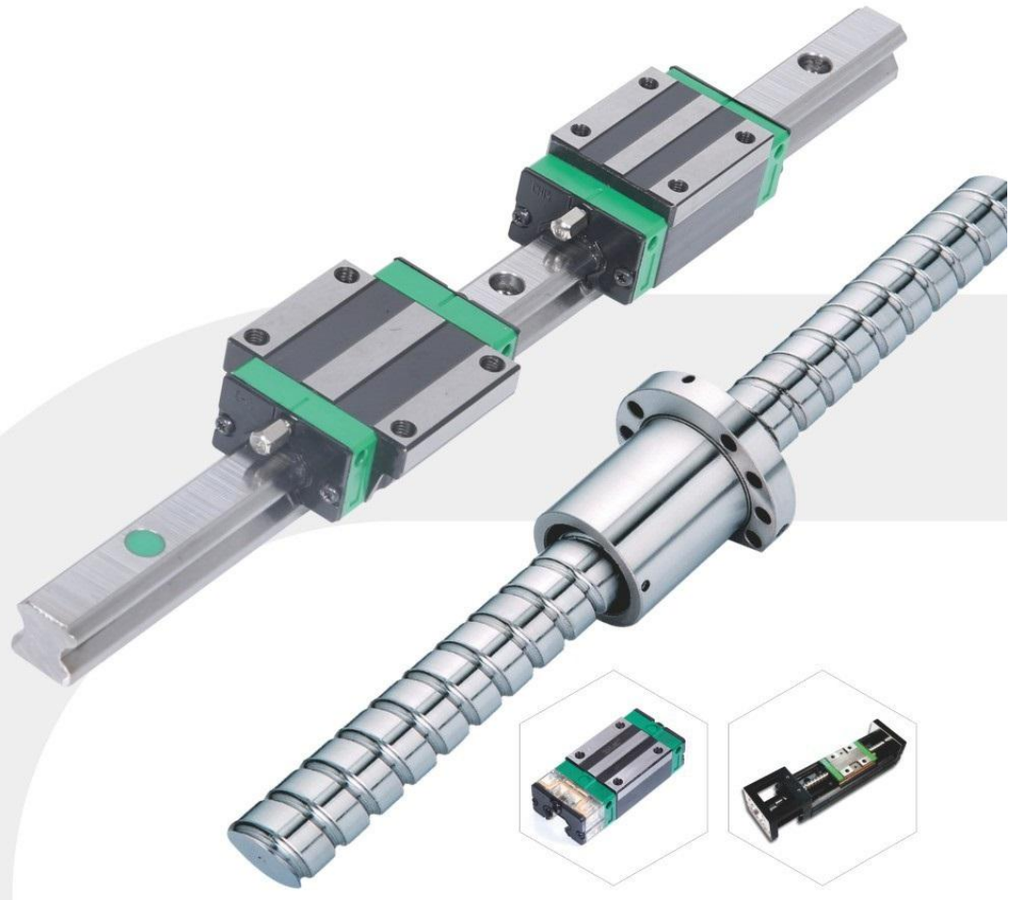
H.S.

MADE IN TAIWAN



ABOUT 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.

3.General Information

3-1 Features of Ball Screw

(1)High Reliability

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 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 SHAC Precision Ball Screw

(4) Circulation Method

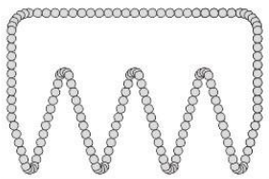


Fig 3.1.2 External Ball Circulation Nuts

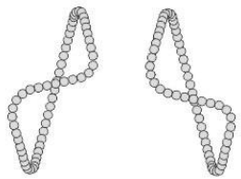
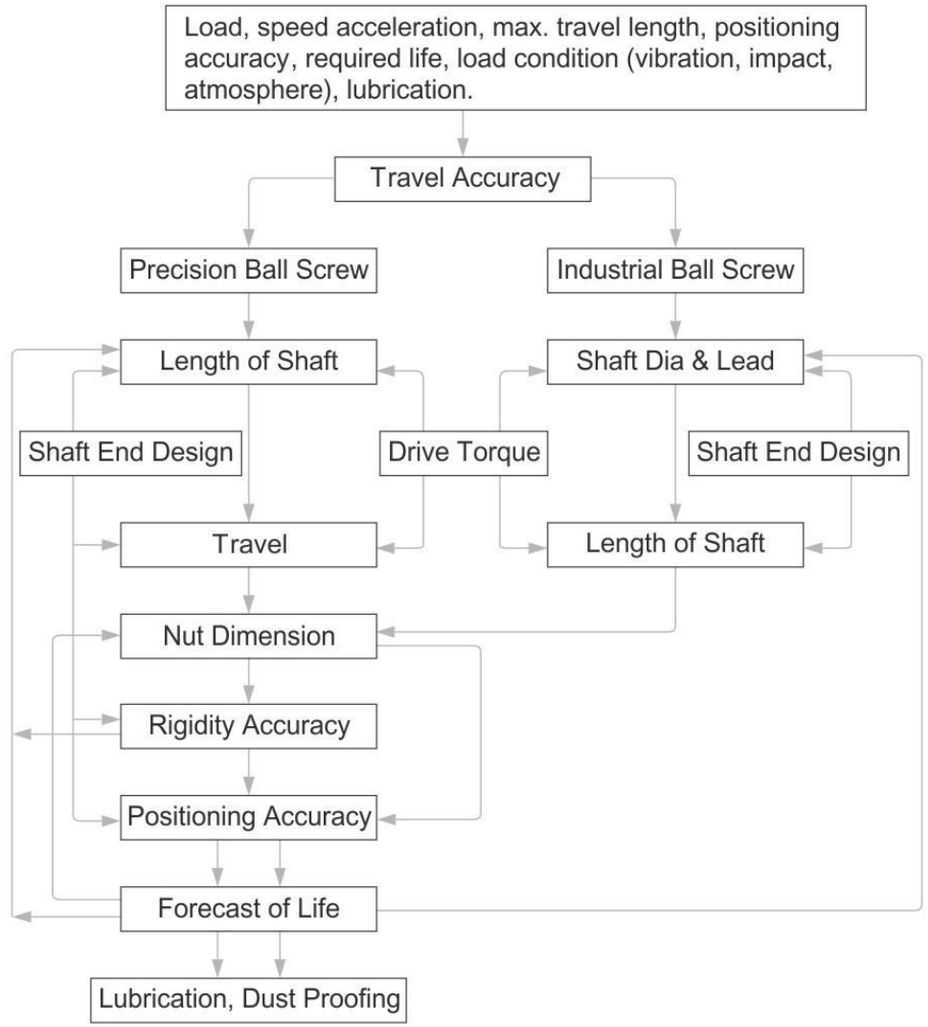


Fig 3.1.3 Internal Ball Circulation Nuts

(5) High Durability

3-2 Ball Screw Selection Procedure



3-3 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.

