic static load rating	37300N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 2 circuit	Surface treatment	Phosphate coating
Ball diameter	3.175		

Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY2505ES-HULR-1000A	~0.100	890	1000	0.160	Lip seal	4.33
GY2505ES-HULR-2000A		1890	2000	0.400		8.18
GY2505ES-HULR-2500A		2390	2500	0.640		10.10

Notation of standard rolled ball screw

- A set of shaft and nut without additional end machining
GY2505ES-HULR-□□□□A
- Nut only without additional end machining
GY2505ES-HULR
- Screw shaft only without additional end machining
GY2505ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY2505ES-HULR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY2505ZZ-ZZZZ-□□□□Y□□□□-CAY

Overall length Thread length

Table of optional specifications for each model

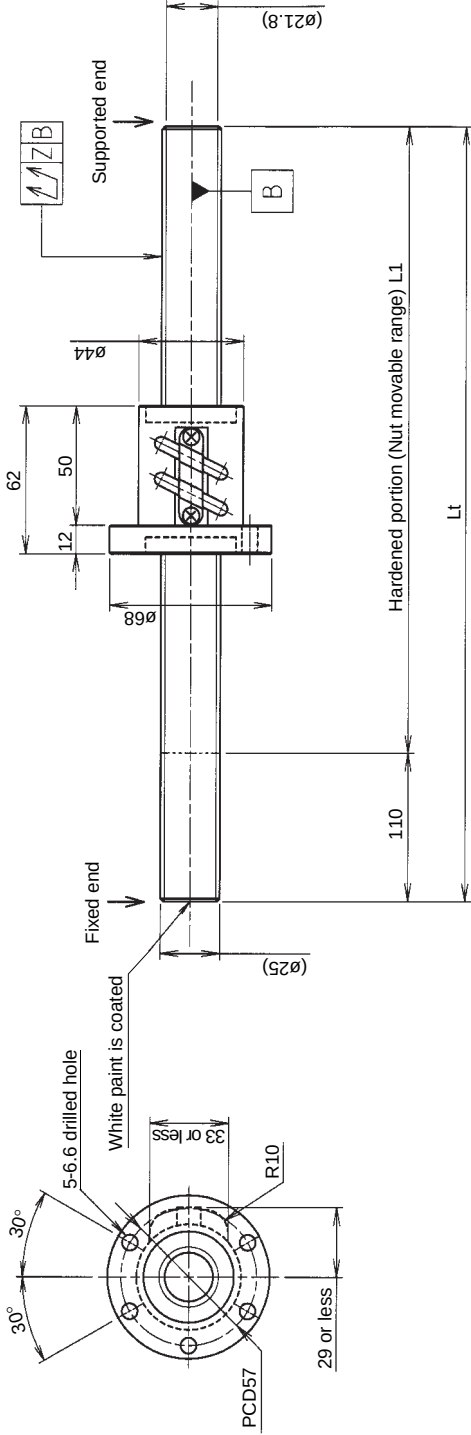
Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
o	o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

UNFINISHED SHAFT ENDS

Screw shaft diameter $\phi 25$, Lead 5 (Protruded tube type nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	20	Basic dynamic load rating	11900N
Lead	5	Basic static load rating	37300N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 2 circuit	Surface treatment	Phosphate coating
Ball diameter	3.175		

Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY2505ES-CTLR-1000A	~0.100	890	1000	0.160	Lip seal	4.51
GY2505ES-CTLR-2000A		1890	2000	0.400		8.35
GY2505ES-CTLR-2500A		2390	2500	0.640		10.28

Notation of standard rolled ball screw

- A set of shaft and nut without additional end machining
GY2505ES-CTLR-□□□□A
- Nut only without additional end machining
GY2505ES-CTLR
- Screw shaft only without additional end machining
GY2505ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY2505ES-CTLR-□□□□X□□□□□-CAY
- Screw shaft only with optional specifications
GY2505ZZ-ZZZZ-□□□□Y□□□□□-CAY

Overall length Thread length

Table of optional specifications for each model

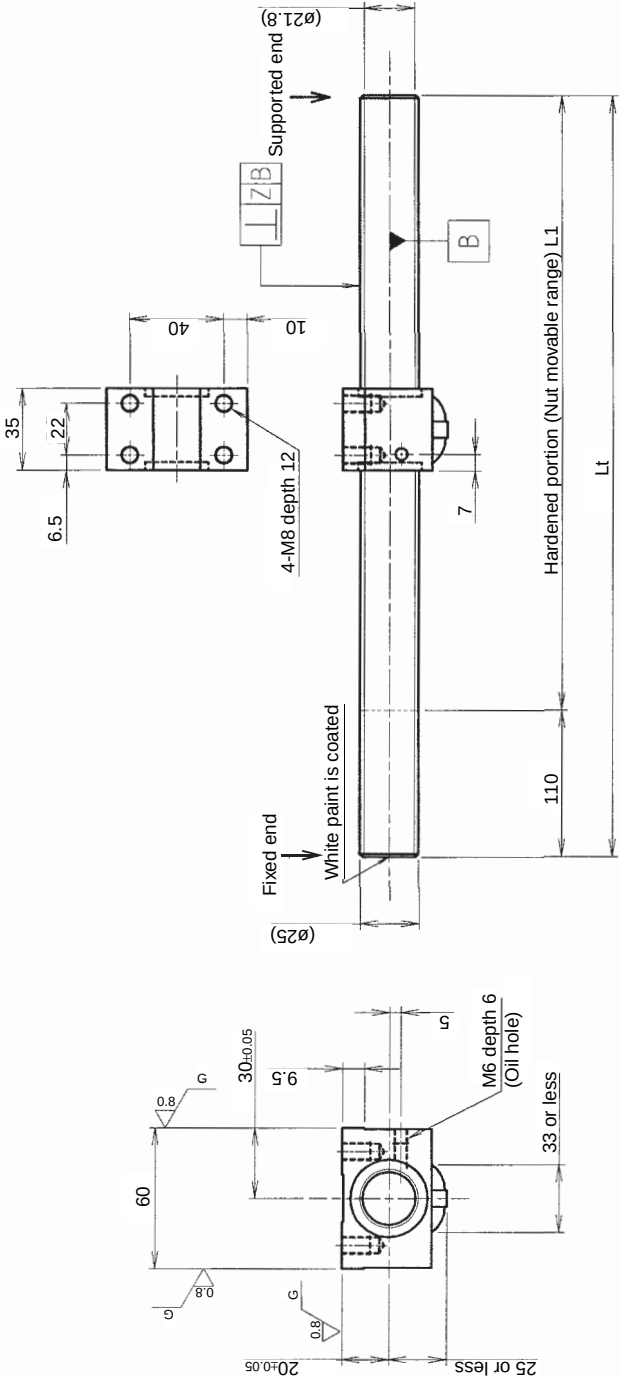
Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
o	o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

UNFINISHED SHAFT ENDS

Screw shaft diameter $\phi 25$, Lead 5 (Square nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	25	Basic dynamic load rating	6600N
Lead	5	Basic static load rating	18700N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 1 circuit	Surface treatment	Phosphate coating
Ball diameter	3.175		

Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY2505DS-NKLR-1000A	~0.100	890	1000	0.160	Lip seal	4.40
GY2505DS-NKLR-2000A		1890	2000	0.400		8.24
GY2505DS-NKLR-2500A		2390	2500	0.640		10.17

Notation of standard rolled ball screw

- A set of shaft and nut without additional end machining
GY2505DS-NKLR-□□□□A
- Nut only without additional end machining
GY2505DS-NKLR
- Screw shaft only without additional end machining
GY2505ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY2505DS-NKLR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY2505ZZ-ZZZZ-□□□□Y□□□□-CAY

Overall length Thread length

Table of optional specifications for each model

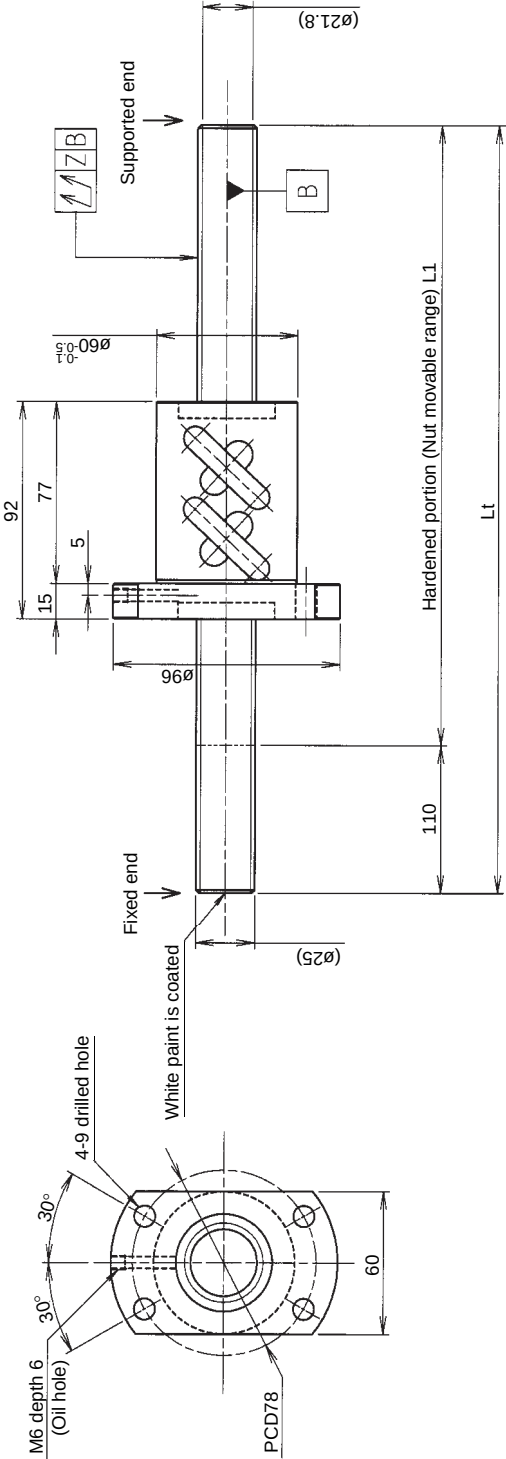
Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
o	o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

UNFINISHED SHAFT ENDS

Screw shaft diameter ø25, Lead 10 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	25	Basic dynamic load rating	27500N
Lead	10	Basic static load rating	76300N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 2 circuit	Surface treatment	Phosphate coating
Ball diameter	6.350		

Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY2510ES-HULR-1000A	~0.200	890	1000	0.160	Lip seal	5.70
GY2510ES-HULR-2000A		1890	2000	0.400		9.54
GY2510ES-HULR-2500A		2390	2500	0.640		11.46

Notation of standard rolled ball screw

- A set of shaft and nut without additional end machining
GY2510ES-HULR-□□□□A
- Nut only without additional end machining
GY2510ES-HULR
- Screw shaft only without additional end machining
GY2510ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY2510ES-HULR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY2510ZZ-ZZZZ-□□□□Y□□□□-CAY

Overall length Thread length

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
o	o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Screw shaft diameter $\varnothing 25$, Lead 10 (Protruded tube type nut)

Technical drawing of a shaft assembly. The drawing includes a side view and a cross-section view.

Side View:

- Shaft diameter: $\varnothing 100$
- Hardened portion (Nut movable range) $L1$
- Total length: Lt
- Fixed end
- Supported end
- Dimensions: 15, 77, 92, 110, $\varnothing 78$, $\varnothing 44$
- Feature B

Cross-section View:

- 5-9 drilled hole
- White paint is coated
- Dimensions: 30°, 30°, 39 or less, R17, 35 or less, PCD62, 30 or less

Screw shaft diameter	25	Basic dynamic load rating	27500N
Lead	10	Basic static load rating	76300N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 2 circuit	Surface treatment	Phosphate coating
Ball diameter	6.350		

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
○	○	○	○	○

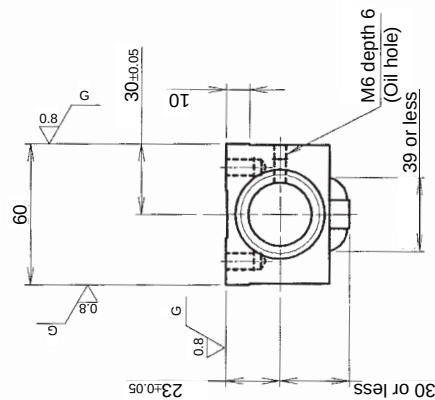
Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY2510ES-CTLR-1000A	~0.200	890	1000	0.160	Lip seal	4.83
GY2510ES-CTLR-2000A		1890	2000	0.400		8.68
GY2510ES-CTLR-2500A		2390	2500	0.640		10.60

- A set of shaft and nut without additional end machining
GY2510ES-CTLR-□□□□A
- Nut only without additional end machining
GY2510ES-CTLR
- Screw shaft only without additional end machining
GY2510ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY2510ES-CTLR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY2510ZZ-ZZZZ-□□□□Y□□□□-CAY

Overall length Thread length

Screw shaft diameter ø25, Lead 10 (Square nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	25	Basic dynamic load rating	27500N
Lead	10	Basic static load rating	76300N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 2 circuit	Surface treatment	Phosphate coating
Ball diameter	6.350		

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
○	○	○	○	○

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Notation of standard rolled ball screw

- A set of shaft and nut without additional end machining
GY2510ES-NKLR-□□□□A
- Nut only without additional end machining
GY2510ES-NKLR
- Screw shaft only without additional end machining
GY2510ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY2510ES-NKLR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY2510ZZ-ZZZZ-□□□□Y□□□□-CAY

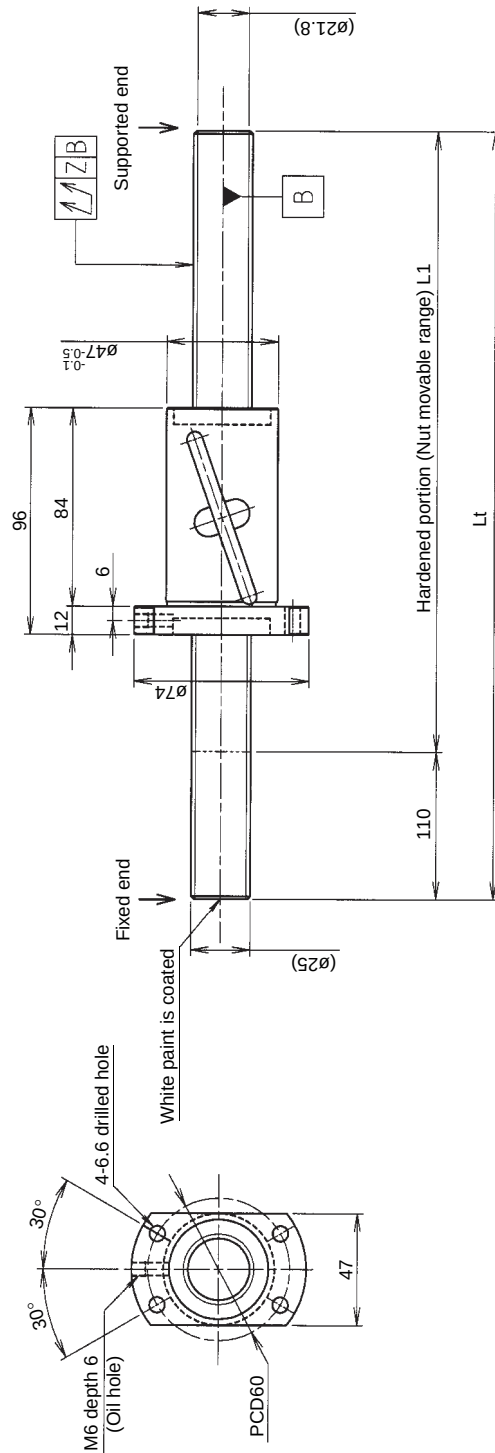
Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY2510ES-NKLR-1000A	~0.200	890	1000	0.160	Lip seal	5.74
GY2510ES-NKLR-2000A		1890	2000	0.400		9.59
GY2510ES-NKLR-2500A		2390	2500	0.640		11.51

Overall length Thread length

UNFINISHED SHAFT ENDS

Screw shaft diameter ø25, Lead 25 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	25	Basic dynamic load rating	9300N
Lead	25	Basic static load rating	22700N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 1 circuit	Surface treatment	Phosphate coating
Ball diameter	3.9688		

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
○	○	○	○	○

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Notation of standard rolled ball screw

- A set of shaft and nut without additional end machining
GY2525DS-HULR-□□□□A
- Nut only without additional end machining
GY2525DS-HULR
- Screw shaft only without additional end machining
GY2525ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY2525DS-HULR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY2525ZZ-ZZZZ-□□□□Y□□□□-CAY

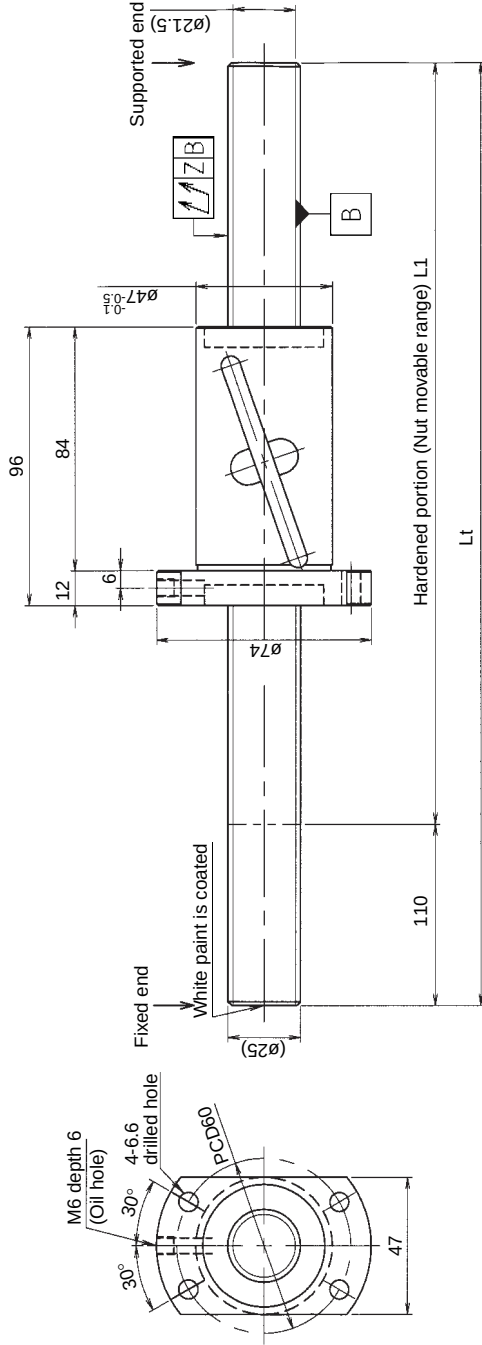
Overall length Thread length

Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY2525DS-HULR-1000A	~0.120	890	1000	0.160	Lip seal	4.87
GY2525DS-HULR-2000A		1890	2000	0.400		8.71
GY2525DS-HULR-2500A		2390	2500	0.640		10.63

UNFINISHED SHAFT ENDS

Screw shaft diameter ø25, Lead 25 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	25	Basic dynamic load rating	16800N
Lead	25	Basic static load rating	45400N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 2 circuit	Surface treatment	Phosphate coating
Ball diameter	3.9688		

Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY2525ES-HULR-1000A	~0.120	890	1000	0.160	Lip seal	4.87
GY2525ES-HULR-2000A		1890	2000	0.400		8.71
GY2525ES-HULR-2500A		2390	2500	0.640		10.63

Notation of standard rolled ball screw

- A set of shaft and nut without additional end machining
GY2525ES-HULR-□□□□A
- Nut only without additional end machining
GY2525ES-HULR
- Screw shaft only without additional end machining
GY2525ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY2525ES-HULR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY2525ZZ-ZZZZ-□□□□Y□□□□-CAY

Overall length Thread length

Table of optional specifications for each model

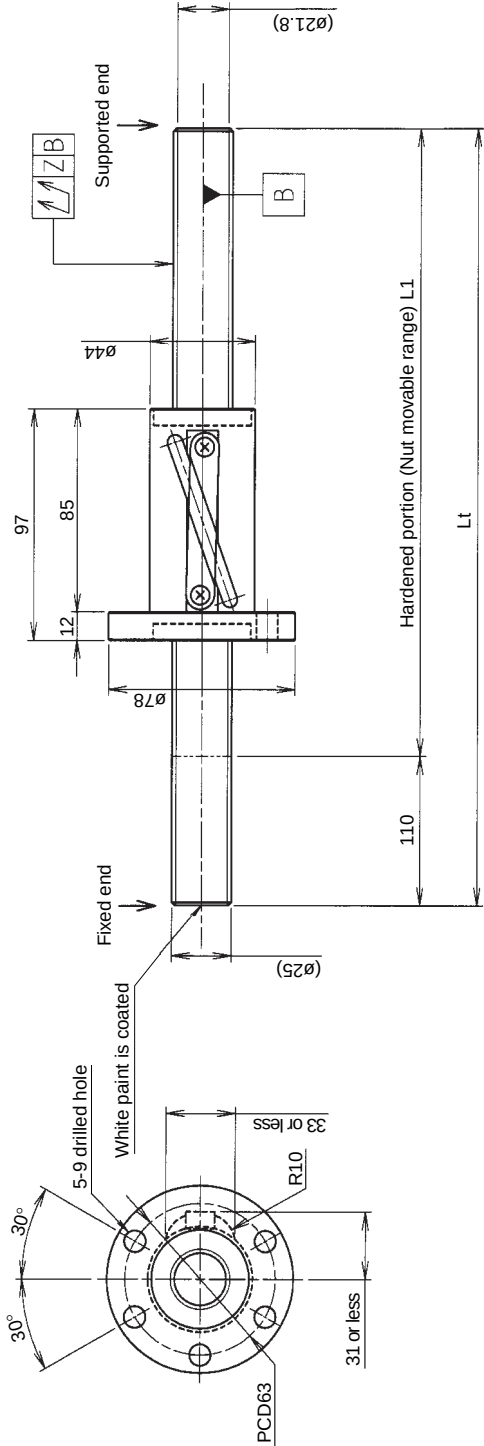
Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
o	o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

UNFINISHED SHAFT ENDS

Screw shaft diameter ø25, Lead 25 (Protruded tube type nut)

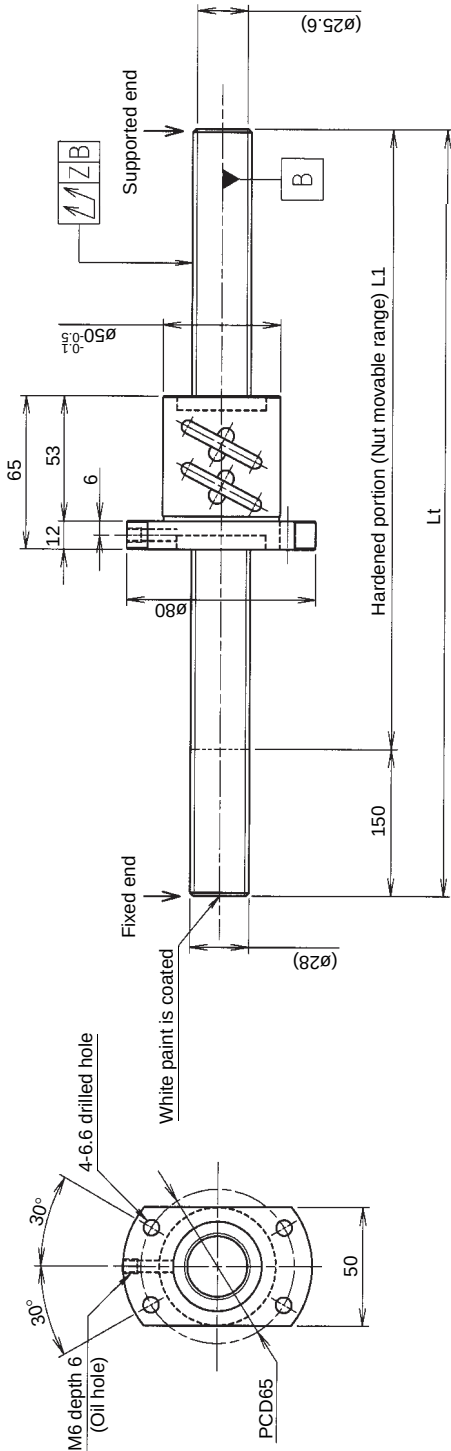
(Unit: mm)



UNFINISHED SHAFT ENDS

Screw shaft diameter ø28, Lead 6 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	28	Basic dynamic load rating	12100N
Lead	6	Basic static load rating	42300N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 2 circuit	Surface treatment	Phosphate coating
Ball diameter	3.175		

Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY2806ES-HUBR-1000A	~0.100	850	1000	0.120	Brush wiper	5.63
GY2806ES-HUBR-2000A		1850	2000	0.240		10.45
GY2806ES-HUBR-2500A		2350	2500	0.640		12.86

Notation of standard rolled ball screw

- A set of shaft and nut without additional end machining
GY2806ES-HUBR-□□□□A
- Nut only without additional end machining
GY2806ES-HUBR
- Screw shaft only without additional end machining
GY2806ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY2806ES-HUBR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY2806ZZ-ZZZZ-□□□□Y□□□□-CAY

Overall length Thread length

Table of optional specifications for each model

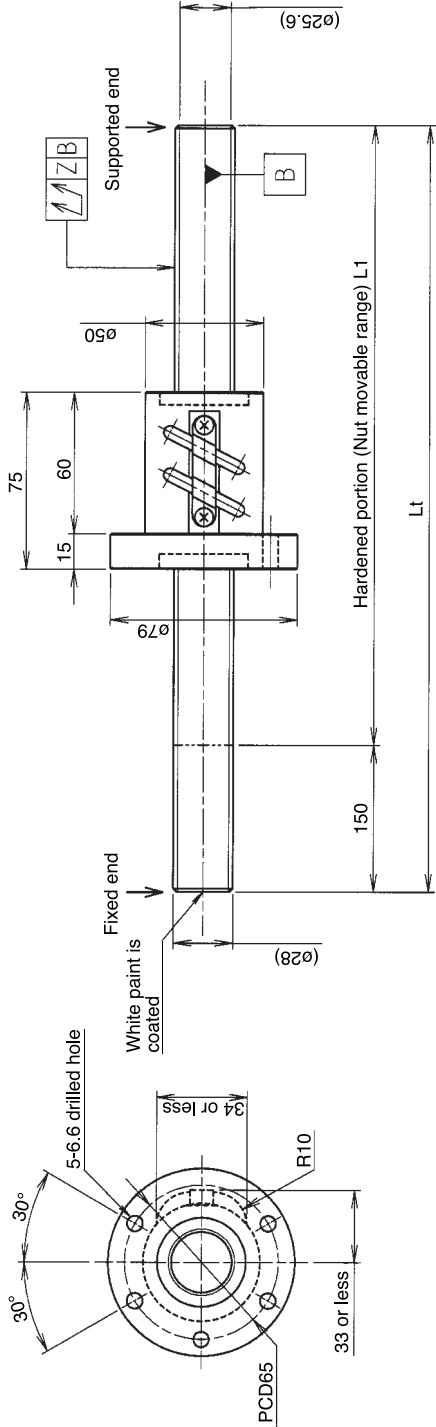
Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
o	o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

UNFINISHED SHAFT ENDS

Screw shaft diameter ø28, Lead 6 (Protruded tube type nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	28	Basic dynamic load rating	12100N
Lead	6	Basic static load rating	42300N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 2 circuit	Surface treatment	Phosphate coating
Ball diameter	3.175		

Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY2806ES-CTBR-1000A	~0.100	850	1000	0.120	Brush wiper	5.90
GY2806ES-CTBR-2000A		1850	2000	0.240		10.72
GY2806ES-CTBR-2500A		2350	2500	0.640		13.13

Notation of standard rolled ball screw

- A set of shaft and nut without additional end machining
GY2806ES-CTBR-□□□□A
- Nut only without additional end machining
GY2806ES-CTBR
- Screw shaft only without additional end machining
GY2806ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY2806ES-CTBR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY2806ZZ-ZZZZ-□□□□Y□□□□-CAY

Overall length Thread length

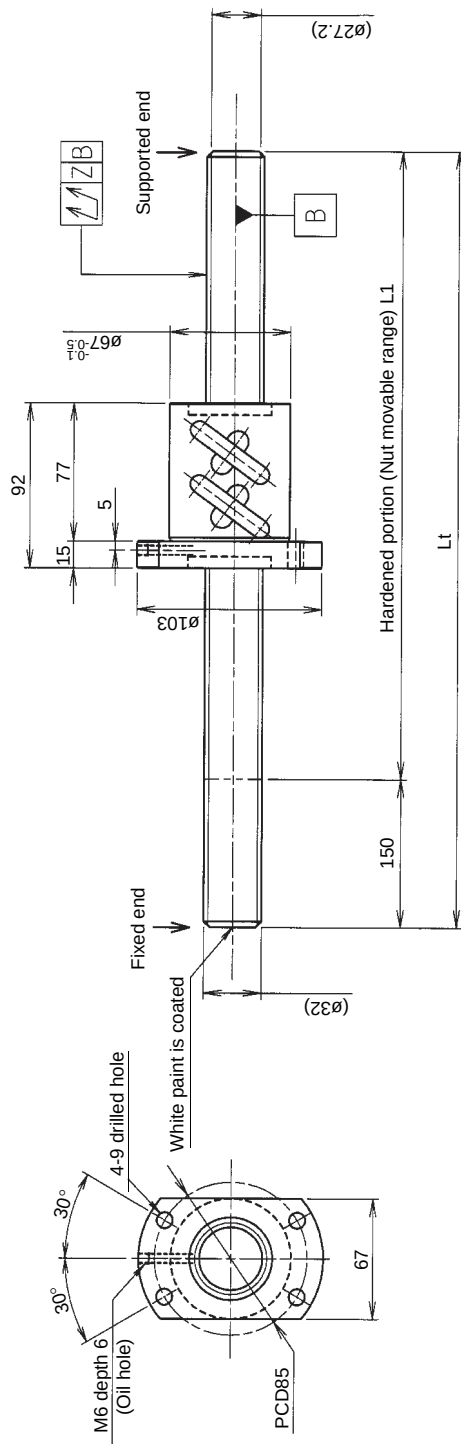
Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
o	o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Screw shaft diameter ø32, Lead 10 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	32	Basic dynamic load rating	32800N
Lead	10	Basic static load rating	86700N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 2 circuit	Surface treatment	Phosphate coating
Ball diameter	6.350		

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
○	○	○	○	○

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Notation of standard rolled ball screw

- A set of shaft and nut without additional end machining
GY3210ES-HUBR-□□□□A
- Nut only without additional end machining
GY3210ES-HUBR
- Screw shaft only without additional end machining
GY3210ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY3210ES-HUBR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY3210ZZ-ZZZZ-□□□□Y□□□□-CAY

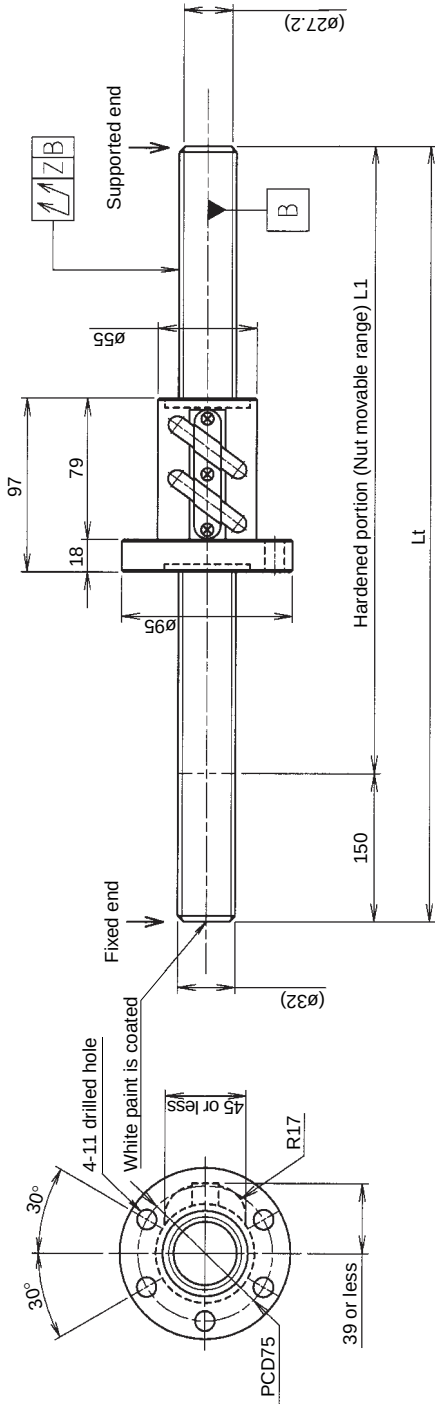
Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY3210ES-HUBR-1000A	~0.200	850	1000	0.120	Brush wiper	8.44
GY3210ES-HUBR-2000A		1850	2000	0.240		14.73
GY3210ES-HUBR-3000A		2850	3000	0.640		21.03

Overall length Thread length

UNFINISHED SHAFT ENDS

Screw shaft diameter ø32, Lead 10 (Protruded tube type nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	32	Basic dynamic load rating	32800N
Lead	10	Basic static load rating	86700N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 2 circuit	Surface treatment	Phosphate coating
Ball diameter	6.350		

Model No.	Axial clearance	L ₁	L ₂	Z	Wiper	Mass (kg)
GY3210ES-CTBR-1000A	~0.200	850	1000	0.120	Brush wiper	7.96
GY3210ES-CTBR-2000A		1850	2000	0.240		14.25
GY3210ES-CTBR-3000A		2850	3000	0.640		20.55

Notation of standard rolled ball screw

- A set of shaft and nut without additional end machining
GY3210ES-CTBR-□□□□A
- Nut only without additional end machining
GY3210ES-CTBR
- Screw shaft only without additional end machining
GY3210ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY3210ES-CTBR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY3210ZZ-ZZZZ-□□□□Y□□□□-CAY

Overall length Thread length

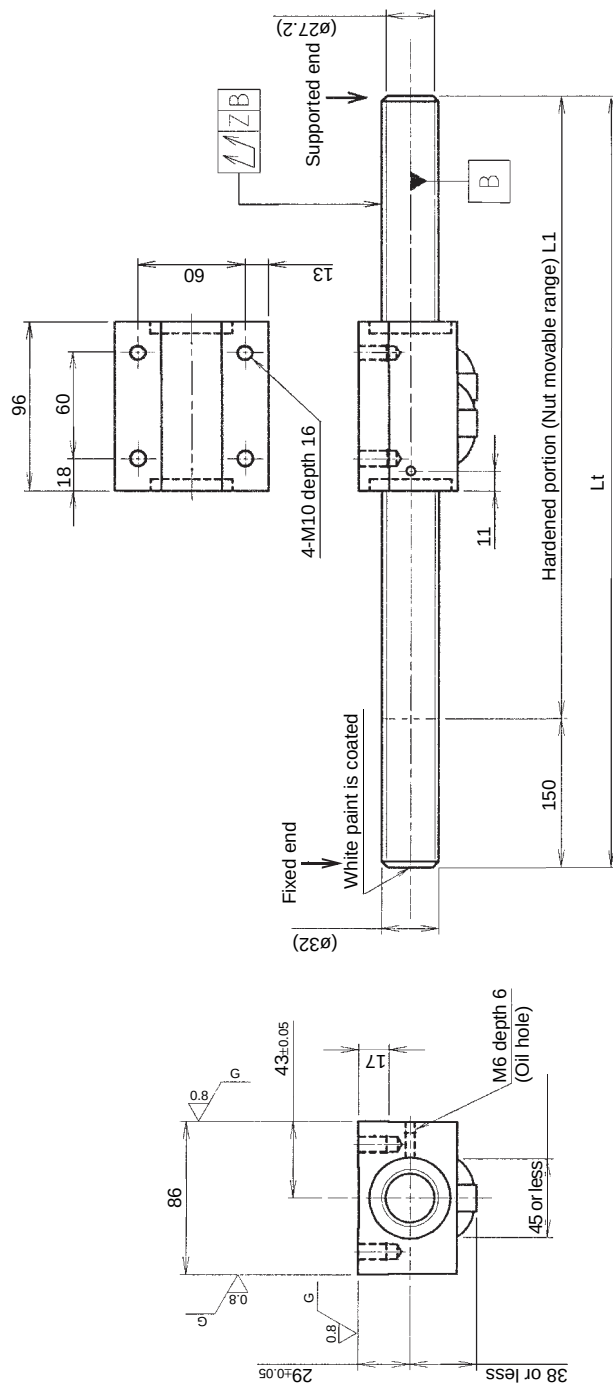
Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
o	o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Screw shaft diameter ø32, Lead 10 (Square nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	32	Basic dynamic load rating	32800N
Lead	10	Basic static load rating	86700N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 2 circuit	Surface treatment	Phosphate coating
Ball diameter	6.350		

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
○	○	○	○	○

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Notation of standard rolled ball screw

- A set of shaft and nut without additional end machining
GY3210ES-NKBR-□□□□A
- Nut only without additional end machining
GY3210ES-NKBR
- Screw shaft only without additional end machining
GY3210ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY3210ES-NKBR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY3210ZZ-ZZZZ-□□□□Y□□□□-CAY

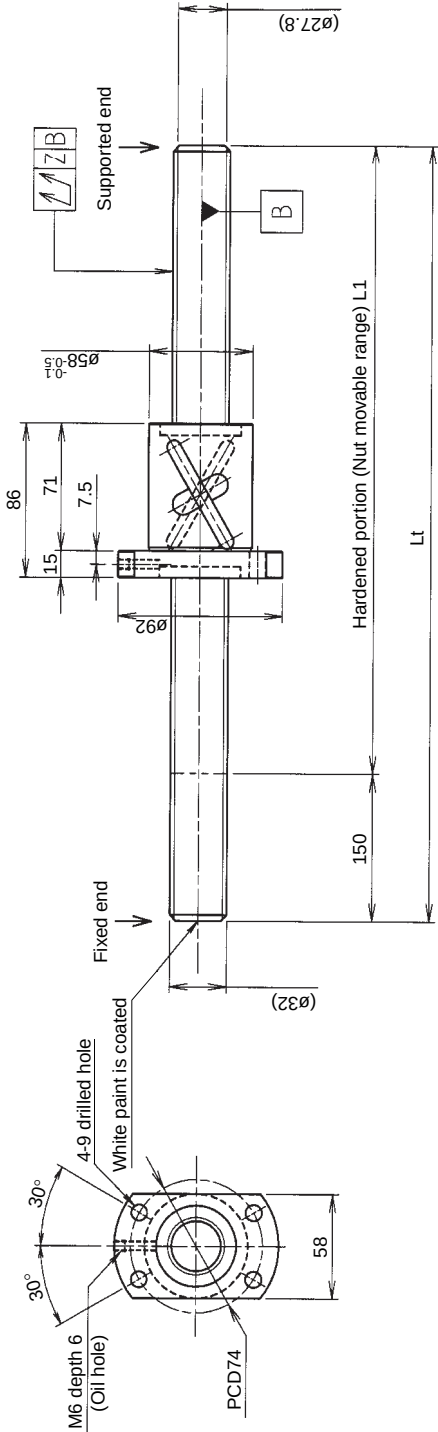
Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY3210ES-NKBR-1000A	~0.200	850	1000	0.120	Brush wiper	9.79
GY3210ES-NKBR-2000A		1850	2000	0.240		16.08
GY3210ES-NKBR-3000A		2850	3000	0.640		22.38

Overall length Thread length

UNFINISHED SHAFT ENDS

Screw shaft diameter ø32, Lead 32 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	32	Basic dynamic load rating	14600N
Lead	32	Basic static load rating	38900N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	1.5 turn 2 circuit	Surface treatment	Phosphate coating
Ball diameter	4.7625		

Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY3232BS-HUBR-1000A	~0.150	850	1000	0.120	Brush wiper	7.72
GY3232BS-HUBR-2000A		1850	2000	0.240		14.01
GY3232BS-HUBR-3000A		2850	3000	0.640		20.31

Notation of standard rolled ball screw

- A set of shaft and nut without additional end machining
GY3232BS-HUBR-□□□□A
- Nut only without additional end machining
GY3232BS-HUBR
- Screw shaft only without additional end machining
GY3232ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY3232BS-HUBR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY3232ZZ-ZZZZ-□□□□Y□□□□-CAY

Overall length Thread length

Table of optional specifications for each model

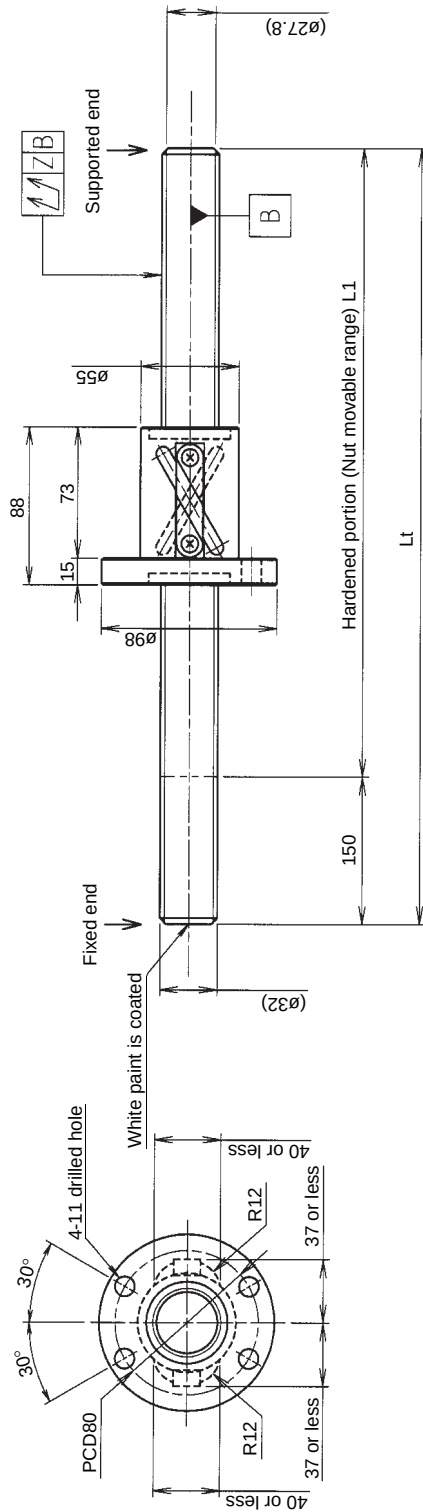
Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
o	o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

UNFINISHED SHAFT ENDS

Screw shaft diameter ø32, Lead 32 (Protruded tube type nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	32	Basic dynamic load rating	14600N
Lead	32	Basic static load rating	38900N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	1.5 turn 2 circuit	Surface treatment	Phosphate coating
Ball diameter	4.7625		

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
o	o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY3232BS-CTBR-1000A	~0.150	850	1000	0.120	Brush wiper	7.88
GY3232BS-CTBR-2000A		1850	2000	0.240		14.18
GY3232BS-CTBR-3000A		2850	3000	0.640		20.48

Notation of standard rolled ball screw

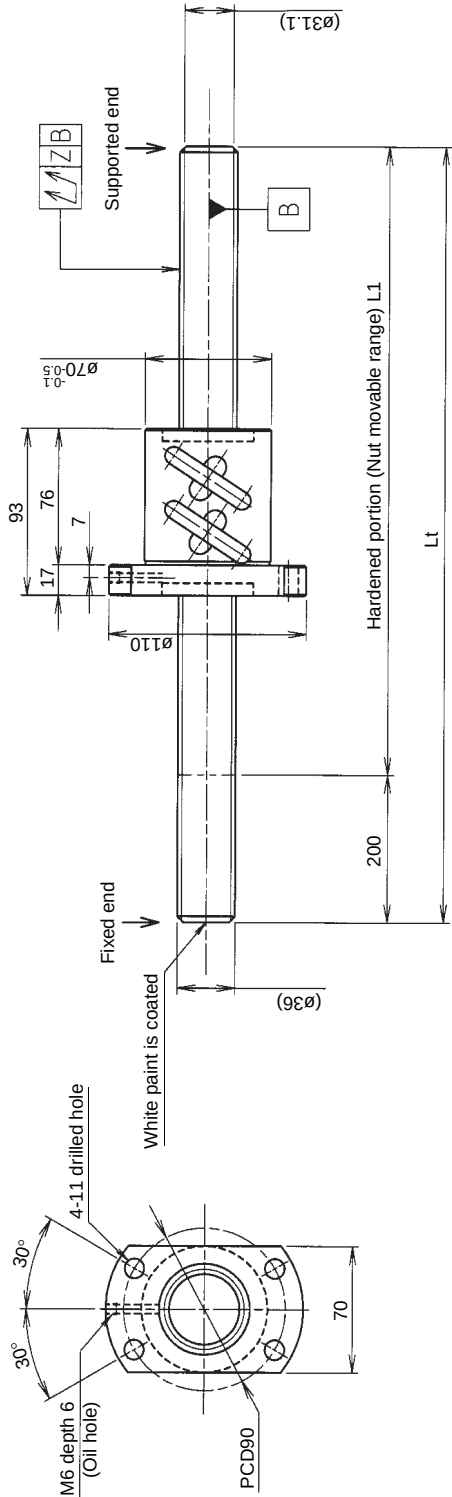
- A set of shaft and nut without additional end machining
GY3232BS-CTBR-□□□□A
- Nut only without additional end machining
GY3232BS-CTBR
- Screw shaft only without additional end machining
GY3232ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY3232BS-CTBR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY3232ZZ-ZZZZ-□□□□Y□□□□-CAY

Overall length Thread length

UNFINISHED SHAFT ENDS

Screw shaft diameter ø36, Lead 10 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	36	Basic dynamic load rating	35100N
Lead	10	Basic static load rating	98200N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 2 circuit	Surface treatment	Phosphate coating
Ball diameter	6.350		

Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY3610ES-HUBR-1000A	~0.200	800	1000	0.120	Brush wiper	10.28
GY3610ES-HUBR-2000A		1800	2000	0.240		18.25
GY3610ES-HUBR-3000A		2800	3000	0.630		26.22

Notation of standard rolled ball screw

- A set of shaft and nut without additional end machining
GY3610ES-HUBR-□□□□A
- Nut only without additional end machining
GY3610ES-HUBR
- Screw shaft only without additional end machining
GY3610ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY3610ES-HUBR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY3610ZZ-ZZZZ-□□□□Y□□□□-CAY

Overall length Thread length

Table of optional specifications for each model

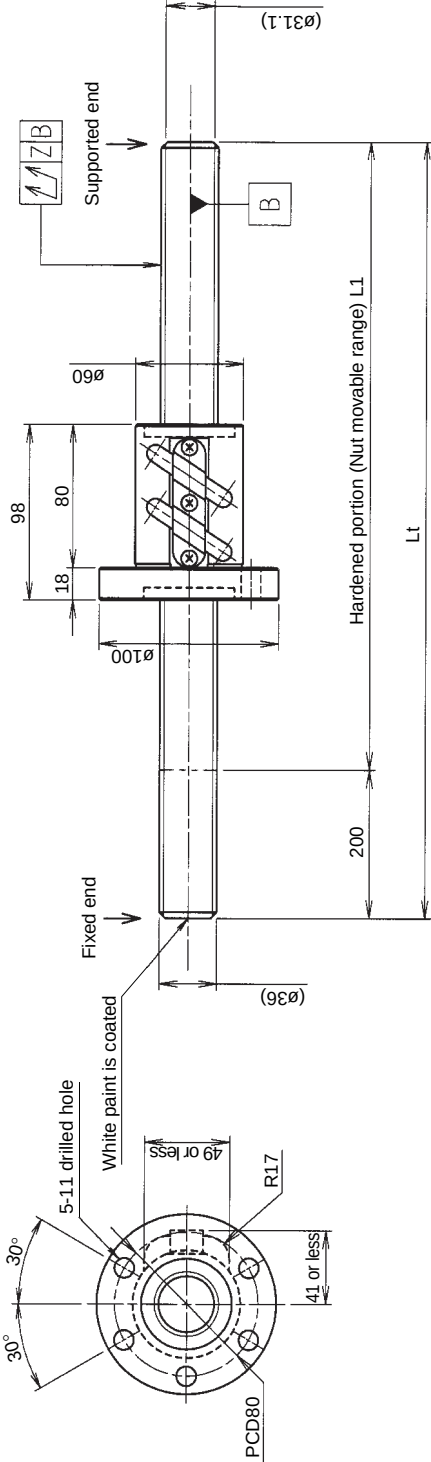
Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
o	o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

UNFINISHED SHAFT ENDS

Screw shaft diameter ø36, Lead 10 (Protruded tube type nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	36	Basic dynamic load rating	35100N
Lead	10	Basic static load rating	98200N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 2 circuit	Surface treatment	Phosphate coating
Ball diameter	6.350		

Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY3610ES-CTBR-1000A	~0.200	800	1000	0.120	Brush wiper	9.86
GY3610ES-CTBR-2000A		1800	2000	0.240		17.83
GY3610ES-CTBR-3000A		2800	3000	0.630		25.80

Notation of standard rolled ball screw

- A set of shaft and nut without additional end machining
GY3610ES-CTBR-□□□□A
- Nut only without additional end machining
GY3610ES-CTBR
- Screw shaft only without additional end machining
GY3610ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY3610ES-CTBR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY3610ZZ-ZZZZ-□□□□Y□□□□-CAY

Overall length Thread length

Table of optional specifications for each model

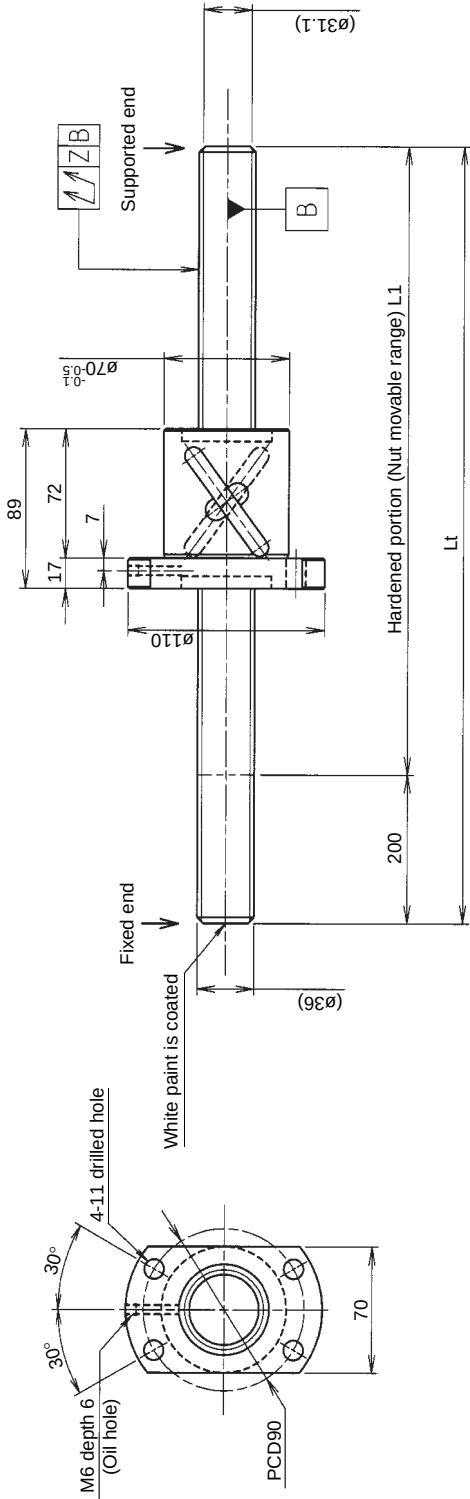
Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
o	o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

UNFINISHED SHAFT ENDS

Screw shaft diameter ø36, Lead 20 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	36	Basic dynamic load rating	35100N
Lead	20	Basic static load rating	98200N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 2 circuit	Surface treatment	Phosphate coating
Ball diameter	6.350		

Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY3620ES-HUBR-1000A	~0.200	800	1000	0.120	Brush wiper	10.20
GY3620ES-HUBR-2000A		1800	2000	0.240		18.17
GY3620ES-HUBR-3000A		2800	3000	0.630		29.14

Notation of standard rolled ball screw

- A set of shaft and nut without additional end machining
GY3620ES-HUBR-□□□□A
- Nut only without additional end machining
GY3620ES-HUBR
- Screw shaft only without additional end machining
GY3620ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY3620ES-HUBR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY3620ZZ-ZZZZ-□□□□Y□□□□-CAY

Overall length Thread length

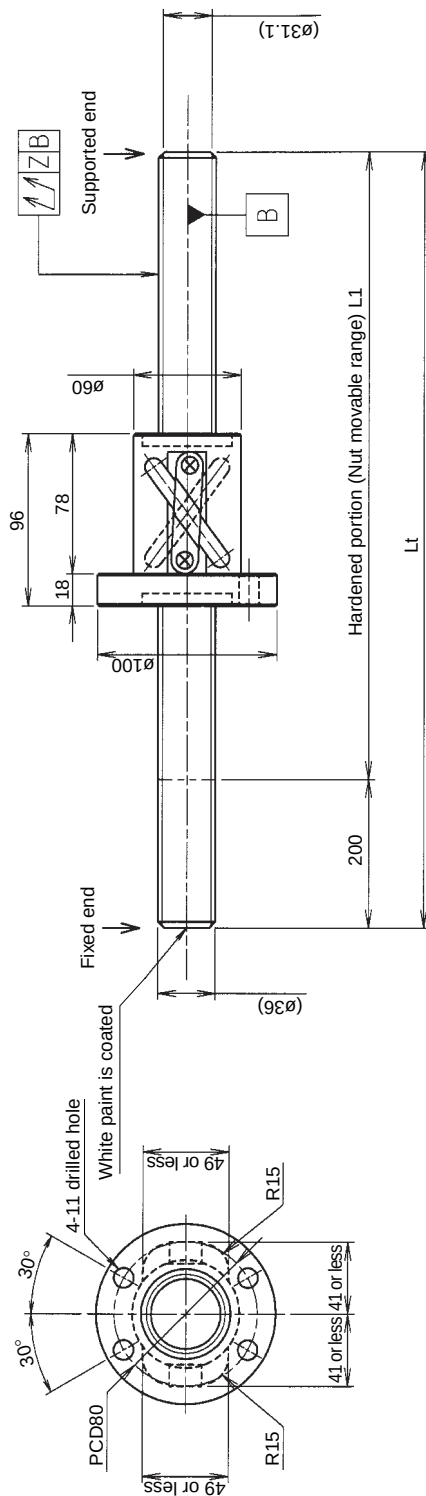
Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
o	o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Screw shaft diameter $\varnothing 36$, Lead 20 (Protruded tube type nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	36	Basic dynamic load rating	35100N
Lead	20	Basic static load rating	98200N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 2 circuit	Surface treatment	Phosphate coating
Ball diameter	6.350		

Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY3620ES-CTBR-1000A	~0.200	800	1000	0.120	Brush wiper	9.85
GY3620ES-CTBR-2000A		1800	2000	0.240		17.82
GY3620ES-CTBR-3000A		2800	3000	0.630		25.79

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
○	○	○	○	○

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Notation of standard rolled ball screw

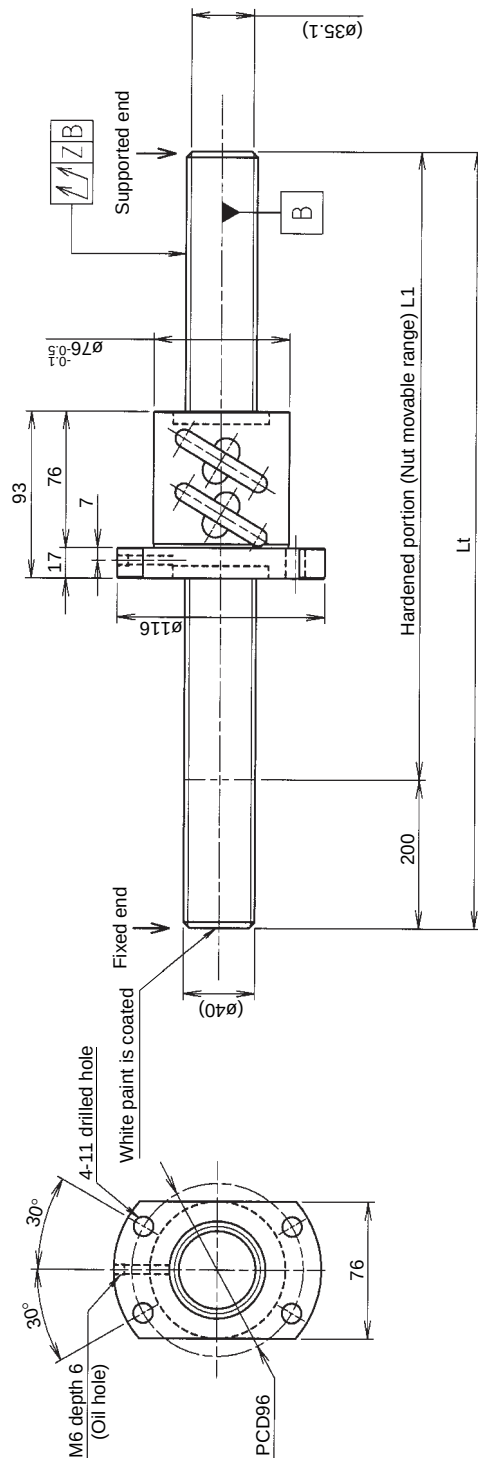
- A set of shaft and nut without additional end machining
GY3620ES-CTBR-□□□□A
- Nut only without additional end machining
GY3620ES-CTBR
- Screw shaft only without additional end machining
GY3620ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY3620ES-CTBR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY3620ZZ-ZZZZ-□□□□Y□□□□-CAY

Overall length Thread length

UNFINISHED SHAFT ENDS

Screw shaft diameter $\varnothing 40$, Lead 10 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	40	Basic dynamic load rating	37100N
Lead	10	Basic static load rating	105600N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 2 circuit	Surface treatment	Phosphate coating
Ball diameter	6.350		

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
○	○	○	○	○

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY4010ES-HUBR-2000A	~0.200	1800	2000	0.240	Brush wiper	22.34
GY4010ES-HUBR-3000A		2800	3000	0.400		32.18
GY4010ES-HUBR-4000A		3800	4000	0.640		42.02

Notation of standard rolled ball screw

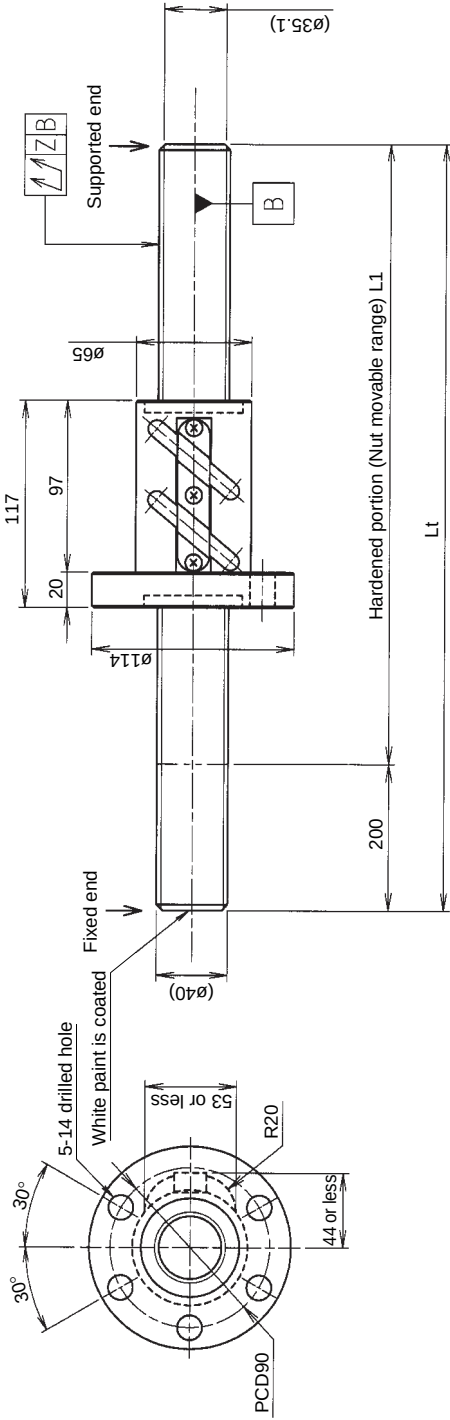
- A set of shaft and nut without additional end machining
GY4010ES-HUBR-□□□□A
- Nut only without additional end machining
GY4010ES-HUBR
- Screw shaft only without additional end machining
GY4010ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY4010ES-HUBR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY4010ZZ-ZZZZ-□□□□Y□□□□-CAY

Overall length Thread length

UNFINISHED SHAFT ENDS

Screw shaft diameter ø40, Lead 10 (Protruded tube type nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	40	Basic dynamic load rating	49600N
Lead	10	Basic static load rating	153700N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	3.5 turn 2 circuit	Surface treatment	Phosphate coating
Ball diameter	6.350		

Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY4010RS-CTBR-2000A	~0.200	1800	2000	0.240	Brush wiper	22.34
GY4010RS-CTBR-3000A		2800	3000	0.400		32.18
GY4010RS-CTBR-4000A		3800	4000	0.640		42.02

Notation of standard rolled ball screw

- A set of shaft and nut without additional end machining
GY4010RS-CTBR-□□□□A
- Nut only without additional end machining
GY4010RS-CTBR
- Screw shaft only without additional end machining
GY4010ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY4010RS-CTBR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY4010ZZ-ZZZZ-□□□□Y□□□□-CAY

Overall length Thread length

Table of optional specifications for each model

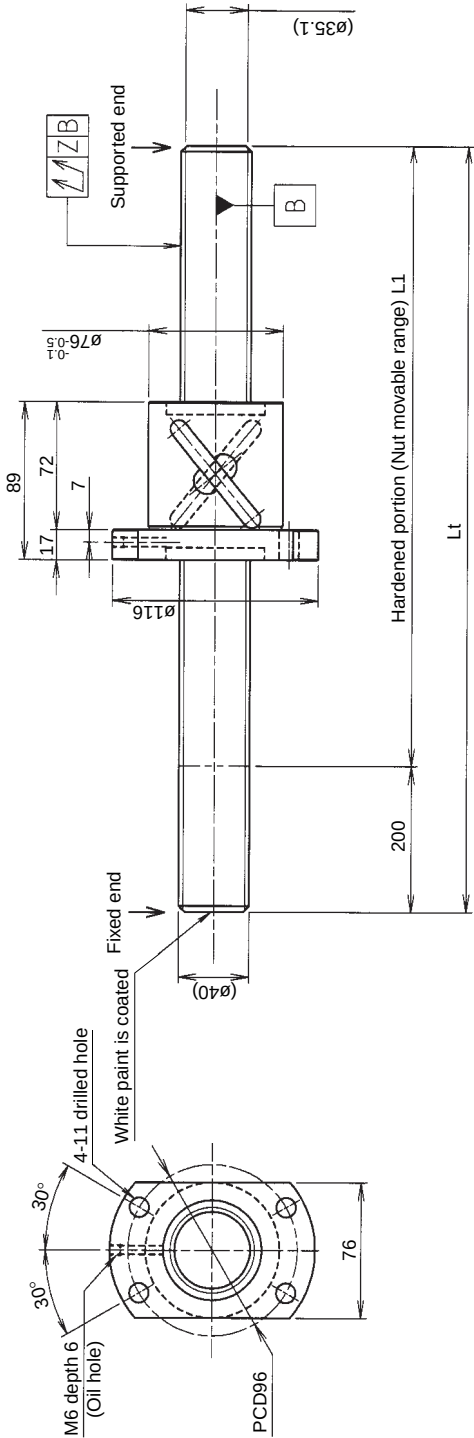
Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
o	o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

UNFINISHED SHAFT ENDS

Screw shaft diameter $\phi 40$, Lead 20 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	40	Basic dynamic load rating	37100N
Lead	20	Basic static load rating	105600N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 2 circuit	Surface treatment	Phosphate coating
Ball diameter	6.350		

Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY4020ES-HUBR-2000A	~0.200	1800	2000	0.240	Brush wiper	22.25
GY4020ES-HUBR-3000A		2800	3000	0.400		32.09
GY4020ES-HUBR-4000A		3800	4000	0.640		41.93

Notation of standard rolled ball screw

- A set of shaft and nut without additional end machining
GY4020ES-HUBR-□□□□A
- Nut only without additional end machining
GY4020ES-HUBR
- Screw shaft only without additional end machining
GY4020ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY4020ES-HUBR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY4020ZZ-ZZZZ-□□□□Y□□□□-CAY

Overall length Thread length

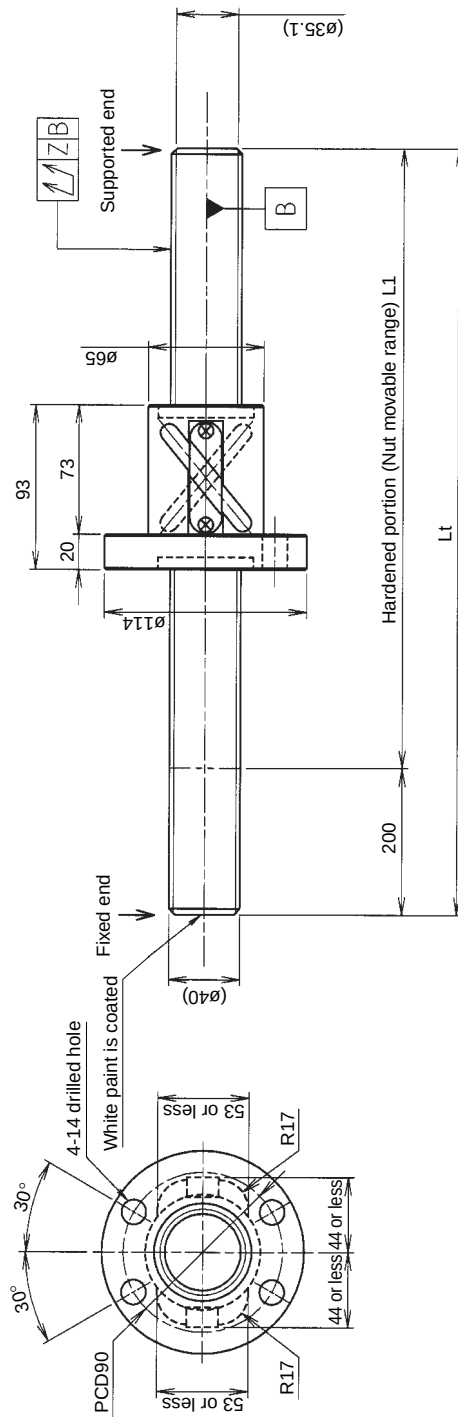
Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
o	o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μ m).

Screw shaft diameter $\varnothing 40$, Lead 20 (Protruded tube type nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	40	Basic dynamic load rating	37100N
Lead	20	Basic static load rating	105600N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	2.5 turn 2 circuit	Surface treatment	Phosphate coating
Ball diameter	6.350		

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
○	○	○	○	○

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Notation of standard rolled ball screw

- A set of shaft and nut without additional end machining
GY4020ES-CTBR-□□□□A
- Nut only without additional end machining
GY4020ES-CTBR
- Screw shaft only without additional end machining
GY4020ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY4020ES-CTBR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY4020ZZ-ZZZZ-□□□□Y□□□□-CAY

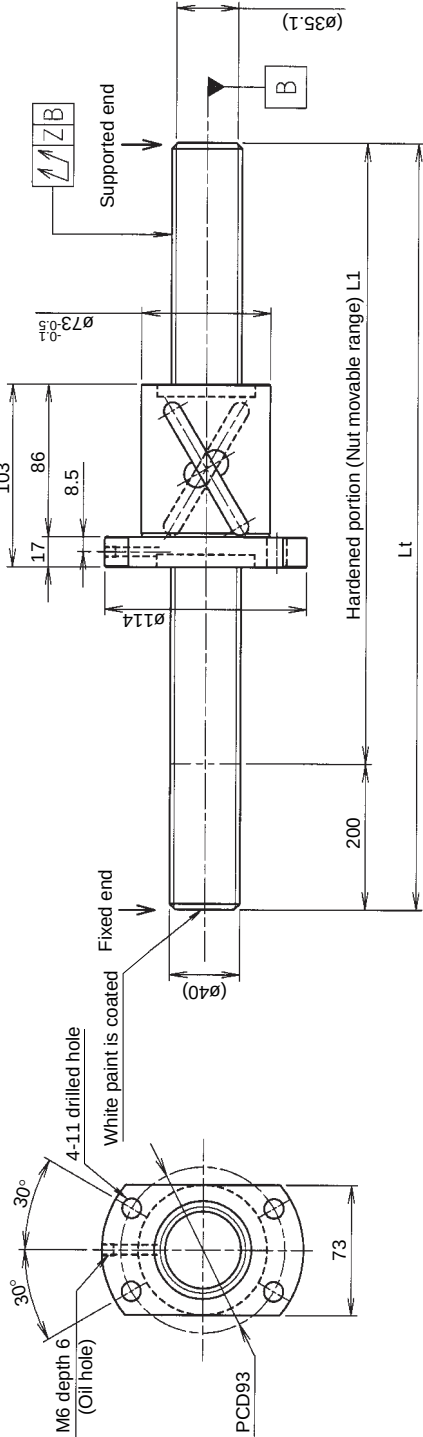
Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY4020ES-CTBR-2000A	~0.200	1800	2000	0.240	Brush wiper	22.01
GY4020ES-CTBR-3000A		2800	3000	0.400		31.85
GY4020ES-CTBR-4000A		3800	4000	0.640		41.69

Overall length Thread length

UNFINISHED SHAFT ENDS

Screw shaft diameter ø40, Lead 40 (Round nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	40	Basic dynamic load rating	23900N
Lead	40	Basic static load rating	66900N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	1.5 turn 2 circuit	Surface treatment	Phosphate coating
Ball diameter	6.350		

Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY4040BS-HUBR-2000A	~0.200	1800	2000	0.240	Brush wiper	22.29
GY4040BS-HUBR-3000A		2800	3000	0.400		32.13
GY4040BS-HUBR-4000A		3800	4000	0.640		41.97

Notation of standard rolled ball screw

- A set of shaft and nut without additional end machining
GY4040BS-HUBR-□□□□A
- Nut only without additional end machining
GY4040BS-HUBR
- Screw shaft only without additional end machining
GY4040ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY4040BS-HUBR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY4040ZZ-ZZZZ-□□□□Y□□□□-CAY

Overall length Thread length

Table of optional specifications for each model

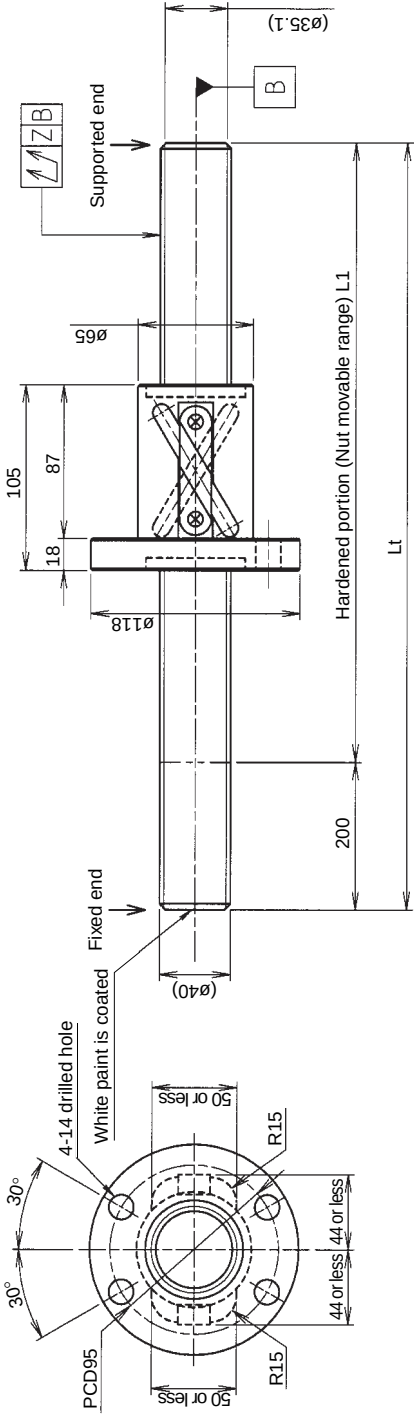
Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
o	o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

UNFINISHED SHAFT ENDS

Screw shaft diameter ø40, Lead 40 (Protruded tube type nut)

(Unit: mm)



Ball screw specifications

Screw shaft diameter	40	Basic dynamic load rating	23900N
Lead	40	Basic static load rating	66900N
Thread direction	Right-hand	Lubricant	Alvania Grease S2
Number of circuits	1.5 turn 2 circuit	Surface treatment	Phosphate coating
Ball diameter	6.350		

Model No.	Axial clearance	L ₁	L _t	Z	Wiper	Mass (kg)
GY4040BS-CTBR-2000A	~0.200	1800	2000	0.240	Brush wiper	22.19
GY4040BS-CTBR-3000A		2800	3000	0.400		32.03
GY4040BS-CTBR-4000A		3800	4000	0.640		41.87

Notation of standard rolled ball screw

- A set of shaft and nut without additional end machining
GY4040BS-CTBR-□□□□A
- Nut only without additional end machining
GY4040BS-CTBR
- Screw shaft only without additional end machining
GY4040ZZ-ZZZZ-□□□□D
- A set of shaft and nut with optional specifications
GY4040BS-CTBR-□□□□X□□□□-CAY
- Screw shaft only with optional specifications
GY4040ZZ-ZZZZ-□□□□Y□□□□-CAY

Overall length Thread length

Table of optional specifications for each model

Additional machining of shaft end	Surface treatment (Note 1)	Difference of grease	Direction of nut	Wiper removal
o	o	o	o	o

Note 1: The above-mentioned surface treatment is Anticorrosive black coating (coating thickness: 1 to 2 μm).

Ball Screw Related Products

Page

Support units BUK series, BUM series, BUT series

- Features of support units for ball screws _____ C_ 2
- Major parts and their materials, Bearing data _____ C_ 3~ 4

BUK series Shape and dimension

- Bearing bore diameter 6 to 25 mm
- Fixed end unit · Supported end unit _____ C_ 5

BUM series Shape and dimension

- Bearing bore diameter 6 to 25 mm
- Fixed end unit · Supported end unit _____ C_ 5

BUT series Shape and dimension

- Bearing bore diameter 20 to 40 mm
- Fixed end unit _____ C_ 7

Mounting the Support Units _____ C_ 8 ~ 9

KURODA Dust preventive grease series

- KURODA C-GREASE _____ C_10 ~ 11
- KURODA S-GREASE _____ C_12 ~ 13

Lubrication unit for ball screws LUBSEAL® _____ C_14 ~ 15

Slide screws with resin nuts _____ C_16 ~ 17

Support Units

BUK (square type), BUM (round type), BUT (round type)

Features

- **Type which is fit to the mounting pattern can be selected!**

· Two kinds: Square type (BUK series) and Round type (BUM series, BUT series)

The type can be selected according to the mounting configuration.

- **Bearing which meets the specifications of ball screw has been adopted!**

· In BUK (square type) and BUM (round type), DF type angular contact ball bearings with accuracy grade P5 and contact angle of 30° are used.

· In BUT (round type), DF type high-thrust angular contact ball bearings with accuracy grade P4 and contact angle of 60° are used.

- **Anti-slacking function incorporated!**

· The lock nut especially for bearing assures a high-accuracy mounting and has an anti-slacking function incorporated.

BUK (Square type)

BUM (Round type)



BUT (Round type)



☐ Notation of Model Number of Support Unit

Example:	Model		-	Diameter of bearing mount (mm)	Combination
	BUK			15	F
	Square type:	BUK	Diameter of fixed side bearing mount 6, 8, 10, 12, 15, 20, 25	F : Fixed end unit	
				S : Supported end unit	
	Round type:	BUM	Diameter of supported side bearing mount 6, 8, 10, 15, 20, 25	A (set): F + S (*Set only for BUK)	
				No mark: F + Support bearing	
Round type:	BUT	Diameter of fixed side bearing mount 20, 25, 30, 35, 40	* For combination on BUT, only fixed end unit is available. There is no mark for combination.		

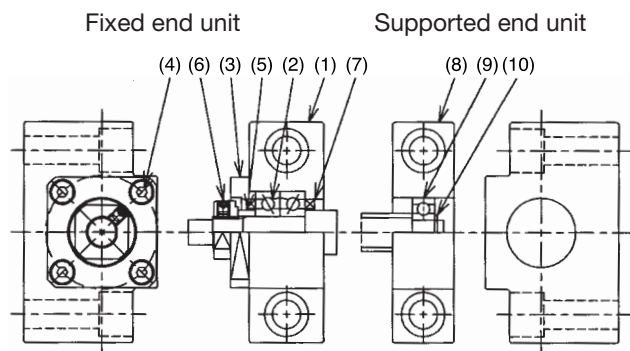
☐ Combination with ball screw

Model	Bore diameter of fixed side bearing (mm)	Bore diameter of supported side bearing (mm)	Applicable series						
			FE/FG	DP	HG	GP	GE/GG	GW	GY
BUK BUM	6	6	-	0601	0606	-	-	0802	08 □
BUK BUM	8	6	-	08 □ 1002	0812	08 □ 10 □	08 □ 10 □ 12 □	10 □	10 □
BUK BUM	10	8	1010 12 □	12 □	1230	12 □	1010 12 □	12 □	12 □
BUK BUM	12	10	15 □	1404	15 □ 1632	15 □	15 □ 16 □	15 □ 1632	15 □ 1632
BUK BUM	15	15	20 □	-	20 □	20 □	20 □	20 □ 2040	20 □ 2040
BUK BUM	20	20	25 □	-	2550	--	25 □	25 □	25 □ 2806
BUK BUM	25	25	-	-	3264	-	32 □	-	32 □
BUT	30	-	-	-	-	-	-	-	36 □
BUT	35	-	-	-	-	-	-	-	40 □

• □ in the above table indicates the kind of lead. For details, see the specifications of each size.

□ Major parts and materials

• Square type: BUK series

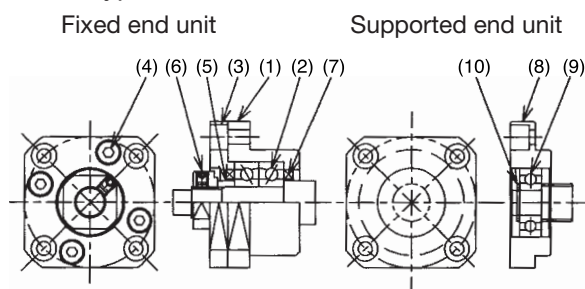


BUK/BUM series Fixed end unit Major parts and materials

No.	Description	Material	Q'ty	Remark
1	Bearing housing	Structural steel	1	Blackening
2	Bearing		1 set	
3	Cover flange	Structural steel	1	Blackening
4	Hexagon socket head cap screw		4	
5	Spacer	Structural steel	1	Blackening
6	Lock nut (with set piece)	Structural steel (brass set piece)	1	Blackening
7	Oil seal	Synthetic rubber	2	

- When the above parts are used with the rolled ball screw, an optional color (Material: structural steel, blackening) is required.
- Round type: For BUM (Fixed end unit), no blackening treatment is applied on the housing body and the mounting end face.
- Part Nos. 1, 2 and 3 are united. Do not disassemble the unit.

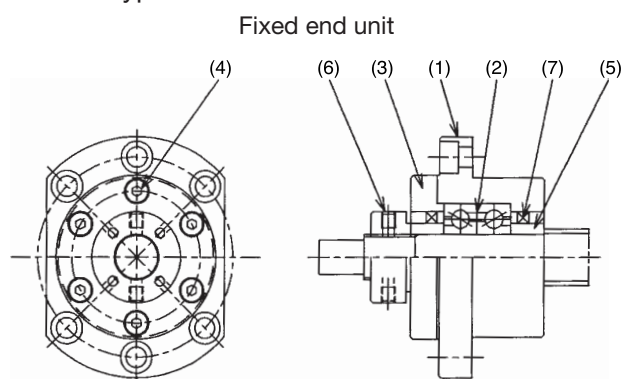
• Round type: BUM series



BUK/BUM series Supported end unit Major parts and materials

No.	Description	Material	Q'ty	Remark
8	Bearing housing	Structural steel	1	Blackening
9	Bearing		1	
10	Clip washer		1	

• Round type: BUT series



BUT series Fixed end unit Major parts and materials

No.	Description	Material	Q'ty	Remark
1	Bearing housing	Structural steel	1	Rustproof black coating
2	Bearing		1 set	
3	Cover flange	Structural steel	1	Rustproof black coating
4	Hexagon socket head cap screw		6 or 8	
5	Spacer	Structural steel	2	Rustproof black coating
6	Lock nut (with set piece)	Structural steel (brass set piece)	1	Rustproof black coating
7	Oil seal	Synthetic rubber	2	

- Round type: For BUT (Fixed end unit), no rustproof black coating is applied on the housing body and the mounting end face.
- Part Nos. 1, 2 and 3 are united. Do not disassemble the unit.

□ Bearing data

- BUK/BUM series Fixed side bearing
(Combined angular contact ball bearing)

Model No. of support unit	Model No. of bearing	Axial force			Maximum starting torque (N·cm)
		Basic dynamic load rating (N)	Preloaded (N)	Rigidity (N/μm)	
BUK-6, BUM-6	706ADFP5	2670	30	38	0.5
BUK-8, BUM-8	708ADFP5	4400	49	52	0.8
BUK-10, BUM-10	7000ADFP5	6170	120	95	2
BUK-12, BUM-12	7001ADFP5	6770	140	100	2.2
BUK-15, BUM-15	7002ADFP5	7740	170	120	2.3
BUK-20, BUM-20	7204ADFP5	18200	350	193	5.5
BUK-25, BUM-25	7205ADFP5	20600	500	230	7.5

- BUK/BUM series Supported End Bearing
(Deep groove radial bearing)

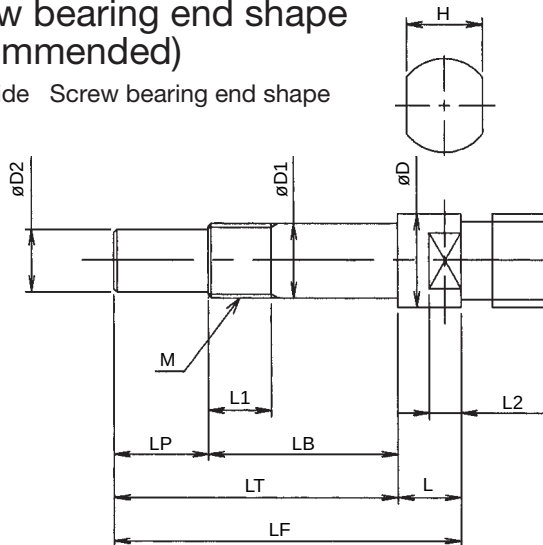
Model No. of support unit	Model No. of bearing	Basic dynamic load rating (N)
BUK-6S	606ZZ	1720
BUK-8S, BUM-8S	608ZZ	2620
BUK-10S, BUM-10S	6000ZZ	3600
BUK-15S, BUM-15S	6002ZZ	4400
BUK-20S, BUM-20S	6204ZZ	10100
BUK-25S	6205ZZ	11000

- BUT series Fixed side bearing (High-thrust angular contact ball bearing)

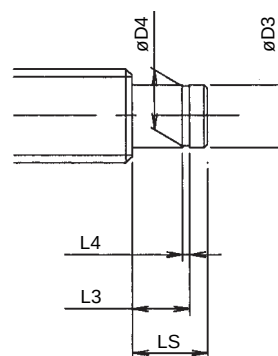
Model No. of support unit	Model No. of bearing Inner diameter X Outer diameter X Width/ Combination/Accuracy mark (Width when combined in one row)	Axial force			Maximum starting torque (N·cm)
		Basic dynamic load rating (N)	Critical load (N)	Rigidity (N/μm)	
BUT-20	20 X 47 X 30-DFP4	25900	32000	735	10
BUT-25	25 X 62 X 30-DFP4	29900	46400	981	15
BUT-30	30 X 62 X 30-DFP4	29900	46400	981	15
BUT-35	35 X 72 X 30-DFP4	32500	54300	1230	20
BUT-40	40 X 72 X 30-DFP4	32500	54300	1230	20

□ Screw bearing end shape (recommended)

Fixed side Screw bearing end shape



Supported side End shape



- Square type: BUK, Round type: Screw bearing end shape dimension for BUM (recommended) (Unit: mm)

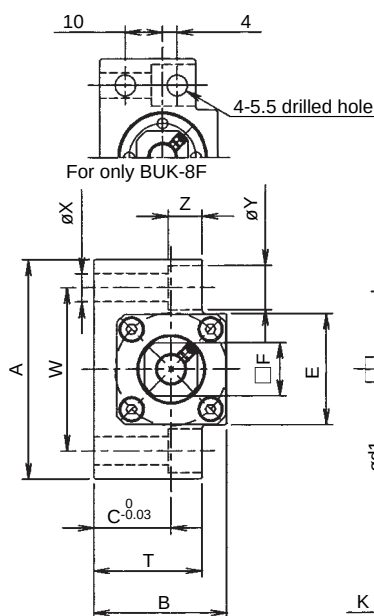
Model No. (Fixed side)	LP	øD2 (Tolerance)	LB	øD1 (Tolerance)	LT	L	øD	LF	L2	H (Tolerance)	L1	M	Model No. (Fixed side)	LS	L3 (Tolerance)	øD3 (Tolerance)	L4 (Tolerance)	øD4 (Tolerance)
BUK-6 BUM-6	7.5	4.5 0	22.5	6 -0.002 -0.007	30	7	9.5	37	3	8	7	M6 X0.75	-	-	-	-	-	-
BUK-8 BUM-8	10	6 -0.008	27	8 -0.002 -0.008	37	8	11.5	45	4	10	9	M8 X1	BUK-6S BUM-6S	9	6.8	6 -0.002 -0.010	0.8 +0.1	5.7 0
BUK-10 BUM-10	15	8 0	30	10 -0.008	45	10	14	55	5	12	10	M10 X1	BUK-8S BUM-8S	10	7.9	8 -0.004 -0.012	0.9 0	7.6 -0.06
BUK-12 BUM-12	15	10 -0.009	30	12 -0.003 -0.011	45	10	15	55	5	12	10	M12 X1	BUK-10S BUM-10S	12	9.15	10 -0.004 -0.012	1.15 0	9.6 -0.09
BUK-15 BUM-15	20	12 0	40	15 -0.011	60	15	20	75	5	17	15	M15 X1	BUK-15S BUM-15S	12	10.15	15 -0.004 -0.012	+0.14 0	14.3 -0.11
BUK-20 BUM-20	27	15 -0.011	53	20 -0.003 -0.012	80	20	25	100	10	22	16	M20 X1	BUK-20S BUM-20S	18	15.35	20 -0.004 -0.013	0	19 0
BUK-25 BUM-25	33	20 -0.013	62	25 -0.005 -0.014	95	27	32	122	12	27	20	M25 X1.5	BUK-25S	20	16.35	25 -0.004 -0.013	1.35 0	23.9 -0.21

(Note) When applied to the series in stock, the end shape may be different from the recommended shape depending on the shape of unprocessed shaft of the product in stock. For the details of the shape of the series in stock, see the instruction drawings for end processing in Page E_1 and the subsequent pages.

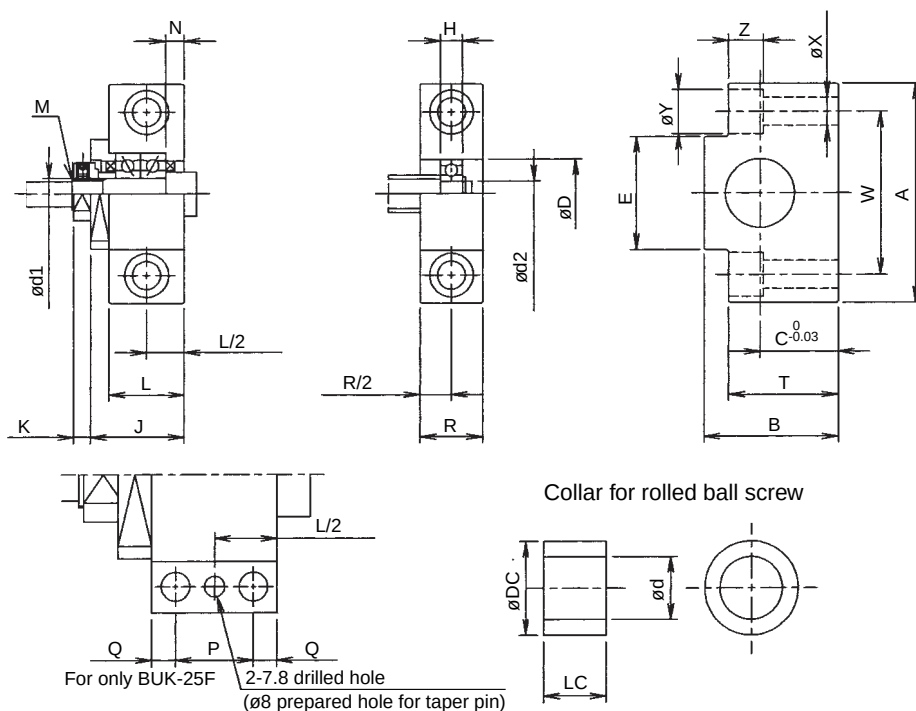
Support units for small-sized factory automation equipment /BUK series

Shape and dimension

☐ Square type Fixed end unit



☐ Square type Supported end unit



☐ Square type Fixed end unit shape and dimension

(Unit: mm)

Model No.	ød1	A	B	C	T	E	□F	J	K	L	N	P	Q	W	øX	øY	Z	M
BUK-6	6	42	25	13	20	18	12	20	5.5	20	3.5	-	-	30	5.5	9.5	11	M6 X 0.75
BUK-8F	8	52	32	17	26	25	14	23	7	23	4	-	-	38	6.6	11	12	M8 X 1
BUK-10F	10	70	43	25	35	35.5	17	30	5.5	24	6	-	-	52	9	14	11	M10 X 1
BUK-12F	12	70	43	25	35	35.5	19	30	5.5	24	6	-	-	52	9	14	11	M12 X 1
BUK-15F	15	80	50	30	40	41	22	31	12	25	5	-	-	60	11	17	15	M15 X 1
BUK-20F	20	95	58	30	45	56	30	52	10	42	10	22	10	75	11	17	15	M20 X 1
BUK-25F	25	105	68	35	25	66	36	61	13	48	14	30	9	85	11	-	-	M25 X 1.5

☐ Square type Supported end unit shape and dimension (Unit: mm)

Model No.	ød2	øD	H	R	A	B	C	T	E	W	øX	øY	Z	Clip washer
BUK-6S	6	17	6	15	52	32	17	26	25	38	6.6	11	12	Nominal 6
BUK-8S	8	22	7	20	70	43	25	35	35.5	52	9	14	11	Nominal 8
BUK-10S	10	26	8	20	70	43	25	35	35.5	52	9	14	11	Nominal 10
BUK-15S	15	32	9	20	80	50	30	40	41	60	11	17	15	Nominal 15
BUK-20S	20	47	14	26	95	58	30	45	56	75	11	17	15	Nominal 20
BUK-25S	25	52	15	30	105	68	35	25	66	85	11	-	-	Nominal 25

☐ Collar for rolled ball screw (Unit: mm)

ModelNo.	ød	øDC (Tolerance)	LC
GY/W-C06	6	9.5	7
GY/W-C08	8	11.5	8
GY/W-C10	10	14	10
GY/W-C12	12	15	10
GY/W-C15	15	20	15
GY/W-C20	20	25	20
GY/W-C25	25	32	25

(Note 1) When the above parts are used with rolled ball screw, color is required.
 (Note 2) Color is not included in the standard parts of support unit. When used with rolled ball screw, the optional collar is available on request.

☐ Weight

Square type Fixed end unit		Square type Supported end unit	
Model	Weight (kg)	Model	Weight (kg)
BUK-6	0.10	---	---
BUK-8F	0.23	BUK-6S	0.17
BUK-10F	0.49	BUK-8S	0.37
BUK-12F	0.50	BUK-10S	0.36
BUK-15F	0.65	BUK-15S	0.46
BUK-20F	1.48	BUK-20S	0.76
BUK-25F	1.90	BUK-25S	0.98

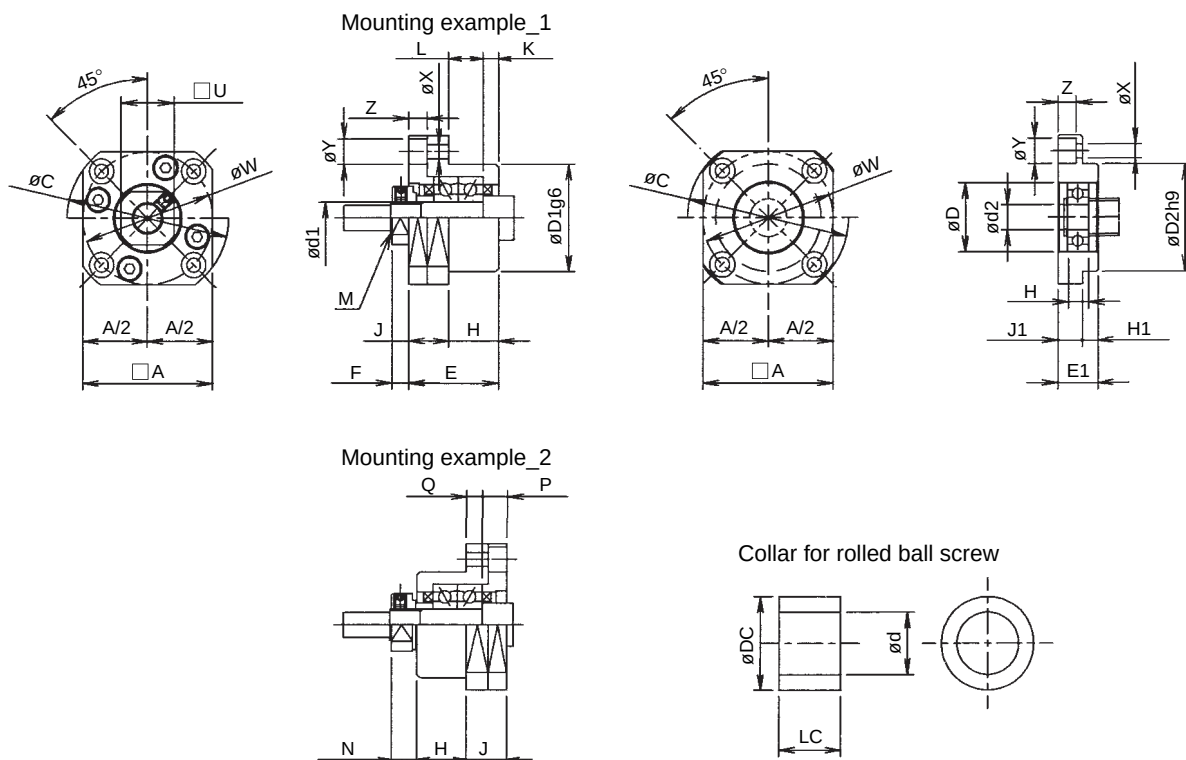
(Note 1) The above weight does not include that of the packing material.

Support units for small-sized factory automation equipment /BUM series

Shape and dimension

☐ Round type Fixed end unit

☐ Round type Supported end unit



☐ Round type Shape and dimension of fixed end unit

(Unit: mm)

Model No.	ød1	□A	øC	øD1	E	F	H	J	K	L	N	P	Q	□U	øW	øX	øY	Z	M
BUM-6F	6	28	35	22	20	5.5	13	7	3.5	9.5	6.5	4.5	2.5	12	28	2.9	5.5	3.5	M6 X 0.75
BUM-8F	8	35	43	28	23	7	14	9	4	10	8	5	4	14	35	3.4	6.5	4	M8 X 1
BUM-10F	10	42	52	34	29	5.5	16	13	5	11	8.5	8	5	17	42	4.5	8	6	M10 X 1
BUM-12F	12	44	54	36	29	5.5	16	13	5	11	8.5	8	5	19	44	4.5	8	6	M12 X 1
BUM-15F	15	52	63	40	32	12	17	15	6	11	14	8	7	22	50	5.5	9.5	6	M15 X 1
BUM-20F	20	68	85	57	52	10	30	22	10	20	14	14	8	30	70	6.6	11	10	M20 X 1
BUM-25	25	79	98	63	57	13	30	27	10	20	20	17	10	36	80	9	15	13	M25 X 1.5

☐ Round type Shape and dimension of supported end unit (Unit: mm)

ModelNo.	ød2	øD	H	□A	øC	øD2	E1	J1	H1	W	øX	øY	Z	Clipwasher
BUM-6S	6	17	6	35	43	28	10	6	4	35	3.4	6.5	4	Nominal 6
BUM-8S	8	22	7	42	52	34	13	8	5	42	4.5	8	6	Nominal 8
BUM-10S	10	26	8	44	54	36	15	7	8	44	4.5	8	6	Nominal 10
BUM-15S	15	32	9	52	63	40	17	9	8	50	5.5	9.5	6	Nominal 15
BUM-20S	20	47	14	68	85	57	20	11	9	70	6.6	11	10	Nominal 20

☐ Collar for rolled ball screw (Unit: mm)

ModelNo.	ød	øDC(Tolerance)	LC
GY/W-C06	6	9.5	7
GY/W-C08	8	11.5	8
GY/W-C10	10	14	10
GY/W-C12	12	15	10
GY/W-C15	15	20	15
GY/W-C20	20	25	20
GY/W-C25	25	32	25

(Note 1) When the above parts are used with rolled ball screw, color is required.

(Note 2) Color is not included in the standard parts of support unit.

When used with rolled ball screw, the optional collar is available on request.

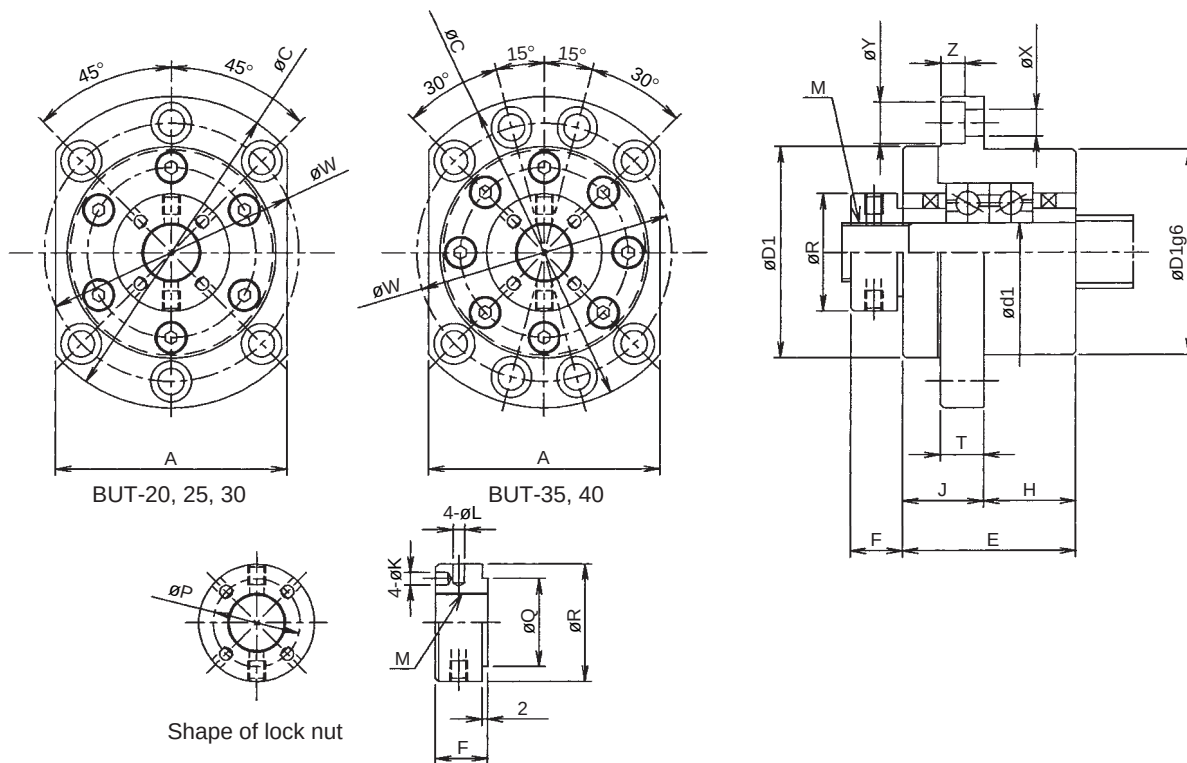
☐ Weight

Round type Fixed end unit		Round type Supported end unit	
Model	Weight (kg)	Model	Weight (kg)
BUM-6F	0.08	---	---
BUM-8F	0.18	BUM-6S	0.06
BUM-10F	0.24	BUM-8S	0.11
BUM-12F	0.26	BUM-10S	0.12
BUM-15F	0.40	BUM-15S	0.17
BUM-20F	1.09	BUM-20S	0.38
BUM-25F	1.51	---	---

(Note 1) The above weight does not include that of the packing material.

Support Units for machine tools/BUT series

Shape and dimension



☐ Round type Shape and dimension of fixed end unit

(Unit: mm)

Model No.	ød1	A	øC	øD1	E	F	H	J	T	øR	øP	øK	øL	Q	øW	øX	øY	Z	M
BUT-20	20	80	106	70	60	18	32	28	15	40	30	4.3	4	30	88	9	14	8.5	M20 X 1
BUT-25	25	100	130	85	66	20	33	33	18	45	35	4.3	4	40	110	11	17.5	11	M25 X 1.5
BUT-30	30	100	130	85	66	20	33	33	18	50	40	4.3	5	40	110	11	17.5	11	M30 X 1.5
BUT-35	35	106	142	95	66	25	33	33	18	55	45	4.3	5	50	121	11	17.5	11	M35 X 1.5
BUT-40	40	106	142	95	66	25	33	33	18	60	50	4.3	5	50	121	11	17.5	11	M40 X 1.5

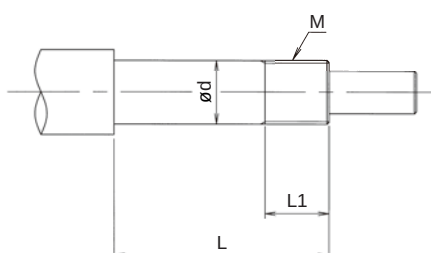
☐ Weight

Round type Fixed end unit	
Model	Weight (kg)
BUT-20	2.0
BUT-25	3.4
BUT-30	3.3
BUT-35	3.9
BUT-40	3.8

(Note 1) The above weight does not include that of the packing material.

☐ BUT (round type) Shape of bearing mount (reference)

(Unit: mm)



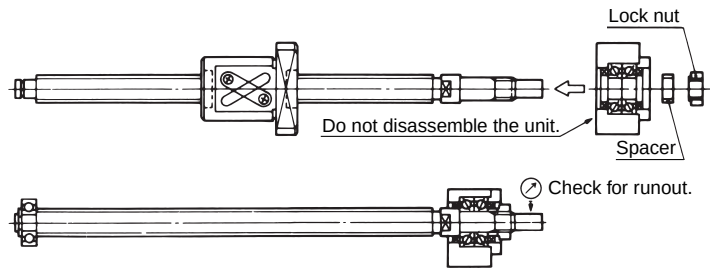
Model No. of support unit	Dimension of bearing mount			
	ød	L	L1	M
BUT-20	20 ^{+0.003} _{-0.012}	81	23	M20 X 1.0
BUT-25	25 ^{+0.003} _{-0.012}	89	25	M25 X 1.5
BUT-30	30 ^{+0.003} _{-0.012}	89	25	M30 X 1.5
BUT-35	35 ^{+0.004} _{-0.015}	94	30	M35 X 1.5
BUT-40	40 ^{+0.004} _{-0.015}	94	30	M40 X 1.5

Support Units

Mounting procedure for the square type support unit

Assembling the support unit

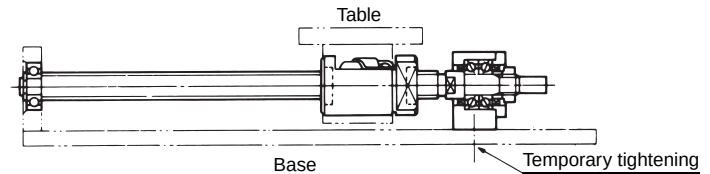
- 1) Fit the support unit to the ball screw.
 - Do not disassemble the unit.
 - Exercise care to prevent the oil seal from peeling off.
 - When tightening the lock nut, check the mounting portion for a coupling, etc. for runout.
- 2) Fit the supported bearing and fix it with a snap ring.



Mounting the support unit

- 1) Temporarily tighten the ball screw nut to the nut bracket.
- 2) Temporarily tighten the support unit to the base.

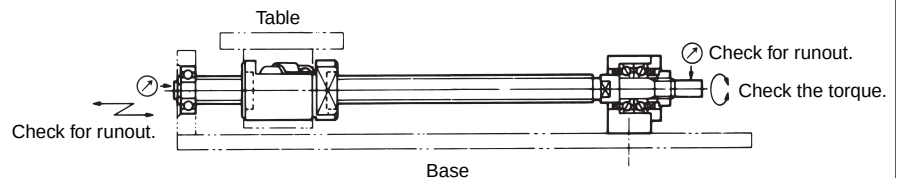
Move the table toward the support unit side to center the ball screw nut and adjust by the following method so that the table can be moved smoothly:



- (1) Adjust the position of the square type support unit with the proper shim to meet the nut bracket alignment.
- (2) Adjust the nut position having some gap between the round type support unit and the base to meet the nut bracket alignment.
- (3) Adjust the position of the nut bracket with proper shim to meet the square type or round type support unit.
- (4) Adjust the nut position having some gap between the square type or round type support unit and the nut bracket.

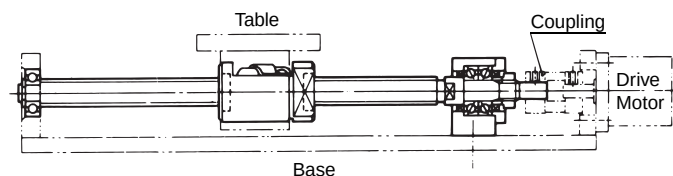
Mounting the supported side bearing and checking the alignment

- 1) Move the table toward the supported side and center the ball screw. Temporarily tighten the supported side bearing housing to the base.
 - Check for runout.
- 2) While reciprocating the table, make adjustment so that the whole unit can move smoothly.
- 3) Tighten and fix the bearing housing while checking the alignment or runout of each part.



Coupling the ball screw to the motor

- 1) Mount the motor bracket to the ball screw with a high accuracy.
- 2) Connect the motor and the ball screw with a coupling.
- 3) After completion of assembling, give the unit a thorough shakedown.

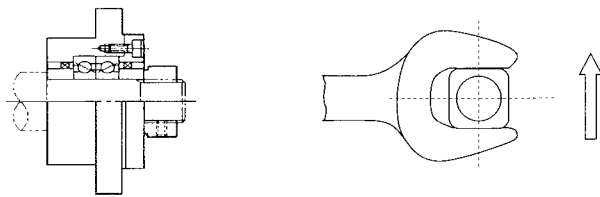


Mounting procedure for the round type support unit

Fitting the support unit to the ball screw

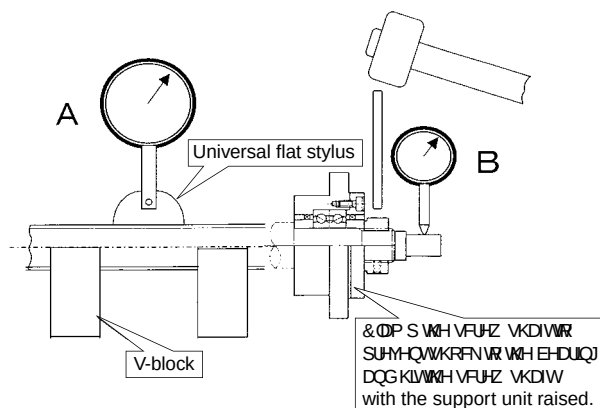
When the bearing lock nut is fixed with a spanner or the like, the lock nut may shift in the arrow direction due to the gap between the external thread and internal thread. This causes mis-alignment and bending of the screw shaft.

Similarly to poor alignment, bending of the screw shaft results in reduction of feed accuracy and shortening of service life. In addition, it may cause abnormal sounds, vibration and other accidents such as break of the screw shaft.



Cautions for fitting the bearing lock nut

- (1) Lightly tighten the bearing lock nut.
- (2) Support the screw shaft with V-block, apply a dial gauge to A or B shown in the illustration and find a position at which the deflection of the pointer is maximized while turning the screw shaft.
- (3) Using a hammer as shown in the illustration, lightly hit the bearing lock nut at the above-mentioned backlash alignment position to reduce the deflection of the pointer.

