



ABOUT LIMON BALL SCREW

Ball screw are ideal for converting rotary motion into linear motion or converting linear motion into rotary motion. Ball screw is the most commonly used transmission component in tool machinery and precision machinery. Its main function is to convert rotary motion into linear motion or to convert torque into axial repetitive force, which is high precision, reversibility and high efficiency. Due to the small frictional resistance, ball screw are widely used in a variety of industrial equipment and precision instruments. The ball screw is composed of screw, nut, steel balls, preloading piece, deflector and dust-proof end seals.

1. General Information

1-1 Features of LIMON Ball Screw

(1) High Reliability

LIMON applies stringent quality control standards on every production process. With proper lubrication and use, trouble-free operation for an extended period of time is possible.

(2) Smooth Operation

The high efficiency of ball screw is vastly superior than conventional screws as shown in Fig 3.1.1. It takes less than 30% torque to make the linear motion into rotary motion.

(3) High Rigidity and Preload

The ball screw of LIMON is designed with Gothic arch groove, which makes the screw easy to rotate even using minimum axial play. To make the rigidity more appropriate to using condition, you can change the preload between one or two screw nuts to reduce axial play.



Fig 3.1.1 Groove Shape of LIMON Precision Ball Screw

(4) Circulation Method

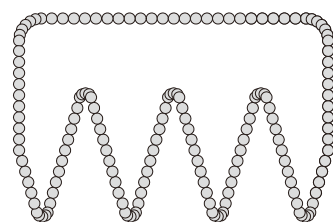


Fig 3.1.2 External Ball Circulation Nuts

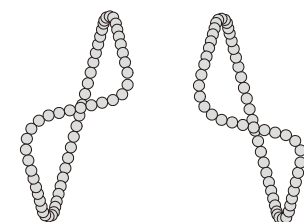
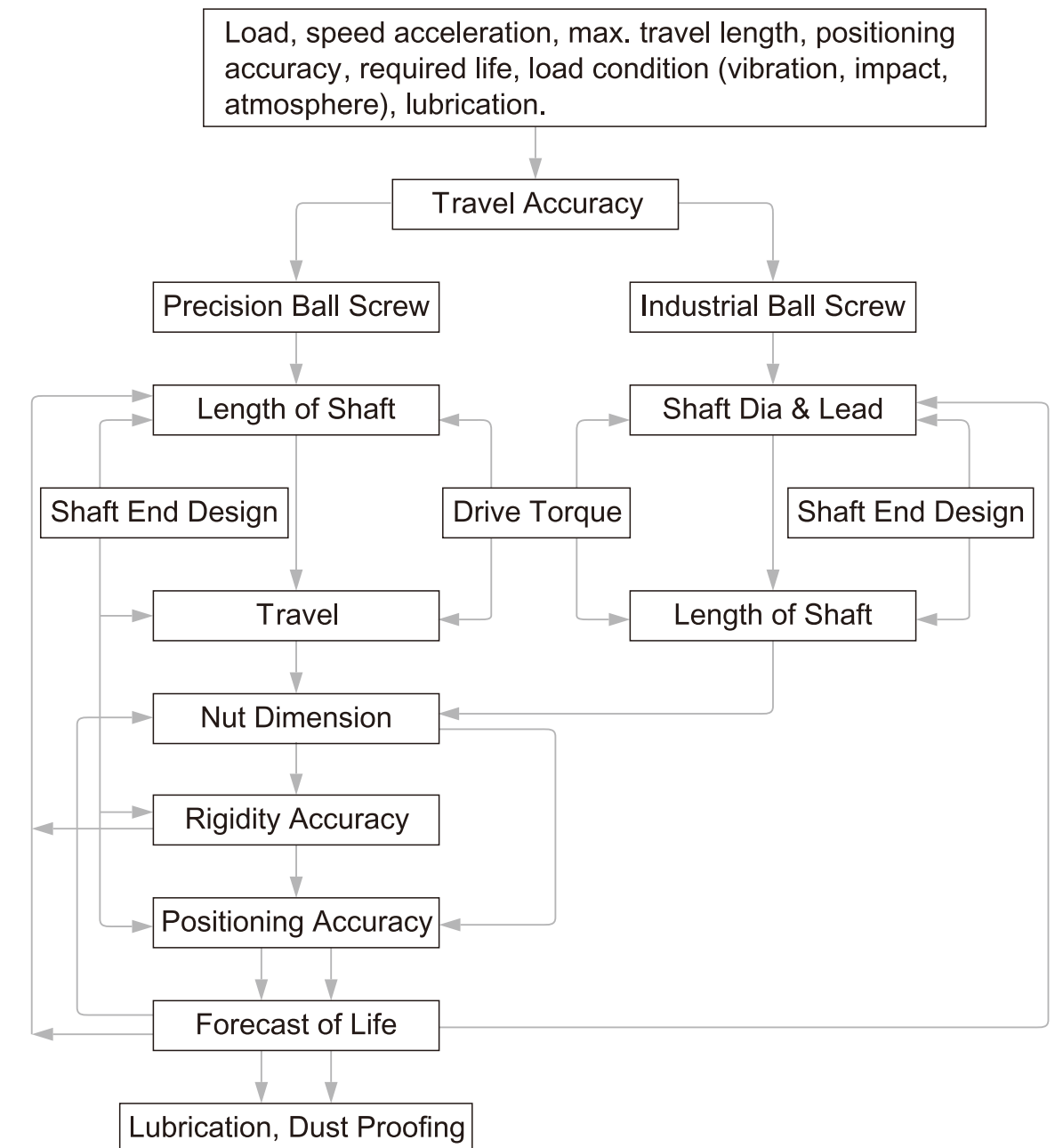


Fig 3.1.3 Internal Ball Circulation Nuts

(5) High Durability

1-2 Ball Screw Selection Procedure



Ball Screw



1-3 Selection of Nut

(1) Series

When making selection of series, please take demanded accuracy, intended delivery time,dimensions(the outside diameter of screw, ratio of lead/ the outside diameter of screw) preloadand etc into consideration.

(2) Circulation type

Selection of circulation type,please consider the efficiency of screw nut's mounting space. The advantage of each circulation type will be specified in figure 3.4.1.

(3) Number of loop circuits

Performance and service life should be considered when selecting number of loop circuits.

(4) Shape of flanges

Please make selection based on the available space for the installation of nuts.

(5) Oil hole

Oil holes are provided for the precision ball screws, please use them during machine assembling and regular furnishing.

1-4 Nut Design

1-4-1 Circulation type

Circulation type	Model		Characteristic
	Single Nut	Double Nuts	
Internal circulation type	SFK SFU SFI SCI	DFU DFI	- Delicated diameter of screw takes only little space. - Applicable to those with smaller lead / the outside diameter of the screw
External circulation type	SFV XFV	DFV	- Economy - Applicable to larger lead and diameter. - Applicable for high loading purpose.
End-caps circulation type	SFS SFY	DFS	Suitable for high speed positioning

1-4-2 Nut Types

U, I - Type Nut

In these types of nuts, by using the internal circulator which makes the ball pass over the crest diagonally, the ball will return to the starting point. Normally, one roll of balls will fit with one circulation. As figure 3.4.1 specified, these types of nuts need at least one side which is completely tooth passing, which is applicable for smaller shaft diameter.

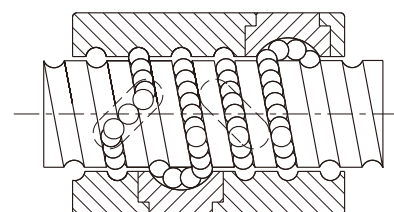


Fig 3.4.1 U, I - Type Nut

K - Type Nut

It applies the similar circulation as that of I-type, but circulation takes place in key slots of identical angle for different circulation. (see Fig 3.4.2)

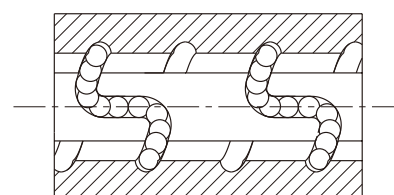


Fig 3.4.2 K - Type Nut



Ball Screw

V - Type Nut

Using outer circulation, the special design of circulator allows the balls to roll along the thread direction. By so, the smoothness of circulation is increased and meanwhile decrease the mutual collision. It's a suitable type for high speed and heavy loading.

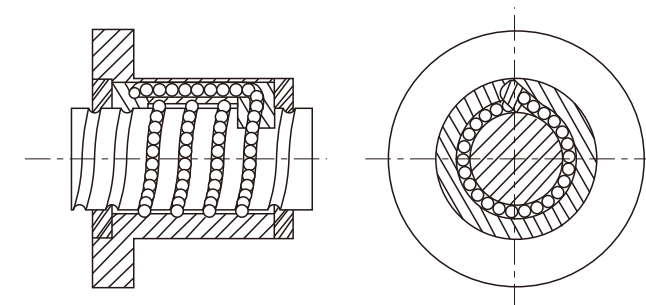


Fig 3.4.3 V - Type Nut

S, Y, E ,H- Type Nut

By using thin and flexible dust cap on both side, the performance of wiping had been enhanced.Moreover, the enhancement of circulation structure increase both the function of high rigidity and speed.

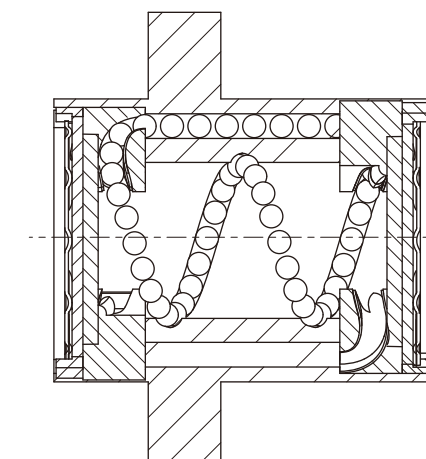


Fig 3.4.4 S,Y, E,H - type nut



1-5 Accuracy

1-5-1 Lead/Travel Accuracy

Mean Travel Deviation ($\pm E$) and Travel Variation (e) (JIS B 1192)
Variation per 300mm (e_{300}) and Wobble Error ($e_{2\pi}$) (JIS B 1192)

Table 1-5-1 Unit : μm

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					
Travel Length (mm)	Over	Ind.	$\pm E$	e	$\pm E$	e	$\pm E$	e	$\pm E$	e	$\pm E$	e	e	e	
		100	3	3	3.5	5	5	7	8	8	18	18	$\pm 50/300\text{mm}$	$\pm 210/300\text{mm}$	
	100	200	3.5	3	4.5	5	7	7	10	8	20	18			
	200	315	4	3.5	6	5	8	7	12	8	23	18			
	315	400	5	3.5	7	5	9	7	13	10	25	20			
	400	500	6	4	8	5	10	7	15	10	27	20			
	500	630	6	4	9	6	11	8	16	12	30	23			
	630	800	7	5	10	7	13	9	18	13	35	25			
	800	1000	8	6	11	8	15	10	21	15	40	27			
	1000	1250	9	6	13	9	18	11	24	16	46	30			
	1250	1600	1	7	15	10	21	13	29	18	54	35			
	1600	2000			18	11	25	15	35	21	65	40			
	2000	2500			22	13	30	18	41	24	77	46			
	2500	3150			26	15	36	21	50	29	93	54			
	3150	4000			30	18	44	25	60	35	115	65			
	4000	5000					52	30	72	41	140	77			
	5000	6300					65	36	90	50	170	93			
	6300	8000							110	60	210	115			
	8000	10000									260	140			
	10000	12500									320	170			

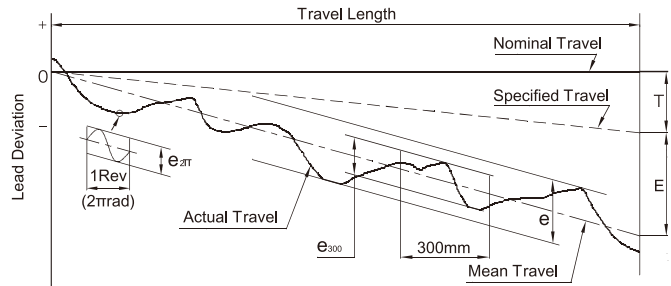


Fig 1.5.1 Diagram of Lead Accuracy

1-5-2 Axial Play

Axial play of LIMON precision ball screw is shown as follows

Table 1-5-2 Classification of Axial Play

Grade	P0	P1	P2	P3	P4
Axial Play	Yes	No	No	No	No
Preload	No	No	Light	Medium	Heavy



Excessive preload increases the friction torque and generates heat which will reduce the life expectancy. However, insufficient preload will reduce stiffness and increase the possibility of lost motion. LIMON recommends that the preload applied on CNC machine tools should not heavier than 8% of the dynamic load; 5% for industrial automation X-Y table.

