

## ***PRECISION SMALL AND MINIATURE BALL SCREW***



# **PRODUCT MANUAL**

-  Professional Customization
-  Precision Machining
-  High Quality Assurance

Transmission parts and supporting mechanical parts.  
Linear transmission components, such as single-axis and multi-axis components.  
Motors, controllers, sensors, encoders, etc.  
Design, assembly and debugging of non-standard automation equipment, etc.



#### Ball screw model selection steps

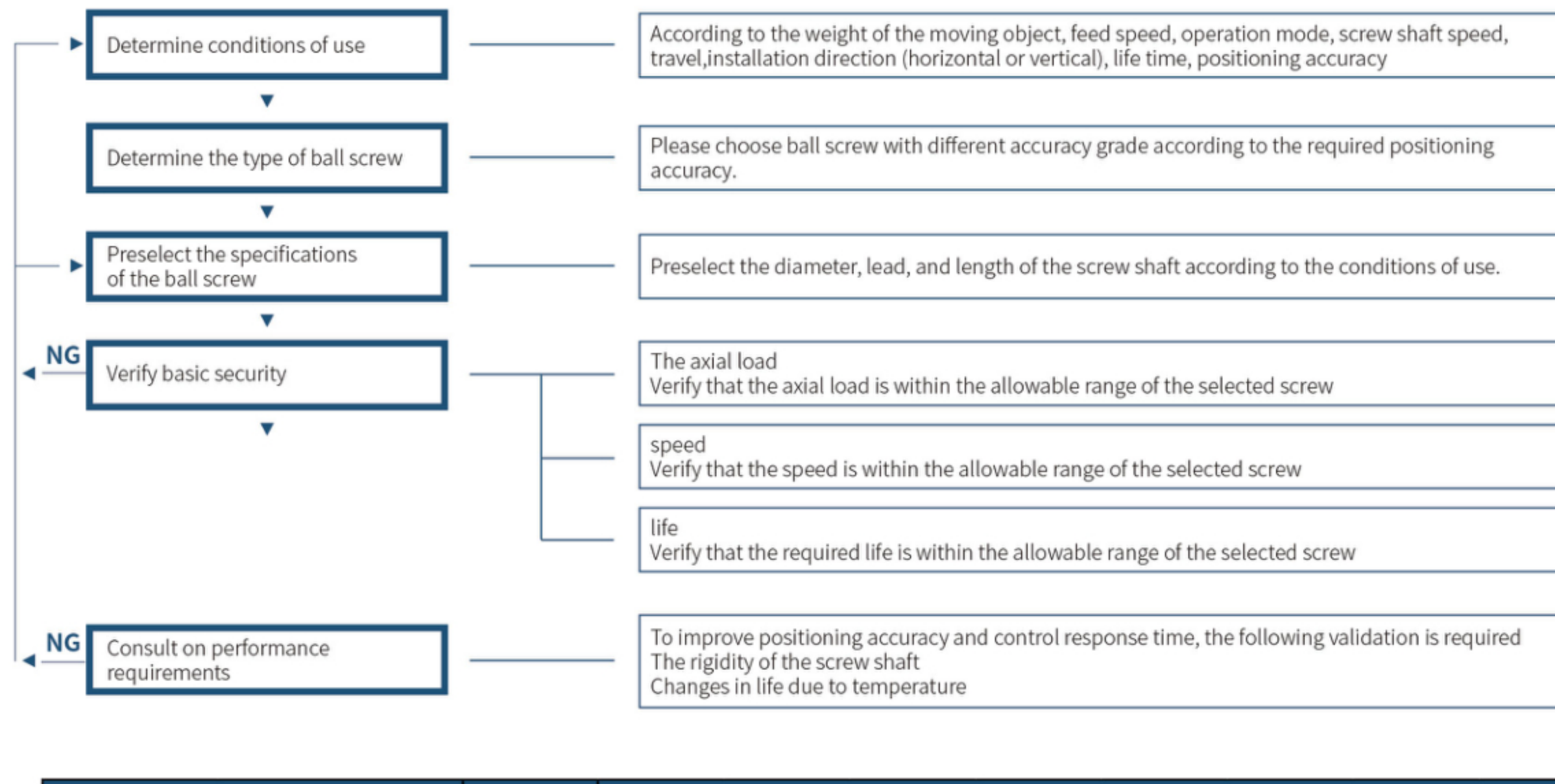
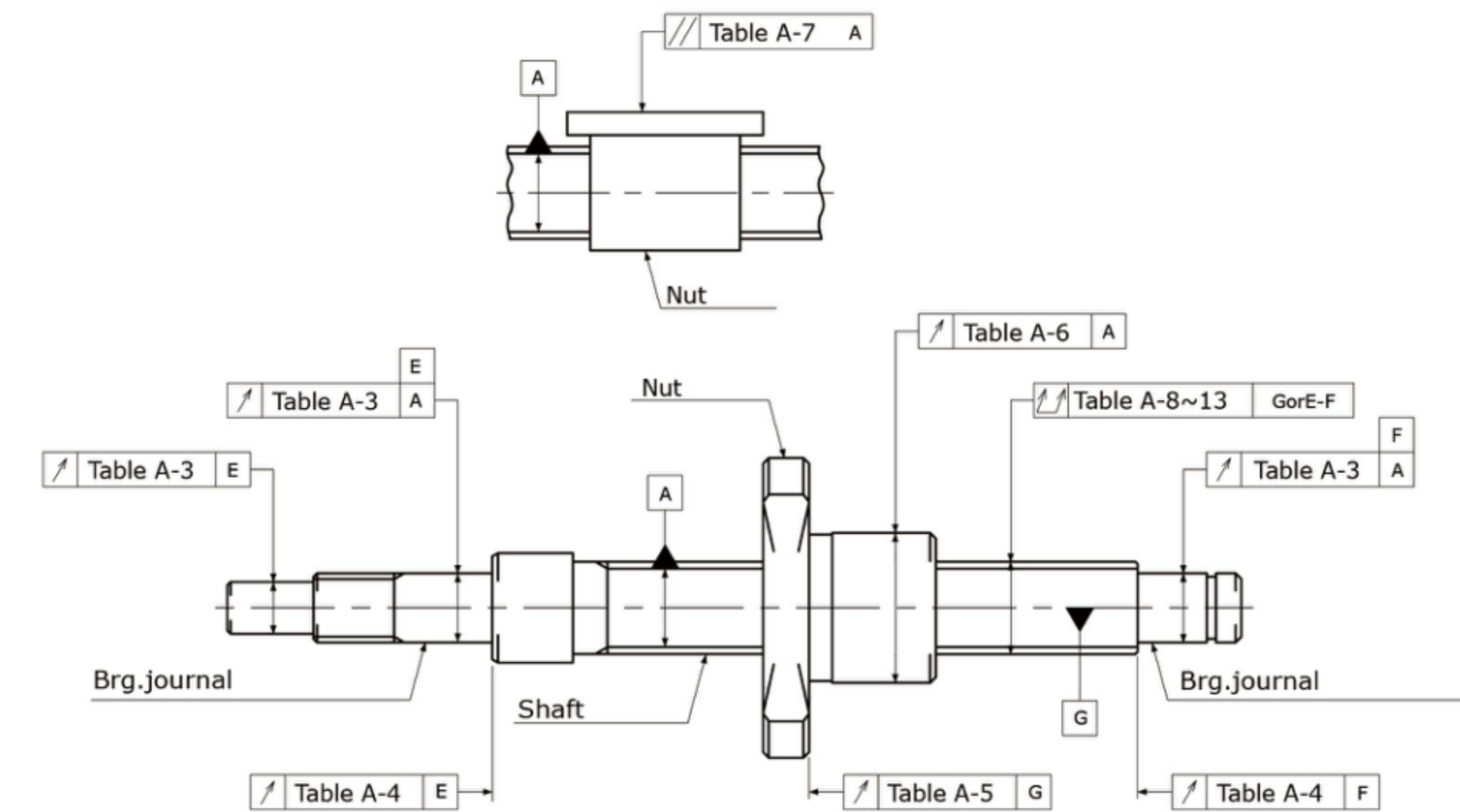


Fig. A-1: Description of Run-out and location tolerances for Ball Screws



#### Ball Screw Run-out and location tolerances

Japan Industrial Standard of Ball Screw (JIS B1192) was revised in 1997, 2013 and 2018 in order to correspond to ISO. Regarding accuracy grade, C series (current JIS C0, 1, 3, 5) and Cp, Ct series (standard corresponding to ISO) are established. There are some differences between C series and Cp, Ct series in notation and tolerances for accuracy of Ball Screw mounting section. WY uses notation in Fig. A-1 below and standard tolerance value, which conforms to C series standard, and WY refers to Cp, Ct series standard in case of 7 and 10 grade. Moreover, in the revision of 2018, the notation of perpendicularity changed to “run-out of the mounting surface or end face”, and geometric tolerance symbols changed from  $\perp$  to  $\nearrow$ .

Table A-3 : Radial Run-out of Bearing seat related to the centerline of screw groove and Radial Run-out of journal diameter related to the Bearing seat

Unit:  $\mu\text{m}$

Shaft nominal diameter (mm)		Permissible deviation of Radial Run-out				
Over	Up to	C1	C3	C5	C7	C10
-	8	5	8	10	14	40
8	12	5	8	11	14	40
12	20	6	9	12	14	40

This measurement item is affected by Total Run-out of the Screw Shaft, and so it must be corrected as follows. Find the corrected value from the Total Run-out tolerances given in Tables A-8 ~ 12 on page 7 ~ 8 using the ratio of the total Shaft length to the distance between the supporting point and the measuring point (L1,L2) (see Fig. A-2), and add the values obtained to the tolerance given in Table A-3.

$$\text{Compensation Value of Run-out} = \frac{\text{Tolerance of total Run-out (Table (A-8 ~ 13))}}{\text{Total shaft length}} \times L1 \text{ or } L2$$

L1, L2 : Distance btw supporting pt & measuring pt (mm)

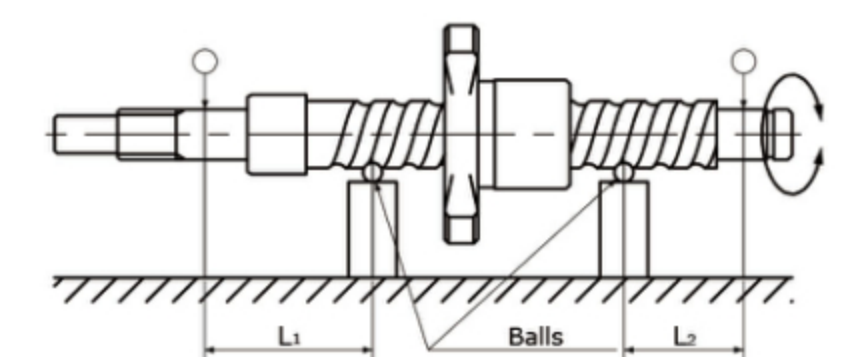


Fig. A-2 : Compensation of Radial Run-out

Table A-4 : Axial Run-out (Perpendicularity) of Shaft (Bearing) face related to the centerline of the Bearing seat

Unit:  $\mu\text{m}$

Shaft nominal diameter (mm)		Permissible deviations of Axial Run-out (Perpendicularity)				
Over	Up to	C1	C3	C5	C7	C10
-	8	3	4	5	7	10
8	12	3	4	5	7	10
12	20	3	4	5	7	10

Table A-5 : Axial Run-out (Perpendicularity) of Ball Nut location face related to the centerline of Screw Shaft

Unit:  $\mu\text{m}$

Shaft nominal diameter (mm)		Permissible deviations of Axial Run-out (Perpendicularity)				
Over	Up to	C1	C3	C5	C7	C10
-	20	6	8	10	14	20
20	32	6	8	10	14	20
32	50	7	8	11	18	30

Table A-6 : Radial Run-out of Ball Nut location diameter related to the centerline of Screw Shaft

Unit:  $\mu\text{m}$

Nut outside diameter (mm)		Permissible deviations of Radial Run-out				
Over	Up to	C1	C3	C5	C7	C10
-	20	6	9	12	20	40
20	32	7	10	12	20	40
32	50	8	12	15	30	60

Table A-7 : Parallelism of rectangular Ball Nut related to the centerline of Screw Shaft

Unit:  $\mu\text{m}$

Mounting length (mm)		Permissible deviations of Parallelism				
Over	Up to	C1	C3	C5	C7	C10
-	50	6	8	10	17	30
50	100	8	10	13	17	30

Table A-8: Total Run-out in radial direction of Screw Shaft related to the centerline of Screw Shaft (C1)

Unit:  $\mu\text{m}$

Shaft total length		Over Up to	Shaft nominal diameter		
			-	8	12
Over	Up to	8	12	20	Permissible deviations of total Run-out in radial direction
-	125	0.020	0.020	0.015	
125	200	0.030	0.025	0.020	
200	315	0.040	0.030	0.025	
315	400	0.045	0.040	0.030	
400	500	-	0.050	0.040	
500	630	-	0.060	0.045	
630	800	-	-	0.060	
800	1000	-	-	0.075	

Table A-9 : Total Run-out in radial direction of Screw Shaft related to the centerline of Screw Shaft (C3)

Unit:  $\mu\text{m}$

Shaft total length		Over Up to	Shaft nominal diameter		
			-	8	12
Over	Up to	8	12	20	Permissible deviations of total Run-out in radial direction
-	125	0.025	0.025	0.020	
125	200	0.035	0.035	0.025	
200	315	0.050	0.040	0.030	
315	400	0.060	0.050	0.040	
400	500	-	0.065	0.050	
500	630	-	0.070	0.055	
630	800	-	-	0.070	
800	1000	-	-	0.095	

Table A-10 : Total Run-out in radial direction of Screw Shaft related to the centerline of Screw Shaft (C5)

Unit:  $\mu\text{m}$

Shaft total length		Over Up to	Shaft nominal diameter		
			-	8	12
Over	Up to	8	12	20	Permissible deviations of total Run-out in radial direction
-	125	0.035	0.035	0.035	
125	200	0.050	0.040	0.040	
200	315	0.060	0.055	0.045	
315	400	0.075	0.065	0.055	
400	500	-	0.080	0.060	
500	630	-	0.090	0.075	
630	800	-	-	0.090	
800	1000	-	-	0.120	

Table A-11 : Total Run-out in radial direction of Screw Shaft related to the centerline of Screw Shaft (C7)

Unit:  $\mu\text{m}$

Shaft total length		Over Up to	Shaft nominal diameter		
			-	8	12
Over	Up to	8	12	20	Permissible deviations of total Run-out in radial direction
-	125	0.060	0.055	0.055	
125	200	0.075	0.065	0.060	
200	315	0.100	0.080	0.070	
315	400	-	0.100	0.080	
400	500	-	0.120	0.095	
500	630	-	0.150	0.110	
630	800	-	-	0.140	
800	1000	-	-	0.170	

Table A-12 : Total Run-out in radial direction of Screw Shaft related to the centerline of Screw Shaft (C10) Unit:  $\mu\text{m}$

Shaft total length		Shaft nominal diameter		
		-	8	12
Over	Up to	8	12	20
Over	Up to	Permissible deviations of total Run-out in radial direction		
-	125	0.100	0.095	0.090
125	200	0.140	0.120	0.110
200	315	0.210	0.160	0.130
315	400	-	0.210	0.160
400	500	-	0.270	0.200
500	630	-	0.350	0.250
630	800	-	0.460	0.320
800	1000	-	-	0.420

Note) In case of Ct7, Ct10 grade, WY may use the standard of Total Run-out based on slenderness ratio, which conforms to JIS B1192-2013.

Slenderness ratio		Total Run-out	
Over	Up to	Ct7	Ct10
-	40	0.080	0.160
40	60	0.120	0.240
60	80	0.200	0.400
80	100	0.320	0.640

Slenderness ratio =  $l_u/d_o$

$l_u$  : Useful travel (mm)  
 $d_o$  : Nominal diameter of Ball Screw (mm)

Table A-13: Allowable value for variation ( $e_{300}$ ) and swing ( $e_{2\pi}$ ) of screw thread length 300mm. Unit:  $\mu\text{m}$

Accuracy grade	C0	C1	C2	C3	C5	C7	C10
$e_{300}$	3.5	5	7	8	18	50	210
$e_{2\pi}$	2.5	4	5	6	8		

Table A-14: Axial preload grade of miniature ball screw, as follows.

WY miniature ball screw pair axial backlash and preload combination table

Backlash and preload level	X		Y		Z	
	Backlash value = 0mm	With preload	Backlash value < 0.005mm	0 preload	Backlash value < 0.01mm	0 preload
C1	C1X		C1Y		-	
C3	C3X		C3Y		C3Z	
C5	C5X		C5Y		C5Z	

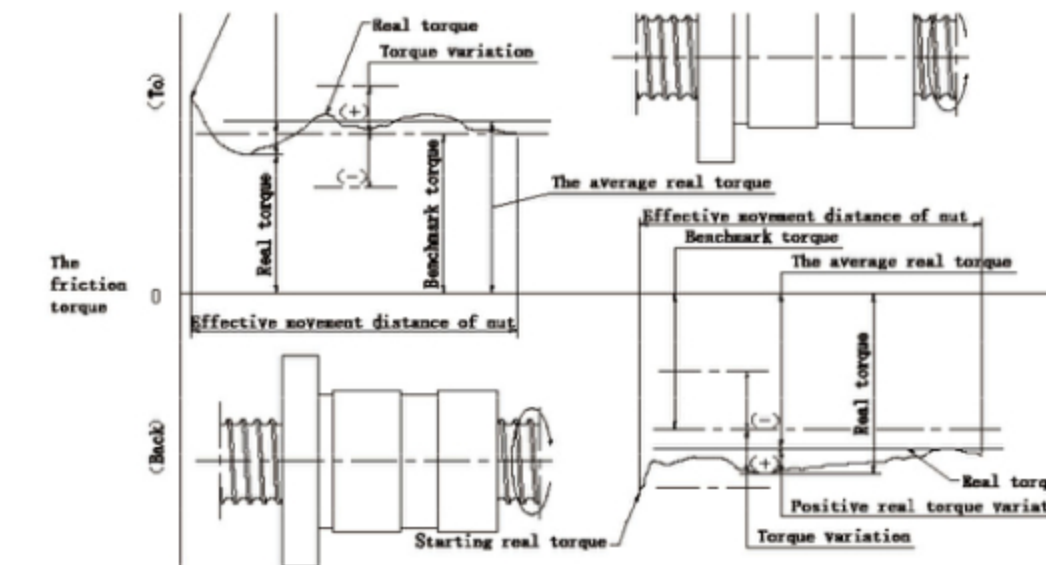
Rolled miniature ball screw pair axial backlash and preload combination table

Backlash and preload level	Z		W		V		U	
	Backlash value < 0.01mm	With preload	Backlash value < 0.02mm	0 preload	Backlash value < 0.03mm	0 preload	Backlash value < 0.05mm	0 preload
C7	C7Z		C7W		C7V		C7U	

### Appropriate amount of preloading

Preloading should be adjusted based on the desired level of rigidity or the clearance on the tooth side. Nevertheless, it's crucial to consider the potential impacts of preloading, including:

1. Amplification of dynamic torque.
2. Diminished positioning accuracy due to heating and temperature elevation.
3. Reduction in service life.



### Method for measuring precision of ball screw assembling part

WY ball screw measuring Geometric Tolerance based on screw shaft central axis, below is measuring process:

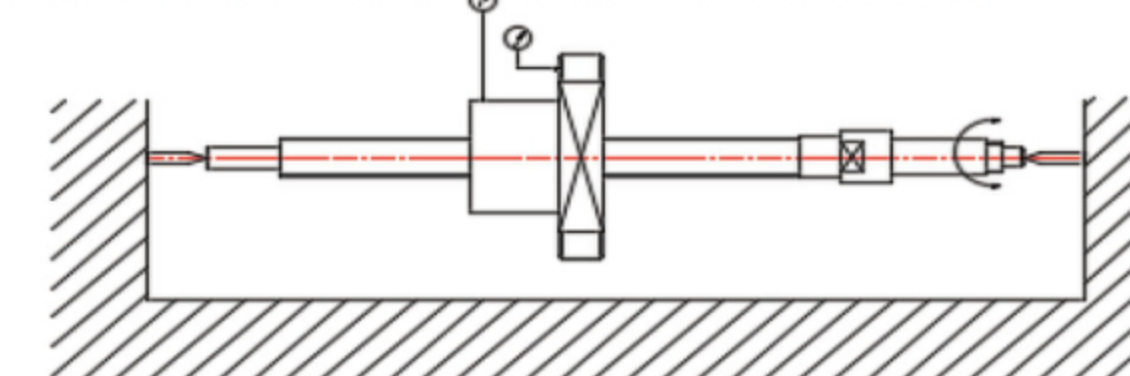
Utilize a qualified deflection tool (or a machine tool equipped with a center) for this procedure. Secure both ends of the screw using the center, ensuring the screw is adequately supported on the deflection tool or machine tool. Affix the magnetic dial seat of the dial indicator onto the surface of the deflection tool or the guide rail of the machine tool. Simultaneously, position the probe of the meter head at an angle of less than  $30^\circ$  relative to the surface being measured, ensuring contact with the measurement area. Rotate the dial to zero by turning the dial indicator, then proceed to rotate the screw while reading the dial indication. The measured data for one complete rotation corresponds to the scale within the range of the left-right deflection of the dial pointer.

This method can measure the runout of any outside surface of the screw and the central. As shown below:



### The perpendicularity of the central axis and the end surface of the nut (or flange assembling surface)

Employing a certified tool (or a machine tool equipped with a center), support the screw at both ends through the center to ensure smooth placement on the deflection instrument or machine tool. Refer to the illustrations below:



To measure the external diameter runout of nuts, affix the magnetic dial base of the dial indicator to the surface of the deflection instrument or the guide rail of the machine tool. Simultaneously, lightly place the probe of the meter head on the measurement position at an angle of less than  $30^\circ$ . Rotate the dial to reset the pointer to zero, and while keeping the screw and nut stationary (with no relative movement between them), read the dial indication. The measured value for one complete rotation corresponds to the left and right deflection of the dial pointer.

For measuring the runout of the nut's end face, install the dial indicator on the base of a height ruler that can be manually adjusted. Position the base of the height ruler on the guide rail's surface. Place the meter head vertically on the end surface of the screw nut and rotate the hand to move the dial indicator vertically. The measured data is within the scale range of the dial pointer's deflection.

### Precautions for the use of ball screw

#### Precautions for handling and installation

1. Disassembling the nut from the screw shaft will result in the steel balls falling out, rendering the nut unusable. Avoid dismantling to prevent impurities from entering the interior and compromising the assembly precision of individual components. If nut removal is necessary, utilize the designated special dummy axis.

2. Avoid subjecting the nut to external impacts, as such shocks can harm the outer circumference of the screw shaft, the spiral groove, and the components involved in the circulation mechanism. This damage may lead to impaired circulation and a loss of functionality. Please exercise caution to prevent such impacts.

3. Be mindful of the potential for the nut to drop during free fall. Ball screws and nuts, when inclined, may fall under the influence of gravity, so exercise caution. This risk is particularly heightened when employed as a vertical axis. To mitigate the possibility of the nut falling due to its own weight, consider implementing a fall prevention mechanism.

4. Before using, assess the smoothness of the screw. Evaluate its flexibility by either rotating the screw shaft with the secured nut or rotating the nut with the secured shaft.

1. Utilize the ball screw in a clean environment. The intrusion of debris, chips, and other foreign particles into the ball screw can result in damage to the ball circulation components and a loss of functionality. Therefore, it is advisable to install a cover to prevent the entry of foreign objects.

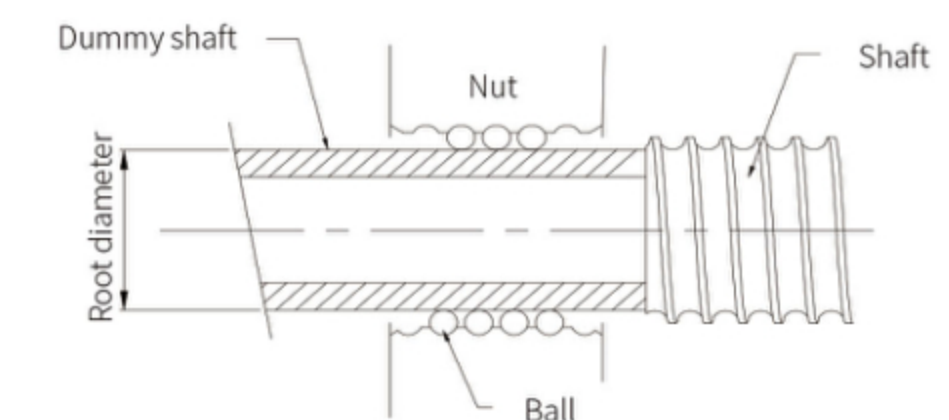
2. Avoid allowing the ball screw nut to overrun during operation. Overrunning may result in issues such as ball drop and damage to the ball circulation components.

Refrain from operating in environments exceeding  $80^\circ\text{C}$ . Failure to comply may lead to harm to circulation components and seals.

4. If there is axial deviation or tilt in the support part of the ball screw shaft and the nut, the nut may experience off-loading, potentially resulting in a reduced service life. Therefore, it is crucial to prioritize assembly precision and pay careful attention to these factors.

#### Remove nut from screw to false shaft

- remove nut from screw shaft -
- Position the lead screw shaft vertically and align the auxiliary shaft's axis with the end face of the supporting side of the lead screw shaft.
- Rotate the nut gently, guiding it in a gradual motion toward the auxiliary shaft.
- Once ensuring that both ends of the nut have entirely shifted onto the auxiliary shaft, withdraw the auxiliary shaft from the lead screw shaft.
- Handle with care and ensure that the nut does not accidentally disengage from the auxiliary shaft.



#### Install the nut from the false shaft to the screw rod

- Detach the nut from the auxiliary shaft and affix it to the screw shaft -
- Position the lead screw shaft vertically, aligning the axis of the auxiliary shaft with the end face of the supporting side of the lead screw shaft.

Delicately push the nut towards the screw shaft and gradually rotate it onto the screw shaft.