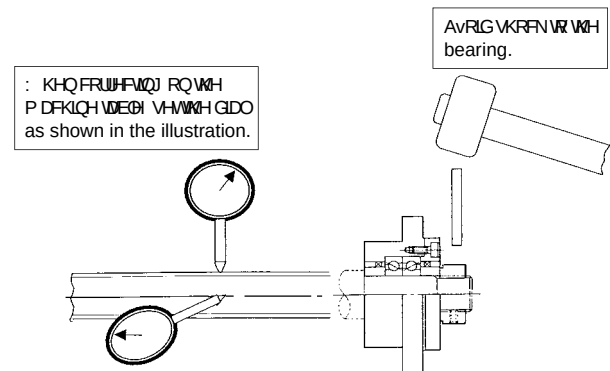


* For the recommended tightening torque, consult Kuroda.

Fitting the bearing lock nut after fixing the support unit to the machine table

- (1) Set a dial gauge vertically and horizontally to the outside diameter of the screw shaft.
- (2) Lightly tighten the bearing lock nut.
- (3) As shown in the illustration, lightly hit the bearing lock nut with a hammer to reduce the deflection of the pointer.

If the pointer of the dial gauge does not deflect when the bearing lock nut is lightly hit, loosen the lock nut and repeat the procedure to prevent shock to the bearing.



Dust preventive grease KURODA C-GREASE

C-GREASE meets the needs for dust prevention on actuators required in semiconductor manufacturing machines and electronic component devices.

■ Features

- Superior dust prevention
- Stable torque characteristics
- High lubricating performance
- Rust prevention performance equivalent to that of lithium grease

■ Notation

C1-080G-J (Contents: 80g in bellows type container)

C1-400G-J (Contents: 400g in bellows type container)

* For the can (1kg, 1.5kg) and the syringe (50cc), contact us.

* The color of the bellows type container for KURODA C-GREASE is white.

■ Major properties

Appearance	Yellow white
Thickener	Urea
Base oil	Synthetic oil
Consistency	280 (No.2)
Operating temperature range	-30 ~ +150°C

⚠ Precautions on handling

Before using C-GREASE, carefully read the precautions on the “Material Safety Data Sheet” (MSDS) of the oil type. For the “Material Safety Data Sheet”, request to the distributor you purchased the product.

Major applications	KURODA C-GREASE
⚠ Caution Precautions on handling	• C-GREASE is flammable (flash point: 220°C). Keep from flame. • Use protective glasses in handling. If it enters your eye, eye irritation may be caused. • Use protective gloves in handling. If it touches your skin, an irritation may be caused. • Do not eat. (If you eat it, you suffer from diarrhea and vomiting.) • Keep away from children. • After use, seal hermetically to prevent intrusion of dirt or water from.
Emergency measures	• If it enters your eye, wash the eye with clean water for over 15 minutes and consult a doctor. • If it touches your skin, fully wash with soap and water. • If swallowed, do not induce vomiting. Immediately consult a doctor.
Disposal of waste oil and waste container	• For disposal, take a proper measure according to the “Waste Disposal and Public Cleaning Law”.
Storage	• Avoid direct sunlight, keep away from fire or heat and store in a dark place.

Performance data

■ Dust prevention property

Number of dust particles from ball screw (particle size 0.13 μ m or more)

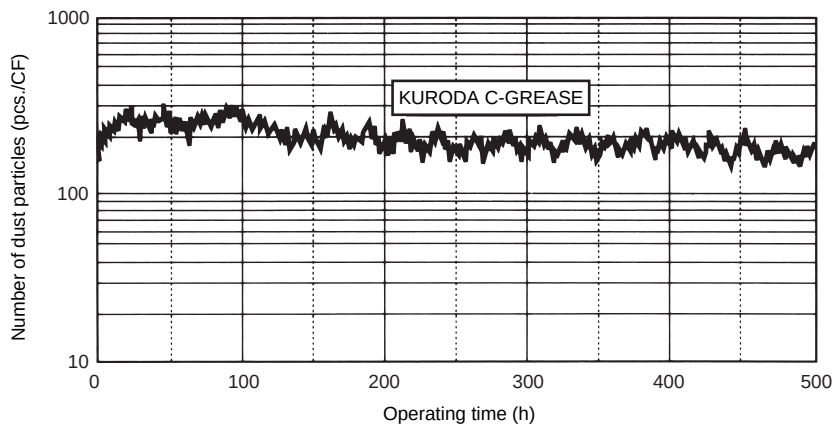


Fig. 1 Test conditions

Ball screw Shaft diameter: 20 mm
 Lead: 20 mm
 Preloaded : 800N
 Revolution speed: 1200 min⁻¹
 Stroke: 250 mm
 Amount of grease: 1 cc
 Measurement interval: 1h

Number of dust particles from ball screw (particle size 0.13 μ m or more)

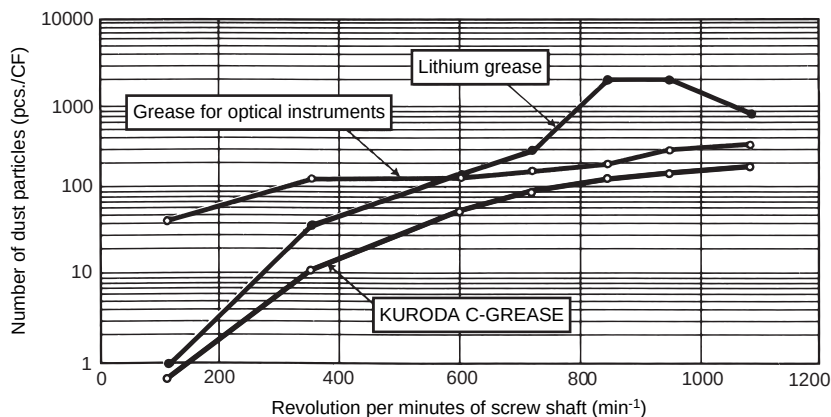
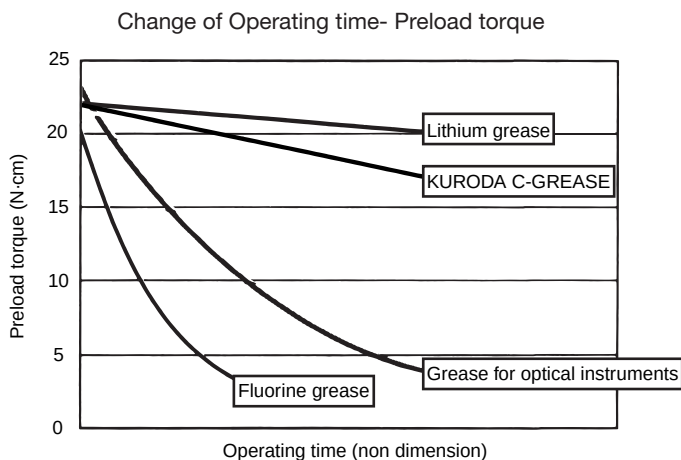


Fig. 2 Test conditions

Ball screw Shaft diameter: 20 mm
 Lead: 20 mm
 Preloaded : 800N
 Stroke: 250 mm
 Amount of grease: 1 cc
 These values are mean values taken after 100 times of measurements for each revolution speed. The operating time of ball screw during those measurements is about 240 hours.

■ Torque characteristic

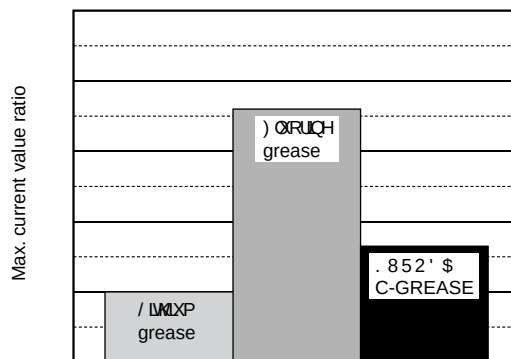


Test conditions are the same as those in Fig. 2.

The less the preload torque decreases, the higher the lubricating performance is.

■ Lubricating performance

Comparison of grease resistance



The above bars indicate the maximum current value ratio at 500mm/s (1500min⁻¹) for a single-axis robot. The current value of drive motor is proportional to the load torque. Therefore, the larger the current value is, the larger the grease resistance becomes (the revolution becomes stiff).

Dust preventive grease KURODA S-GREASE

S-GREASE meets the needs for dust prevention on actuators required in semiconductor manufacturing machines, liquid crystal devices and medial equipment.

■ Features

- Most suitable for clean environment!
- High lubricating performance!
- Superior torque characteristics!
- High rust prevention performance!

■ Notation

S1-080G-J (Contents: 80g in bellows type container)

S1-400G-J (Contents: 400g in bellows type container)

* For the can (1kg, 1.5kg) other than the above containers, contact us.

* The color of the bellows type container for KURODA S-GREASE is chocolate color.

■ Major properties

Appearance	Yellow white
Thickener	Urea
Base oil	Mineral oil
Consistency	280 (No.2)
Operating temperature range	-20 ~ +150°C

⚠ Precautions on handling

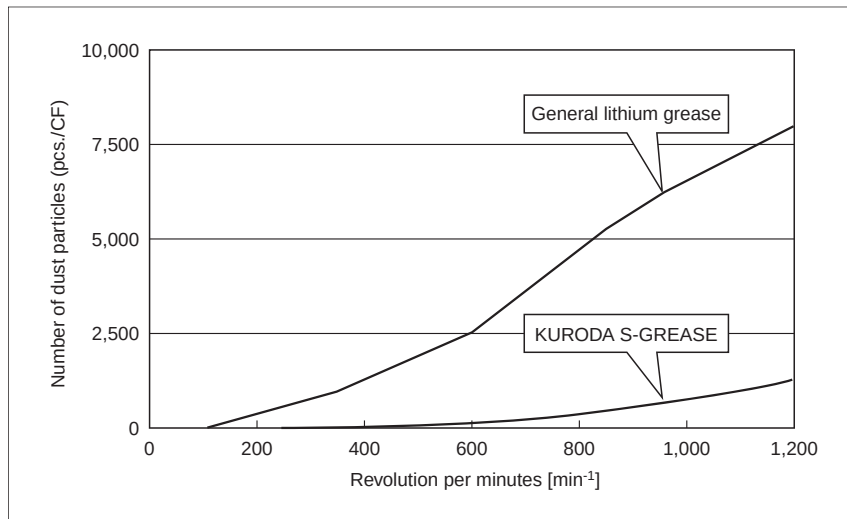
Before use, carefully read the precautions on the “Material Safety Data Sheet” (MSDS) of the oil type. For the “Material Safety Data Sheet”, request to the distributor you purchased the product.

Major applications	KURODA S-GREASE
 Caution Precautions on handling	• S-GREASE is flammable (flash point: 195°C). Keep from flame. • Use protective glasses in handling. If it enters your eye, eye irritation may be caused. • Use protective gloves in handling. If it touches your skin, an irritation may be caused. • Do not eat. (If you eat it, you suffer from diarrhea and vomiting.) • Keep away from children. • After use, seal hermetically to prevent intrusion of dirt or water from.
Emergency measures	• If it enters your eye, wash the eye with clean water for over 15 minutes and consult a doctor. • If it touches your skin, fully wash with soap and water. • If swallowed, do not induce vomiting. Immediately consult a doctor.
Disposal of waste oil and waste container	• For disposal, take a proper measure according to the “Waste Disposal and Public Cleaning Law”.
Storage	• Avoid direct sunlight, keep away from fire or heat and store in a dark place.

Performance data

■ Dust prevention property

- Compared to general lithium grease, S-GREASE exhibits a superior dust prevention property.

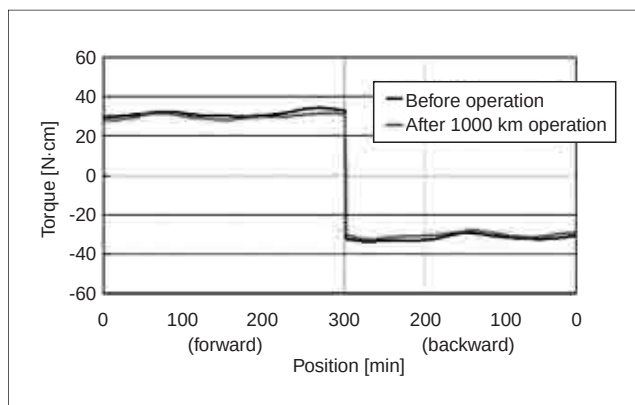


Test conditions	
Screw shaft diameter	ø20mm
Lead	20mm
Axial load	800N

■ Lubricating performance: Comparison of torque changes between before and after operation

Test conditions	
Screw shaft diameter	ø20mm
Lead	20mm
Preload torque	30N·cm

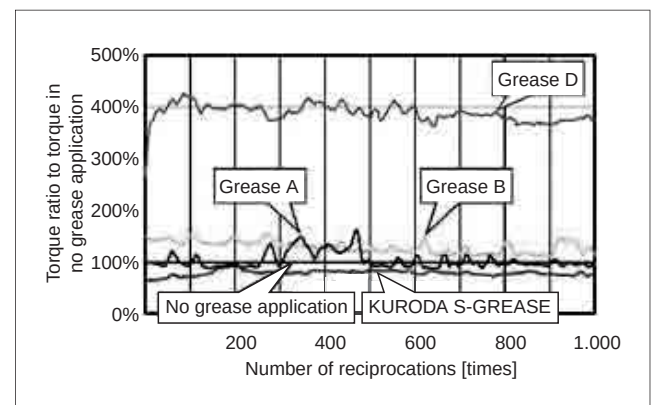
- After 1000 km operation, no change of torque is recognized.



■ Torque characteristics: Comparison with other greases having a dust prevention performance

Test conditions	
Screw shaft diameter	ø16mm
Lead	2mm
Operating stroke	0.5mm

- A stable torque characteristic is exhibited in reciprocating operation.



■ Rust prevention performance

- #1 rust prevention performance at the bearing rust prevention test (52°C, 48 hours)

*#1 means that no rust was formed under the above test conditions.

Lubrication unit for ball screw LUBSEAL®

LUBSEAL is a lubrication unit which contacts the ball rolling portion of the screw shaft groove and supplies an appropriate amount of lubricant (grease).

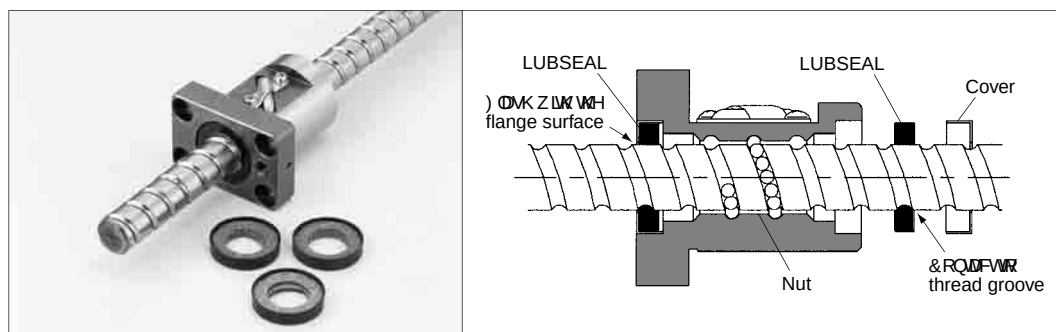
It can fit into the both ends of ball screw nut and becomes compact in size.

Most suitable for semiconductor/liquid crystal manufacturing machines, detection devices, food machines, medical equipment, machine tools and automobile production facilities.

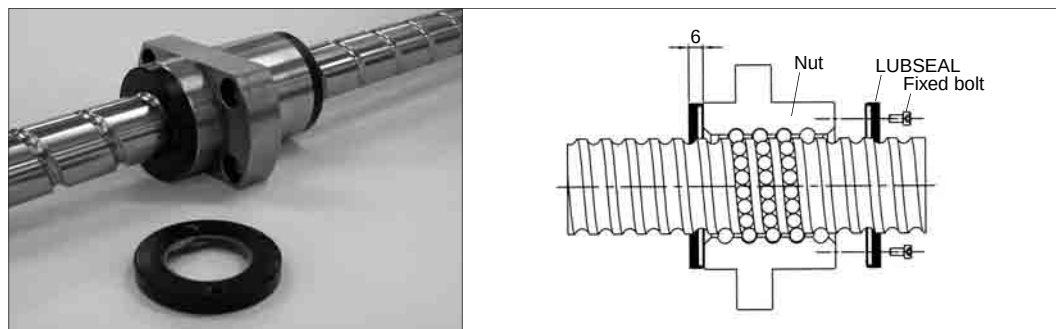
■ Features

- Assembled into the standard ball screw unit simply, neatly and in compact.
- Clean and environmentally friendly
- Maintenance period can be substantially extended.

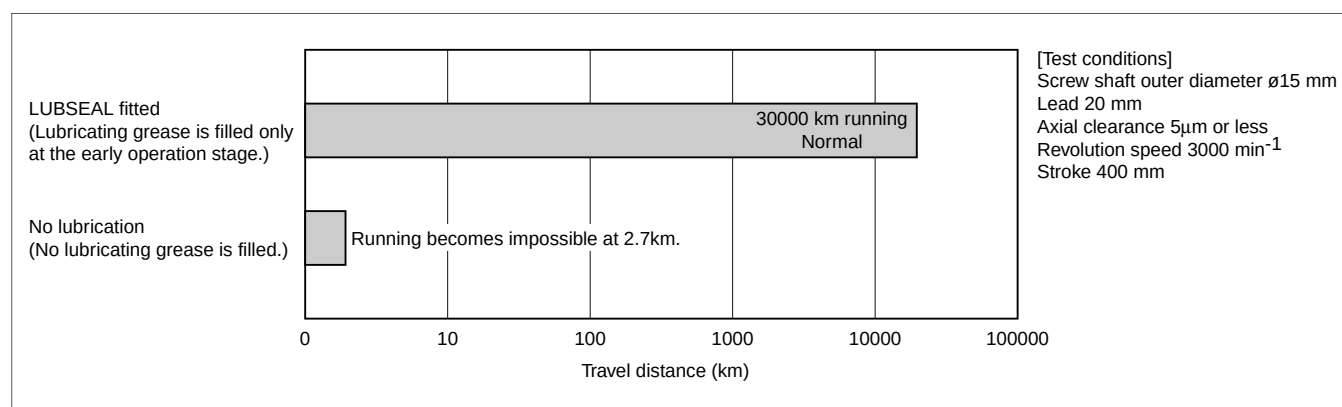
■ G series (including rolled series), fitted to a ball screw



■ F series, fitted to a ball screw



■ Performance



■ Notation by model No.

GG	15	20	AS	-	B	A	S	R	-	Total length	X	Thread length	-	C5	F
FG	15	10	PS	-	H	P	S	R	-	Total length	X	Thread length	-	C5	F
↑ Series					↑ LUBSEAL fitted product										

■ Series and size

Shaft diameter	Lead	Series to which LUBSEAL can be fitted			
		FE/FG	GE/GG	GP	GY/GW (Note 1)
10	10	o			
12	10	o			
	20	o			
15	5	o	o	o	o
	10	o	o		o
	15		o		
	20	o	o		o
20	5	o	o	o	o
	10	o	o		o
	20	o	o		o
25	5	o	o		o
	10	o	o		o
	20		o		
	25	o	o		o

(Note 1) LUBSEAL cannot be fitted to the GY/GW series square nut.

⚠ Precautions on handling

(Note 1) For lubrication, grease having the same ingredients as those of Alvania Grease S2 filled in the nut is impregnated.
For use of other greases, consult us.

(Note 2) For LUBSEAL fitting on ball screws other than the above series, stainless ball screws and surface treated ball screws, consult us.

(Note 3) The maximum operating temperature is 50°C. For the case where it is 50°C or higher, consult us.

(Note 4) Do not use organic solvent and illuminating kerosene.

Slide screws with resin nuts

Shaft diameter $\phi 10, \phi 12$ Accuracy grade, C7, C10



Low price and compact design compared to ball screws

Accuracy

(Unit: mm)

Model No.	Mean travel deviation	Shaft center runout	Initial axial play
PY1004GP(SP)*-0400A	C10 $\pm 0.21/300$	0.15	0.1 or less
PY1004GP(SP)*-0600A		0.25	
PY1010GP(SP)*-0400A		0.15	
PY1010GP(SP)*-0600A		0.25	
PY1204GP(SP)*-0400A		0.15	
PY1204GP(SP)*-0800A		0.32	
PY1210GP(SP)*-0400A		0.15	
PY1210GP(SP)*-0800A		0.32	
PW1004GP(SP)*-0400A	C7 $\pm 0.05/300$	0.10	0.05 or less
PW1004GP(SP)*-0600A		0.15	
PW1010GP(SP)*-0400A		0.10	
PW1010GP(SP)*-0600A		0.15	
PW1204GP(SP)*-0400A		0.10	
PW1204GP(SP)*-0800A		0.20	
PW1210GP(SP)*-0400A		0.10	
PW1210GP(SP)*-0800A		0.20	

Shaft (Rolled)

- Two materials can be selected by material.
GP: S45C (No quench hardening)
SP: SUS304 (No quench hardening)
- Surface roughness in the sliding direction of thread groove: Ra0.05 μ m

Nut (Injection mold)

- Stable dimension
High rigidity engineering plastic (PPS) for sliding is used.

Major physical properties of nut material PPS

Item	Unit	PPS	PET GF 30 %	Aluminum die casting	Test method
Specific gravity	-	2.55	1.60	2.70	ASTM-D792
Tensile strength	MPa	165	118	343	ASTM-D638
Bending strength	MPa	225	181	-	ASTM-D790
Coefficient of linear expansion	X 10 ⁻⁵ /K	1.7~1.8	2.5	2.1	ASTM-D696

Notation

- Standard product (without screw shaft machining)

PY 10 04 SPR - 0600 A
(1) (2) (3) (4) (5) (6) (7)

- (With t screw shaft machining)

PY 10 04 SPR - 0600 X 0546 - CA Y
(1) (2) (3) (4) (5) (6) (7) (8) (9)

- Series: PY (C10) or PW (C7)
- Shaft diameter (mm): 10 or 12
- Lead (mm): 04 or 10
- Shaft material: G (S45C) or S (SUS304)
- Nut material: P (PPS)
- Torsion direction: R (right) or L (left) (R or L indicated at the mark * in the left table.)
- Whole shaft length (mm)
- Thread length (mm)
- Accuracy grade: CA (PY) or C7 (PW)

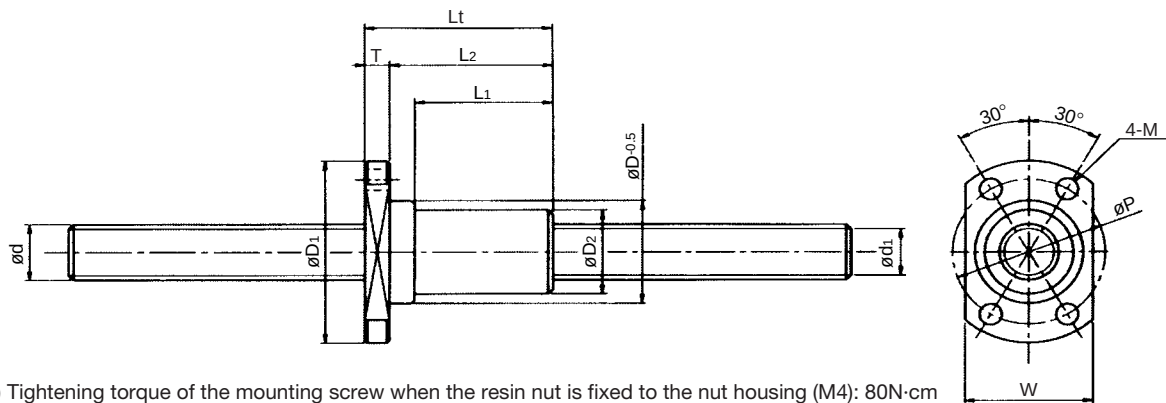
Lubrication

- Recommended grease:
“Alvania Grease S2” by Showa Shell Sekiyu
- Anti-rust oil applied to the shaft and the resin nut has a lubricating property and it can be also used as lubricant.
- The initial inspection shall be conducted in 2 to 3 months after operation start.
If grease is very dirty, remove the old grease and apply new grease.
- After the initial inspection, re-grease once a year.

Permissible axial load and revolution speed

Shaft diameter (mm)	Lead (mm)	Permissible axial load (practical index) (N)	Permissible revolution speed (min ⁻¹)
$\phi 10$	4	70	3000
	10		
$\phi 12$	4	100	3000
	10		

Shape and dimension



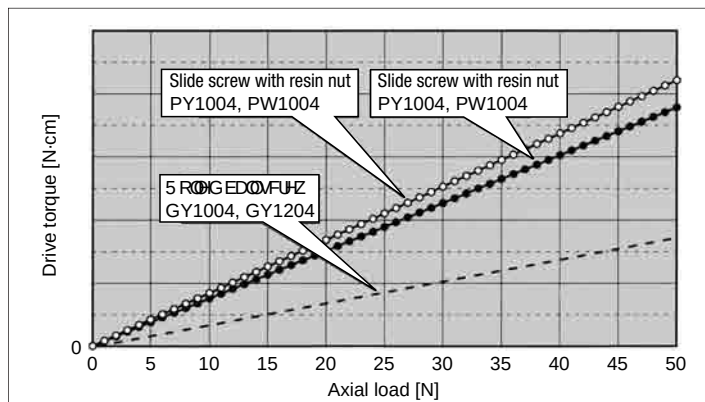
(Note) Tightening torque of the mounting screw when the resin nut is fixed to the nut housing (M4): 80N·cm

(Unit: mm)

Model No.	Nominal			Screw shaft		Nut										Accuracy grade	Axial clearance		
	Shaft diameter d	Lead L	Torsion	Overall length	Root diameter d ₁	Nut barrel				Flange									
						Outside diameter		Overall length Lt	Nut barrel length		Diameter D ₁	Thickness T	Mounting hole		Width W				
D	D ₂	L ₂	L ₁	PCD.P	M														
PY1004GP(SP)R-0400A	10	4	Right	400	(7.8)	19	16	32	27	22	36	5	28	4.5 drilled	22	C10	0.10 or less		
PY1004GP(SP)R-0600A				600															
PY1004GP(SP)L-0400A			Left	400															
PY1004GP(SP)L-0600A				600															
PY1010GP(SP)R-0400A		10	Right	400															
PY1010GP(SP)R-0600A				600															
PY1204GP(SP)R-0400A	12	4	Right	400	(10.0)	22	18	38	33	28	39	5	31	4.5 drilled	26	C10	0.10 or less		
PY1204GP(SP)R-0800A				800															
PY1210GP(SP)R-0400A		10	Right	400														(9.6)	800
PY1210GP(SP)R-0800A				800															
PW1004GP(SP)R-0400A	10	4	Right	400	(7.8)	19	16	32	27	22	36	5	28	4.5 drilled	22	C7	0.05 or less		
PW1004GP(SP)R-0600A				600															
PW1004GP(SP)L-0400A			Left	400															
PW1004GP(SP)L-0600A				600															
PW1010GP(SP)R-0400A		10	Right	400															
PW1010GP(SP)R-0600A				600															
PW1204GP(SP)R-0400A	12	4	Right	400	(10.0)	22	18	38	33	28	39	5	31	4.5 drilled	26	C7	0.05 or less		
PW1204GP(SP)R-0800A				800															
PW1210GP(SP)R-0400A		10	Right	400														(9.6)	800
PW1210GP(SP)R-0800A				800															

Axial load and drive torque

Index of torque required for motor



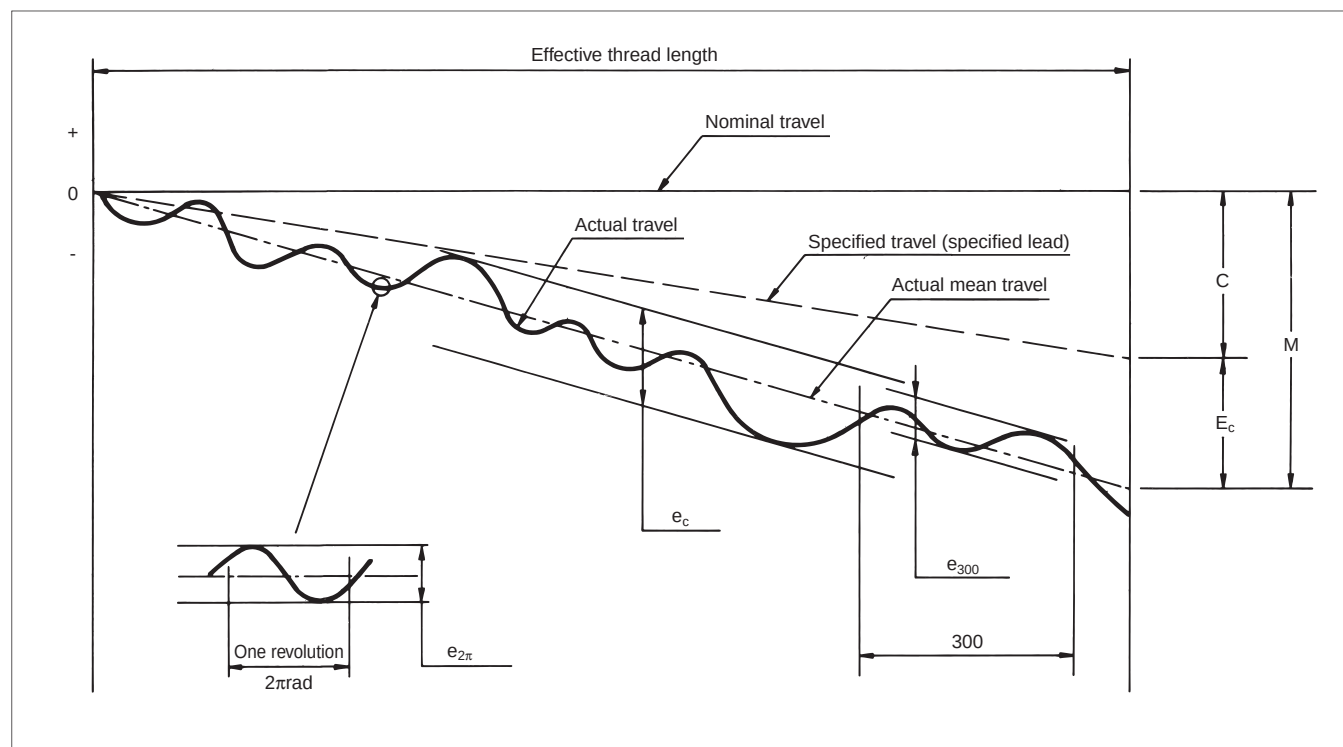
Technical Data of Ball Screws

Lead Accuracy	D_ 2 ~ 3
Mounting Accuracy and Tolerance	D_ 4 ~ 7
Preload Torque	D_ 8
Designing of Screw Shaft	D_ 9 ~ 12
Life Time Calculation	D_13 ~ 14
Optimum Designing of Ball Screw	D_15 ~ 20
Driving Torque	D_21 ~ 22
Guide for Ball Screw Selection	D_23 ~ 29
Ball Screw Ordering Information	D_30 ~ 31

Technical Data of Ball Screws

Lead Accuracy

The lead accuracy of ball screws is defined by the following characteristics in accordance with JIS Standard. The permissible values are shown in Table 2 and 3



Terms and definitions

Specified Lead

In general, it is the same as the nominal lead. However, it sometimes represents a nominal lead value corrected consciously when the purpose of application so requires. (Example: Nominal lead 10mm → Specified lead 9.9995mm).

Specified Travel Target Value “C”

This is a target value of the cumulative lead to be preset where contraction and expansion of the screw shaft due to the temperature change or some external load should be considered. This value will be determined by experiments or experiences if necessary. For presetting procedures, see the specified travel setting procedures on page 538.

Actual Travel

A travel obtained by successive measurement of an actual ball screw or by measurement on a section including the axial line of the screw shaft.

Actual Mean Travel “M”

A straight line representing the trend of actual travel. It is obtained by the least-squares method or an approximation similar to this method using the curve representing the actual travel corresponding to the effective travel of a nut or the effective thread length of the screw shaft.

Actual Mean Travel Deviation “Ec”

A value obtained by subtracting the specified travel target value (C) from the actual mean travel (M).

Variation

The maximum difference of the actual travel contained between two lines drawn parallel to the actual mean travel. It is prescribed by e_c , e_{300} , $e_{2\pi}$.

e_c : Variation for the effective travel of nut or the effective thread length of screw shaft.

e_{300} : Variation for a length of 300 mm arbitrarily taken within the effective thread length of screw shaft.

$e_{2\pi}$: Variation for one revolution (2π rad) made within the effective thread length of screw shaft.

Mean travel deviation and permissible values for variation

Accuracy grades C0-C5

Table 2 Mean travel deviation ($\pm E_c$) and permissible values for variation (e_c)

(Unit: μm)

Effective thread length (mm)	Accuracy grade	C0		C1		C2		C3		C4		C5	
		$\pm E_c$	e_c	$\pm E_c$	e_c	$\pm E_c$	e_c	$\pm E_c$	e_c	$\pm E_c$	e_c	$\pm E_c$	e_c
Over	Or less												
-	315	4	3.5	6	5	9	6	12	8	15	11	23	18
315	400	5	3.5	7	5	10	7	13	10	17	13	25	20
400	500	6	4	8	5	11	7	15	10	19	13	27	20
500	630	6	4	9	6	12	9	16	12	20	16	30	23
630	800	7	5	10	7	14	10	18	13	24	17	35	25
800	1000	8	6	11	8	16	11	21	15	28	19	40	27
1000	1250	9	6	13	9	18	12	24	16	32	21	46	30
1250	1600	11	7	15	10	21	13	29	18	38	24	54	35
1600	2000			18	11	26	15	35	21	46	28	65	40
2000	2500			22	13	31	18	41	24	54	32	77	46
2500	3150			26	15	37	21	50	29	66	38	93	54
3150	4000			32	18	43	24	62	35	80	46	115	65
4000	5000							76	41	97	54	140	77
5000	6000											170	93

Table 3 Permissible values for variation

(Unit: μm)

Accuracy grade	C0		C1		C2		C3		C4		C5	
Item	e ₃₀₀	e _{2π}	e ₃₀₀	e _{2π}	e ₃₀₀	e _{2π}	e ₃₀₀	e _{2π}	e ₃₀₀	e _{2π}	e ₃₀₀	e _{2π}
Permissible value	3.5	3	5	4	6	5	8	6	11	7	18	8

Accuracy grades C7 and C10

The travel deviation of C7 and C10 grade ball screws is prescribed by the permissible value for a specified lead which had a length of 300 mm arbitrarily taken within the effective thread length of screw shaft, in accordance with JIS Standard.

Accuracy grade and axial clearance

The relationship between the accuracy grade and the axial clearance is classified by the respective combinations as shown in Table 5.

Table 4 Permissible values for cumulative lead error

(Unit: mm)

Accuracy grade	C7	C10
Travel deviation	0.05/300	0.21/300

Table 5 Accuracy grade and axial clearance

Symbol	Axial clearance (mm)	Nut combination	Accuracy grade							
			C0	C1	C2	C3	C4	C5	C7	C10
S	0	Double nut	o	o	o	o	o	o	-	-
S	0	Single nut	o	o	o	o	o	o	-	-
F	0.005 or smaller		-	o	o	o	o	o	-	-
H	0.010 or smaller		-	-	-	-	o	o	o	-
M	0.030 or smaller		-	-	-	-	o	o	o	-
L	0.200 or smaller		-	-	-	-	-	-	o	o

* In the case of an integral nut, the combination of the double nut should be applied.

* For rolled ball screws in GY/GW series, do not use the information in the above table. Refer to details in the pages describing rolled ball screws.

* For any combinations not listed above, consult KURODA

Accuracy grade and manufacturable screw shaft length

When the slenderness ratio (shaft length per shaft diameter) is large, it is sometimes difficult to manufacture a ball screw with the desired accuracy. The following table shows the maximum length of screw shafts of each accuracy grade that can be manufactured in the standard process. When ball screws exceeding the manufacturable range are required, consult KURODA.

Table 6 Accuracy grade and manufacturable screw shaft length

(Unit: mm)

Accuracy grade	Nominal outside diameter of screw shaft																
	5	6	8	10	12	15-16	20	25	28	32	36	40	45	50	55	63	70-80-100-125
C0	90	160	240	340	420	500	800	1100	1200	1600	1800	2000	2000	2000	2000	2000	-
C1	120	180	280	400	500	600	900	1300	1500	1800	2000	2200	2300	2800	3000	3000	3000
C2	120	180	280	400	500	600	1100	1600	1800	2200	2500	2800	3000	3600	4000	4500	4500
C3	140	210	340	480	600	700	1400	1800	2000	2500	2800	3200	3600	4000	5000	5000	5000
C4	140	210	340	480	600	800	1400	1800	2000	2500	2800	3200	3600	4000	5000	5000	5000
C5	140	210	340	655	900	1500	2000	2000	2200	2800	3100	3600	4100	4500	5000	5000	5000
C7	-	-	340	655	900	1500	2000	2300	2600	3200	3600	4600	5000	5000	5000	5000	5000
C10	-	-	-	-	-	1500	2000	2300	2600	3600	4000	4600	5000	5000	5000	5000	5000

(Note) When the lead is larger than the nominal screw shaft diameter, the manufacturable accuracy grade is between C2 and C10.

Technical Data of Ball Screws

Mounting Accuracy and Tolerance

■ Accuracy of each part of screw shaft

Tables 7 and 8 show the tolerance of the radial circumferential runout of the thread groove surface and mounting portions to the axial line of screw shaft support and that of the squareness of the end face of the support to the axial line of screw shaft support.

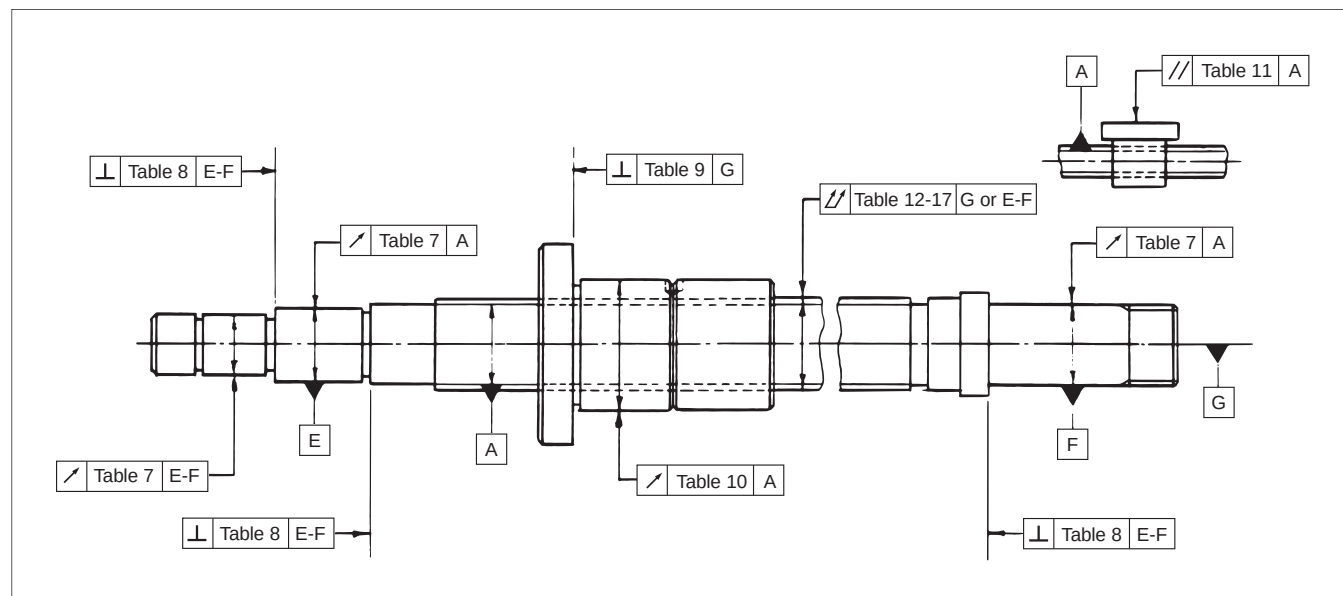


Figure 5 Mounting accuracy of ball screw (example)

Table 7 Radial circumferential runout of thread groove surface to axial line of screw shaft support and radial circumferential runout of mounting portions to axial line of screw shaft support (Unit: μm)

Nominal screw shaft diameter (mm)		Tolerable runout (maximum)					
Over	Or less	C0	C1	C2	C3	C4	C5
—	8	3	5	7	8	9	10
8	12	4	5	7	8	9	11
12	20	4	6	8	9	10	12
20	32	5	7	9	10	11	13
32	50	6	8	10	12	13	15
50	80	7	9	11	13	15	17
80	125	—	10	12	15	17	20

(Note) As the measurements of this item include the influence of the runout of the screw shaft axial line, it is necessary to correct the measurements. Calculate the correction value by using the total runouts (tolerance) of the screw shaft axial line shown in Tables 12 to 17 corresponding to the ratio of the overall length of screw shaft to the distance between the supporting point and the measuring point (L1 and L2) and add it to the tolerance shown in the above table.

Table 8 Squareness of end face of support to axial line of screw shaft support

(Unit: μm)

Nominal screw shaft diameter (mm)		Tolerable squareness (axial runout) (maximum)					
Over	Or less	C0	C1	C2	C3	C4	C5
—	8	2	3	3	4	4	5
8	12	2	3	3	4	4	5
12	20	2	3	3	4	4	5
20	32	2	3	3	4	4	5
32	50	2	3	3	4	5	5
50	80	3	4	4	5	6	7
80	125	—	4	5	6	7	8

■ Accuracy of nut mounting portion

Tables 9, 10 and 11 show the tolerance of the squareness of the reference end face of the nut or flange mounting surface to the axial line of the screw shaft which is used as a basis for mounting, that of the radial circumferential runout and the parallelism of the peripheral surface (cylinder or plane) of the nut to the axial line of screw shaft respectively.

Table 9 Squareness (axial runout) of reference end face of nut or flange mounting surface to axial line of screw shaft (Unit: μm)

Outside diameter of nut (mm)		Tolerable squareness (axial runout) (maximum)					
Over	Or less	C0	C1	C2	C3	C4	C5
–	20	5	6	7	8	9	10
20	32	5	6	7	8	9	10
32	50	6	7	8	8	10	11
50	80	7	8	9	10	11	13
80	125	7	9	10	12	13	15
125	160	8	10	11	13	15	17
160	200	–	11	12	14	16	18
200	250	–	12	13	15	17	20

Table 10 Radial circumferential runout of peripheral surface (cylinder) of nut to axial line of screw shaft (Unit: μm)

Outside diameter of nut (mm)		Tolerable runout (maximum)					
Over	Or less	C0	C1	C2	C3	C4	C5
–	20	5	6	7	9	10	12
20	32	6	7	8	10	11	12
32	50	7	8	10	12	13	15
50	80	8	10	12	15	17	19
80	125	9	12	16	20	23	27
125	160	10	13	17	22	26	30
160	200	–	16	20	25	29	34
200	250	–	18	23	28	33	38

Table 11 Parallelism of circumferential surface of nut (in the case of plain mounting surface) to axial line of screw shaft (Unit: μm)

Basic mounting length (mm)		Tolerable parallelism (maximum)					
Over	Or less	C0	C1	C2	C3	C4	C5
–	50	5	6	7	8	9	10
50	100	7	8	9	10	11	13
100	200	–	10	11	13	15	17

Technical Data of Ball Screws

■ Total runout of axial center of screw shaft

Tables 12 to 17 show the permissible values for total runout of the axial center of screw shaft.

Table 12 Total runout of axial center of screw shaft [C0]

(Unit: mm)

Nominal screw shaft diameter		Over	-	8	12	20	32	50	80
Overall length of screw shaft		Or less	8	12	20	32	50	80	125
Over	Or less								
-	125			0.015	0.015	0.015			
125	200			0.025	0.020	0.020	0.015		
200	315			0.035	0.025	0.020	0.020		
315	400				0.035	0.025	0.020	0.015	
400	500				0.045	0.035	0.025	0.020	
500	630				0.050	0.040	0.030	0.020	0.015
630	800					0.050	0.035	0.025	0.020
800	1000					0.065	0.045	0.030	0.025
1000	1250					0.085	0.055	0.040	0.030
1250	1600					0.110	0.070	0.050	0.040
1600	2000						0.095	0.065	0.045

Table 13 Total runout of axial center of screw shaft [C1]

(Unit: mm)

Nominal screw shaft diameter		Over	-	8	12	20	32	50	80
Overall length of screw shaft		Or less	8	12	20	32	50	80	125
Over	Or less								
-	125		0.020	0.020	0.015				
125	200		0.030	0.025	0.020	0.020			
200	315		0.040	0.030	0.025	0.020			
315	400		0.045	0.040	0.030	0.025	0.020		
400	500			0.050	0.040	0.030	0.025		
500	630			0.060	0.045	0.035	0.025	0.020	
630	800				0.060	0.040	0.030	0.025	
800	1000				0.075	0.055	0.040	0.030	
1000	1250				0.095	0.065	0.045	0.035	0.030
1250	1600				0.130	0.085	0.060	0.045	0.035
1600	2000					0.120	0.080	0.055	0.040
2000	2500						0.100	0.070	0.050
2500	3150						0.130	0.090	0.060
3150	4000							0.120	0.080

Table 14 Total runout of axial center of screw shaft [C2]

(Unit: mm)

Nominal screw shaft diameter		Over	-	8	12	20	32	50	80
Overall length of screw shaft		Or less	8	12	20	32	50	80	125
Over	Or less								
-	125		0.025	0.020	0.020				
125	200		0.035	0.030	0.020	0.025			
200	315		0.045	0.035	0.025	0.025			
315	400		0.050	0.045	0.035	0.030	0.025		
400	500			0.055	0.045	0.035	0.025		
500	630			0.065	0.050	0.040	0.030	0.025	
630	800				0.065	0.045	0.035	0.030	
800	1000				0.080	0.060	0.045	0.035	
1000	1250				0.105	0.070	0.050	0.040	0.030
1250	1600				0.140	0.095	0.065	0.050	0.035
1600	2000					0.130	0.090	0.065	0.045
2000	2500						0.110	0.080	0.055
2500	3150						0.140	0.100	0.065
3150	4000							0.130	0.090
4000	5000								0.110

Table 15 Total runout of axial center of screw shaft [C3]

(Unit: mm)

Nominal screw shaft diameter		Over	-	8	12	20	32	50	80
Overall length of screw shaft		Or less	8	12	20	32	50	80	125
Over	Or less								
-	125		0.025	0.025	0.020				
125	200		0.035	0.035	0.025	0.020			
200	315		0.050	0.040	0.030	0.030			
315	400		0.060	0.050	0.040	0.035	0.025		
400	500			0.065	0.050	0.040	0.030		
500	630			0.080	0.055	0.045	0.035	0.030	
630	800				0.070	0.055	0.040	0.035	
800	1000				0.095	0.065	0.050	0.040	0.030
1000	1250				0.120	0.085	0.060	0.045	0.035
1250	1600				0.160	0.110	0.075	0.055	0.040
1600	2000					0.140	0.095	0.070	0.050
2000	2500						0.120	0.085	0.060
2500	3150						0.160	0.110	0.075
3150	4000						0.220	0.150	0.100
4000	5000							0.200	0.130

Table 16 Total runout of axial center of screw shaft [C4]

(Unit: mm)

Nominal screw shaft diameter		Over	-	8	12	20	32	50	80
Overall length of screw shaft		Or less	8	12	20	32	50	80	125
Over	Or less								
-	125		0.030	0.030	0.030				
125	200		0.040	0.040	0.035	0.030			
200	315		0.055	0.050	0.040	0.035			
315	400		0.070	0.060	0.050	0.040	0.035		
400	500			0.075	0.055	0.050	0.040		
500	630			0.090	0.070	0.055	0.050	0.035	
630	800				0.080	0.065	0.055	0.040	
800	1000				0.100	0.070	0.060	0.050	0.035
1000	1250				0.130	0.090	0.070	0.055	0.040
1250	1600				0.170	0.120	0.080	0.060	0.045
1600	2000					0.150	0.110	0.080	0.060
2000	2500						0.130	0.100	0.070
2500	3150						0.180	0.130	0.090
3150	4000						0.240	0.170	0.120
4000	5000							0.220	0.150

Table 17 Total runout of axial center of screw shaft [C5]

(Unit: mm)

Nominal screw shaft diameter		Over	-	8	12	20	32	50	80
Overall length of screw shaft		Or less	8	12	20	32	50	80	125
Over	Or less								
-	125		0.035	0.035	0.035				
125	200		0.050	0.040	0.040	0.035			
200	315		0.065	0.055	0.045	0.040			
315	400		0.075	0.065	0.055	0.045	0.035		
400	500			0.080	0.060	0.050	0.045		
500	630			0.090	0.075	0.060	0.050	0.040	
630	800				0.090	0.070	0.055	0.045	
800	1000				0.120	0.085	0.065	0.050	0.045
1000	1250				0.150	0.100	0.075	0.060	0.050
1250	1600				0.190	0.130	0.095	0.070	0.055
1600	2000					0.170	0.120	0.085	0.065
2000	2500						0.150	0.110	0.080
2500	3150						0.200	0.140	0.095
3150	4000						0.260	0.180	0.120
4000	5000							0.240	0.160
5000	6300							0.320	0.210

Technical Data of Ball Screws

Preload Torque

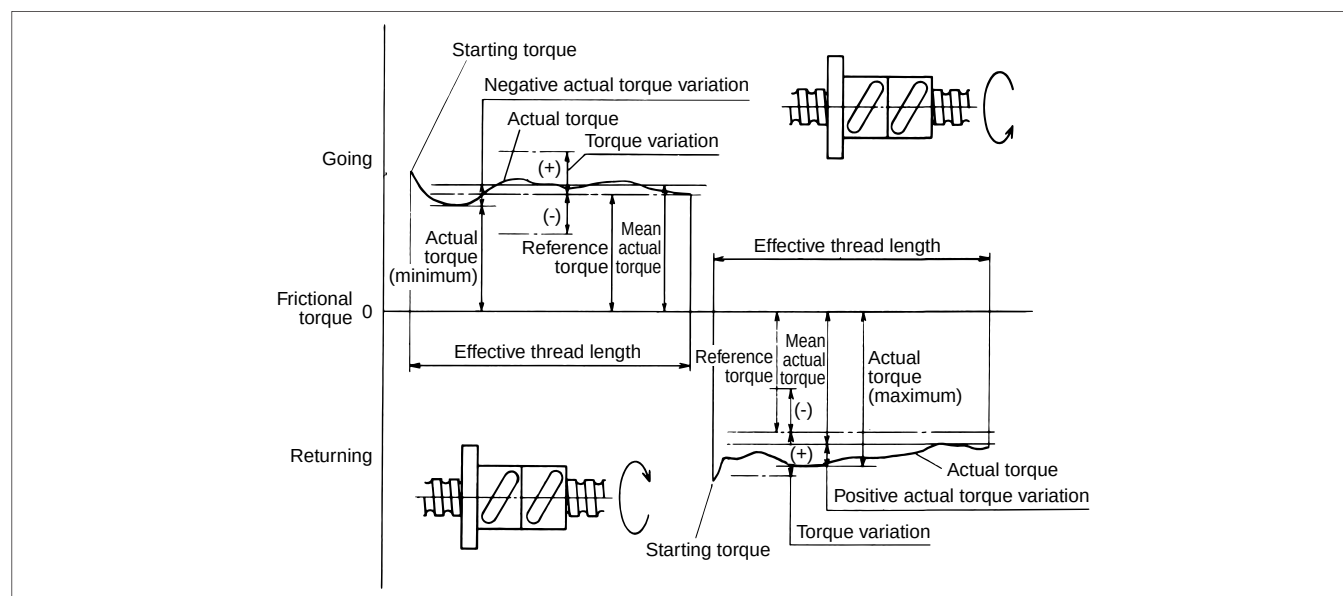


Figure 6 Characteristics of preload torque

■ Terms and definitions

Preload

A way to reduce the backlash of ball screws or to increase the rigidity of ball screws by incorporating a series of steel balls or by using a pair of nuts which are displaced in the axial direction respectively.

Dynamic preload drag torque

A dynamic torque required to successively rotate the screw shaft or nut of ball screw to which the prescribed preload is applied without applying load from the outside.

Reference torque

A dynamic preload drag torque preset as a target

Torque variation value

A value of variation in dynamic preload drag torque preset as a target. The value is described as a plus (+) and minus (-) values to the reference torque.

Torque variation ratio

A ratio of torque variation to reference torque.

Actual torque

A dynamic preload drag torque obtained by measurement on an actual ball screw.

Mean actual torque

An arithmetic mean of the maximum and minimum values of the actual torque measured by moving the nut forward and backward over the effective thread length.

Actual torque variation

A maximum variation of actual torque measured by moving the nut forward and backward over the effective thread length. The value is described as a plus (+) and minus (-) value to the mean actual torque.

Actual torque variation ratio

A ratio of actual torque variation to mean actual torque.