3-4 Nut Design

3-4-1 Circulation type

Circulation type	Model		Characteristic
	Single Nut	Double Nuts	
Internal circulation type	SFK SFU SFI BSH 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 BSH	DFV	•Economy •Applicable to larger lead and diameter. •Applicable for high loading purpose.
End-caps circulation type	SFS SFY SFE	DFS	•Suitable for high speed positioning

3-4-2 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.

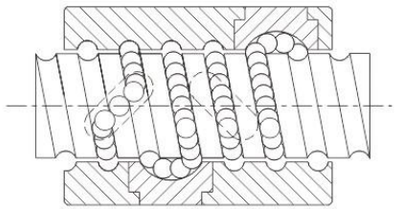


Fig 3.4.1 U, I - Type Nut

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)

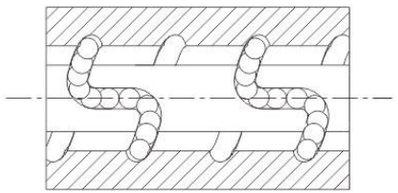


Fig 3.4.2 K - Type Nut

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.

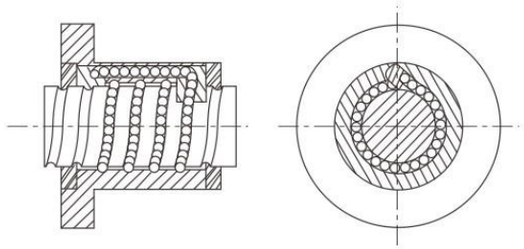


Fig 3.4.3 V - Type Nut

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.

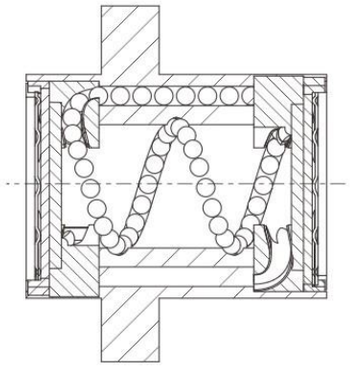


Fig 3.4.4 S,Y, E,H - type nut

3-5 Accuracy

3-5-1 Lead/Travel Accuracy

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

Table 3.5.1 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	Incl.	±E	e	±E	e	±E	e	±E	e	±E	e	e	e
		100	3	3	3.5	5	5	7	8	8	18	18		
	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	11	7	15	10	21	13	29	18	54	35	±50/300mm	±210/300mm
	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		

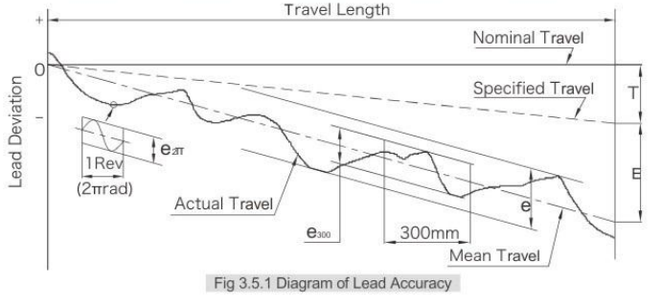


Fig 3.5.1 Diagram of Lead Accuracy

3-5-2 Axial Play

Axial play of precision ball screw is shown as follows

Table 3.5.2 Classiication 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, 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 3.5.3 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 3.5.4 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

3-5-3 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.

3-6 Screw Shaft Design

3-6-1 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.

(Mounting Screw and Nut)

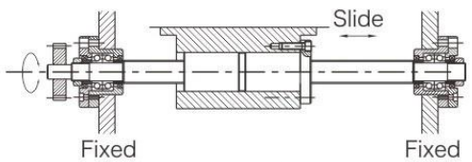


Fig 3.6.1

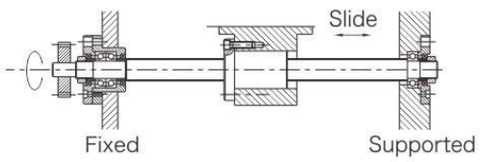


Fig 3.6.5

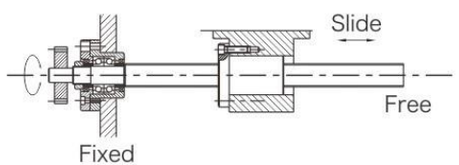


Fig 3.6.2

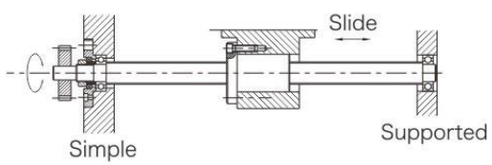


Fig 3.6.6

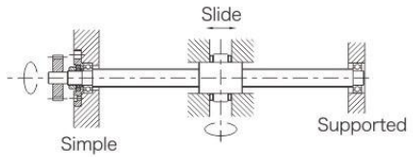


Fig 3.6.3

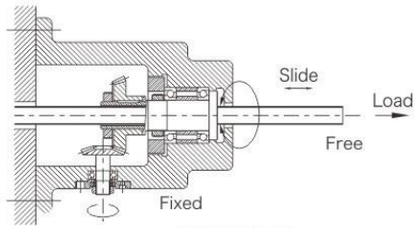


Fig 3.6.7

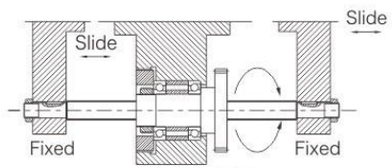


Fig 3.6.4

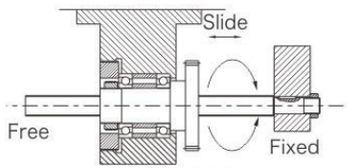


Fig 3.6.8

(The mounting method for common types of machinery.)