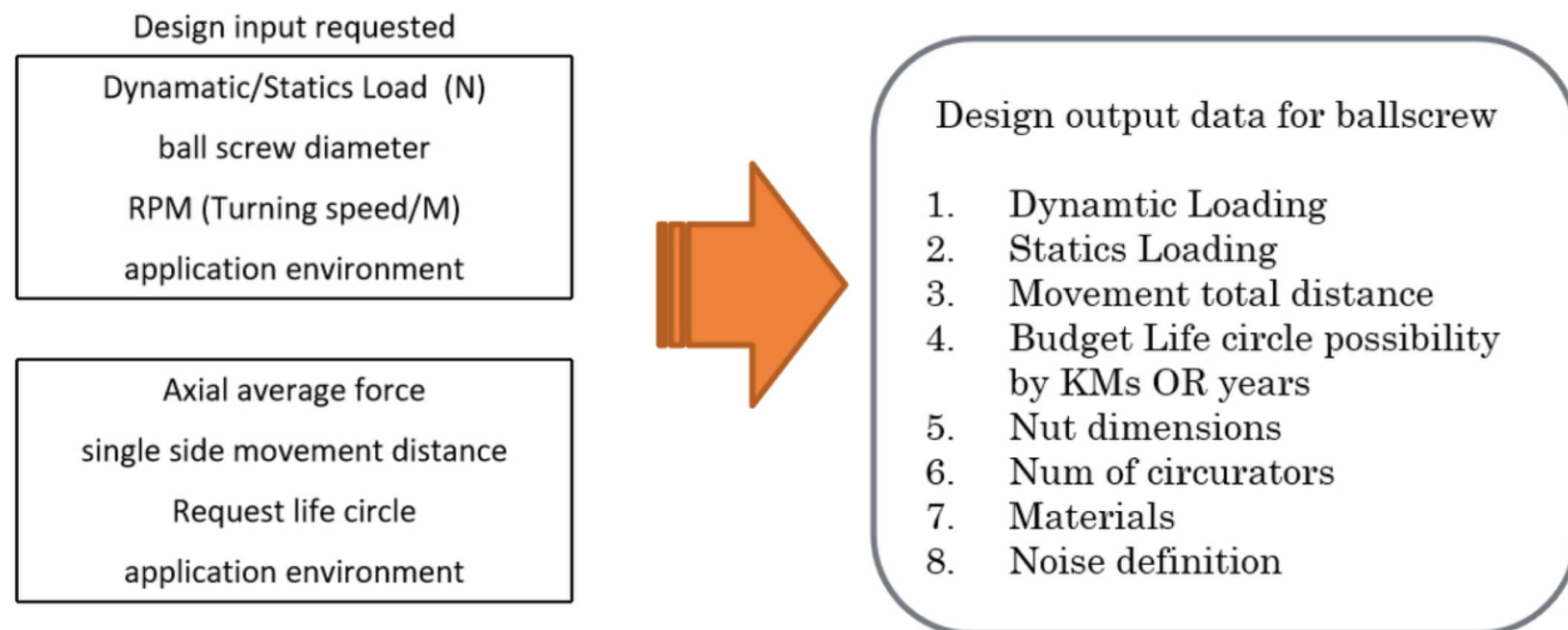
If you encounter resistance or a feeling of tightness while transferring the nut onto the lead screw axis, refrain from exerting force. Instead, carefully assess the situation and then proceed accordingly.

Part Number / Ordering information

SS 04 01 — 086 R 126 C3 B  
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧

- ① 系列符号  
SSR : 台阶型冷轧滚珠丝杠  
SSG : 磨制滚珠丝杠
- ② 丝杠轴公称外径( mm)
- ④ 螺纹部长度( mm)  
(追加加工后以1mm为单位指定)
- ⑤ 螺纹旋向(R=右旋)
- ⑥ 丝杠轴总长( mm )  
(以1mm为单位指定)
- ⑦ 精度等级(C3,C5,C7)
- ⑨ 导程( mm)
- SS : Stainless Rolled or grinding Ball Screws with Integrated end-journal
- ② Screw Shaft nominal diameter( mm)
- ③ Lead( mm )
- ④ Screw thread length( mm )  
(Specify in 1mm units after end-journal machining)
- ⑤ Thread direction( R= Right-hand )
- ⑥ Screw Shaft total length( mm )  
(Specify in 1mm units)
- ⑦ Accuracy grade(C3, C5, C7)
- ⑧ Shaft end-journal profile (customization follow drawing)

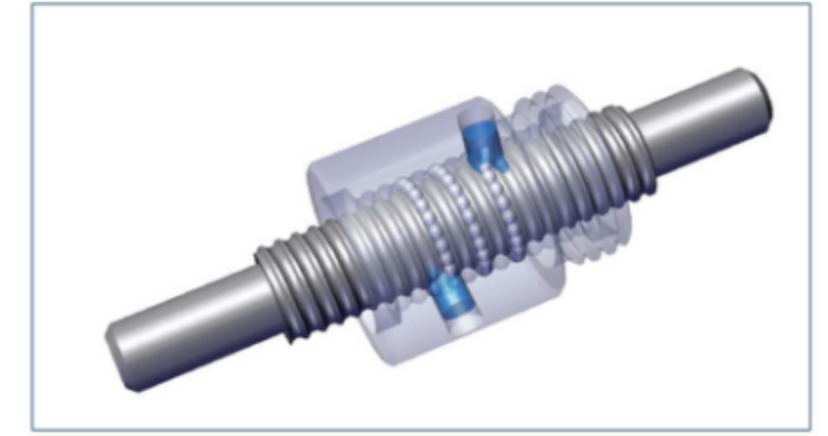
- I. Based on Customer requirements to design ballscrew solution is best way
- II. Identify customer application environment then design it ,Like Noise, Loading ,life circles, need anti-Rustly or not .. Application environments



Steel ball circulation mode

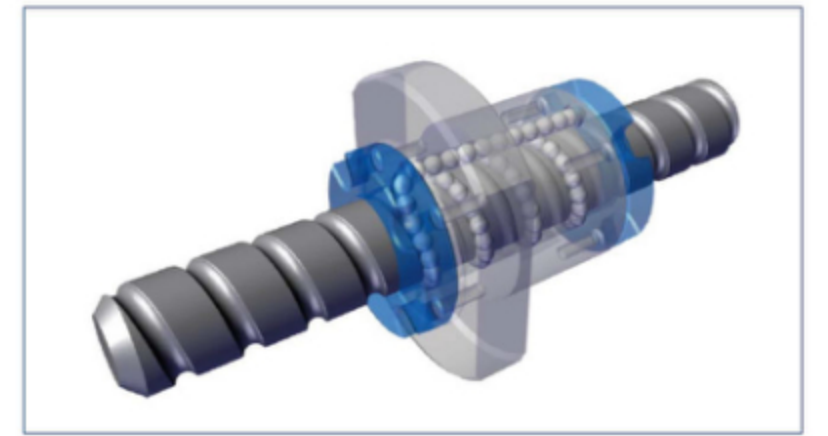
Internal Deflector

The Internal Deflector return, employing the bead groove's path, stands out as the fundamental and extensively applied method. This technique directs the ball to roll along the raceway, navigating through the screw thread raceway and returning to the initial raceway after reaching the tooth tip. This process forms a continuous circular ball chain, making it adaptable to various diameters and nut styles. Within all circulation systems, minimizing the nut diameter in Internal Deflector return is achievable, rendering it suitable for a diverse range of precision micro equipment.



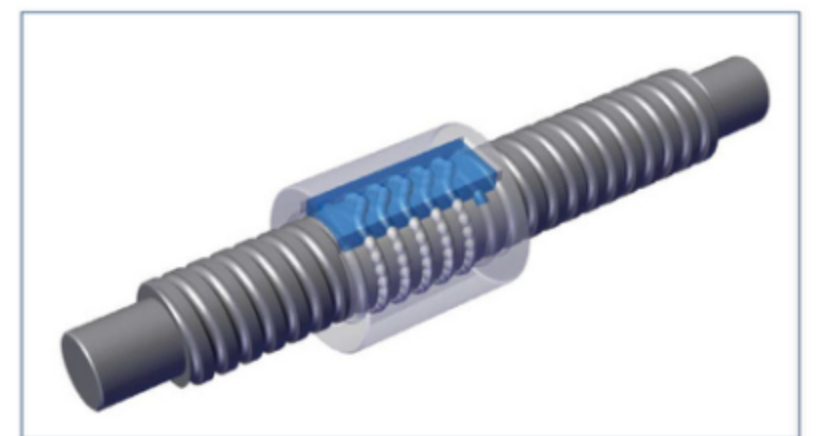
End-cap

Describing the motion of the steel ball as it travels along the groove between the screw shaft and the nut, passing through the through hole on the nut via the path provided on the end cover backer at both ends of the nut, and then returning to its initial position. This mechanism enhances the scraping effect significantly, and the reinforced circulating backflow structure adds to its capabilities of high rigidity and high-speed operation. This design is well-suited for applications requiring high-speed, light loads, and low noise.



Liner Return

The Liner Return type offers benefits such as compact space utilization and a high load capacity, although it comes with increased complexity. Therefore, this type is well-suited for specific situations that require these particular characteristics.



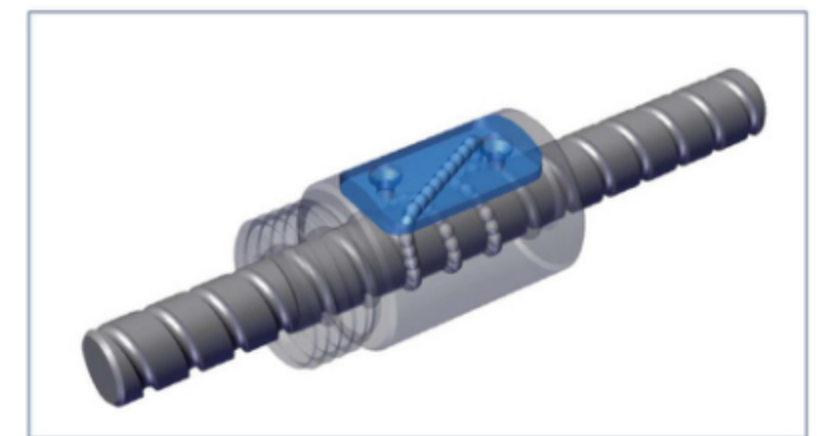
Return Tube

The recirculation type with a return tube represents a progression from the internal deflector design. It involves directing the balls into and out of the elbow tube using a tongue bevel located at the end of the elbow tube, which is inserted into a hole or another type of bead stopper.



Return Plate

A nut equipped with a return plate is well-suited for applications involving large lead ball screws, substantial loads, and cost-effectiveness.



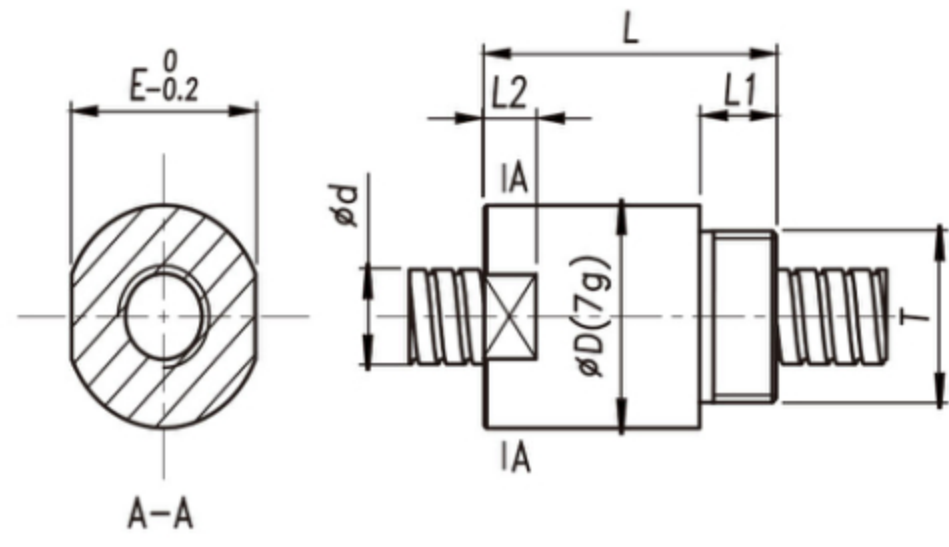
Professional supplier of transmission components

WY of WANFu group provided professional customization design and manufacturing for transmission products such as ball screws, lead screws, support units, couplings, linear guideways, linear modules, positioning slides, linear actuators.

WY focused on customer special requirements like loading life circles, and Noise , application environments ,design and build the ballscrew

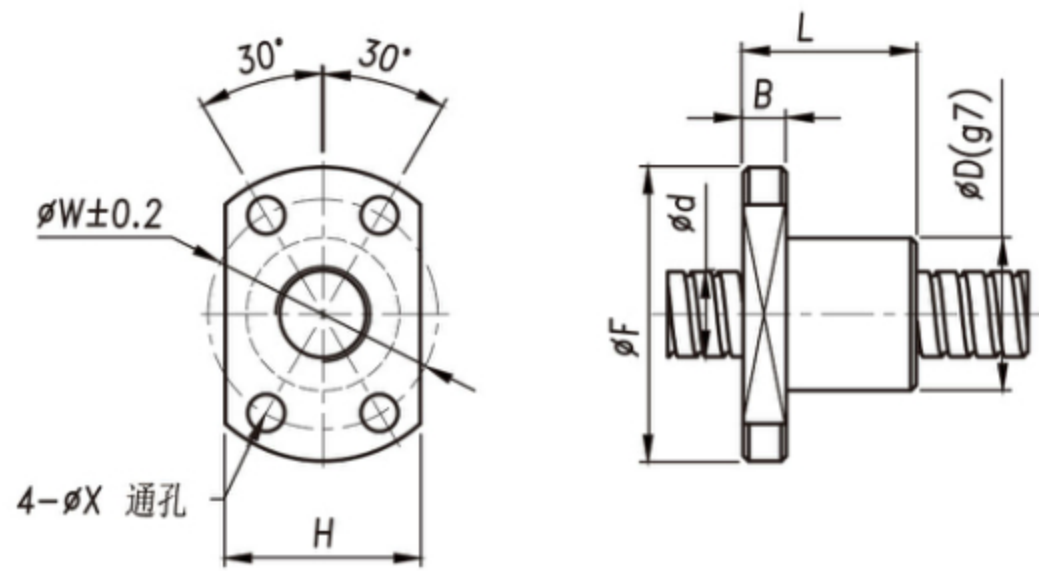
# Miniature Ball Screw

## SSIA



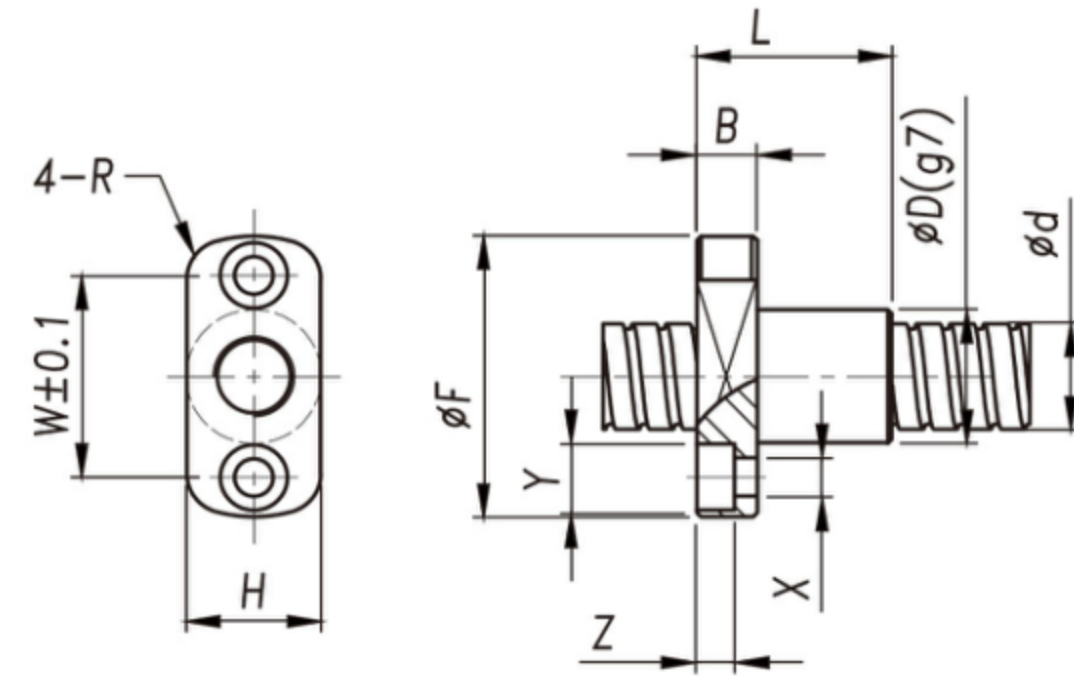
Model	d	D	L	L1	L2	E	T
SSIA0401	6	10	15	5	-	-	M8x0.75
SSIA0401B	6	12	15	5	-	-	M12x1.5
SSIA0601	6	12	16	5	2	10	M10x1
SSIA0602	6	12	20	6	-	-	M10x1
SSIA0602B	6	12	15	5	-	-	M10x1
SSIA0602C	6	12	20	6	8	11	M10x1

## SSIF



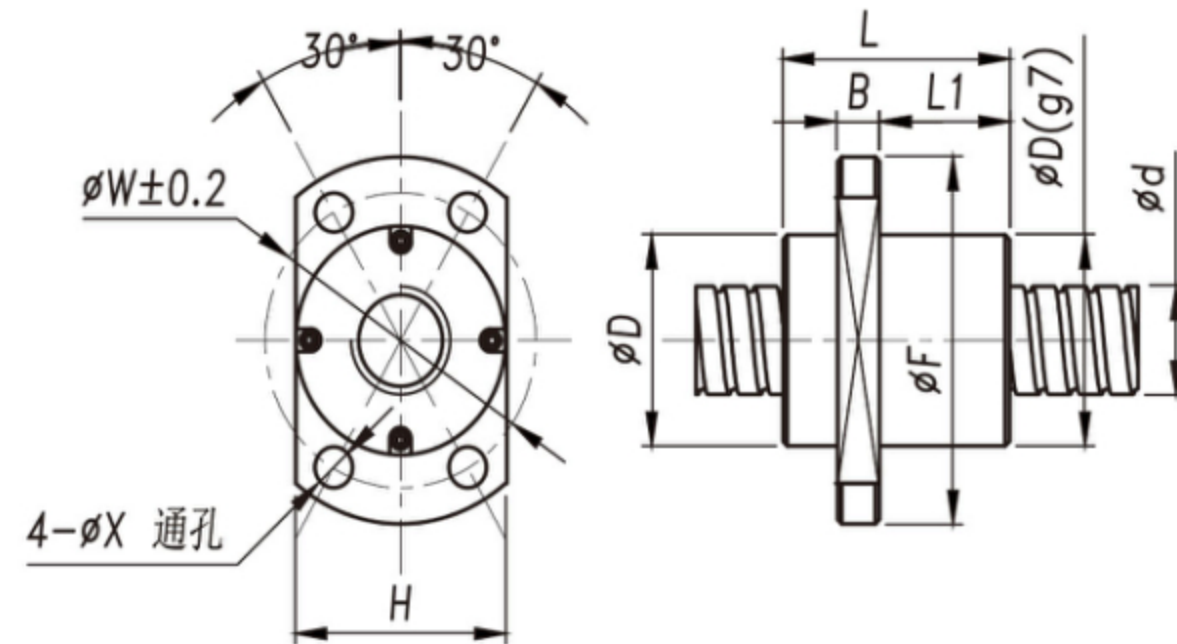
Model	d	D	F	L	B	W	H	X
SSIF0401	4	10	20	12	3	15	14	2.9
SSIF0501	5	10	20	12	3	15	14	2.9
SSIF0601	6	12	24	15	3.5	18	16	3.4
SSIF0601E	6	13	26	17	4	20	16	3.4
SSIF0601C	6	11	23	14.5	3.5	17	15	3.4
SSIF0602	6	12	24	15	3.5	18	16	3.4
SSIF0602B	6	15	28	17	4	22	19	3.4

## SSIF



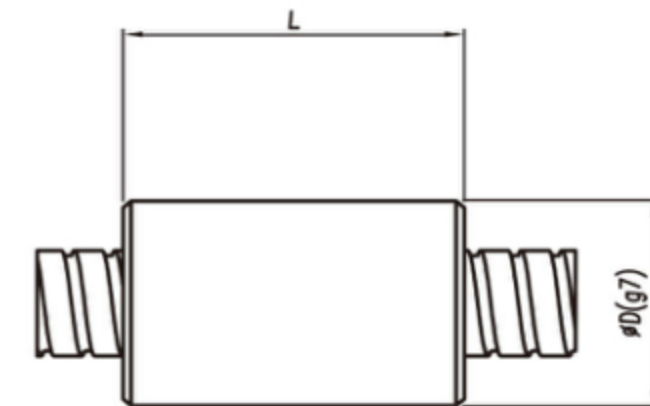
Model	d	D	F	L	B	W	H	X	Y	Z	R
SSIF0601D	6	10	21	14.5	3.5	15	10	2.9	5	2.1	3

## SSEF



Model	d	D	F	L	L1	B	W	H	X
SSEF0606	6	14	27	17	9.5	4	21	16	3.4

## SSIC

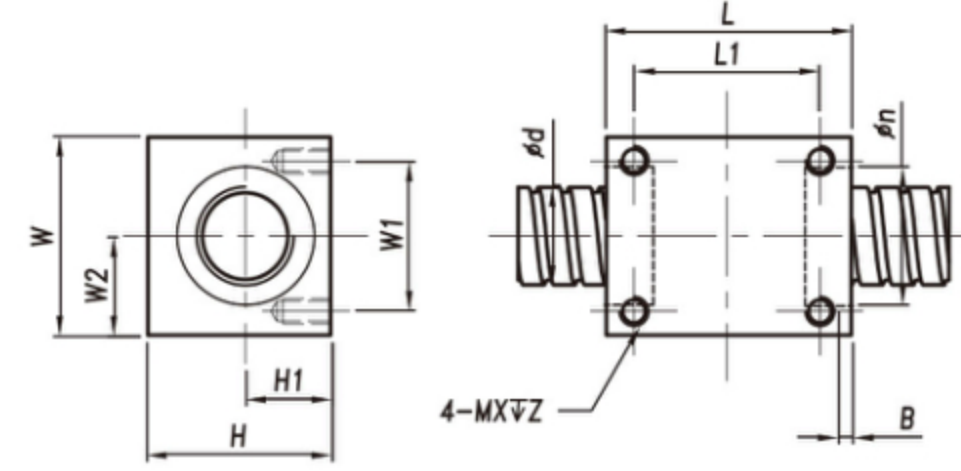


Model	D	L
SSIC0602	12	15

Nominal Diameter 4,5,6  
Ball screw Nut in Stock

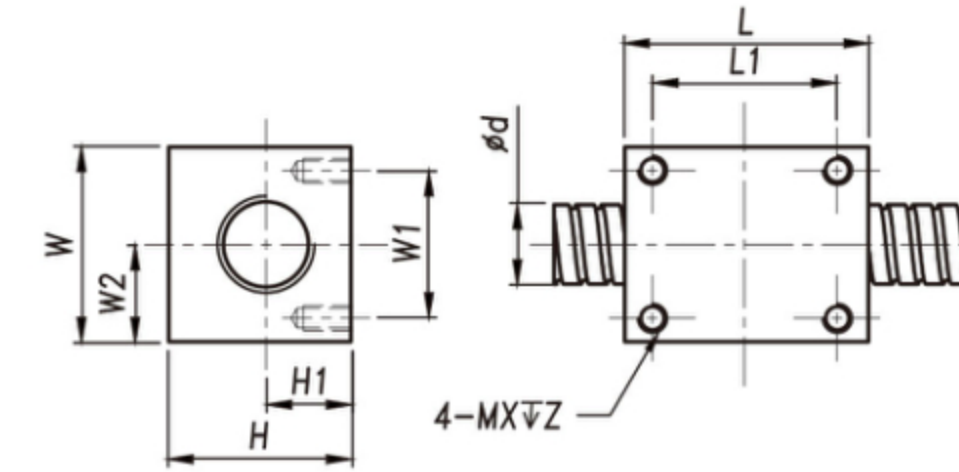
Nominal Diameter 4,5,6  
Ball screw Nut in Stock

## SSIS



Model	d	L	L1	W	W1	W2	H	H1	B	n	X	Z
SSIS0601E	6	20	15	13	8	6.5	11	5.5	4	8.5	3	6
SSIS0602B	6	20	15	13	8	6.5	11	5.5	4	8.5	3	6

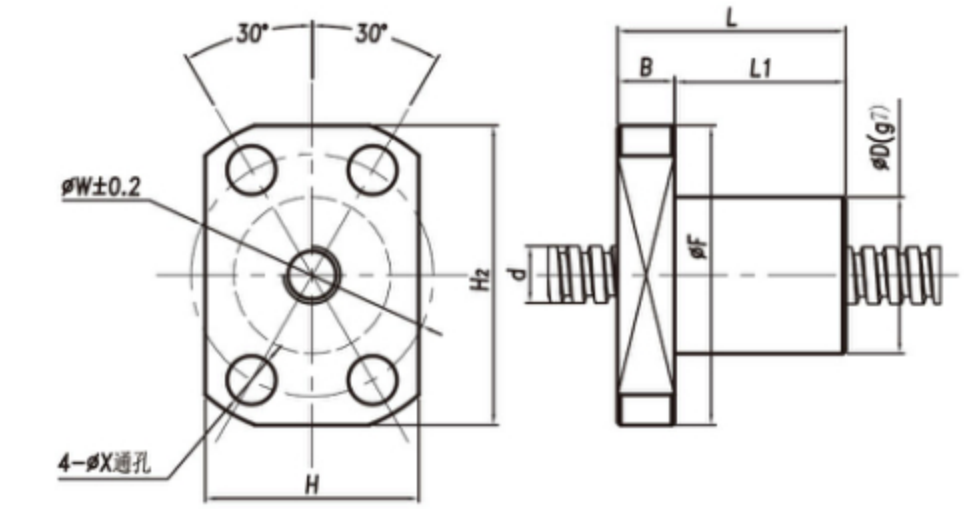
## SSIS



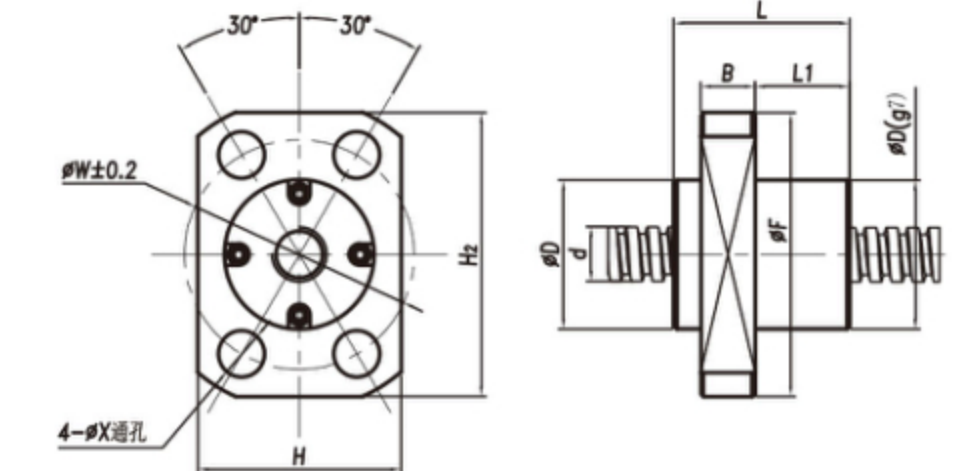
Model	d	L	L1	W	W1	W2	H	H1	X	Z
SSIS0601	6	16	12	14	10	7	12	6	2.5	5
SSIS0601B	6	20	15	13	8	6.5	11	5.5	2.5	5
SSIS0601C	6	15	10	15	10	7.5	12.5	6.5	2.5	5.5
SSIS0601G	6	15	10	13	8	6.5	11	5.5	2.5	4
SSIS0602	6	20	15	13	8	6.5	11	5.5	2.5	5

# Miniature Ball Screw

## SSEX



Model	d	D	F	L	L1	B	W	H	H2	X
SSEX0402	4	11	22.5	16	12	4	17	15	21	3.4



Model	d	D	F	L	L1	B	W	H	H2	X
SSEX0404	4	11	23	13	7	4	17	15	21	3.4
SSEX0406	4	11	23	17	9.5	4	17	15	21	3.4

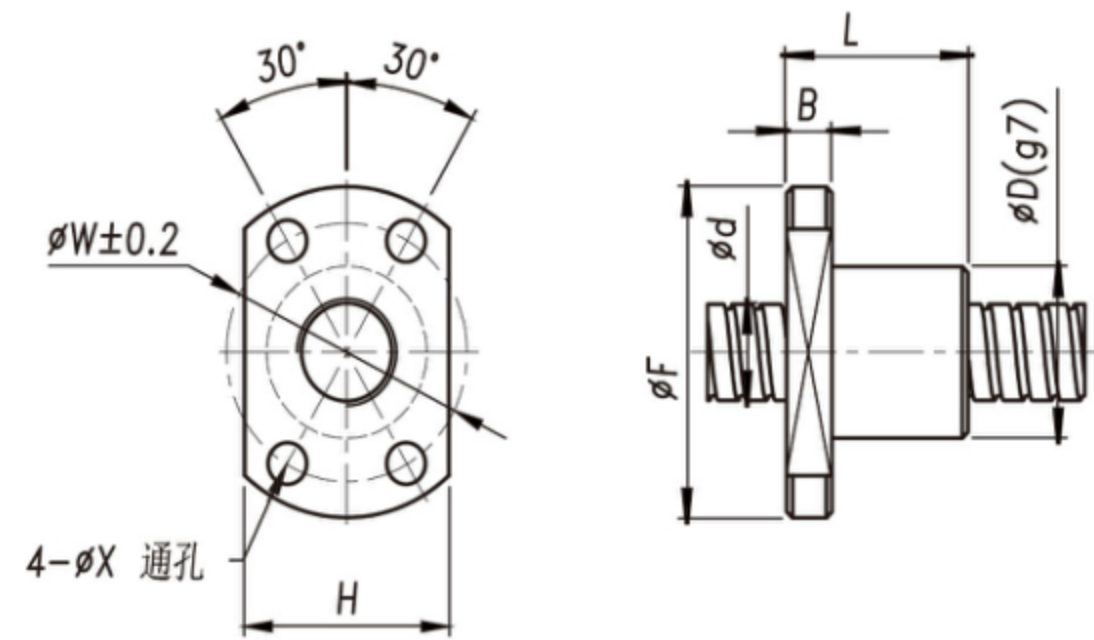
Model	Nominal diameter (mm)	Lead (mm)	Accuracy grade	Ball Diameter	Circuits	Basic rated load(N)	
						Dynamic load	Static load
SSIF	4	1	C3, C5	0.8	3	600	900
	5	1		0.8	3	700	1200
	6	1		0.8	3	800	1500
SSIA	4	1		1.0	3	1000	1800
	6	1		0.8	3	600	900
	6	2		0.8	3	800	1500
SSEF	6	6		1.0	3	1000	1800
SSIS	6	1		0.8	3	800	1500
		2		1.0	3	1000	1800
SSIC	6	2		1.0	3	1300	1800

The above models can be made as left hand thread, right hand thread or Bi-directional(left hand+right hand) thread, special sizes can be customized.