Table 1.5.3 The reference spring force of (P2)

Model No.	Spring Force (Kg) Single Nut	Spring Force(Kg) Double Nut
1605	0.1~0.3	0.3~0.6
2005	0.1~0.3	0.3~0.6
2505	0.2~0.5	0.3~0.6
3205	0.2~0.5	0.5~0.8
4005	0.2~0.5	0.5~0.8
2510	0.2~0.5	0.5~0.8
3210	0.3~0.6	0.5~0.8
4010	0.3~0.6	0.5~0.8
5010	0.3~0.6	0.8~1.2
6310	0.6~1.0	0.8~1.2
8010	0.6~1.0	0.8~1.2

Table 1.5.4 Axial Play (P0) Clearance in the Axial Direction of Rolled and Ground Ball Screw Unit : mm

Nominal Diameter	Rolled Ball Screw Clearance in the Axial Direction (max.)	Ground Ball Screw Clearance in the Axial Direction (max.)
Ø04~Ø14 miniature ball screw	0.05	0.015
Ø15~Ø40 middle size of ball screw	0.08	0.025
Ø50~Ø100 big size of ball screw	0.12	0.05

1-5-3 Definition of Mounting Accuracy and Tolerance on Ball Screw

- The main items of the mounting accuracy of ball screw are listed in below.
- (1) Periphery run-out of the supporting part of the screw shaft to the screw groove.
 - (2) Concentricity of a mounting portion of the shaft to the adjacent ground portion of the screw shaft.
 - (3) Perpendicularity of the shoulders to the adjacent ground portion of the screw shaft.
 - (4) Perpendicularity of the nut flange to the axis of the screw shaft.
 - (5) Concentricity of the ball nut diameter to the screw groove.
 - (6) Parallelism of the mounting surface of a ball nut to the screw groove.
 - (7) Total run-out of the screw shaft to the axis of the screw shaft.

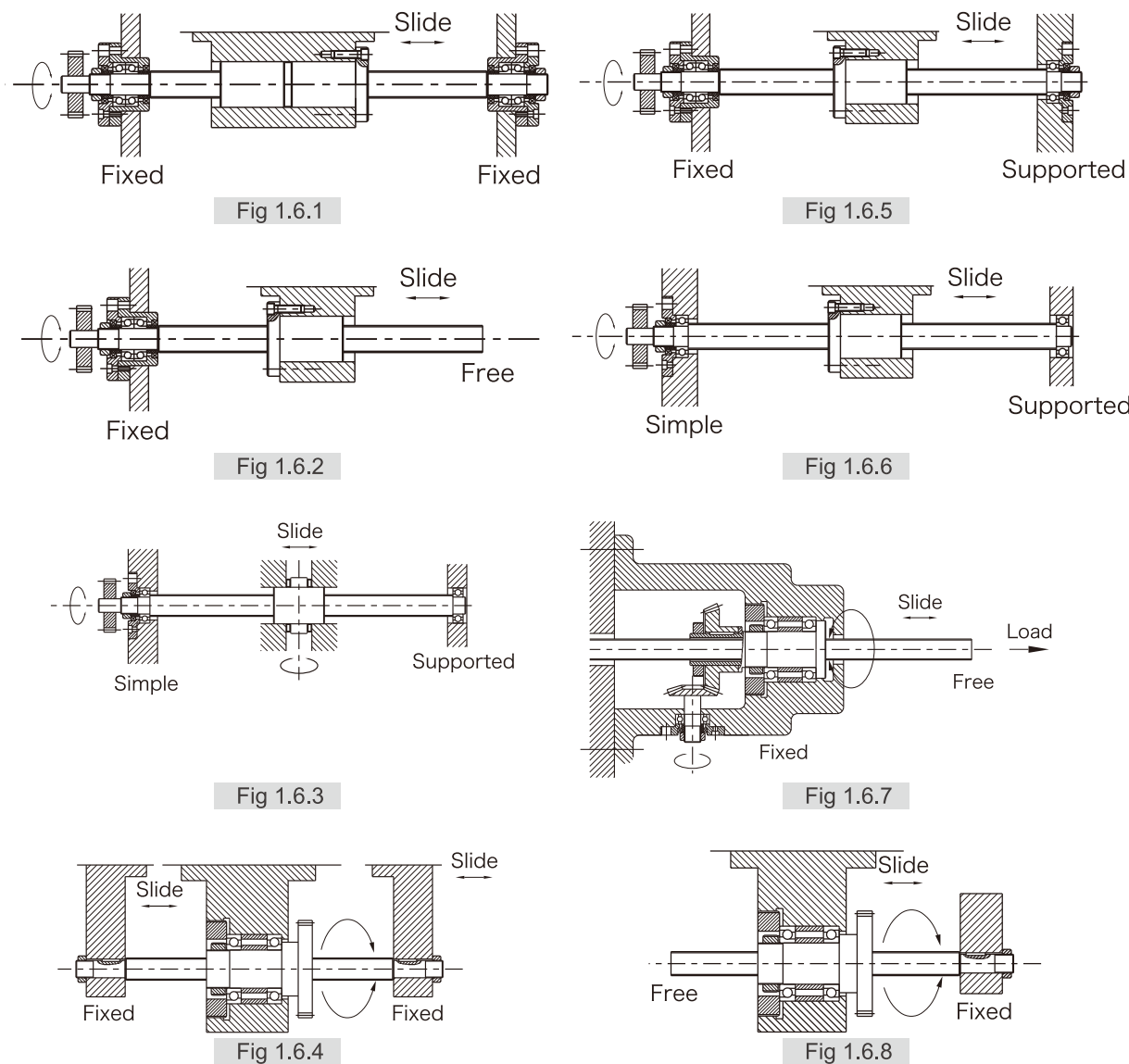


1-6 Screw Shaft Design

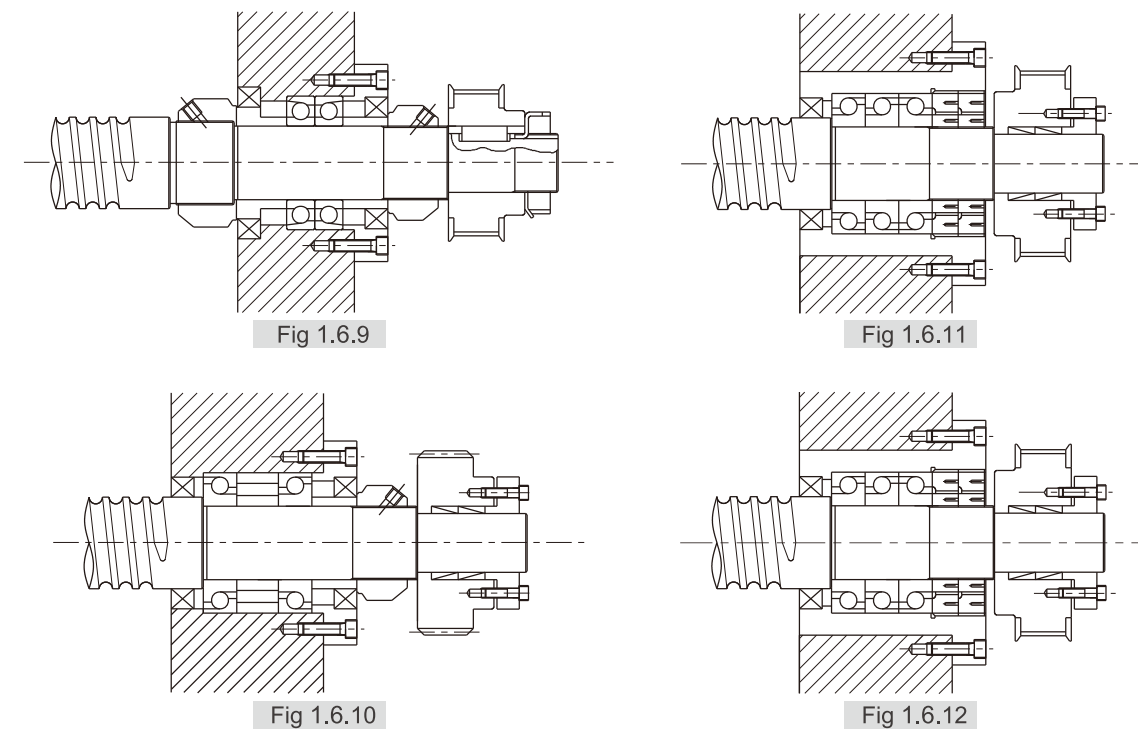
1-6-1 Mounting Methods

It's important to consider mounting method (Fig 3.6.1~3.6.8) during your selection of ball screw specification. If you have special requirement related with mounting method, please consult LIMON.

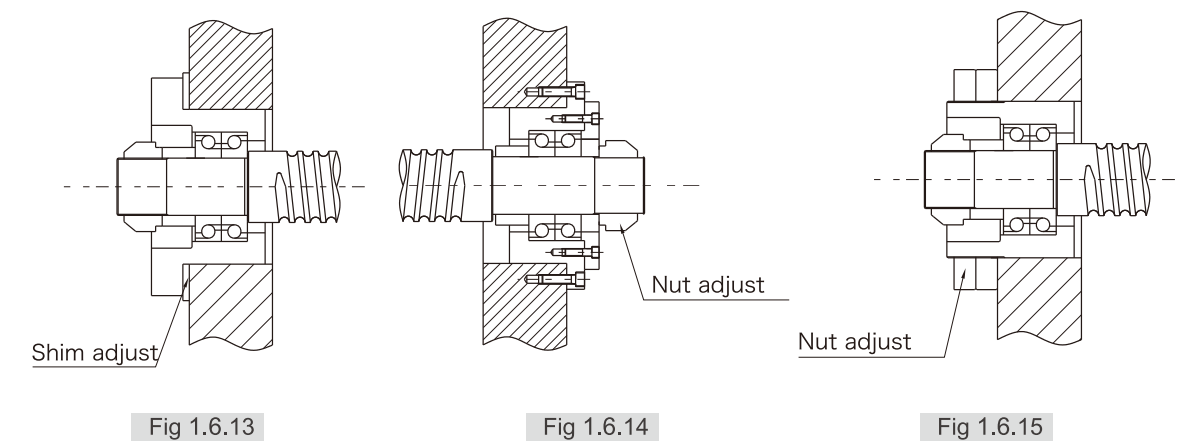
(Mounting Screw and Nut)



(The mounting method for common types of machinery.)



(The mounting method for bearing in a given pretension.)