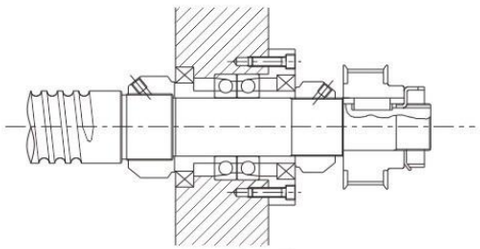


Fig 3.6.9

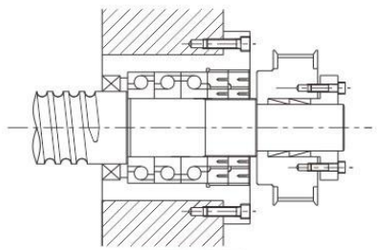


Fig 3.6.11

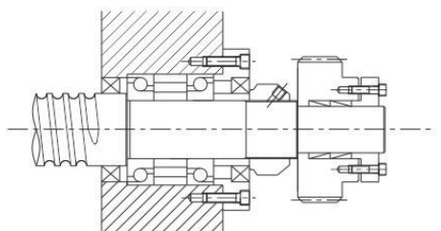


Fig 3.6.10

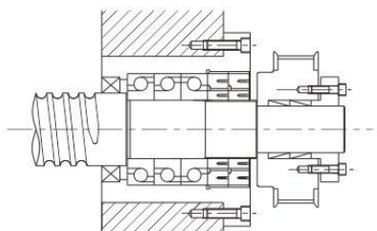


Fig 3.6.12

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

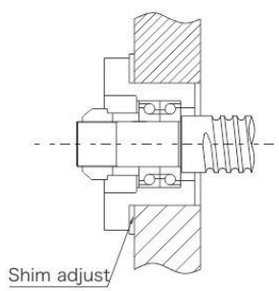


Fig 3.6.13

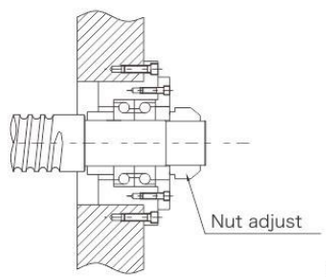


Fig 3.6.14

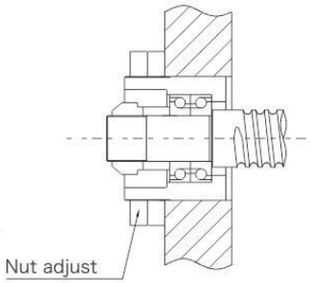


Fig 3.6.15

3-7 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.

3-7-1 Accuracy Selection

Table 3.7.1 shows the recommended application ranges for various ball screws accuracy classes based on different.

Table 3.7.1 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				○	○	○	○	
	PCB Driller			○	○	○	○	○	
Industrial Robots	Orthogonal Type	As'sy		○	○	○	○	○	
		Others					○	○	○
	Muliti-joints Type	As'sy			○	○	○		
		Others				○	○	○	
	SCARA Type				○	○	○	○	
Machines for Steel molding							○	○	○
Injection Molding Machines							○	○	○
Three-Dimensonal Measuring Machines			○	○	○				
Business Machines							○	○	○
Pattern Image Machines			○	○					
Nuclear	Rod Control					○	○	○	
	Mechnaical Snubber							○	○
Aircrafts						○	○		

3-8 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 for further instruction.
Do not attempt to reassemble, which might cause permanent damage to the ball screw.)

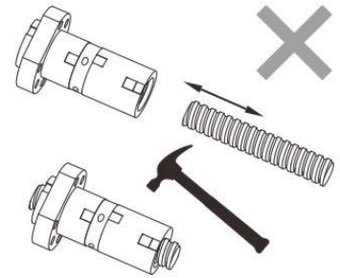


Fig 3.8.1 Error installation

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.

3-9 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 3.9.1 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

3-10 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 3.10.1, to cover the screw shaft completely.

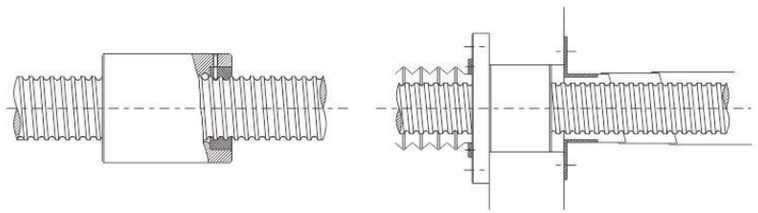


Fig 3.10.1 Dust proof Method by Telescopic Cover and Bellows

3-11 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 3.11.1

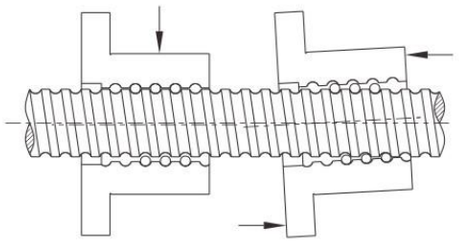


Fig 3.11.1 Offset Load

3-12 Assembling the Ball Screws

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

Table 3.12.1 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.

3-13 Nominal Model Code of 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	
S	S : Single nut
	D : Double nut
F	F : With flange
	C : Without flange
U	I : type nut
	U : type nut
	H : type nut
	S : type nut
	E : type nut
	Y : type nut
	V : type nut
	K : type nut
	DC : type nut

② Threading Direction
R : Right
L : Left

③ Nominal Diameter
Unit : mm

④ Lead
Unit : mm

⑤ Number of Turns (Turn·Row)
Turn : T : 1
A : 1.5 (or 1.7/1.8)
B : 2.5/2.8
C : 3.5
D : 4.8
ex : (2.5×2 = B2)

⑥ Flange Type
N : Not cutting
S : Single cutting
D : Double cutting

⑦ Product Code
G : Ground
F : Rolled

⑧ Accuracy Grade
C0, C1, C2, C3, C5, C7, C10

⑨ Overall Length of Shaft
Unit : mm

⑩ Axial Clearance and Preload Value
P0, P1, P2, P3, P4

⑪ Number of Nut
(Leave blank if only one nut is required) Ex : Install two nuts on a shaft B2