Customization design and Manufacturing	Stainless steel and other customized materials
	Surface treatment
	Customized Ballscrew Nuts and end of machines
	Grease Replacing
	Maintenance and assembling

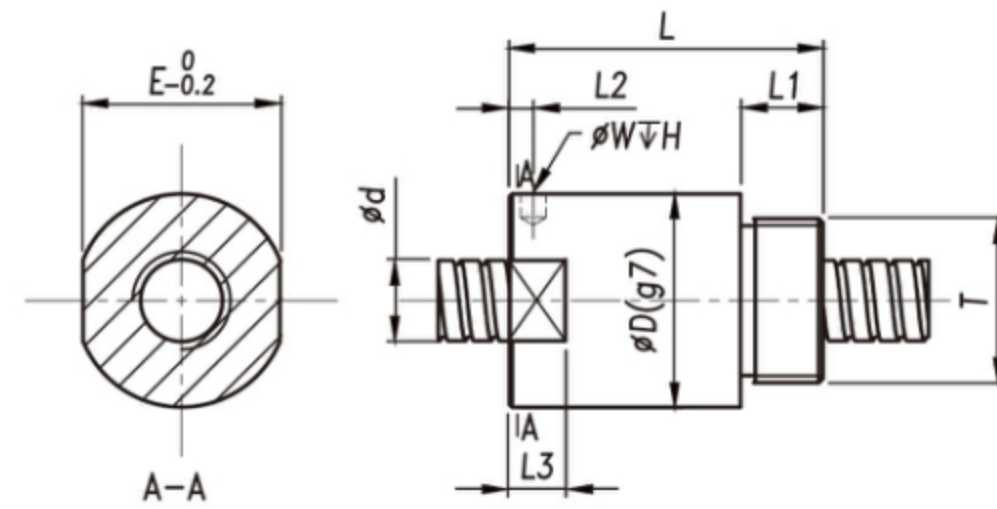
According to the needs, customization design ,reply within an hour

## SSIF(SSUF)



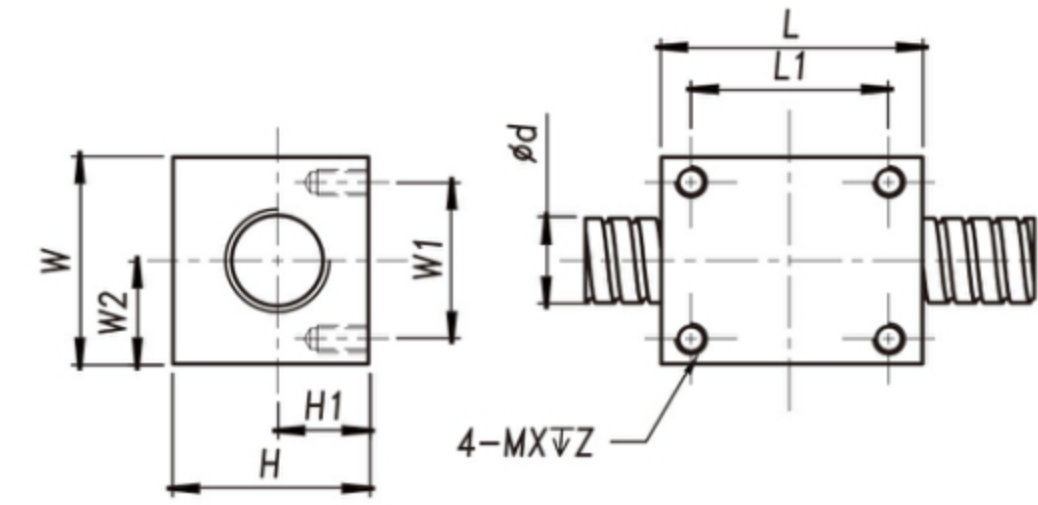
Model	d	D	F	L	B	W	H	X
SSIF0801	8	14	27	16	4	21	18	3.4
SSIF0801C	8	13	26	15	4	20	17	3.4
SSIF0801D	8	12	25	15	4	19	16	3.4
SSIF0802	8	14	27	16	4	21	18	3.4
SSIF0802B	8	16	29	26	4	23	20	3.4
SSIF0802C	8	15	28	18	4	22	19	3.4
SSIF0802D	8	14	27	17	6	21	19	3.4
SSIF0802.5	8	16	29	26	4	23	20	3.4
SSIF0802.5B	8	16	28	30	6	22	19	3.4
SSUF0804	8	16	29	26	4	23	20	3.4

## SSIA



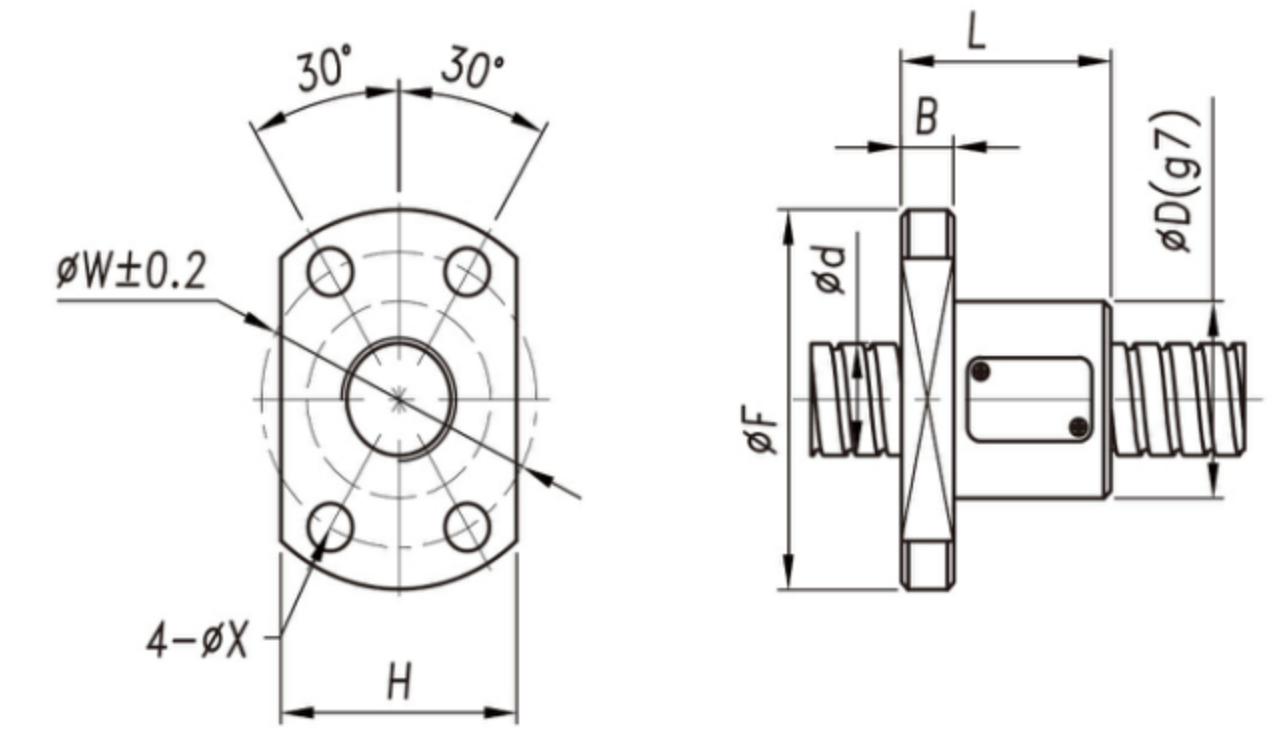
Model	d	D	L	L1	L2	L3	W	H	E	T
SSIA0801	8	16	22	8	-	-	-	-	-	M14x1
SSIA0802	8	16	27	8	-	-	-	-	-	M14x1
SSIA0802B	8	18	27	8	-	5	-	-	17	M14x1
SSIA0802.5B	8	17.5	23.5	7.5	3	-	3.2	2	-	M15x1

## SSIS



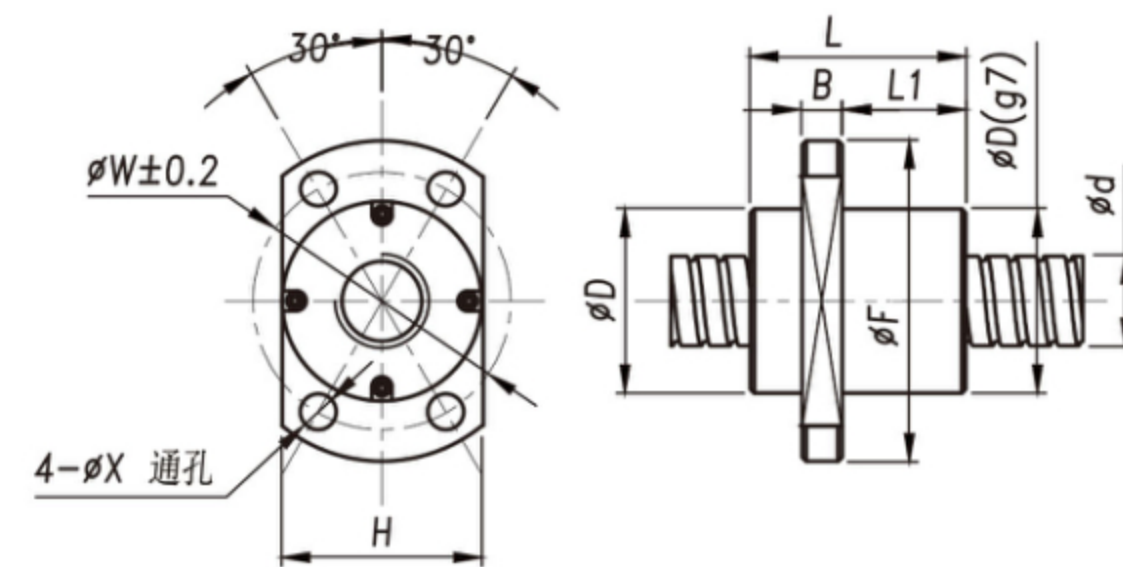
Model	d	L	L1	W	W1	W2	H	H1	X	Z
SSIS0801E	8	20	15	14	8	7	13	6.5	2.5	5

## SSPF

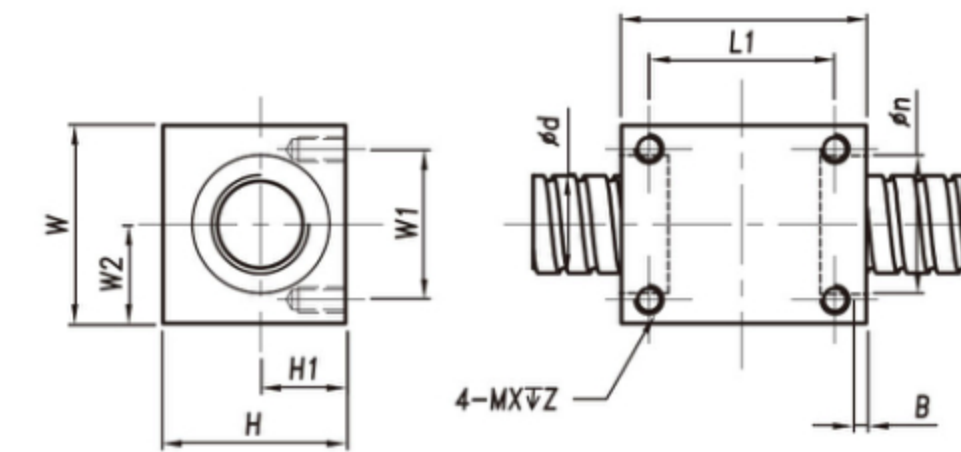


Model	d	D	F	L	B	W	H	X
SSPF0804C	8	21	39	28	5	31	23	4.5
SSPF0805	8	18	31	28	4	25	20	3.4

## SSEF

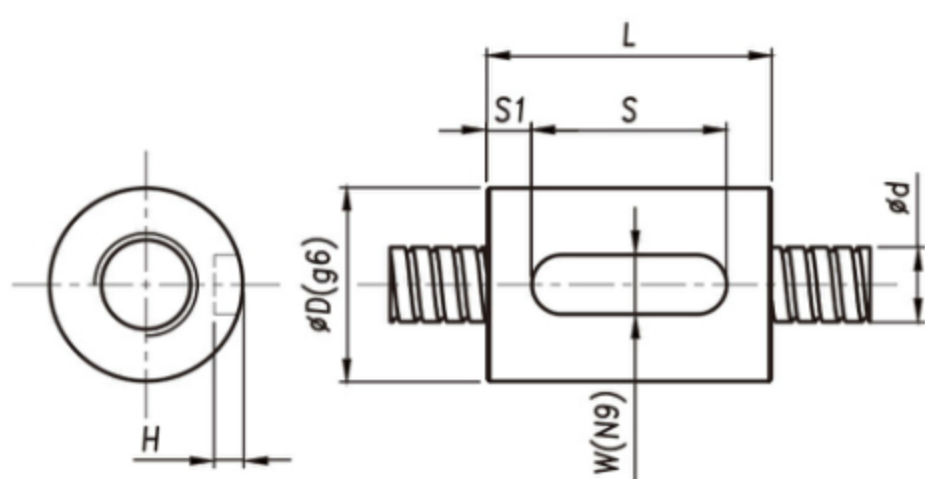


Model	d	D	F	L	L1	B	W	H	X
SSEF0808	8	18	31	21.5	13	4	25	20	3.4
SSEF0810	8	18	31	24	13	4	25	20	3.4



Model	d	L	L1	W	W1	W2	H	H1	B	n	X	Z
SSIS0801C	8	20	15	16	12	8	14	7	4	10.5	2.5	5
SSIS0801D	8	20	15	14	8	7	13	6.5	4	10.5	2.5	5
SSIS0802E	8	20	15	16	12	8	14	7	4	10.5	2.5	5

## SSIC



Model	d	D	L	S	S1	W	H
SSIC0801	8	14	16	10	3	3	1.8

Customization design and Manufacturing	Stainless steel and other customized materials
	Surface treatment
	Customized Ballscrew Nuts and end of machines
	Grease Replacing
	Maintenance and assembling
According to the needs, customization design ,reply within an hour	

# Miniature Ball Screw

Nominal Diameter 8  
Ball screw Nut in Stock

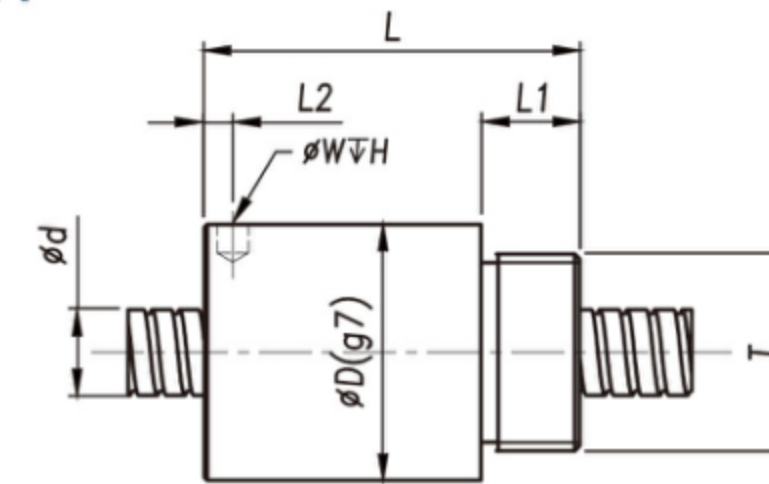
Model	Nominal diameter (mm)	Lead (mm)	Accuracy grade	Ball Diameter	Circuits	Basic rated load(N)	
						Dynamic load	Static load
SSIF	8	1	C3, C5,	0.8	3	900	2000
		2		1.2	3	1500	2900
		2.5		1.2	3	1500	2900
		4		1.588	3	2200	3700
SSIA	8	1		0.8	4	1100	2700
		2		1.2	4	2000	3900
		2.5		1.588	4	2800	5000
SSIC	8	1		0.8	3	900	2000
SSEF	8	8		1.588	3.0	2200	3800
		10		1.588	3.0	2100	3800
SSPF	8	4		2.0	3.5	3300	5400
		5		1.588	2.5	1800	3100
		8	1.588	2.5	1800	3200	
SSIS	8	1	0.8	3	900	2000	
		2	1.2	3	1500	2900	

The above models can be customization based on customer loading, lifecircle and application environments like left hand , right hand and Bi-directions.



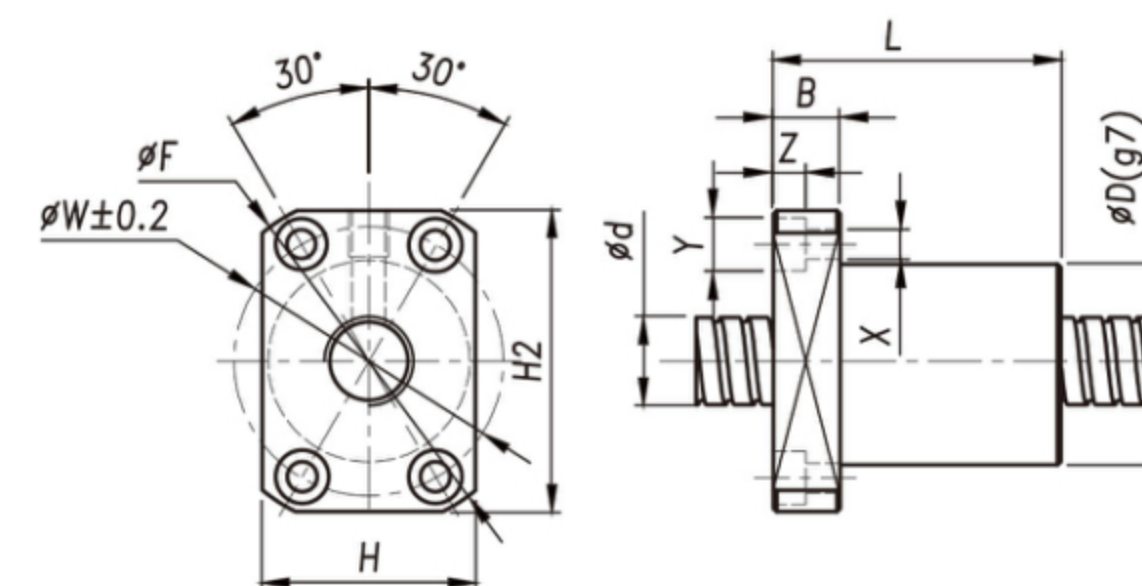
Nominal Diameter 10  
Ball screw Nut in Stock

## SSIA



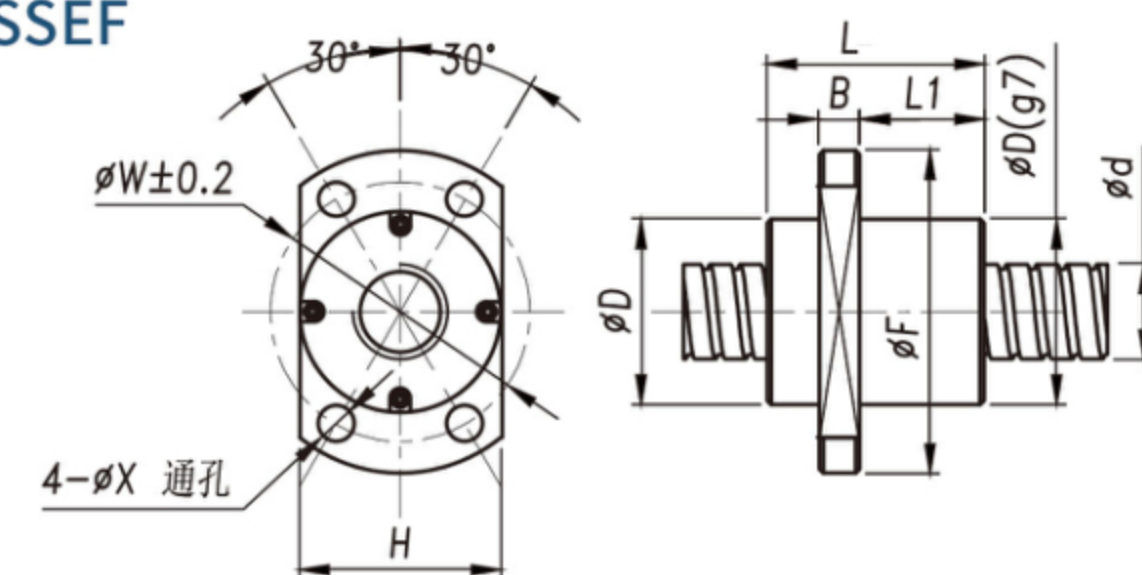
Model	d	D	L	L1	L2	W	H	T
SSIA1002	10	19.5	22	7.5	3	3.2	2.5	M17x1
SSIA1002B	10	18	28	7	-	-	-	M16x1
SSIA1004	10	21	30	8	3	3.2	3	M18x1

## SSWF



Model	d	D	F	L	B	W	H	H2	X	Y	Z
SSWF1004	10	26	46	34	10	36	28	42	4.5	8	4.4

## SSEF

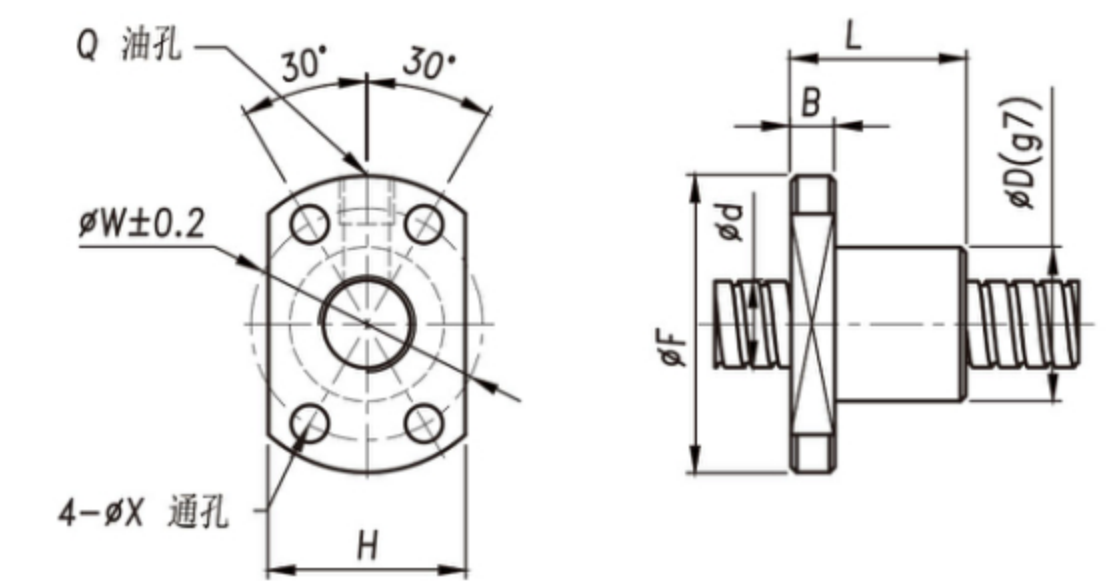


Model	d	D	F	L	L1	B	W	H	X
SSEF1010	10	23	40	27	15.5	5	32	25	4.5

Customization design and Manufacturing	Stainless steel and other customized materials
	Surface treatment
	Customized Ballscrew Nuts and end of machines
	Grease Replacing
	Maintenance and assembling
According to the needs, customization design ,reply within an hour	