1-7 Positioning Accuracy

Among the factors that cause feed accuracy errors, lead accuracy and feed system rigidity are the key points for review, while other factors such as heat deformation due to temperature rise as well as assembly accuracy for the guiding surface, etc. should also be considered.

1-7-1 Accuracy Selection

Table 1.7.1 shows the recommended application ranges for various ball screws accuracy classes based on different.

Table 1-7-1 Examples of ball screws accuracy classes for different uses

Application			Accuracy Grade						
			C0	C1	C2	C3	C5	C7	C10
NC Machine Tools	Lathe	X	○	○	○	○	○	○	
		Y				○	○	○	
	Milling Machine Boring Machine	XY		○	○	○	○	○	
		Z			○	○	○	○	
	Machine Center	XY		○	○	○	○		
		Z			○	○	○		
	Jig Borer	Y	○	○					
		Z	○	○					
	Drilling Machine	XY				○	○	○	
		Z					○	○	
	Grinding Machine	X	○	○	○	○	○	○	
		Z		○	○	○	○	○	
	Electro-discharge Machine (EDM)	XY		○	○	○	○	○	
		(Z)			○	○	○	○	
	Wire Cut (EDM)	Y		○	○	○			
		UV		○	○	○	○	○	
	Punching Press	XY				○	○	○	
Laser Cutting Machine	XY				○	○			
	Z				○	○			
Wood Working Machine						○	○	○	○
Machines of General use and special Use					○	○	○	○	○
Semiconductor Machines	Explosure Equipments		○	○					
	Chemical Treatment					○	○	○	○
	Wire Bonder			○	○	○			
	Prober		○	○	○	○			
	Inserter				○	○	○	○	
Industrial Robots	PCB Driller			○	○	○	○	○	
	Orthogonal Type	As'sy		○	○	○	○	○	
		Others					○	○	○
	Muliti-joints Type	As'sy			○	○	○		
		Others				○	○	○	
SCARA Type					○	○	○	○	
Machines for Steel molding							○	○	○
Injection Molding Machines							○	○	○
Three-Dimensional Measuring Machines			○	○	○				
Business Machines							○	○	○
Pattern Image Machines			○	○					
Nuclear	Rod Control					○	○	○	
	Mechnaical Snubber							○	○
Aircrafts						○	○		



1-8 Cautions About Use of Ball Screws

Ball screw assemblies are delicate components. Therefore,extra care must be taken to prevent the ball track from damages that caused by edged component or tools. Meanwhile, to prevent steel ball fall out of the nut through the disassembly of screw and nut or over stroke, please be careful while operating. If the steel ball falls out, please contact with LIMON for further instruction.Do not attempt to reassemble, which might cause permanent damage to the ball screw.)

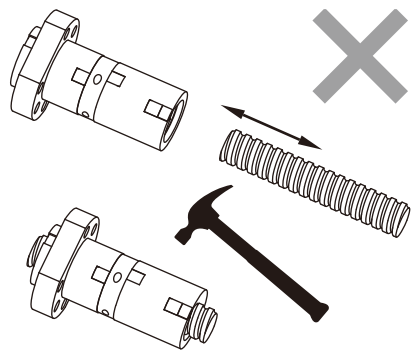


Fig 3.8.1 Error installation

If disassemble is required, please use a transfer pipe which has minor diameter than the screw diameter to transfer the nut to prevent falling out of the steel balls.

1-9 Lubrication

Adequate lubrication must be provided when ball screw is used, insufficient lubrication will result in collision of metal, which leads to increase of friction and detrition, thus cause failure or shortening the service life.

Lubricants applied to ball screws can be divided into 2 types, namely lubricating oil and consistent grease. In general speaking, in respect of maintenance, consistent grease will lead to increase of dynamic friction torque linearly along with increase of rotating speed, hence oil lubrication is deemed the better way when speed exceeds 3-5 m/min; however, don't forget the fact that there have been examples that using grease has been capable of achieving speed of 10 m/min, with respect to the equipment.

In terms of equipments, there are some cheaper lubricant that can be used. In general, to fully utilize the function of ball screw, lubricating oil of 5m/minute is the best option to choose.In figure3.9.1, we provide the standard of lubricating oil inspection and supplement interval. Before replenishing, please clean up the previous grease to continue.

Table 1-9-1 Inspection of lubrication and interval of reill

Method	Interval	Check Item	Replenish or Change Interval
Auto. Periodial oil supply	Weekly	Oil level, contamination	Add at each check, as required depending on tank level
Grease	Initially 2~3 months	Contamination on entry of chip	replenish yearly or according to the inspection result.
Oil bath	Daily	Oil level	To be determined according to consumption



1-10 Dust Proof / Prevention

Any foreign matter or water, if entering to the ball screw, may increase friction and cause damage. For example, the entry of chips or cutting oil may be expected with machine tools according to the work environment. Where entry of foreign matter is anticipated, use a bellows or telescopic cover as shown in Fig 1.10.1, to cover the screw shaft completely.

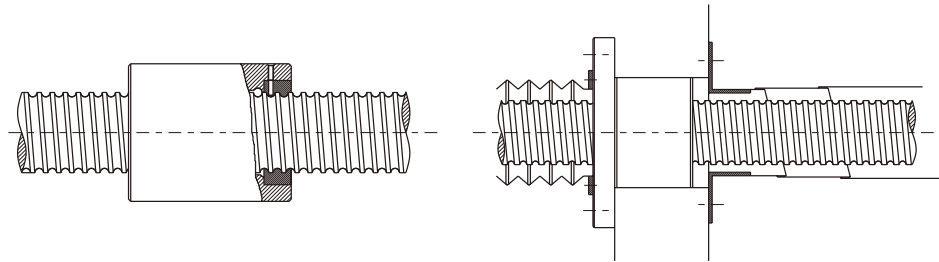


Fig 1.10.1 Dust proof Method by Telescopic Cover and Bellows

1-11 Offset Load

When offset load phenomenon occurs, screw life and noise tend to be directly affected, which would usually be accompanied with hand feel of rough running. As the smoothness of single shaft and assembled ball screw might be different. In addition to single shaft's accuracy, the offset phenomenon was mostly occurred by failed assemble accuracy which is shown in Fig 1.11.1

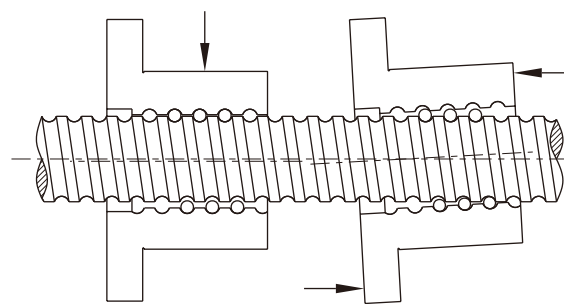


Fig 1.11.1 Offset Load



1-12 Assembling the Ball Screws

If rolled ball nut is shipped un-assembled please follow the procedure as below.

Table 1-12-1 Procedure

(1) Remove the band.	(2) Attached the mandrel towards machine ends.
(3) Rotate the ball nut into the screw along the thread.	(4) Ensure that the ball nut is fully inserted before remove the mandrel.



1-13 Nominal Model Code of Limon Ball Screw

SFU R 025 05 T4 D G C5 - 600 - P1 - B2 + N3 N3

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬

① Nominal Model	② Threading Direction	⑤ Number of Turns (Turn-Row)	⑦ Product Code
S : Single nut	R : Right	Turn : T : 1	G : Ground
S D : Double nut	L : Left	A : 1.5 (or 1.7/1.8)	F : Rolled
		B : 2.5/2.8	
F : With flange	③ Nominal Diameter	C : 3.5	⑧ Accuracy Grade
C : Without flange	Unit : mm	D : 4.8	C0, C1, C2, C3, C5, C7, C10
I : type nut		ex : (2.5× 2 = B2)	
U : type nut			
H : type nut	④ Lead	⑥ Flange Type	⑨ Overall Length of Shaft
S : type nut	Unit : mm	N : Not cutting	Unit : mm
E : type nut		S : Single cutting	
Y : type nut		D : Double cutting	
V : type nut			
K : type nut			
DC : type nut			

⑩ Axial Clearance and Preload Value	⑪ Number of Nut
P0, P1, P2, P3, P4	(Leave blank if only one nut is required) Ex : Install two nuts on a shaft B2

⑫ Nut Surface Treatment	⑬ Shaft Surface Treatment
S : Standard	S : Standard
B1 : Black Oxidation	B1 : Black Oxidation
N1 : Hard Chrome Plating	N1 : Hard Chrome Plating
P : Phosphating	P : Phosphating
N3 : Nickel Plating	N3 : Nickel Plating
N4 : Raydent	N4 : Raydent
N5 : Chrome Plating	N5 : Chrome Plating

※ No symbol required when plating is not needed.
※ An inspection report is provided for ground ball screws with an accuracy higher than C5.

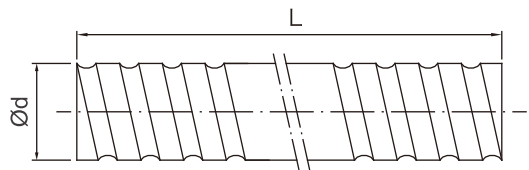


Fig 1.13.1 Screw Shaft Nominial Diameter

Table 1-13-1 Ground Ball Screw Specifications Ø4~32

Model No.			Accuracy Grade	Threading Direction R : Right L : Left	Number of Grooves	Standard Code of Shaft	Type of Nut
Ød	I	Da					
4	1	0.8	C7, C5, C3	R	1	SCR00401	K
6	1	0.8	C7, C5, C3	R	1	SCR00601	K
8	1	0.8	C7, C5, C3	R/L	1	SCR00801	K
	2	1.2	C7, C5, C3	R/L	1	SCR00802	K
	2.5	1.2	C7, C5, C3	R	1	SCR0082.5	K
10	2	1.2	C7, C5, C3	R/L	1	SCR01002	K
	4	2	C7, C5, C3	R	1	SCR01004	K
	2	1.2	C7, C5, C3	R/L	1	SCR01202	K
12	4	2.5	C7, C5, C3	R	1	SCR01204	U
	5	2.5	C7, C5, C3	R	1	SCR01205-A	V, U, H
	10	2.5	C7, C5, C3	R	2	SCR01210-B	V, S
14	2	1.2	C7, C5, C3	R/L	1	SCR01402	K
	2	1.2	C7, C5, C3	R/L	1	SCR01602	K
	4	2.381	C7, C5, C3	R	1	SCR01604(N)	V, I, U
16	5	3.175	C7, C5, C3	R/L	1	SCR01605	V, I, U, S
	10	3.175	C7, C5, C3	R/L	2	SCR01610	V, I, U, S
	16	2.778	C7, C5, C3	R	2	SCR01616	S, E, Y
20	32	2.778	C7, C5, C3	R	2	SCR01632	Y
	4	2.381	C7, C5, C3	R	1	SCR02004(N)	V, I, U
	5	3.175	C7, C5, C3	R/L	1	SCR02005	V, I, U, S, H
25	10	3.969	C7, C5, C3	R	1	SCR02010	S, V
	20	3.175	C7, C5, C3	R	2	SCR02020	E, S, V, Y, H
	40	3.175	C7, C5, C3	R	2	SCR02040	Y
25	4	2.381	C7, C5, C3	R	1	SCR02504(N)	I, U
	5	3.175	C7, C5, C3	R/L	1	SCR02505	V, I, U, S, H
	6	3.969	C7, C5, C3	R	1	SCR02506	V, U
32	8	4.762	C7, C5, C3	R	1	SCR02508	V, U
	10	4.762	C7, C5, C3	R	1	SCR02510-A	I, U
	10	6.35	C7, C5, C3	R	1	SCR02510-B	V
32	25	3.969	C7, C5, C3	R	2	SCR02525	S, E, Y
	50	3.969	C7, C5, C3	R	2	SCR02550	Y
	4	2.381	C7, C5, C3	R	1	SCR03204(N)	V, I, U
32	5	3.175	C7, C5, C3	R/L	1	SCR03205	V, I, U, S, M, H
	6	3.969	C7, C5, C3	R	1	SCR03206	V, U
	8	4.762	C7, C5, C3	R	1	SCR03208	V, U
64	10	6.35	C7, C5, C3	R/L	1	SCR03210	V, I, U
	20	6.35	C7, C5, C3	R	1	SCR03220	S, V
	32	4.762	C7, C5, C3	R	2	SCR03232	E, Y
64	64	4.762	C7, C5, C3	R	2	SCR03264	Y