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

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

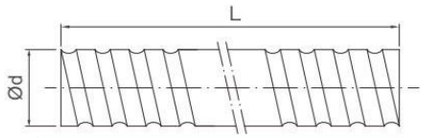


Fig 3.13.1 Screw Shaft Nominial Diameter

Table 3.13.1 Ground Ball Screw Speciications Ø4~32

Model No.			Accuracy Grade	Threading Direction	Number of Grooves	Standard Code of Shaft	Type of Nut
Ød	l	Da		R : Right L : Left			
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, BSH
10	2	1.2	C7, C5, C3	R/L	1	SCR01002	K, BSH
	4	2	C7, C5, C3	R	1	SCR01004	K, BSH
12	2	1.2	C7, C5, C3	R/L	1	SCR01202	K
	4	2.5	C7, C5, C3	R	1	SCR01204	U, BSH
	5	2.5	C7, C5, C3	R	1	SCR01205-A	V, U, BSH, 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
	4	2.5	C7, C5, C3	R	1	SCR01404	BSH
16	2	1.2	C7, C5, C3	R/L	1	SCR01602	K
	4	2.381	C7, C5, C3	R	1	SCR01604(N)	V, I, U, BSH
	5	3.175	C7, C5, C3	R/L	1	SCR01605	V, I, U, S, BSH
	10	3.175	C7, C5, C3	R/L	2	SCR01610	V, I, U, BSH,S
	16	2.778	C7, C5, C3	R	2	SCR01616	S,E,Y
	32	2.778	C7, C5, C3	R	2	SCR01632	Y
20	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,BSH,H
	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,BSH, H
	6	3.969	C7, C5, C3	R	1	SCR02506	V, U
	8	4.762	C7, C5, C3	R	1	SCR02508	V, U
	10	4.762	C7, C5, C3	R	1	SCR02510-A	I, U, BSH
	10	6.35	C7, C5, C3	R	1	SCR02510-B	V
	25	3.969	C7, C5, C3	R	2	SCR02525	S,E,Y
	50	3.969	C7, C5, C3	R	2	SCR02550	Y
32	4	2.381	C7, C5, C3	R	1	SCR03204(N)	V, I, U
	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
	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	4.762	C7, C5, C3	R	2	SCR03264	Y

Table 3.13.2 Standard Speciications Ø40~80 Unit : mm

Model No.			Accuracy Grade	Threading Direction	Number of Grooves	Standard Code of Shaft	Type of Nut
Ød	l	Da		R : Right L : Left			
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,E,Y
	80	6.35	C7, C5, C3	R	2	SCR04080	Y
50	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
	100	7.938	C7, C5, C3	R	2	SCR050100	Y
63	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

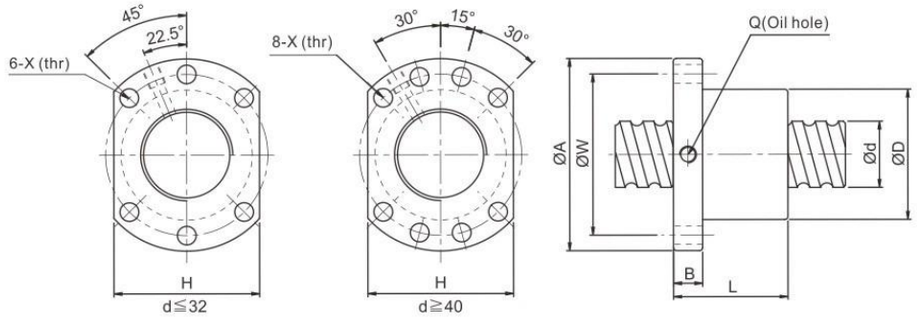
Table 3.13.3 H-type Speciications Ø16~50 Unit : mm

Model No.			Accuracy Grade	Threading Direction	Number of Grooves	Type-H Code of Shaft	Type of Nut
Ød	l	Da		R : Right L : Left			
12	10	2.5	C7, C5, C3	R	1	SSR01210	H
16	5	2.778	C7, C5, C3	R	1	SSR01605	H
	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
25	10	3.175	C7, C5, C3	R	1	SSR02510	H
	25	3.175	C7, C5, C3	R	1	SSR02525	H
32	10	3.969	C7, C5, C3	R	1	SSR03210	H
	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

3-14 Ball Screw Classification

Size Table of SFDC Ball Screws

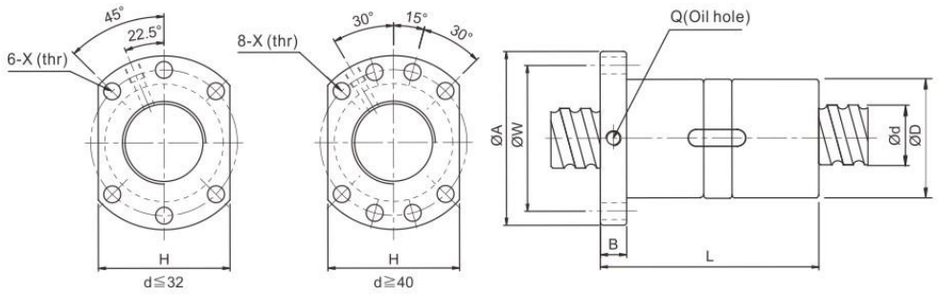


I:Lead Da:Ball Diameter n:Number of Circuits K:Stiffness(Kgf/μm)