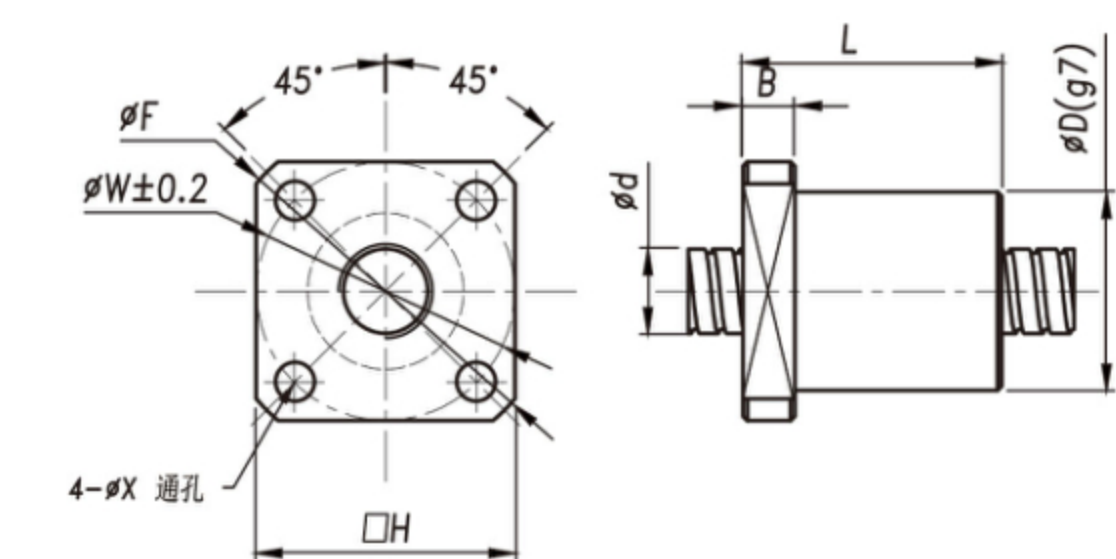
# Miniature Ball Screw

## SSIF



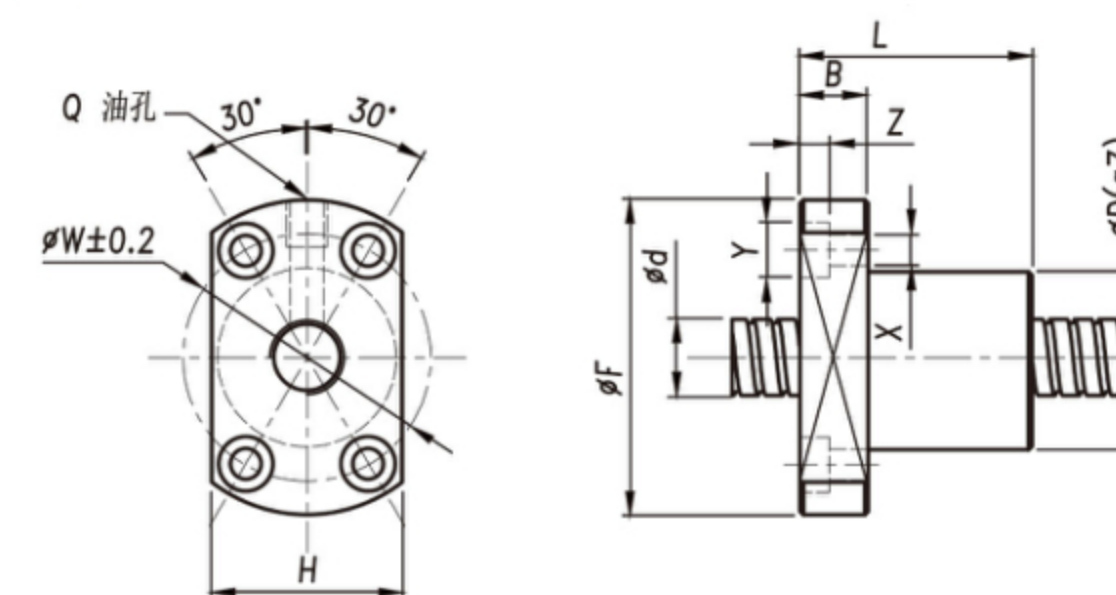
Model	d	D	F	L	B	W	H	X	Q
SSIF1002	10	18	35	28	5	27	22	4.5	-
SSIF1003	10	20	37	32	6	29	24	4.5	-
SSIF1004	10	20	37	38	8	29	24	4.5	M5

## SSIF



Model	d	D	F	L	B	W	H	X
SSIF1003B	10	23	39	30	6	30	30	4.5
SSIF1004B	10	23	41	30	6	30	30	4.5

## SSIF



Model	d	D	F	L	B	W	H	X	Y	Z	Q
SSIF1004C	10	26	46	34	10	36	28	4.5	8	4.5	M6

# Miniature Ball Screw

Nominal Diameter 10  
Ball screw Nut in Stock

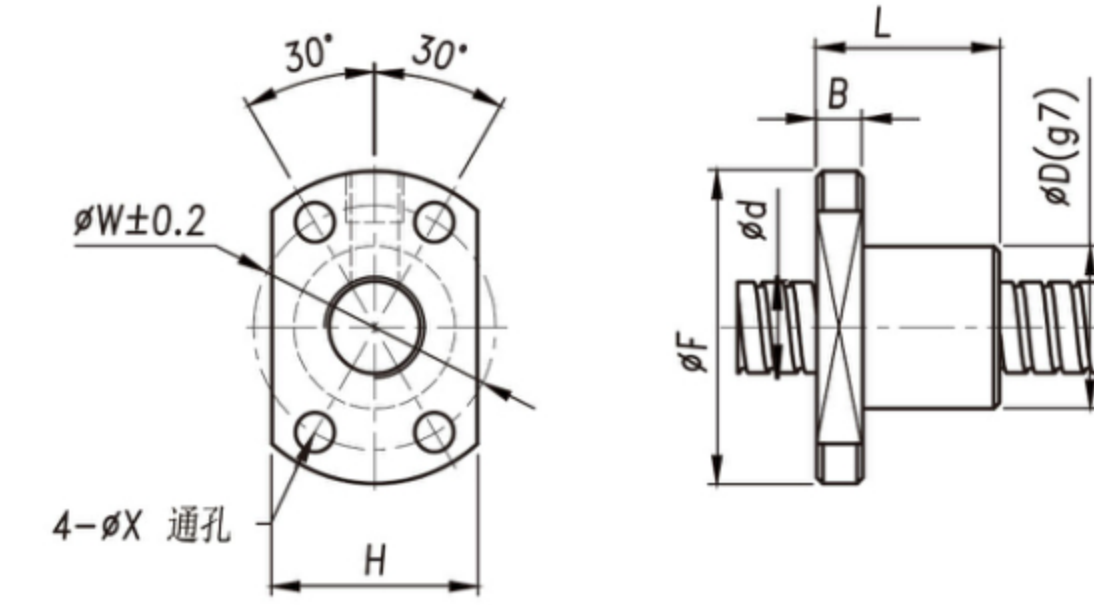
Model	Nominal diameter (mm)	Lead (mm)	Accuracy grade	Ball Diameter	Circuits	Basic rated load(N)	
						Dynamic load	Static load
SSIF	10	2	C3, C5,	1.2/1.588	3	1700	3800
		3		2.0	3	3300	6000
		4		2.381	3	4200	7200
SSIA	10	2		1.2/1.588	4	2200	5100
		4		2.381	3	4200	7200
SSEF	10	10			2.0	3.0	3300
SSWF	10	4		2.0	2.5	2800	5000

The above models can be made as left hand thread, right hand thread or Bi-directional(left hand+right hand) thread, special sizes can be customized.



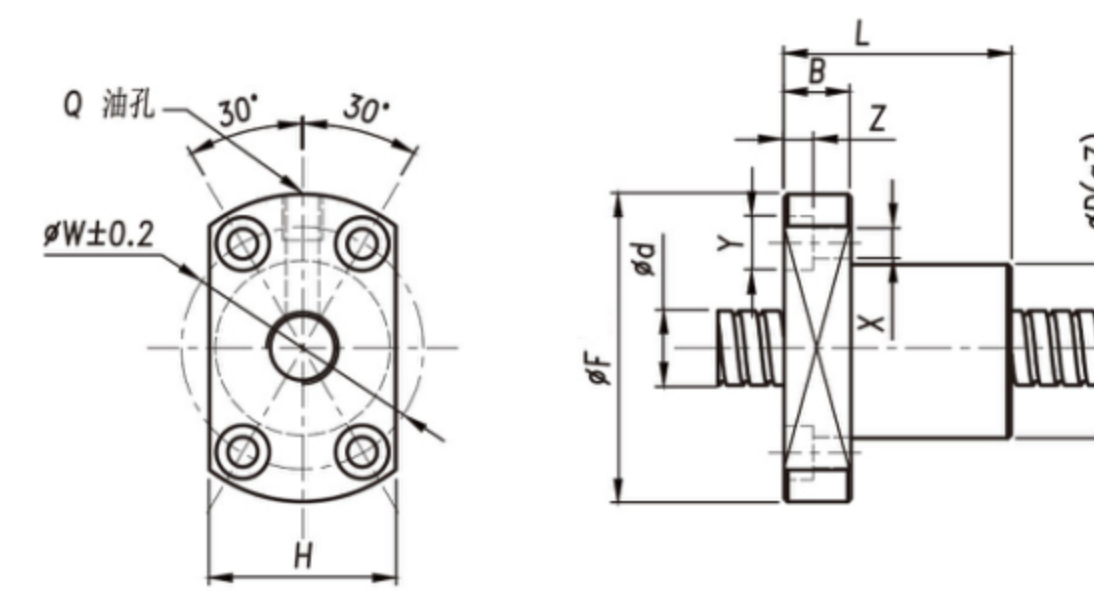
Nominal Diameter 12  
Ball screw Nut in Stock

## SSIF



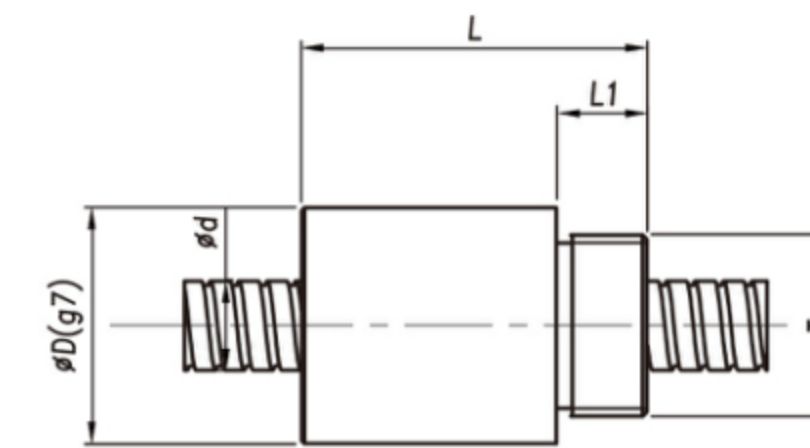
Model	d	D	F	L	B	W	H	X
SSIF1201	12	20	37	28	5	29	24	4.5
SSIF1202	12	20	37	28	5	29	24	4.5
SSIF1203	12	22	39	32	6	31	26	4.5
SSIF1204C	12	24	40	28	6	32	25	3.5
SSIF1205	12	22	43	38	8	31	26	4.5

## SSIF



Model	d	D	F	L	B	W	H	X	Y	Z	Q
SSIF1204D	12	24	44	40	10	34	34	4.5	8	4.5	M6

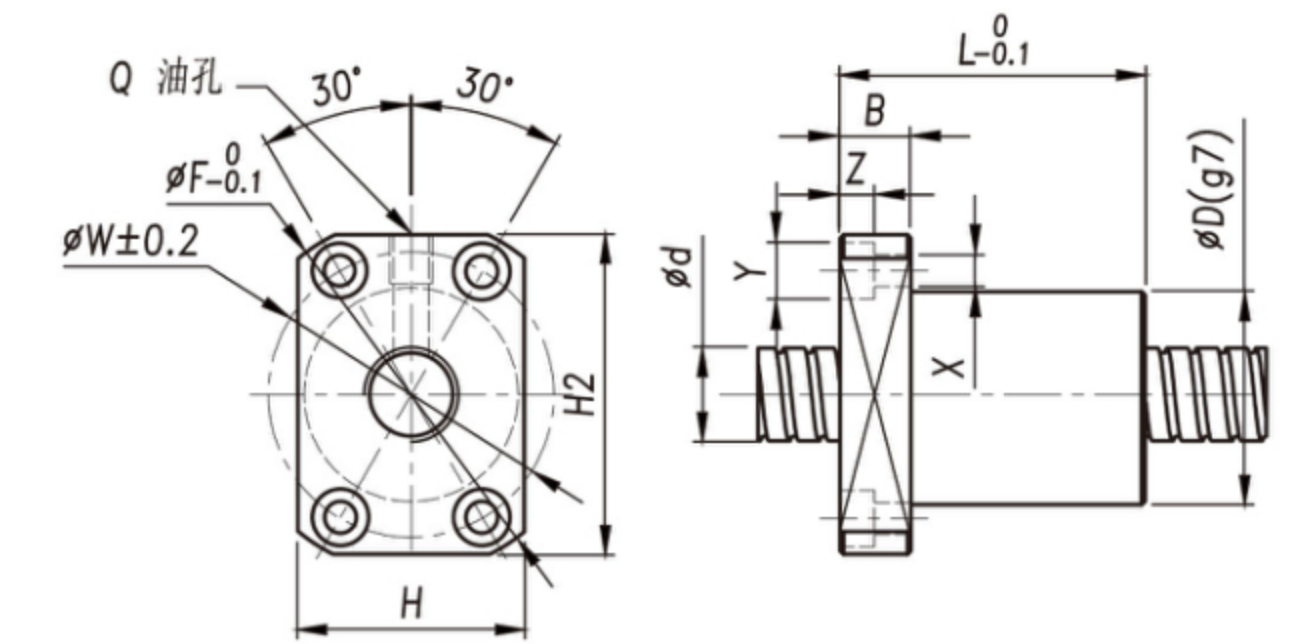
## SSIA



Model	d	D	L	L1	T
SSIA1204	12	25.5	34	10	M20x1
SSIA1205	12	24	38	10	M20x1
SSIA1202	12	20	28	10	M18x1

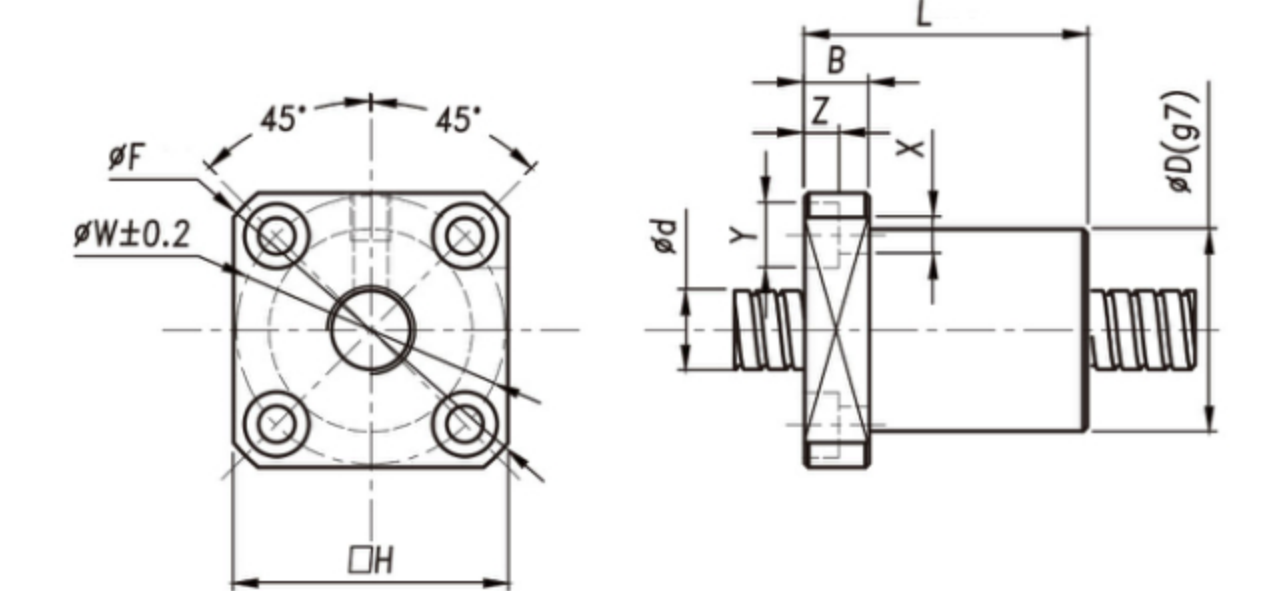
# Miniature Ball Screw

## SSIF



Model	d	D	F	L	B	W	H	H2	X	Y	Z	Q
SSIF1202B	12	20	40	33	8	29	25	36	4.5	8	5	-
SSIF1204B	12	26	46	34	8	36	28	42	4.5	8	4.5	M6
SSIF1205B	12	30	50	40	10	40	32	45	4.5	8	4	M6

## SSIF

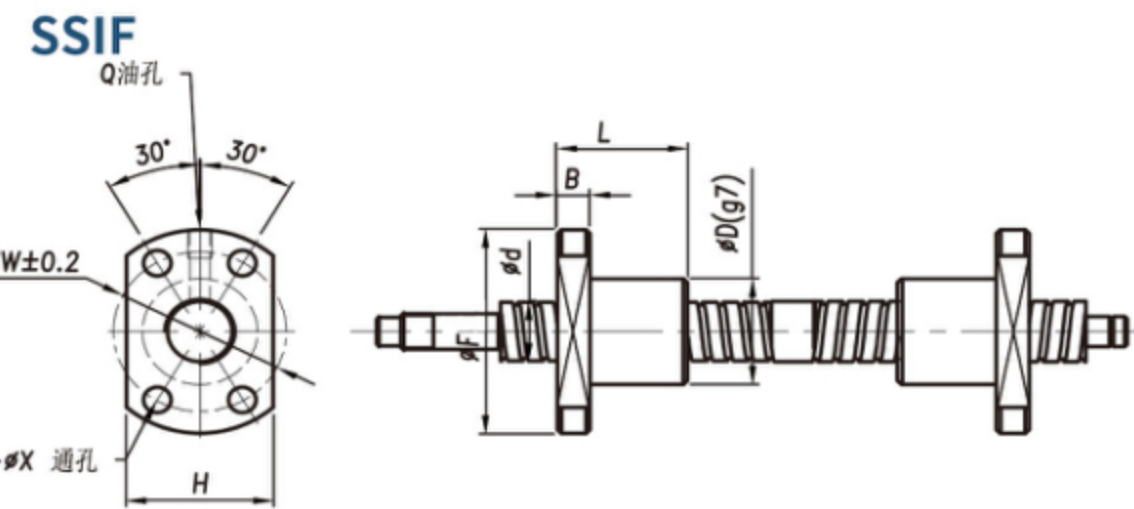


Model	d	D	F	L	B	W	H	X	Y	Z
SSIF1202C	12	25	44	35	8	33	34	4.5	8	4.4

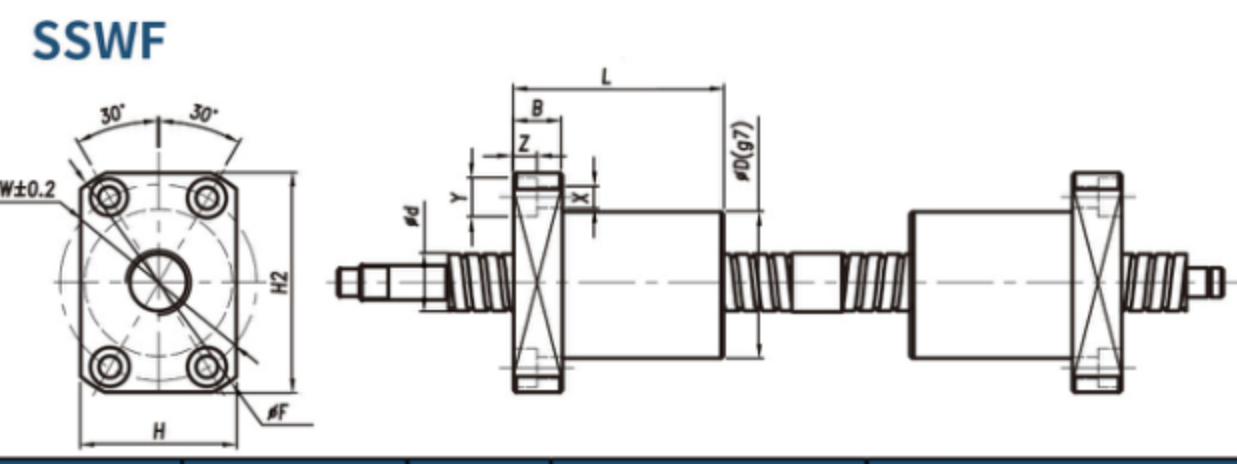
Customization design and Manufacturing	Stainless steel and other customized materials
	Surface treatment
	Customized Ballscrew Nuts and end of machines
	Grease Replacing
	Maintenance and assembling
According to the needs, customization design ,reply within an hour	



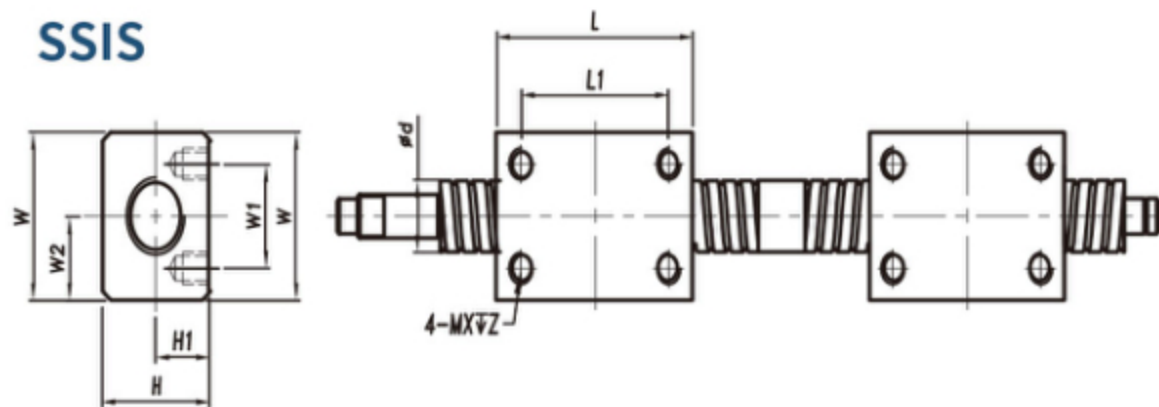
# Bi-directional Ball Screw



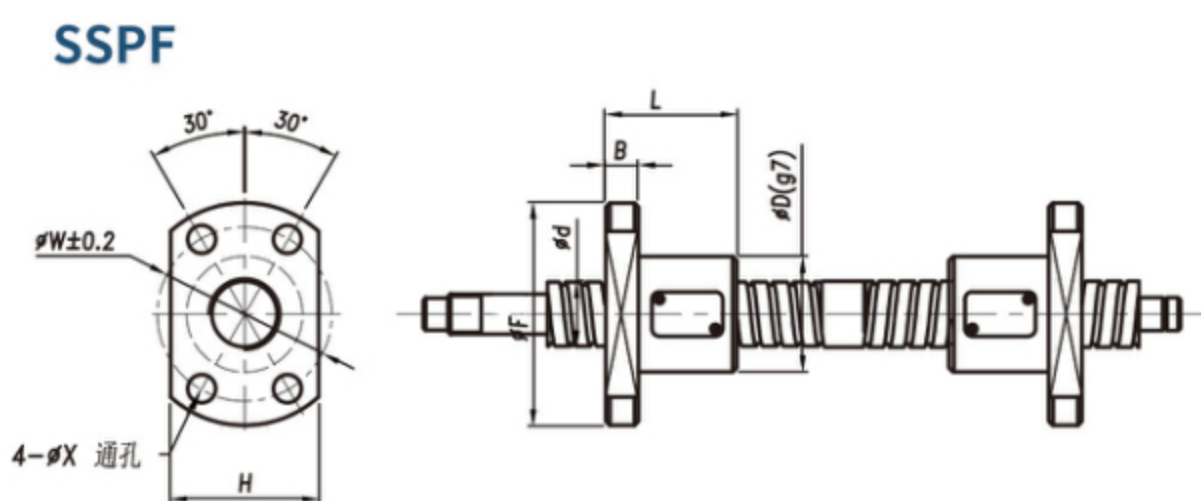
Model	d	L	Ball Diameter	Loading & Lifecircle
SSIF0501	5	1	0.8	Customization design and manufacturing according with customers special request in loading and life circles, ballscrew Design parameter feedback within 1 hour
SSIF0601	6	1	0.8	
SSIF0801	8	1	0.8	
SSIF0801.5		1.5	1.0	
SSIF0802	2	1.2		
SSIF1001	10	1	0.8	
SSIF1001.5		1.5	1.0	
SSIF1002		2	1.2	
SSIF1002.5		2.5	1.5875	
SSIF1003		3	2.0	
SSIF1004	4	2.0		
SSIF1005	5	2.0		
SSIF1201	12	1	0.8	
SSIF1202		2	1.2	
SSIF1202.5		2.5	1.5875	
SSIF1203		3	2.0	
SSIF1204	4	2.381		
SSIF1401	14	1	0.8	
SSIF1402		2	1.2	
SSIF1402.5		2.5	1.5875	
SSIF1403		3	2.0	
SSIF1404		4	2.381	
SSIF1405	5	2.381		
SSIF1601	16	1	0.8	
SSIF1602		2	1.2	
SSIF1603		3	2.0	