Table 1-13-2 Standard Specications Ø40~80

Unit : mm

Model No.			Accuracy Grade	Threading Direction R : Right L : Left	Number of Grooves	Standard Code of Shaft	Type of Nut
Ød	I	Da					
40	5	3.175	C7, C5, C3	R / L	1	SCR04005	V, I, U, H
	6	3.969	C7, C5, C3	R	1	SCR04006	V, U
	8	4.762	C7, C5, C3	R	1	SCR04008	V, U
	10	6.35	C7, C5, C3	R / L	1	SCR04010	V, I, U
	20	6.35	C7, C5, C3	R	2	SCR04020	S,V
	40	6.35	C7, C5, C3	R	2	SCR04040	S,Y
50	80	6.35	C7, C5, C3	R	2	SCR04080	Y
	5	3.175	C7, C5, C3	R	1	SCR05005	V, H
	10	6.35	C7, C5, C3	R / L	1	SCR05010	V, I, U
	20	9.525	C7, C5, C3	R	1	SCR05020	S,V
	50	7.938	C7, C5, C3	R	2	SCR05050	S,Y
63	100	7.938	C7, C5, C3	R	2	SCR050100	Y
	10	6.35	C7, C5, C3	R	1	SCR06310	V, I, U
	20	9.525	C7, C5, C3	R	1	SCR06320	V, U
80	10	6.35	C7, C5, C3	R	1	SCR08010	V, I, U
	20	9.525	C7, C5, C3	R	1	SCR08020	V, U

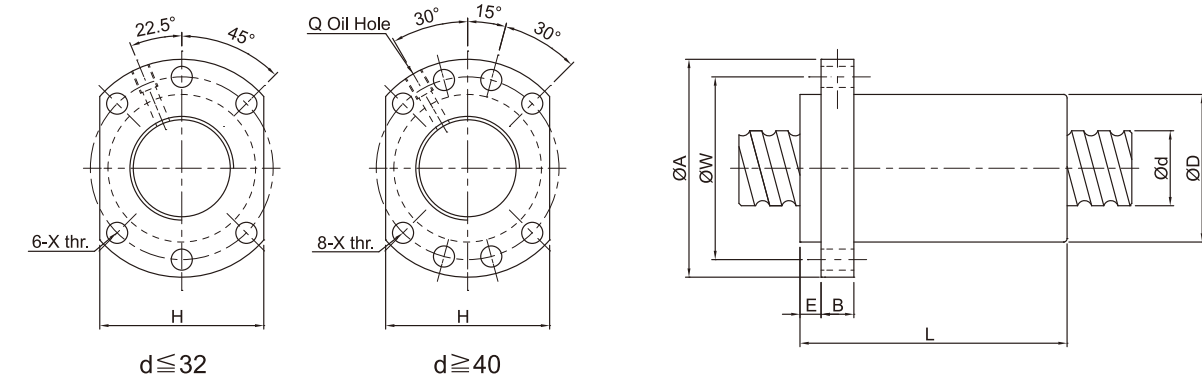
Table 1-13-3 H-type Specications Ø16~50

Unit : mm

Model No.			Accuracy Grade	Threading Direction R : Right L : Left	Number of Grooves	Type-H Code of Shaft	Type of Nut
Ød	I	Da					
12	10	2.5	C7,C5,C3	R	1	SSR01210	H
	5	2.778	C7,C5,C3	R	1	SSR01605	H
16	10	2.778	C7,C5,C3	R	1	SSR01610	H
	16	2.778	C7,C5,C3	R	1	SSR01616	H
	20	2.778	C7,C5,C3	R	1	SSR01620	H
20	10	3.175	C7,C5,C3	R	1	SSR02010	H
	10	3.175	C7,C5,C3	R	1	SSR02510	H
25	25	3.175	C7,C5,C3	R	1	SSR02525	H
	10	3.969	C7,C5,C3	R	1	SSR03210	H
32	20	3.969	C7,C5,C3	R	1	SSR03220	H
	32	6.35	C7,C5,C3	R	1	SSR03232	H
40	10	6.35	C7,C5,C3	R	1	SSR04010	H
	20	6.35	C7,C5,C3	R	1	SSR04020	H
	40	6.35	C7,C5,C3	R	1	SSR04040	H
50	10	6.35	C7,C5,C3	R	1	SSR05010	H
	20	6.35	C7,C5,C3	R	1	SSR05020	H
	50	6.35	C7,C5,C3	R	1	SSR05050	H

※ The information is for specifications, if customized products are needed please contact LIMON.

2 Ball Screw Classification
2-1 Size Table of SFA Ball Screws

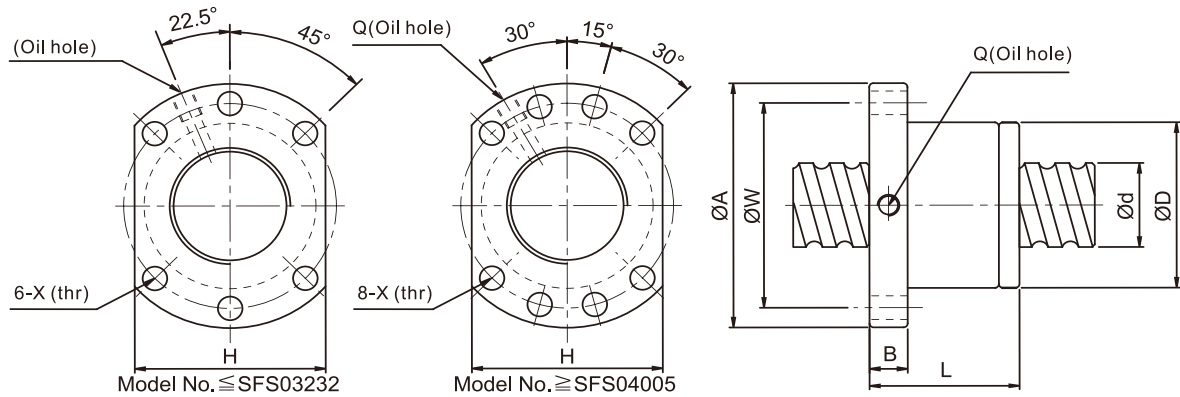


I:Lead Da:Ball Diameter n:Number of Circuits K:Stiffness(Kgf/µm)
Ca:Basic Dynamic Rating Load(Kgf) Coa: Basic Static Rating Load(Kgf) Unit : mm

Model No.	d	I	Da	Dimension										Load Rating		K kgf/µm
				D	A	E	B	L	W	H	X	Q	n	Ca (kgf)	Coa (kgf)	
SFA0802-3.8	8	2	1.2	14	27	3	5	17.5	21	18	3.4	-	3.8×1	213	419	-
SFA0802.5-3.8	8	2.5	1.2	14	27	3	5	20	21	18	3.4	-	3.8×1	214	420	-
SFA1004-3.8	10	4	2	26	46	4	10	30	36	28	4.5	-	3.8×1	476	891	-
☆ SFA1205-2.8	12	5	2.5	24	40	5	10	30	32	30	4.5	-	2.8×1	661	1316	19
☆ SFA1210-2.8		10	2.5	24	40	5	10	42	32	30	4.5	-	2.8×1	642	1287	19
☆ SFA1605-3.8	15	5	2.778	28	48	5	10	31	38	40	5.5	M6	3.8×1	1112	2507	30
☆ SFA1610-2.8		10	2.778	28	48	5	10	42	38	40	5.5	M6	2.8×1	839	1821	23
☆ SFA1616-1.8		16	2.778	28	48	5	10	43	38	40	5.5	M6	1.8×1	552	1137	14
☆ SFA1616-2.8		16	2.778	28	48	5	10	59	38	40	5.5	M6	2.8×1	808	1769	22
☆ SFA1620-1.8	20	20	2.778	28	48	5	10	50	38	40	5.5	M6	1.8×1	554	1170	14
☆ SFA1630-1.8		30	2.778	28	48	7	10	70	38	40	5.5	M6	1.8×1	534	1195	14
☆ SFA2005-3.8		5	3.175	36	58	7	10	33	47	44	6.6	M6	3.8×1	1484	3681	37
☆ SFA2010-3.8	20	10	3.175	36	58	7	10	52	47	44	6.6	M6	3.8×1	1516	3833	40
☆ SFA2020-1.8		20	3.175	36	58	7	10	52	47	44	6.6	M6	1.8×1	764	1758	19
☆ SFA2020-2.8		20	3.175	36	58	7	10	72	47	44	6.6	M6	2.8×1	1118	2734	29
☆ SFA2505-3.8	25	5	3.175	40	62	7	10	33	51	48	6.6	M6	3.8×1	1650	4658	43
☆ SFA2510-3.8		10	3.175	40	62	7	12	52	51	48	6.6	M6	3.8×1	1638	4633	45
☆ SFA2525-1.8		25	3.175	40	62	7	12	60	51	48	6.6	M6	1.8×1	843	2199	22
☆ SFA2525-2.8	25	25	3.175	40	62	7	12	85	51	48	6.6	M6	2.8×1	1232	3421	34
SFA3205-3.8	32	5	3.175	50	80	9	12	35	65	62	9	M6	3.8×1	1839	6026	51
SFA3210-3.8	31	10	3.969	50	80	9	12	53	65	62	9	M6	3.8×1	2460	7255	55
SFA3220-2.8		20	3.969	50	80	9	12	72	65	62	9	M6	2.8×1	1907	5482	43
SFA3232-1.8		32	3.969	50	80	9	12	78	65	62	9	M6	1.8×1	1257	3426	27
SFA3232-2.8	40	32	3.969	50	80	9	12	110	65	62	9	M6	2.8×1	1838	5329	42
SFA4005-3.8		5	3.175	63	93	9	14	39	78	70	9	M8	3.8×1	2018	7589	60
SFA4010-3.8		10	6.35	63	93	9	14	57	78	70	9	M8	3.8×1	5035	13943	67
SFA4020-2.8	38	20	6.35	63	93	9	14	78	78	70	9	M8	2.8×1	3959	10715	54
SFA4040-1.8		40	6.35	63	93	9	14	96	78	70	9	M8	1.8×1	2585	6648	34
SFA4040-2.8		40	6.35	63	93	9	14	136	78	70	9	M8	2.8×1	3780	10341	52
SFA5005-3.8	50	5	3.175	75	110	10.5	15	42	93	85	11	M8	3.8×1	2207	9542	68
SFA5010-3.8		10	6.35	75	110	10.5	18	57	93	85	11	M8	3.8×1	5638	17852	79
SFA5020-3.8		20	6.35	75	110	10.5	18	98	93	85	11	M8	3.8×1	5749	18485	87
SFA5050-1.8	48	50	6.35	75	110	10.5	18	117	93	85	11	M8	1.8×1	2946	8749	42
SFA5050-2.8		50	6.35	75	110	10.5	18	167	93	85	11	M8	2.8×1	4308	13610	65