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

Model no.	d	l	Da	Dimension									Load Rating Ca(kgf)	Load Rating Coa(kgf)	K kgf/μm
				D	A	B	L	W	X	H	Q	n			
SFDCR2812-2.8	28	12	6.35	54	87	16	65.5	72	9	69	M8×1	2.8×1	2752	5746	43
SFDCR2812-3.8		12	6.35	54	87	16	77.5	72	9	69	M8×1	3.8×1	3579	7799	59
SFDCR2812-4.8		12	6.35	54	87	16	89.5	72	9	69	M8×1	4.8×1	4375	9851	74
SFDCR2816-2.8		16	4.762	48	74	12	74.5	60	6.6	60	M6×1	2.8×1	1855	3589	41
SFDCR2816-3.8		16	4.762	48	74	12	90.5	60	6.6	60	M6×1	3.8×1	2412	4871	55
SFDCR2816-4.8		16	4.762	48	74	12	106.5	60	6.6	60	M6×1	4.8×1	2949	6153	70
SFDCR3210-2.8	32	10	4.762	58	91	18	57	76	9	68	M8×1	2.8×1	1955	4041	45
SFDCR3210-3.8		10	4.762	58	91	18	67	76	9	68	M8×1	3.8×1	2542	5485	61
SFDCR3210-4.8		10	4.762	58	91	18	77	76	9	68	M8×1	4.8×1	3107	6928	77
SFDCR3205-2.8		5	3.175	50	87	16	39	72	9	69	M8×1	2.8×1	1118	2653	43
SFDCR3205-3.8		5	3.175	50	87	16	44	72	9	69	M8×1	3.8×1	1454	3600	58
SFDCR3205-4.8		5	3.175	50	87	16	49	72	9	69	M8×1	4.8×1	1778	4547	73
SFDCR3212-2.8		12	4.762	53	87	16	40.5	72	9	69	M8×1	2.8×1	1956	4049	45
SFDCR3212-3.8		12	4.762	53	87	16	64.5	72	9	69	M8×1	3.8×1	2544	5496	61
SFDCR3212-4.8		12	4.762	53	87	16	88.5	72	9	69	M8×1	4.8×1	3110	6942	77
SFDCR3216-2.8		16	6.35	57	87	16	77.5	72	9	69	M8×1	2.8×1	2915	11226	48
SFDCR3216-3.8		16	6.35	57	87	16	93.5	72	9	69	M8×1	3.8×1	3790	8887	66
SFDCR3216-4.8		16	6.35	57	87	16	109.5	72	9	69	M8×1	4.8×1	4634	6549	83
SFDCR4006-2.8	40	6	3.969	58	91	18	45.5	76	9	68	M8×1	2.8×1	1671	4010	52
SFDCR4006-3.8		6	3.969	58	91	18	51.5	76	9	68	M8×1	3.8×1	2172	5618	70
SFDCR4006-4.8		6	3.969	58	91	18	57.5	76	9	68	M8×1	4.8×1	2656	7096	88
SFDCR4010-2.8		10	6.35	65	95	18	62.5	80	9	72	M8×1	2.8×1	3192	9048	57
SFDCR4010-3.8		10	6.35	65	95	18	72.5	80	9	72	M8×1	3.8×1	4150	10922	77
SFDCR4010-4.8		10	6.35	65	95	18	82.5	80	9	72	M8×1	4.8×1	5074	13797	97
SFDCR4012-2.8		12	6.35	65	95	18	65.5	80	9	72	M8×1	2.8×1	3194	8058	57
SFDCR4012-3.8		12	6.35	65	95	18	77.5	80	9	72	M8×1	3.8×1	4153	10936	77
SFDCR4012-4.8		12	6.35	65	95	18	89.5	80	9	72	M8×1	4.8×1	5077	13815	97
SFDCR4016-2.8		16	6.35	65	95	18	76.5	80	9	72	M8×1	2.8×1	3198	8085	57
SFDCR4016-3.8		16	6.35	65	95	18	92.5	80	9	72	M8×1	3.8×1	4159	10972	77
SFDCR4016-4.8		16	6.35	65	95	18	108.5	80	9	72	M8×1	4.8×1	5084	13860	97
SFDCR5010-2.8	50	10	6.35	75	118	18	62.5	100	11	92	M8×1	2.8×1	3509	9982	67
SFDCR5010-3.8		10	6.35	75	118	18	72.5	100	11	92	M8×1	3.8×1	4563	13547	90
SFDCR5010-4.8		10	6.35	75	118	18	82.5	100	11	92	M8×1	4.8×1	5578	17112	114

Size Table of DFDC Ball Screws



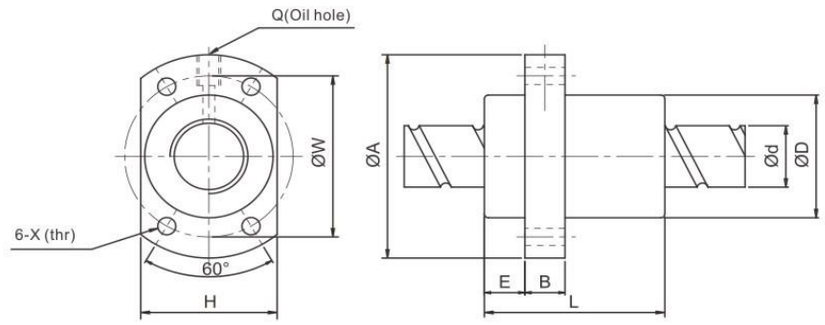
I:Lead Da:Ball Diameter n:Number of Circuits K:Stiffness(Kgf/μm)

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

Unit:mm

Model no.	d	l	Da	Dimension									Load Rating Ca(kgf)	Load Rating Coa(kgf)	K kgf/μm
				D	A	B	L	W	H	X	Q	n			
DFDCR2812-2.8	28	12	6.35	54	87	16	125.5	72	69	9	M8×1	2.8×1	2752	5746	66
DFDCR2812-3.8		12	6.35	54	87	16	149.5	72	69	9	M8×1	3.8×1	3579	7799	90
DFDCR2812-4.8		12	6.35	54	87	16	173.5	72	69	9	M8×1	4.8×1	4375	9851	113
DFDCR2816-2.8		16	4.762	48	74	12	143	60	60	6.6	M6×1	2.8×1	1855	3589	63
DFDCR2816-3.8		16	4.762	48	74	12	175	60	60	6.6	M6×1	3.8×1	2412	4871	85
DFDCR2816-4.8		16	4.762	48	74	12	207	60	60	6.6	M6×1	4.8×1	2949	6153	108
DFDCR3210-2.8	32	10	4.762	58	91	18	107.5	76	68	9	M8×1	2.8×1	1955	4041	69
DFDCR3210-3.8		10	4.762	58	91	18	127.5	76	68	9	M8×1	3.8×1	2542	5485	94
DFDCR3210-4.8		10	4.762	58	91	18	147.5	76	68	9	M8×1	4.8×1	3107	6928	119
DFDCR3205-2.8		5	3.175	50	87	16	71.5	72	69	9	M8×1	2.8×1	1118	2653	52
DFDCR3205-3.8		5	3.175	50	87	16	81.5	72	69	9	M8×1	3.8×1	1454	3600	71
DFDCR3205-4.8		5	3.175	50	87	16	91.5	72	69	9	M8×1	4.8×1	1778	4547	90
DFDCR3212-2.8		12	4.762	53	87	16	124.5	72	69	9	M8×1	2.8×1	1956	4049	69
DFDCR3212-3.8		12	4.762	53	87	16	148.5	72	69	9	M8×1	3.8×1	2544	5496	94
DFDCR3212-4.8		12	4.762	53	87	16	172.5	72	69	9	M8×1	4.8×1	3110	6942	119
DFDCR3216-2.8		16	6.35	57	87	16	149.5	72	69	9	M8×1	2.8×1	2915	11226	74
DFDCR3216-3.8		16	6.35	57	87	16	181.5	72	69	9	M8×1	3.8×1	3790	8887	100
DFDCR3216-4.8		16	6.35	57	87	16	213.5	72	69	9	M8×1	4.8×1	4634	6549	126
DFDCR4006-2.8	40	6	3.969	58	91	18	60.5	76	68	9	M8×1	2.8×1	1671	4010	80
DFDCR4006-3.8		6	3.969	58	91	18	84.5	76	68	9	M8×1	3.8×1	2172	5618	108
DFDCR4006-4.8		6	3.969	58	91	18	108.5	76	68	9	M8×1	4.8×1	2656	7096	136
DFDCR4010-2.8		10	6.35	65	95	18	117.5	80	72	9	M8×1	2.8×1	3192	9048	87
DFDCR4010-3.8		10	6.35	65	95	18	137.5	80	72	9	M8×1	3.8×1	4150	10922	118
DFDCR4010-4.8		10	6.35	65	95	18	157.5	80	72	9	M8×1	4.8×1	5074	13797	149
DFDCR4012-2.8		12	6.35	65	95	18	125.5	80	72	9	M8×1	2.8×1	3194	8058	87
DFDCR4012-3.8		12	6.35	65	95	18	149.5	80	72	9	M8×1	3.8×1	4153	10936	118
DFDCR4012-4.8		12	6.35	65	95	18	173.5	80	72	9	M8×1	4.8×1	5077	13815	149
DFDCR4016-2.8		16	6.35	65	95	18	148.5	80	72	9	M8×1	2.8×1	3198	8085	87
DFDCR4016-3.8		16	6.35	65	95	18	180.5	80	72	9	M8×1	3.8×1	4159	10972	118
DFDCR4016-4.8		16	6.35	65	95	18	212.5	80	72	9	M8×1	4.8×1	5084	13860	149
DFDCR5010-2.8	50	10	6.35	75	118	18	117.5	100	92	11	M8×1	2.8×1	3509	9982	104
DFDCR5010-3.8		10	6.35	75	118	18	137.5	100	92	11	M8×1	3.8×1	4563	13547	141
DFDCR5010-4.8		10	6.35	75	118	18	157.5	100	92	11	M8×1	4.8×1	5578	17112	178