■ Measuring conditions

Measuring number of revolutions: 100 min⁻¹

Viscosity of lubricant: ISO VG100

■ Permissible ratio of torque variation

Table 18 Permissible ratio of torque variation

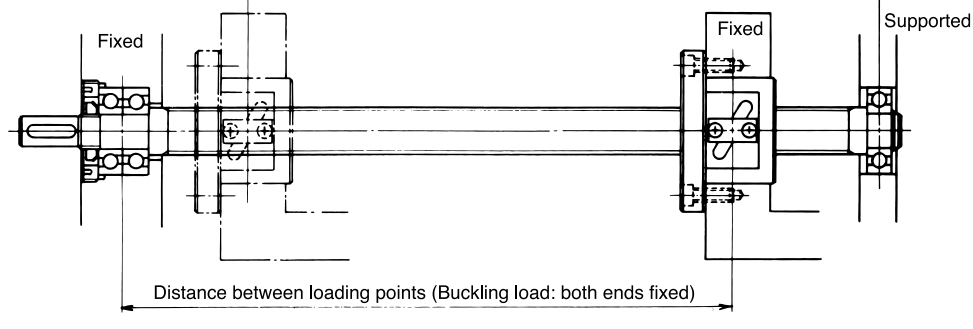
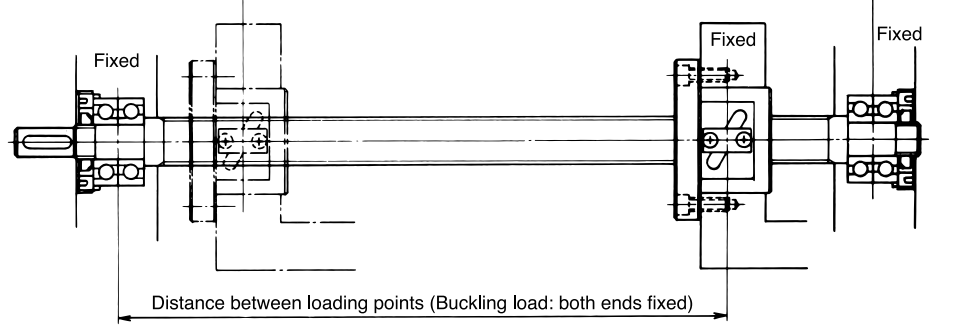
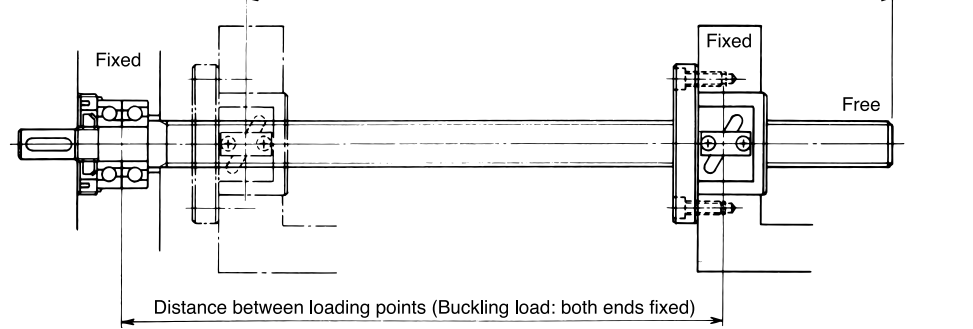
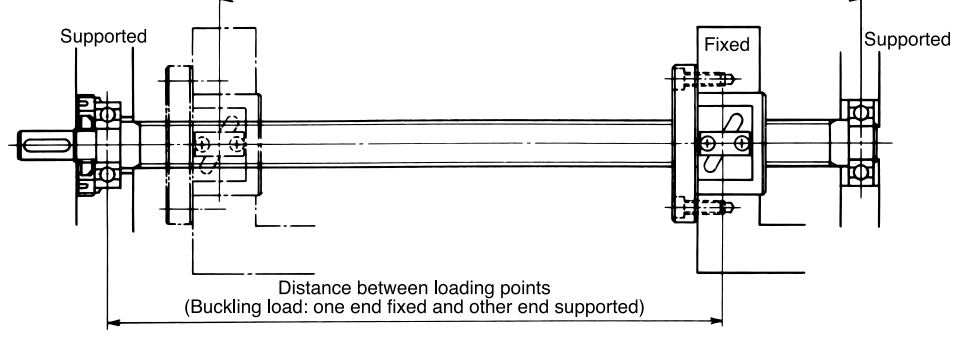
Reference torque (N·cm)		Effective thread length (mm)											
		4000 or less											
		Slenderness ratio: 40 or less						Slenderness ratio: 60 or less					
		Accuracy grade						Accuracy grade					
Over	Or less	C0	C1	C2	C3	C4	C5	C0	C1	C2	C3	C4	C5
20	40	±35%	±40%	±45%	±45%	±50%	±55%	±40%	±45%	±50%	±55%	±60%	±65%
40	60	±25	±30	±35	±35	±40	±45	±33	±38	±45	±45	±50	±50
60	100	±20	±25	±30	±30	±35	±35	±25	±30	±35	±35	±40	±40
100	250	±15	±20	±25	±25	±30	±30	±20	±25	±30	±30	±35	±35
250	630	±10	±15	±20	±20	±25	±25	±15	±20	±25	±25	±30	±30
630	1000	-	-	±15	±15	±20	±20	-	-	±20	±20	±25	±25

(Note) Slenderness ratio is the value obtained by dividing thread length (mm) of screw shaft by nominal diameter (mm) of screw shaft.

Designing of Screw Shaft

Mounting methods for screw shaft

There are four basic methods of mounting a screw shaft as shown below. Since the screw shaft supporting method has a direct relation to permissible axial load and permissible number of rotations at critical speed. Therefore, sufficient thought and considerations should be given in determining the method for your use of a ball screw under severe conditions or the use requiring advanced accuracy.

Screw shaft supporting method	Application example
Fixed-Supported Distance between supports (Critical speed: one end fixed and other end supported)  Distance between loading points (Buckling load: both ends fixed)	• Typical mounting method • Medium to high speed range • Medium accuracy to high accuracy
Fixed-Fixed Distance between supports (Critical speed: both ends fixed)  Distance between loading points (Buckling load: both ends fixed)	• High accuracy • Medium speed
Fixed-Free Distance between supports (Critical speed: one end fixed and other end free)  Distance between loading points (Buckling load: both ends fixed)	• Low speed • Short shaft length • Medium accuracy
Supported-Supported Distance between supports (Critical speed: one end fixed and other end supported)  Distance between loading points (Buckling load: one end fixed and other end supported)	• Low to medium speed range • Low accuracy to medium accuracy

Technical Data of Ball Screws

■ Permissible axial load

A diagram of permissible axial load for selecting the minimum shaft diameter for the axial load is shown below.

- (1) The oblique line indicates the permissible axial load determined by taking account of buckling of the screw shaft. Read a scale corresponding to the screw shaft supporting method.
- (2) The line parallel to the line representing the distance between loading points indicates the permissible tensile/compression load. Read on the scale mark of "Supported-Supported" (both ends supported).
- (3) The line perpendicular to the line representing the distance between loading points indicates the screw shaft length of ball screws manufacturable in the standard process in KURODA. (See Table 6 on page D3.)

● Permissible axial load to buckling load: P

$$P = \alpha P_k \text{ (N)} \dots\dots\dots(1)$$

Where,

P_k : Buckling load (N)

α : Safety factor ($\alpha = 0.5$)

It may be sometimes necessary to set the safety factor at a larger value according to the degree of required safety.

Generally, the buckling load of a long column can be worked out from the Euler's equation.

However, when the slenderness ratio ℓ/k (k : Secondary radius of section) is 90 or less, use the Rankine's equation or the Tetmajer's equation.

● Buckling load worked out from Euler's equation: P_k

$$P_k = \frac{n\pi^2 EI}{\ell^2} \text{ (N)} \dots\dots\dots(2)$$

Where,

P_k : Load at which buckling starts (N)

ℓ : Distance between loading points (mm)

E : Young's modulus ($2.06 \times 10^5 \text{ N/mm}^2$)

I : Minimum secondary moment of screw shaft root cross section (mm^4)

$$I = \frac{\pi}{64} d^4$$

d : Screw shaft root diameter (mm)

Refer to dimension tables

n : Coefficient to be determined by supporting method of ball screw

Supported-Supported $n = 1$

Fixed-Supported $n = 2$

Fixed-Fixed $n = 4$

Fixed-Free $n = 0.25$

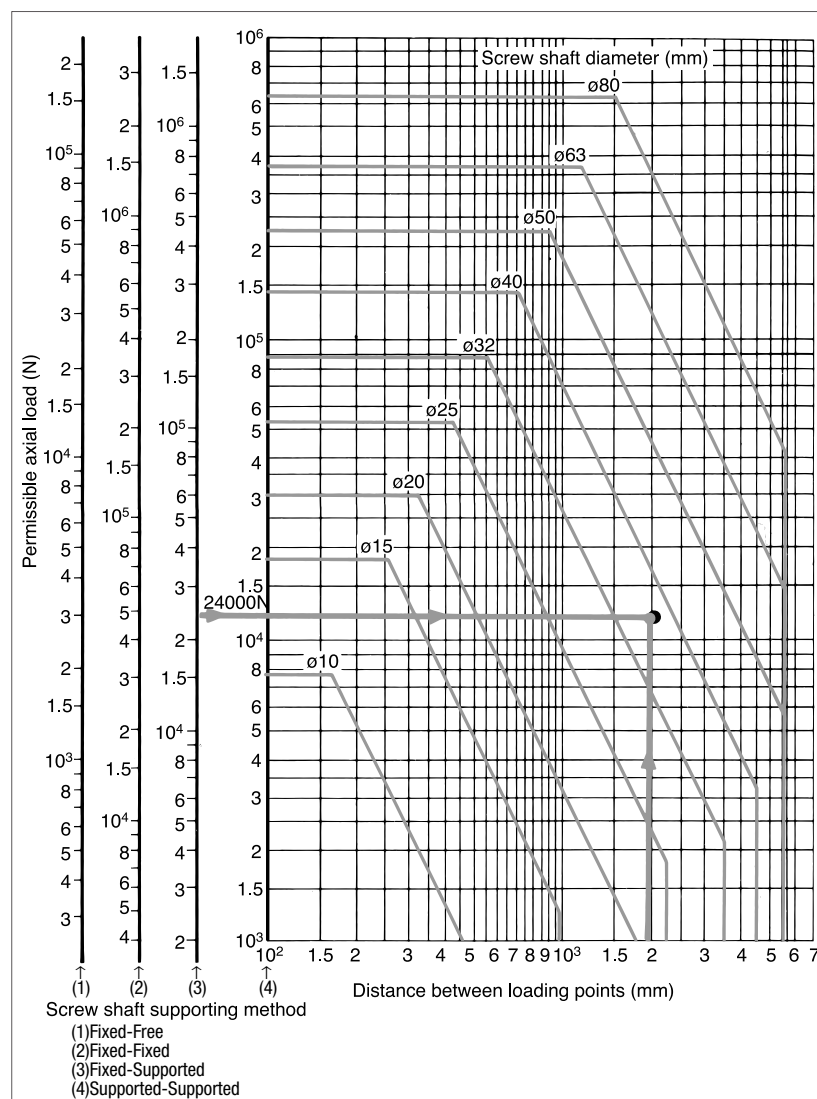


Figure 7 Diagram of permissible axial load

Example: selection of permissible screw shaft diameter

Selecting a shaft diameter when the screw shaft is supported with the "Fixed-Supported" method and a compression load of 24000N (maximum axial load) is applied to a distance of 2000 mm as loading points (between nut and shaft end support):

1. Find out the intersecting point where the permissible axial compression load on the scale of "Fixed-Supported" is 24000N and the distance between loading points is 2000 mm as shown by a thick line in Figure 7.
2. Then, select a shaft diameter of 40 mm or more which is shown from the line outside the intersecting point.

■ Permissible number of revolutions

The permissible number of revolutions of ball screws is expressed by DmN value which means the limit of operating speed of recirculating balls in the nut and the critical speed of the rotary shaft.

A diagram for selecting the optimum shaft diameter corresponding to the number of revolutions is shown in Figure 8.

- (1) The oblique line indicates the number of revolutions determined by taking account of the critical speed.
Read a scale corresponding to the screw shaft supporting method
- (2) The line parallel to the line representing the distance between supports is prepared on the basis of DmN value which is the limit of operating speed. Read on the scale mark of "Supported-Supported".
- (3) The line perpendicular to the line representing the distance between supports indicates the screw shaft length of ball screws that can be manufactured in the standard process by KURODA. (See Table 6 on page D3.)

● Critical speed: N_c

$$N_c = f_a \frac{60\lambda^2}{2\pi\ell^2} \sqrt{\frac{EI \times 10^3}{\gamma A}} \quad (\text{min}^{-1}) \quad \dots\dots\dots(4)$$

Where,

ℓ : Distance between supports (mm)

f_a : Safety factor (0.8)

E : Young's modulus ($2.06 \times 10^5 \text{N/mm}^2$)

I : Minimum secondary moment of screw shaft root cross section (mm^4)

$$I = \frac{\pi}{64} d^4$$

d : Screw shaft root diameter(mm)

Refer to dimension tables.

γ : Specific gravity ($7.8 \times 10^{-6} \text{kg/mm}^3$)

A : Sectional area of screw shaft root diameter (mm^2)

$$A = \frac{\pi}{4} d^2$$

λ : Coefficient to be determined by supporting method of ball screw

Supported-Supported $\lambda = \pi$ Fixed-Fixed $\lambda = 4.730$

Fixed-Supported $\lambda = 3.927$ Fixed-Free $\lambda = 1.875$

● DmN value

- GR, DR, GE/GG, GP, DP, and HG series

$$\text{DmN} \leq 70000 \quad \dots\dots\dots(3)$$

- GY and GW series

$$\text{DmN} \leq 50000 \quad \dots\dots\dots(3)$$

- FR and FE/FG series

The DmN value and maximum number of revolutions for each screw shaft diameter are as shown in the tables below.

Where,

Dm: Outside diameter of screw shaft (mm) + A (mm)

N : Maximum number of revolutions (mm^{-1})

Ball diameter	A	Ball diameter	A
0.8000	0.24	3.1750	0.80
1.0000	0.30	3.9688	0.80
1.2000	0.30	4.7625	1.00
1.5875	0.30	6.3500	1.80
2.0000	0.40	7.1438	2.00
2.3812	0.60	7.9375	2.00
2.7780	0.60	9.5250	2.40

Screw shaft diameter	Lead	A	N (Max.)	DmN
10	10	0.6	5000	53000
12	10	0.8	5000	64000
12	20	0.8	5000	64000
15	5	0.8	5000	79000
15	10	0.8	5000	79000
15	20	0.8	5000	79000
20	10	1.0	5000	105000
20	20	1.0	5000	105000
25	5	0.8	5000	129000
25	10	1.0	5000	130000
25	25	1.0	5000	130000
32	5	0.8	4000	131200
32	8	1.0	4000	132000
32	12	1.8	4000	135200
32	16	1.8	4000	135200
36	12	2.0	3500	133000
36	16	2.0	3500	133000
40	8	1.0	3200	131200
40	10	1.8	3200	133760
40	12	2.0	3200	134400
40	16	2.0	3200	134400

Note) Consult KURODA for high speed consideration if the DmN on your application exceeds above.

Technical Data of Ball Screws

Resonance phenomenon arising from the number of revolutions of a ball screw and the characteristic frequency of the screw shaft is caused by the unbalance of deflection by the empty weight of the shaft at the distance “ l ” between supports of the rotation system and the critical speed corresponding to the characteristic frequency increases the amplitude of the vibration.

When the ball screw is practically used, the nut serves as a move bearing, and therefore, the distance “ l ” between supports always changes and the shaft deflection changes as well. Since the critical speed shown in Formula (4) is transient, consider it as a permissible number of revolutions to assure safety.

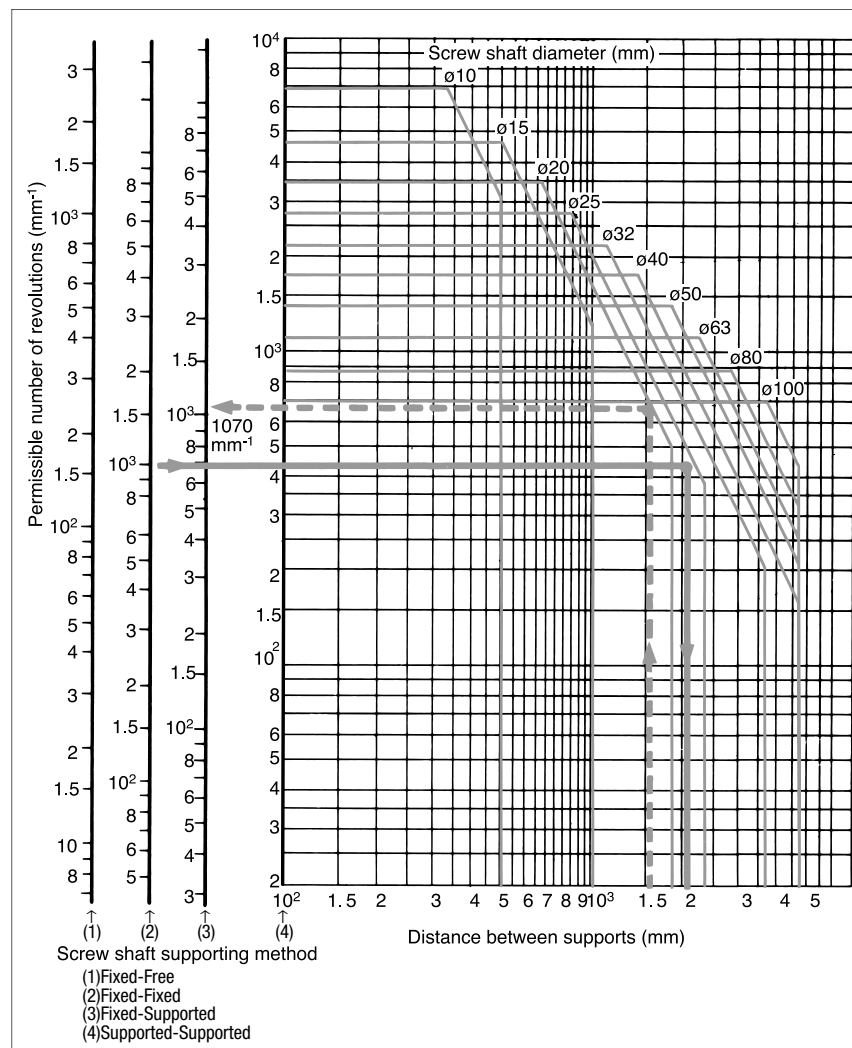


Figure 8 Diagram of permissible number of revolutions

Example 1: determining permissible number of revolutions

Finding the permissible number of revolutions, provided that the screw shaft is supported with the “Fixed-Supported” method, wherein the shaft diameter is 20 mm and the distance between supports is 1500 mm:

1. The vertical thick line in Figure 8 shows that the distance between supports is 1500 mm. Find out an intersecting point with the oblique line representing the critical speed of the shaft with a diameter of 20 mm.
2. In this case, the scale of the permissible number of revolutions for the supporting method of “Fixed-Supported” reads 1076 min^{-1} , which gives the maximum permissible number of revolutions.

Example 2: determining shaft diameter

Finding a shaft diameter that can meet the maximum number of revolutions “1000 min^{-1} ”, provided that the screw shaft is supported with a “Fixed-Fixed” method and the distance between supports is 2000 mm.

1. The vertical dotted line in Figure 8 shows that the distance between supports is 2000 mm. Find out an intersecting point with the line of the permissible number of revolutions “1000 min^{-1} ” on the scale of “Fixed-Fixed”.
2. In this case, a shaft diameter of 25 mm, represented by the line over the intersection, meets the requirement of the maximum number of revolutions 1000 min^{-1} .

Life Time Calculation

Life time of ball screws

The life time of a ball screw is defined as a total number of revolutions with which the screw can perform proper operation without causing any fatigue failure (flaking) to the thread groove and/or balls. The flaking is caused by metal fatigue due to constant stress.

The life of a ball screw is determined by the basic dynamic load rating.

Life time

The life time of a ball screw (fatigue life) is calculated by the following formula:

$$L_h = \frac{10^6}{60N_m} \left(\frac{C}{P_m f_w} \right)^3 \text{ (hours)} \dots\dots\dots(5)$$

Where,

L_h : Life time (hours)

C : Basic dynamic load rating (N)

Refer to dimension tables

P_m : Average axial load (N)

N_m : Average number of revolutions (mm^{-1})

f_w : Load factor (coefficient by operating condition)

Smooth operation without impact $f_w = 1.0 \sim 1.2$

Normal operation $f_w = 1.2 \sim 1.5$

Operation associated with shock or vibration
 $f_w = 1.5 \sim 2.0$

The basic dynamic load rating that satisfies the intended life time is obtained from the following formula:

$$C = \left(\frac{60L_h N_m}{10^6} \right)^{\frac{1}{3}} P_m f_w \text{ (N)}$$

If the life time of a ball screw is set too long, it is necessary to increase both size and cost of the ball screw. Some case examples of standard life requirements are given below for reference.

Machine tools	20,000 hours
Industrial machinery	10,000 hours
Automated control equipment	15,000 hours
Measuring instruments	15,000 hours

Basic dynamic load rating: C

The basic dynamic load rating (C) is an axial load that permits the rated life of 1,000,000 revolutions (10^6 revolutions) during which 90% or more of a group of the same ball screws can perform without causing a flaking. For basic dynamic load ratings, refer to the dimension tables.

Average axial load “ P_m ” and average number of revolutions “ N_m ”

To select a ball screw suitable for your use, determine the following values. It may be difficult to accurately determine these operating conditions. However, it is recommendable to gather correct data, because the life time is inversely proportional to the cube of load. When these values are properly determined, the range of your choice will surely broaden.

$$(t_1 + t_2 + t_3 = 100\%)$$

Axial load	Number of revolutions	Operating time ratio
P_1 N (maximum)	$N_1 \text{ min}^{-1}$	$t_1 \%$
P_2 N (normal)	$N_2 \text{ min}^{-1}$	$t_2 \%$
P_3 N (minimum)	$N_3 \text{ min}^{-1}$	$t_3 \%$

Considering the operating conditions of a machine tool, the maximum load (P_1) is a “load applied at the time of heaviest cutting”, the normal load (P_2) is a “load applied during general cutting”, and the minimum load (P_3) is a “load applied at the time of rapid traverse of the cutting tool before starting cutting and at the time of quick return after completion of cutting”. Once the above-mentioned values are determined, the average axial load (P_m) and the average number of revolutions (N_m) can be obtained from the following formulae:

$$P_m = \left(\frac{P_1^3 N_1 t_1 + P_2^3 N_2 t_2 + P_3^3 N_3 t_3}{N_1 t_1 + N_2 t_2 + N_3 t_3} \right)^{\frac{1}{3}} \text{ (N)} \dots\dots\dots(6)$$

$$N_m = \frac{N_1 t_1 + N_2 t_2 + N_3 t_3}{t_1 + t_2 + t_3} \text{ (min}^{-1}\text{)} \dots\dots\dots(7)$$

When the difference between the maximum axial load (P_1) and the minimum axial load (P_3) is small, or when the load changes linearly, an approximate value can be calculated from the following formula:

$$P_m \approx \frac{2P_1 + P_3}{3} \text{ (N)} \dots\dots\dots(8)$$

Technical Data of Ball Screws

Life time in case of low speed revolution

In the case of low speed revolution lower than 10min⁻¹, the life time can be satisfied with a value sufficiently smaller than basic dynamic load rating (C).

In such a case, select a ball screw whose basic static load rating (C₀) satisfies the value obtained from the following formula:

$$C_0 = f_a P_{\max} \quad (\text{N}) \dots\dots\dots (9)$$

Where,

P_{max}: Maximum axial load (N)

f_a : Safety factor

Normal operation f_a = 1 ~ 2

Operation associated with impacts and shocks

f_a = 2 ~ 3

When smooth operation is especially required

f_a = 3 or above

Basic static load rating: C₀

The basic static load rating (C₀) is an axial load where the sum of permanent deformation of the steel balls and that of the thread groove surface by a certain amount of static load becomes 0.0001 time as much as the steel ball diameter.

In many cases, no problem will be caused by the permanent deformation during operation. However, when high accuracy or very smooth revolutions are required, select a ball screw having the C₀ value which is largely over the static load. For basic static load ratings, refer to dimension tables.

Hardness and life time

When special material is used in the thread groove because corrosion resistance or other characteristics are required, the thread groove cannot be hardened to HRC58-62. In such a case, the basic dynamic load rating and the basic static load rating decrease according as the hardness lowers. When the hardness is low, the basic dynamic load rating (C') and the basic static load rating

(C₀') are expressed by the following formulae, assuming that the respective hardness factors are (f_H) and (f_H').

$$C' = f_H C \quad (\text{N}) \dots\dots\dots (10)$$

$$C_0' = f_H' C_0 \quad (\text{N}) \dots\dots\dots (11)$$

Table 19 Hardness factors

Hardness HRC	58 or above	56	54	52	50	40	30	20	10
f _H	1.0	0.88	0.72	0.58	0.47	0.27	0.16	0.10	0.07
f _H '	1.0	0.83	0.61	0.45	0.32	0.14	0.07	0.03	0.02

Temperature and life time

When operating a ball screw made of standard material (See Table 1 on page A6) at a temperature at 100°C or above at all times or when operating it at a extremely high temperature for a short period of time, the composition of the material changes; thus, the basic dynamic load rating and the basic static load rating decrease according as the temperature rises. However, in this case, the temperature of up to 100°C will not adversely affect the operation. When the ball screw is operated at a

temperature at 100°C or above, the basic dynamic load rating (C'') and the basic static load rating (C₀'') are expressed by the following formulae, assuming that the respective temperature factors are (f_t) and (f_t').

$$C'' = f_t C \quad (\text{N}) \dots\dots\dots (12)$$

$$C_0'' = f_t' C_0 \quad (\text{N}) \dots\dots\dots (13)$$

Table 20 Temperature factors

Temperature (°C)	100 or below	125	150	175	200
f _t	1.0	0.95	0.90	0.85	0.75
f _t '	1.0	0.93	0.85	0.78	0.65

Optimum Designing of Ball Screw

In order to work out an optimum design for machines, it is necessary to examine the rigidity of the feed screw system, the positioning accuracy and the driving torque in due consideration of the required function, performance and cost.

■ Rigidity of feed screw system

To improve the positioning accuracy and responsiveness of precision machines and equipment when they are controlled, it is necessary to take into consideration the rigidity of each component of the feed screw system. The rigidity (K) of the feed screw system is expressed by the following formula:

$$K = \frac{P}{\delta} \quad (\text{N}/\mu\text{m}) \quad \dots\dots\dots(14)$$

Where,

P : Axial load applied to feed screw system

δ : Axial elastic deformation of feed screw system

The relationship between the rigidity of feed screw system and that of each component is as follows:

$$\frac{1}{K} = \frac{1}{K_\ell} + \frac{1}{K_n} + \frac{1}{K_b} + \frac{1}{K_h} \quad \dots\dots\dots(15)$$

Where,

K_ℓ : Rigidity of screw shaft to tension and compression

K_n : Rigidity of nut

K_b : Rigidity of support bearing

K_h : Rigidity of nut mounting portion and bearing mounting portion

● Tension and compression strength of screw shaft: K_ℓ

$$K_\ell = \frac{P}{\delta_\ell} \quad (\text{N}/\mu\text{m}) \quad \dots\dots\dots(16)$$

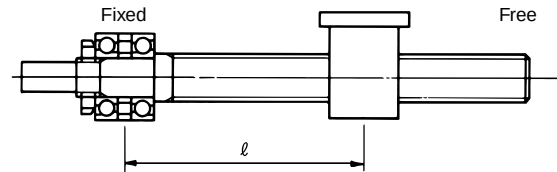
Where,

P : Axial load (N)

δ_ℓ : Amount of expansion or contraction of screw shaft (μm)

When an external axial load is applied to the screw shaft, the axial expansion and contraction is expressed by the following formulae. The axial expansion and contraction come out directly as the backlash of the ball screw.

1. When the supporting method is "Fixed-Free"



$$\delta_\ell = \frac{4P\ell}{E\pi d^2} \times 10^3 \quad (\mu\text{m}) \quad \dots\dots\dots(17)$$

Where,

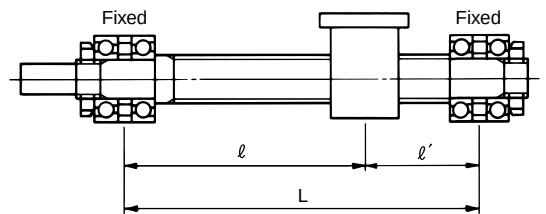
P : Axial load (N)

E : Young's modulus ($2.06 \times 10^5 \text{N}/\text{mm}^2$)

d : Screw shaft root diameter (mm)

ℓ : Distance between loading points (mm)

2. When the supporting method is "Fixed-Fixed"



$$\delta_\ell = \frac{4P\ell\ell'}{E\pi d^2 L} \times 10^3 \quad (\mu\text{m}) \quad \dots\dots\dots(18)$$

Where,

P : Axial load (N)

E : Young's modulus ($2.06 \times 10^5 \text{N}/\text{mm}^2$)

d : Screw shaft root diameter (mm)

ℓ, ℓ' : Distance between loading points (mm)

L : Distance between supports (mm)

The maximum value is obtained from formula (18) when

$$\ell = \ell' = \frac{L}{2}$$

$$\left(\delta_\ell = \frac{PL}{E\pi d^2} \times 10^3 \right)$$

Therefore, the maximum expansion and contraction of the screw shaft supported with the both ends fixed becomes 1/4 of the one with "Fixed-Free".

Technical Data of Ball Screws

● Rigidity of nut: K_n

Rigidity of single nut (non-preloaded): K_{ns}

When a ball screw receives an axial load, the steel balls and the thread groove will be deformed.

The relationship between the axial load (P) and the axial elastic deformation (δ_{ns}) is expressed by the following formula:

$$\delta_{ns} = \frac{2.6}{\sin \alpha} \left(\frac{Q^2}{D_b} \right)^{\frac{1}{3}} K \quad (\mu\text{m}) \dots\dots\dots(19)$$

Where,

α : Contact angle of steel balls with thread groove
(45°)

D_b : Steel ball diameter (mm)

K : Coefficient corresponding to accuracy and construction (1.4 ~ 1.6)

Q : Load per steel ball (N)

$$Q = \frac{2.6}{Z \sin \alpha}$$

P : Axial load (N)

Z : Number of steel balls

Theoretical rigidity (K_{NS}) obtained from the amount of elastic deformation when an axial load equivalent to 30% of the basic dynamic load rating (C) is shown in the dimension table for each of the product series. Rigidity (K_{ns}) corresponding to an axial load (P) is expressed by the following formula:

$$K_{ns} = K_{NS} \left(\frac{P}{0.3C} \right)^{\frac{1}{3}} \quad (\text{N}/\mu\text{m}) \dots\dots\dots(20)$$

Where,

C : Basic dynamic load rating (N)

P : Axial load (N)

(δ_{ns}) in formula (19) is expressed by the following formula using the rigidity (K_{NS}) of the single nut and the basic dynamic load rating (C).

$$\delta_{ns} = \frac{(0.3C)^{\frac{1}{3}} P^{\frac{2}{3}}}{K_{NS}} \quad (\mu\text{m}) \dots\dots\dots(21)$$

Where,

K_{NS} : Theoretical rigidity of single nut (N/ μm)

See pages for each series.

C : Basic dynamic load rating (N)

P : Axial load (N)

Rigidity of preloaded nut: K_{nw}

The dimension table for each product series gives theoretical rigidity (K_{NW}) obtained from the amount of elastic deformation that will occur when a preload of 1/15 of the basic dynamic load rating (C) is applied to the nut and an axial load of about 3 times or less of the preload is applied. These values are of practical use, because they were calculated on the basis of the results of the rigidity test including the nut rigidity test.

Rigidity (K_{nw}) corresponding to any preload can be obtained from the following formula:

$$K_{nw} = K_{NW} \left(\frac{P_L}{\frac{1}{15}C} \right)^{\frac{1}{3}} \quad (\text{N}/\mu\text{m}) \dots\dots\dots(22)$$

Where,

P_L : Preload (N)

C : Basic dynamic load rating (N)

Backlash and preload

The backlash of a ball screw is the sum of the axial clearance and the elastic deformation caused by the axial load at the contact point of the steel balls with the thread groove.

The axial elastic deformation can be reduced to a great extent by setting a proper preload and thus, the rigidity can be increased.

Preloading effect by double nut

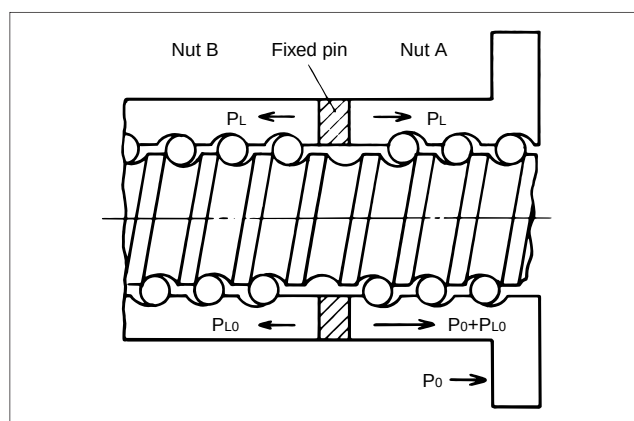


Figure 9 Preloading effect by double nut

In Figures 9 and 10, Nuts A and B undergo an elastic deformation of (δ_{nw0}) by preload (P_L) respectively. When external load (P_0) is applied to Nut A, the elastic deformation of Nuts A and B is:

$$\delta_{nwA} = \delta_{nw0} + \delta_{nw1}$$

$$\delta_{nwB} = \delta_{nw0} - \delta_{nw1}$$

The load applied to Nuts A and B is:

$$P_A = P_L + P_0 - P_0' = P_0 + P_{L0}$$

$$P_B = P_L - P_0' = P_{L0}$$

Therefore, an amount of (P_0') of the external load (P_0) is offset because the deformation of Nut B decreases. As a result, the elastic deformation of Nut A is reduced. This effect will continue until (δ_{nwB}) is zeroed, namely until the elastic deformation caused by the external load becomes (δ_{nw0}) and the preload applied to Nut B is completely released.

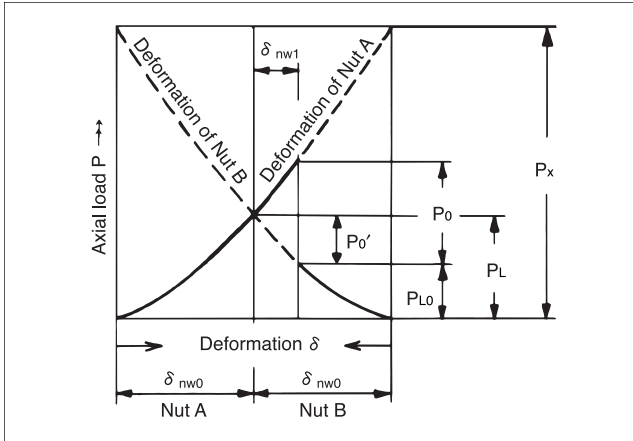


Figure 10 Preload diagram

The guideline of the preload to ball screw

The axial elastic deformation (δ_{nw0}) is proportional to a value obtained by raising the axial load (P) to two-thirds power according to the Hertz's law of point contact.

Therefore, deformation caused by preloading is:

$$\delta_{nw0} = C \cdot P_L^{\frac{2}{3}}$$

Deformation caused by an external load when the preload applied to one nut is completely released is:

$$2\delta_{nw0} = C \cdot P_x^{\frac{2}{3}}$$

From the above two equations,

$$\left(\frac{P_x}{P_L}\right)^{\frac{2}{3}} = \frac{2\delta_{nw0}}{\delta_{nw0}} = 2$$

Therefore, the released preload is:

$$P_x = 2.8P_L \approx 3P_L \dots\dots\dots(23)$$

Where,

P_x : Release preload (N)

(External axial load when preload applied to one nut returns to zero)

P_L : Preload (N)

As shown in equation (23), preloading effect is about 3 times as much as the preload amount. Generally, therefore, the preload amount is set at 1/3 of the maximum axial load. On the other hand, taking into consideration the life and efficiency, the preload amount is usually set at 1/20 to 1/10 of the basic dynamic load rating.

Classification of preload

	Light preload	Normal preload	Medium preload	Heady preload
Preload	$\frac{1}{20} C$ or less	$\frac{1}{20} \sim \frac{1}{15} C$	$\frac{1}{15} \sim \frac{1}{10} C$	$\frac{1}{10} C$ or more

C: Basic dynamic load rating

Elastic displacement curve of preloaded nut

Figure 11 shows elastic displacement curves of the single nut (non-preload) and the preloaded nut. Where an axial load (P_x), which is three times as large as the preload (P_L), is applied, the elastic displacement of the preloaded nut is just one half of the elastic displacement of the non-preloaded single nut.

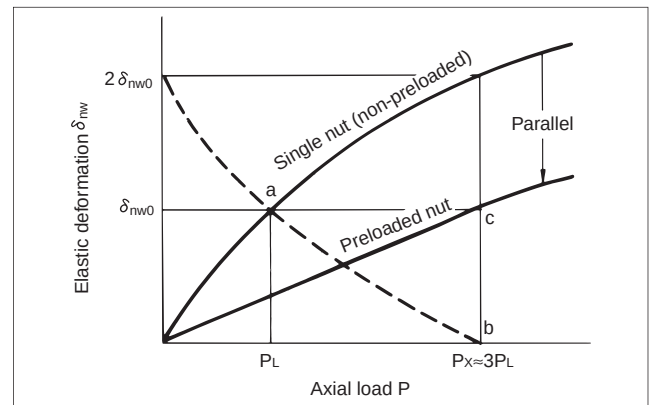


Figure 11 Elastic deformation curve of nut

Technical Data of Ball Screws

Preloading method of the double nut

Preloading is to be applied, in general, to two nuts in tension (tension preloading) or in compression (compression preloading).

KURODA's ball screws adopt the tension preloading unless otherwise specified.

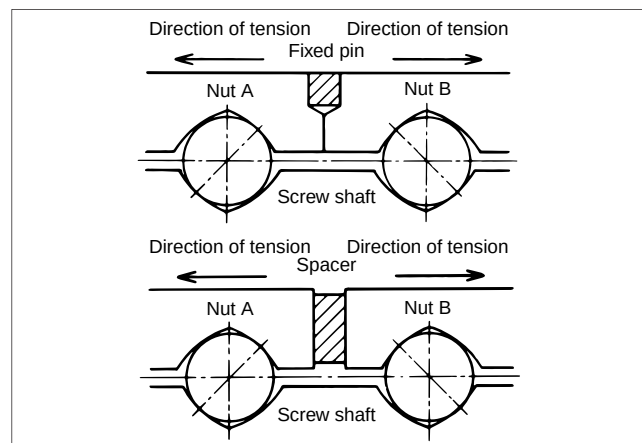


Figure 12 Tension preloading

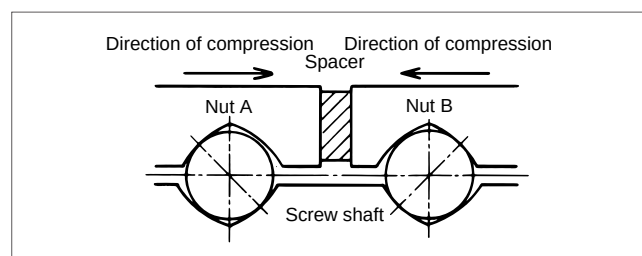


Figure 13 Compression preloading

- Preloaded with pin (standard method of KURODA)
This is the simplest and most effective tension preloading method. The required preload is attained and kept by inserting a pin between the two nuts.

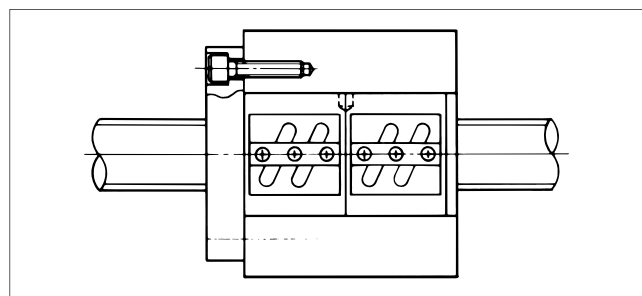


Figure 14 Preloaded with pin (I)

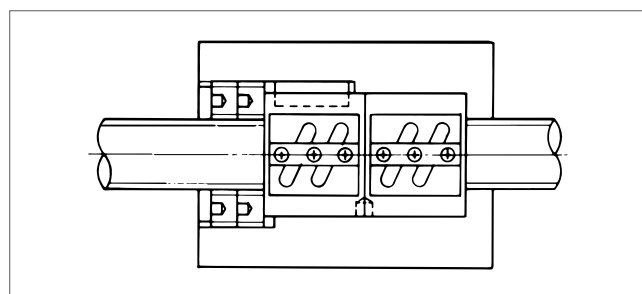


Figure 15 Preloaded with pin (II)

- Preloaded with spacer

In this method, preload is adjusted by the thickness of a spacer inserted between the two nuts. Both tension preloading and compression preloading are available.

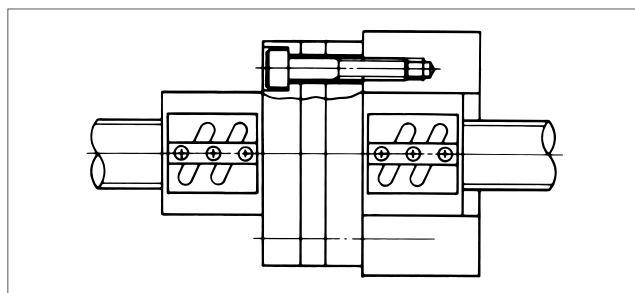


Figure 16 Preloaded with spacer (I)

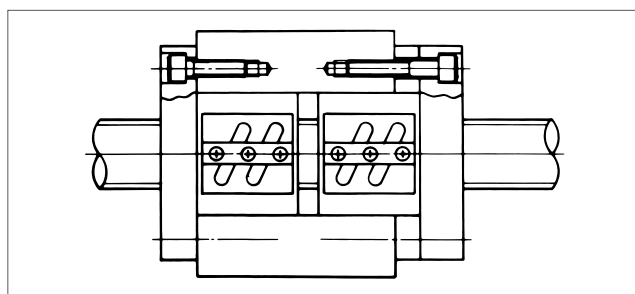


Figure 17 Preloaded with spacer (II)

Preloading method of the integral nut

In this method, a slightly offset lead on the nut generates preload in a single nut.

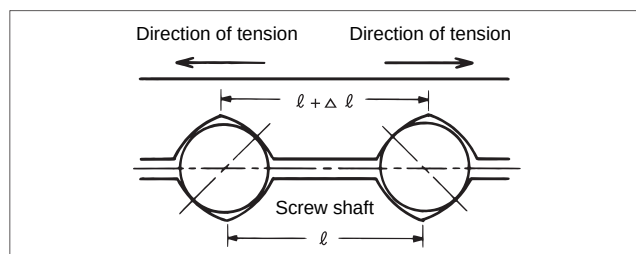


Figure 18 Preloading method of the integral nut

Preloading method of the single nut

In this method, the single nut is preloaded by putting oversized steel balls between the thread groove of the screw shaft and that of the nut.

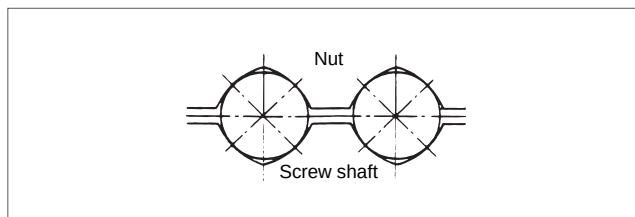


Figure 19 Preloaded with over-sized ball

● Rigidity of support bearing: K_b

The rigidity of a bearing to which preload (P_L) is applied is expressed by the following formula:

• Rigidity of ball bearing

$$K_b = \frac{2.83P_L}{\delta_b} \quad (\text{N}/\mu\text{m}) \dots\dots\dots (24)$$

Where,

P_L : Preload (N)

δ_b : Axial elastic deformation to preload (μm)

Axial elastic deformation of angular ball bearing is:

$$\delta_b = \frac{2}{\sin \alpha} \left(\frac{Q^2}{D_b} \right)^{\frac{1}{3}} \quad (\mu\text{m}) \dots\dots\dots (25)$$

$$Q = \frac{P}{Z \sin \alpha}$$

Axial elastic deformation of thrust ball bearing is:

$$\delta_b = 2.4 \left(\frac{Q^2}{D_b} \right)^{\frac{1}{3}} \quad (\mu\text{m}) \dots\dots\dots (26)$$

$$Q = \frac{P}{Z}$$

Where,

δ_b : Axial elastic deformation (μm)

α : Contact angle

D_b : Steel ball diameter (mm)

Q : Load per steel ball (N)

Z : Number of steel balls

P : Axial load (N)

• Rigidity of roller bearing

$$K_b = \frac{2.16P_L}{\delta_b} \quad (\text{N}/\mu\text{m}) \dots\dots\dots (27)$$

Where,

P_L : Preload (N)

δ_b : Axial elastic deformation to preload (μm)

Axial elastic deformation of tapered roller bearing is:

$$\delta_b = \frac{0.6}{\sin \alpha} \cdot \frac{Q^{0.9}}{\ell^{0.8}} \quad (\mu\text{m}) \dots\dots\dots (28)$$

$$Q = \frac{P}{Z \sin \alpha}$$

Where,

δ_b : Axial elastic deformation (μm)

α : Contact angle

Q : Load per roller (N)

Z : Number of rollers

P : Axial load (N)

ℓ : Effective contact length of roller (mm)

● Rigidity of nut mounting portion and bearing mounting portion: K_h

In designing these portions, pay due regard to the thickness and the distance from the mounting surface to the ball screw shaft center, so that the rigidity of the nut bracket and the bearing box may be improved. When the distortion due to tension of the set bolt is not negligible, use the mounting method shown in Figure 17 on page D18.

● Torsional rigidity of screw shaft

The screw shaft is twisted around the axial line by the torsional moment (driving torque), resulting in rotational strain. The torsional deformation can be expressed as the axial deformation of the ball screw by the following formula:

$$\delta_T = \ell \theta \frac{L}{2\pi} \dots\dots\dots (29)$$

$$\theta = \frac{32T}{\pi d^4 G} \dots\dots\dots (30)$$

Where,

δ_T : Axial deformation caused by torsion (cm)

ℓ : Distance between working points (cm)

θ : Angle of torsion (rad/cm)

L : Lead of ball screw (cm)

T : Torsional moment (N·cm)

d : Root diameter of screw shaft (cm)

G : Modulus of rigidity ($83 \times 10^5 \text{ N/cm}^2$)

If the angle of torsion for the driving shaft is excessively large, defects on the parts of the driving mechanism may be caused and result in torsional vibration of the shaft system.

For ordinary driving shafts, the angle of torsion due to the maximum operating torsional moment should be set within 4.36×10^{-5} (rad/cm).

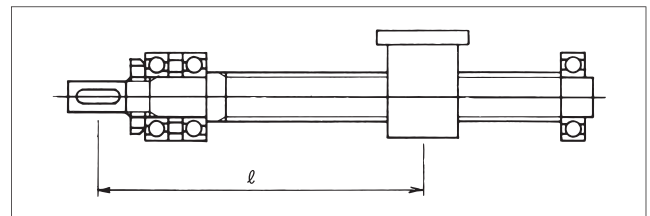


Figure 20

Technical Data of Ball Screws

■ Notes for positioning accuracy

This paragraph deals with how to select accuracy grade, how to determine specified travel, and how to take effective measures against thermal strain, which will exert a great influence upon the positioning accuracy.

● Selection guide for the accuracy grade classified according to the type of machine

Select the accuracy grade of the ball screw meeting to the required positioning accuracy from Tables 2 and 3 on page D3. KURODA recommends that you select the accuracy grade in accordance with the following table

Table 21 Examples of accuracy grade of ball screw recommendable according to the type of machine (Unit: mm)

Type of machine		Accuracy grade
NC machine tools	Machining centers	X, Y C1 ~ C3
	Milling machines	Z C2 ~ C5
	Lathe	X C1 ~ C3
		Z C3 ~ C5
	Grinding machines	X C0 ~ C2
		Z C1 ~ C3
	Electric discharge machines	X, Y C1 ~ C3
		Z C2 ~ C5
	Punching machines	C3 ~ C5
	Wood working machines (NC routers)	C5 ~ C7
Industrial robots	Cartesian coordinates type (assembly)	C1 ~ C5
	Vertical revolute type (assembly)	C2 ~ C5
	SCARA type (assembly)	C3 ~ C5
Semiconductor manufacturing equipment	Exposure system, Drawing system	C0 ~ C1
	Ion implanting equipment, Etching equipment,	C3 ~ C7
	Wire bonders, Die bondersv	C1 ~ C2
	Wafer probers	C0 ~ C2
	Electrical parts charging apparatus, Insert machines	C2 ~ C7
Printing equipment	Electronic color separating apparatus	C0 ~ C2
	Electronic composing machines	C1 ~ C3
Business equipment	Color graphic printers	C1 ~ C3
	XY plotters, Auto drawing machines	C1 ~ C3

● Determining the specified travel

In general, the specified lead of a ball screw means the nominal lead. However, the specified lead of the screw shaft is sometimes set to the negative side or the positive side to correct the expansion due to temperature rise during operation or the expansion or contraction of the screw shaft due to the external load. In such a case, inform KURODA of the target value of the specified travel. The typical target values of the specified travel classified according to the type of machine are shown in Table 22 below. To correct the expansion, a tensile load may sometimes be applied to the screw shaft when mounting.

Table 22 Target values of specified travel classified according to type of machine (Unit: mm)

Machine type	Axis	Target value of specified travel (per meter)
NC lathes	X	-0.02 ~ -0.05
	Z	-0.02 ~ -0.03
Machining centers	X, Y	-0.03 ~ -0.04

● Measures to be taken for thermal displacement

As the ball screw is so constructed that its rolling motion involves a slight sliding motion, it inevitably suffers a thermal strain due to temperature rise. The temperature rise is closely related to the operating conditions. The expansion of the thermal displacement can be expressed by the following formula:

$$\Delta l = \rho t l \quad (\text{mm}) \dots \dots \dots (31)$$

Where,

Δl : Axial thermal displacement (mm)

ρ : Coefficient of thermal expansion ($11.7 \times 10^{-6} \text{ } ^\circ\text{C}^{-1}$)

t : Temperature rise of screw shaft ($^\circ\text{C}$)

l : Effective thread length (mm)

Driving Torque

Frictional characteristics of ball screw and selection of driving motor

Friction and efficiency

The efficiency “ η ” of a ball screw obtained by the analysis of a mechanical model of screw can be expressed as follows, assuming that the coefficient of friction = μ and the screw lead angle = β .

- When converting the rotational force into the axial force (normal operation):

$$\eta = \frac{1 - \mu \tan \beta}{1 + \mu / \tan \beta} \dots\dots\dots(32)$$

- When converting the axial force into the rotational force (reverse operation):

$$\eta' = \frac{1 - \mu / \tan \beta}{1 + \mu \tan \beta} \dots\dots\dots(33)$$

Load torque

The load torque (constant-speed driving torque) required for designing a driving unit (motor etc.) can be worked out as follows.

Normal operation

When converting the rotational force into the axial force

$$T = \frac{PL}{2\pi\eta} \text{ (N·cm)} \dots\dots\dots(34)$$

Where,

T: Load torque (N·cm)

P: Axial external load (N)

L: Lead of ball screw (cm)

η : Efficiency of ball screw (0.9)

Reverse operation

When converting the axial force into the rotational force

$$P = \frac{2\pi T}{\eta' L} \text{ (N)} \dots\dots\dots(35)$$

Where,

P: Axial external load (N)

T: Load torque (N·cm)

L: Lead of ball screw (cm)

η' : Efficiency of ball screw (0.9)

Friction torque caused by preload

A torque produced by preloading. According as the external load increases, the preload applied to the preloaded nut is gradually released and consequently, the friction torque caused by preload is also reduced.

In case of no loading:

$$T_P = K \frac{P_L L}{2\pi} \text{ (N·cm)} \dots\dots\dots(36)$$

$$K = 0.05(\tan \beta)^{-\frac{1}{2}}$$

Where,

P_L : Preload (N)

L : Lead of ball screw (cm)

K : Coefficient of internal friction

β : Lead angle

$$\beta \approx \tan^{-1} \left(\frac{L}{\pi D} \right)$$

D : Outside diameter of screw shaft (cm)

Selection of drive motor

Select a motor which meets the following conditions.

1. The motor should be able to sufficiently bear the load torque applied to the output shaft.
2. The motor should be able to start and stop at the required pulse speed when the moment of inertia is applied to the output shaft.
3. The required acceleration constant and deceleration constant can be obtained when the moment of inertia is applied to the output shaft.