2-2 Size Table of SFS Ball Screws



l:Lead Da:Ball Diameter n:Number of Circuits K:Stiffness(Kgf/μm)

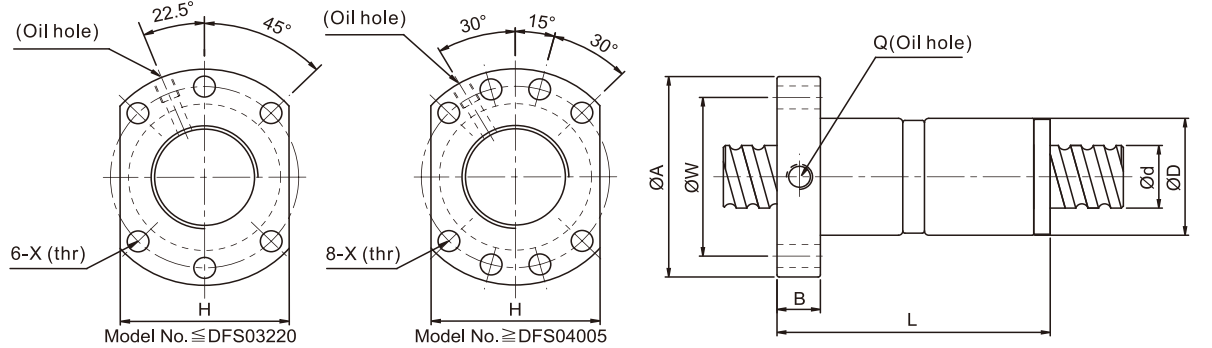
Ca:Basic Dynamic Rating Load(Kgf) Coa: Basic Static Rating Load(Kgf)

Unit:mm

Model no.	d	l	Da	Dimension									Load Rating Ca(kgf)	Load Rating Coa(kgf)
				D	A	B	L	W	H	X	Q	n		
SFS1205-2.8	12	5	2.5	24	40	10	31	32	30	4.5	M6×1	2.8×1	661	1316
SFS1210-2.8		10	2.5	24	40	10	48.5	32	30	4.5	M6×1	2.8×1	642	1287
SFS1605-3.8	15	5	2.778	28	48	10	38	38	40	5.5	M6×1	3.8×1	1112	2507
SFS1610-2.8		10	2.778	28	48	10	47	38	40	5.5	M6×1	2.8×1	839	1821
SFS1616-1.8		16	2.778	28	48	10	45	38	40	5.5	M6×1	1.8×1	552	1137
SFS1616-2.8		16	2.778	28	48	10	61	38	40	5.5	M6×1	2.8×1	808	1769
SFS1620-1.8	20	20	2.778	28	48	10	57	38	40	5.5	M6×1	1.8×1	554	1170
SFS2005-3.8		5	3.175	36	58	10	40	47	44	6.6	M6×1	3.8×1	1484	3681
SFS2010-3.8		10	3.175	36	58	10	60	47	44	6.6	M6×1	3.8×1	1516	3833
SFS2020-1.8		20	3.175	36	58	10	57	47	44	6.6	M6×1	1.8×1	764	1758
SFS2020-2.8	25	20	3.175	36	58	10	77	47	44	6.6	M6×1	2.8×1	1118	2734
SFS2505-3.8		5	3.175	40	62	10	40	51	48	6.6	M6×1	3.8×1	1650	4658
SFS2510-3.8		10	3.175	40	62	12	65	51	48	6.6	M6×1	3.8×1	1638	4633
SFS2520-2.8		20	3.969	40	62	12	72	51	48	6.6	M6×1	2.8×1	1206	2695
SFS2525-1.8	32	25	3.175	40	62	12	70	51	48	6.6	M6×1	1.8×1	843	2199
SFS2525-2.8		25	3.175	40	62	12	95	51	48	6.6	M6×1	2.8×1	1232	3421
SFS3205-3.8		5	3.175	50	80	12	42	65	62	9	M6×1	3.8×1	1839	6026
SFS3210-3.8		10	3.969	50	80	13	62	65	62	9	M6×1	3.8×1	2460	7255
SFS3220-2.8	31	20	3.969	50	80	12	80	65	62	9	M6×1	2.8×1	1907	5482
SFS3232-1.8		32	3.969	50	80	13	84	65	62	9	M6×1	1.8×1	1257	3426
SFS3232-2.8		32	3.969	50	80	13	116	65	62	9	M6×1	2.8×1	1838	5329
SFS4005-3.8		5	3.175	63	93	15	45	78	70	9	M8×1	3.8×1	2018	7589
SFS4010-3.8	38	10	6.35	63	93	14	63	78	70	9	M8×1	3.8×1	5035	13943
SFS4020-2.8		20	6.35	63	93	14	82	78	70	9	M8×1	2.8×1	3959	10715
SFS4040-1.8		40	6.35	63	93	15	105	78	70	9	M8×1	1.8×1	2585	6648
SFS4040-2.8		40	6.35	63	93	15	145	78	70	9	M8×1	2.8×1	3780	10341
SFS5005-3.8	50	5	3.175	75	110	15	45	93	85	11	M8×1	3.8×1	2207	9542
SFS5010-3.8		10	6.35	75	110	18	68	93	85	11	M8×1	3.8×1	5638	17852
SFS5020-3.8		20	6.35	75	110	18	108	93	85	11	M8×1	3.8×1	5749	18485
SFS5050-1.8		50	6.35	75	110	18	125	93	85	11	M8×1	1.8×1	2946	8749
SFS5050-2.8	48	50	6.35	75	110	18	175	93	85	11	M8×1	2.8×1	4308	13610



2-3 Size Table of DFS Ball Screws



l:Lead Da:Ball Diameter n:Number of Circuits K:Stiffness(Kgf/μm)

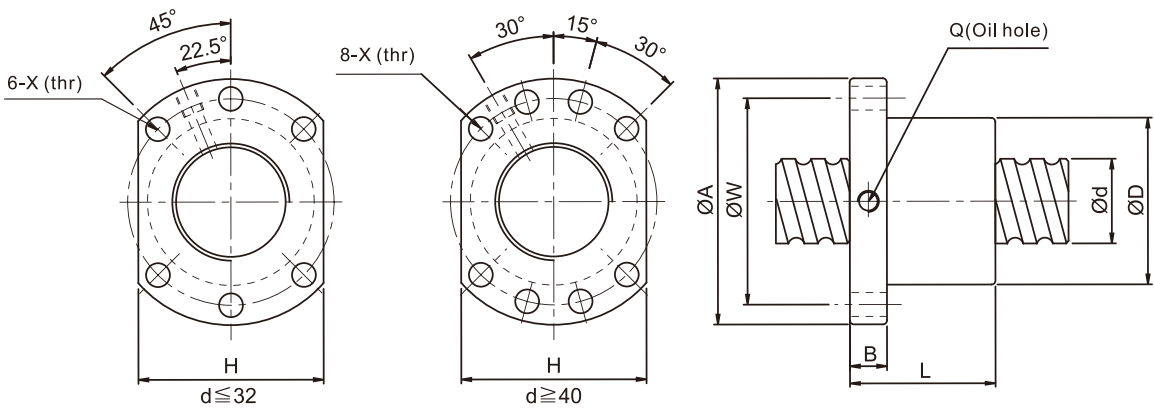
Ca:Basic Dynamic Rating Load(Kgf) Coa: Basic Static Rating Load(Kgf)

Unit:mm

Model no.	d	l	Da	Dimension									Load Rating Ca(kgf)	Load Rating Coa(kgf)
				D	A	B	L	W	H	X	Q	n		
DFS1605-3.8	15	5	2.778	28	48	10	73	38	40	5.5	M6×1	3.8×1	1112	2507
DFS1610-2.8		10	2.778	28	48	10	97	38	40	5.5	M6×1	2.8×1	839	1821
DFS2005-3.8	20	5	3.175	36	58	10	75	47	44	6.6	M6×1	3.8×1	1484	3681
DFS2010-3.8		10	3.175	36	58	10	120	47	44	6.6	M6×1	3.8×1	1516	3833
DFS2505-3.8	25	5	3.175	40	62	10	75	51	48	6.6	M6×1	3.8×1	1650	4658
DFS2510-3.8		10	3.175	40	62	12	122	51	48	6.6	M6×1	3.8×1	1638	4633
DFS2520-2.8		10	3.969	50	62	12	140	51	48	6.6	M6×1	2.8×1	1206	2695
DFS3205-3.8	32	5	3.175	50	80	12	82	65	62	9	M6×1	3.8×1	1839	6026
DFS3210-3.8	31	10	3.969	50	80	13	122	65	62	9	M6×1	3.8×1	2460	7255
DFS3220-2.8		20	3.969	50	80	12	160	65	62	9	M6×1	2.8×1	1907	5482
DFS4005-3.8	40	5	3.175	63	63	15	85	78	70	9	M8×1	3.8×1	2018	7589
DFS4010-3.8	38	10	6.35	63	63	14	123	78	70	9	M8×1	3.8×1	5035	13943
DFS4020-2.8		20	6.35	63	63	14	162	78	70	9	M8×1	2.8×1	3959	10715
DFS5005-3.8	50	5	3.175	75	75	15	85	93	85	11	M8×1	3.8×1	2207	9542
DFS5010-3.8	48	10	6.35	75	75	18	138	93	85	11	M8×1	3.8×1	5638	17852
DFS5020-3.8		20	6.35	75	75	18	218	93	85	11	M8×1	3.8×1	5749	18485



2-4 Size Table of SFU Ball Screws



I:Lead Da:Ball Diameter n:Number of Circuits K:Stiffness(Kgf/μm)

Ca:Basic Dynamic Rating Load(Kgf) Coa: Basic Static Rating Load(Kgf)