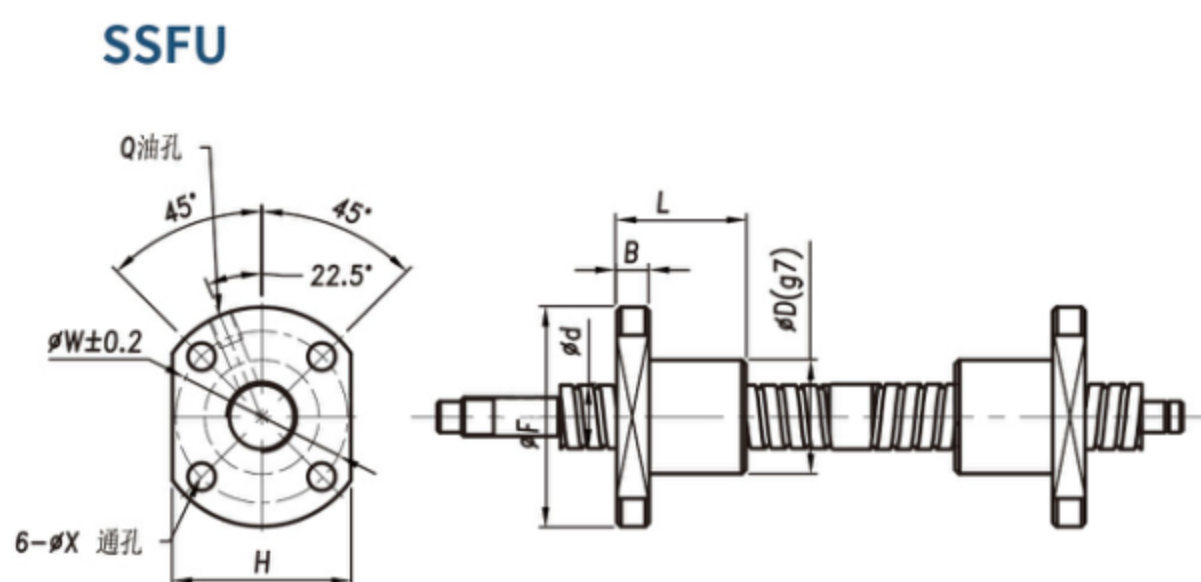
Model	d	L	Ball Diameter	Other Parameters
SSWF1210	12	10	2.381	Refer to P14



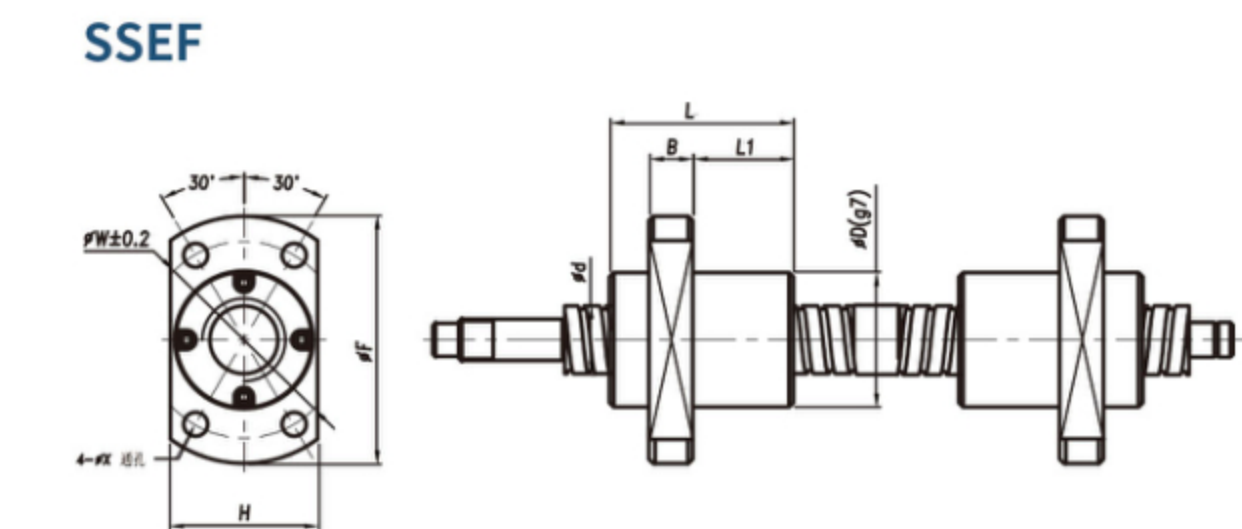
Model	d	L	Ball Diameter	Other Parameters
SSIS0602	6	2	1.2	Refer to P8



Model	d	L	Ball Diameter	Other Parameters
SSPF0805	8	5	1.5	Refer to P9



Model	d	L	Ball Diameter	Loading & Lifecircle
SSFU1604-4	16	4	2.381	Customization Design and manufacturing according with customers special request in loading and life circles, Design info feedback time within 1 hour
SSFU1605-4		5	3.175	
SSFU1610-3		10	3.175	
SSFU2004-4	20	4	2.381	
SSFU2005-4		5	3.175	
SSFU2010-4	25	10	4.762	
SSFU2504-4		4	2.381	
SSFU2505-4		5	3.175	
SSFU2506-4		6	3.969	
SSFU2508-4		8	4.762	
SSFU2510-4		10	4.762	



Model	d	L	Ball Diameter	Loading & Lifecircle
SSEF0606	6	6	1.2	Customization Design and manufacturing according with customers special request in loading and life circles, Design info feedback time within 1 hour
SSEF0808	8	8	1.588	
SSEF1010	10	10	2.0	
SSEF1210	12	10	2.381	
SSEF1616	16	16	3.175	

# End-journal machining of ballscrew shaft

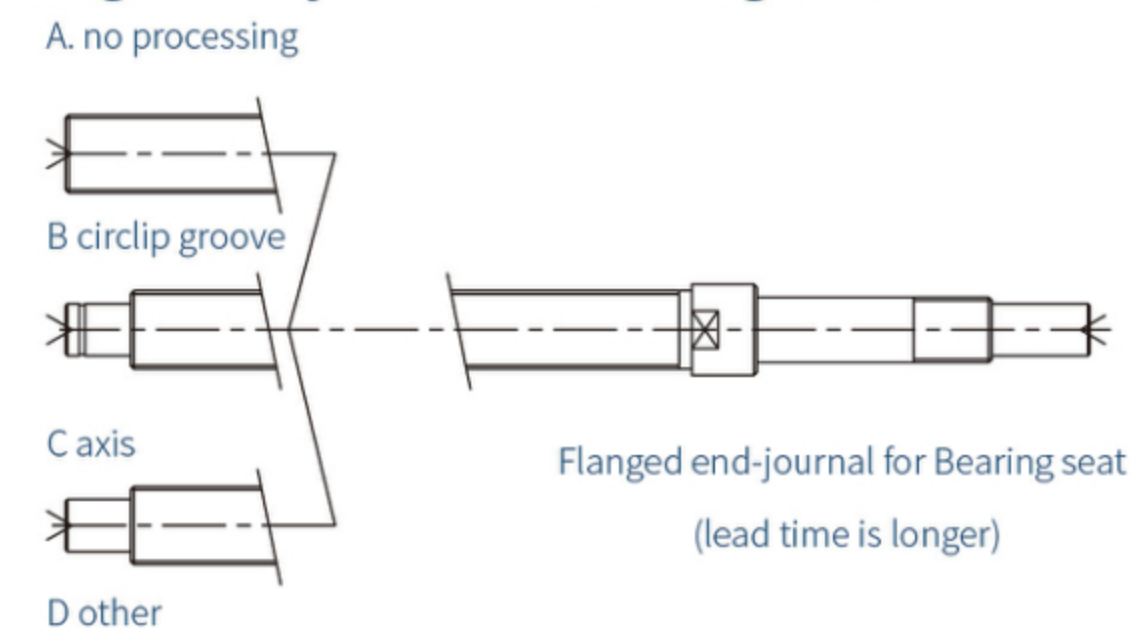
# Miniature Ball Screw

## End-journal machining

Typical Journal Ends	Journal ends machining Symbol and Feature		Diagram
	Symbol	Features	
Fixed end(F)	F	coupling end+thread lock+bearing block	
	FM	coupling end(axial threaded hole)+thread lock+bearing block	
	FD	coupling end(milling with one cut face)+thread lock+bearing block	
	FH	coupling end(milling with two cut faces)+thread lock+bearing block	
	FX	coupling end(milling square)+thread lock+bearing block	
	FU	coupling end(key way)+thread lock+bearing block	

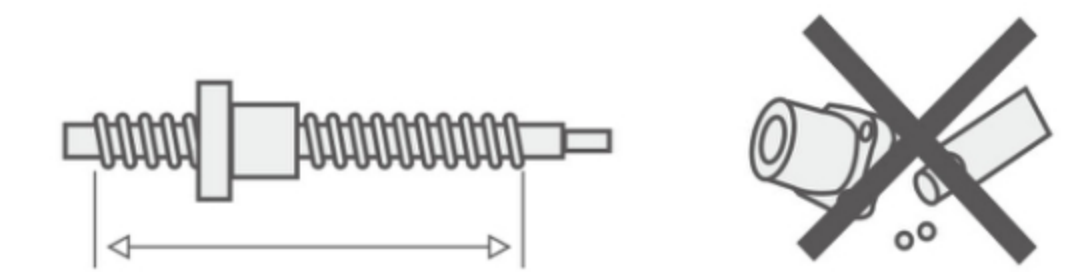
Screw Typical Journal Ends	Screw Journal ends machining Symbol and Feature		Diagram
	Symbol	Features	
Support end(S)	S	bearing block	
	SH	bearing block+milling with one cut face	
	SX	bearing block+milling with two cut faces	
	SU	bearing block+milling square	
	SC	bearing block+keyway	
	SD	bearing block+circlip	

## Flanged end-journal for Bearing seat



### Precautions for use

Avoid rotating the nut beyond the effective travel range of the ball screw or unscrewing the screw, as this can lead to the ball falling off, resulting in damage. Additionally, be cautious of tilting the ball screw, as the nut may detach due to its own weight. Please take note of this precaution.



Run the nut within the effective stroke Do not remove the nut by yourself

### Note

You can substitute Lithium-based general grease No.2 (Great Wall, a Chinese brand) with an alternative grease as needed.

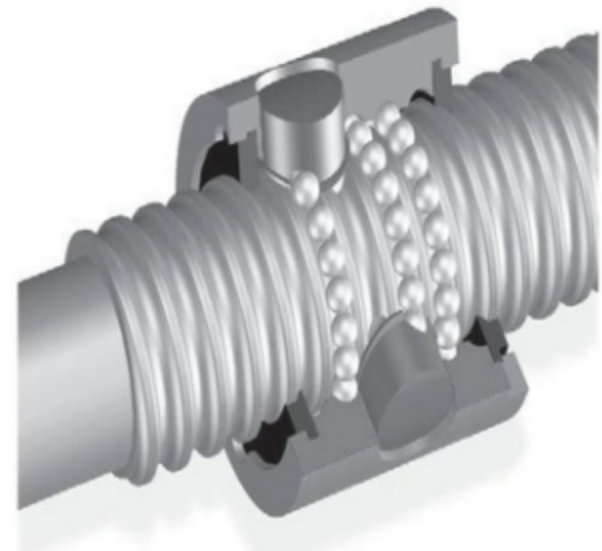
## Related accessories



Customization design and Manufacturing	Stainless steel and other customized materials
	Surface treatment
	Customized Ballscrew Nuts and end of machines
	Grease Replacing
Maintenance and assembling	
According to the needs, customization design ,reply within an hour	

WY滾珠絲杠系統  
WF Ball Screw System

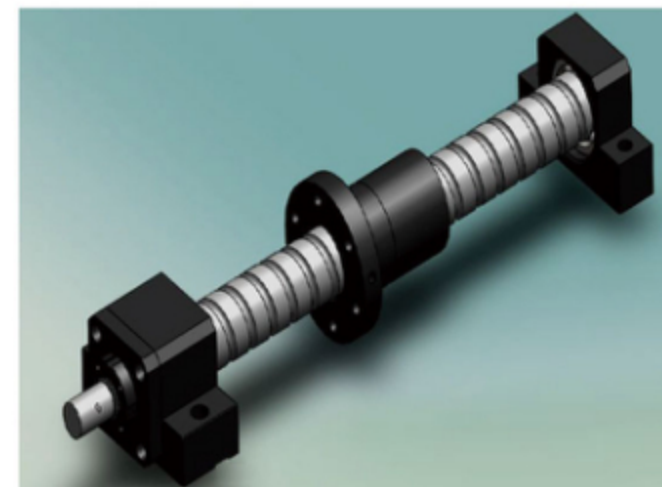
螺母滾珠迴圈方式  
Ball Recirculation



螺母裏面的滾珠以回流的形式進行單列迴圈，圓柱凸鍵反向器，它的圓柱部分嵌入螺母內，端部開有反向槽，反向槽靠圓柱外圓面及其上端的圓鍵定位，以保證對準螺紋滾道方向。



Steel balls in the nut recirculate in one line with an inverse flow style. The cylindrical part of the deflector is inserted in the nut and the face has a reverse groove which is positioned by the cylindrical diameter and the round keyway, in order to make sure the correct direction of thread groove.



在經過若干圈之後，滾珠通過整合在螺母中的塑膠或者鋼制返向器返回。內部迴圈設計使功能作用均勻，滾珠數量多而擁有很高的額定載荷，還有超短的螺母結構，光滑的螺母外表，高效的防塵密封，且螺母無凸出零件，便於安裝。

After several circulations, the steel balls return through a plastic or metal deflector in the nut. The design of internal return make the function equally effect. Plenty of balls enable high load rating and super short nut structure, smooth nut surface, high efficient sealing as well as no projecting components of nut make it easy to install.

Ballscrew Transimission System

推薦軸端Screw End Recommer

絲杆端部，左或右軸端形狀

Screw ends, forms for a left or right screw end

基礎款式Basic version	帶鍵槽With keyway
00	
01	02
11	
21	22
31	32
41	
51	52

1) 以上僅適用於d。8至50 滾壓絲杆

1) The forms above apply to rolled screws of diameter from 8mm to 50mm

2) 可以根據客戶提供的圖紙製作

2) Customer designed are also available

PRP-滾珠絲杠副訂貨編碼 Ball Screw Assembly Ordering Code

滾珠絲杠副 Ball Screw Assembly	W	32	10	L	-3	P5	01	11	/900	X800	-V1	-R
螺母結構 Ball nut structure	W...單螺母single nuts Y...雙螺母double nuts											
規格Size	公稱直徑 (mm) Nominal diameter(mm)											
	導程 (mm) Lcad(mm)											
	螺旋方向 L...左、無標記...右 Direction of lead L...left、unmarked...right											
	螺母內的滾珠圈數 Number of ball track turns in the nut											
精度precision	P3、P5、P7											
絲杠左軸端形狀Left screw end												
絲杠右軸端形狀Right screw end												
絲杠總長Overall length												
絲杠螺紋長度Thread length												
預緊Preload	V0 ... 無預緊none V2 ... 中預緊medium					V1 ... 輕預緊light preload V3 ... 重預緊heavy preload						
絲杆Screw	R ... 轉造級精密絲杠Precision-rolled screw					M ... 研磨級精密絲杠 Stock Ground Ball Screw						

PRP-用於單獨供貨的滾珠螺母

滾珠螺母	W	32	10	FU	L	-1	P5
螺母結構	W...單螺母 Y...雙螺母						
規格	公稱直徑 (mm)						
	導程 (mm)						
螺母結構	FE...法蘭E型 CI...圓柱型	FI...法蘭I型 FU...DIN規格					
螺旋方向	L...左 無標記...右						
威遠螺母相應系列編號							
精度	P3,P5、P7						

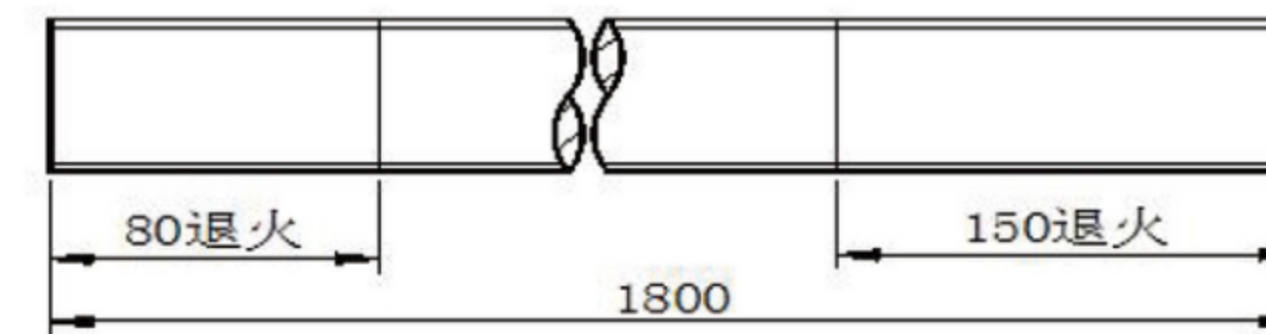
PRP-滾珠絲杠訂貨編碼 Ball Screw Ordering Code

滾珠絲杠 Ball Screw		32	10	L	-P5	01	11	/900	X800	-R
規格Size	公稱直徑 (mm) Nominal									
	導程 (mm) Lcad(mm)									
	螺旋方向 L...左 無標記...右 Direction of lead L...left、unmarked...right									
精度precision	P3、P5、P7									
絲杠左軸端形狀Left screw end										
絲杠右軸端形狀Right screw end										
絲杠總長Overall length										
絲杠螺紋長度Thread length										
絲杆Screw	R ... 轉造級精密絲杠 Precision-rolled screw					M ... 研磨級精密絲杠 Stock Ground Ball Screw				

單獨訂購絲杠，僅需退火絲杠軸端

Special cases with annealed ends

- 1)關於帶退火端部的精密滾壓絲杠的特殊要求，請致電我司。
- 2)絲杠兩端部退火長度根據客戶要求。
- 3)可以根據客戶提供的圖紙製作



滾珠絲杠副基本公稱直徑與導程

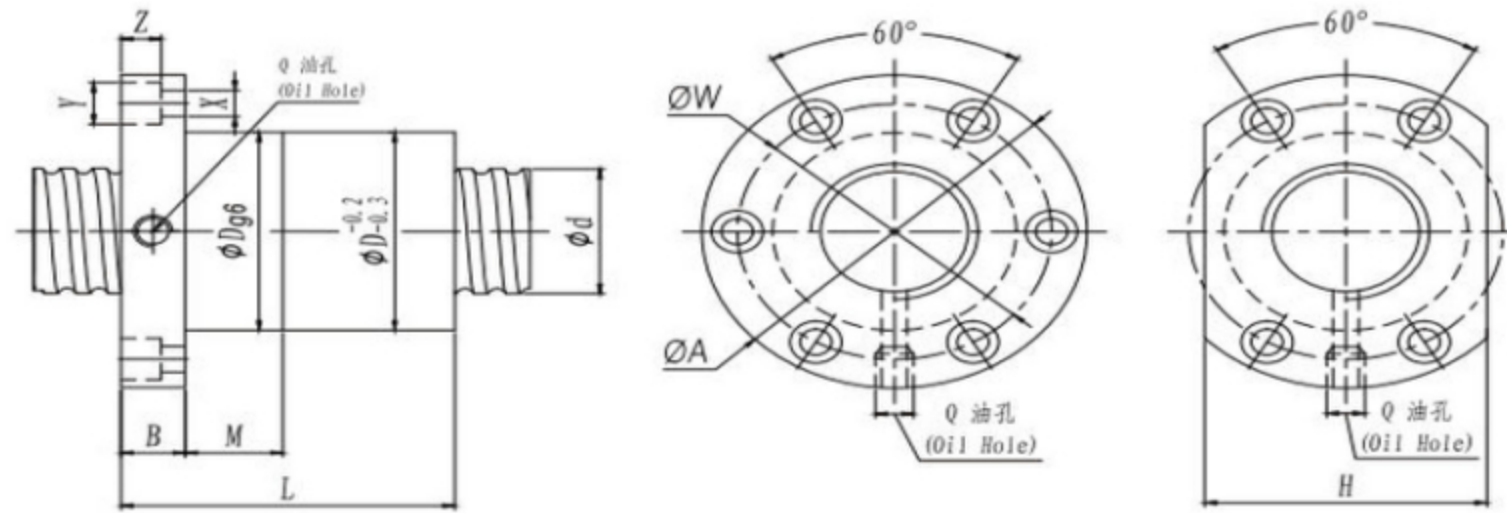
Ball Screw Assemblies Basic Nominal Diameter and Lead

		導程P										
		2	2.5	4	5	10	12	16	20	25	32	40
公稱直徑d <sub>0</sub>	8											
	12											
	16											
	20											
	25											
	32											
	40											
	50											
	63											
	80											

TYPE:WFWYI

(Ball nut)

Rollde Ball Screw Series



Unit: mm

I: Lead Da: Ball Dia. n: Number of Circuits

Ca:Basic Dunamic Rating Load (Kgf)

Coa: Basic Static Rating Load (Kgf)

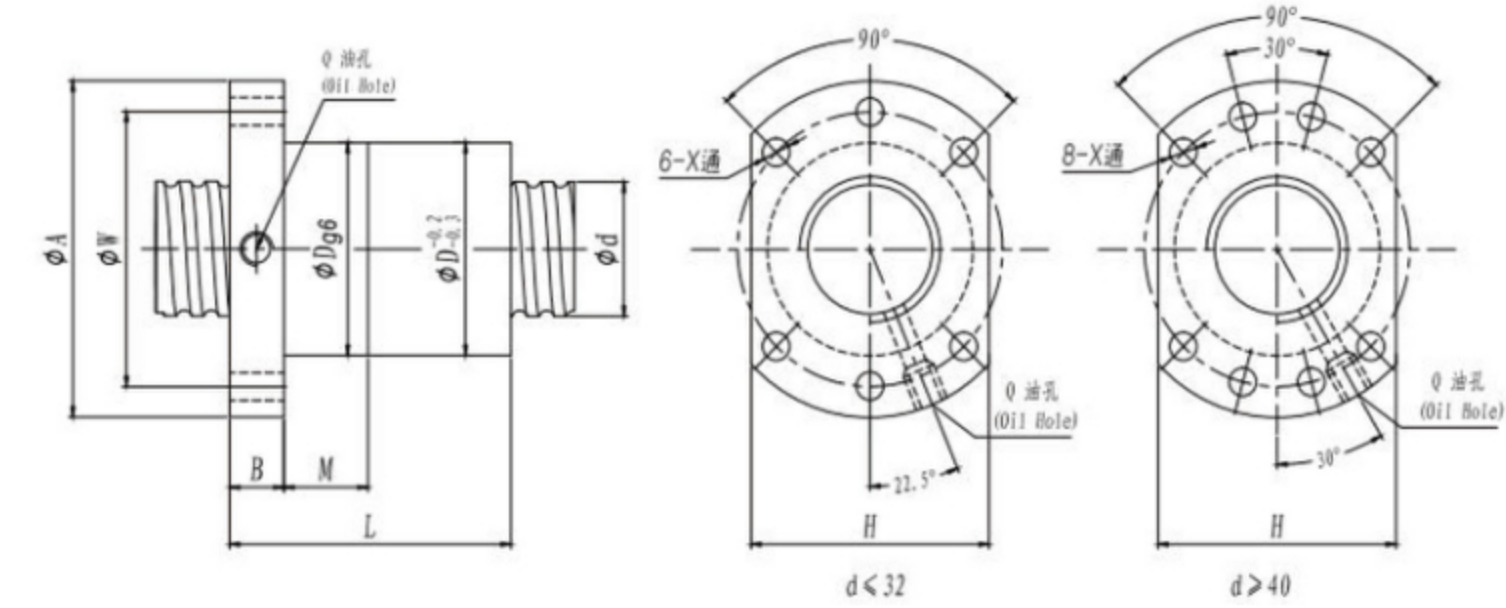
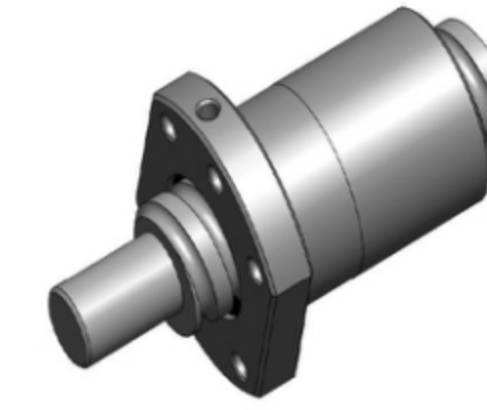
Model No.	Dimensions																
	d	I	Da	D	A	B	M	L	W	H	X	Y	Z	Q	n	Ca	Coa
FI0802-3	7.5	2	1.588	16	32	8	10	25	23	22	3.5	6	3.5	M4	3	200	380
FI0802.5-3		2.5	1.588	16	32	8	10	25	23	22	3.5	6	3.5	M4	3	200	380
FI1202-3	11.5	2	1.588	20	44	8	10	30	32	30	4.5	8	4.5	M4	3	280	600
FI1204-4	11.4	4	2	22	44	10	12	40	32	30	4.5	8	4.5	M6	4	480	990
FI1205-4		5	2	22	44	10	12	40	32	30	4.5	8	4.5	M6	4	480	990
★FI1210-2		10	2	22	44	10	12	30	32	30	4.5	8	4.5	M6	2	260	500
★FI1604-4	15.3	4	2.381	30	49	10	12	45	39	34	4.5	8	4.5	M6	4	700	1570
★FI1605-4	15	5	3	30	49	10	12	50	39	34	4.5	8	4.5	M6	4	900	1970
FI1610-3		10	3	34	58	10	12	57	45	34	5.5	10	5.5	M6	3	700	1450
★FI1616-2		16	3	30	49	10	12	40	39	34	5.5	10	5.5	M6	2	500	1000
FI2004-4	19.5	4	2.381	34	57	11	13	46	45	40	5.5	10	5.5	M6	4	800	2000
FI2005-4	19	5	3	34	57	11	13	51	45	40	5.5	10	5.5	M6	4	1000	2500
FI2010-3	19.35	10	3.175	36	60	11	12	54	46	42	5.5	10	5.5	M6	3	880	1970
FI2020-2	19.4	20	3.5	36	60	11	12	40	46	42	5.5	10	5.5	M6	2	700	1400
FI2504-4	24.3	4	2.381	40	63	11	15	46	51	46	5.5	10	5.5	M6	4	870	2570
★FI2505-4	24	5	3	40	63	11	15	51	51	46	5.5	10	5.5	M6	4	1200	3290
FI2510-4	24.5	10	3.969	46	72	12	15	85	58	52	6.5	11	6.5	M6	4	1700	4100
FI2525-2	24.1	25	3.5	42	70	12	15	47	55	50	6.5	11	6.5	M6	2	790	1800
★FI3205-4	31.6	5	3.5	46	72	12	15	52	58	52	6.5	11	6.5	M8X1	4	1600	4800
FI3210-4	31.6	10	5.556	54	88	15	20	90	70	62	9	14	8.5	M8X1	4	2950	7200
FI3220-4	31	20	3.969	52	87	15	20	90	67	56	9	14	8.5	M8X1	4	1900	5400
FI3232-2	31	32	3.969	52	87	15	20	58	67	56	9	14	8.5	M8X1	2	1000	2750
FI4005-4	39.58	5	3.5	56	90	15	20	55	72	64	9	14	8.5	M8X1	4	1800	6100
★FI4010-4	39.51	10	7.144	62	104	18	25	93	82	70	11	18	11	M8X1	4	4680	11900
FI4020-3	38	20	6	64	106	18	25	90	81	72	11	18	11	M8X1	3	2800	7400
FI4040-2	40	40	6.35	68	110	18	25	70	85	75	11	18	11	M8X1	2	2160	5300
FI5005-5	49	5	3.5	68	110	18	25	52	85	75	11	18	11	M8X1	5	2400	9660
FI5010-4	49.31	10	7.144	72	114	18	25	93	92	82	11	18	11	M8X1	4	5200	14900
FI5020-3	48.15	20	6.35	77	119	18	25	93	94	82	11	18	11	M8X1	3	3470	10100
FI5040-2	48	40	6.5	77	119	18	25	71	94	82	11	18	11	M8X1	2	2500	6900
FI6310-4	62.55	10	7.144	85	131	22	30	98	107	95	14	20	13	M8X1	4	5800	19400
FI6320-4	62.55	20	9.525	95	146	22	30	149	116	100	14	20	13	M8X1	4	8500	25100
FI8010-4	80	10	7.144	105	150	22	30	98	127	115	14	20	13	M8X1	4	6400	24700
FI8020-4	80	20	12.7	125	165	22	30	160	145	130	14	20	13	M8X1	4	13900	42400