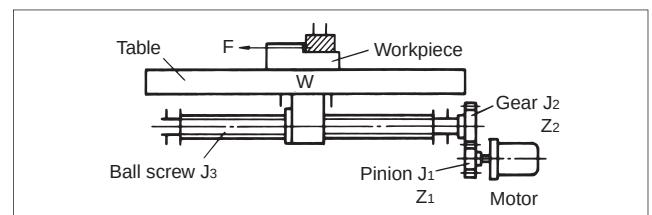


Figure 21

Technical Data of Ball Screws

● Torque applied to the output shaft of a motor

A torque required for driving at a constant speed against external load

$$T_1 = \left(\frac{PL}{2\pi\eta} + T_P \frac{(3P_L - P)}{3P_L} \right) \frac{Z_1}{Z_2} \quad (\text{N}\cdot\text{cm}) \dots\dots\dots(37)$$

Where, $P \leq 3P_L$

T_1 : Driving torque at constant speed (N·cm)

P : Axial external load (N)

$$P = F + \mu Mg$$

F : Anti-thrust repulsive force by cutting force (N)

M : Weight of table and work (kg)

μ : Coefficient of friction of sliding surface

g : Acceleration of gravity (9.8m/s²)

L : Lead of ball screw (cm)

η : Mechanical efficiency of motor including ball screw and gear

T_P : Friction torque caused by preload (N·cm)
Refer to formula (36)

P_L : Preload (N)

Z_1 : Number of teeth of pinion

Z_2 : Number of teeth of gear

● Acceleration torque applied to the shaft of a motor

A torque required for accelerative driving against external load

$$T_2 = J_M \dot{\omega} = J_M \times \frac{2\pi N}{60t} \times 10^{-2} \quad (\text{N}\cdot\text{cm}) \dots\dots\dots(38)$$

$$J_M = J_1 + J_4 + \left(\frac{Z_1}{Z_2} \right)^2 (J_2 + J_3 + J_5 + J_6) \quad (\text{kg}\cdot\text{cm}^2) \dots\dots(39)$$

Where,

T_2 : Driving torque at the time of acceleration (N·m)

$\dot{\omega}$: Angular acceleration of motor shaft (rad/s²)

N : Number of revolutions of motor shaft (min⁻¹)

t : Acceleration time (s)

J_M : Moment of inertia applied to motor (kg·cm²)

J_1 : Moment of inertia of pinion (kg·cm²)

J_2 : Moment of inertia of gear (kg·cm²)

J_3 : Moment of inertia of ball screw (kg·cm²)

J_4 : Moment of inertia of motor rotor (kg·cm²)

J_5 : Moment of inertia of moving object (kg·cm²)

J_6 : Moment of inertia of coupling (kg·cm²)

M : Mass of table and work (kg)

L : Lead of ball screw (cm)

Moment of inertia of cylinders such as ball screw and gear (Calculation of J_1 - J_4 and J_6)

$$J = \frac{\pi\gamma}{32} D^4 \ell \quad (\text{kg}\cdot\text{cm}^2) \dots\dots\dots(40)$$

Where,

D : Outside diameter of cylinder (cm)

ℓ : Length of cylinder (cm)

γ : Specific gravity of material

$$\gamma = 7.8 \times 10^{-3} \quad (\text{kg}\cdot\text{cm}^3)$$

$$J_5 = M \left(\frac{L}{2\pi} \right)^2 \quad (\text{kg}\cdot\text{cm}^2) \dots\dots\dots(41)$$

● Total torque applied to the output shaft of a motor

The total torque can be calculated by adding the value of formula (38) to that of formula (37).

$$T_M = T_1 + T_2 \quad (\text{N}\cdot\text{cm}) \dots\dots\dots(42)$$

Where,

T_M : Total torque applied to output shaft of motor (N·cm)

T_1 : Driving torque at constant speed (N·cm)

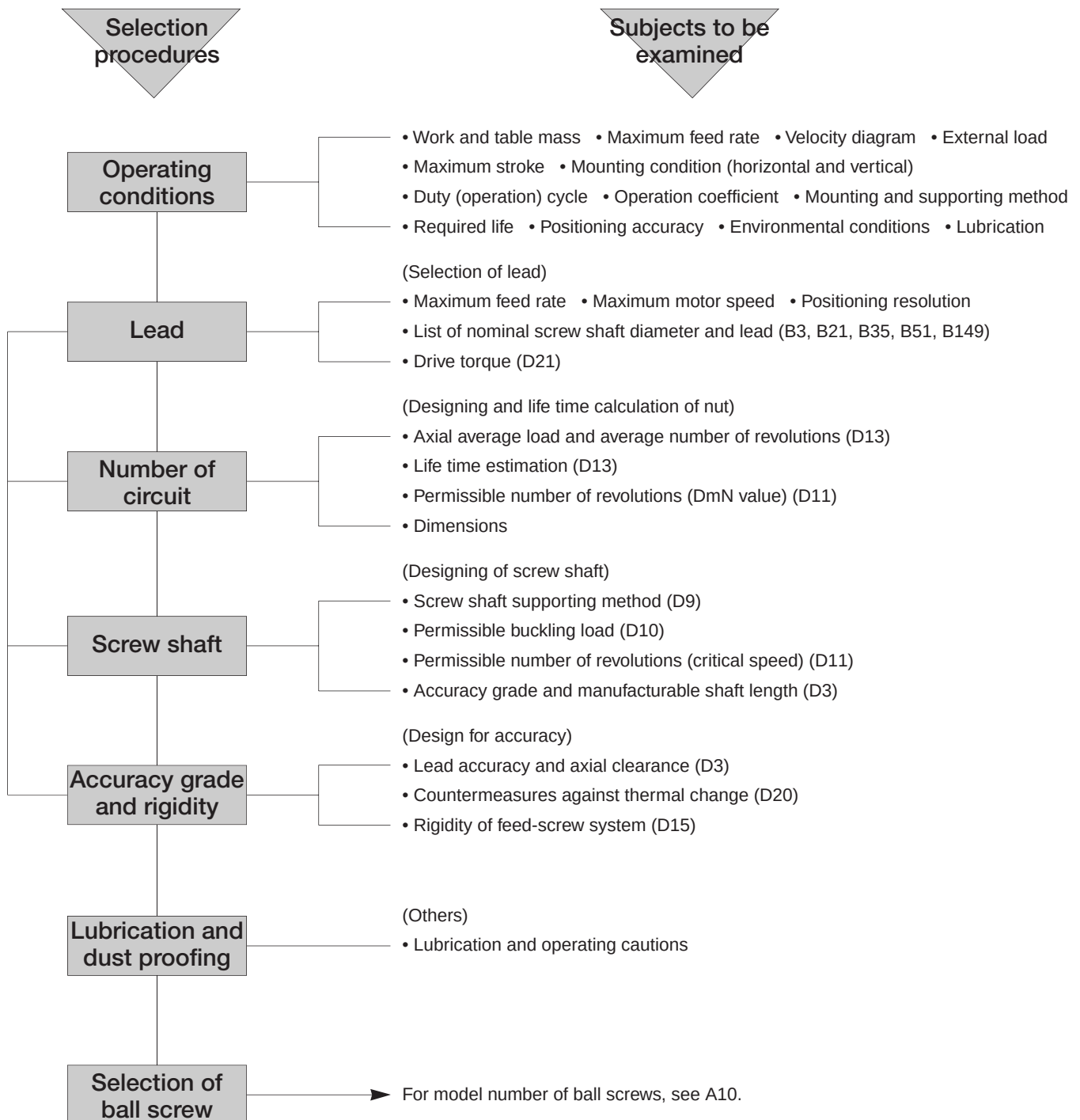
T_2 : Driving torque at the time of acceleration (N·cm)

After temporarily selecting a motor, check the motor for the following three items. The motor you select should satisfactorily meet the respective values.

- (1) Effective torque value
- (2) Acceleration constant
- (3) Over-load characteristics and tolerance to overheat of motor at the time of repetitive starting and stopping

Guide for Ball Screw Selection

When a ball screw is selected, a number of factors are examined from various points of view on the basis of the above-mentioned basic subjects by a process of trial and error. Therefore, the procedure cannot be categorically determined. An example of general procedures and main subjects for examination regarding each item and reference pages are mentioned below:



Technical Data of Ball Screws

Example of ball screw selection

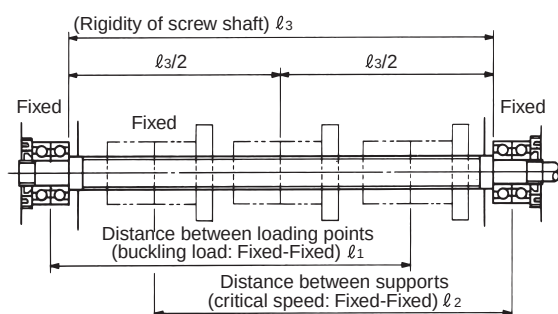
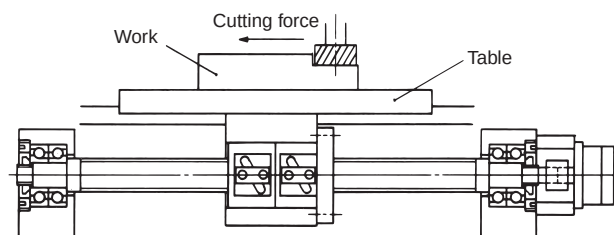
Machine tool

<Specifications>

- Mass of work and table $M = 1300$ (kg)
- Maximum stroke $S_{\max} = 800$ (mm)
- Rapid traverse speed $V_{\max} = 12000$ (mm/min)
- Friction factor of linear guide $\mu = 0.02$
- Load condition

Classification	Axial load (N)	Feed speed (mm/min)	Operating time rate (%)
Rapid traverse speed	300	12000	25
Light/medium cutting	5000	600	55
Heavy cutting	9000	120	20

- Positioning accuracy $\pm 0.04/800$ (mm)
- Required life time 25000 (hour)
- Drive motor $N_{\max} = 2000$ (min⁻¹)
- Shaft-end supporting method Fixed-Fixed



1. Selection of lead (L)

Select the lead so that the maximum r.p.m of the motor and the rapid traverse speed of the motor satisfy the following formula:

$$V \geq \frac{V_{\max}}{N_{\max}} = 6 \text{ (mm)}$$

2. Selection of nut

Examination of necessary basic dynamic load rating and permissible number of revolutions (DmN value)

<In the case of lead 6>

Load conditions

Classification	Axial load (N)	Rotational speed (min ⁻¹)	Operating time rate (%)
Rapid traverse speed	300	12000	25
Light/medium cutting	5000	100	55
Heavy cutting	9000	20	20

Calculating axial average load (P_m) and average number of revolutions (N_m) from load conditions (formulas (6) and (7) on page D13) results in the following formulas:

$$P_m = 2600 \text{ (N)} \quad N_m = 559 \text{ (min}^{-1}\text{)}$$

To calculate necessary basic dynamic load rating (C), transformation formula (5) shown on page D13 is used assuming that life time (L_h) is 25,000 hours and operation coefficient (f_w) is 1.2, as shown below.

$$C = \left(\frac{60 L_h N_m}{10^6} \right)^{\frac{1}{3}} P_m f_w = 29420 \text{ (N)}$$

A nut in suitable size with the smallest diameter can be

selected from page B133 as follows:

Outside diameter 36, lead 6, and 2.5 turns with 3 circuits

Then, when DmN value (formula (3) on page D11) is sought to find permissible number of revolutions, $DmN = 36.8 \times 2000 = 73600$ is found as against permissible $DmN \leq 70000$, showing that it exceeds the permissible value. Consequently, this size is not suitable. Therefore, increase the lead to 8, make the maximum number of revolutions lower, and take another examination.

<In the case of lead 8>

Load conditions

Classification	Axial load (N)	Rotational speed (min ⁻¹)	Operating time rate (%)
Rapid traverse speed	300	1500	25
Light/medium cutting	5000	75	55
Heavy cutting	9000	15	20

The necessary basic dynamic load rating (C) calculated in the same manner as in the case of lead 6 is:

$$P_m = 2600 \text{ (N)} \quad N_m = 419 \text{ (min}^{-1}\text{)} \quad C = 26720 \text{ (N)}$$

Accordingly, a nut in suitable size with the smallest diameter can be selected from page B131 as follows:

Outside diameter 32, lead 8, and 2.5 turns with 2 circuits

Then, DmN value is found to be $DmN = 33 \times 1500 = 49500$, showing that it satisfies the permissible value. Proceed with following examination based on this size.

3. Designing of screw shaft

Examining overall length of screw shaft (ℓ), permissible axial load (P_0), and critical speed (N_c)

Assuming that:

$$\ell = \text{Maximum stroke} + \text{nut length} + \text{allowance} + \text{size of both shaft ends} = 800 + 145 + 80 + 175 = 1200$$

To obtain permissible axial load, examine a buckling load assuming that distance between loading points $\ell_1 = 930$. The following formula can be obtained by formulas (1) and (2) on page D10:

$$P_0 = 141400 \text{ (N)}$$

This can fully satisfy the operating conditions.

The critical speed is calculated from formula (4) on page D11 as follows:

$$N_c = 6490 \text{ (min}^{-1}\text{)}$$

Where, distance between load working points $\ell_2 = 940$.

This can fully satisfy the operating conditions

4. Rigidity of ball screw

Rigidity of screw shaft (K_ℓ)

Calculate at position $\ell_3/2$ where axial deflection is maximized, assuming that distance between bearing end faces $\ell_3 = 1005$. The following formula is obtained by formulas (16) and (18) on page D15.

$$K_\ell = \frac{E\pi d^2}{\ell_3} \times 10^{-3} = 50 \text{ (N/}\mu\text{m)}$$

E: Young's modulus ($2.06 \times 10^5 \text{ N/mm}^2$)

d: Screw shaft root diameter (mm)

Rigidity of nut (K_{nw})

Rigidity to any preload amount assuming that 1/3 of maximum axial load is preload (P_L) can be obtained using formula (22) on page D16.

$$K_{nw} = K_{nw} \left(\frac{P_L}{\frac{1}{15} C} \right)^{\frac{1}{3}} = 59 \left(\frac{300}{\frac{1}{15} \times 3230} \right)^{\frac{1}{3}} = 660 \text{ (N/}\mu\text{m)}$$

As the result of the above-mentioned examination, the nut model number **GR3208ED-DALR** is selected from page B131.

5. Selection of accuracy

Select C5 ($e_c = \pm 0.025$) from positioning accuracy $\pm 0.04/800$ and permissible variable value (e_c) on page D3, assuming that the directivity of actual mean travel can be corrected on the control side.

6. Result of ball screw selection

The model number of the selected ball screw is

GR3208ED-DALR-1200X0985-C5S on page B131.

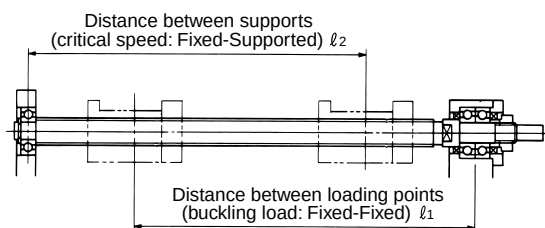
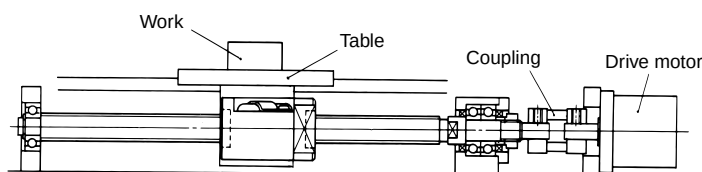
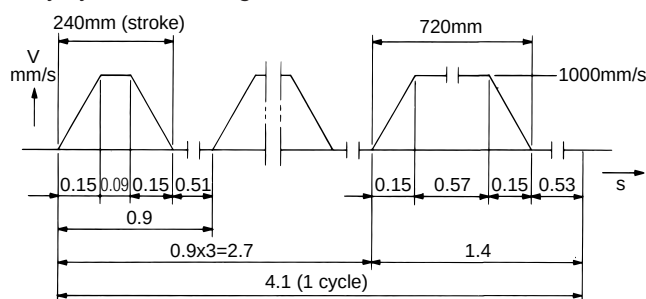
Technical Data of Ball Screws

Example of ball screw selection

X-axis of Cartesian robot (horizontal position)

<Specifications>

- Mass of work and table $M = 50 \text{ (kg)}$
- Maximum stroke $S_{\max} = 720 \text{ (mm)}$
- Rapid traverse speed $V_{\max} = 1000 \text{ (mm/min)}$
- Acceleration/deceleration time constant $t = 0.15 \text{ (s)}$
- Positioning accuracy $\pm 0.1/720 \text{ (mm)}$
- Repeat accuracy $\pm 0.01 \text{ (mm)}$
- Required life time $L_h = 30000 \text{ (hour)}$
- Friction factor of linear guide $\mu = 0.02$
- Drive motor $N_{\max} = 3000 \text{ (min}^{-1}\text{)}$
- Duty cycle model diagram



1. Selection of lead (L)

Select the lead so that the maximum r.p.m of the motor and the rapid traverse speed of the motor satisfy the following formula:

$$L \geq \frac{V_{\max} \times 60}{N_{\max}} = 20 \text{ (mm)}$$

2. Selection of nut

Examination of necessary basic dynamic load rating and permissible number of revolutions (DmN value)

Calculation of axial load in each pattern of operations:

(a) At the time of acceleration

$$\text{Acceleration } (\alpha) = \frac{V_{\max}}{t} \times 10^{-3} = 6.67 \text{ (m/s}^2\text{)}$$

$$\text{Axial load } (P_a) = (M\alpha + \mu Mg) = 343 \text{ (N)}$$

(g: Gravitational acceleration 9.8m/s²)

(b) At the time of constant speed

$$\text{Axial load } (P_b) = \mu Mg = 10 \text{ (N)}$$

(c) At the time of deceleration

$$\text{Axial load } (P_c) = (M\alpha - \mu Mg) = 324 \text{ (N)}$$

Operating time(s) during one cycle of each pattern

Operation pattern	(a)	(b)	(c)	Total operating time
Operating time	0.6	0.84	0.6	2.04

Load conditions at the time of lead 20

Operation pattern	(a)	(b)	(c)
Axial load	343N	10N	324N
Number of revolutions	1500min ⁻¹	3000min ⁻¹	1500min ⁻¹
Operating time ratio	29.4%	41.2%	29.4%

Calculating axial average load (P_m) and average number of revolutions (N_m) from the load conditions (formulas (6) and (7) on page D13) results in the following formulas:

$$P_m = 249 \text{ (N)} \quad N_m = 2118 \text{ (min}^{-1}\text{)}$$

Calculation of necessary basic dynamic load rating (C)

A net operation life time (L_{h0}) excluding downtime based on required life time is calculated as follows:

$$L_{h0} = 30000 \left(\frac{2.04}{4.1} \right) = 14927 \text{ (hours)}$$

Transformation formula (5) shown on page D13 is used assuming that operation coefficient $f_w = 1.2$, as shown below.

$$C = \left(\frac{60 L_{h0} N_m}{10^6} \right)^{\frac{1}{3}} \times P_m \times f_w = 3700 \text{ (N)}$$

A ball screw in suitable size can be selected from standard ball screw GE and GG series (page B85) as follows:

Outside diameter 15, lead 20, and 1.5 turns with 1 circuits

When looking for DmN value (formula (3) on page D11) as a permissible number of revolutions, $DmN = 15.8 \times 3000 = 47400$ is found with respect to $DmN \leq 70000$, showing that it satisfies the permissible value. Proceed with following examination based on this size.

3. Selection of screw shaft

Examining overall length of screw shaft (ℓ), critical speed (N_c), and buckling load (P_k)

$$\begin{aligned} \ell &= \text{Maximum stroke} + \text{nut length} + \text{safety stroke} + \\ &\text{size of both shaft ends} = 720 + 62 + 60 + 78 = 920 \\ &\quad (\text{mm}) \end{aligned}$$

To obtain permissible axial load, examine the buckling load assuming that distance between loading points $\ell_1 = 820$. The following formula can be obtained by formulas (1) and (2) on page D10:

$$P_k = 7220 \text{ (N)}$$

This fully satisfies the operating condition.

Assuming that distance between supports $\ell_2 = 790$, critical speed can be obtained by formula (4) (Fixed-Supported) on page D11 as follows:

$$N_c = 3024 \text{ (min}^{-1}\text{)}$$

This satisfies the operating condition.

4. Selection of accuracy

Examination of accuracy grade and axial clearance

The accuracy grade that can satisfy positioning accuracy of $\pm 0.1/750$ mm is determined, from the permissible value of lead accuracy (page D3), to be C5 (actual mean travel deviation $\pm E_c = 0.035$ and variation $e_c = 0.025$).

Axial clearance is set to 0.005 or less based on repeated positioning accuracy ± 0.01 .

5. Result of section of ball screw and support unit

Provided that additional machining of standard ball screw GG series with unfinished shaft end is performed, the following model number is selected from page B85:

GG1520AS-BALR-1100A

The model number of a suitable support unit selected from page C5 is BUK-12.

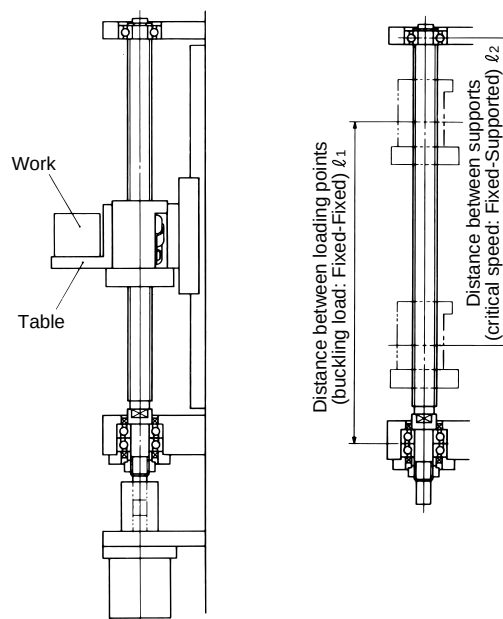
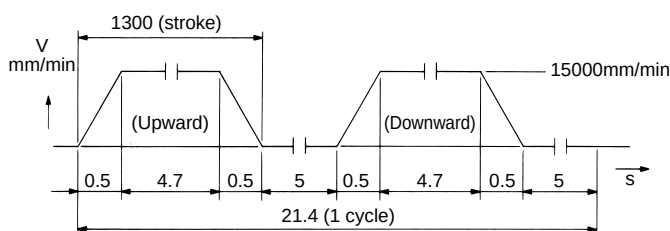
Technical Data of Ball Screws

Example of ball screw selection

Elevator (vertical position)

<Specifications>

- Mass of work and table $M = 100 \text{ (kg)}$
- Maximum stroke $S_{\max} = 1300 \text{ (mm)}$
- Rapid traverse speed $V_{\max} = 15000 \text{ (mm/min)}$
- Acceleration/deceleration time constant $t = 0.5 \text{ (s)}$
- Repeat accuracy 0.5 (mm)
- Required life time $L_h = 20000 \text{ (hour)}$
- Friction factor of linear guide $\mu = 0.02$
- Drive motor $N_{\max} = 1500 \text{ (min}^{-1}\text{)}$
- Duty cycle model diagram



1. Selection of lead (L)

Select the lead so that the maximum r.p.m of the motor and the rapid traverse speed of the motor satisfy the following formula:

$$L \geq \frac{V_{\max}}{N_{\max}} = 10 \text{ (mm)}$$

2. Selection of nut

Examination of necessary basic dynamic load rating and permissible number of revolutions (DmN value)

Calculation of axial load in each pattern of operations:

(a) At the time of acceleration

$$\text{Acceleration } (\alpha) = \frac{V_{\max}}{t \cdot 60} \times 10^{-3} = 0.5 \text{ (m/s}^2\text{)}$$

$$\text{Axial load } (P_a) = (M\alpha + Mg) = 1030 \text{ (N)}$$

(g: Gravitational acceleration 9.8m/s²)

(b) At the time of constant speed

$$\text{Axial load } (P_b) = Mg = 980 \text{ (N)}$$

(c) At the time of upward deceleration and downward acceleration

$$\text{Axial load } (P_c) = (Mg - M\alpha) = 930 \text{ (N)}$$

Operating time(s) during one cycle of each pattern

Operation pattern	(a)	(b)	(c)	Total operating time
Operating time	1	9.4	1	11.4

Load conditions at the time of lead 10

Operation pattern	(a)	(b)	(c)
Axial load	1030N	980N	930N
Number of revolutions	750min ⁻¹	1500min ⁻¹	750min ⁻¹
Operating time rate	8.8%	82.4%	8.8%

Calculating axial average load (P_m) and average number of revolutions (N_m) from the load conditions (formulas (6) and (7) on page D13) results in the following formulas:

$$P_m = 980 \text{ (N)} \quad N_m = 1368 \text{ (min}^{-1}\text{)}$$

Calculation of necessary basic dynamic load rating (C)

A net operation life time (L_{h0}) excluding downtime based on required life time is calculated as follows:

$$L_{h0} = L_h \left(\frac{11.4}{21.4} \right) = 10654 \text{ (hours)}$$

As the operation accompanied by vibration is anticipated, operation coefficient is calculated by transformation formula (5) on page D13, assuming that the operation coefficient $f_w=1.5$, as shown below.

$$C = \left(\frac{60 L_{h0} N_m}{10^6} \right)^{\frac{1}{3}} \times P_m \cdot f_w = 14057 \text{ (N)}$$

Suitable nut size can be selected from rolled ball screw GY series (page B221) based on repeatability 0.5 as follows:

Outside diameter 25, lead 10, and 2.5 turns with 2 circuits

When looking for DmN value (formula (3) on page D11) as a permissible number of revolutions, $DmN = 26.8 \times 1500 = 40200$ is found with regards to $DmN \leq 50000$, showing that it satisfies the permissible value. Proceed with following examination based on this size.

3. Selection of screw shaft

Examination of overall length of screw shaft (ℓ) and permissible axial load (P_k)

$$\begin{aligned} \ell &= \text{Maximum stroke} + \text{nut length} + \text{safety stroke} + \\ &\text{size of both shaft ends} = 1300 + 92 + 60 + 118 = 1570 \\ &\quad (\text{mm}) \end{aligned}$$

To obtain permissible axial load, examine the buckling load, assuming that distance between load working points $\ell_1 = 1440$. The following formula can be obtained by formulas (1) and (2) (Fixed-Fixed) on page D 10:

$$P_k = 16290 \quad (\text{N})$$

This satisfies the operating condition.

Assuming that distance between supports $\ell_2 = 1420$, the following formula can be obtained by formula (4) (Fixed-Supported) on page D11:

$$N_c = 1520 \quad (\text{min}^{-1})$$

This satisfies the operating condition.

4. Result of ball screw selection

Provided that additional machining of rolled ball screw GY series is performed, the following model number is selected from page B221:

GY2510ES-HULR-2000A

Ballscrew specification data sheet

Company Name		Date	
Department		Contact personnel	
Address		Tel • Fax	
Name of equipment/machine used		Location of use	
Drawing/conceptual drawing attached?	☐ Yes pieces of pages	☐ No	

Conditions of Use (Either unit system may be used.)

Mass of work and table					
Type of slide guide	☐ Rolling (model number:)		☐ Sliding		
Operating orientation	☐ Horizontal	☐ Vertical	☐ Other (description:)		
Maximum table speed	mm/s	Maximum table stroke		mm	
Mount/support method	☐ Fixed - fixed (semi-fixed)	☐ Fixed - support	☐ Fixed - free	☐ Support - support	
Moving conditions	☐ Shaft rotation - nut movement		☐ Nut rotation - nut movement		☐ Forward operation
	☐ Shaft rotation - shaft movement		☐ Nut rotation - shaft movement		☐ Reverse operation
	Oscillation	☐ Yes	☐ No	Range of oscillation	mm
Vibration impact level					
Expected life					
Operating conditions (Select either Case A or B below and describe the operating conditions)					
☐ Case A (when axial load and revolving speed can be classified into several patterns) - Please attach a separate document if your descriptions do not fit in the following table.					
No. of patterns	Axial load		Revolving speed		Hours or ratio of use
1					
2					
3					
☐ Case B (when largely impacted by inertial force) - Please attach a separate document if your descriptions do not fit in the following table.					
No. of patterns	Strokes	Table speed	Acceleration time	Constant-speed time	Deceleration time
1					
2					
3					
Lubrication	☐ Grease (brand)			☐ Oil (brand)	
Environmental conditions	Temp.	Dust	Humidity	Gas	Liquid
	°C		%		In
Change control	☐ Yes		☐ No		
Name of motor					
Actuator quantity per a machine					
Quantity for prototype					
Quantity for mass production					

Ballscrew specifications

Screw shaft diameter		Thread direction		Axial clearance		Thread length		Preload	
Lead		Number of circuits		Accuracy grade		Overall length		Required torque	
Nut type	☐ Single	☐ Double	☐ Integral	Flange type		Mounting direction			

Additional description/request

KURODA office Contact personnel

Ballscrew specification data sheet (Sample)

Company Name	XYZ Industries, Co., Ltd.	Date	
Department	Stage design dept.	Contact personnel	
Address		Tel • Fax	
Name of equipment/machine used	NC lathe	Location of use	Right and left table forwarding along Z-axis
Drawing/conceptual drawing attached?	☒ Yes 1 pieces of pages ☐ No		

Conditions of Use (Either unit system may be used.)

Mass of work and table	1000 kg					
Type of slide guide	☐ Rolling (model number:)			☒ Sliding		
Operating orientation	☒ Horizontal		☐ Vertical		☐ Other (description:)	
Maximum table speed	400 mm/s		Maximum table stroke		830 mm	
Mount/support method	☒ Fixed - fixed (semi-fixed)		☐ Fixed - support		☐ Fixed - free	
Moving conditions	☒ Shaft rotation - nut movement		☐ Nut rotation - nut movement		☐ Forward operation	
	☐ Shaft rotation - shaft movement		☐ Nut rotation - shaft movement		☐ Reverse operation	
	Oscillation	☒ Yes	☐ No	Range of oscillation	20 mm	
Vibration impact level						
Expected life	20,000 hours					
Operating conditions (Select either Case A or B below and describe the operating conditions)						
☐ Case A (when axial load and revolving speed can be classified into several patterns) - Please attach a separate document if your descriptions do not fit in the following table.						
No. of patterns	Axial load		Revolving speed		Hours or ratio of use	
1	6000 N		100 mm/s		10 %	
2	3500 N		200 mm/s		65 %	
3	1500 N		400 mm/s		25 %	
☐ Case B (when largely impacted by inertial force) - Please attach a separate document if your descriptions do not fit in the following table.						
No. of patterns	Strokes	Table speed	Acceleration time	Constant-speed time	Deceleration time	
1						
2						
3						
Lubrication	☒ Grease (brand)		☐ Oil (brand)			
Environmental conditions	Temp.	Dust	Humidity	Gas	Liquid	Clean room
	20 °C	Slightly there	%		In	
Change control	☐ Yes		☒ No			
Name of motor						
Actuator quantity per a machine						
Quantity for prototype						
Quantity for mass production						

Ballscrew specifications

Screw shaft diameter		Thread direction		Axial clearance		Thread length		Preload	
Lead		Number of circuits		Accuracy grade		Overall length		Required torque	
Nut type	☐ Single	☐ Double	☐ Integral	Flange type		Mounting direction			

Additional description/request

Request for an expected life calculation			
KURODA office		Contact personnel	

Standard Ground Ball Screw

Shaft end finish ordering sheet

FE Series (Accuracy grade C7)/FG Series (Accuracy grade C5)	——	E_ 3 ~ 7
DP Series (Accuracy grade C3)	—————	E_ 9 ~ 13
HG Series (Accuracy grade C5)	—————	E_15 ~ 22
GP Series (Accuracy grade C3)	—————	E_24 ~ 28
GE Series (Accuracy grade C7)/GG Series (Accuracy grade C5)	——	E_30 ~ 40
Rolled Ball Screw:GW Series (Accuracy grade C7)	—————	E_42 ~ 52
Rolled Ball Screw:GY Series (Accuracy grade C10)	—————	E_54 ~ 69

FE Series (Accuracy grade C7)/ FG Series (Accuracy grade C5) Shaft end finish ordering sheet

Screw shaft diameter ø10, Lead 10	_____	E_ 3
Screw shaft diameter ø12, Lead 10, 20	_____	E_ 4
Screw shaft diameter ø15, Lead 5, 10, 20	_____	E_ 5
Screw shaft diameter ø20, Lead 10, 20	_____	E_ 6
Screw shaft diameter ø25, Lead 5, 10, 25	_____	E_ 7

SHAFT END FINISH ORDERING SHEET

Screw shaft diameter ø10, Lead 10

FE1010PS-HPNR-

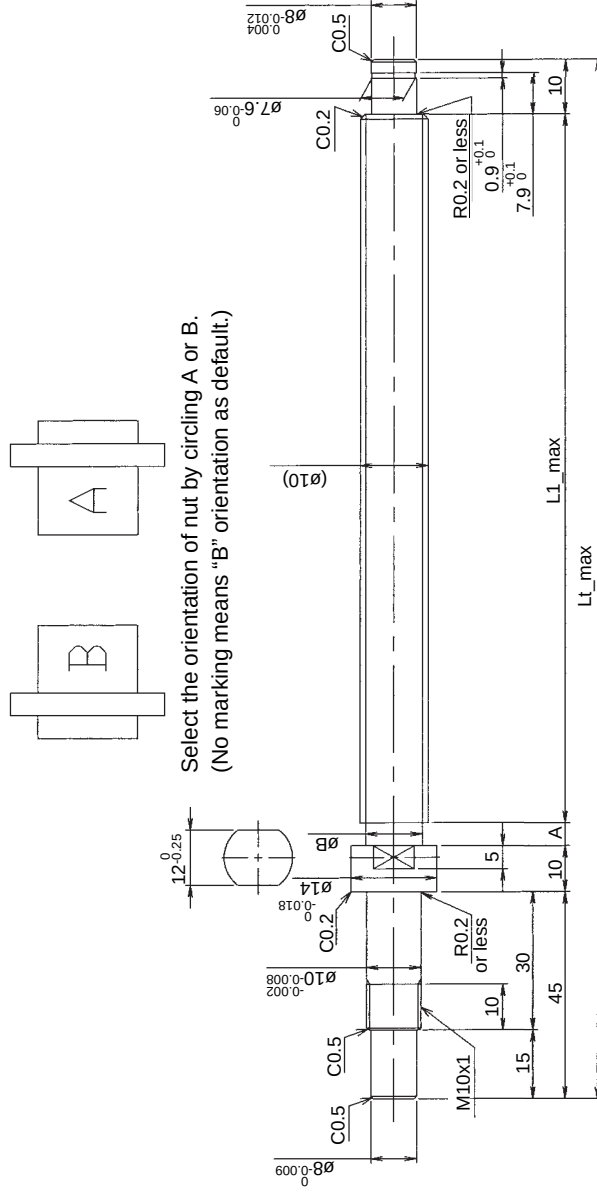
X

-C7M
FG1010PS-HPNR-

X

-C5

(Unit: mm)



* For the size with the ▲ mark in the table below, spiral mark may be left at the end diameter ø8 portion of supported end.

Model No.	A	B	Root diameter	Lt_max.	L1_max.
FE/FG1010	8	8.1	8.1	655	582

Applicable support unit model	
Rectangle type	BUK-10F Fixed end
	BUK-8S Supported end
	BUK-10 Fixed end, Supported end bearing
Circle flange type	BUM-10F Fixed end
	BUM-8S Supported end
	BUM-10 Fixed end, Supported end bearing

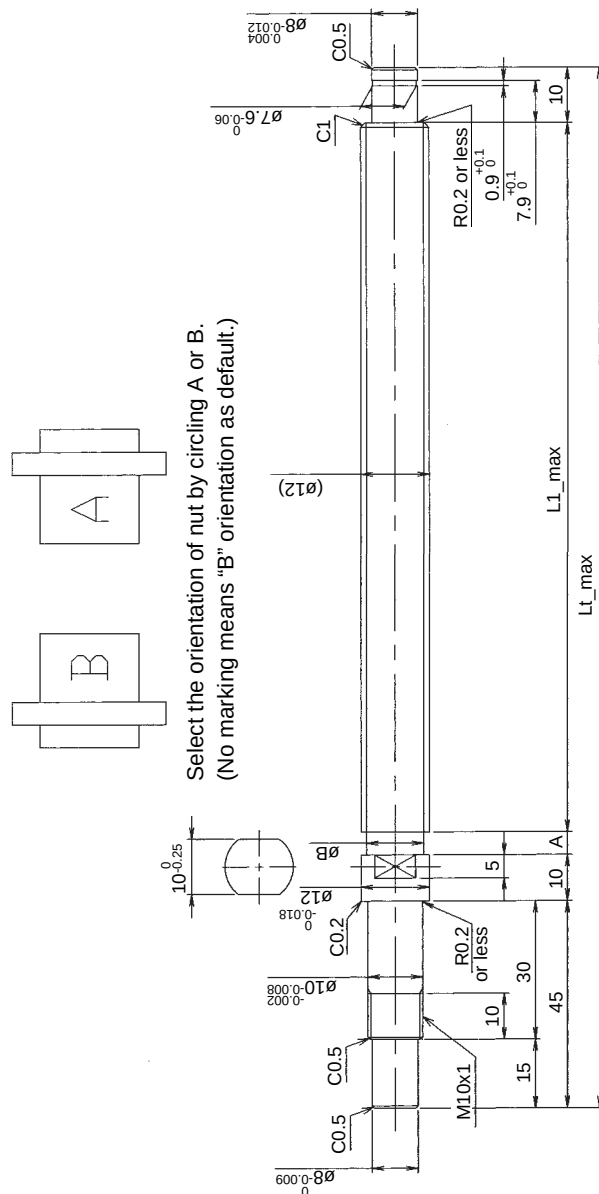
Company name		
TEL		Name of person in charge
Company address		

SHAFT END FINISH ORDERING SHEET

Screw shaft diameter Ø12, Lead 10, 20

	FE12	PS-HPNR-	X	-C7M
	FG12	PS-HPNR-	X	-C5

(Unit: mm)



Model No.	A	B	Root diameter	Lt_max.	L1_max.
FE/FG1210	5	9.5	9.5	605	535
FE/FG1220	5	9.5	9.5	900	830

Applicable support unit model		
Rectangle type	BUK-10F	Fixed end
	BUK-8S	Supported end
	BUK-10	Fixed end, Supported end bearing
Circle flange type	BUM-10F	Fixed end
	BUM-8S	Supported end
	BUM-10	Fixed end, Supported end bearing

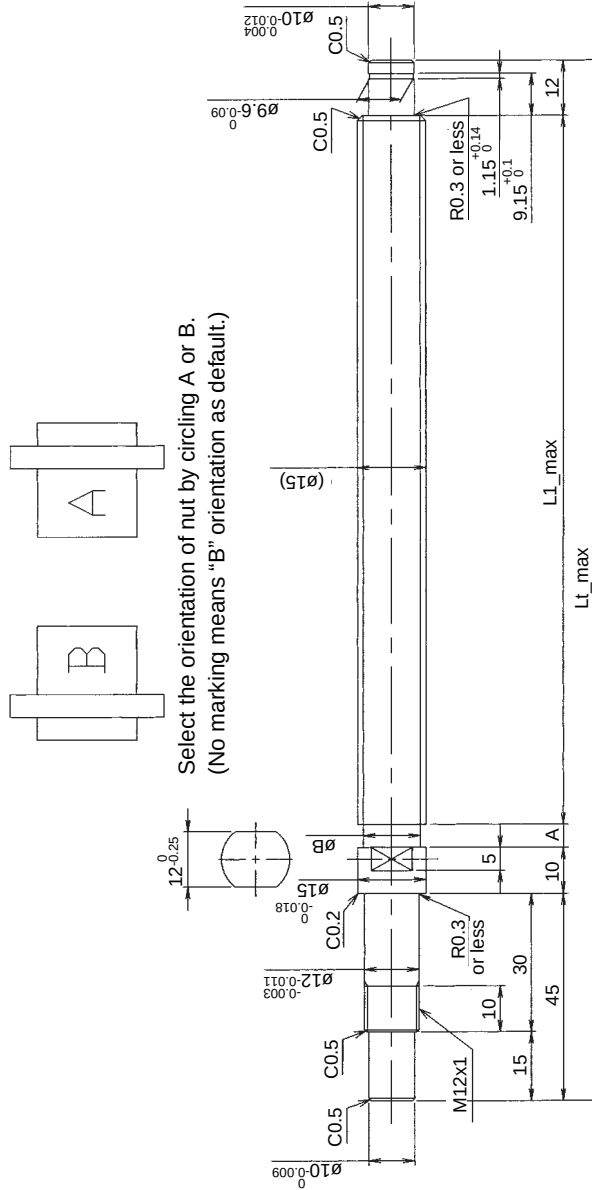
Company name		
TEL		Name of person in charge
Company address		

SHAFT END FINISH ORDERING SHEET

Screw shaft diameter $\varnothing 15$, Lead 5, 10, 20

FE15 ☐ PS-HPNR-☐☐☐☐ X ☐☐☐ -C7M
FG15 ☐ PS-HPNR-☐☐☐☐ X ☐☐☐ -C5 ☐

(Unit: mm)



Select the orientation of nut by circling A or B.
(No marking means "B" orientation as default.)

Model No.	A	B	Root diameter	Lt_max.	L1_max.
FE/FG1505	5	12.5	12.5	1100	1028
FE/FG1510	5	12.5	12.5	1500	1428
FE/FG1520	5	12.5	12.5	1500	1428

Applicable support unit model	
Rectangle type	BUK-12F Fixed end
	BUK-10S Supported end
	BUK-12 Fixed end, Supported end bearing
Circle flange type	BUM-12F Fixed end
	BUM-10S Supported end
	BUM-12 Fixed end, Supported end bearing

Company name		
TEL		
Company address		

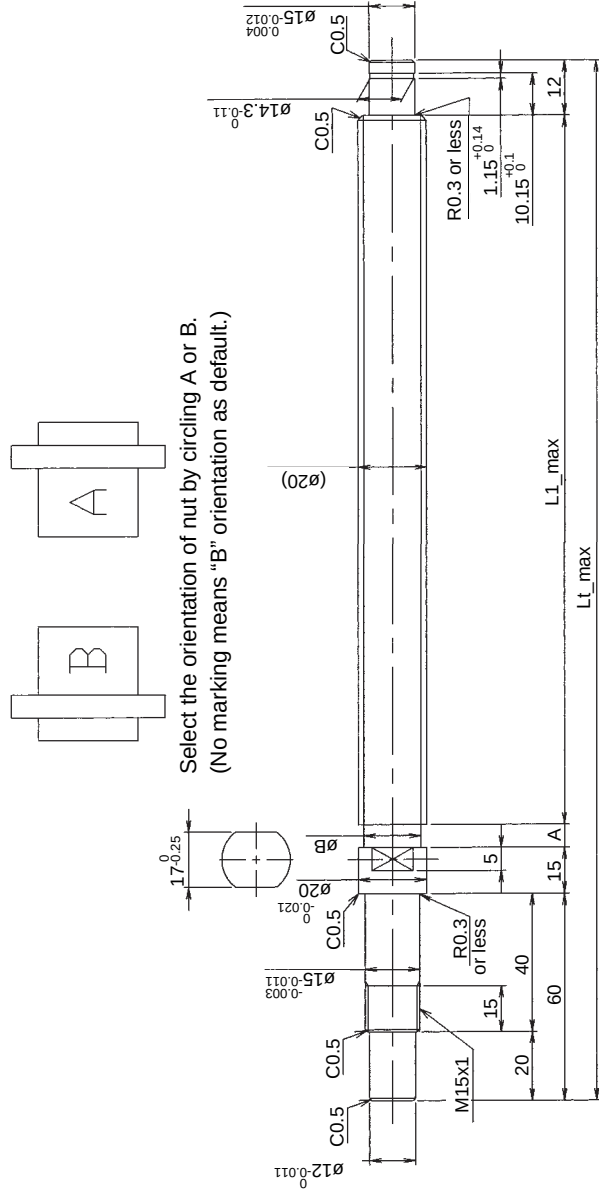
SHAFT END FINISH ORDERING SHEET

Screw shaft diameter ø20, Lead 10, 20

FE20 ☐ PS-HPNR-☐☐☐☐☐ X ☐☐☐☐ -C7M

FG20 ☐ PS-HPNR-☐☐☐☐☐ X ☐☐☐☐ -C5 ☐

(Unit: mm)

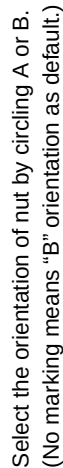


Model No.	A	B	Root diameter	Lt_max.	L1_max.
FE/FG2010	8	16	16	1805	1710
FE/FG2020	8	15.9	15.9	1805	1710

Applicable support unit model		
Rectangle type	BUK-15F	Fixed end
	BUK-15S	Supported end
	BUK-15	Fixed end, Supported end bearing
Circle flange type	BUM-15F	Fixed end
	BUM-15S	Supported end
	BUM-15	Fixed end, Supported end bearing

Company name		
TEL		Name of person in charge
Company address		

(Unit: mm)



Applicable support unit model	
Rectangle type	BUK-20F Fixed end
	BUK-20S Supported end
	BUK-20 Fixed end, Supported end bearing
Circle flange type	BUM-20F Fixed end
	BUM-20S Supported end
	BUM-20 Fixed end, Supported end bearing

Company name		
TEL		Name of person in charge
Company address		

DP Series (Accuracy grade C3)

Shaft end finish ordering sheet

Screw shaft diameter ø6, Lead 1 _____ E_ 9
Screw shaft diameter ø8, Lead 1, 2 _____ E_10
Screw shaft diameter ø10, Lead 2 _____ E_11
Screw shaft diameter ø12, Lead 2, 3 _____ E_12
Screw shaft diameter ø14, Lead 4 _____ E_13

SHAFT END FINISH ORDERING SHEET

Screw shaft diameter $\varnothing 6$, Lead 1

DP0601JS-HDNR-

X

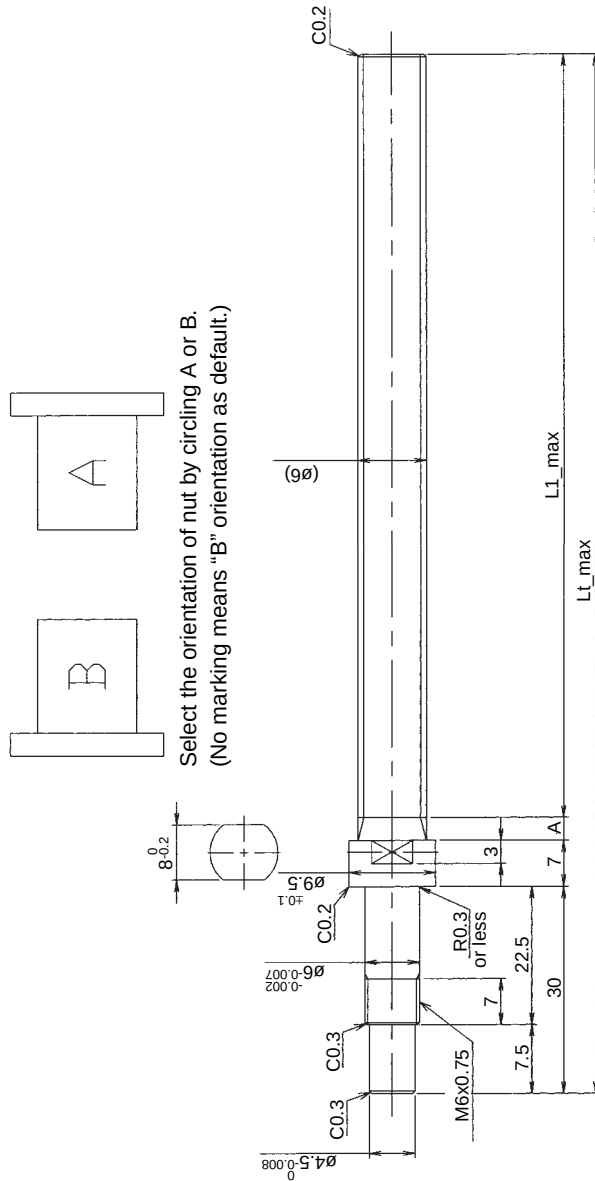
-C3F

DP0601JS-HDNR-

X

-C3S

(Unit: mm)



Model No.	A	---	Root diameter	Lt_max.	L1_max.
DP0601J	3	---	5.3	210	170

Applicable support unit model		
Rectangle type	BUK-6	Fixed end, Supported end bearing
Circle flange type	BUM-6F	Fixed end
	BUM-6	Fixed end, Supported end bearing

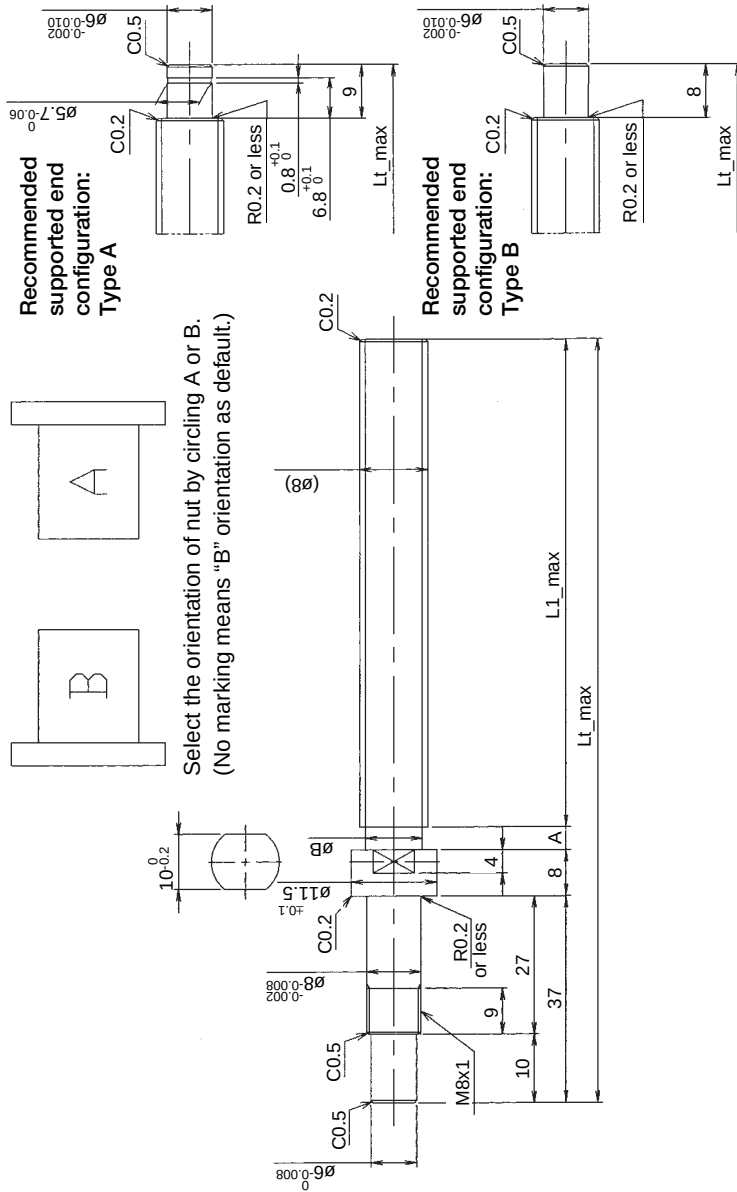
Company name		
TEL		Name of person in charge
Company address		

SHAFT END FINISH ORDERING SHEET

Screw shaft diameter ø8, Lead 1, 2

(Unit: mm)

DP08	JS-HDNR-	-C3F
		X
DP08	JS-HDNR-	-C3S
		X



Model No.	A	B	Root diameter	Lt_max.	L1_max.
DP0801J	3	7.3	7.3	260	212
DP0802J	3	7	7	260	212

Applicable support unit model	
Rectangle type	BUK-8F Fixed end
	BUK-6S Supported end
	BUK-8 Fixed end, Supported end bearing
Circle flange type	BUM-8F Fixed end
	BUM-6S Supported end
	BUM-8 Fixed end, Supported end bearing

Company name		
TEL		Name of person in charge
Company address		

SHAFT END FINISH ORDERING SHEET

Screw shaft diameter ø10, Lead 2

DP1002JS-HDNR-

X

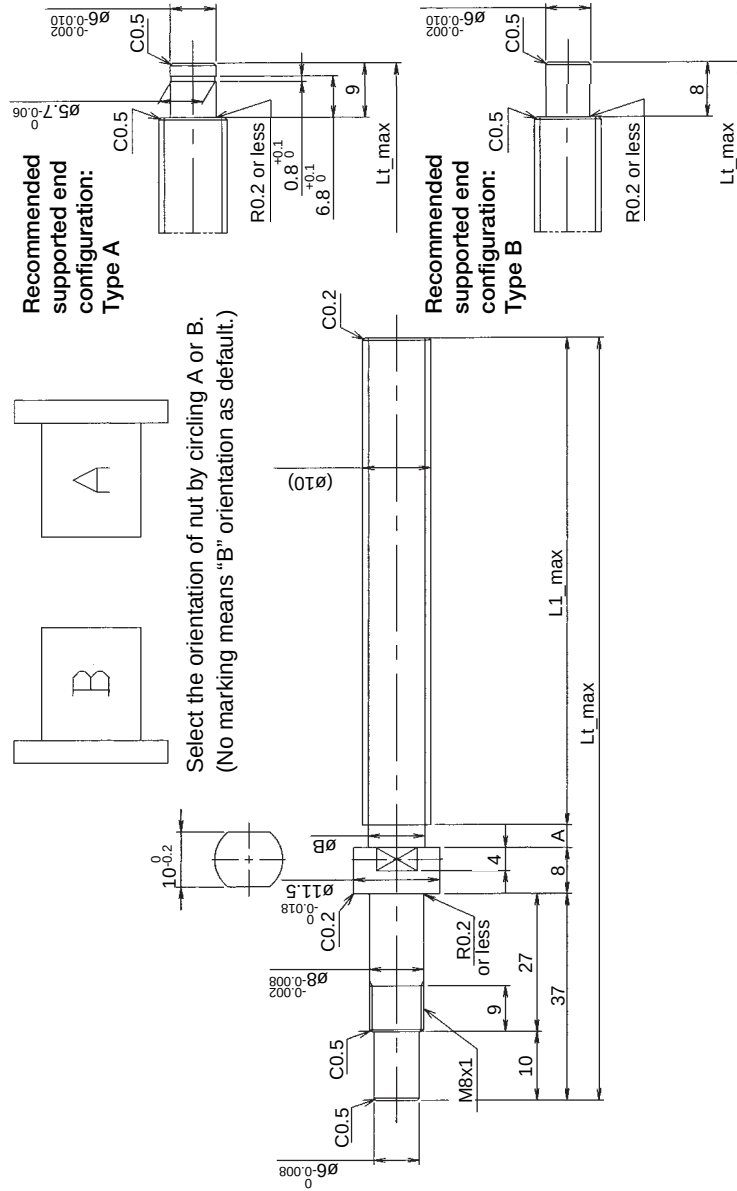
-C3F

DP1002JS-HDNR-

X

-C3S

(Unit: mm)



Model No.	A	B	Root diameter	Lt_max.	L1_max.
DP1002J	3	9	9	320	272

Applicable support unit model	
Rectangle type	BUK-8F Fixed end
	BUK-6S Supported end
	BUK-8 Fixed end, Supported end bearing
Circle flange type	BUM-8F Fixed end
	BUM-6S Supported end
	BUM-8 Fixed end, Supported end bearing

Company name		
TEL		Name of person in charge
Company address		

SHAFT END FINISH ORDERING SHEET

Screw shaft diameter $\varnothing 12$, Lead 2, 3

DP1202JS-HDNR-

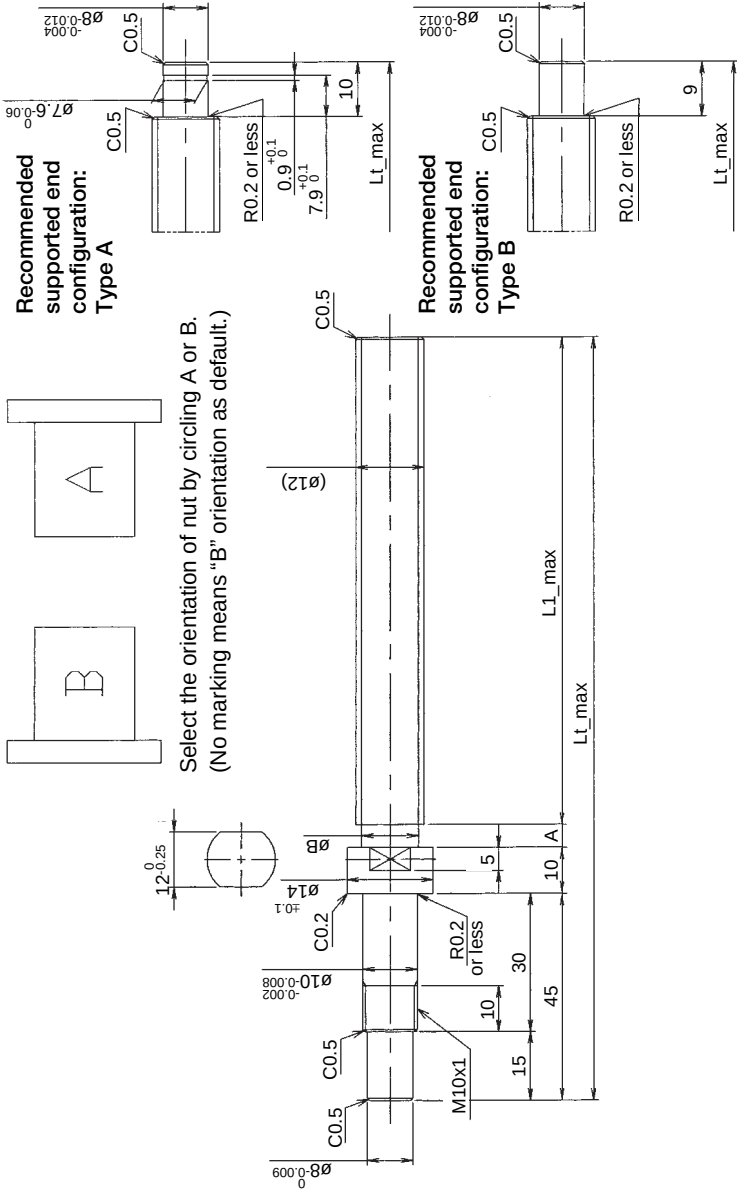
X

-C3F
DP1203JS-HDPR-

X

-C3S

(Unit: mm)