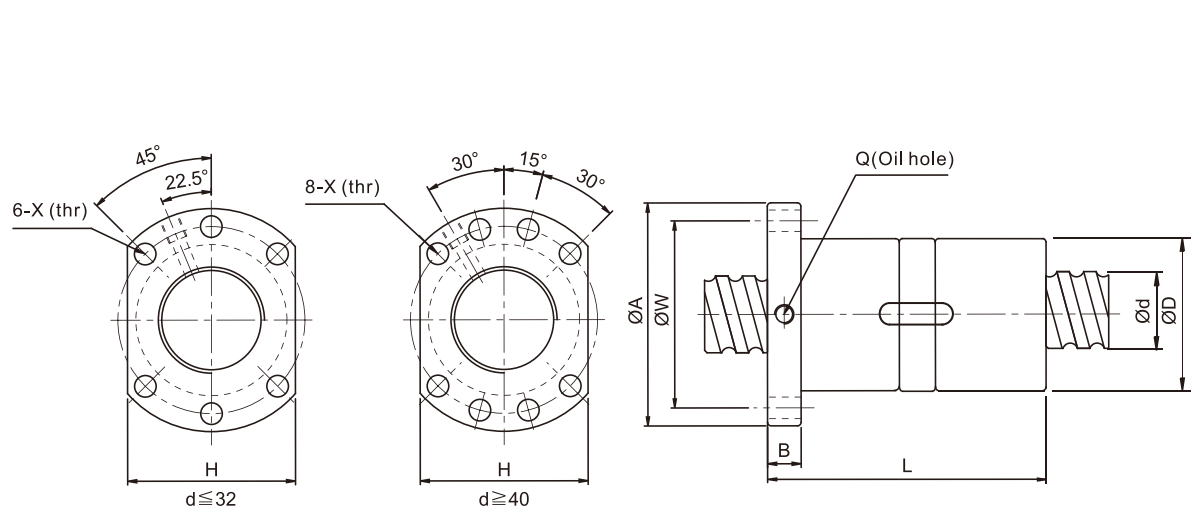
Unit:mm

	Model no.	d	I	Da	Dimension									Load Rating Ca(kgf)	Load Rating Coa(kgf)
					D	A	B	L	W	H	X	Q	n		
☆	SFU 1204-3	12	4	2.5	24	40	10	40	32	30	4.5	M6×1	1×3	415	709
	SFU 1604-3	16	4	2.381	28	48	10	36	38	40	5.5	M6×1	1×3	488	940
☆	SFU 1605-3		5	3.175	28	48	10	42	38	40	5.5	M6×1	1×3	666	1143
☆	SFU 1605-4		5	3.175	28	48	10	50	38	40	5.5	M6×1	1×4	1127	2288
☆	SFU 1610-3		10	3.175	28	48	10	57	38	40	5.5	M6×1	1×3	909	1848
☆	SFU 2004-3	20	4	2.381	36	58	10	42	47	44	6.6	M6×1	1×3	541	1187
	☆		SFU 2005-3	5	3.175	36	58	10	42	47	44	6.6	M6×1	1×3	749
☆	SFU 2005-4		5	3.175	36	58	10	51	47	44	6.6	M6×1	1×4	1268	2991
☆	SFU 2504-3	25	4	2.381	40	62	10	42	51	48	6.6	M6×1	1×3	605	1534
	☆		SFU 2505-3	5	3.175	40	62	10	42	51	48	6.6	M6×1	1×3	839
☆	SFU 2505-4		5	3.175	40	62	10	51	51	48	6.6	M6×1	1×4	1420	3872
☆	SFU 2510-3		10	4.762	40	62	10	70	51	48	6.6	M6×1	1×3	1427	2771
☆	SFU 2510-4	10	4.762	40	62	12	85	51	48	6.6	M6×1	1×4	2415	5543	
☆	SFU 3205-4	32	5	3.175	50	80	12	52	65	62	9	M6×1	1×4	1604	5103
	SFU 3210-3		10	6.35	50	80	12	74	65	62	9	M6×1	1×3	2319	4575
	SFU 3210-4		10	6.35	50	80	12	90	65	62	9	M6×1	1×4	3924	9152
	SFU 4005-4	40	5	3.175	63	93	14	55	78	70	9	M8×1	1×4	1786	6512
	SFU 4010-3		10	6.35	63	93	14	71	78	70	9	M8×1	1×3	2610	5834
	SFU 4010-4		10	6.35	63	93	14	93	78	70	9	M8×1	1×4	4417	11669
	SFU 5010-4	50	10	6.35	75	110	16	93	93	85	11	M8×1	1×4	4947	15488
	SFU 6310-4	63	10	6.35	90	125	18	98	108	95	11	M8×1	1×4	5586	20417
	SFU 6320-4		20	9.525	95	135	20	149	115	100	13.5	M8×1	1×4	9397	28512
	SFU 8010-4	80	10	6.35	105	145	20	98	125	110	13.5	M8×1	1×4	6219	26049
SFU 8020-4	20		9.525	125	165	25	154	145	130	13.5	M8×1	1×4	10665	38018	

Note:with sign ☆ can poduce left helix



2-5 Size Table of DFU Ball Screws



I:Lead Da:Ball Diameter n:Number of Circuits K:Stiffness(Kgf/μm)

Ca:Basic Dynamic Rating Load(Kgf) Coa: Basic Static Rating Load(Kgf)

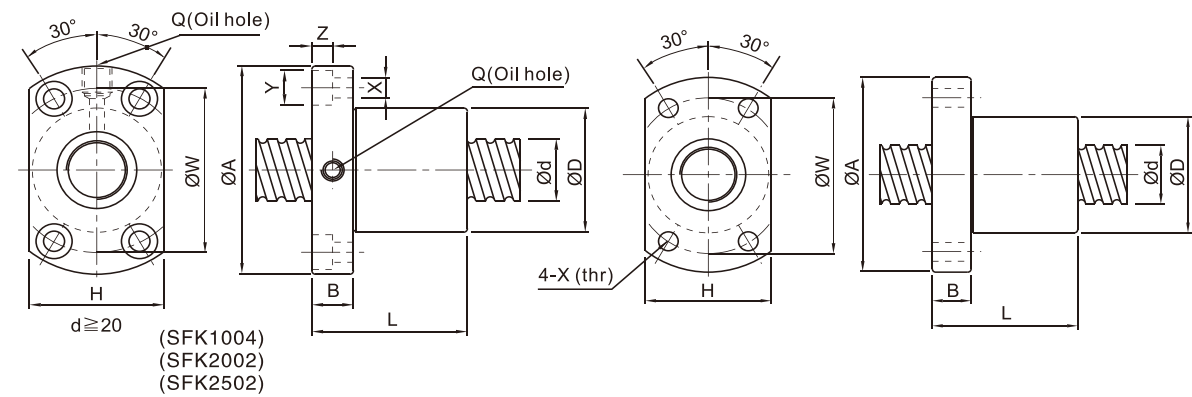
Unit:mm

Model no.	d	I	Da	Dimension									Load Rating Ca(kgf)	Load Rating Coa(kgf)
				D	A	B	L	W	H	X	Q	n		
DFU 1604-3	16	4	2.381	28	48	10	80	38	40	5	M6×1	1×3	488	940
☆ DFU 1605-4		5	3.175	28	48	10	100	38	40	5	M6×1	1×4	1123	2288
☆ DFU 1610-3		10	3.175	28	48	10	118	38	40	5	M6×1	1×3	716	1232
DFU 2004-3	20	4	2.381	36	58	10	80	47	44	6.6	M6×1	1×3	541	1187
☆ DFU 2005-4		5	3.175	36	58	10	101	47	44	6.6	M6×1	1×4	1268	2291
DFU 2504-3		4	2.381	40	62	10	80	51	48	6.6	M6×1	1×3	605	1534
☆ DFU 2505-4	25	5	3.175	40	62	10	101	51	48	6.6	M6×1	1×4	1420	3872
☆ DFU 2510-4		10	4.762	40	62	12	145	51	48	6.6	M6×1	1×4	2246	4157
☆ DFU 3205-4		5	3.175	50	80	12	102	65	62	9	M6×1	1×4	1604	5103
DFU 3210-4	32	10	6.35	50	80	12	162	65	62	9	M6×1	1×4	3924	9152
DFU 4005-4		5	3.175	63	93	14	105	78	70	9	M8×1	1×4	1786	6512
DFU 4010-4		10	6.35	63	93	14	165	78	70	9	M8×1	1×4	4417	11969
DFU 5010-4	50	10	6.35	75	110	16	171	93	85	11	M8×1	1×4	4947	15488
DFU 6310-4	63	10	6.35	90	125	18	182	108	95	11	M8×1	1×4	5586	20417
DFU 6320-4		20	9.525	95	135	20	290	115	100	13.5	M8×1	1×4	9397	28512
DFU 8010-4		10	6.35	105	145	20	182	125	110	13.5	M8×1	1×4	6219	26049
DFU 8020-4	80	20	9.525	125	165	25	295	145	130	13.5	M8×1	1×4	10665	38018

Note:with sign ☆ can poduce left helix



2-6 Size Table of SFK Ball Screws



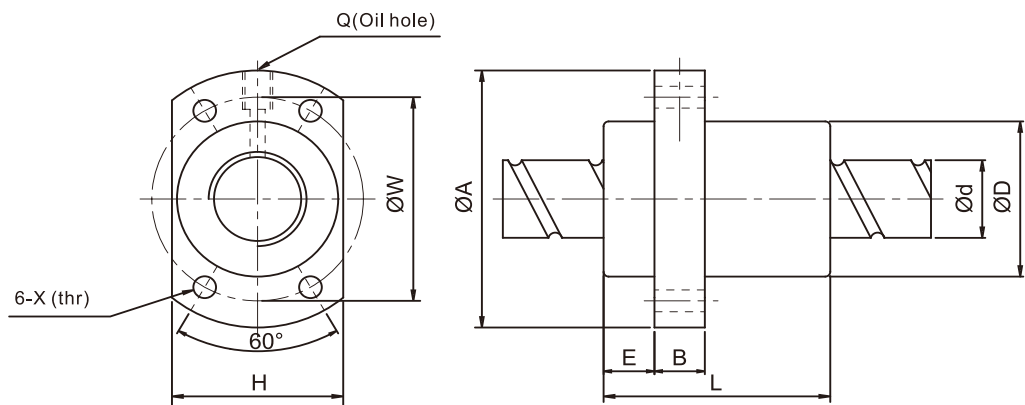
I:Lead Da:Ball Diameter n:Number of Circuits K:Stiffness(Kgf/μm)
Ca:Basic Dynamic Rating Load(Kgf) Coa: Basic Static Rating Load(Kgf)

Unit:mm

Model no.	d	I	Da	Dimension											Load Rating Ca(kgf)	Load Rating Coa(kgf)
				D	A	B	L	W	H	X	Y	Z	Q	n		
SFK0401	4	1	0.8	10	20	3	12	15	14	2.9	-	-	-	1×2	64	97
SFK0601	6	1	0.8	12	24	3.5	15	18	16	3.4	-	-	-	1×3	111	224
SFK0801	8	1	0.8	14	27	4	16	21	18	3.4	-	-	-	1×4	161	403
SFK0802		2	1.2	14	27	4	16	21	18	3.4	-	-	-	1×3	222	458
SFK082.5		2.5	1.2	16	29	4	26	23	20	3.4	-	-	-	1×3	221	457
SFK1002	10	2	1.2	18	35	5	28	27	22	4.5	-	-	-	1×3	243	569
SFK1004		4	2	26	46	10	34	36	28	4.5	8	4.5	M6	1×3	468	905
SFK1204	12	2	1.2	20	37	5	28	29	24	4.5	-	-	-	1×4	334	906
SFK1205		4	2.5	24	40	6	28	32	25	3.5	-	-	-	1×3	454	722
SFK 1202		5	2.5	22	37	8	39	29	24	4.5	-	-	-	1×3	675	1316
SFK 1402	14	2	1.2	21	40	6	23	31	26	5.5	-	-	-	1×4	354	1053
SFK1602	16	2	1.2	25	43	10	40	35	29	5.5	-	-	M6	1×4	373	1200
SFK2002	20	2	1.2	50	80	15	55	65	68	6.5	10.5	6	M6	1×6	581	2284
SFK2502	25	2	1.2	50	80	13	43	65	68	6.5	10.5	6	M6	1×5	540	2381



2-7 Size Table of SFY Ball Screws



I:Lead Da:Ball Diameter n:Number of Circuits K:Stiffness(Kgf/μm)

Ca:Basic Dynamic Rating Load(Kgf) Coa: Basic Static Rating Load(Kgf)