Note:with sign ★ can produce left helix

滚珠螺母 (Ball nut)

Ballscrew System

型号(TYPE):WFU



单位 (Unit) : mm

I:导程 Lead Da:珠径 Ball Dia. n:珠圈数 Number of Circuits

Ca:动额定负荷 Basic Dunamic Rating Load (Kgf)

Coa:静额定负荷 Basic Static Rating Load (Kgf)

型号 Model No.	基准数据 Dimensions															
	d	I	Da	D	A	B	M	L	W	X	H	Q	n	Ca	Coa	
FU0802-3	7.5	2	1.588	16	31	8	10	25	23	3.4	25	M4	3	200	380	
FU0802.5-3	7.5	2.5	1.588	16	31	8	10	25	23	3.4	25	M4	3	200	380	
FU1202-3	11.5	2	1.588	20	40	8	10	30	32	4.5	30	M4	3	280	600	
FU1204-4	11.4	4	2	24	40	10	12	40	32	4.5	30	M6	4	480	990	
FU1205-4	11.4	5	2	24	40	10	12	40	32	4.5	35	M6	4	480	990	
★FU1210-2	11.4	10	2	24	40	10	12	30	32	4.5	35	M6	2	260	500	
★FU1604-4	15.3	4	2.381	28	48	10	12	40	38	5.5	40	M6	4	700	1570	
★FU1605-4	15	5	3	28	48	10	12	50	38	5.5	40	M6	4	900	1970	
★FU1610-3	15	10	3	28	48	10	12	50	38	5.5	40	M6	3	700	1450	
★FU1616-2	15	16	3	30	50	10	12	32	38	5.5	39	M6	2	500	1000	
FU2004-4	19.5	4	2.381	36	58	10	12	42	47	6.6	44	M6	4	800	2000	
FU2005-4	19	5	3	36	58	10	12	51	47	6.6	44	M6	4	1000	2500	
FU2010-3	19.35	10	3.175	36	57	10	12	54	46	6.6	48	M6	3	880	1970	
FU2020-2	19.4	20	3.5	36	57	10	12	40	46	6.6	48	M6	2	700	1400	
FU2504-4	24.3	4	2.381	40	62	10	12	42	51	6.6	48	M6	4	870	2570	
★FU2505-4	24	5	3	40	62	10	12	51	51	6.6	48	M6	4	1200	3290	
FU2510-4	24.5	10	3.969	40	62	12	15	85	51	6.6	48	M6	4	1700	4100	
FU2525-2	24.1	25	3.5	42	68	12	15	47	55	6.6	57	M6	2	790	1880	
★FU3205-4	31.6	5	3.5	50	80	12	15	52	65	9	62	M6	4	1600	4800	
★FU3210-4	31.6	10	5.556	50	80	12	15	90	65	9	62	M6	4	2950	7200	
★FU3220-4	31	20	3.969	52	83	12	15	90	67	9	69	M6	4	1900	5400	
★FU3232-2	31	32	3.969	52	83	12	15	58	67	9	69	M6	2	1000	2750	
FU4005-4	39.58	5	3.5	63	93	14	20	55	78	9	70	M8X1	4	1800	6100	
★FU4010-4	39.51	10	7.144	63	93	14	20	93	78	9	70	M8X1	4	4680	11900	
★FU4020-3	38	20	6	64	100	14	20	90	81	9	83	M8X1	3	2800	7400	
★FU4040-2	40	40	6.35	68	105	14	20	70	85	9	87	M8X1	2	2160	5300	
FU5005-5	49	5	3.5	68	107	16	25	52	85	11	92	M8X1	5	2400	9660	
FU5010-4	49.3	10	7.144	75	110	16	25	93	93	11	85	M8X1	4	5200	14900	
FU5020-3	48.2	20	6.35	75	110	16	25	93	93	11	85	M8X1	3	3470	10100	
FU5040-2	48	40	6.5	77	117	18	25	71	94	11	98	M8X1	2	2500	6900	
FU6310-4	62.6	10	7.144	90	125	18	25	98	108	11	95	M8X1	4	5800	19400	
FU6320-4	62.6	20	9.525	95	135	20	30	149	115	13	100	M8X1	4	8500	25100	
FU8010-4	80	10	7.144	105	145	20	30	98	125	13	110	M8X1	4	6400	24700	
FU8020-4	80	20	12.7	125	165	25	30	154	145	13	130	M8X1	4	13900	42400	

备注: 有标注★记号者可制作左旋螺纹 Note:with sign ★ can produce left helix

Ball nut  
Rollde Ball Screw Series

TYPE:FI



单位 (Unit) : mm

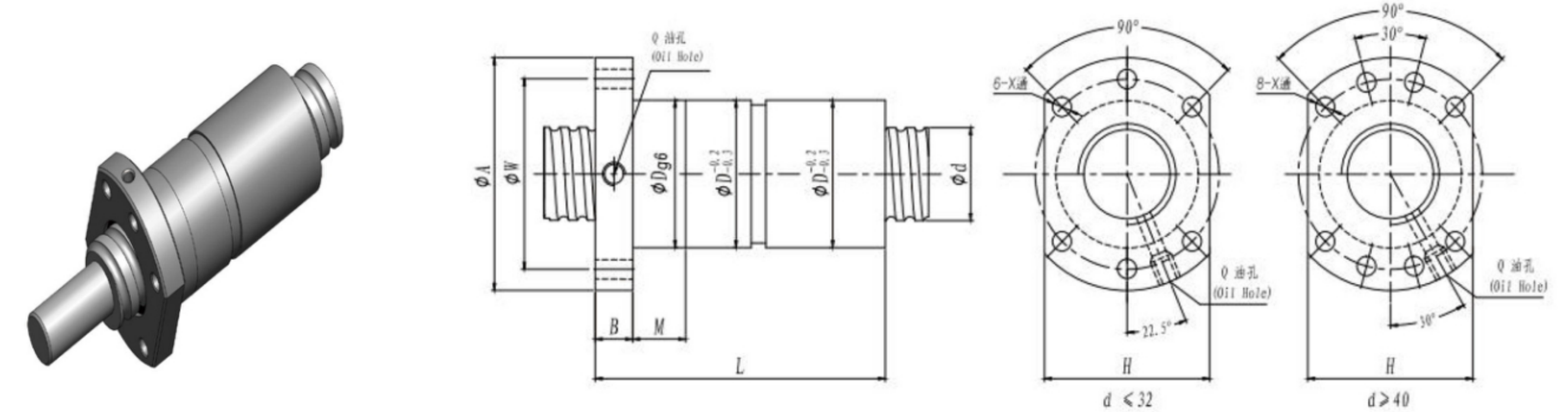
I: Lead Da: Ball Dia. n: Number of Circuits  
Ca: Basic Dynamic Rating Load (Kgf)  
Coa: Basic Static Rating Load (Kgf)

Model No.	Dimensions																
	d	I	Da	D	A	B	M	L	W	H	X	Y	Z	Q	n	Ca	Coa
FI1604-4	15.3	4	2.381	30	49	10	12	80	39	34	4.5	8	4.5	M6	4	700	1570
★FI1605-4	15	5	3	30	49	10	12	100	39	34	4.5	8	4.5	M6	4	900	1970
FI2004-4	19.5	4	2.381	34	57	11	15	80	45	40	5.5	9.5	5.5	M6	4	800	2000
FI2005-4	19	5	3	34	57	11	15	101	45	40	5.5	9.5	5.5	M6	4	1000	2500
FI2010-3	19.35	10	3.175	36	60	11	15	98	46	42	5.5	9.5	5.5	M6	3	880	1970
FI2504-4	24.3	4	2.381	40	63	11	15	80	51	46	5.5	9.5	5.5	M6	4	870	2570
★FI2505-4	24	5	3	40	63	11	15	101	51	46	5.5	9.5	5.5	M6	4	1200	3290
FI2510-4	24.5	10	3.969	46	72	12	15	145	58	52	6.5	11	6.5	M6	4	1700	4100
★FI3205-4	31.6	5	3.5	46	72	12	15	102	58	52	6.5	11	6.5	M8X1	4	1600	4800
FI3210-4	31.6	10	5.556	54	88	15	20	162	70	62	9	14	8.5	M8X1	4	2950	7200
FI3220-4	31	20	3.969	52	87	15	20	145	67	56	9	14	8.5	M8X1	4	1900	5400
FI4005-4	39.58	5	3.5	56	90	15	20	105	72	64	9	14	8.5	M8X1	4	1800	6100
★FI4010-4	39.51	10	7.144	62	104	18	25	165	82	70	11	18	11	M8X1	4	4680	11900
FI4020-3	38	20	6	64	106	18	25	195	82	72	10.5	18	11	M8X1	3	2800	7400
FI5005-5	49	5	3.5	68	110	18	25	120	85	75	10.5	18	11	M8X1	5	2400	9660
FI5010-4	49.31	10	7.144	72	114	18	25	171	92	82	10.5	18	11	M8X1	4	5200	14900
FI5020-3	48.15	20	6.35	77	119	18	25	200	94	82	10.5	18	11	M8X1	3	3470	10100
FI5040-2	48	40	6.5	77	119	18	25	156	94	82	10.5	18	11	M8X1	2	2500	6900
FI6310-4	62.55	10	7.144	85	131	22	30	182	107	95	14	20	13	M8X1	4	5800	19400
FI6320-4	62.55	20	9.525	95	146	22	30	290	116	100	14	20	13	M8X1	4	8500	25100
FI8010-4	80	10	7.144	105	150	22	30	182	127	115	14	20	13	M8X1	4	6400	24700
FI8020-4	80	20	12.7	125	165	22	30	295	145	130	14	20	13	M8X1	4	13900	42400

Note: with sign ★ can produce left helix

Ball nut  
Rollde Ball Screw Series

TYPE:FU



单位 (Unit) : mm

I: Lead Da: Ball Dia. n: Number of Circuits  
Ca: Basic Dynamic Rating Load (Kgf)  
Coa: Basic Static Rating Load (Kgf)

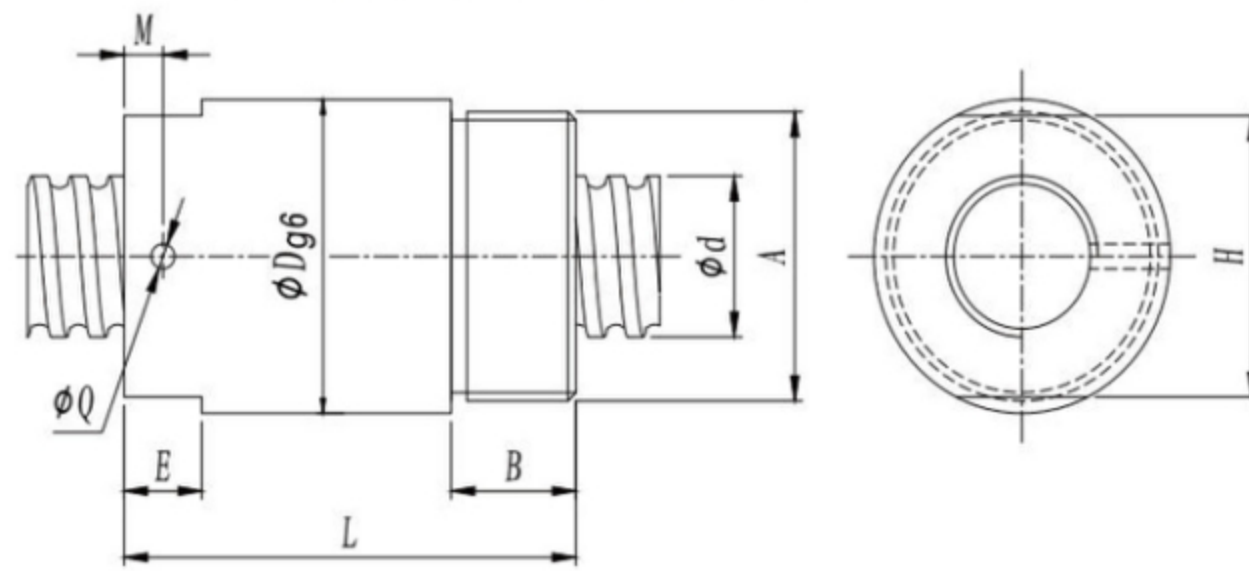
Model No.	Dimensions															
	d	I	Da	D	A	B	M	L	W	X	H	Q	n	Ca	Coa	
FU1604-4	15.3	4	2.381	28	48	10	12	80	38	5.5	40	M6	4	700	1570	
★FU1605-4	15	5	3	28	48	10	12	100	38	5.5	40	M6	4	900	1970	
FU2004-4	19.5	4	2.381	36	58	10	12	80	47	6.6	44	M6	4	800	2000	
FU2005-4	19	5	3	36	58	10	12	101	47	6.6	44	M6	4	1000	2500	
FU2010-3	19.35	10	3.175	36	57	10	12	98	46	6.6	48	M6	3	880	1970	
FU2504-4	24.3	4	2.381	40	62	10	12	80	51	6.6	48	M6	4	870	2570	
★FU2505-4	24	5	3	40	62	10	12	101	51	6.6	48	M6	4	1200	3290	
FU2510-3	24.5	10	3.969	40	62	12	15	145	51	6.6	48	M6	3	1300	3000	
★FU3205-4	31.6	5	3.5	50	80	12	15	102	65	9	62	M6	4	1600	4800	
FU3210-4	31.6	10	5.556	50	80	12	15	162	65	9	62	M6	4	2950	7200	
FU3220-4	31	20	3.969	52	83	14	20	145	67	9	69	M8X1	4	1900	5400	
FU4005-4	39.58	5	3.5	63	93	14	20	105	78	9	70	M8X1	4	1800	6100	
★FU4010-4	39.51	10	7.144	63	93	14	20	165	78	9	70	M8X1	4	4680	11900	
FU4020-3	38	20	6	64	100	14	20	195	81	9	83	M8X1	3	2800	7400	
FU5005-5	49	5	3.5	68	107	16	25	120	85	11	85	M8X1	5	2400	9660	
FU5010-4	49.31	10	7.144	75	110	16	25	171	93	11	85	M8X1	4	5200	14900	
FU5020-3	48.15	20	6.35	75	110	16	25	200	93	11	85	M8X1	3	3470	10100	
FU5040-2	48	40	6.5	77	117	18	25	156	94	11	98	M8X1	2	2500	6900	
FU6310-4	62.55	10	7.144	90	125	18	25	182	108	11	95	M8X1	4	5800	19400	
FU6320-4	62.55	20	9.525	95	135	20	30	290	115	13	100	M8X1	4	8500	25100	
FU8010-4	80	10	7.144	105	145	20	30	182	125	13	110	M8X1	4	6400	24700	
FU8020-4	80	20	12.7	125	165	25	35	295	145	13	130	M8X1	4	13900	42400	

Note: with sign ★ can produce left helix

TYPE: WFYCG



Ball nut  
Rollde Ball Screw Series



Unit: mm

I: Lead Da: Ball Dia. n: Number of Circuits  
Ca: Basic Dynamic Rating Load (Kgf)  
Coa: Basic Static Rating Load (Kgf)

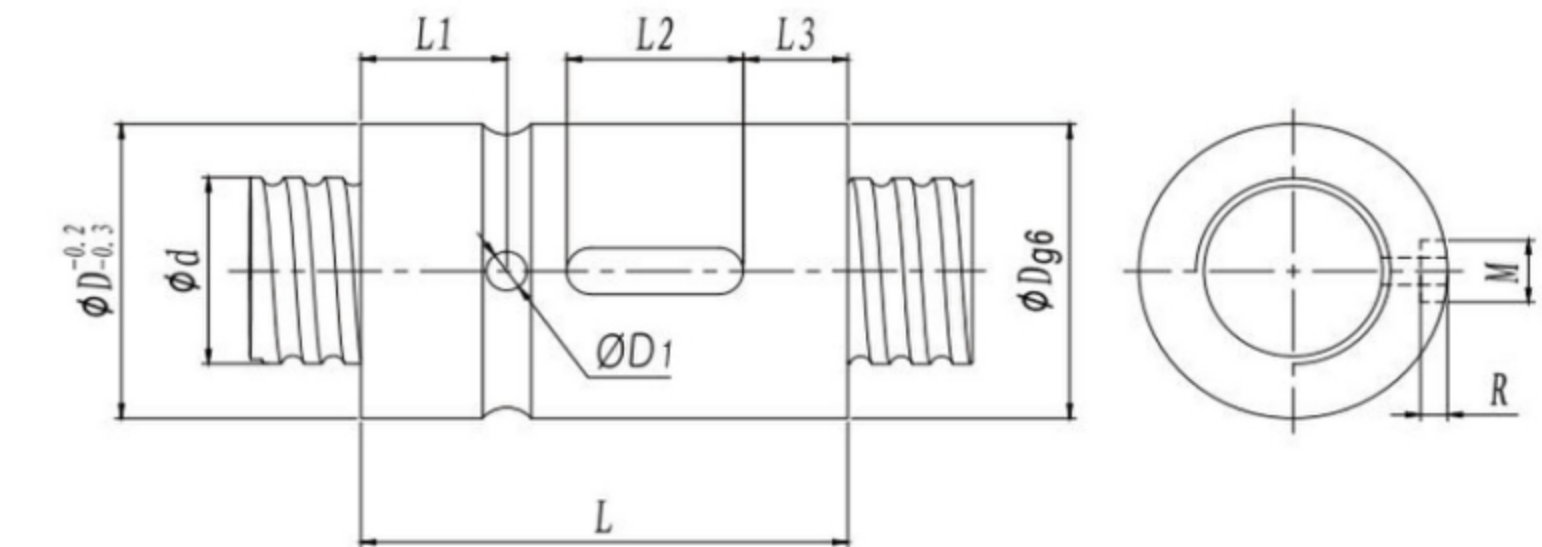
Model No.	Dimensions													Ca	Coa
	d	I	Da	D	A	B	L	E	H	M	Q	n			
CG082.5-3	7.5	2.5	1.588	17.5	M15X1	7.5	23.5	5	15	5	3	3	290	500	
CG1010-2	10.8	10	2	24	M8X5	7	38	10	21	5	3	3	240	400	
CG1202-3	11.5	2	1.588	25	M20X1	10	34	6	22	5	3	3	280	600	
CG1204-3	11.4	4	2	25.5	M20X1	10	34	6	22	5	3	3	370	700	
★CG1205-3		5	2	25.5	M20X1	10	39	6	22	5	3	3	370	700	
CG1210-2		10	2	25.5	M20X1	10	32	6	22	5	3	2	260	500	
★CG1604-3	15.3	4	2.381	29	M22X1.5	8	32	6	25	5	3	3	540	1100	
CG1605-3	15	5	3	32.5	M26X1.5	12	42	6	28	5	3	3	740	1400	
★CG1610-3		10	3	32	M26X1.5	12	50	6	28	5	3	3	700	1450	
CG1616-2		16	3	32	M26X1.5	12	40	6	28	5	3	2	500	1000	
CG2004-3	19.5	4	2.381	38	M35X1.5	15	43	8	34	6	4	3	620	1500	
CG2005-3	19	5	3	38	M35X1.5	15	45	8	34	6	4	3	800	1800	
CG2010-3	19.35	10	3.175	45	M40X1.5	17	62	8	40	6	4	3	880	1970	
CG2020-2	19.4	20	3.5	45	M40X1.5	17	47	8	40	6	4	2	700	1400	
★CG2504-4	24.3	4	2.381	43	M40X1.5	19	55	8	38	6	4	4	870	2570	
CG2505-4	24	5	3	43	M40X1.5	19	69	8	38	6	4	4	1200	3290	
CG2510-3	24.5	10	3.969	43	M40X1.5	19	84	8	38	6	4	3	1300	3000	
★CG2525-2	24.1	25	3.5	50	M45X1.5	20	50	8	45	6	4	2	790	1880	
CG3205-4	31.6	5	3.5	55	M50X1.5	23	63	10	51	6	4	4	1600	4800	
CG3210-3	31.6	10	5.556	60	M55X1.5	25	88	10	55	6	4	3	2300	5400	
CG3220-4	31	20	3.969	62	M56X1.5	25	95	10	56	6	4	4	1900	5400	
CG3232-2	31	32	3.969	62	M56X1.5	25	60	10	56	6	4	2	1000	2750	
★CG4005-5	39.58	5	3.5	55	M60X2	27	55	10	59	7	5	5	2200	7600	
CG4010-3	39.51	10	7.144	68	M65X2	30	95	10	63	7	5	3	3600	8900	
CG4020-3	38	20	6	75	M70X2	30	95	10	69	7	5	3	2800	7400	
CG4040-2	40	40	6.35	75	M70X2	30	80	10	69	7	5	2	2160	5300	
CG5005-5	49	5	3.5	75	M70X2	30	65	13	69	7	5	5	2400	9660	
CG5010-4	49.31	10	7.144	78	M72X2	30	103	13	70	7	5	4	5200	14900	
CG5020-3	48.15	20	6.35	85	M80X2	30	105	13	80	7	5	3	3470	10100	
CG5040-2	48	40	6.5	85	M80X2	30	80	13	80	7	5	2	2500	6900	
CG6310-4	62.55	10	7.144	90	M85X2	30	118	13	84	8	6	4	5800	19400	
CG6320-3	62.55	20	9.525	100	M95X2	35	105	13	95	8	6	3	6600	18800	
CG8010-4	80	10	7.144	120	M110X2	35	120	15	112	8	6	4	6400	24700	
CG8020-4	80	20	12.7	135	M130X2	40	175	15	126	8	6	4	13900	42400	

Note:①with sign ★ can produce left helix  
②Model No. <1605 without dust ring

TYPE: CI



Ball nut  
Rollde Ball Screw Series



Unit: mm

I: Lead Da: Ball Dia. n: Number of Circuits  
Ca: Basic Dynamic Rating Load (Kgf)  
Coa: Basic Static Rating Load (Kgf)

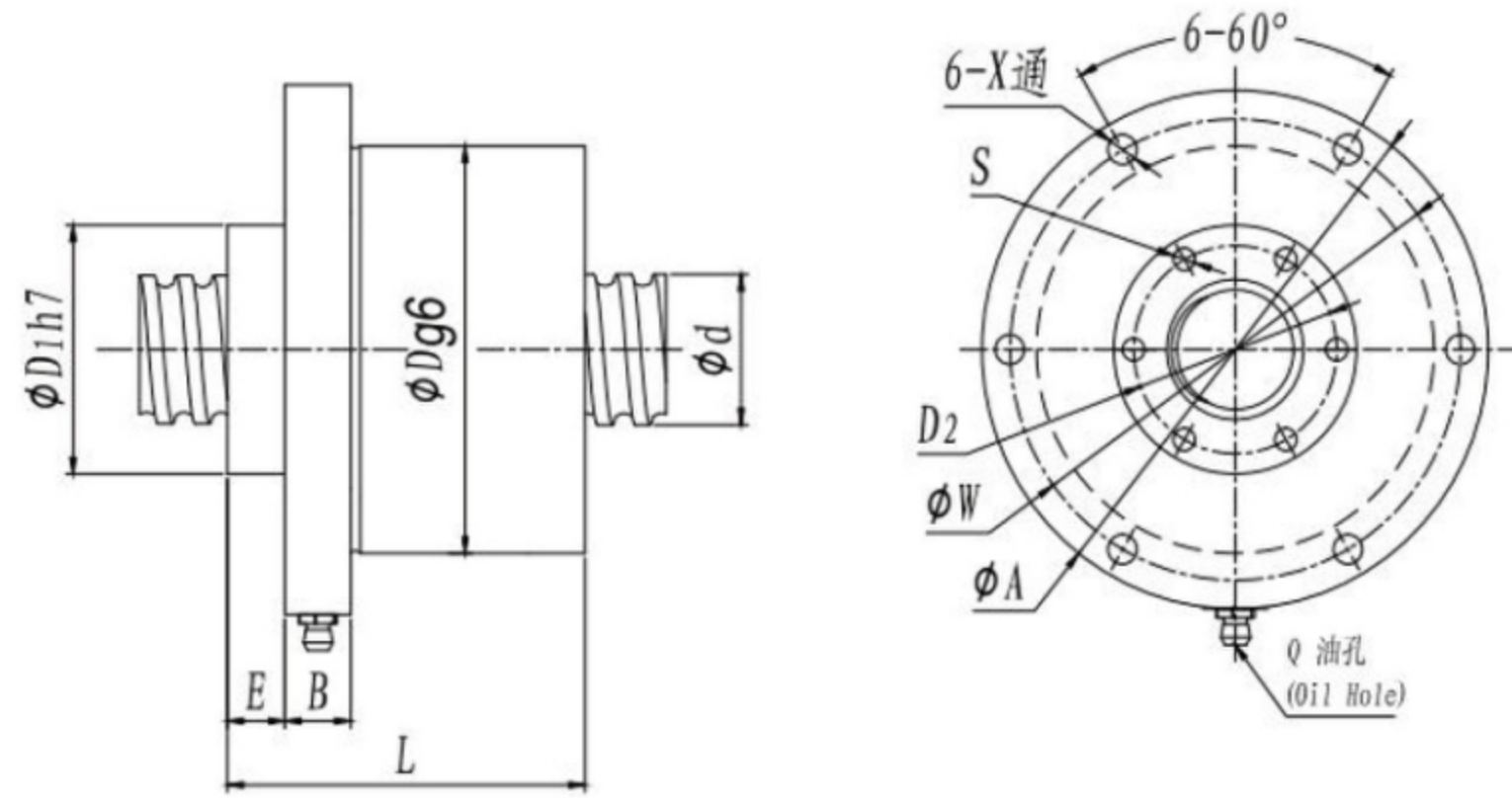
Model No.	Dimensions													Ca	Coa
	d	I	Da	D	L	L1	L2	L3	D1	M	R	n			
CI0802-3	7.5	2	1.588	16	22	4	8	5	2	3	1.5	3	200	380	
CI0802.5-3		2.5	1.588	16	17	5	6	5	2	3	1.5	3	200	380	
CI1010-2	10.8	10	2	24	38	7	38	5	2	3	1.5	3	240	400	
CI1202-3	11.5	2	1.588	20	25	6	10	4.5	2	3	1.5	3	280	600	
CI1204-4	11.4	4	2	22	35	6	15	10	2.5	3	1.5	4	480	990	
★CI1205-4		5	2	22	35	6	15	10	2.5	3	1.5	4	480	990	
CI1210-2		10	2	22	25	6	10	5	2.5	3	1.5	2	260	500	
★CI1604-4	15.3	4	2.381	30	40	9	15	10	3	3	1.5	4	700	1570	
CI1605-4	15	5	3	30	45	9	20	10	3	5	3	4	940	1900	
★CI1610-3		10	3	30	45	10	18	10	3	5	3	3	700	1450	
CI1616-2		16	3	30	32	7	15	5	3	5	3	2	500	1000	
CI2004-4	19.5	4	2.381	34	40	9	15	10	3	3	1.5	4	800	2000	
CI2005-4	19	5	3	34	45	9	20	10	3.5	5	3	4	1000	2500	
CI2010-3	19.35	10	3.175	36	52	9	20	10	3.5	5	3	3	880	1970	
CI2020-2	19.4	20	3.5	37	41	9	20	6	3.5	5	3	2	700	1400	
★CI2504-4	24.3	4	2.381	40	40	9	15	10	3.5	3	1.5	4	870	2570	
CI2505-4	24	5	3	40	45	9	20	10	3.5	5	3	4	1200	3290	
CI2510-4	24.5	10	3.969	46	85	13	30	25	3.5	5	3	4	1700	4100	
★CI2525-2	24.1	25	3.5	42	47	9	20	10	3.5	5	3	2	790	1880	
CI3205-4	31.6	5	3.5	46	45	9	20	10	4	5	3	4	1600	4800	
CI3210-4	31.6	10	5.556	54	85	13	30	25	4	5	3	4	2950	7200	
CI3220-4	31	20	3.969	55	70	10	30	10	4	5	3	4	1900	5400	
CI3232-2	31	32	3.969	50	58	10	30	10	4	5	3	2	1000	2750	
★CI4005-4	39.58	5	3.5	56	45	9	20	10	4	5	3	4	1800	6100	
CI4010-4	39.51	10	7.144	62	85	13	30	25	4	5	3	4	4680	11900	
CI4020-3	38	20	6	65	90	12	30	10	4	5	3	3	2800	7400	
CI4040-2	40	40	6.35	68	70	12	30	10	4	5	3	2	2160	5300	
CI5005-5	49	5	3.5	68	60	12	25	10	4	5	3	5	2400	9660	
CI5010-4	49.31	10	7.144	72	85	13	30	25	4	5	3	4	5200	14900	
CI5020-3	48.15	20	6.35	78	91	13	30	10	4	6	3.5	3	3470	10100	
CI5040-2	48	40	6.5	76	71	13	30	10	4	6	3.5	2	2500	6900	
CI6310-4	62.55	10	7.144	85	85	13	30	25	4	6	3.5	4	5800	19400	
CI6320-4	62.55	20	9.525	95	96	15	30	10	4	6	3.5	4	8500	25100	
CI8010-4	80	10	7.144	105	85	13	30	25	6	8	4.5	4	6400	24700	
CI8020-4	80	20	12.7	125	155	20	40	10	6	8	4.5	4	13900	42400	