Model No.	A	B	Root diameter	Lt_max.	L1_max.
DP1202J	3	11	11	400	342
DP1203J	5	10.3	10.3	400	340

Applicable support unit model	
Rectangle type	BUK-10F Fixed end
	BUK-8S Supported end
	BUK-10 Fixed end, Supported end bearing
Circle flange type	BUM-10F Fixed end
	BUM-8S Supported end
	BUM-10 Fixed end, Supported end bearing

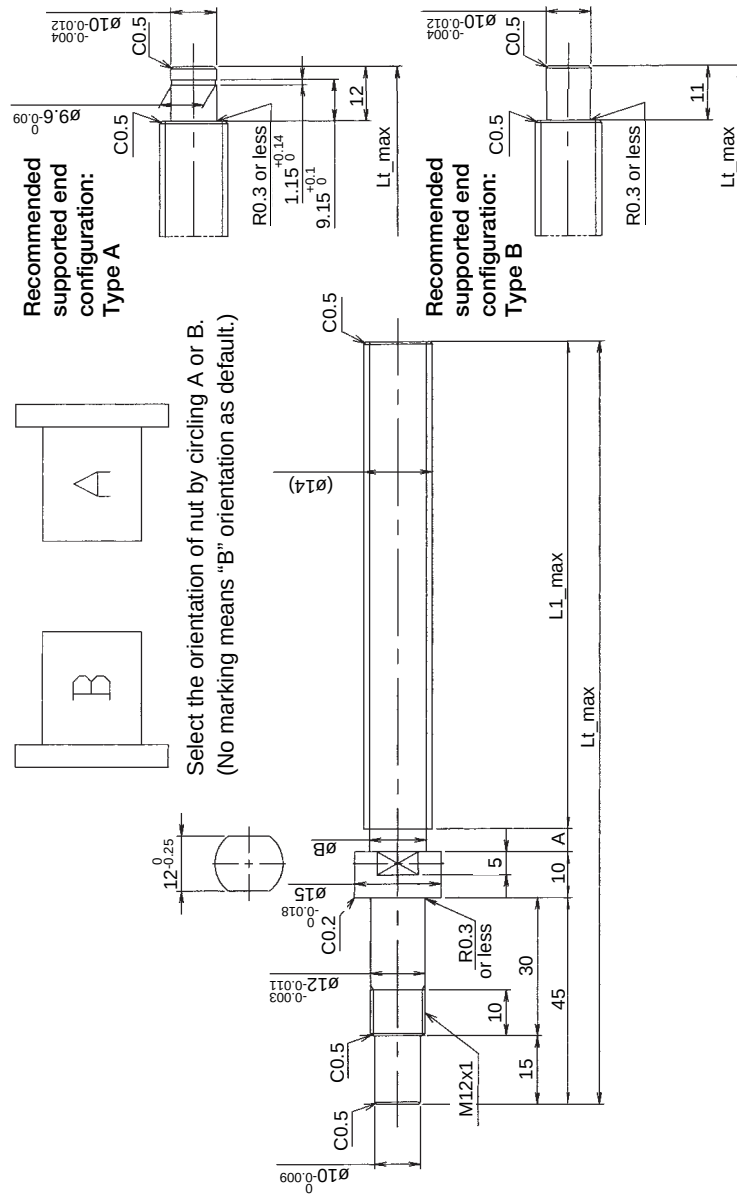
Company name		
TEL		Name of person in charge
Company address		

SHAFT END FINISH ORDERING SHEET

Screw shaft diameter $\varnothing 14$, Lead 4

	-C3F	-C3S
DP1404JS-HDPR-	X	X
DP1404JS-HDPR-		

(Unit: mm)



Model No.	A	B	Root diameter	Lt_max.	L1_max.
DP1404J	5	12.1	12.1	530	470

Applicable support unit model	
Rectangle type	BUK-12F Fixed end
	BUK-10S Supported end
	BUK-12 Fixed end, Supported end bearing
Circle flange type	BUM-12F Fixed end
	BUM-10S Supported end
	BUM-12 Fixed end, Supported end bearing

Company name		
TEL		Name of person in charge
Company address		

HG Series (Accuracy grade C5)

Shaft end finish ordering sheet

Screw shaft diameter ø6, Lead 6	_____	E_15
Screw shaft diameter ø8, Lead 12	_____	E_16
Screw shaft diameter ø12, Lead 30	_____	E_17
Screw shaft diameter ø15, Lead 20, 40	_____	E_18
Screw shaft diameter ø16, Lead 32	_____	E_19
Screw shaft diameter ø20, Lead 20, 30, 40, 60	_____	E_20
Screw shaft diameter ø25, Lead 50	_____	E_21
Screw shaft diameter ø32, Lead 64	_____	E_22

SHAFT END FINISH ORDERING SHEET

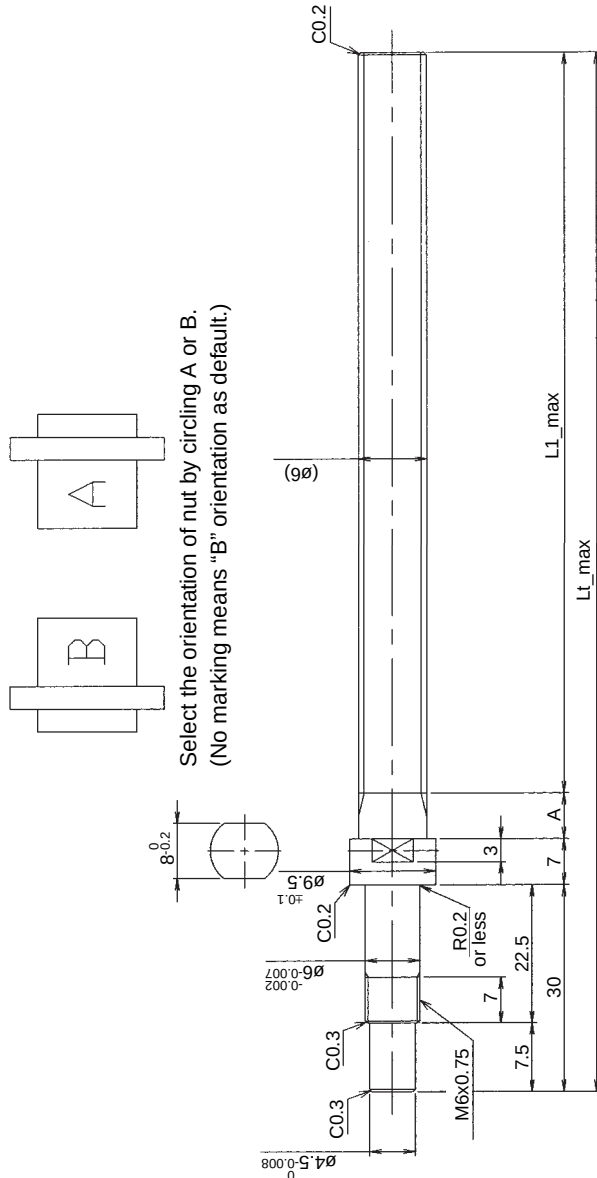
Screw shaft diameter $\varnothing 6$, Lead 6

HG0606QS-HEZR-

 X

 -C5H

(Unit: mm)



Model No.	A	Root diameter	Lt_max.	L1_max.
HG0606	8	5.1	207	162

Applicable support unit model		
Rectangle type	BUK-6	Fixed end, Supported end bearing
Circle flange type	BUM-6F	Fixed end
	BUM-6	Fixed end, Supported end bearing

Company name		
TEL		Name of person in charge
Company address		

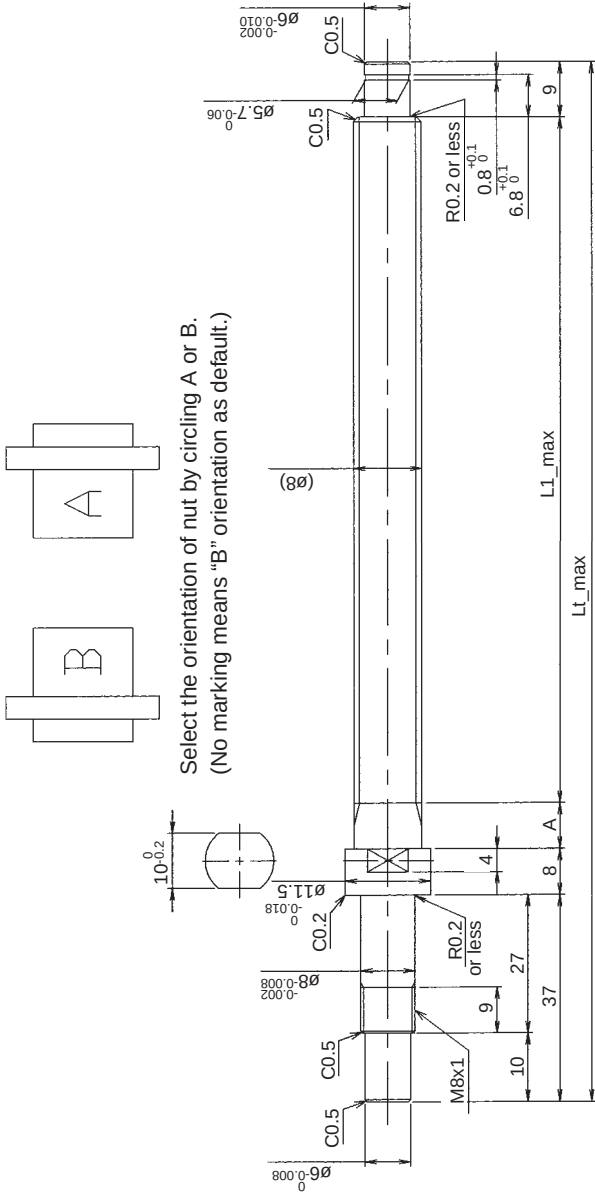
KURODA Standard Ground Ball Screw: HG Series (Accuracy grade C5)

SHAFT END FINISH ORDERING SHEET

Screw shaft diameter ø8, Lead 12

HG0812QS-HEZR- X -C5H

(Unit: mm)



Model No.	A	B	Root diameter	Lt_max.	L1_max.
HG0812	6	6.6	6.6	340	280

Applicable support unit model	
Rectangle type	BUK-8F Fixed end
	BUK-6S Supported end
	BUK-8 Fixed end, Supported end bearing
Circle flange type	BUM-8F Fixed end
	BUM-6S Supported end
	BUM-8 Fixed end, Supported end bearing

Company name		
TEL		Name of person in charge
Company address		

SHAFT END FINISH ORDERING SHEET

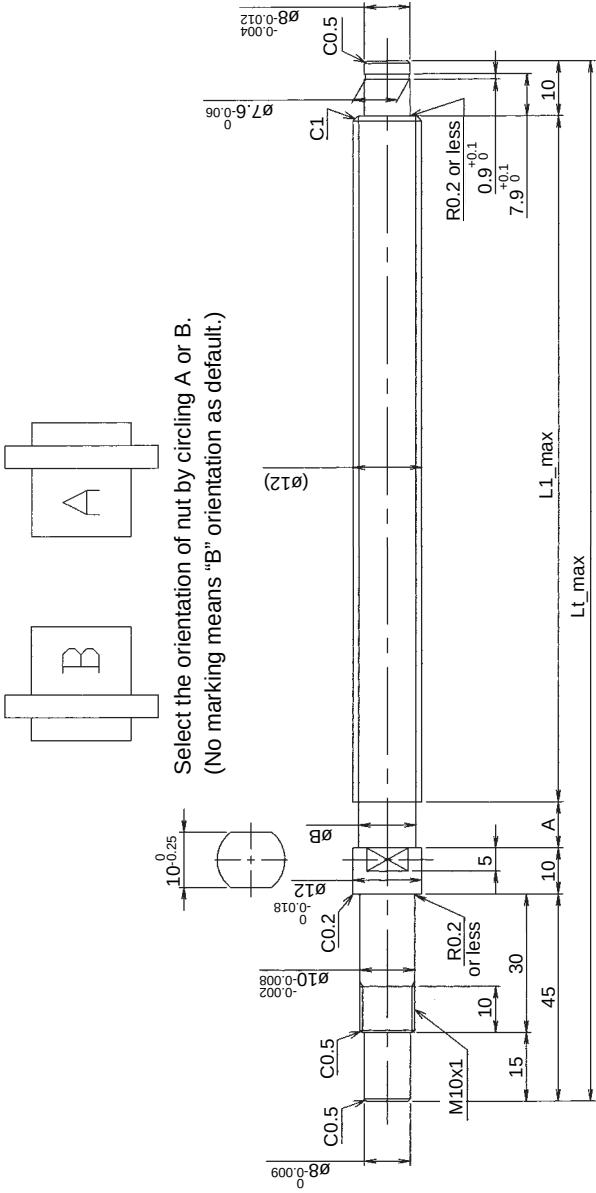
Screw shaft diameter $\varnothing 12$, Lead 30

HG1230QS-HEZR-

 X

 -C5H

(Unit: mm)



Model No.	A	B	Root diameter	Lt_max.	L1_max.
HG1230	15	9.5	9.5	800	720

Applicable support unit model	
Rectangle type	BUK-10F Fixed end
	BUK-8S Supported end
	BUK-10 Fixed end, Supported end bearing
Circle flange type	BUM-10F Fixed end
	BUM-8S Supported end
	BUM-10 Fixed end, Supported end bearing

Company name		
TEL		Name of person in charge
Company address		

SHAFT END FINISH ORDERING SHEET

Screw shaft diameter $\varnothing 15$, Lead 20, 40

HG1520QS-HEZR-

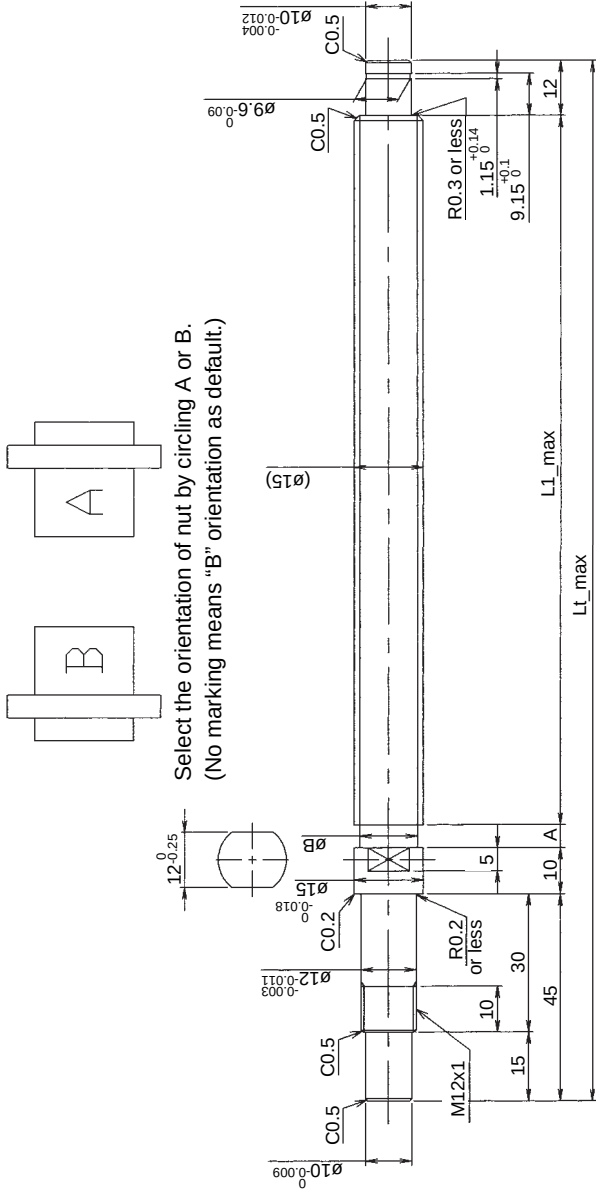
X

-C5F
HG1540QS-BEZR-

X

-C5H

(Unit: mm)



Model No.	A	B	Root diameter	Lt_max.	L1_max.
HG1520	10	12.5	12.5	1500	1423
HG1540	15	12.5	12.5	1100	1018

Applicable support unit model		
Rectangle type	BUK-12F	Fixed end
	BUK-10S	Supported end
	BUK-12	Fixed end, Supported end bearing
Circle flange type	BUM-12F	Fixed end
	BUM-10S	Supported end
	BUM-12	Fixed end, Supported end bearing

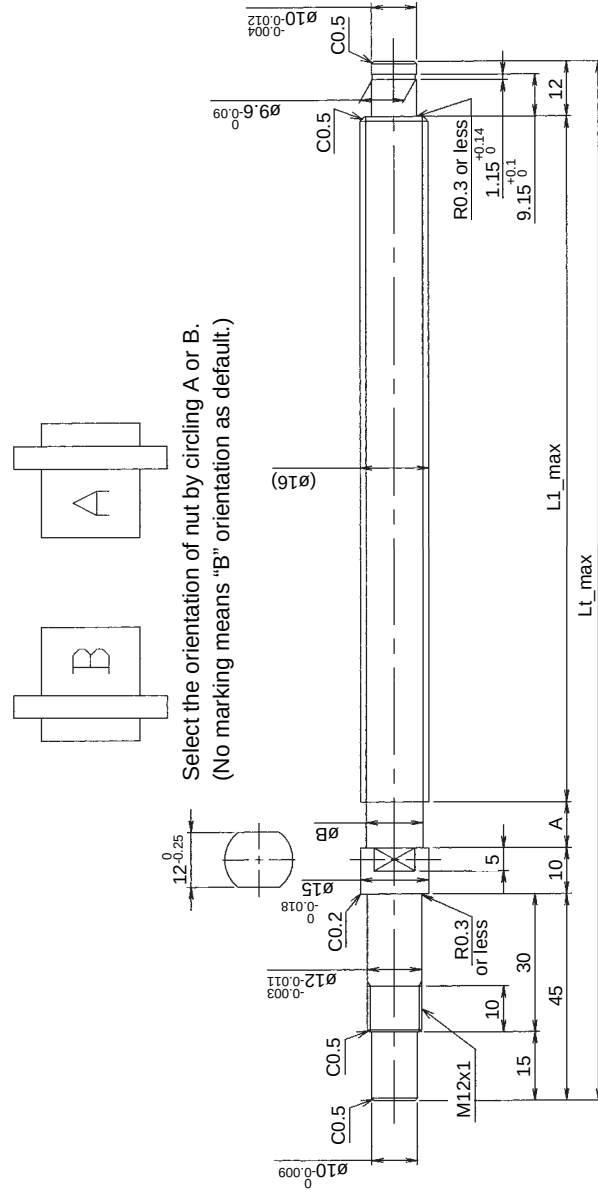
Company name		
TEL		Name of person in charge
Company address		

SHAFT END FINISH ORDERING SHEET

Screw shaft diameter ø16, Lead 32

HG1632QS-HEZR-				X				-C5F

(Unit: mm)



Model No.	A	B	Root diameter	Lt_max.	L1_max.
HG1632	15	13.5	13.5	1500	1418

Applicable support unit model	
Rectangle type	BUK-12F Fixed end
	BUK-10S Supported end
	BUK-12 Fixed end, Supported end bearing
Circle flange type	BUM-12F Fixed end
	BUM-10S Supported end
	BUM-12 Fixed end, Supported end bearing

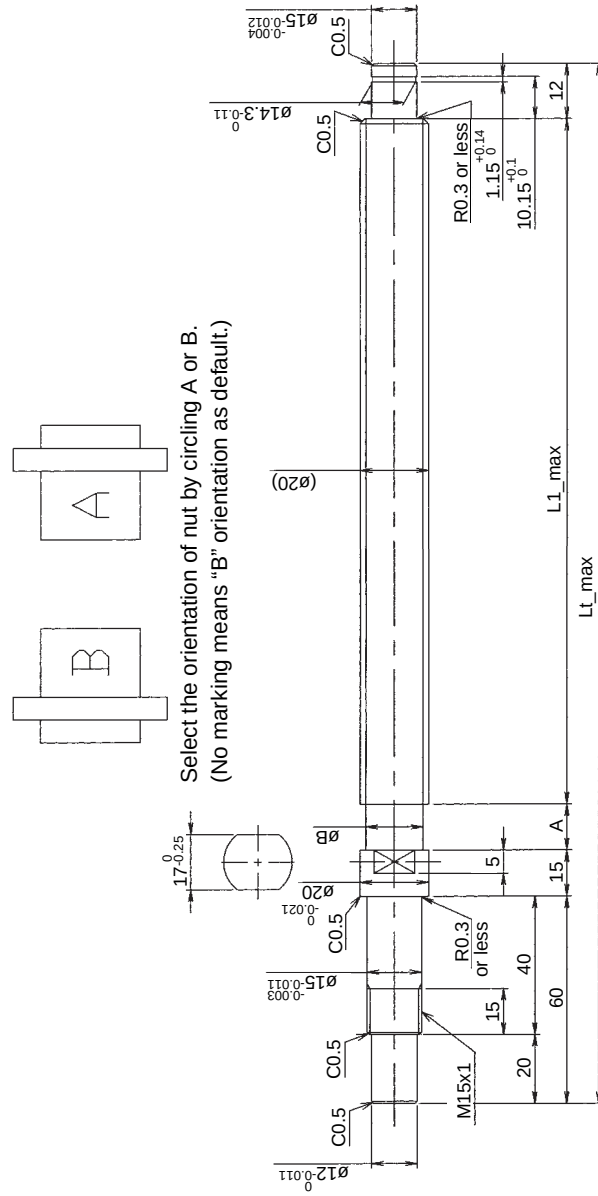
Company name		
TEL		Name of person in charge
Company address		

SHAFT END FINISH ORDERING SHEET

Screw shaft diameter $\varnothing 20$, Lead 20, 30, 40, 60

(Unit: mm)

HG20				X	-C5F
HG2060QS-BEZR-				X	-C5H



Model No.	A	B	Root diameter	Lt_max.	L1_max.
HG2020	5	17.5	17.5	1500	1408
HG2030	5	17.5	17.5	1500	1408
HG2040	15	17.5	17.5	1800	1698
HG2060	20	17.5	17.5	1500	1393

Applicable support unit model	
Rectangle type	BUK-15F Fixed end
	BUK-15S Supported end
	BUK-15 Fixed end, Supported end bearing
Circle flange type	BUM-15F Fixed end
	BUM-15S Supported end
	BUM-15 Fixed end, Supported end bearing

Company name		
TEL		Name of person in charge
Company address		

SHAFT END FINISH ORDERING SHEET

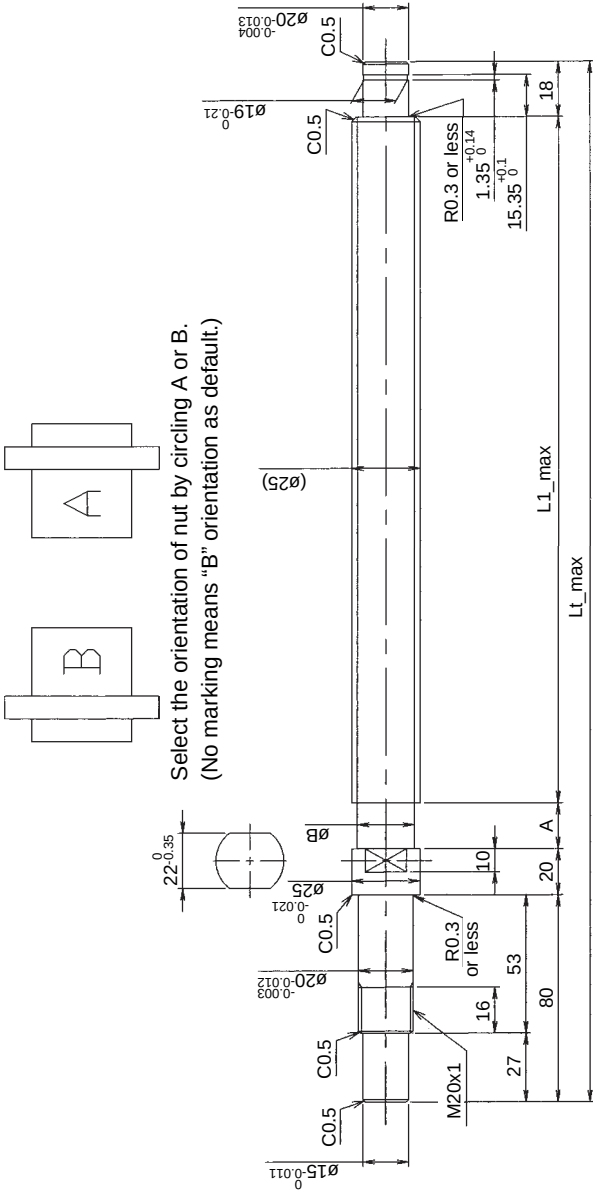
Screw shaft diameter ø25, Lead 50

HG2550QS-HEFR-

 X

 -C5F

(Unit: mm)



Model No.	A	B	Root diameter	Lt_max.	L1_max.
HG2550	15	22.2	22.2	2015	1882

Applicable support unit model	
Rectangle type	BUK-20F Fixed end
	BUK-20S Supported end
	BUK-20 Fixed end, Supported end bearing
Circle flange type	BUM-20F Fixed end
	BUM-20S Supported end
	BUM-20 Fixed end, Supported end bearing

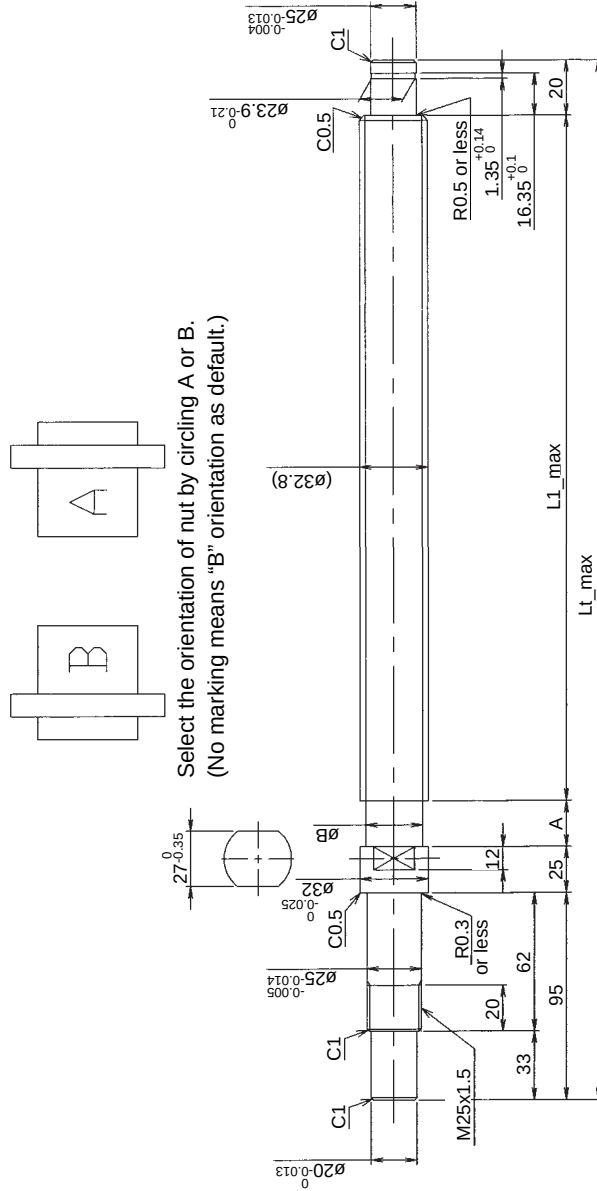
Company name	
TEL	Name of person in charge
Company address	

SHAFT END FINISH ORDERING SHEET

Screw shaft diameter ø32, Lead 64

HG3264QS-HEFR-				X				-C5F

(Unit: mm)



Model No.	A	B	Root diameter	Lt_max.	L1_max.
HG3264	15	28.8	28.8	2200	2045

Applicable support unit model	
Rectangle type	BUK-25F Fixed end
	BUK-25S Supported end
Circle flange type	BUM-25F Fixed end
	BUM-25 Fixed end, Supported end bearing

Company name		
TEL		Name of person in charge
Company address		

GP Series (Accuracy grade C3)

Shaft end finish ordering sheet

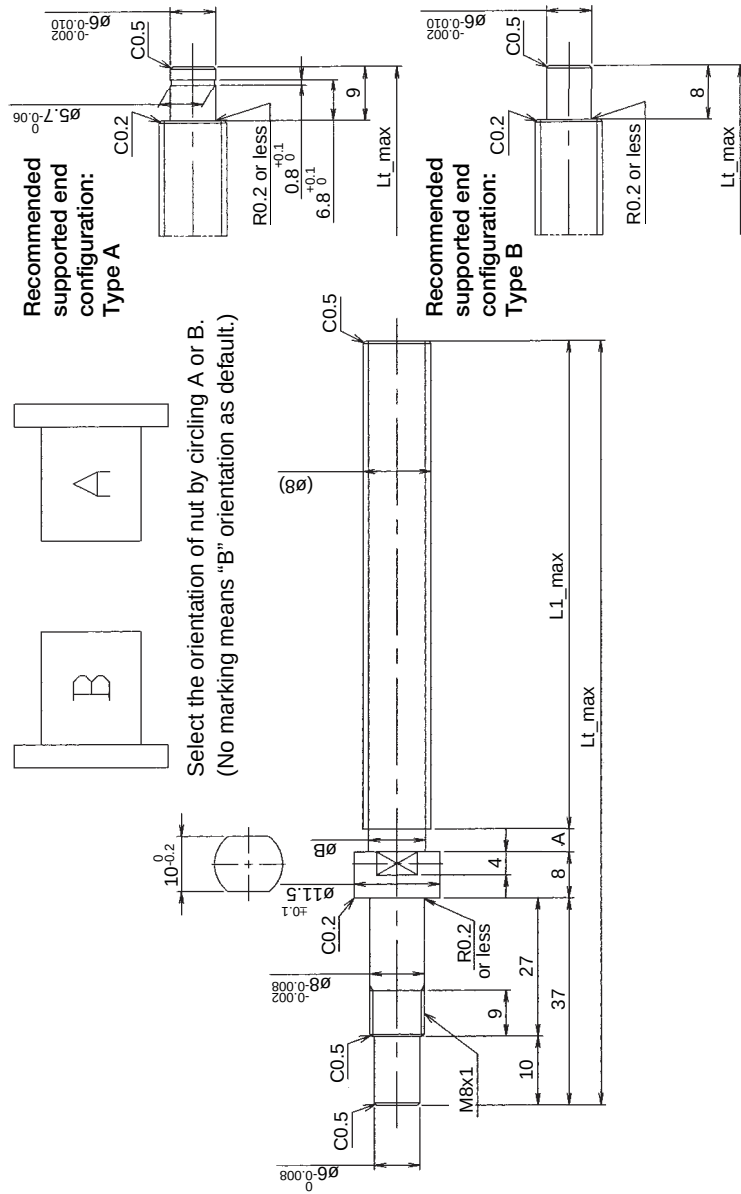
Screw shaft diameter ø8, Lead 1.5, 2	_____	E_24
Screw shaft diameter ø10, Lead 2, 2.5	_____	E_25
Screw shaft diameter ø12, Lead 2, 2.5, 4, 5	_____	E_26
Screw shaft diameter ø15, Lead 2, 4, 5	_____	E_27
Screw shaft diameter ø20, Lead 4, 5	_____	E_28

SHAFT END FINISH ORDERING SHEET

Screw shaft diameter ø8, Lead 1.5, 2

(Unit: mm)

	-C3F	
	-C3S	
	X	
GP081FDS-AAFR-		
GP0802DS-AAFR-		



Model No.	A	B	Root diameter	Lt_max.	L1_max.
GP081FD	3	7.1	7.1	250	202
GP0802D	3	6.6	6.6	250	202

Applicable support unit model	
Rectangle type	BUK-8F Fixed end
	BUK-6S Supported end
	BUK-8 Fixed end, Supported end bearing
Circle flange type	BUM-8F Fixed end
	BUM-6S Supported end
	BUM-8 Fixed end, Supported end bearing

Company name		
TEL		Name of person in charge
Company address		

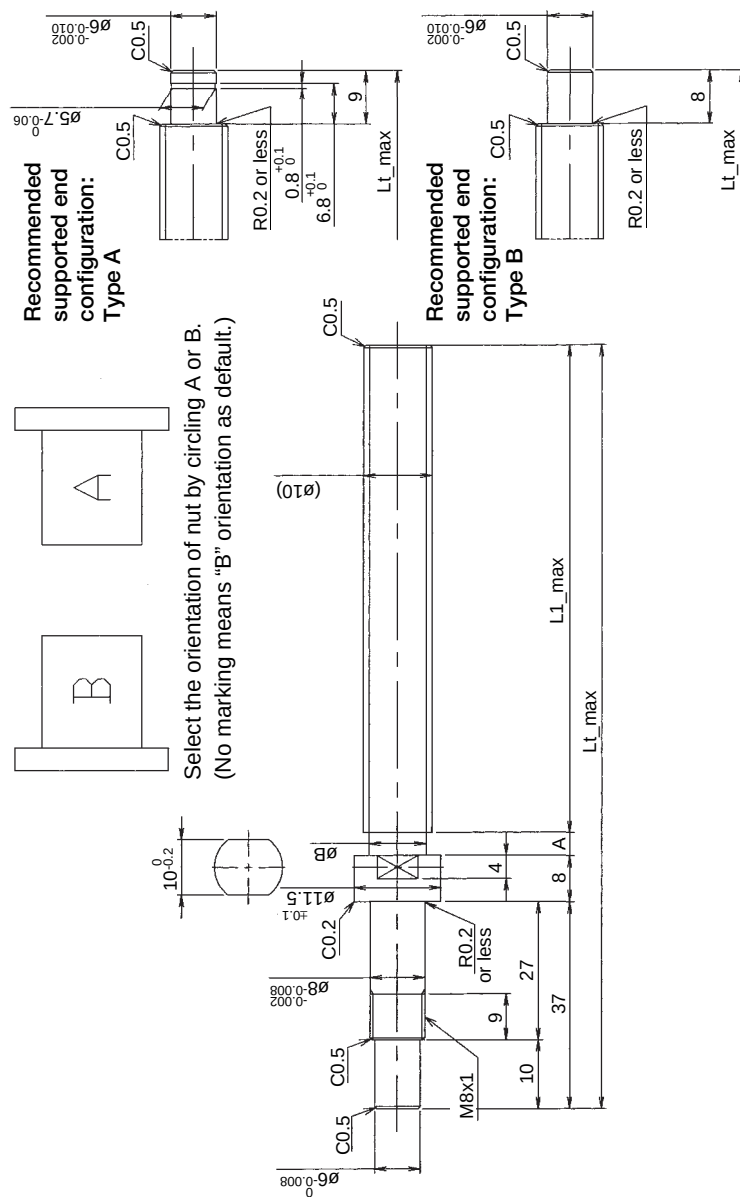
SHAFT END FINISH ORDERING SHEET

Screw shaft diameter ø10, Lead 2, 2.5

GP1002DS-EAFR-
GP102FDS-AAFR-

C3F					
C3S					

(Unit: mm)



Model No.	A	B	Root diameter	Lt_max.	L1_max.
GP1002D	3	8.6	8.6	320	272
GP102FD	4	8.3	8.3	320	271

Applicable support unit model	
Rectangle type	BUK-8F Fixed end
	BUK-6S Supported end
	BUK-8 Fixed end, Supported end bearing
Circle flange type	BUM-8F Fixed end
	BUM-6S Supported end
	BUM-8 Fixed end, Supported end bearing

Company name		
TEL		Name of person in charge
Company address		

SHAFT END FINISH ORDERING SHEET

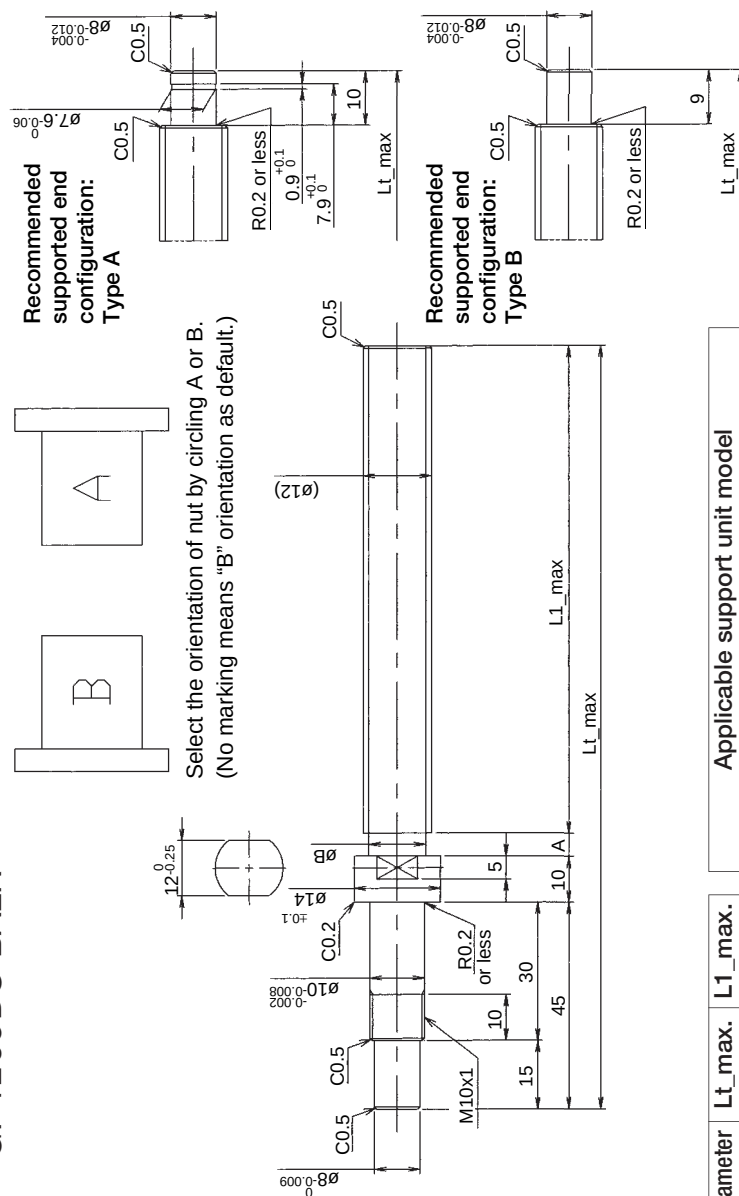
Screw shaft diameter $\varnothing 12$, Lead 2, 2.5, 4, 5

(Unit: mm)

GP1202DS-AAPR-
GP122FDS-AAPR-
GP1204DS-AAPR-
GP1205DS-BALR-

3-E

CS-



Model No.	A	B	Root diameter	Lt_max.	L1_max.
GP1202D	3	10.6	10.6	400	342
GP122FD	5	10.3	10.3	400	340
GP1204D	5	10.1	10.1	400	340
GP1205D	5	9.5	9.5	450	390

Applicable support unit model	
Rectangle type	BUK-10F Fixed end
	BUK-8S Supported end
	BUK-10 Fixed end, Supported end bearing
Circle flange type	BUM-10F Fixed end
	BUM-8S Supported end
	BUM-10 Fixed end, Supported end bearing

Company name		
TEL		Name of person in charge
Company address		

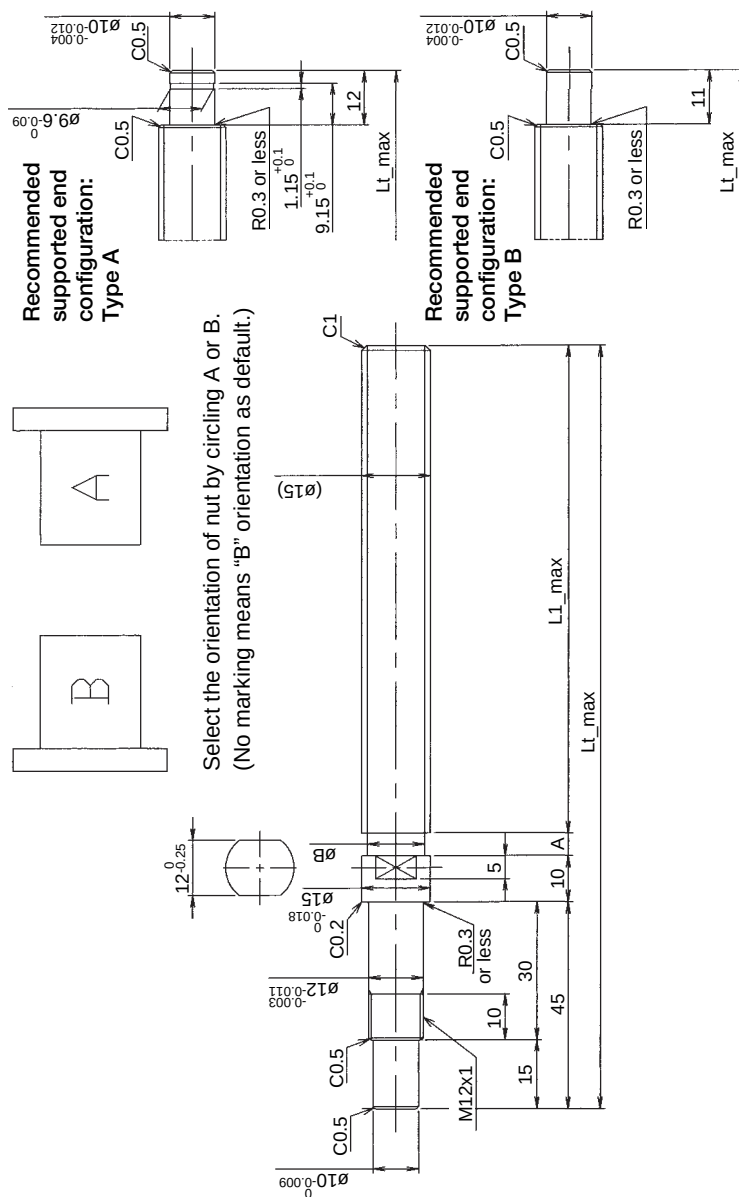
SHAFT END FINISH ORDERING SHEET

Screw shaft diameter $\varnothing 15$, Lead 2, 4, 5

GP1502DS-BAPR-
GP1504DS-BALR-
GP1505DS-BALR-

	X						
-C3F							
-C3S							

(Unit: mm)



Model No.	A	B	Root diameter	Lt_max.	L1_max.
GP1502D	3	13.6	13.6	600	542
GP1504D	5	13.1	13.1	600	540
GP1505D	5	12.5	12.5	600	540

Applicable support unit model	
Rectangle type	BUK-12F Fixed end
	BUK-10S Supported end
	BUK-12 Fixed end, Supported end bearing
Circle flange type	BUM-12F Fixed end
	BUM-10S Supported end
	BUM-12 Fixed end, Supported end bearing

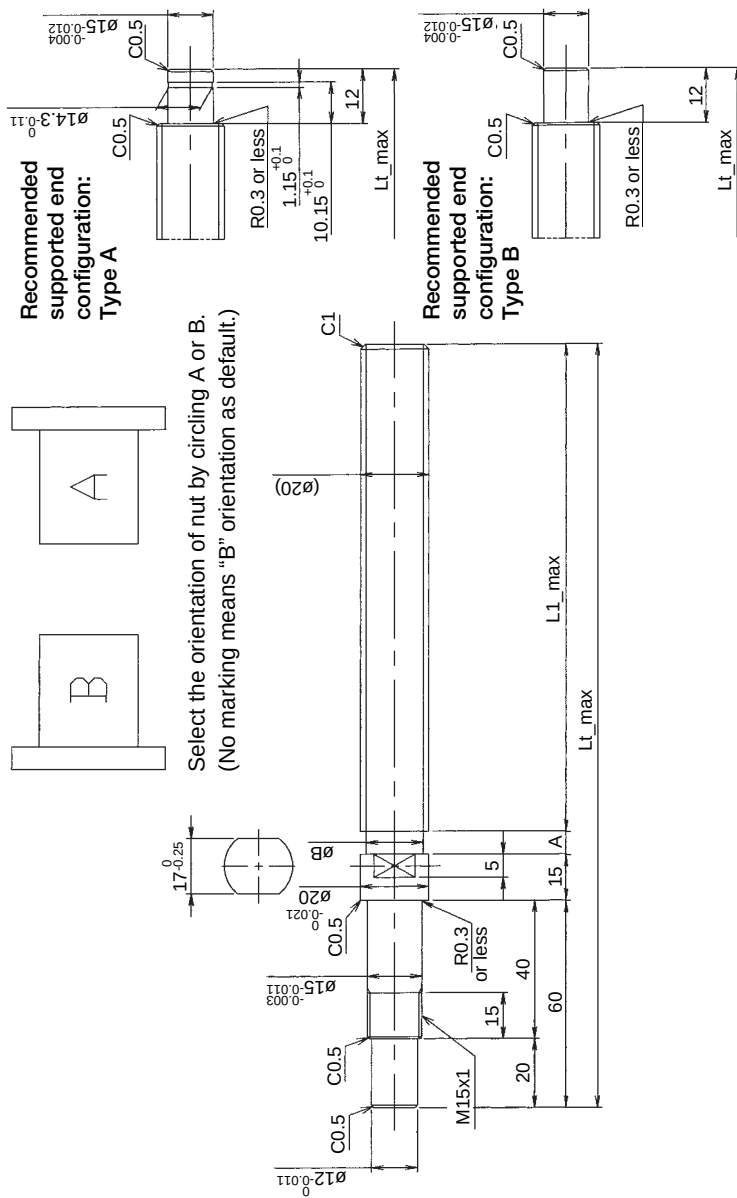
Company name		
TEL		Name of person in charge
Company address		

SHAFT END FINISH ORDERING SHEET

Screw shaft diameter ø20, Lead 4, 5

(Unit: mm)

	-C3F	-C3S
GP2004ES-AALR-		
GP2005DS-BALR-		



Model No.	A	B	Root diameter	Lt_max.	L1_max.
GP2004E	5	18.1	18.1	1005	925
GP2005D	5	17.5	17.5	1005	925

Applicable support unit model	
Rectangle type	BUK-15F Fixed end
	BUK-15S Supported end
	BUK-15 Fixed end, Supported end bearing
Circle flange type	BUM-15F Fixed end
	BUM-15S Supported end
	BUM-15 Fixed end, Supported end bearing

Company name		
TEL		Name of person in charge
Company address		

GE Series (Accuracy grade C7)/ GG Series (Accuracy grade C5) Shaft end finish ordering sheet

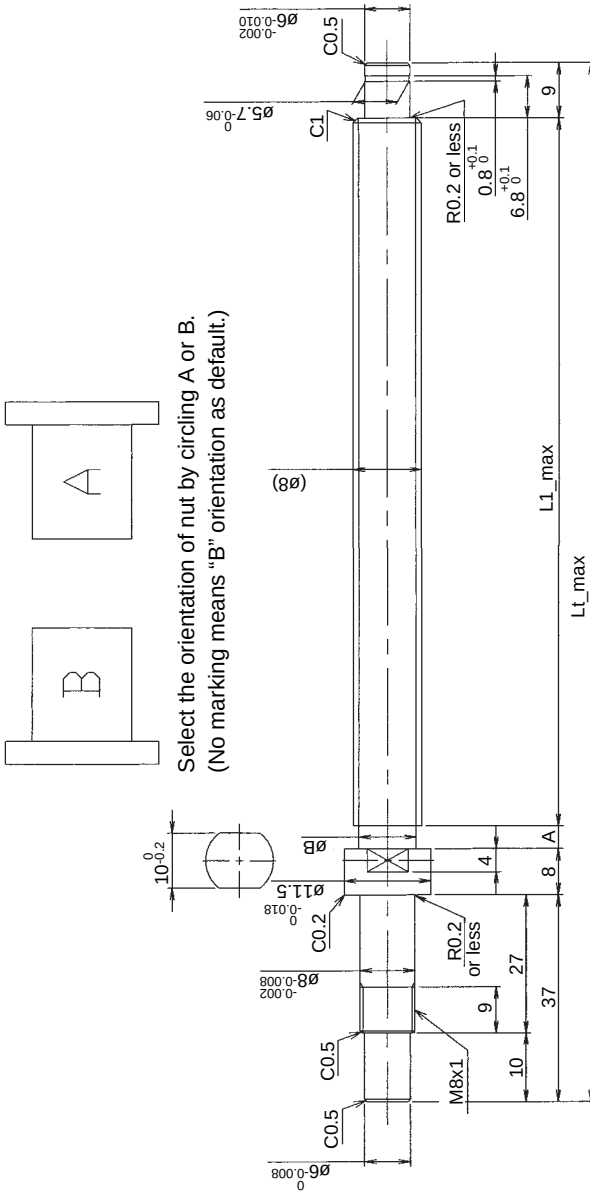
Screw shaft diameter ø8, Lead 1.5, 2, 4	_____	E_30
Screw shaft diameter ø10, Lead 2, 2.5	_____	E_31
Screw shaft diameter ø10, Lead 4	_____	E_32
Screw shaft diameter ø10, Lead 10	_____	E_33
Screw shaft diameter ø12, Lead 2, 2.5	_____	E_34
Screw shaft diameter ø12, Lead 4, 5, 10, 20	_____	E_35
Screw shaft diameter ø15, Lead 2, 4, 5, 10, 15, 20	_____	E_36
Screw shaft diameter ø16, Lead 16	_____	E_37
Screw shaft diameter ø20, Lead 4, 5, 10, 20	_____	E_38
Screw shaft diameter ø25, Lead 5, 10, 20, 25	_____	E_39
Screw shaft diameter ø32, Lead 5, 10	_____	E_40

SHAFT END FINISH ORDERING SHEET

Screw shaft diameter ø8, Lead 1.5, 2, 4

(Unit: mm)

	081FDS-AANR-					-C7M
GE	0802DS-AANR-	X				-C5
GG	0804DS-BAFR-					



Model No.	A	B	Root diameter	Lt_max.	L1_max.
GE/GG081FD	3	7.1	7.1	215	158
GE/GG0802D	3	6.6	6.6	215	158
GE/GG0804D	6	6.3	6.3	340	280

Applicable support unit model	
Rectangle type	BUK-8F Fixed end
	BUK-6S Supported end
	BUK-8 Fixed end, Supported end bearing
Circle flange type	BUM-8F Fixed end
	BUM-6S Supported end
	BUM-8 Fixed end, Supported end bearing

Company name		
TEL		Name of person in charge
Company address		

SHAFT END FINISH ORDERING SHEET

Screw shaft diameter ø10, Lead 2, 2.5

GE

1002DS-EANR-

X

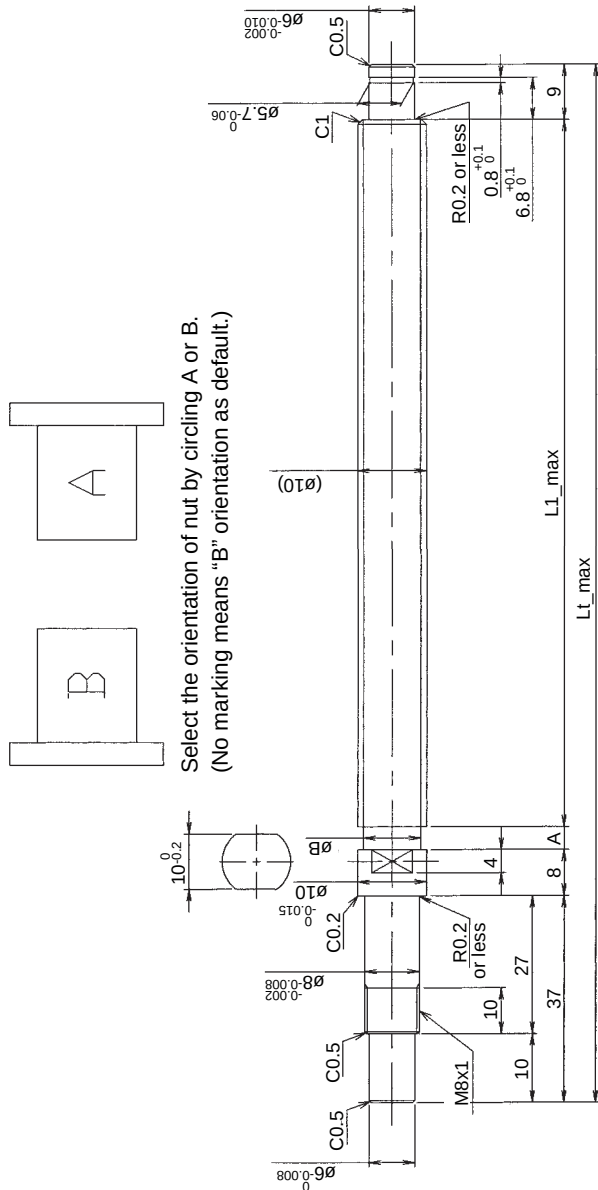
-C7M

GG

102FDS-AAFR-

-C5

(Unit: mm)



Model No.	A	B	Root diameter	Lt_max.	L1_max.
GE/GG1002D	3	8.6	8.6	320	263
GE/GG102FD	4	8.3	8.3	315	257

Applicable support unit model	
Rectangle type	BUK-8F Fixed end
	BUK-6S Supported end
	BUK-8 Fixed end, Supported end bearing
Circle flange type	BUM-8F Fixed end
	BUM-6S Supported end
	BUM-8 Fixed end, Supported end bearing

Company name		
TEL		Name of person in charge
Company address		

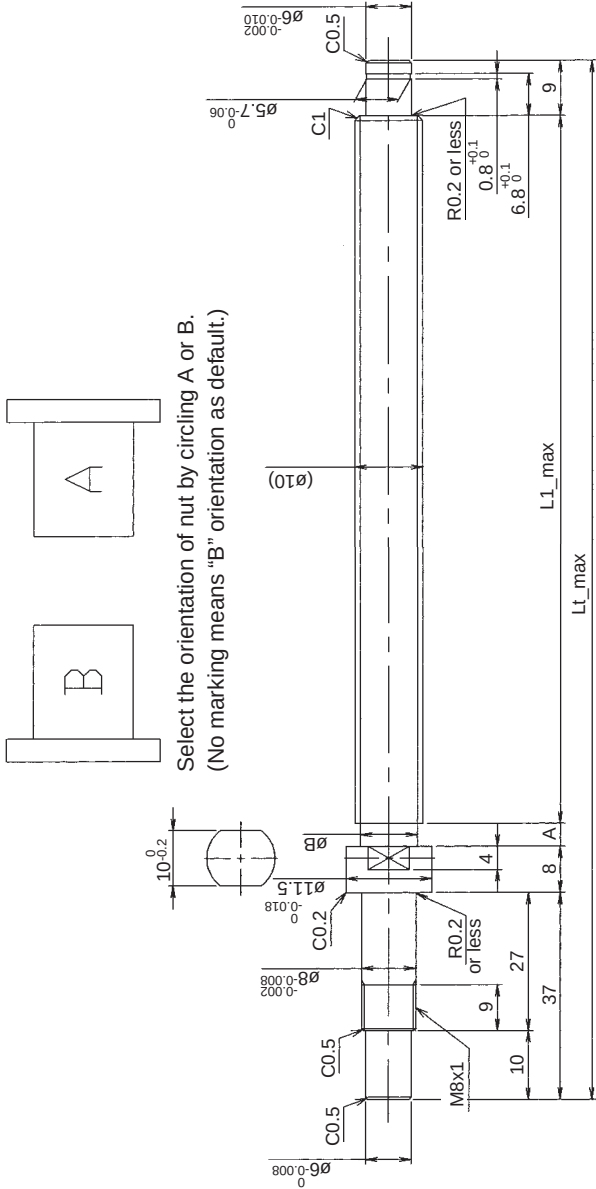
KURODA Standard Ground Ball Screw: GE Series (Accuracy grade C7)/GG Series (Accuracy grade C5)

SHAFT END FINISH ORDERING SHEET

Screw shaft diameter $\phi 10$, Lead 4

GE 1004DS-BAPR- X -C7M
GG -C5

(Unit: mm)



Model No.	A	B	Root diameter	Lt. max.	L1. max.
GE/GG1004D	5	8.1	8.1	445	386

Applicable support unit model	
Rectangle type	BUK-8F Fixed end
	BUK-6S Supported end
	BUK-8 Fixed end, Supported end bearing
Circle flange type	BUM-8F Fixed end
	BUM-6S Supported end
	BUM-8 Fixed end, Supported end bearing

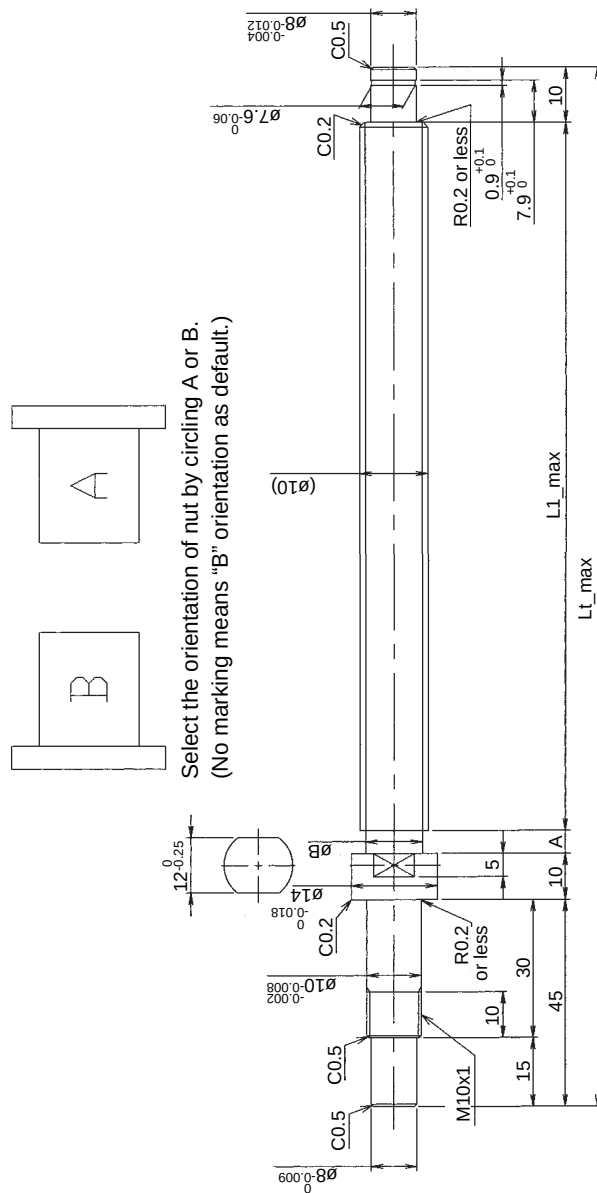
Company name		
TEL		Name of person in charge
Company address		

SHAFT END FINISH ORDERING SHEET

Screw shaft diameter ø10, Lead 10

GE 1010AS-BAPR- X -C7M
GG -C5

(Unit: mm)



* For the size with the ▲ mark in the table below, spiral mark may be left at the end diameter ø8 portion of supported end.