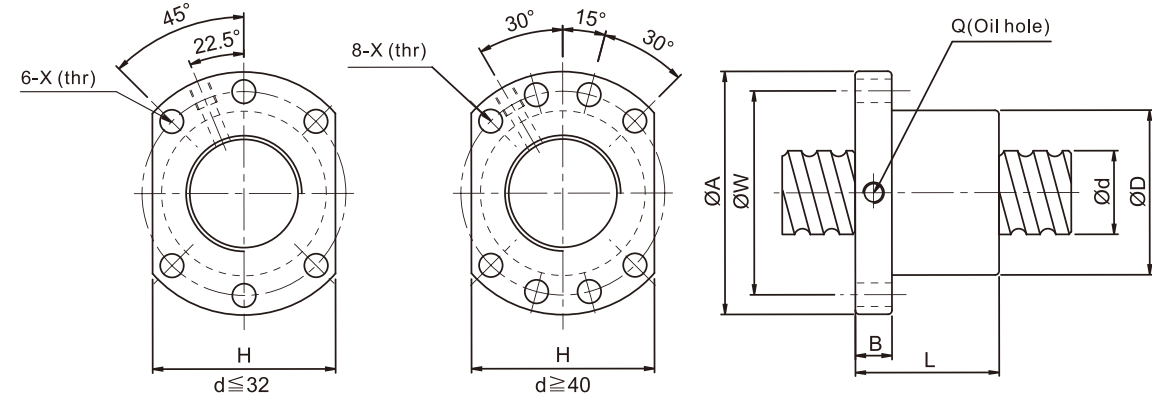
Unit:mm

Model no.	d	I	Da	Dimension										Load Rating Ca(kgf)	Load Rating Coa(kgf)
				D	A	E	B	L	W	H	X	Q	n		
SFY1616-3.6	16	16	2.778	32	53	10.1	10	45	42	34	4.5	M6x1	1.8×2	1073	2551
SFY2020-3.6	20	20	3.175	39	62	13	10	52	50	41	5.5	M6x1	1.8×2	1387	3515
SFY2040-1.6	20	20	3.175	39	62	13	10	48	50	41	5.5	M6x1	0.8×2	653	1597
SFY2550-1.6	25	25	3.969	47	74	15	12	58	60	49	6.6	M6X1	0.8×2	976	2495
SFY2525-3.6	25	25	3.969	47	74	15	12	64	60	49	6.6	M6x1	1.8×2	2074	5494
SFY3232-3.6	32	32	4.762	58	92	17	12	78	74	60	9	M6x1	1.8×2	3021	8690
SFY4040-3.6	40	40	6.35	73	114	19.5	15	99	93	75	11	M6x1	1.8×2	4831	14062
SFY5050-3.6	50	50	7.938	90	135	21.5	20	117	112	92	14	M6x1	1.8×2	7220	21974

Ball Screw - SFDC Series



2-8 Size Table of SFDC Ball Screws



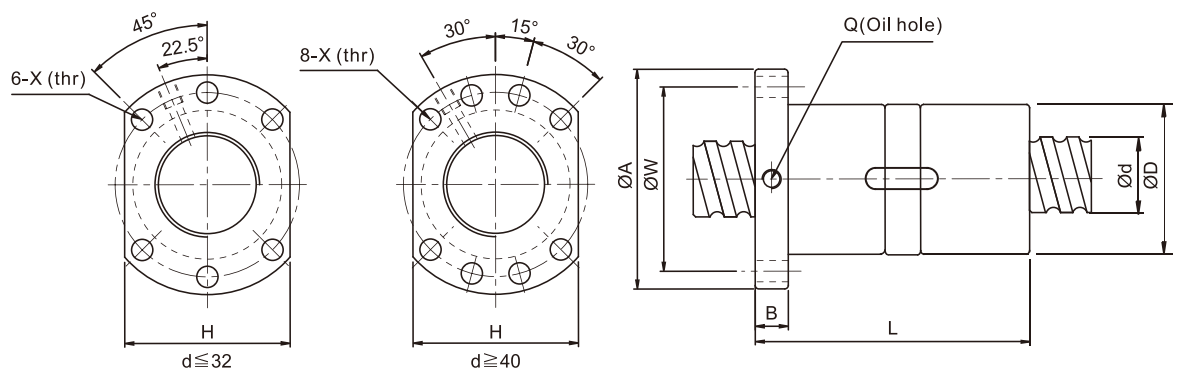
I:Lead Da:Ball Diameter n:Number of Circuits K:Stiffness(Kgf/μm)
Ca:Basic Dynamic Rating Load(Kgf) Coa: Basic Static Rating Load(Kgf) Unit:mm

Model no.	d	I	Da	Dimension									Load Rating Ca(kgf)	Load Rating Coa(kgf)	K kgf/ μm
				D	A	B	L	W	X	H	Q	n			
SFDC2812-2.8	28	12	6.35	54	87	16	65.5	72	9	69	M8×1	2.8×1	2752	5746	43
SFDC2812-3.8		12	6.35	54	87	16	77.5	72	9	69	M8×1	3.8×1	3579	7799	59
SFDC2812-4.8		12	6.35	54	87	16	89.5	72	9	69	M8×1	4.8×1	4375	9851	74
SFDC2816-2.8		16	4.762	48	74	12	74.5	60	6.6	60	M6×1	2.8×1	1855	3589	41
SFDC2816-3.8		16	4.762	48	74	12	90.5	60	6.6	60	M6×1	3.8×1	2412	4871	55
SFDC2816-4.8		16	4.762	48	74	12	106.5	60	6.6	60	M6×1	4.8×1	2949	6153	70
SFDC3210-2.8	32	10	4.762	58	91	18	57	76	9	68	M8×1	2.8×1	1955	4041	45
SFDC3210-3.8		10	4.762	58	91	18	67	76	9	68	M8×1	3.8×1	2542	5485	61
SFDC3210-4.8		10	4.762	58	91	18	77	76	9	68	M8×1	4.8×1	3107	6928	77
SFDC3205-2.8		5	3.175	50	87	16	39	72	9	69	M8×1	2.8×1	1118	2653	43
SFDC3205-3.8		5	3.175	50	87	16	44	72	9	69	M8×1	3.8×1	1454	3600	58
SFDC3205-4.8		5	3.175	50	87	16	49	72	9	69	M8×1	4.8×1	1778	4547	73
SFDC3212-2.8	32	12	4.762	53	87	16	40.5	72	9	69	M8×1	2.8×1	1956	4049	45
SFDC3212-3.8		12	4.762	53	87	16	64.5	72	9	69	M8×1	3.8×1	2544	5496	61
SFDC3212-4.8		12	4.762	53	87	16	88.5	72	9	69	M8×1	4.8×1	3110	6942	77
SFDC3216-2.8		16	6.35	57	87	16	77.5	72	9	69	M8×1	2.8×1	2915	11226	48
SFDC3216-3.8		16	6.35	57	87	16	93.5	72	9	69	M8×1	3.8×1	3790	8887	66
SFDC3216-4.8		16	6.35	57	87	16	109.5	72	9	69	M8×1	4.8×1	4634	6549	83
SFDC4006-2.8	40	6	3.969	58	91	18	45.5	76	9	68	M8×1	2.8×1	1671	4010	52
SFDC4006-3.8		6	3.969	58	91	18	51.5	76	9	68	M8×1	3.8×1	2172	5618	70
SFDC4006-4.8		6	3.969	58	91	18	57.5	76	9	68	M8×1	4.8×1	2656	7096	88
SFDC4010-2.8		10	6.35	65	95	18	62.5	80	9	72	M8×1	2.8×1	3192	9048	57
SFDC4010-3.8		10	6.35	65	95	18	72.5	80	9	72	M8×1	3.8×1	4150	10922	77
SFDC4010-4.8		10	6.35	65	95	18	82.5	80	9	72	M8×1	4.8×1	5074	13797	97
SFDC4012-2.8	40	12	6.35	65	95	18	65.5	80	9	72	M8×1	2.8×1	3194	8058	57
SFDC4012-3.8		12	6.35	65	95	18	77.5	80	9	72	M8×1	3.8×1	4153	10936	77
SFDC4012-4.8		12	6.35	65	95	18	89.5	80	9	72	M8×1	4.8×1	5077	13815	97
SFDC4016-2.8		16	6.35	65	95	18	76.5	80	9	72	M8×1	2.8×1	3198	8085	57
SFDC4016-3.8		16	6.35	65	95	18	92.5	80	9	72	M8×1	3.8×1	4159	10972	77
SFDC4016-4.8		16	6.35	65	95	18	108.5	80	9	72	M8×1	4.8×1	5084	13860	97
SFDC5010-2.8	50	10	6.35	75	118	18	62.5	100	11	92	M8×1	2.8×1	3509	9982	67
SFDC5010-3.8		10	6.35	75	118	18	72.5	100	11	92	M8×1	3.8×1	4563	13547	90
SFDC5010-4.8		10	6.35	75	118	18	82.5	100	11	92	M8×1	4.8×1	5578	17112	114



Ball Screw - DFDC Series

2-9 Size Table of DFDC Ball Screws

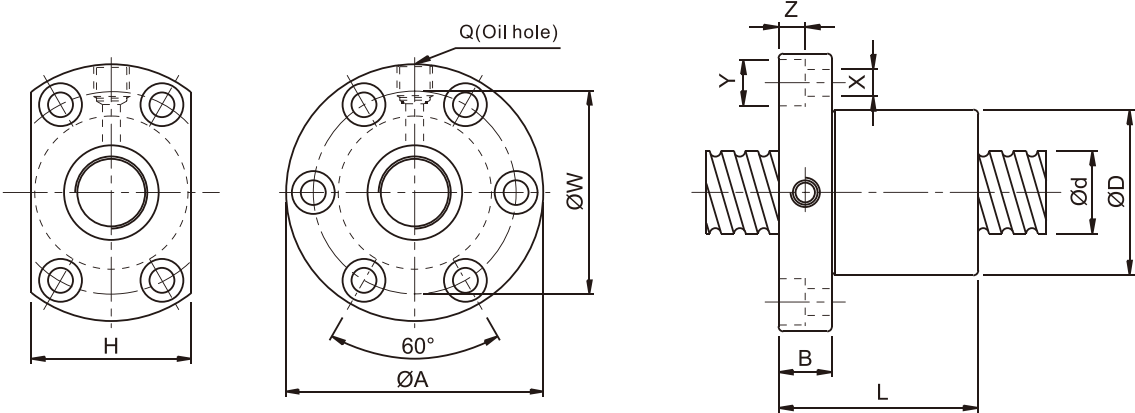


I:Lead Da:Ball Diameter n:Number of Circuits K:Stiffness(Kgf/μm)
Ca:Basic Dynamic Rating Load(Kgf) Coa: Basic Static Rating Load(Kgf) Unit:mm