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

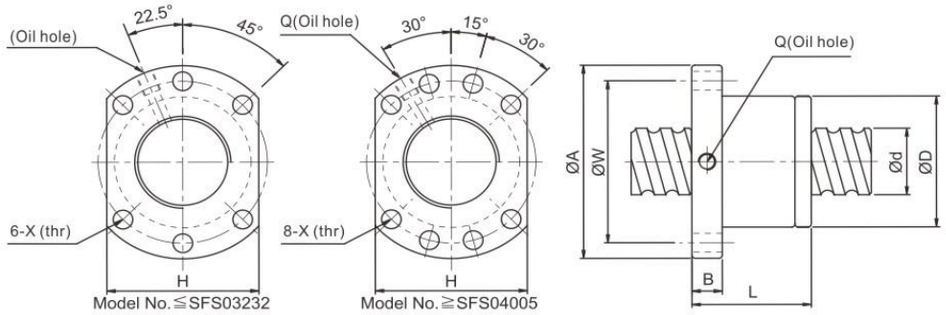
Model no.	d	l	Da	Dimension										Load Rating Ca(kgf)	Load Rating Coa(kgf)
				D	A	E	B	L	W	H	X	Q	n		
SFYR1616-3.6	16	16	2.778	32	53	10.1	10	45	42	34	4.5	M6x1	1.8×2	1073	2551
SFYR2020-3.6	20	20	3.175	39	62	13	10	52	50	41	5.5	M6x1	1.8×2	1387	3515
SFYR2040-1.6	40	40	3.175	39	62	13	10	48	50	41	5.5	M6x1	0.8×2	653	1597
SFYR2550-1.6	50	50	3.969	47	74	15	12	58	60	49	6.6	M6X1	0.8×2	976	2495
SFYR2525-3.6	25	25	3.969	47	74	15	12	64	60	49	6.6	M6x1	1.8×2	2074	5494
SFYR3232-3.6	32	32	4.762	58	92	17	12	78	74	60	9	M6x1	1.8×2	3021	8690
SFYR4040-3.6	40	40	6.35	73	114	19.5	15	99	93	75	11	M6x1	1.8×2	4831	14062
SFYR5050-3.6	50	50	7.938	90	135	21.5	20	117	112	92	14	M6x1	1.8×2	7220	21974

Size Table of SFE Ball Screws

Unit:mm

Model no.	d	l	Da	Dimension										Load Rating Ca(kgf)	Load Rating Coa(kgf)
				D	A	E	B	L	W	H	X	Q	n		
SFE01616-3.6	16	16	2.778	32	53	10.1	10	45	42	34	4.5	M6×1	1.8×2	1073	2551
SFE02020-3.6	20	20	3.175	39	62	11.5	10	55	50	41	5.5	M6×1	1.8×2	1387	3515
SFE02525-3.6	25	25	3.969	47	74	13	12	57	60	49	6.6	M6×1	1.8×2	2074	5494
SFE03232-3.6	32	32	4.762	58	92	16	12	82	74	60	9	M6×1	1.8×2	3021	8690
SFE04040-3.6	40	40	6.35	73	114	19	15	100	93	75	11	M6×1	1.8×2	4831	14062
SFE05050-3.6	50	50	7.938	90	135	21.5	20	125	112	92	14	M6×1	1.8×2	7220	21974

Size Table of SFS Ball Screws



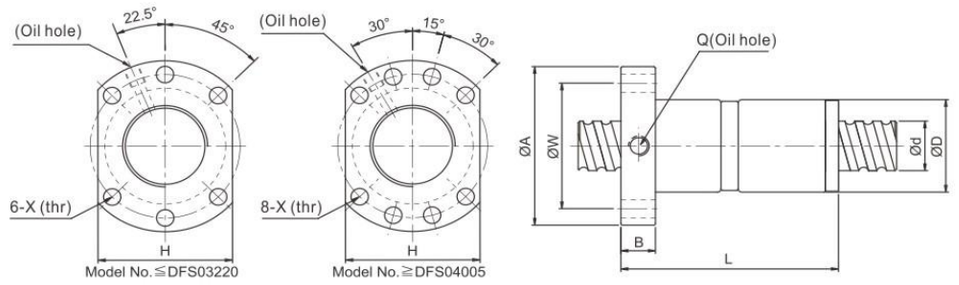
I:Lead Da:Ball Diameter n:Number of Circuits K:Stiffness(Kgf/μm)