Model No.	A	B	Root diameter	Lt_max.	L1_max.
GE/GG1010A	8	8.1	8.1	655	582

Applicable support unit model	
Rectangle type	BUK-10F Fixed end
	BUK-8S Supported end
	BUK-10 Fixed end, Supported end bearing
Circle flange type	BUM-10F Fixed end
	BUM-8S Supported end
	BUM-10 Fixed end, Supported end bearing

Company name		
TEL		Name of person in charge
Company address		

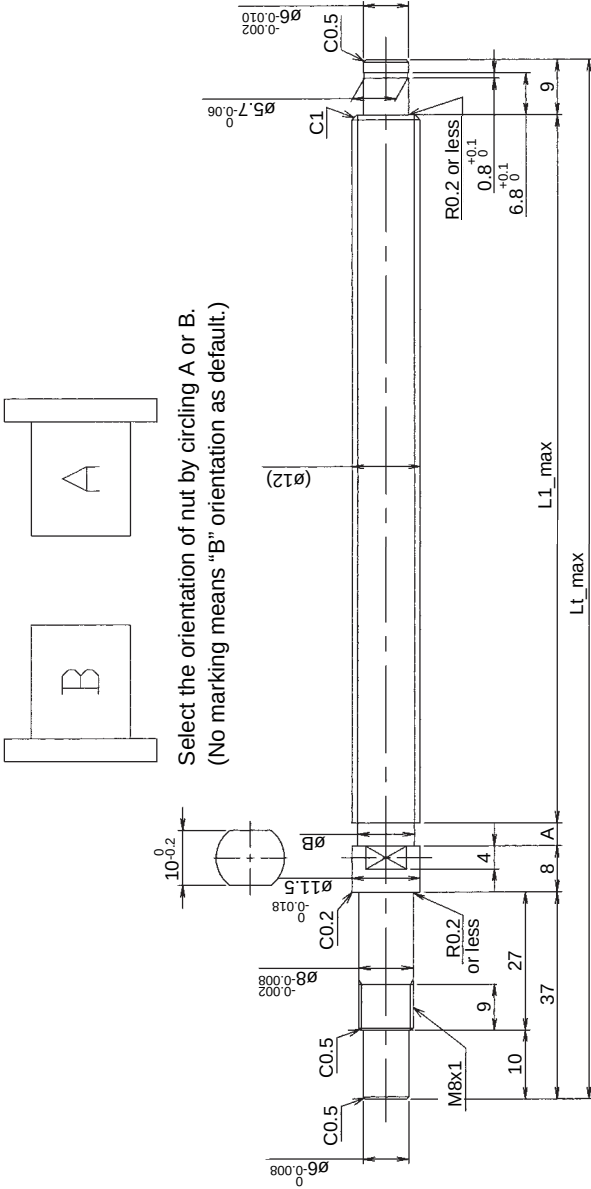
SHAFT END FINISH ORDERING SHEET

Screw shaft diameter $\varnothing 12$, Lead 2, 2.5

GE 1202DS-AAPR-X-C7M

GG 122FDS-AAPR--C5

(Unit: mm)



Model No.	A	B	Root diameter	Lt_max.	L1_max.
GE/GG1202D	3	10.6	10.6	450	393
GE/GG122FD	5	10.3	10.3	395	336

Applicable support unit model	
Rectangle type	BUK-8F Fixed end
	BUK-6S Supported end
	BUK-8 Fixed end, Supported end bearing
Circle flange type	BUM-8F Fixed end
	BUM-6S Supported end
	BUM-8 Fixed end, Supported end bearing

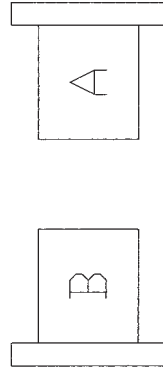
Company name		
TEL		Name of person in charge
Company address		

SHAFT END FINISH ORDERING SHEET

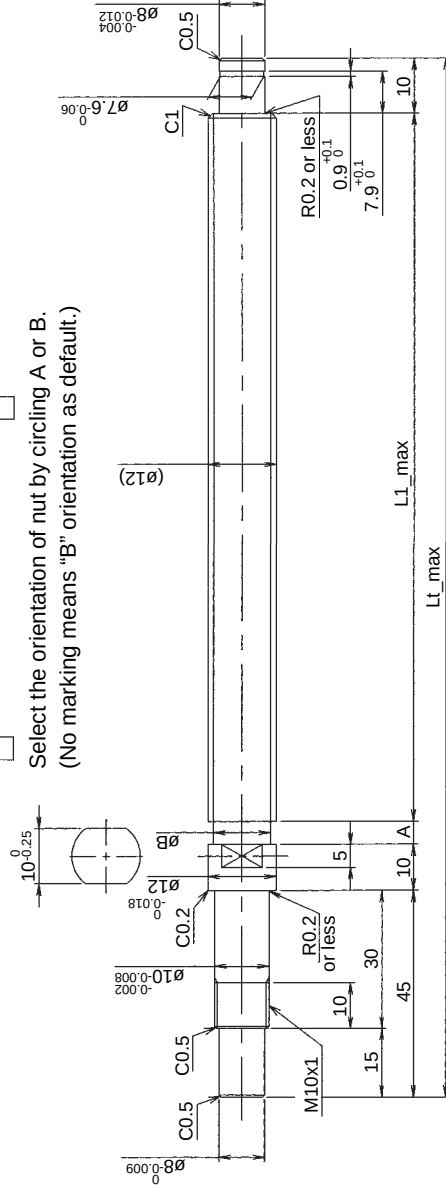
Screw shaft diameter $\varnothing 12$, Lead 4, 5, 10, 20

(Unit: mm)

1204DS-AALR-GE -C7M
1205DS-BALR- X -C5
1210AS-BALR-GG
1220AS-BALR-



Select the orientation of nut by circling A or B.
(No marking means "B" orientation as default.)



Model No.	A	B	Root diameter	Lt_max.	L1_max.
GE/GG1204D	5	10.1	10.1	605	535
GE/GG1205D	5	9.5	9.5	455	385
GE/GG1210A	5	9.5	9.5	605	535
GE/GG1220A	5	9.5	9.5	900	830

Applicable support unit model	
Rectangle type	BUK-10F Fixed end
	BUK-8S Supported end
	BUK-10 Fixed end, Supported end bearing
Circle flange type	BUM-10F Fixed end
	BUM-8S Supported end
	BUM-10 Fixed end, Supported end bearing

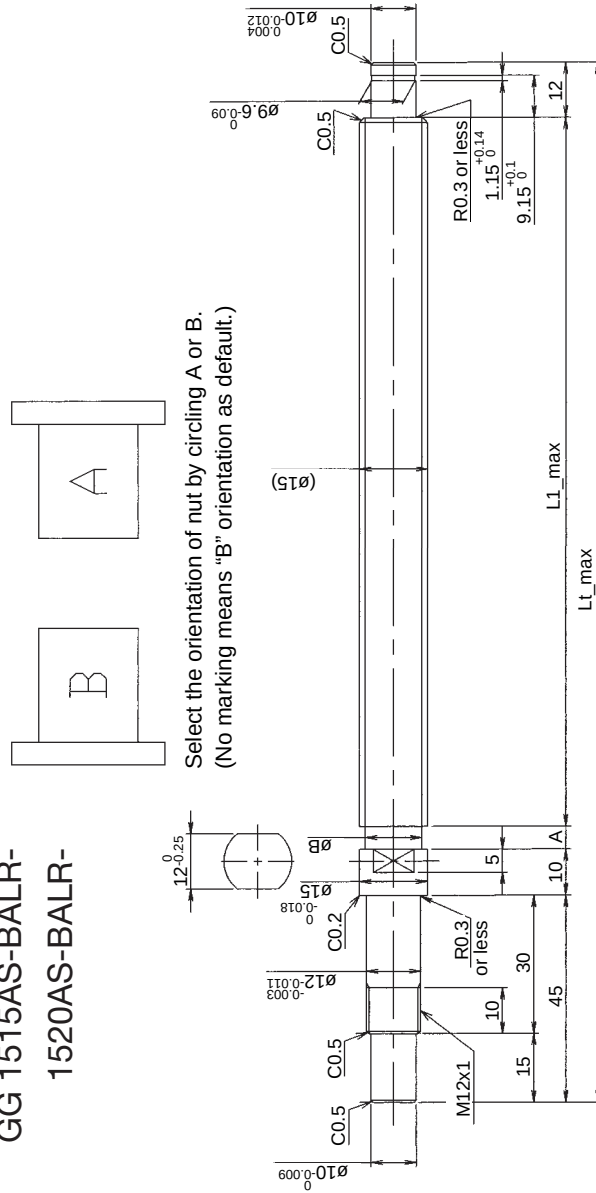
Company name		
TEL		Name of person in charge
Company address		

SHAFT END FINISH ORDERING SHEET

Screw shaft diameter 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 95, 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 390, 400, 410, 420, 430, 440, 450, 460, 470, 480, 490, 500, 510, 520, 530, 540, 550, 560, 570, 580, 590, 600, 610, 620, 630, 640, 650, 660, 670, 680, 690, 700, 710, 720, 730, 740, 750, 760, 770, 780, 790, 800, 810, 820, 830, 840, 850, 860, 870, 880, 890, 900, 910, 920, 930, 940, 950, 960, 970, 980, 990, 1000, 1010, 1020, 1030, 1040, 1050, 1060, 1070, 1080, 1090, 1100, 1110, 1120, 1130, 1140, 1150, 1160, 1170, 1180, 1190, 1200, 1210, 1220, 1230, 1240, 1250, 1260, 1270, 1280, 1290, 1300, 1310, 1320, 1330, 1340, 1350, 1360, 1370, 1380, 1390, 1400, 1410, 1420, 1430, 1440, 1450, 1460, 1470, 1480, 1490, 1500, 1510, 1520, 1530, 1540, 1550, 1560, 1570, 1580, 1590, 1600, 1610, 1620, 1630, 1640, 1650, 1660, 1670, 1680, 1690, 1700, 1710, 1720, 1730, 1740, 1750, 1760, 1770, 1780, 1790, 1800, 1810, 1820, 1830, 1840, 1850, 1860, 1870, 1880, 1890, 1900, 1910, 1920, 1930, 1940, 1950, 1960, 1970, 1980, 1990, 2000, 2010, 2020, 2030, 2040, 2050, 2060, 2070, 2080, 2090, 2100, 2110, 2120, 2130, 2140, 2150, 2160, 2170, 2180, 2190, 2200, 2210, 2220, 2230, 2240, 2250, 2260, 2270, 2280, 2290, 2300, 2310, 2320, 2330, 2340, 2350, 2360, 2370, 2380, 2390, 2400, 2410, 2420, 2430, 2440, 2450, 2460, 2470, 2480, 2490, 2500, 2510, 2520, 2530, 2540, 2550, 2560, 2570, 2580, 2590, 2600, 2610, 2620, 2630, 2640, 2650, 2660, 2670, 2680, 2690, 2700, 2710, 2720, 2730, 2740, 2750, 2760, 2770, 2780, 2790, 2800, 2810, 2820, 2830, 2840, 2850, 2860, 2870, 2880, 2890, 2900, 2910, 2920, 2930, 2940, 2950, 2960, 2970, 2980, 2990, 3000, 3010, 3020, 3030, 3040, 3050, 3060, 3070, 3080, 3090, 3100, 3110, 3120, 3130, 3140, 3150, 3160, 3170, 3180, 3190, 3200, 3210, 3220, 3230, 3240, 3250, 3260, 3270, 3280, 3290, 3300, 3310, 3320, 3330, 3340, 3350, 3360, 3370, 3380, 3390, 3400, 3410, 3420, 3430, 3440, 3450, 3460, 3470, 3480, 3490, 3500, 3510, 3520, 3530, 3540, 3550, 3560, 3570, 3580, 3590, 3600, 3610, 3620, 3630, 3640, 3650, 3660, 3670, 3680, 3690, 3700, 3710, 3720, 3730, 3740, 3750, 3760, 3770, 3780, 3790, 3800, 3810, 3820, 3830, 3840, 3850, 3860, 3870, 3880, 3890, 3900, 3910, 3920, 3930, 3940, 3950, 3960, 3970, 3980, 3990, 4000, 4010, 4020, 4030, 4040, 4050, 4060, 4070, 4080, 4090, 4100, 4110, 4120, 4130, 4140, 4150, 4160, 4170, 4180, 4190, 4200, 4210, 4220, 4230, 4240, 4250, 4260, 4270, 4280, 4290, 4300, 4310, 4320, 4330, 4340, 4350, 4360, 4370, 4380, 4390, 4400, 4410, 4420, 4430, 4440, 4450, 4460, 4470, 4480, 4490, 4500, 4510, 4520, 4530, 4540, 4550, 4560, 4570, 4580, 4590, 4600, 4610, 4620, 4630, 4640, 4650, 4660, 4670, 4680, 4690, 4700, 4710, 4720, 4730, 4740, 4750, 4760, 4770, 4780, 4790, 4800, 4810, 4820, 4830, 4840, 4850, 4860, 4870, 4880, 4890, 4900, 4910, 4920, 4930, 4940, 4950, 4960, 4970, 4980, 4990, 5000, 5010, 5020, 5030, 5040, 5050, 5060, 5070, 5080, 5090, 5100, 5110, 5120, 5130, 5140, 5150, 5160, 5170, 5180, 5190, 5200, 5210, 5220, 5230, 5240, 5250, 5260, 5270, 5280, 5290, 5300, 5310, 5320, 5330, 5340, 5350, 5360, 5370, 5380, 5390, 5400, 5410, 5420, 5430, 5440, 5450, 5460, 5470, 5480, 5490, 5500, 5510, 5520, 5530, 5540, 5550, 5560, 5570, 5580, 5590, 5600, 5610, 5620, 5630, 5640, 5650, 5660, 5670, 5680, 5690, 5700, 5710, 5720, 5730, 5740, 5750, 5760, 5770, 5780, 5790, 5800, 5810, 5820, 5830, 5840, 5850, 5860, 5870, 5880, 5890, 5900, 5910, 5920, 5930, 5940, 5950, 5960, 5970, 5980, 5990, 6000, 6010, 6020, 6030, 6040, 6050, 6060, 6070, 6080, 6090, 6100, 6110, 6120, 6130, 6140, 6150, 6160, 6170, 6180, 6190, 6200, 6210, 6220, 6230, 6240, 6250, 6260, 6270, 6280, 6290, 6300, 6310, 6320, 6330, 6340, 6350, 6360, 6370, 6380, 6390, 6400, 6410, 6420, 6430, 6440, 6450, 6460, 6470, 6480, 6490, 6500, 6510, 6520, 6530, 6540, 6550, 6560, 6570, 6580, 6590, 6600, 6610, 6620, 6630, 6640, 6650, 6660, 6670, 6680, 6690, 6700, 6710, 6720, 6730, 6740, 6750, 6760, 6770, 6780, 6790, 6800, 6810, 6820, 6830, 6840, 6850, 6860, 6870, 6880, 6890, 6900, 6910, 6920, 6930, 694

(Unit: mm)

1502DS-BAPR-
GE 1504DS-BALR-
1505DS-BALR-
1510AS-BALR-
1510DS-BALR-
GG 1515AS-BALR-
1520AS-BALR-



Model No.	A	B	Root diameter	Lt_max.	L1_max.
GE/GG1502D	3	13.6	13.6	600	530
GE/GG1504D	5	13.1	13.1	1100	1028
GE/GG1505D	5	12.5	12.5	1100	1028
GE/GG1510*	5	12.5	12.5	1500	1428
GE/GG1515A	5	12.5	12.5	1300	1228
GE/GG1520A	5	12.5	12.5	1500	1428

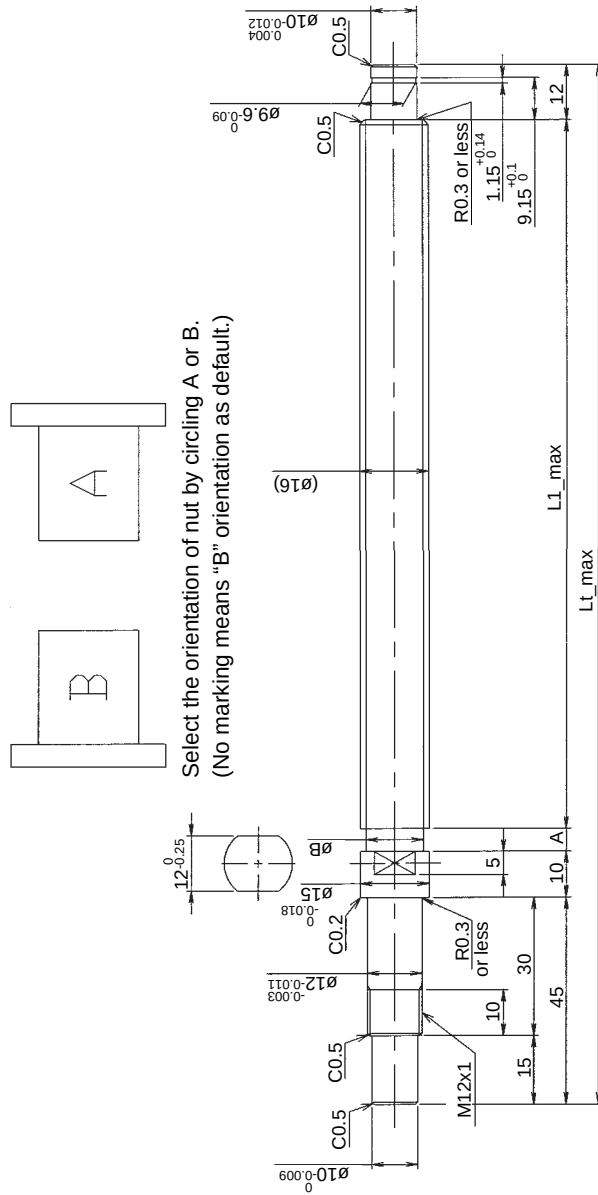
Note: For GE/GG1510*, select A or D.

Applicable support unit model	
Rectangle type	BUK-12F Fixed end
	BUK-10S Supported end
	BUK-12 Fixed end, Supported end bearing
Circle flange type	BUM-12F Fixed end
	BUM-10S Supported end
	BUM-12 Fixed end, Supported end bearing

Company name		
TEL		Name of person in charge
Company address		

GE	1616AS-BTLR-		X				-C7M
GG							-C5

(Unit: mm)



Model No.	A	B	Root diameter	Lt_max.	L1_max.
GE/GG1616A	5	13.5	13.5	1300	1228

Applicable support unit model	
Rectangle type	BUK-12F Fixed end
	BUK-10S Supported end
	BUK-12 Fixed end, Supported end bearing
Circle flange type	BUM-12F Fixed end
	BUM-10S Supported end
	BUM-12 Fixed end, Supported end bearing

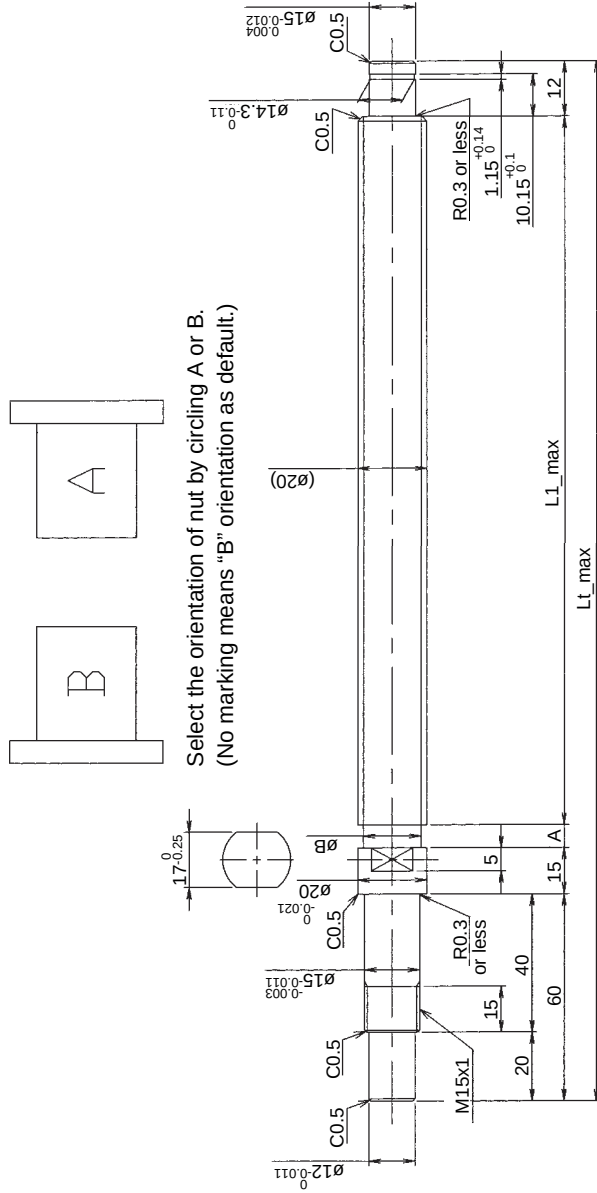
Company name		
TEL		Name of person in charge
Company address		

SHAFT END FINISH ORDERING SHEET

Screw shaft diameter ø20, Lead 4, 5, 10, 20

(Unit: mm)

GE	2004ES-AALR-							-C7M
	2005DS-BALR-							
	2010DS-BALR-						X	
GG	2020AS-BALR-							-C5



Model No.	A	B	Root diameter	Lt_max.	L1_max.
GE/GG2004E	5	18.1	18.1	1005	913
GE/GG2005D	5	17.5	17.5	1805	1713
GE/GG2010D	8	16	16	1805	1710
GE/GG2020A	8	15.9	15.9	1805	1710

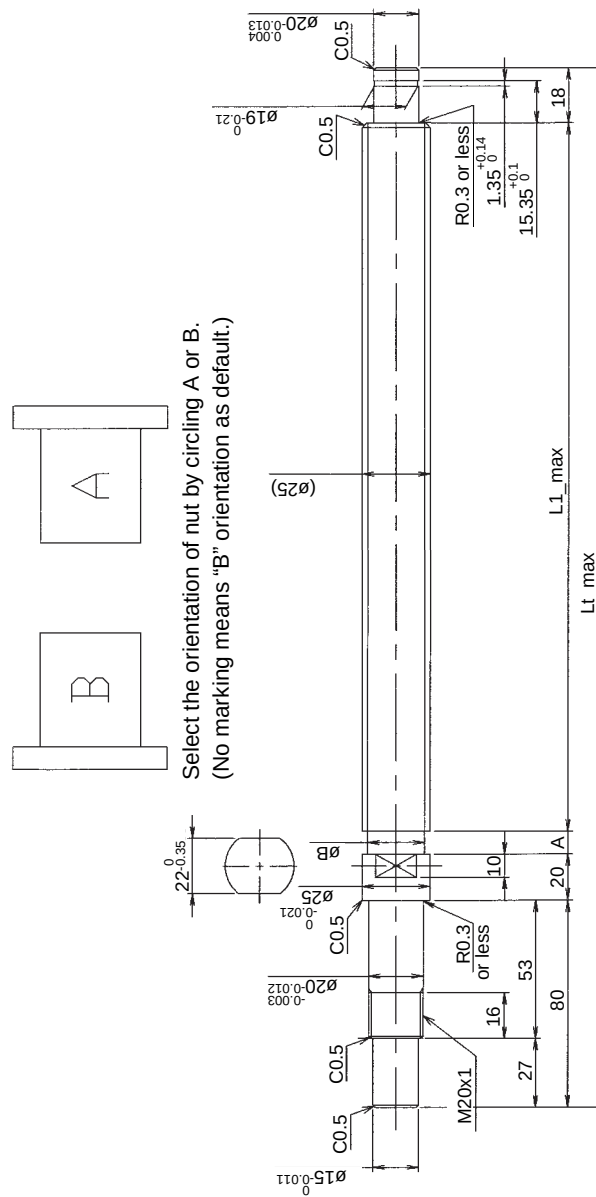
Applicable support unit model	
Rectangle type	BUK-15F Fixed end
	BUK-15S Supported end
	BUK-15 Fixed end, Supported end bearing
Circle flange type	BUM-15F Fixed end
	BUM-15S Supported end
	BUM-15 Fixed end, Supported end bearing

Company name		
TEL		Name of person in charge
Company address		

Screw shaft diameter $\varnothing 25$, Lead 5, 10, 20, 25

(Unit: mm)

GE	2505DS-AALR-							-C7M
	2510DS-BALR-							
	2520AS-BALR-					X		
GG	2525AS-BALR-							-C5



Model No.	A	B	Root diameter	Lt_max.	L1_max.
GE/GG2505D	5	22.5	22.5	1805	1682
GE/GG2510D	8	21	21	2220	2094
GE/GG2520A	8	21	21	2020	1894
GE/GG2525A	8	21	21	2020	1894

Applicable support unit model	
Rectangle type	BUK-20F Fixed end
	BUK-20S Supported end
	BUK-20 Fixed end, Supported end bearing
Circle flange type	BUM-20F Fixed end
	BUM-20S Supported end
	BUM-20 Fixed end, Supported end bearing

Company name		
TEL		Name of person in charge
Company address		

SHAFT END FINISH ORDERING SHEET

Screw shaft diameter $\varnothing 32$, Lead 5, 10

GE

3205ES-DALR-

X

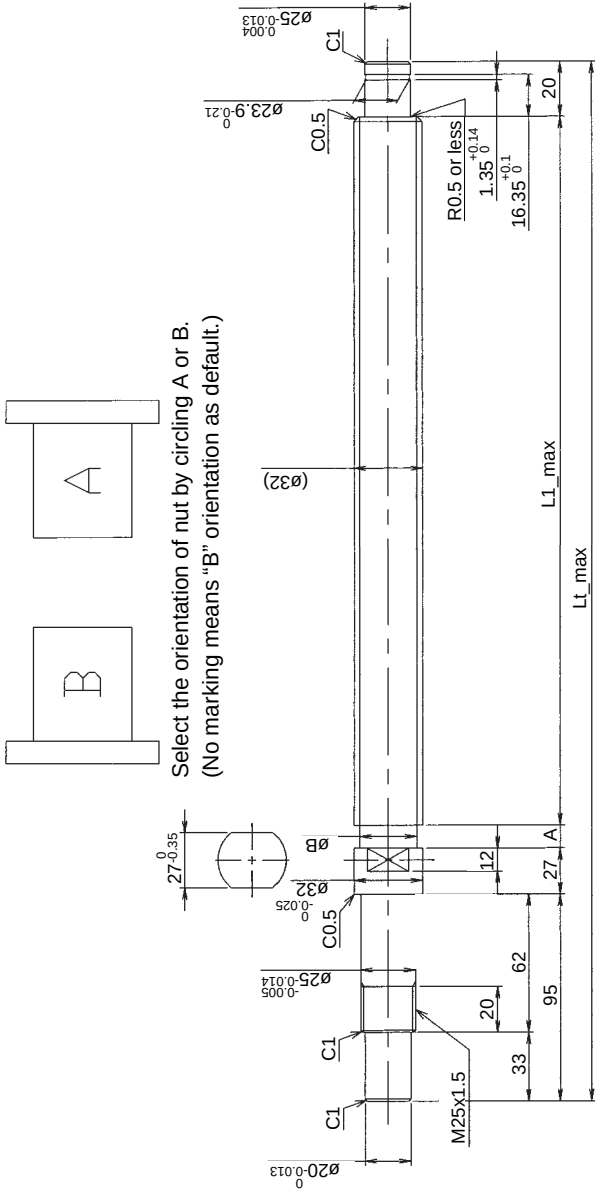
-C7M

GG

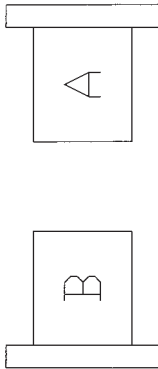
3210DS-DALR-

-C5

(Unit: mm)



Select the orientation of nut by circling A or B.
(No marking means "B" orientation as default.)



Model No.	A	B	Root diameter	Lt. max.	L1. max.
GE/GG3205E	5	29.5	29.5	972	825
GE/GG3210D	10	27.2	27.2	1922	1770

Applicable support unit model		
Rectangle type	BUK-25F	Fixed end
Circle flange type	BUK-25S	Supported end
	BUM-25F	Fixed end
	BUM-25	Fixed end, Supported end bearing

Company name		
TEL	Name of person in charge	
Company address		

Rolled Ball Screw: GW Series (Accuracy grade C7) Shaft end finish ordering sheet

Screw shaft diameter ø8, Lead 2	_____	E_42
Screw shaft diameter ø10, Lead 2.5, 4, 10	_____	E_43
Screw shaft diameter ø12, Lead 4, 10	_____	E_44
Screw shaft diameter ø15, Lead 5, 10, 16, 20	_____	E_45
Screw shaft diameter ø15, Lead 5, 10, Square nut	_____	E_46
Screw shaft diameter ø16, Lead 32	_____	E_47
Screw shaft diameter ø20, Lead 5, 10, 20	_____	E_48
Screw shaft diameter ø20, Lead 5, 10, Square nut	_____	E_49
Screw shaft diameter ø20, Lead 40	_____	E_50
Screw shaft diameter ø25, Lead 5, 10, 25	_____	E_51
Screw shaft diameter ø25, Lead 5, 10, Square nut	_____	E_52

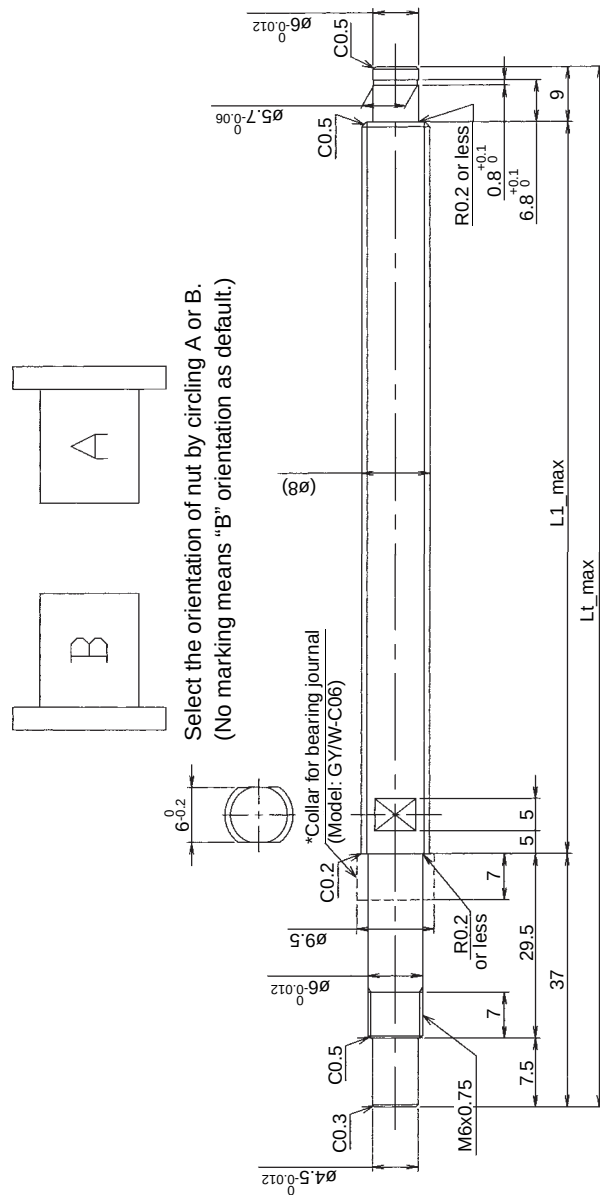
SHAFT END FINISH ORDERING SHEET

Screw shaft diameter ø8, Lead 2

Round nut

(Unit: mm)

			X		-C7Y



Model No.	Root diameter	Nut movable range	Lt_max.	L1_max.
GW0802G	6.6	326	382	336

Applicable support unit model	
Rectangle type	BUM-6 Fixed end, Supported end bearing
Circle flange type	BUM-6F Fixed end
	BUM-6 Fixed end, Supported end bearing

Note: For the collar for bearing journal shown with the mark * in the above figure, a separate order is required.

Company name		
TEL		Name of person in charge
Company address		

SHAFT END FINISH ORDERING SHEET

Screw shaft diameter $\varnothing 10$, Lead 2.5, 4, 10

Round nut

(Unit: mm)

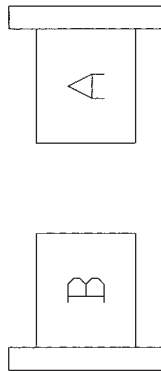
GW102FGS-HGNR

GW1004DS-HANR

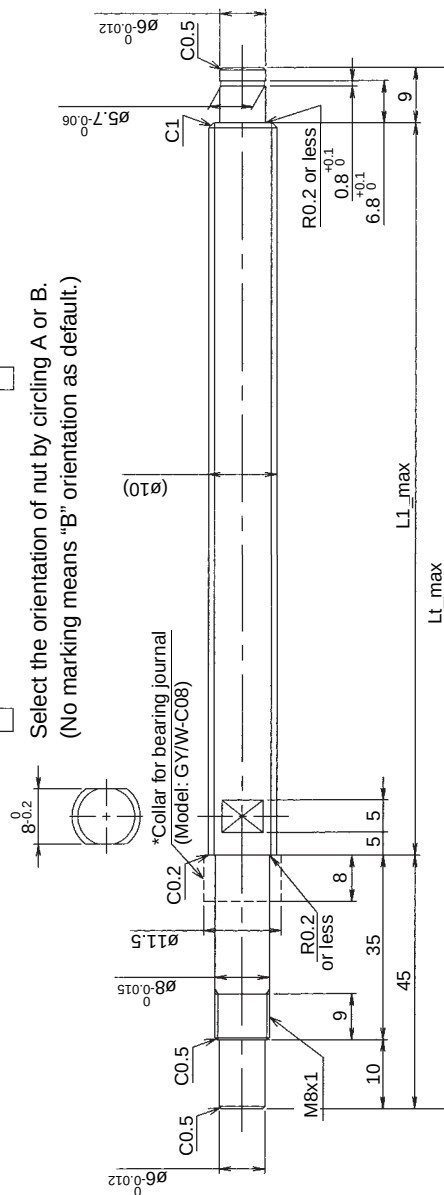
GW1010AS-HANR-

GE1010BS-HUNR

	X	-C7Y



Select the orientation of nut by circling A or B.
(No marking means "B" orientation as default.)



* For the size with the ▲ mark in the table below, spiral mark may be left at the end diameter ø8 portion of fixed end.

Model No.	Root diameter	Nut movable range	Lt_max.	L1_max.
GW102FG	8.2	521	585	531
GW1004D	7.8	521	585	531
GW1010*	7.8	521	585	531

Note: For GY1010*, select A or B.

Applicable support unit model	
Rectangle type	BUK-8F Fixed end
	BUK-6S Supported end
	BUK-8 Fixed end, Supported end bearing
Circle flange type	BUM-8F Fixed end
	BUM-6S Supported end
	BUM-8 Fixed end, Supported end bearing

Note: For the collar for bearing journal shown with the mark * in the above figure, a separate order is required.

Company name		
TEL		Name of person in charge
Company address		

SHAFT END FINISH ORDERING SHEET

Screw shaft diameter $\varnothing 12$, Lead 4, 10

Round nut

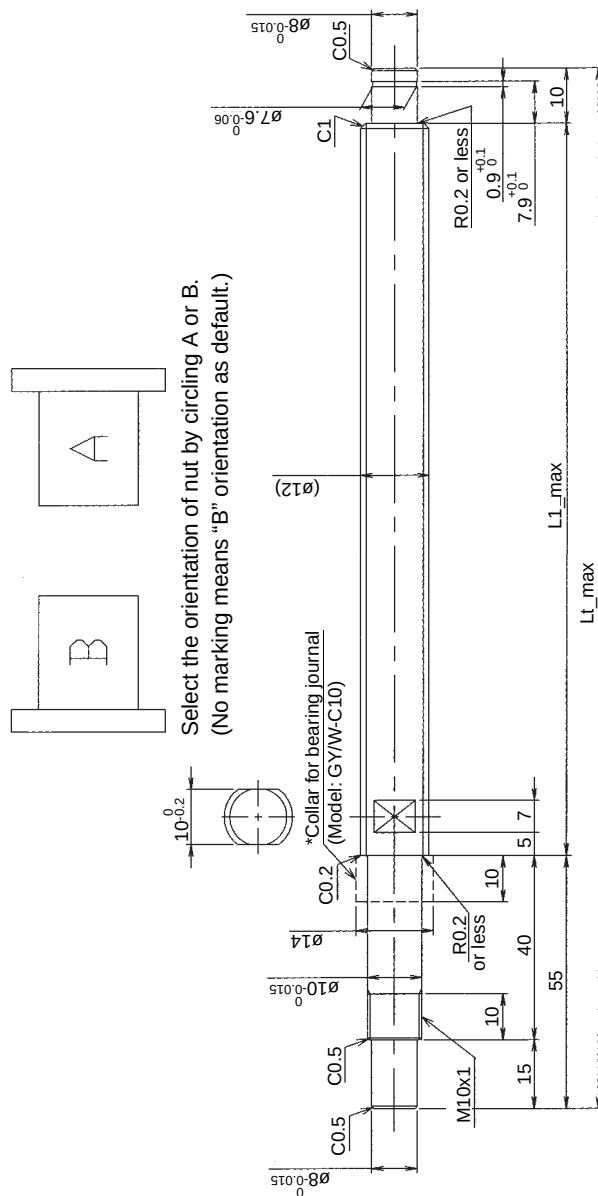
(Unit: mm)

GW1204DS-HANR

GW1210AS-HULR-

	X	-C7Y

GW1210BS-HULR



* For the size with the ▲ mark in the table below, spiral mark may be left at the end diameter $\phi 10$ portion of fixed end.

Model No.	Root diameter	Nut movable range	Lt_max.	L1_max.
GW1204D	10	718	795	730
GW1210*	9.6	718	795	730

Note: For GY1210*, select A or B.

Applicable support unit model	
Rectangle type	BUK-10F Fixed end
	BUK-8S Supported end
	BUK-10 Fixed end, Supported end bearing
Circle flange type	BUM-10F Fixed end
	BUM-8S Supported end
	BUM-10 Fixed end, Supported end bearing

Note: For the collar for bearing journal shown with the mark

* in the above figure, a separate order is required.

Company name		
TEL		Name of person in charge
Company address		

SHAFT END FINISH ORDERING SHEET

Screw shaft diameter $\varnothing 15$, Lead 5, 10, 16, 20

Round nut

(Unit: mm)

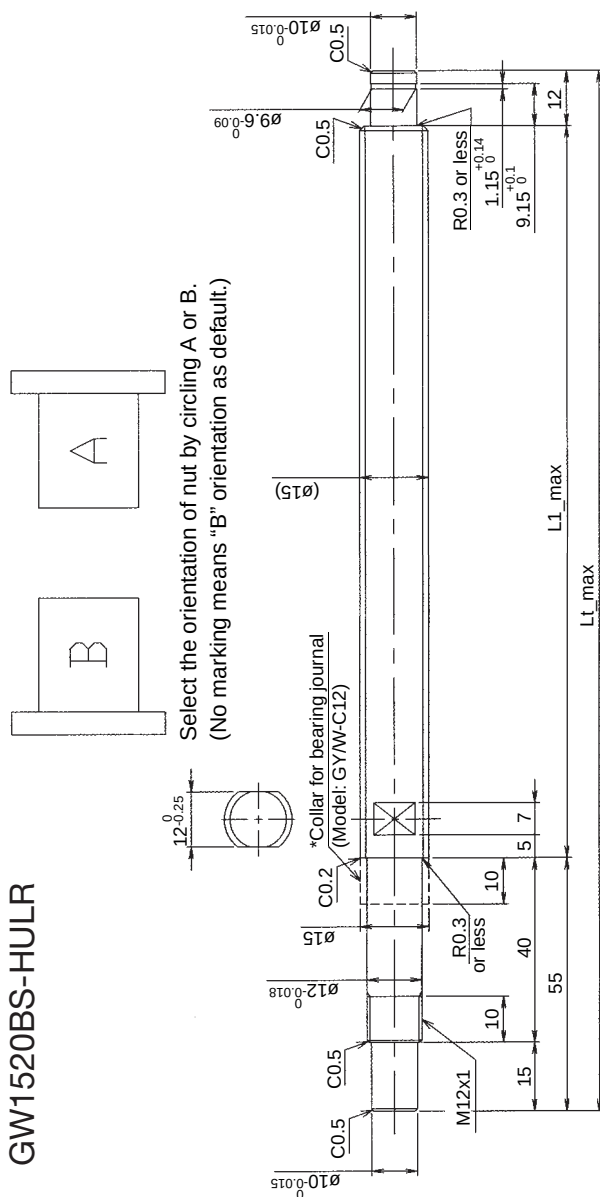
GW1505DS-HULR

GW1510DS-HULR

			X	-C7Y

GW1516BS-HULR

GW1520BS-HULR



Model No.	Root diameter	Nut movable range	Lt_max.	L1_max.
GW1505D	12.5	1116	1195	1128
GW1510*	12.5	1116	1195	1128
GW1516B	12.7	1116	1195	1128
GW1520B	12.5	1116	1195	1128

Note: For the round nut GY1510*, select D or E.

Applicable support unit model	
Rectangle type	BUK-12F Fixed end
	BUK-10S Supported end
	BUK-12 Fixed end, Supported end bearing
Circle flange type	BUM-12F Fixed end
	BUM-10S Supported end
	BUM-12 Fixed end, Supported end bearing

Note: For the collar for bearing journal shown with the mark * in the above figure, a separate order is required.

Company name		
TEL		Name of person in charge
Company address		

SHAFT END FINISH ORDERING SHEET

Screw shaft diameter Ø15, Lead 5, 10

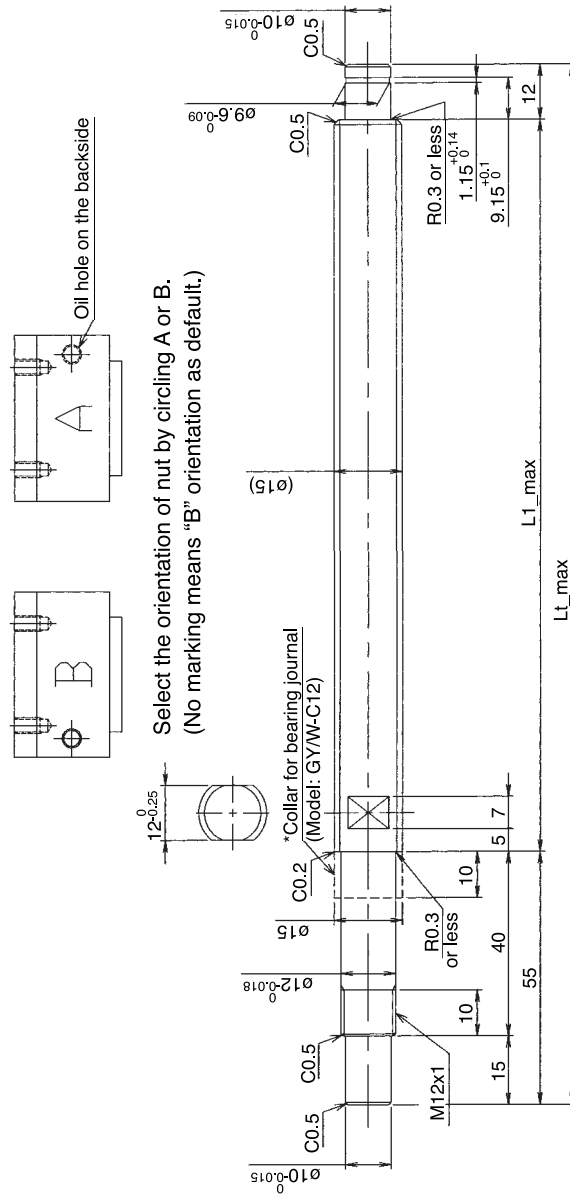
Square nut

(Unit: mm)

GW1505DS-NKLR

X	-C7Y

GW1510DS-NKLR



Model No.	Root diameter	Nut movable range	Lt_max.	L1_max.
GW1505D	12.5	1116	1195	1128
GW1510D	12.5	1116	1195	1128

Applicable support unit model	
Rectangle type	BUK-12F Fixed end
	BUK-10S Supported end
	BUK-12 Fixed end, Supported end bearing
Circle flange type	BUM-12F Fixed end
	BUM-10S Supported end
	BUM-12 Fixed end, Supported end bearing

Note: For the collar for bearing journal shown with the mark
* in the above figure, a separate order is required.

Company name		
TEL		Name of person in charge
Company address		

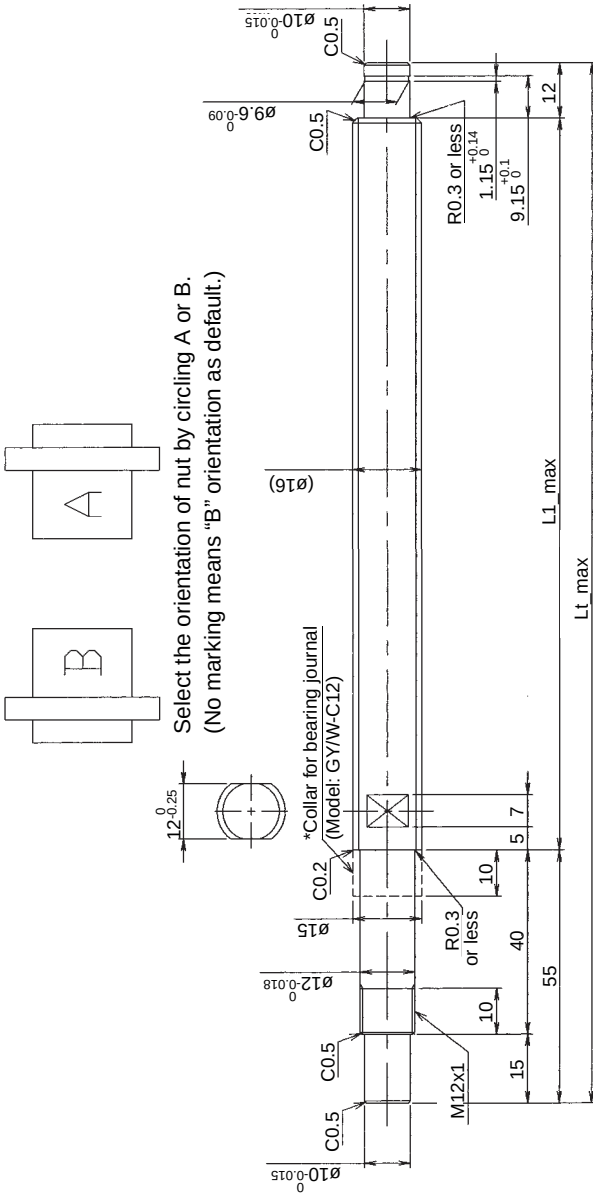
SHAFT END FINISH ORDERING SHEET

Screw shaft diameter ø16, Lead 32

Round nut

GW1632QS-HEZR- X -C7Y

(Unit: mm)



Model No.	Root diameter	Nut movable range	Lt_max.	L1_max.
GW1632Q	13.5	1116	1195	1128

Applicable support unit model	
Rectangle type	BUK-12F Fixed end
	BUK-10S Supported end
	BUK-12 Fixed end, Supported end bearing
Circle flange type	BUM-12F Fixed end
	BUM-10S Supported end
	BUM-12 Fixed end, Supported end bearing

Note: For the collar for bearing journal shown with the mark * in the above figure, a separate order is required.

Company name		
TEL		Name of person in charge
Company address		

SHAFT END FINISH ORDERING SHEET

Screw shaft diameter ø20, Lead 5, 10, 20

Round nut

GW2005DS-HULR

GW2010DS-HULR

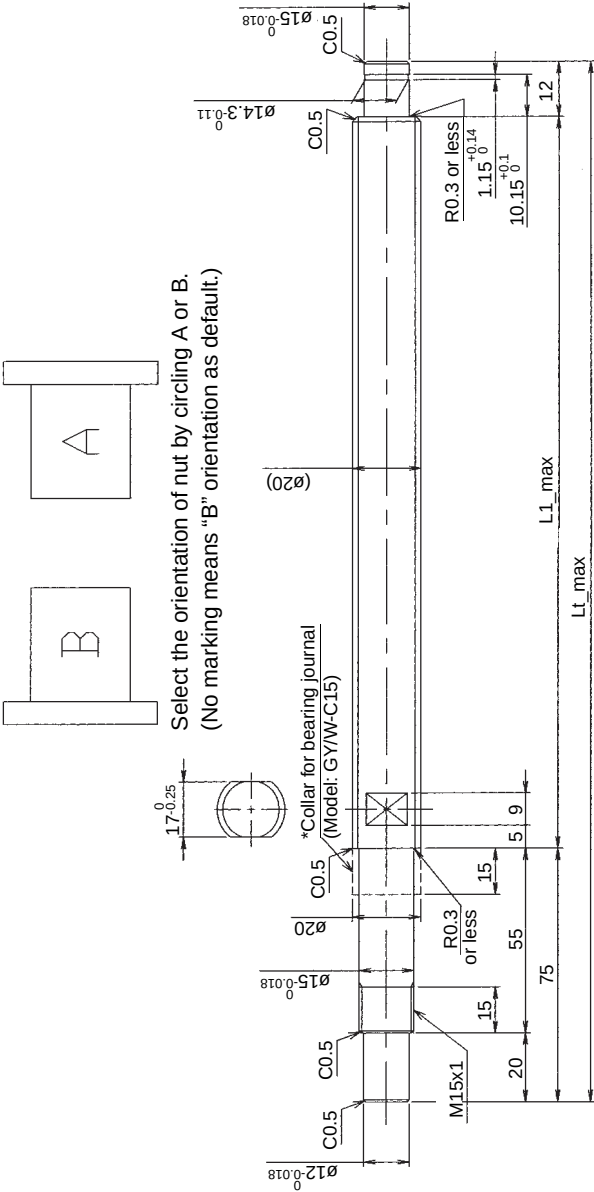
GW2020DS-HULR

GW2020ES-HULR

X

-C7Y

(Unit: mm)



Model No.	Root diameter	Nut movable range	Lt_max.	L1_max.
GW2005D	17.5	1894	1995	1908
GW2010D	16.3	1894	1995	1908
GW2020*	17.5	1894	1995	1908

Note: For the M type nut GW2020*, select D or E.