Note:with sign ★ can produce left helix

Rotary ball nuts

Rolld Ball Screw Series

TYPE: CJ



I: Lead Da: Ball Dia. n: Number of Circuits

Ca: Basic Dynamic Rating Load (Kgf)

Coa: Basic Static Rating Load (Kgf)

Unit: mm

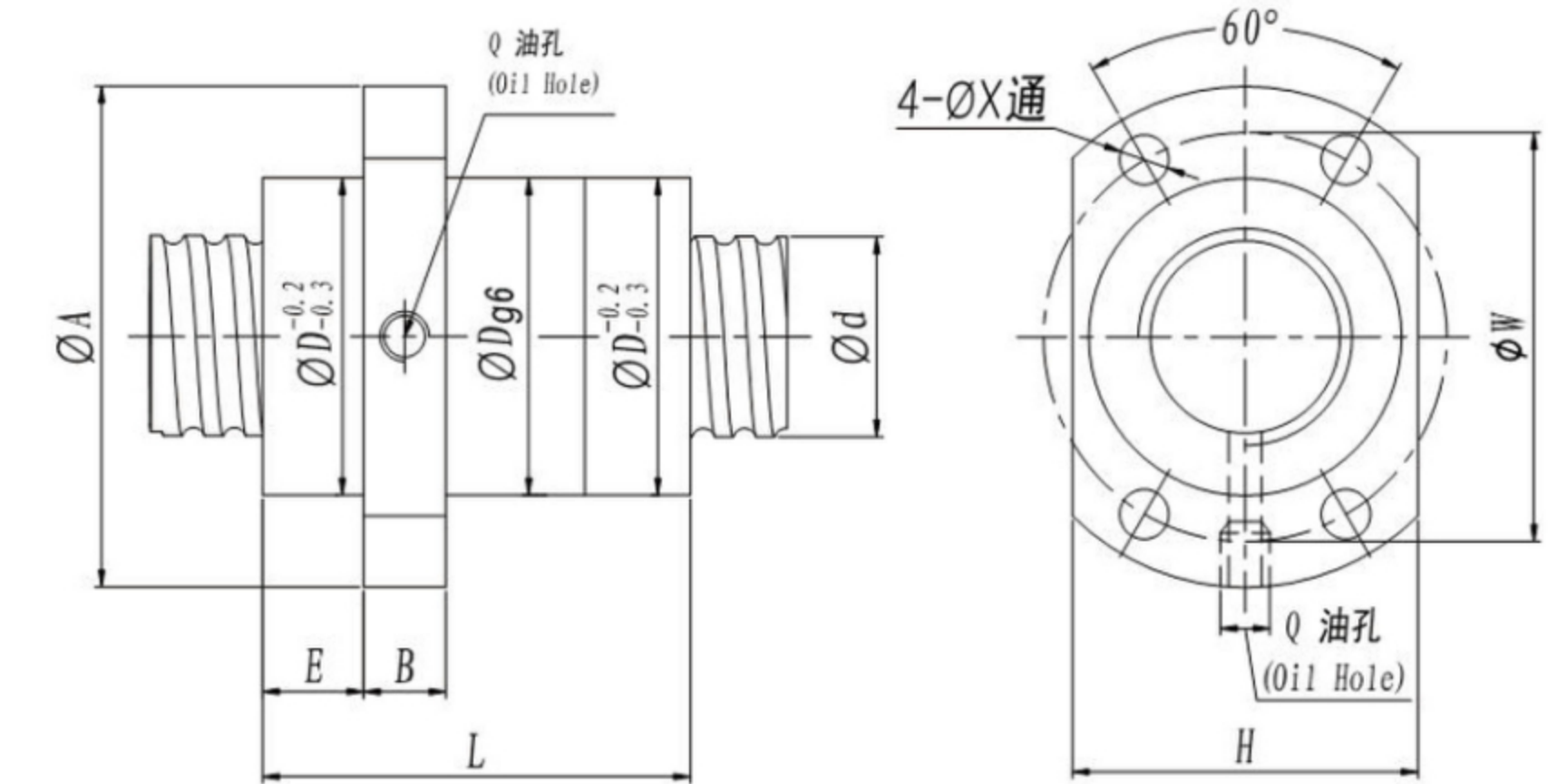
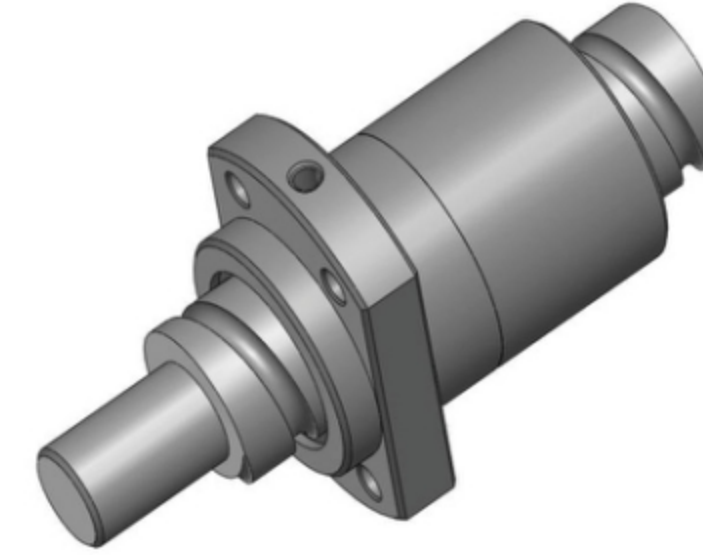
Model No.	Dimensions															bearing symbol	Load Ca	bearing Coa
	Ca	Coa	Da	D	D1	D2	W	X	A	L	E	B	S	Q	n			
★ CJ1605-3	740	1400	3	70	38	30	80	6.6	90	70	5	13	M5	M6X1	3	7006AC/DB	2300	19802
CJ1610-3	700	1450	3	80	45	34	95	6.6	108	68	5	13	M6	M6X1	3	7007AC/DB	3000	2700
CJ2005-3	800	1800	3	80	45	37	95	6.6	108	68	5	15	M4	M6X1	3	7007AC/DB	3000	2700
CJ2010-3	880	1970	3.175	88	45	37	97	6.6	110	71	6	14	M6	M6X1	3	7008AC/DB	3080	2900
CJ2020-2	700	1400	3.5	88	45	37	97	6.6	110	71	6	14	M6	M6X1	2	7008AC/DB	3080	2900
★ CJ2505-3	940	2460	3	93	55	44	105	6.6	120	81	12	15	M6	M6X1	3	7009AC/DB	4180	3900
CJ2510-3	1300	3000	3.969	93	55	44	105	6.6	118	81	12	15	M6	M6X1	3	7009AC/DB	4180	3900
★ CJ3205-3	1280	3600	3.5	106	65	55	121	8.5	140	85	10	20	M6	M6X1	3	7011AC/DB	5700	5850
CJ3210-3	2300	5400	5.556	106	65	55	121	8.5	140	85	10	20	M6	M6X1	3	7011AC/DB	5700	5850
CJ3220-4	1900	5400	3.969	106	65	55	121	8.5	140	90	15	20	M6	M6X1	4	7011AC/DB	5700	5850
CJ3232-2	1000	2750	3.969	106	65	50	121	8.5	140	85	10	20	M6	M6X1	2	7011AC/DB	5700	5850
★ CJ4010-3	3600	8900	7.144	118	75	65	131	8.5	148	90	11	20	M6	M8X1	3	7013AC/DB	6150	6750
CJ4040-2	2160	5300	6.35	118	75	65	131	8.5	148	90	11	20	M6	M8X1	2	7013AC/DB	6150	6750
CJ5005-4	1980	7720	3.5	130	80	70	150	11	170	101	15	20	M8	M8X1	4	7014AC/DB	7420	8300
CJ5010-3	4050	11210	7.144	135	85	70	150	11	170	101	15	20	M8	M8X1	3	7015AC/DB	7580	8850
CJ5020-3	3470	10100	6.35	135	85	70	150	11	170	101	15	20	M8	M8X1	3	7015AC/DB	7580	8850
CJ5040-2	2500	6900	6.5	150	95	80	168	11	190	109	15	20	M8	M8X1	3	7016AC/DB	9000	10500
CJ6310-3	4560	14570	7.144	165	110	95	180	11	200	116	14.5	25	M10	M8X1	3	7018AC/DB	11000	13200
CJ6320-3	6600	18800	9.525	172	110	90	190	14	213	116	14.5	20	M10	M8X1	3	7019AC/DB	11200	13800
CJ8010-3	5000	18500	7.144	190	125	110	210	15	242	140	15	25	M10	M8X1	3	7021AC/DB	13500	16800

Note: with sign ★ can produce left helix

Ball nut

Rolld Ball Screw Series

TYPE: FE



Unit: mm

I: Lead Da: Ball Dia. n: Number of Circuits

Ca: Basic Dynamic Rating Load (Kgf)

Coa: Basic Static Rating Load (Kgf)

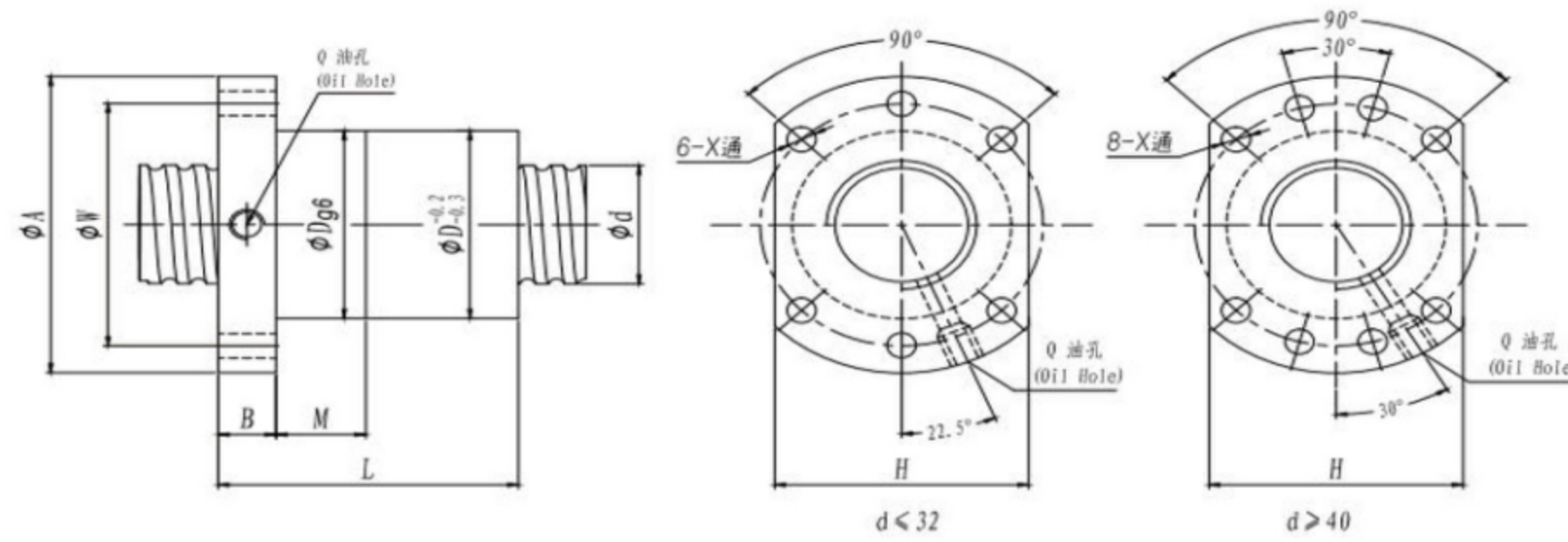
Model No.	Dimensions															Ca	Coa
	d	I	Da	D	A	E	B	L	X	W	H	Q	n				
★ FE1210-2	11.4	10	2	22	44	5	10	30	4.5	32	26	M6X1	2	260	500		
★ FE1616-2	15	16	3	32	53	10.1	10	45	4.5	42	34	M6X1	2	500	1000		
FE2020-2	19.4	20	3.5	36	60	6	10	46	5.5	48	40	M6X1	2	700	1400		
FE2020-4	19.4	20	3.5	36	60	7	10	29	5.5	48	40	M6X1	4	1270	2900		
FE2525-2	24.1	25	3.5	42	74	6	10	53	6.5	60	46	M6X1	2	790	1880		
FE2525-4	24.1	25	3.5	40	72	7.5	10	33	6.5	58	45	M6X1	4	1400	3700		
FE3232-2	31	32	3.969	50	92	8	14	66	9	74	54	M6X1	2	1000	2750		
FE3232-4		32	3.969	50	92	10	12	40	9	74	54	M6X1	4	1900	5500		
FE4040-2	40	40	6.35	68	110	8	15	75	11	86	72	M8X1	2	2160	5300		
FE4040-4	38	40	6	63	105	12	13	50	11	81	68	M8X1	4	3600	10000		
FE5040-2	48	40	6.5	75	128	10	18	81	11	105	79	M8X1	2	2500	6900		
FE5050-4	48	50	6.35	75	128	26	18	87	11	105	79	M8X1	4	4300	13500		

Note: with sign ★ can produce left helix

TYPE: FU

Ball nut

Ground Ball Screw Series



Unit: mm

I: Lead Da: Ball Dia. n: Number of Circuits  
Ca: Basic Dynamic Rating Load (Kgf)  
Coa: Basic Static Rating Load (Kgf)

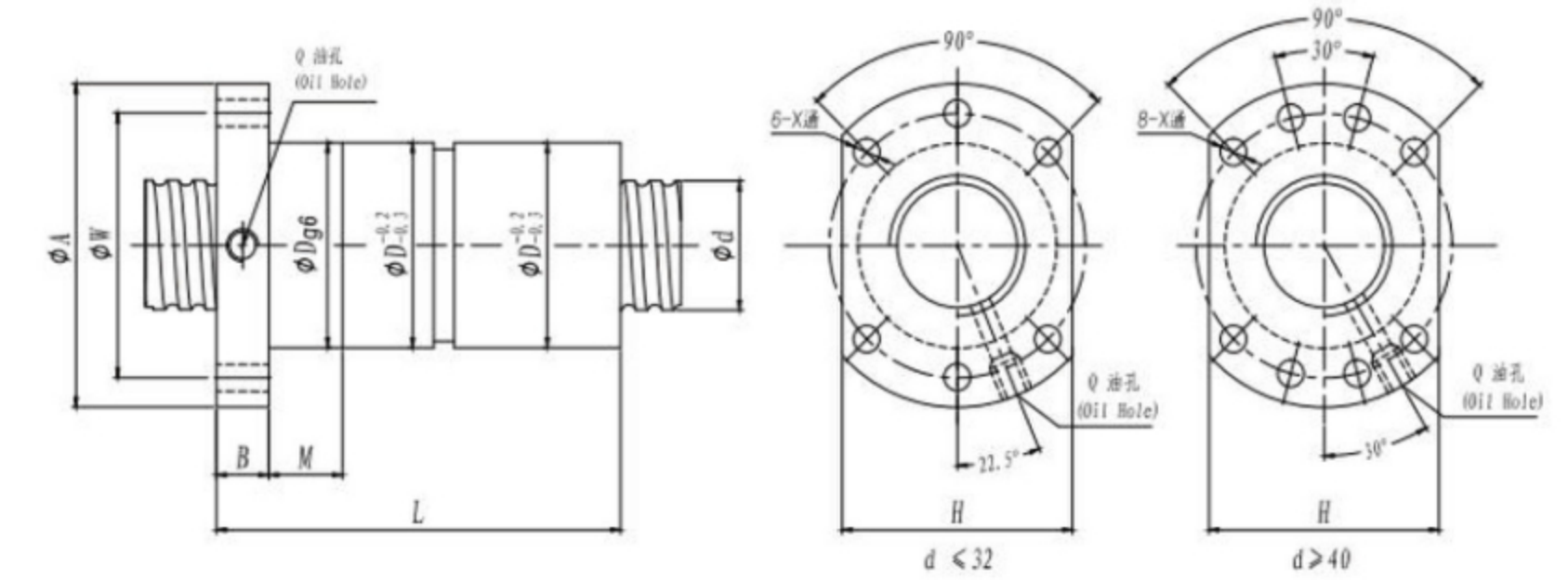
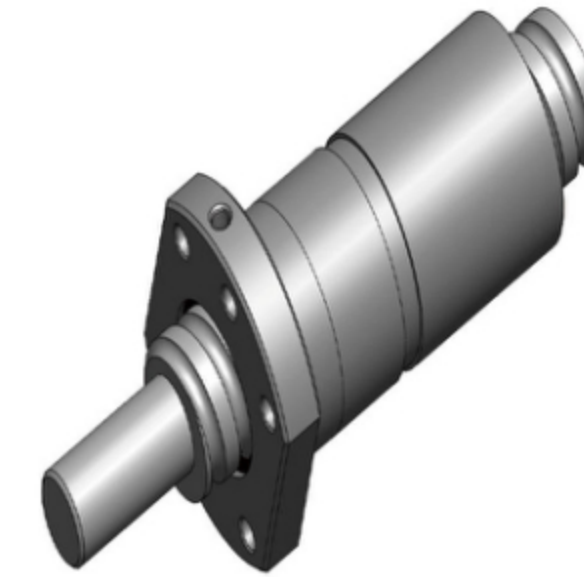
Model No.	Dimensions														
	d	I	Da	D	A	B	M	L	W	X	H	Q	n	Ca	Coa
★ FU1605-4	16	5	3.175	28	48	10	12	50	38	5.5	40	M6X1	4	1000	2000
FU2005-4	20	5	3.175	36	58	10	12	51	47	6.6	44	M6X1	4	1100	2600
FU2010-3	20	10	3.175	36	58	10	12	53	47	6.6	44	M6X1	3	880	1970
★ FU2505-4	25	5	3.175	40	62	10	12	51	51	6.6	48	M6X1	4	1280	3390
FU2510-3	25	10	4.762	42	64	12	15	67	53	6.6	50	M6X1	3	1700	3700
★ FU3205-4	32	5	3.175	50	80	12	15	52	65	9	62	M8X1	4	1400	4400
FU3210-4	31	10	3.969	50	80	12	15	70	65	9	62	M8X1	4	1900	5500
FU3210-3	32	10	6.35	53	83	12	15	70	68	9	65	M8X1	3	2700	6100
FU4010-4	40	10	6.35	63	93	14	20	85	78	9	70	M8X1	4	4000	10600
FU4020-3	38	20	6.35	65	95	14	20	90	80	9	72	M8X1	3	3000	7800
FU5010-4	50	10	6.35	75	110	16	25	93	93	11	85	M8X1	4	4400	13500

Note: with sign ★ can produce left helix

TYPE: FU

Ball nut

Ground Ball Screw Series



Unit: mm

I: Lead Da: Ball Dia. n: Number of Circuits  
Ca: Basic Dynamic Rating Load (Kgf)  
Coa: Basic Static Rating Load (Kgf)

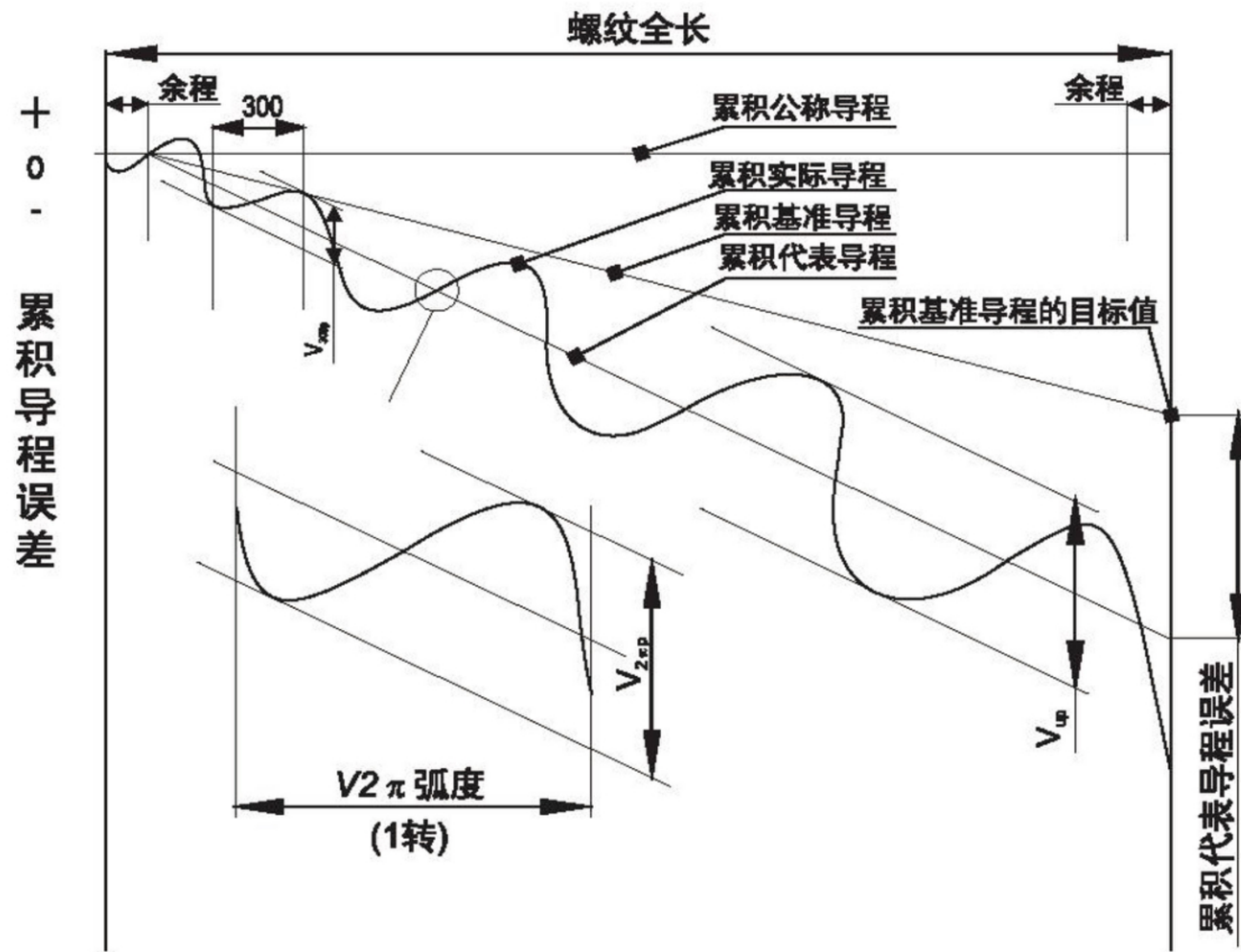
Model No.	Dimensions														
	d	I	Da	D	A	B	M	L	W	X	H	Q	n	Ca	Coa
★ FU1605-4	16	5	3.175	28	48	10	12	100	38	5.5	40	M6X1	4	1000	2000
FU2005-4	20	5	3.175	36	58	10	12	101	47	6.6	44	M6X1	4	1100	2600
FU2010-3	20	10	3.175	36	58	10	12	117	47	6.6	44	M6X1	3	880	1970
★ FU2505-4	25	5	3.175	40	62	10	12	101	51	6.6	48	M6X1	4	1280	3390
FU2510-3	25	10	4.762	42	64	12	15	145	53	6.6	50	M6X1	3	1700	3700
★ FU3205-4	32	5	3.175	50	80	12	15	102	65	9	62	M8X1	4	1400	4400
FU3210-4	31	10	3.969	50	80	12	15	162	65	9	62	M8X1	4	1900	5500
FU3210-3	32	10	6.35	53	83	12	15	162	68	9	65	M8X1	3	2700	6100
FU4010-4	40	10	6.35	63	93	14	20	165	78	9	70	M8X1	4	4000	10600
FU4020-3	38	20	6.35	65	95	14	20	200	80	9	72	M8X1	3	3000	7800
FU5010-4	50	10	6.35	75	110	16	25	171	93	11	85	M8X1	4	4400	13500