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		
SFSR1205-2.8	12	5	2.5	24	40	10	31	32	30	4.5	M6×1	2.8×1	661	1316
SFSR1210-2.8		10	2.5	24	40	10	48.5	32	30	4.5	M6×1	2.8×1	642	1287
SFSR1605-3.8	15	5	2.778	28	48	10	38	38	40	5.5	M6×1	3.8×1	1112	2507
SFSR1610-2.8		10	2.778	28	48	10	47	38	40	5.5	M6×1	2.8×1	839	1821
SFSR1616-1.8		16	2.778	28	48	10	45	38	40	5.5	M6×1	1.8×1	552	1137
SFSR1616-2.8		16	2.778	28	48	10	61	38	40	5.5	M6×1	2.8×1	808	1769
SFSR1620-1.8		20	2.778	28	48	10	57	38	40	5.5	M6×1	1.8×1	554	1170
SFSR2005-3.8	20	5	3.175	36	58	10	40	47	44	6.6	M6×1	3.8×1	1484	3681
SFSR2010-3.8		10	3.175	36	58	10	60	47	44	6.6	M6×1	3.8×1	1516	3833
SFSR2020-1.8		20	3.175	36	58	10	57	47	44	6.6	M6×1	1.8×1	764	1758
SFSR2020-2.8		20	3.175	36	58	10	77	47	44	6.6	M6×1	2.8×1	1118	2734
SFSR2505-3.8	25	5	3.175	40	62	10	40	51	48	6.6	M6×1	3.8×1	1650	4658
SFSR2510-3.8		10	3.175	40	62	12	65	51	48	6.6	M6×1	3.8×1	1638	4633
SFSR2520-2.8		20	3.969	40	62	12	72	51	48	6.6	M6×1	2.8×1	1206	2695
SFSR2525-1.8		25	3.175	40	62	12	70	51	48	6.6	M6×1	1.8×1	843	2199
SFSR2525-2.8		25	3.175	40	62	12	95	51	48	6.6	M6×1	2.8×1	1232	3421
SFSR3205-3.8	32	5	3.175	50	80	12	42	65	62	9	M6×1	3.8×1	1839	6026
SFSR3210-3.8	31	10	3.969	50	80	13	62	65	62	9	M6×1	3.8×1	2460	7255
SFSR3220-2.8		20	3.969	50	80	12	80	65	62	9	M6×1	2.8×1	1907	5482
SFSR3232-1.8		32	3.969	50	80	13	84	65	62	9	M6×1	1.8×1	1257	3426
SFSR3232-2.8		32	3.969	50	80	13	116	65	62	9	M6×1	2.8×1	1838	2329
SFSR4005-3.8	40	5	3.175	63	93	15	45	78	70	9	M8×1	3.8×1	2018	7589
SFSR4010-3.8	38	10	6.35	63	93	14	63	78	70	9	M8×1	3.8×1	5035	13943
SFSR4020-2.8		20	6.35	63	93	14	82	78	70	9	M8×1	2.8×1	3959	10715
SFSR4040-1.8		40	6.35	63	93	15	105	78	70	9	M8×1	1.8×1	2585	6648
SFSR4040-2.8		40	6.35	63	93	15	145	78	70	9	M8×1	2.8×1	3780	10341
SFSR5005-3.8	50	5	3.175	75	110	15	45	93	85	11	M8×1	3.8×1	2207	9542
SFSR5010-3.8	48	10	6.35	75	110	18	68	93	85	11	M8×1	3.8×1	5638	17852
SFSR5020-3.8		20	6.35	75	110	18	108	93	85	11	M8×1	3.8×1	5749	18485
SFSR5050-1.8		50	6.35	75	110	18	125	93	85	11	M8×1	1.8×1	2946	8749
SFSR5050-2.8		50	6.35	75	110	18	175	93	85	11	M8×1	2.8×1	4308	13610

Size Table of DFS Ball Screws



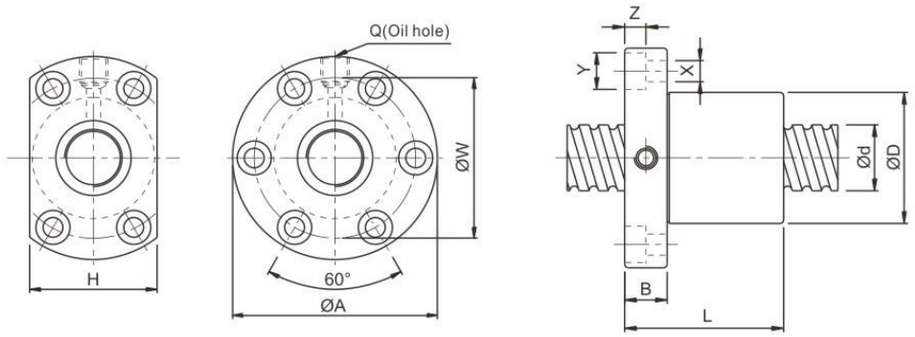
I:Lead Da:Ball Diameter n:Number of Circuits K:Stiffness(Kgf/μm)

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		
DFSR1605-3.8	15	5	2.778	28	48	10	73	38	40	5.5	M6×1	3.8×1	1112	2507
DFSR1610-2.8		10	2.778	28	48	10	97	38	40	5.5	M6×1	2.8×1	839	1821
DFSR2005-3.8	20	5	3.175	36	58	10	75	47	44	6.6	M6×1	3.8×1	1484	3681
DFSR2010-3.8		10	3.175	36	58	10	120	47	44	6.6	M6×1	3.8×1	1516	3833
DFSR2505-3.8	25	5	3.175	40	62	10	75	51	48	6.6	M6×1	3.8×1	1650	4658
DFSR2510-3.8		10	3..175	40	62	12	122	51	48	6.6	M6×1	3.8×1	1638	4633
DFSR2520-2.8		10	3.969	50	62	12	140	51	48	6.6	M6×1	2.8×1	1206	2695
DFSR3205-3.8	32	5	3.175	50	80	12	82	65	62	9	M6×1	3.8×1	1839	6026
DFSR3210-3.8	31	10	3.969	50	80	13	122	65	62	9	M6×1	3.8×1	2460	7255
DFSR3220-2.8		20	3.969	50	80	12	160	65	62	9	M6×1	2.8×1	1907	5482
DFSR4005-3.8	40	5	3.175	63	63	15	85	78	70	9	M8×1	3.8×1	2018	7589
DFSR4010-3.8	38	10	6.35	63	63	14	123	78	70	9	M8×1	3.8×1	5035	13943
DFSR4020-2.8		20	6.35	63	63	14	162	78	70	9	M8×1	2.8×1	3959	10715
DFSR5005-3.8	50	5	3.175	75	75	15	85	93	85	11	M8×1	3.8×1	2207	9542
DFSR5010-3.8	48	10	6.35	75	75	18	138	93	85	11	M8×1	3.8×1	5638	17852
DFSR5020-3.8		20	6.35	75	75	18	218	93	85	11	M8×1	3.8×1	5749	18485