Applicable support unit model	
Rectangle type	BUK-15F Fixed end
	BUK-15S Supported end
	BUK-15 Fixed end, Supported end bearing
Circle flange type	BUM-15F Fixed end
	BUM-15S Supported end
	BUM-15 Fixed end, Supported end bearing

Note: For the collar for bearing journal shown with the mark
* in the above figure, a separate order is required.

Company name		
TEL		Name of person in charge
Company address		

SHAFT END FINISH ORDERING SHEET

Screw shaft diameter ø20, Lead 5, 10

Square nut

GW2005DS-NKLR

GW2010DS-NKLR

-C7Y

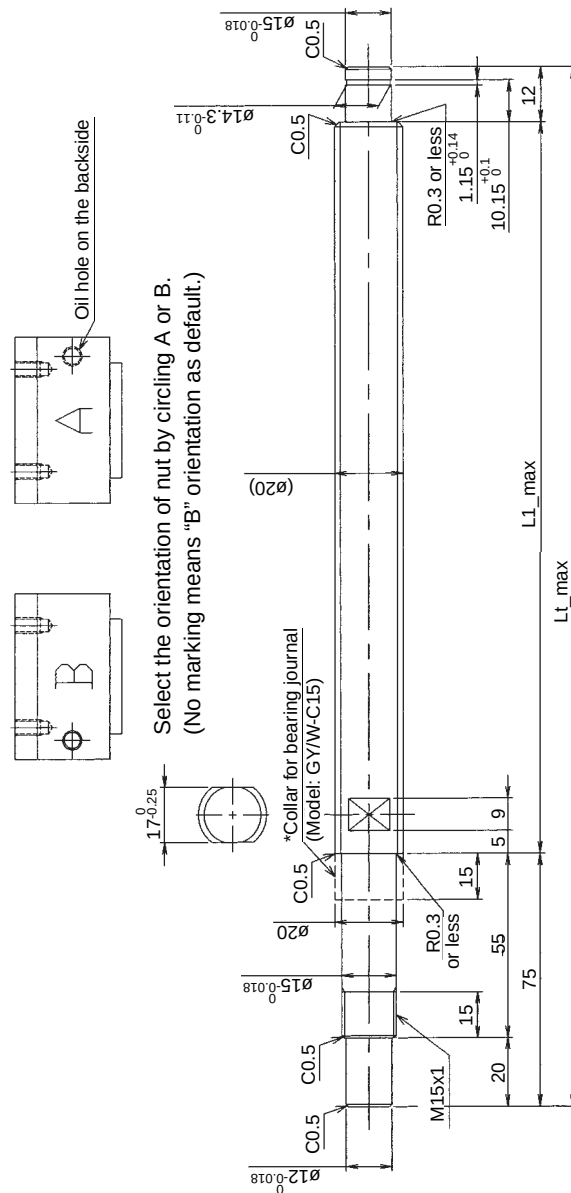
X

1

27

10

(Unit: mm)



Model No.	Root diameter	Nut movable range	Lt_max.	L1_max.
GW2005D	17.5	1894	1995	1908
GW2010D	16.3	1894	1995	1908

Applicable support unit model	
Rectangle type	BUK-15F Fixed end
	BUK-15S Supported end
	BUK-15 Fixed end, Supported end bearing
Circle flange type	BUM-15F Fixed end
	BUM-15S Supported end
	BUM-15 Fixed end, Supported end bearing

Note: For the collar for bearing journal shown with the mark * in the above figure, a separate order is required.

Company name		
TEL		Name of person in charge
Company address		

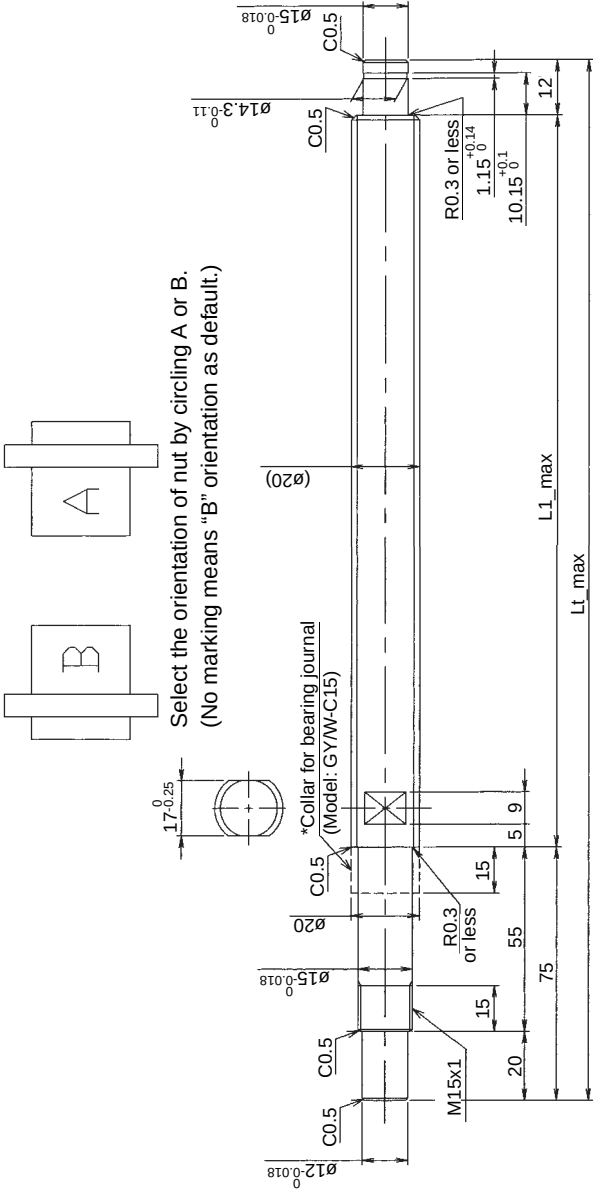
SHAFT END FINISH ORDERING SHEET

Screw shaft diameter ø20, Lead 40

Round nut

GW2040QS-HEZR-X-C7Y

(Unit: mm)



Model No.	Root diameter	Nut movable range	Lt_max.	L1_max.
GW2040Q	17.5	1894	1995	1908

Applicable support unit model	
Rectangle type	BUK-15F Fixed end
	BUK-15S Supported end
	BUK-15 Fixed end, Supported end bearing
Circle flange type	BUM-15F Fixed end
	BUM-15S Supported end
	BUM-15 Fixed end, Supported end bearing

Note: For the collar for bearing journal shown with the mark * in the above figure, a separate order is required.

Company name		
TEL		Name of person in charge
Company address		

SHAFT END FINISH ORDERING SHEET

Screw shaft diameter $\varnothing 25$, Lead 5, 10, 25

Round nut

GW2505DS-HULR

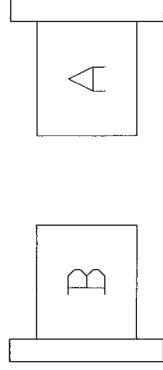
GW2505ES-HULR

GW2510ES-HULR-

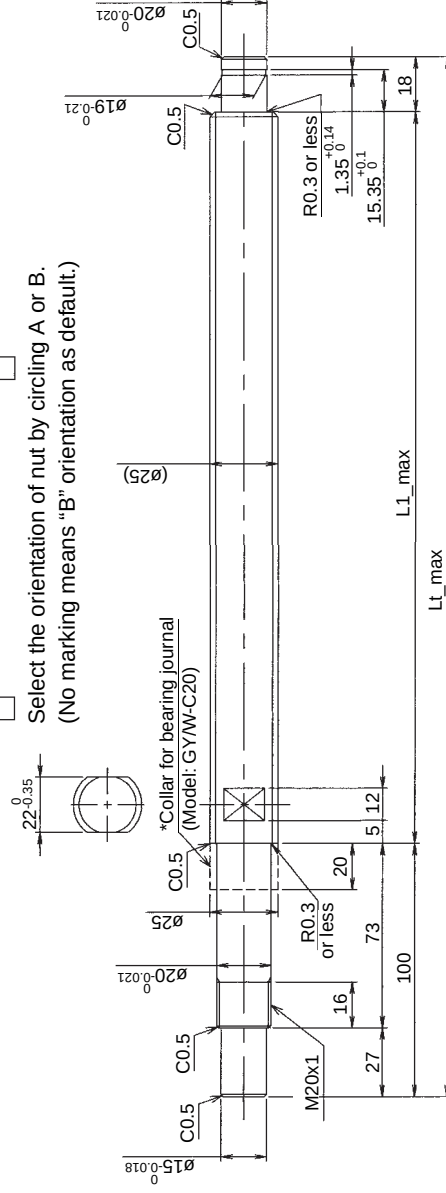
GW2525DS-HULR

GW2525ES-HULR

☐ ☐ ☐ X ☐ ☐ ☐ -C7Y



Select the orientation of nut by circling A or B.
(No marking means "B" orientation as default.)



* For the size with the $\blacktriangle$ mark in the table below, spiral mark may be left at the end diameter $\varnothing 20$ portion of fixed end or supported end.

Model No.	Root diameter	Nut movable range	Lt_max.	L1_max.
GW2505*	21.8	2355	2490	2372
GW2510E	20.3	2355	2490	2372
GW2525*	21.8	2355	2490	2372

Note: For the round nut GW2505* or GW2525*, select D or E.

Applicable support unit model	
Rectangle type	
BUK-20F	Fixed end
BUK-20S	Supported end
BUK-20	Fixed end, Supported end bearing
Circle flange type	
BUM-20F	Fixed end
BUM-20S	Supported end
BUM-20	Fixed end, Supported end bearing

Note: For the collar for bearing journal shown with the mark $\blacktriangle$ in the above figure, a separate order is required.

Company name		
TEL		
Company address		
	Name of person in charge	

SHAFT END FINISH ORDERING SHEET

Screw shaft diameter $\varnothing 25$, Lead 5, 10

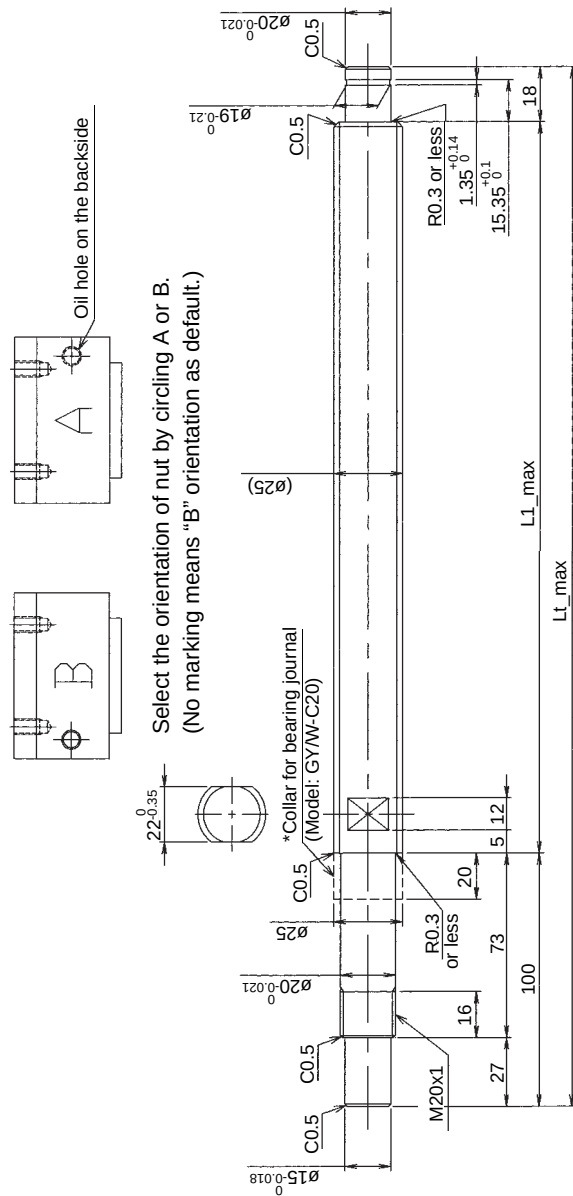
Square nut

(Unit: mm)

GW2505DS-NKLR

GW2510ES-NKLR

	X	-C7Y



Select the orientation of nut by circling A or B.
(No marking means "B" orientation as default.)

* For the size with the ▲ mark in the table below, spiral mark may be left at the end diameter ø20 portion of fixed end or supported end.

Model No.	Root diameter	Nut movable range	Lt_max.	L1_max.
GW2505D	21.8	2355	2490	2372
GW2510E	20.3	2355	2490	2372

Applicable support unit model	
Rectangle type	BUK-20F Fixed end
	BUK-20S Supported end
	BUK-20 Fixed end, Supported end bearing
Circle flange type	BUM-20F Fixed end
	BUM-20S Supported end
	BUM-20 Fixed end, Supported end bearing

Note: For the collar for bearing journal shown with the mark * in the above figure, a separate order is required.

Company name		
TEL		Name of person in charge
Company address		

Rolled Ball Screw: GY Series (Accuracy grade C10) Shaft end finish ordering sheet

Screw shaft diameter ø8, Lead 2, 4, 5, 8	E_54
Screw shaft diameter ø10, Lead 2, 2.5, 4, 5, 6, 10	E_55
Screw shaft diameter ø12, Lead 2, 4, 8, 10	E_56
Screw shaft diameter ø15, Lead 5, 10, 16, 20	E_57
Screw shaft diameter ø15, Lead 5, 10, Square nut	E_58
Screw shaft diameter ø16, Lead 32	E_59
Screw shaft diameter ø20, Lead 5, 10, 20	E_60
Screw shaft diameter ø20, Lead 5, 10, Square nut	E_61
Screw shaft diameter ø20, Lead 40	E_62
Screw shaft diameter ø25, Lead 5, 10, 25	E_63
Screw shaft diameter ø25, Lead 5, 10, Square nut	E_64
Screw shaft diameter ø28, Lead 6	E_65
Screw shaft diameter ø32, Lead 10, 32	E_66
Screw shaft diameter ø32, Lead 10, Square nut	E_67
Screw shaft diameter ø36, Lead 10, 20	E_68
Screw shaft diameter ø40, Lead 10, 20, 40	E_69

SHAFT END FINISH ORDERING SHEET

Screw shaft diameter ø8, Lead 2, 4, 5, 8

Round nut

GY0802GS-HG NR

GY0804DS-HANR -

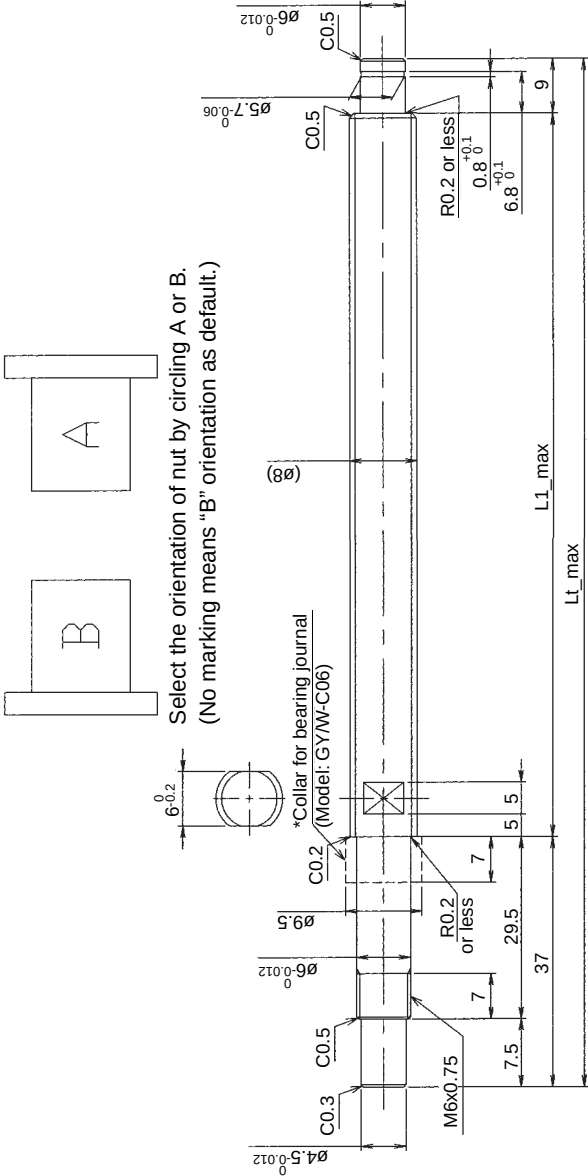
GY0805DS-HUNR

GY0808AS-HUNR

X

-CAY

(Unit: mm)



Model No.	Root diameter	Nut movable range	Lt_max.	L1_max.
GY0802G	6.6	326	382	336
GY0804D	6.3	326	382	336
GY0805D	6.4	326	382	336
GY0808A	6.3	326	382	336

Applicable support unit model		
Rectangle type	BUK-6	Fixed end, Supported end bearing
Circle flange type	BUM-6F	Fixed end
	BUM-6	Fixed end, Supported end bearing

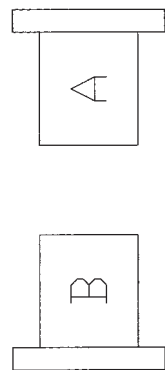
Note: For the collar for bearing journal shown with the mark * in the above figure, a separate order is required.

Company name		
TEL		Name of person in charge
Company address		

Round nut

(Unit: mm)

GY1002DS-HANR	GY1006DS-HANR
GY102FGS-HGNR	GY1010AS-HANR
GY1004DS-HANR	GY1010BS-HUNR
GY1005DS-HUNR	



Select the orientation of nut by circling A or B.
(No marking means "B" orientation as default.)

* For the size with the ▲ mark in the table below, spiral mark may be left at the end diameter Ø8 portion of fixed end.

Applicable support unit model	
Rectangle type	BUK-8F Fixed end
	BUK-6S Supported end
	BUK-8 Fixed end, Supported end bearing
Circle flange type	BUK-8F Fixed end
	BUK-6S Supported end
	BUK-8 Fixed end, Supported end bearing

Note: For GY1010*, select A or B.

Note: For the collar for bearing journal shown with the mark * in the above figure, a separate order is required.

Company name		
TEL		Name of person in charge
Company address		

SHAFT END FINISH ORDERING SHEET

Screw shaft diameter $\varnothing 12$, Lead 2, 4, 8, 10

Round nut

GY1202DS-HANR

GY1204DS-HANR

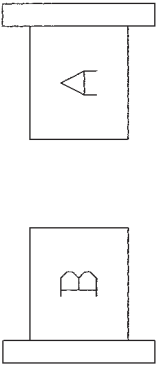
GY1208DS-HUNR-

GY1210AS-HULR

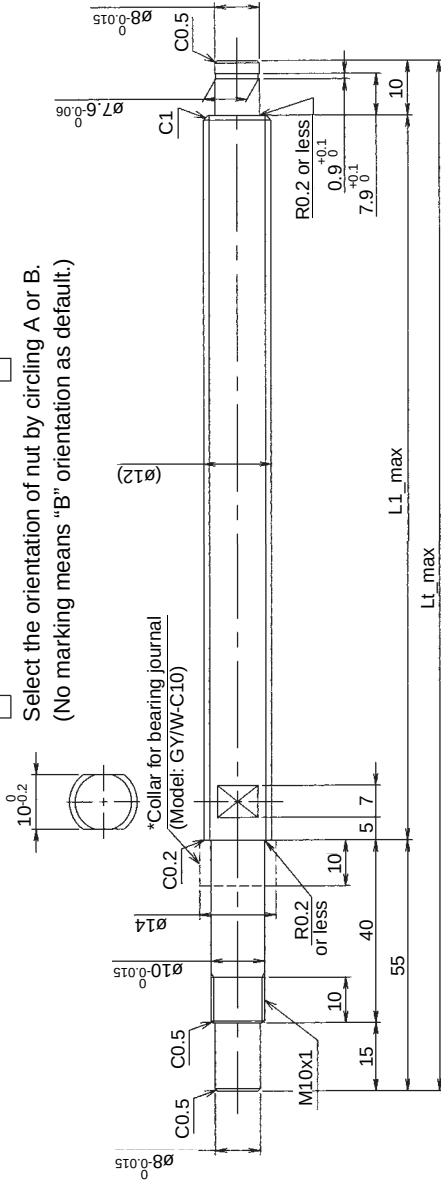
GY1210BS-HULR

X

-CAY



Select the orientation of nut by circling A or B.
(No marking means "B" orientation as default.)



* For the size with the ▲ mark in the table below, spiral mark may be left at the end diameter $\varnothing 10$ portion of fixed end.

Model No.	Root diameter	Nut movable range	Lt_max.	L1_max.
▲ GY1202D	10.6	718	795	730
▲ GY1204D	10	718	795	730
▲ GY1208D	10	718	795	730
▲ GY1210*	9.6	718	795	730

Note: For GY1210*, select A or B.

Applicable support unit model	
Rectangle type	BUK-10F Fixed end
	BUK-8S Supported end
	BUK-10 Fixed end, Supported end bearing
Circle flange type	BUM-10F Fixed end
	BUM-8S Supported end
	BUM-10 Fixed end, Supported end bearing

Note: For the collar for bearing journal shown with the mark
* in the above figure, a separate order is required.

Company name		
TEL		Name of person in charge
Company address		

SHAFT END FINISH ORDERING SHEET

Screw shaft diameter $\phi 15$, Lead 5, 10, 16, 20

Round nut

Protruded tube type nut

(Unit: mm)

GY1505DS-HULR

GY1505DS-CTLR

GY1510DS-HULR

GY1510DS-CTLR

GY1510ES-HULR

GY1516BS-CTLR-

X

SHAFT END FINISH ORDERING SHEET

Screw shaft diameter $\varnothing 15$, Lead 5, 10

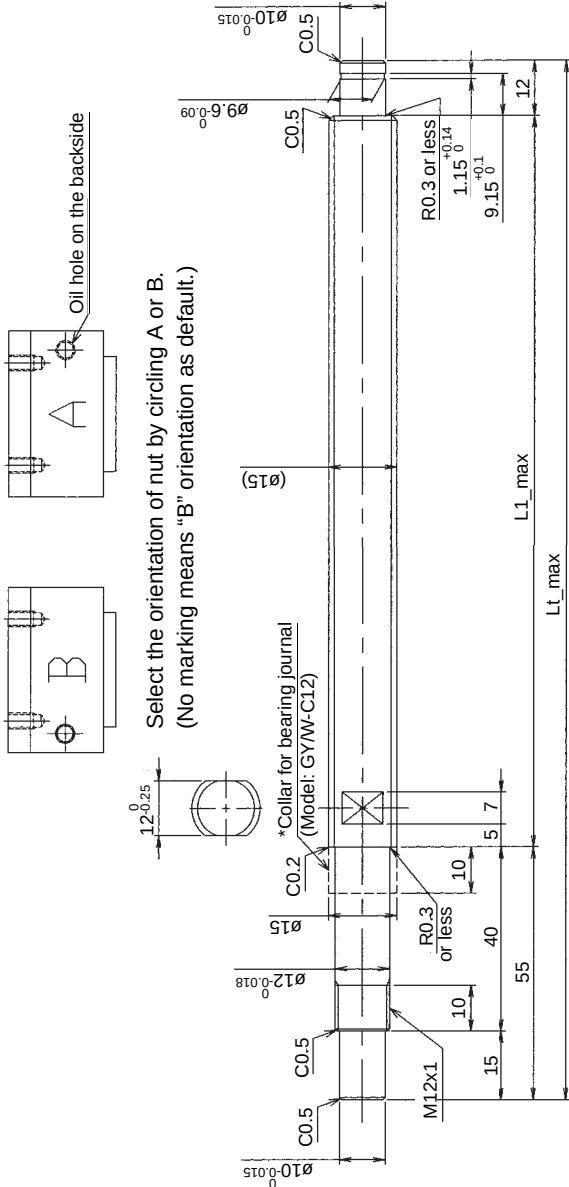
Square nut

GY1505DS-NKLR

GY1510DS-NKLR

X-CAY

(Unit: mm)



Select the orientation of nut by circling A or B.
(No marking means "B" orientation as default.)

Model No.	Root diameter	Nut movable range	Lt_max.	L1_max.
GY1505D	12.5	1116	1195	1128
GY1510D	12.5	1116	1195	1128

Applicable support unit model	
Rectangle type	BUK-12F Fixed end
	BUK-10S Supported end
	BUK-12 Fixed end, Supported end bearing
Circle flange type	BUM-12F Fixed end
	BUM-10S Supported end
	BUM-12 Fixed end, Supported end bearing

Company name		
TEL		Name of person in charge
Company address		

Note: For the collar for bearing journal shown with the mark
* in the above figure, a separate order is required.

SHAFT END FINISH ORDERING SHEET

Screw shaft diameter $\varnothing 16$, Lead 32

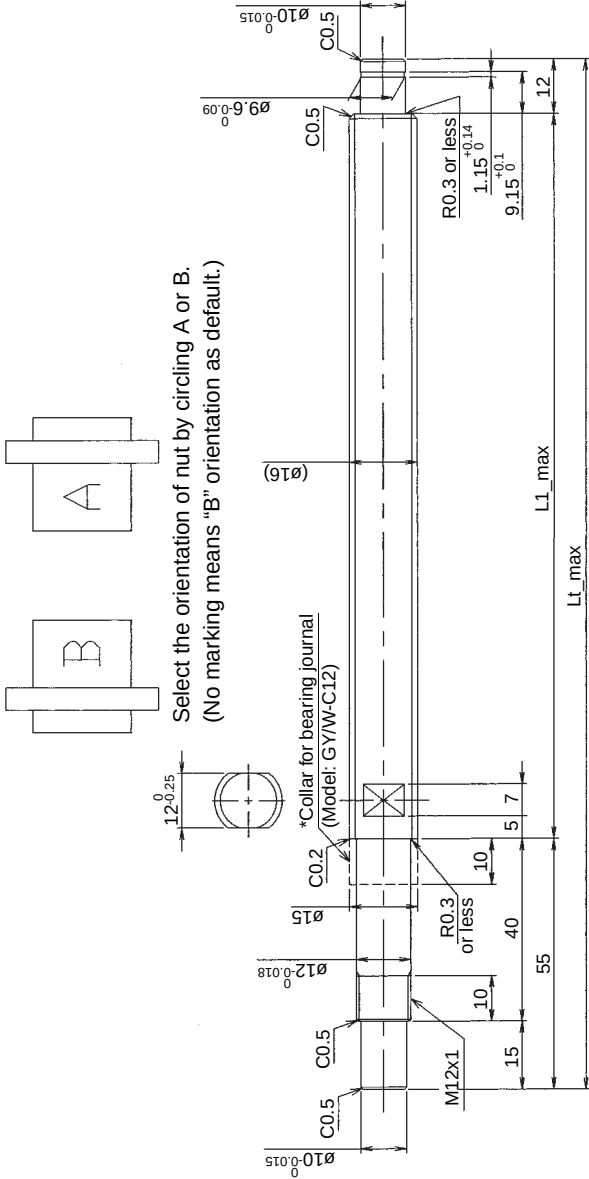
Round nut

GY1632QS-HEZR-

 X

 -CAY

(Unit: mm)



Model No.	Root diameter	Nut movable range	Lt_max.	L1_max.
GY1632Q	13.5	1116	1195	1128

Company name		
TEL		Name of person in charge
Company address		

SHAFT END FINISH ORDERING SHEET

Screw shaft diameter $\varnothing 20$, Lead 5, 10, 20

Round nut

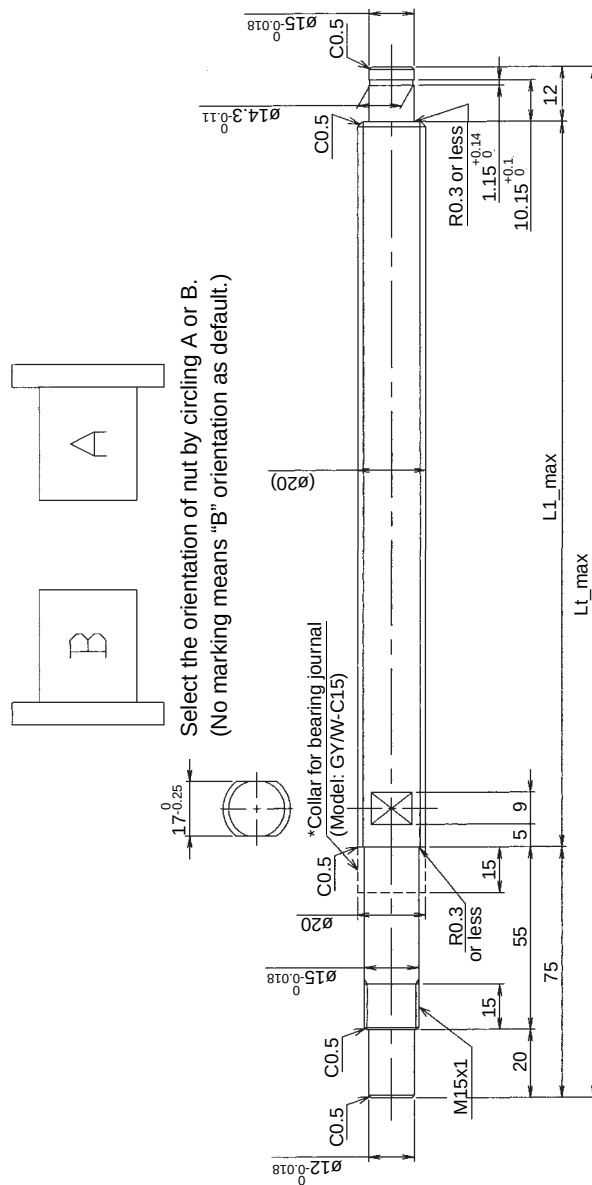
(Unit: mm)

GY2005DS-HULR GY2005DS-CTLR

GY2010DS-HULR GY2010DS-CTRL

СУ2020ДС	Н111 В	СУ2020ДС	СТ1 В	-	Х	-СAY

GY2020ES-HULR



Model No.	Root diameter	Nut movable range	Lt_max.	L1_max.
GY2005D	17.5	1894	1995	1908
GY2010D	16.3	1894	1995	1908
GY2020*	17.5	1894	1995	1908

Note: For the round nut GY2020*, select D or E.

Applicable support unit model	
Rectangle type	BUK-15F Fixed end
	BUK-15S Supported end
	BUK-15 Fixed end, Supported end bearing
Circle flange type	BUM-15F Fixed end
	BUM-15S Supported end
	BUM-15 Fixed end, Supported end bearing

Note: For the collar for bearing journal shown with the mark
* in the above figure, a separate order is required.

Company name		
TEL		Name of person in charge
Company address		

SHAFT END FINISH ORDERING SHEET

Screw shaft diameter $\varnothing 20$, Lead 40

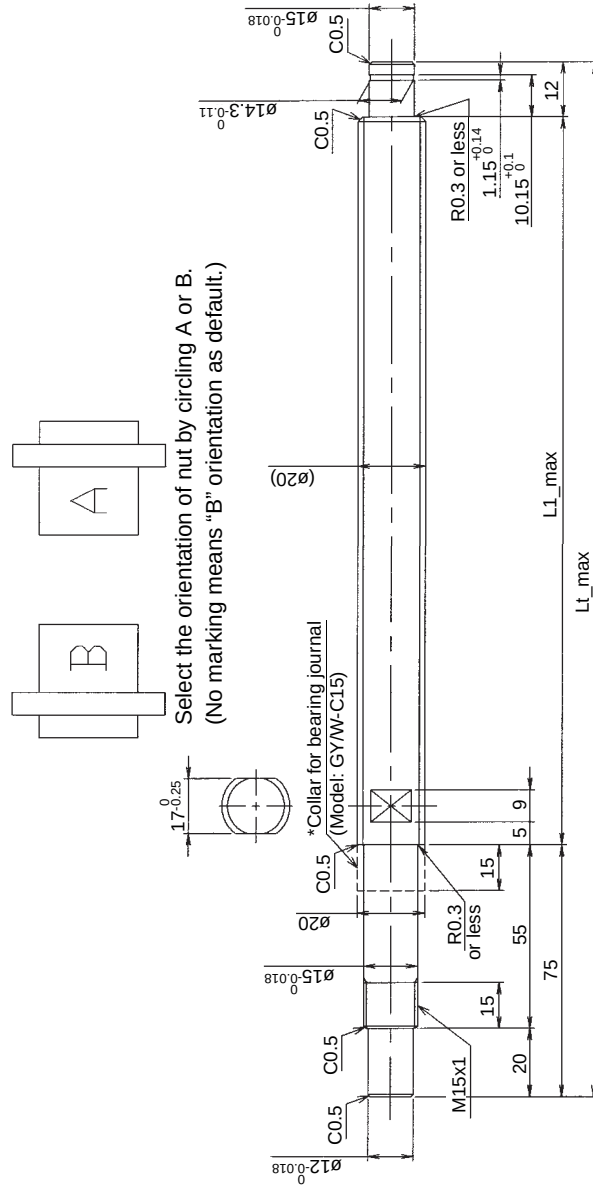
Round nut

(Unit: mm)

GY2040QS-HEZR-

X

-CAY



Model No.	Root diameter	Nut movable range	Lt_max.	L1_max.
GY2040Q	17.5	1894	1995	1908

Applicable support unit model	
Rectangle type	BUK-15F Fixed end
	BUK-15S Supported end
	BUK-15 Fixed end, Supported end bearing
Circle flange type	BUM-15F Fixed end
	BUM-15S Supported end
	BUM-15 Fixed end, Supported end bearing

Note: For the collar for bearing journal shown with the mark
* in the above figure, a separate order is required.

Company name		
TEL		Name of person in charge
Company address		

SHAFT END FINISH ORDERING SHEET

Screw shaft diameter ø25, Lead 5, 10, 25

(Unit: mm)

Round nut

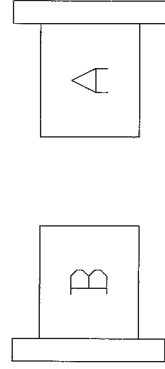
Protruded tube type nut

GY2505DS-HULR
GY2505ES-HULR
GY2510ES-HULR
GY2525DS-HULR
GY2525ES-HULR

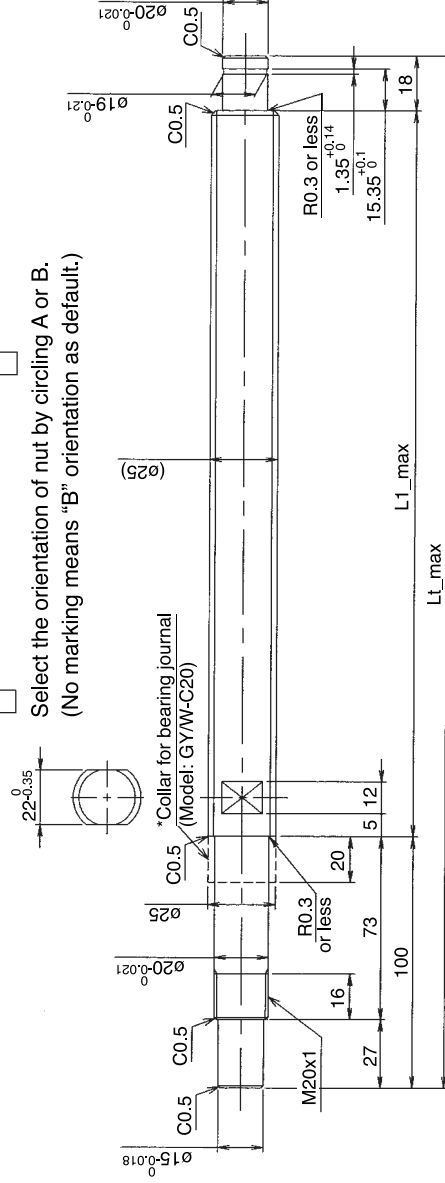
GY2505ES-CTLR

GY2510ES-CTLR

GY2525DS-CTLR- X -CAY



Select the orientation of nut by circling A or B.
(No marking means "B" orientation as default.)



* For the size with the ▲ mark in the table below, spiral mark may be left at the end diameter ø20 portion of fixed end or supported end.

Model No.	Root diameter	Nut movable range	Lt_max.	L1_max.
GY2505*	21.8	2355	2490	2372
GY2510E	20.3	2355	2490	2372
GY2525*	21.8	2355	2490	2372

Note: For the round nut GY2505* or GY2525*, select D or E.

Applicable support unit model	
Rectangle type	
BUK-20F	Fixed end
BUK-20S	Supported end
BUK-20	Fixed end, Supported end bearing
Circle flange type	
BUM-20F	Fixed end
BUM-20S	Supported end
BUM-20	Fixed end, Supported end bearing

Note: For the collar for bearing journal shown with the mark * in the above figure, a separate order is required.

Company name		
TEL		
Company address		
	Name of person in charge	

SHAFT END FINISH ORDERING SHEET

Screw shaft diameter ø25, Lead 5, 10

Square nut

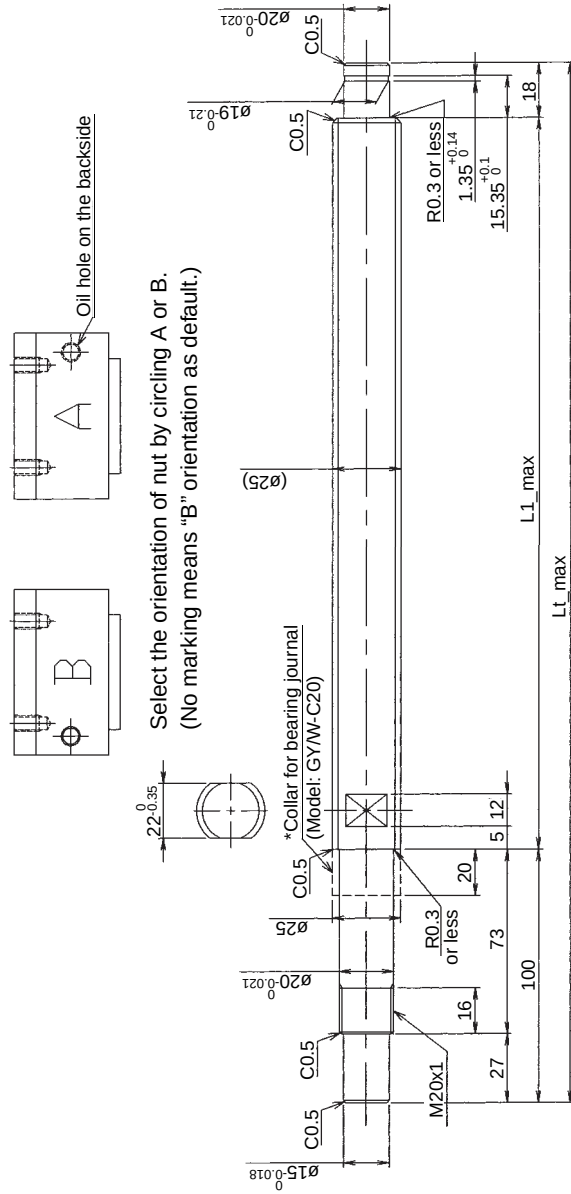
(Unit: mm)

GY2505DS-NKLR-

GY2510ES-NKLR-

X

-CAY



* For the size with the ▲ mark in the table below, spiral mark may be left at the end diameter ø20 portion of fixed end or supported end.

Model No.	Root diameter	Nut movable range	Lt_max.	L1_max.
GY2505D	21.8	2355	2490	2372
GY2510E	20.3	2355	2490	2372

Applicable support unit model	
Rectangle type	BUK-20F Fixed end
	BUK-20S Supported end
	BUK-20 Fixed end, Supported end bearing
Circle flange type	BUM-20F Fixed end
	BUM-20S Supported end
	BUM-20 Fixed end, Supported end bearing

Note: For the collar for bearing journal shown with the mark
* in the above figure, a separate order is required.

Company name		
TEL		Name of person in charge
Company address		

SHAFT END FINISH ORDERING SHEET

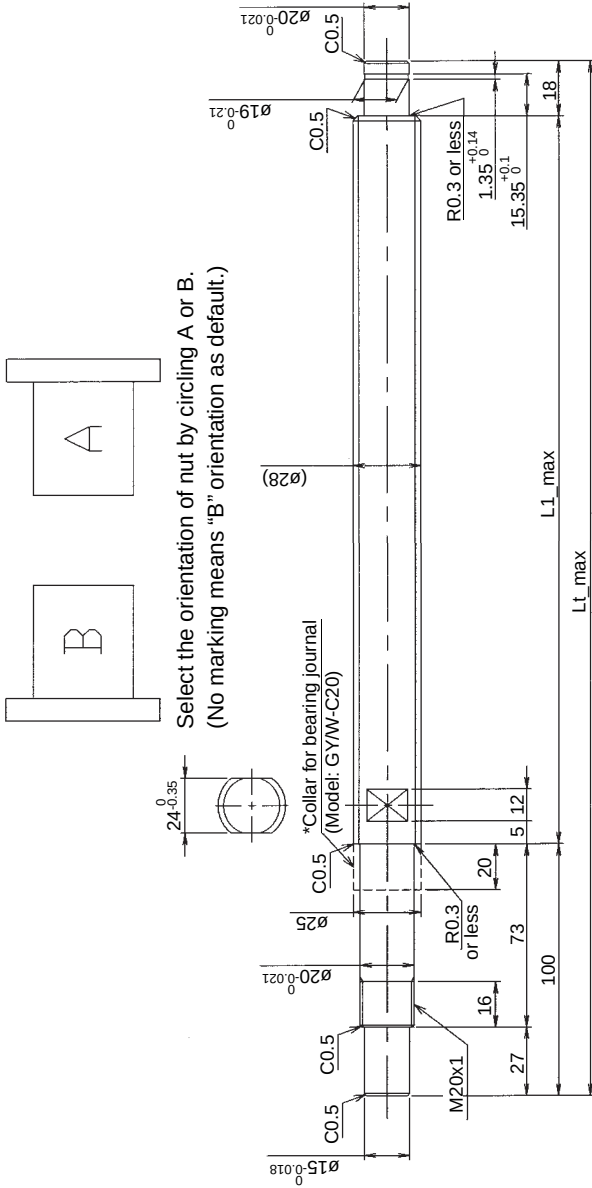
Screw shaft diameter $\varnothing 28$, Lead 6

Round nut

Protruded tube type nut

(Unit: mm)

GY2806ES-HUBR GY2806ES-CTBR- X -CAY



Model No.	Root diameter	Nut movable range	Lt_max.	L1_max.
GY2806E	25.6	2315	2450	2332

Applicable support unit model	
Rectangle type	BUK-20F Fixed end
	BUK-20S Supported end
	BUK-20 Fixed end, Supported end bearing
Circle flange type	BUM-20F Fixed end
	BUM-20S Supported end
	BUM-20 Fixed end, Supported end bearing

Note: For the collar for bearing journal shown with the mark * in the above figure, a separate order is required.

Company name		
TEL		Name of person in charge
Company address		

SHAFT END FINISH ORDERING SHEET

Screw shaft diameter ø32, Lead 10, 32

(Unit: mm)

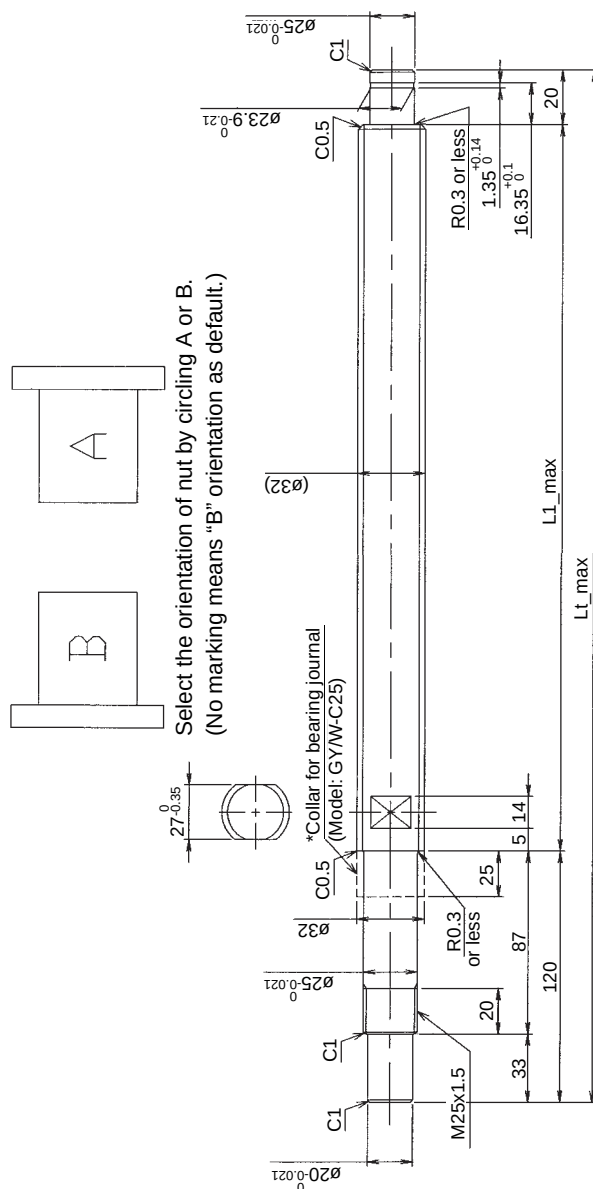
Round nut

Protruded tube type nut

GY3210ES-HUBR GY3210ES-CTBR

	X	-CAY

GY3232BS-HUBR GY3232BS-CTBR



Model No.	Root diameter	Nut movable range	Lt. max.	L1_max.
GY3210E	27.2	2811	2970	2830
GY3232B	27.8	2811	2970	2830

Applicable support unit model		
Rectangle type	BUK-25F	Fixed end
	BUK-25S	Supported end
Circle flange type	BUM-25F	Fixed end
	BUM-25	Fixed end, Supported end bearing

Note: For the collar for bearing journal shown with the mark

* in the above figure, a separate order is required.

Company name		
TEL		Name of person in charge
Company address		

SHAFT END FINISH ORDERING SHEET

Screw shaft diameter $\varnothing 32$, Lead 10

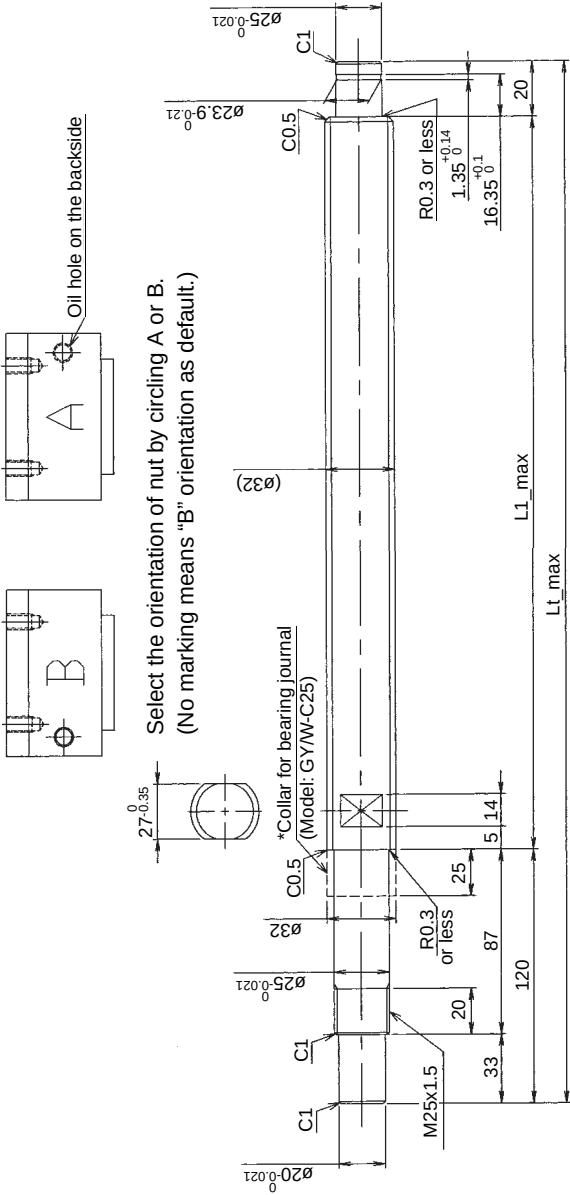
Square nut

GY3210ES-NKBR-

 X

 -CAY

(Unit: mm)



Model No.	Root diameter	Nut movable range	Lt_max.	L1_max.
GY3210E	27.2	2811	2970	2830

Applicable support unit model		
Rectangle type	BUK-25F	Fixed end
Circle flange type	BUM-25F	Supported end
Circle flange type	BUM-25	Fixed end

Note: For the collar for bearing journal shown with the mark * in the above figure, a separate order is required.

Company name		
TEL		
Company address		

SHAFT END FINISH ORDERING SHEET

Screw shaft diameter $\varnothing 36$, Lead 10, 20

Round nut

Protruded tube type nut

GY3610ES-HUBR

GY3610ES-CTBR

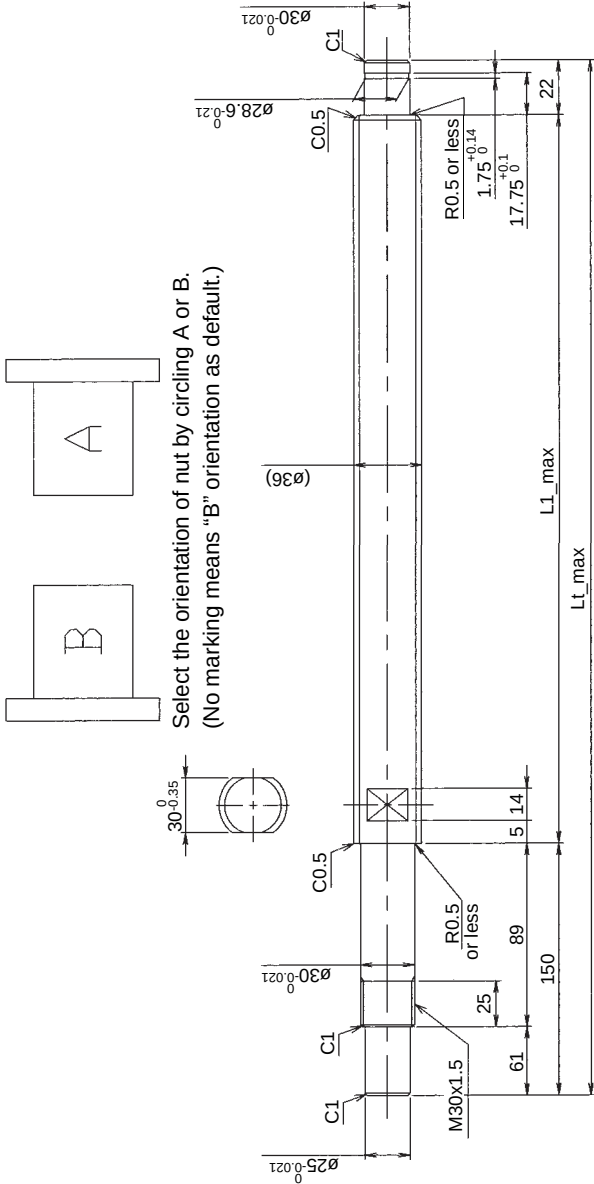
X

-CAY

GY3620ES-HUBR

GY3620ES-CTBR

(Unit: mm)



Model No.	Root diameter	Nut movable range	Lt. max.	L1. max.
GY3610E	31.1	2734	2925	2753
GY3620E	31.1	2734	2925	2753

Applicable support unit model		
Circle flange type	BUT-30	Fixed end

Company name		
TEL		Name of person in charge
Company address		

SHAFT END FINISH ORDERING SHEET

Screw shaft diameter $\varnothing 40$, Lead 10, 20, 40

Round nut

Protruded tube type nut

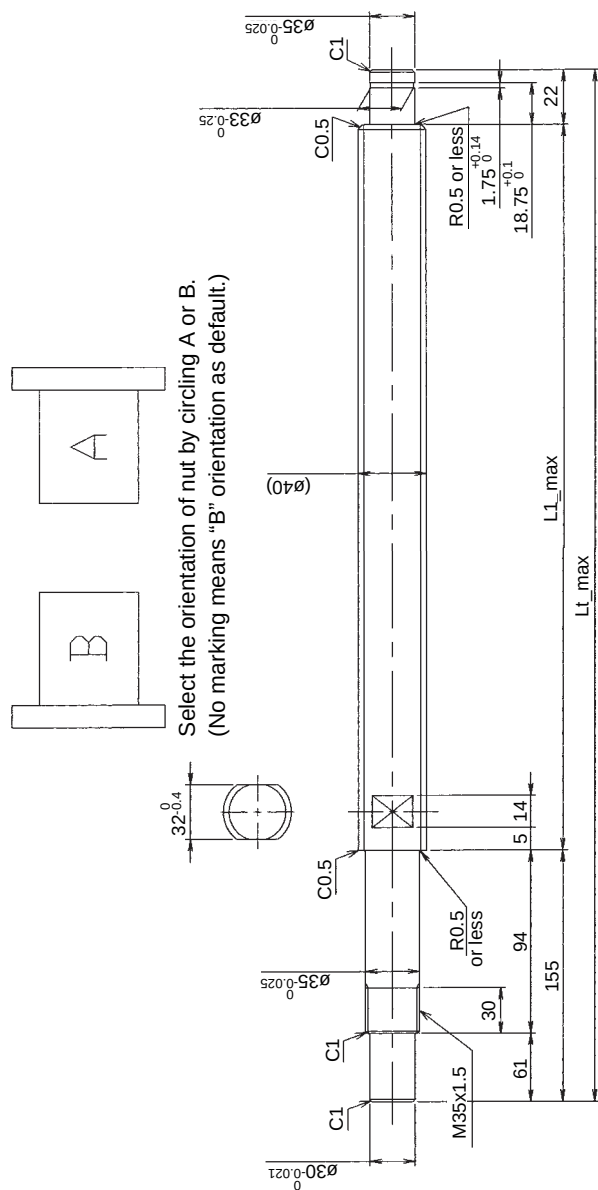
GY4010ES-HUBR GY4010RS-CTBR

GY4020ES-HUBR GY4020ES-CTBR-

GY4040BS-HUBR GY4040BS-CTBR

					X	-CAY

(Unit: mm)



* For the size with the ▲ mark in the table below, spiral mark may be left at the end diameter ø35 portion of fixed end or supported end.

	Model No.	Root diameter	Nut movable range	Lt_max.	L1_max.
▲	GY4010E	35.1	3734	3930	3753
▲	GY4010R	35.1	3734	3930	3753
▲	GY4020E	35.1	3734	3930	3753
▲	GY4040B	35.1	3734	3930	3753

Applicable support unit model		
Circle flange type	BUT-35	Fixed end

Company name		
TEL		Name of person in charge
Company address		

WARNING

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

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