Model no.	d	I	Da	Dimension									Load Rating Ca(kgf)	Load Rating Coa(kgf)	K kgf/ μm
				D	A	B	L	W	H	X	Q	n			
DFDC2812-2.8	28	12	6.35	54	87	16	125.5	72	69	9	M8×1	2.8×1	2752	5746	66
DFDC2812-3.8		12	6.35	54	87	16	149.5	72	69	9	M8×1	3.8×1	3579	7799	90
DFDC2812-4.8		12	6.35	54	87	16	173.5	72	69	9	M8×1	4.8×1	4375	9851	113
DFDC2816-2.8		16	4.762	48	74	12	143	60	60	6.6	M6×1	2.8×1	1855	3589	63
DFDC2816-3.8		16	4.762	48	74	12	175	60	60	6.6	M6×1	3.8×1	2412	4871	85
DFDC2816-4.8		16	4.762	48	74	12	207	60	60	6.6	M6×1	4.8×1	2949	6153	108
DFDC3210-2.8	32	10	4.762	58	91	18	107.5	76	68	9	M8×1	2.8×1	1955	4041	69
DFDC3210-3.8		10	4.762	58	91	18	127.5	76	68	9	M8×1	3.8×1	2542	5485	94
DFDC3210-4.8		10	4.762	58	91	18	147.5	76	68	9	M8×1	4.8×1	3107	6928	119
DFDC3205-2.8		5	3.175	50	87	16	71.5	72	69	9	M8×1	2.8×1	1118	2653	52
DFDC3205-3.8		5	3.175	50	87	16	81.5	72	69	9	M8×1	3.8×1	1454	3600	71
DFDC3205-4.8		5	3.175	50	87	16	91.5	72	69	9	M8×1	4.8×1	1778	4547	90
DFDC3212-2.8	32	12	4.762	53	87	16	124.5	72	69	9	M8×1	2.8×1	1956	4049	69
DFDC3212-3.8		12	4.762	53	87	16	148.5	72	69	9	M8×1	3.8×1	2544	5496	94
DFDC3212-4.8		12	4.762	53	87	16	172.5	72	69	9	M8×1	4.8×1	3110	6942	119
DFDC3216-2.8		16	6.35	57	87	16	149.5	72	69	9	M8×1	2.8×1	2915	11226	74
DFDC3216-3.8		16	6.35	57	87	16	181.5	72	69	9	M8×1	3.8×1	3790	8887	100
DFDC3216-4.8		16	6.35	57	87	16	213.5	72	69	9	M8×1	4.8×1	4634	6549	126
DFDC4006-2.8	40	6	3.969	58	91	18	60.5	76	68	9	M8×1	2.8×1	1671	4010	80
DFDC4006-3.8		6	3.969	58	91	18	84.5	76	68	9	M8×1	3.8×1	2172	5618	108
DFDC4006-4.8		6	3.969	58	91	18	108.5	76	68	9	M8×1	4.8×1	2656	7096	136
DFDC4010-2.8		10	6.35	65	95	18	117.5	80	72	9	M8×1	2.8×1	3192	9048	87
DFDC4010-3.8		10	6.35	65	95	18	137.5	80	72	9	M8×1	3.8×1	4150	10922	118
DFDC4010-4.8		10	6.35	65	95	18	157.5	80	72	9	M8×1	4.8×1	5074	13797	149
DFDC4012-2.8	40	12	6.35	65	95	18	125.5	80	72	9	M8×1	2.8×1	3194	8058	87
DFDC4012-3.8		12	6.35	65	95	18	149.5	80	72	9	M8×1	3.8×1	4153	10936	118
DFDC4012-4.8		12	6.35	65	95	18	173.5	80	72	9	M8×1	4.8×1	5077	13815	149
DFDC4016-2.8		16	6.35	65	95	18	148.5	80	72	9	M8×1	2.8×1	3198	8085	87
DFDC4016-3.8		16	6.35	65	95	18	180.5	80	72	9	M8×1	3.8×1	4159	10972	118
DFDC4016-4.8		16	6.35	65	95	18	212.5	80	72	9	M8×1	4.8×1	5084	13860	149
DFDC5010-2.8	50	10	6.35	75	118	18	117.5	100	92	11	M8×1	2.8×1	3509	9982	104
DFDC5010-3.8		10	6.35	75	118	18	137.5	100	92	11	M8×1	3.8×1	4563	13547	141
DFDC5010-4.8		10	6.35	75	118	18	157.5	100	92	11	M8×1	4.8×1	5578	17112	178



2-10 Size Table of SFI Ball Screws



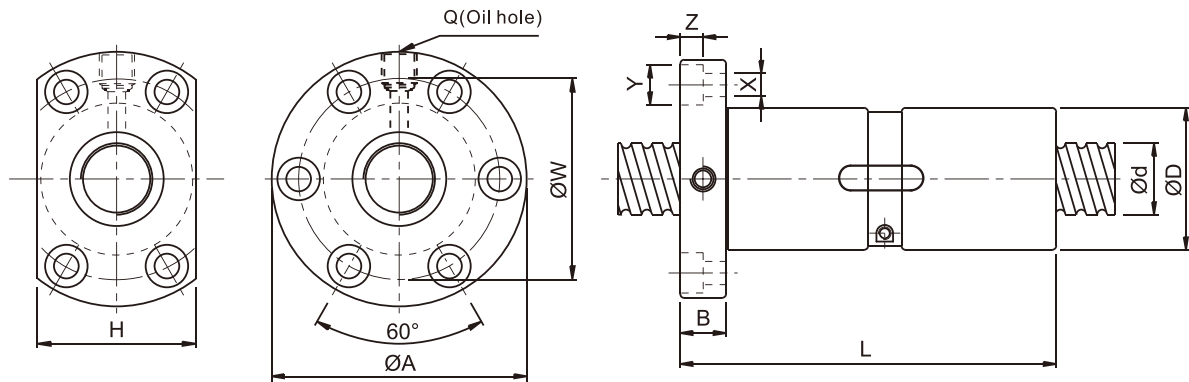
I:Lead Da:Ball Diameter n:Number of Circuits K:Stiffness(Kgf/μm)
Ca:Basic Dynamic Rating Load(Kgf) Coa: Basic Static Rating Load(Kgf) Unit:mm

Model no.	d	I	Da	Dimension											Load Rating Ca(kgf)	Load Rating Coa(kgf)
				D	A	B	L	W	H	X	Y	Z	Q	n		
☆ SFI1605-4	16	5	3.175	30	49	10	50	39	34	4.5	8	4.5	M6×1	1×4	1127	2288
☆ SFI1610-3		10	3.175	34	58	10	57	45	34	5.5	9.5	5.5	M6×1	1×3	909	1848
☆ SFI2005-4	20	5	3.175	34	57	11	51	45	40	5.5	9.5	5.5	M6×1	1×4	1268	2991
☆ SFI2505-4	25	5	3.175	40	63	11	51	51	46	5.5	9.5	5.5	M8×1	1×4	1420	3872
☆ SFI2510-4		10	4.762	46	72	12	85	58	52	6.5	11	6.5	M8×1	1×4	2415	5543
☆ SFI3205-4	32	5	3.175	46	72	12	52	58	52	6.5	11	6.5	M8×1	1×4	1604	5103
☆ SFI3210-4		10	6.35	54	88	15	90	70	62	9	14	8.5	M8×1	1×4	3924	9152
☆ SFI4005-4	40	5	3.175	56	90	15	55	72	64	9	14	8.5	M8×1	1×4	1786	6512
☆ SFI4010-4		10	6.35	62	104	18	93	82	70	11	17.5	11	M8×1	1×4	4417	11669
☆ SFI5010-4	50	10	6.35	72	114	18	93	92	82	11	17.5	11	M8×1	1×4	4947	15488
☆ SFI6310-4	63	10	6.35	85	131	22	98	107	95	14	20	13	M8×1	1×4	5586	20417
☆ SFI8010-4	80	10	6.35	105	150	22	98	127	115	14	20	13	M8×1	1×4	6219	26049

Note:with sign ☆ can poduce left helix



2-11 Size Table of DFI Ball Screws



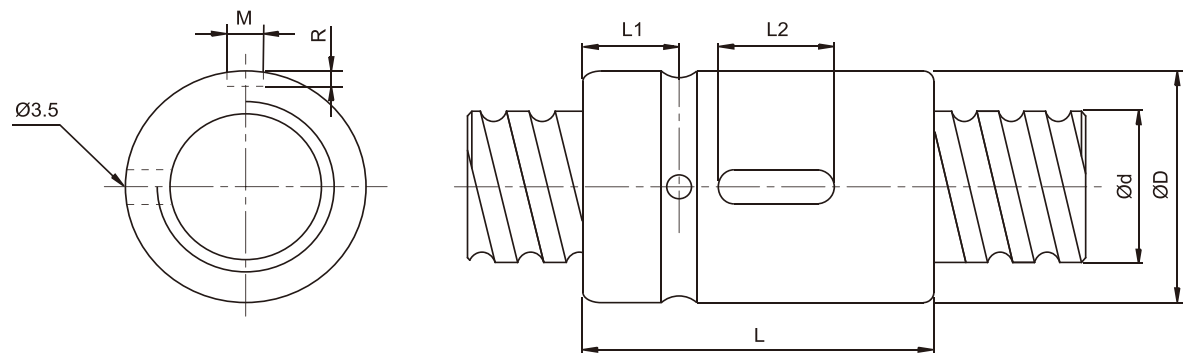
I:Lead Da:Ball Diameter n:Number of Circuits K:Stiffness(Kgf/μm)
Ca:Basic Dynamic Rating Load(Kgf) Coa: Basic Static Rating Load(Kgf) Unit:mm

Model no.	d	I	Da	Dimension											Load Rating Ca(kgf)	Load Rating Coa(kgf)
				D	A	B	L	W	H	X	Y	Z	Q	n		
☆ DFI1605-4	16	5	3.175	30	49	10	10	39	34	4.5	8	4.5	M6×1	1×4	1127	2288
☆ DFI2005-4	20	5	3.175	34	57	11	101	45	40	5.5	9.5	5.5	M6×1	1×4	1268	2991
☆ DFI2505-4	25	5	3.175	40	63	11	101	51	46	5.5	9.5	5.5	M6×1	1×4	1420	3872
☆ DFI2510-4		10	4.762	46	72	12	145	58	52	6.5	11	6.5	M6×1	1×4	2415	5543
☆ DFI3205-4	32	5	3.175	46	72	12	102	58	52	6.5	11	6.5	M8×1	1×4	1604	5103
☆ DFI3210-4		10	6.35	54	88	15	162	70	62	9	14	8.5	M8×1	1×4	3924	9152
☆ DFI4005-4	40	5	3.175	56	90	15	105	72	64	9	14	8.5	M8×1	1×4	1786	6512
☆ DFI4010-4		10	6.35	62	104	18	165	82	70	11	17.5	11	M8×1	1×4	4417	11669
☆ DFI5010-4	50	10	6.35	72	114	18	171	92	82	11	17.5	11	M8×1	1×4	4947	15488
☆ DFI6310-4	63	10	6.35	85	131	22	182	107	95	14	20	13	M8×1	1×4	5586	20417
☆ DFI8010-4	80	10	6.35	105	150	22	182	127	115	14	20	13	M8×1	1×4	6219	26049

Note:with sign ☆ can poduce left helix



2-12 Size Table of SCI Ball Screws



L:Lead Da:Ball Diameter n:Number of Circuits K:Stiffness(Kgf/μm)
 Ca:Basic Dynamic Rating Load(Kgf) Coa: Basic Static Rating Load(Kgf) Unit:mm

Model no.	d	l	Da	Dimension							Load Rating Ca(kgf)	Load Rating Coa(kgf)
				D	L	L1	L2	M	R	n		
SCI01604-4	16	4	2.381	30	40	9	15	3	1.5	1×4	973	2406
☆ SCI01605-4		5	3.175	30	45	9	20	5	3	1×4	1380	3052
SCI02004-4	20	4	2.381	34	40	9	15	3	1.5	1×4	1066	2987
☆ SCI02005-4		5	3.175	34	45	9	20	5	3	1×4	1551	3875
SCI02504-4	25	4	2.381	40	40	9	15	3	1.5	1×4	1180	3795
☆ SCI02505-4		5	3.175	40	45	9	20	5	3	1×4	1724	4904
SCI02510-4		10	4.762	46	85	13	30	5	3	1×4	2954	7295
☆ SCI03205-4	32	5	3.175	46	45	9	20	5	3	1×4	1922	6343
SCI03210-4		10	6.35	54	85	13	30	5	3	1×4	4805	12208
SCI04005-4	40	5	3.175	56	45	9	20	5	3	1×4	2110	7988
SCI04010-4		10	6.35	62	85	13	30	5	3	1×4	5399	15500
SCI05010-4	50	10	6.35	72	85	13	30	5	3	1×4	6004	19614
SCI06310-4	63	10	6.35	85	85	13	30	6	3.5	1×4	6719	25358
SCI08010-4	80	10	6.35	105	85	13	30	8	4.5	1×4	7346	31953

Note:with sign ☆ can poduce left helix