Note: with sign ★ can produce left helix

FE4040-4	38	40	6	63	105	12	13	50	11	81	68	M8X1	4	3600	10000
FE5040-2	48	40	6.5	75	128	10	18	81	11	105	79	M8X1	2	2500	6900
FE5050-4	48	50	6.35	75	128	26	18	87	11	105	79	M8X1	4	4300	13500

Note: with sign ★ can produce left helix

3. 導程精度圖示說明 (圖3) Lead Accuracy Chart



4. 軸向間隙 Axial Play

絲杆副可根據客戶要求做到有預緊或有間隙，最大間隙如下表：  
Preload or axial play of ball screw assembly can be made according to customer requirement, the maximum axial play is shown below in the table:

表3 滾珠絲杆副的軸向間隙  
Table3 Axial play of ball screw assembly

絲杆公稱軸外徑 Nominal diameter	軸向間隙 (最大) Axial backlash
6—12	0.05
14—28	0.1
30—32	0.14
36—45	0.17
1900—2—19	0.2

5. 滾珠絲杆安裝部位精度及測試方法

Mounting accuracy and tolerance of ball screws  
安裝部位精度 Mounting accuracy of ball screw

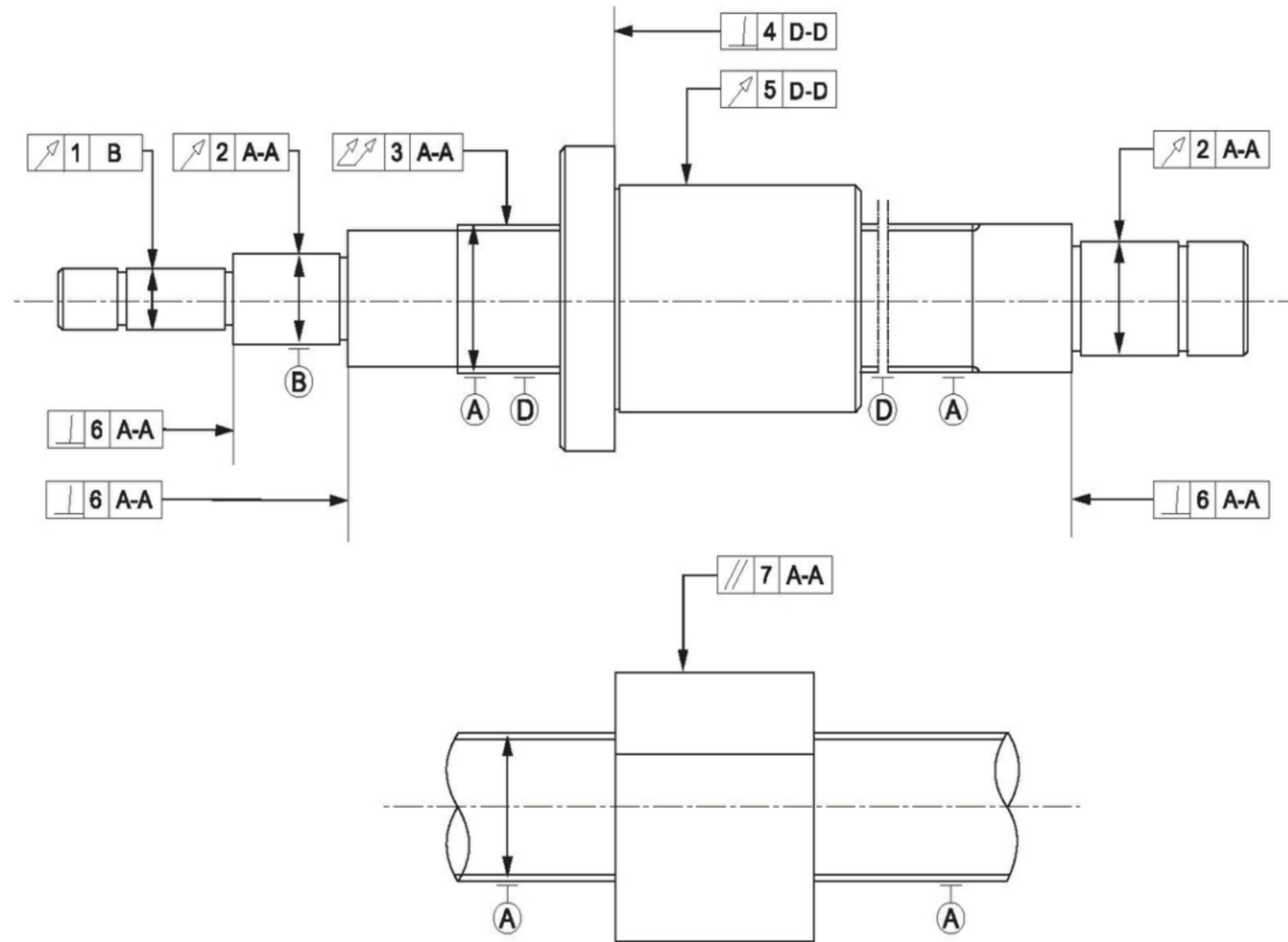


圖4 滾珠絲杆安裝部位的精度

Table 4 ball screw assembly mounting place accuracy

檢測方法及具體要求參照GB/T17587.3-1998

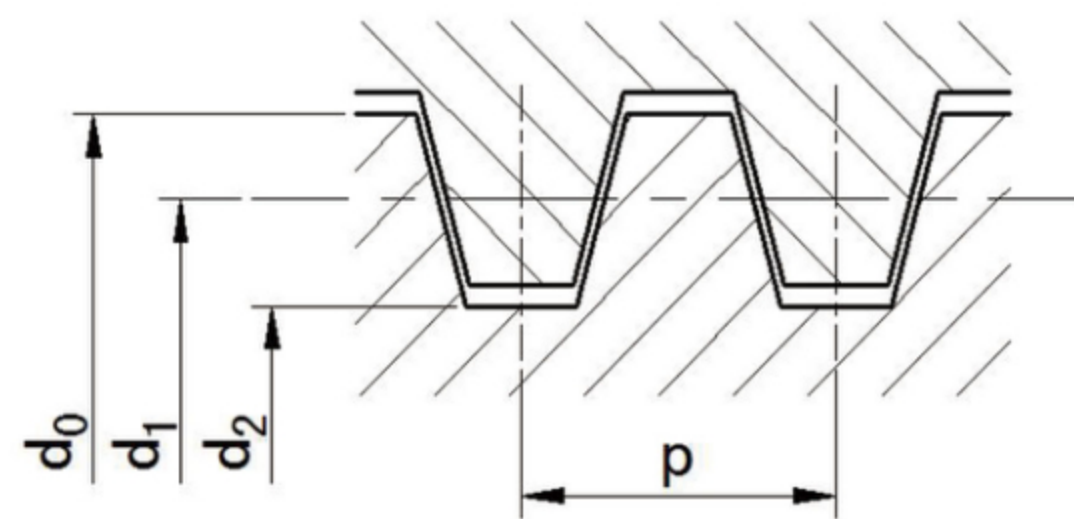
## 梯形絲杆副基本特點 Features of lead screw assembly

### 一、簡述 General introduction

梯形絲杆副有著比滾珠絲杆副更為長久的使用歷史，雖然在許多高精度、高剛性、高速度的直線運動領域已廣泛地被滾珠絲杆副所替代。但由於旋銑及輓軋技術的應用，梯形絲杆副具備更為優越的價格優勢，再加上梯形絲杆副在間隙消除、材料及表面處理技術方面的不斷突破，使得梯形絲杆副在醫療設備、儀器儀錶、工業設備、機械自動化、辦公設備及其他眾多領域仍被廣泛應用。

Lead screw assembly has a longer using history than ball screw assembly. Although replaced by ball screw assembly in many linear motion fields of high precision, high rigidity and high speed, lead screw assembly still has an extraordinary price advantage due to application of rotating and rolling technology. Because of the improvement of backlash elimination and surface treatment, lead screw assembly has been widely used into medical equipment, instrumentation, industrial equipment, mechanical automation, office equipment, and many other industries.

### 絲杆牙形圖 Screw thread



### 二、基本術語及參數

**公稱直徑：**梯形絲杆的公稱直徑及絲杆外徑。我公司提供公稱直徑10~80的梯形絲杆及公稱直徑為8~36的高速梯形絲杆。

**導程l：**螺紋上任意一點沿同一條螺旋線旋轉一周所移動的軸向距離。對於單頭螺紋，螺紋導程等於螺距；對於多頭螺紋，螺紋導程等於螺距與螺紋頭數的乘積。我公司除提供各種標準導程的梯形絲杆外，還大量供應導程10~200的高速絲杆。

**螺距p：**兩相鄰螺牙在中徑線上對應兩點間的軸向距離。螺距等於螺杆導程除以頭數。

**螺旋升角：**螺紋中徑處，螺旋線的切線與垂直於螺紋軸線的平面間夾角。

**導程誤差：**螺杆實際導程與理論導程之間的偏差。螺杆的導程誤差直接影響到絲杆副的定位精度，但片面追求螺杆導程精度勢必造成加工成本的增加。我公司梯形絲杆標準導程精度為0.0007mm/mm，如有需要，我公司還可提供更高導程精度的梯形絲杆或精密滾珠絲杆副。

**螺杆外徑d<sub>0</sub>：**螺杆螺紋頂徑（公稱直徑）。

**螺杆底徑d<sub>2</sub>：**螺杆螺紋底部或根部的直徑。

螺杆中徑d<sub>1</sub>：是指一假想圓柱面的直徑，其母線通過牙型上的溝槽和凸起寬度相等的假想圓柱面的直徑。

**自鎖性：**當梯形絲杆螺旋升角小於摩擦角時，絲杆便能實現自鎖。螺旋升角  $\lambda = \arctan(S/\pi d_2)$ ，摩擦角  $\rho' = \arctan(f/\cos(\alpha/2))$ 。

**螺紋摩擦力矩：**螺母與絲杆之間的摩擦力矩。  $M_t = 0.5d_2F_t \tan(\lambda + \rho')$ 。

**強度校核：**根據載荷情況校核絲杆或螺母強度是否滿足使用。（具體方法可參照《機械設計手冊》梯形螺旋傳動相關章節）

**間隙：**傳動裝置在正反轉運動過程中存在的直線行程偏差。梯形絲杆副不可避免的會在螺杆和螺母之間存在有間隙。我公司有專門設計的螺母結構以減小或消除此種間隙。但在定位精度要求不高或絲杆副垂直受力或單一方向受力時，不需消除間隙，以免額外增加摩擦負載或製造成本。

**使用環境溫度：**POM或其他工程塑膠螺母-40~+60℃，銅螺母-40~+200℃。

### PRP-梯形絲杆副訂貨編碼 Lead Screw Assembly Ordering Code

梯形絲杆副 Lead Screw Assembly	T	A	16 X 20 X 4	N	R	/ 900 X 800	P	S
絲杆名稱 Screw	T...梯形絲杆 Lead screw							
螺母結構 Nut Type	A...螺母法蘭為三角形 N...螺母法蘭為圓形 F...六孔雙切邊 E...四孔雙切邊 T...其他形狀螺母 無...不配螺母							
規格 Size	公稱直徑 Nominal diameter 導程 Lead (mm) 螺紋頭數（無頭數標識時指單頭） Number of thread							
精度 Precision	N...標準精度等級 Standard precision class H...高精度等級 High precision class							
螺旋方向 Direction of lead	R...右旋 Right L...左旋 Left							
絲杆總長 Overall length								
絲杆螺紋長度 Thread length								
螺母材質 Nut material	P...工程塑膠 Engineering plastic Cu...銅合金 Copper alloy							
表面處理 Surface treatment	S...絲杆需表面處理 Surface treatment needed 無...絲杆表面無特殊處理 None							

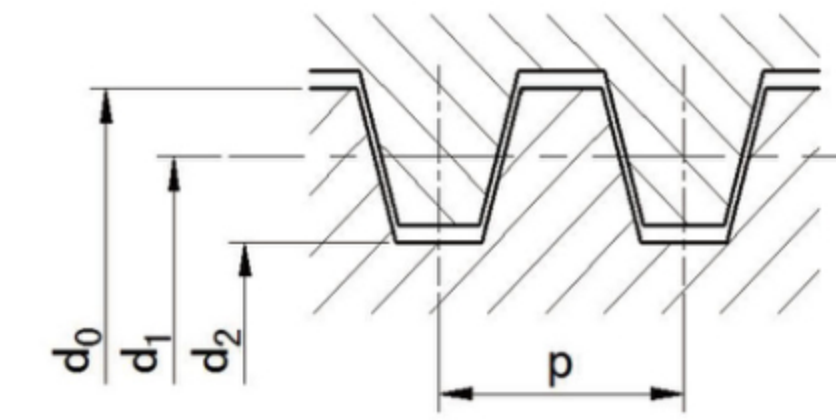
自鎖性：當滑動絲杆螺旋升角小於摩擦角時，絲杆便能實現自鎖。  
 螺旋升角  $\lambda = \arctan(S/\pi d_2)$ ，摩擦角  $\rho' = \arctan(f/\cos(\alpha/2))$ 。  
 螺紋摩擦力矩：螺母與絲杆之間的摩擦力矩。  $M_t = 0.5d_2F_t \tan(\lambda + \rho')$ 。  
 強度校核：根據載荷情況校核絲杆或螺母強度是否滿足使用。  
 （具體方法可參照《機械設計手冊》滑動螺旋傳動相關章節）

間隙：傳動裝置在正反轉運動過程中存在的直線行程偏差。  
 滑動絲杆副不可避免的會在螺杆和螺母之間存在有間隙。我公司有專門設計的螺母結構以減小或消除此種間隙。但在定位精度要求不高或絲杆副垂直受力或單一方向受力時，不需消除間隙，以免額外增加摩擦負載或製造成本。  
 使用環境溫度：POM或其他工程塑膠螺母-40~+60℃，銅螺母-40~+200℃。

PRP-滑動絲杆副訂貨編碼

滑動絲杆	T	A	16	X	20	X	4	N	R	/	900	X	800	P	S
絲杆	T...梯形絲杆														
螺母	E...螺母法蘭為三角形 N...螺母法蘭為圓形 F...六孔雙切邊 E...四孔雙切邊 T...其他形狀螺母 無...不配螺母														
規格	公稱直徑 導程 (mm) 螺紋頭數 (無頭數標識時指單頭)														
精度	N...標準精度等級 H...高精度等級														
螺紋	R...右旋 L...左旋														
絲杆	總長 螺紋長度														
螺母	E...工程塑膠 Cu...銅合金														
表面	S...絲杆需表面處理 無...絲杆表面無特殊處理														

梯形絲杆Lead Screw

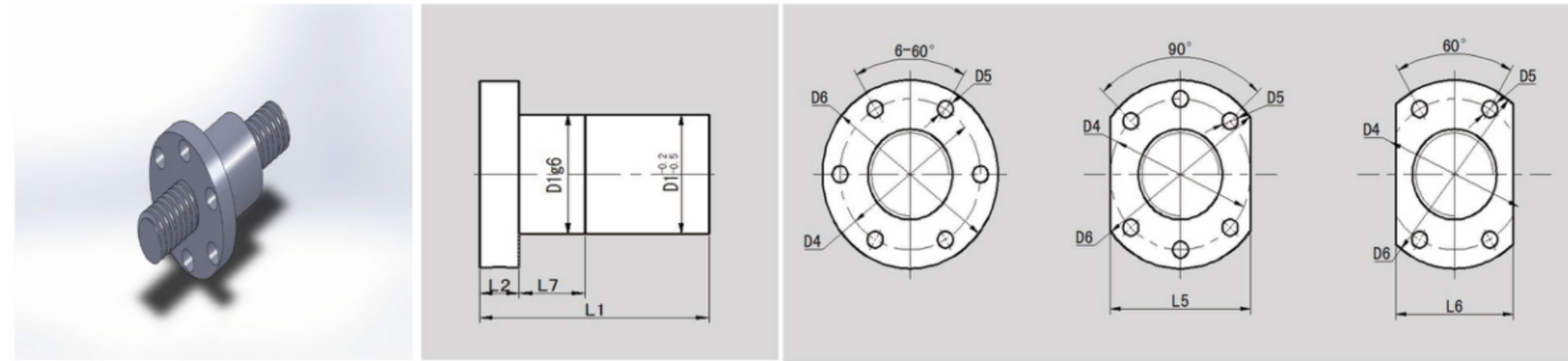


絲杆規格表Screw Size Table

公稱直徑d <sub>0</sub>	導程l	最小中徑d <sub>1min</sub>	最大中徑d <sub>1max</sub>	底徑d <sub>2</sub>	升角λ	效率%	重量
Nominal diameter	Lead	Min diameter	Max diameter	root diameter	lead angle	Efficiency	Weight
mm	mm	mm	mm	mm	(度)		kg/m
10	2	8.739	8.929	6.89	4° 2'	40	0.5
10	3	8.191	8.415	5.84	6° 24'	51	0.446
12	3	10.191	10.415	7.84	5° 11'	46	0.746
14	3	12.191	12.415	9.84	4° 22'	42	1.04
14	4	11.64	11.905	8.8	6° 3'	50	0.888
16	4	13.64	13.905	10.8	5° 11'	46	1.21
18	4	15.64	15.905	12.8	4° 32'	43	1.58
20	4	17.64	17.905	14.8	4° 2'	40	2
22	5	19.114	19.394	15.5	4° 39'	43	2.23
24	5	21.094	21.394	17.5	4° 14'	41	2.72
26	5	23.094	23.394	19.5	3° 52'	39	3.26
28	5	25.094	25.394	21.5	3° 34'	37	3.85
30	6	26.547	26.882	21.9	4° 2'	40	4.5
32	6	28.547	28.882	23.9	3° 46'	38	5.18
36	6	32.547	32.882	27.9	3° 18'	35	6.71
40	7	36.02	36.375	30.5	3° 29'	37	8
44	7	40.002	40.275	34.5	3° 8'	34	9.87
48	8	43.468	43.868	37.8	3° 18'	35	12
50	8	45.468	45.868	39.3	3° 10'	34	13.1
60	9	54.935	55.36	48.15	2° 57'	33	18
70	10	64.425	64.85	57	2° 48'	32	26
80	10	74.425	74.85	67	2° 25'	29	34.7

注：以上梯形絲杆一般為單頭（此時螺距p=導程1），需多頭（此時螺距p=導程1/頭數）絲杆時需特別訂制。表中絲杆頂徑、中徑、底徑僅供參考。  
[www.wyballscrew.com](http://www.wyballscrew.com)

Lead screw nut



d:Nominal diameter

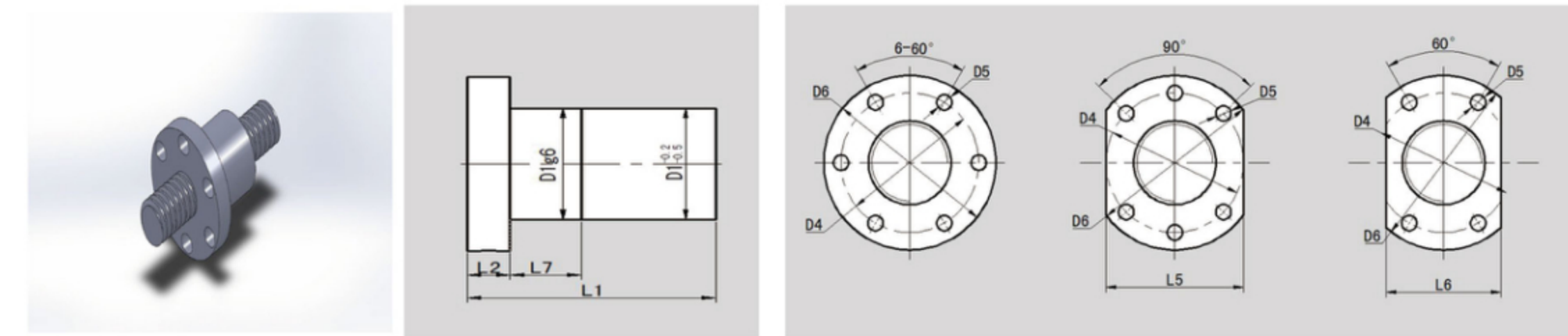
l:Lead

i: Thread number

Size d×l×i	D1	D4	D5	D6	L1	L2	L3	L4	L5	Nut weight kg	Rate load kN	Size d×l×i	D1	D4	D5	D6	L1	L2	L3	L4	L5	Nut weight kg	Rate load kN
10×2×1	22	32	5.5	42	35	8	10	24	33	0.14	1.7	22×24×6	40	51	6.6	62	42	10	10	42	52	0.44	5.6
10×3×1	22	32	5.5	42	35	8	10	24	33	0.14	1.6	24×5×1	40	51	6.6	62	42	10	10	42	52	0.42	5
12×3×1	22	32	5.5	42	35	8	10	24	33	0.13	2	24×10×2	40	51	6.6	62	42	10	10	42	52	0.42	5
12×6×2	22	32	5.5	42	35	8	10	24	33	0.13	2	26×5×1	50	65	9	80	55	12	10	52	66	0.93	7.1
14×3×1	28	38	5.5	48	42	10	10	30	39	0.25	2.8	28×5×1	50	65	9	80	55	12	10	52	66	0.89	7.7
14×4×1	28	38	5.5	48	42	10	10	30	39	0.25	3.4	30×6×1	50	65	9	80	55	12	10	52	66	0.87	8.1
16×2×1	28	38	5.5	48	42	10	10	30	39	0.23	3.4	30×12×2	50	65	9	80	55	12	10	52	66	0.87	8.1
16×4×1	28	38	5.5	48	42	10	10	30	39	0.24	3.2	32×6×1	63	78	9	93	57	14	10	65	79	1.48	9
16×8×2	28	38	5.5	48	42	10	10	30	39	0.24	3.2	36×6×1	63	78	9	93	57	14	10	65	79	1.37	10
18×4×1	36	47	6.6	58	42	10	10	38	48	0.38	3.6	40×7×1	63	78	9	93	57	14	10	65	79	1.28	11
18×8×2	36	47	6.6	58	42	10	10	38	48	0.38	3.6	40×14×2	63	78	9	93	57	14	10	65	79	1.28	11
20×4×1	36	47	6.6	58	42	10	10	38	48	0.36	4.1	44×7×1	75	93	11	110	95	16	16	77	94	2.98	21
20×8×2	36	47	6.6	58	42	10	10	38	48	0.36	4.1	48×8×1	75	93	11	110	95	16	16	77	94	2.79	23
20×16×4	36	47	6.6	58	42	10	10	38	48	0.36	4.1	50×8×1	75	93	11	110	95	16	16	77	94	2.68	24
20×20×5	36	47	6.6	58	42	10	10	38	48	0.36	4.1	60×9×1	90	108	11	125	97	18	16	92	##	3.82	30
22×5×1	40	51	6.6	62	42	10	10	42	52	0.44	4.5	70×10×1	105	125	14	145	101	22	16	107	##	5.46	36
22×10×2	40	51	6.6	62	42	10	10	42	52	0.44	4.5	80×10×1	105	125	14	145	101	22	16	107	##	3.41	42

Remark: above nut material are brass

Lead screw nut



d:Nominal diameter

l:Lead

i: Thread number

Size d×l×i	D1	D4	D5	D6	L5	L6	L7	L2	L1	Nut weight KN	規格 Size d×l×i	D1	D4	D5	D6	L5	L6	L7	L2	L1	Nut weight KN
8×10×2	23.5	32	4.5	42	33	25	5	6	25/18	0.8	20×12×4	35.5	47	6.5	59	48	37	10	12	46/32	1.2
10×12×3	23.5	32	4.5	42	33	25	5	6	25/18	1.2	20×45×5	35.5	47	6.5	59	48	37	10	12	46/32	2.5
12×15×3	23.5	32	4.5	42	33	25	5	6	25/18	1.4	21×27×3	35.5	47	6.5	59	48	37	10	12	46/32	2.2
12×25×5	23.5	32	4.5	42	33	25	5	6	25/18	1.5	21×35×5	35.5	47	6.5	59	48	37	10	12	46/32	2.05
10×50×5	25.5	36	5.5	46	37	27	8	10	42/30	1.25	22×20×4	35.5	47	6.5	59	48	37	10	12	46/32	1.4
11×60×5	25.5	36	5.5	46	37	27	8	10	42/30	1.5	22×50×5	35.5	47	6.5	59	48	37	10	12	46/32	2.75
13×20×5	25.5	36	5.5	46	37	27	8	10	42/30	1.3	23×30×3	35.5	47	6.5	59	48	37	10	12	46/32	2.4
13×70×5	25.5	36	5.5	46	37	27	8	10	42/30	1.75	24×40×5	35.5	47	6.5	59	48	37	10	12	46/32	2.3
14×8×4	25.5	36	5.5	46	37	27	8	10	42/30	0.9	24×55×5	35.5	47	6.5	59	48	37	10	12	46/32	3
14×18×3	25.5	36	5.5	46	37	27	8	10	42/30	1.6	26×16×4	41.5	53	6.5	64	54	43	10	12	50/35	1.4
14×30×5	25.5	36	5.5	46	37	27	8	10	42/30	1.75	26×24×4	41.5	53	6.5	64	54	43	10	12	50/35	2
15×20×4	29.5	39	5.5	49	40	31	8	10	42/30	1.6	26×60×10	41.5	53	6.5	64	54	43	10	12	50/35	3.25
15×80×5	29.5	39	5.5	49	40	31	8	10	42/30	2	27×45×5	41.5	53	6.5	64	54	43	10	12	50/35	2.55
16×21×3	29.5	39	5.5	49	40	31	8	10	42/30	1.8	28×65×5	41.5	53	6.5	64	54	43	10	12	50/35	3.5
16×25×5	29.5	39	5.5	49	40	31	8	10	42/30	1.55	30×28×4	41.5	53	6.5	64	54	43	10	12	50/35	2
16×35×5	29.5	39	5.5	49	40	31	8	10	42/30	2	30×50×5	41.5	53	6.5	64	54	43	10	12	50/35	2.8
16×90×5	29.5	39	5.5	49	40	31	8	10	42/30	2.25	30×70×5	41.5	53	6.5	64	54	43	10	12	50/35	3.75
18×16×2	29.5	39	5.5	49	40	31	8	10	42/30	1.1	32×20×4	49.5	65	9	80	66	51	10	14	70/50	2
18×24×3	29.5	39	5.5	49	40	31	8	10	42/30	2	32×75×5	49.5	65	9	80	66	51	10	14	70/50	4
18×40×5	29.5	39	5.5	49	40	31	8	10	42/30	2.25	34×32×4	49.5	65	9	80	66	51	10	14	70/50	2.3
18×60×3	29.5	39	5.5	49	40	31	8	10	42/30	2.5	34×80×5	49.5	65	9	80	66	51	10	14	70/50	4.25
19×30×10	35.5	47	6.5	59	48	37	10	12	46/32	1.8	36×200×5	49.5	65	9	80	66	51	10	14	70/50	4.5