Size Table of SFI Ball Screws



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

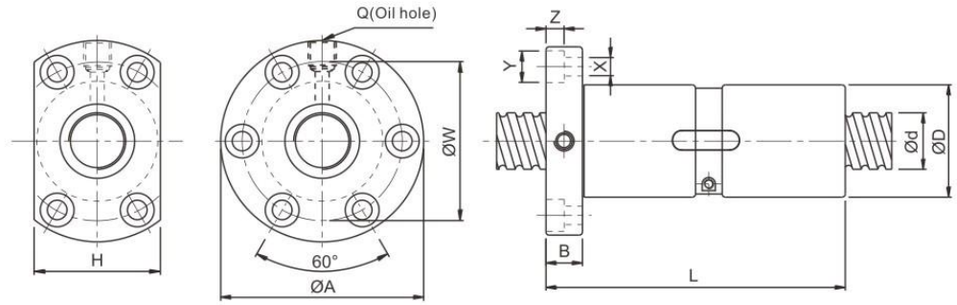
Ca:Basic Dynamic Rating Load(Kgf) Coa: Basic Static Rating Load(Kgf)

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		
☆	SFIR1605-4	16	5	3.175	30	49	10	50	39	34	4.5	8	4.5	M6×1	1×4	888	1525
☆	SFIR1610-3		10	3.175	34	58	10	57	45	34	5.5	9.5	5.5	M6×1	1×3	716	1232
☆	SFIR2005-4	20	5	3.175	34	57	11	51	45	40	5.5	9.5	5.5	M6×1	1×4	999	1994
☆	SFIR2505-4	25	5	3.175	40	63	11	51	51	46	5.5	9.5	5.	M8×1	1×4	1119	2581
☆	SFIR2510-4		10	4.762	46	72	12	85	58	52	6.5	11	6.5	M8×1	1×4	1903	3695
☆	SFIR3205-4	32	5	3.175	46	72	12	52	58	52	6.5	11	6.5	M8×1	1×4	1264	3402
	SFIR3210-4		10	6.35	54	88	15	90	70	62	9	14	8.5	M8×1	1×4	3092	6101
	SFIR4005-4	40	5	3.175	56	90	15	55	72	64	9	14	8.5	M8×1	1×4	1407	4341
	SFIR4010-4		10	6.35	62	104	18	93	82	70	11	17.5	11	M8×1	1×4	3480	7779
	SFIR5010-4	50	10	6.35	72	114	18	93	92	82	11	17.5	11	M8×1	1×4	3898	10325
	SFIR6310-4	63	10	6.35	85	131	22	98	107	95	14	20	13	M8×1	1×4	4401	13611
	SFIR8010-4	80	10	6.35	105	150	22	98	127	115	14	20	13	M8×1	1×4	4900	17366

Note:with sign ☆ can poduce left helix

Size Table of DFI Ball Screws



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

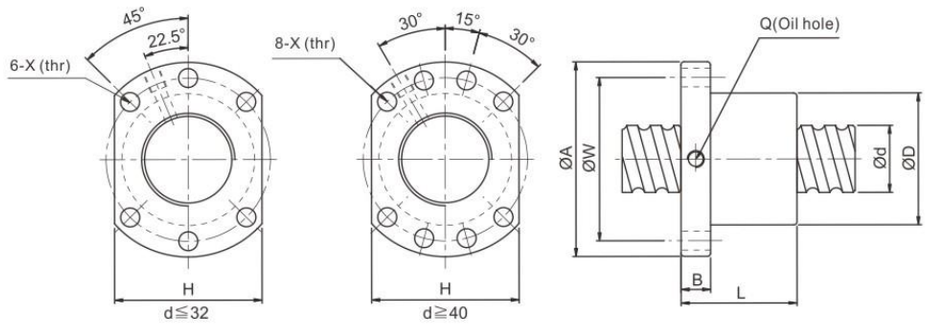
Ca:Basic Dynamic Rating Load(Kgf) Coa: Basic Static Rating Load(Kgf)

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		
☆	DFIR1605-4	16	5	3.175	30	49	10	10	39	34	4.5	8	4.5	M6×1	1×4	888	1525
☆	DFIR2005-4	20	5	3.175	34	57	11	101	45	40	5.5	9.5	5.5	M6×1	1×4	999	1994
☆	DFIR2505-4	25	5	3.175	40	63	11	101	51	46	5.5	9.5	5.5	M6×1	1×4	1119	2581
☆	DFIR2510-4		10	4.762	46	72	12	145	58	52	6.5	11	6.5	M6×1	1×4	1903	3695
☆	DFIR3205-4	32	5	3.175	46	72	12	102	58	52	6.5	11	6.5	M8×1	1×4	1264	3402
	DFIR3210-4		10	6.35	54	88	15	162	70	62	9	14	8.5	M8×1	1×4	3092	6101
	DFIR4005-4	40	5	3.175	56	90	15	105	72	64	9	14	8.5	M8×1	1×4	1407	4341
	DFIR4010-4		10	6.35	62	104	18	165	82	70	11	17.5	11	M8×1	1×4	3480	7779
	DFIR5010-4	50	10	6.35	72	114	18	171	92	82	11	17.5	11	M8×1	1×4	3898	10325
	DFIR6310-4	63	10	6.35	85	131	22	182	107	95	14	20	13	M8×1	1×4	4401	13611
	DFIR8010-4	80	10	6.35	105	150	22	182	127	115	14	20	13	M8×1	1×4	4900	17366

Note:with sign ☆ can poduce left helix

Size Table of SFU Ball Screws



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

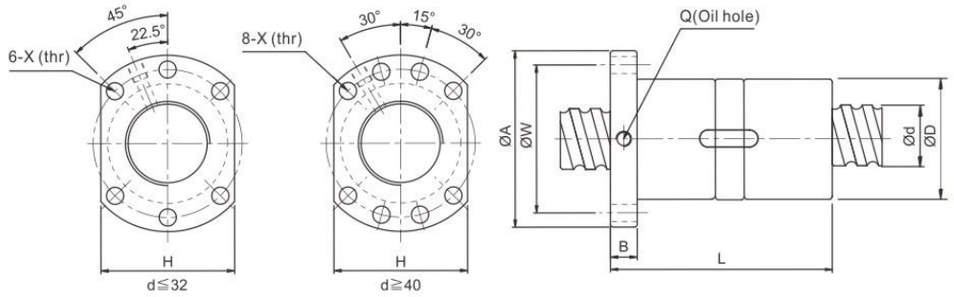
Ca:Basic Dynamic Rating Load(Kgf) Coa: Basic Static Rating Load(Kgf)

Unit:mm

	Model no.	d	l	Da	Dimension									Load Rating Ca(kgf)	Load Rating Coa(kgf)
					D	A	B	L	W	H	X	Q	n		
☆	SFUR 1204-3	12	4	2.5	24	40	10	40	32	30	4.5	M6×1	1×3	451	709
	SFUR 1604-3	16	4	2.381	28	48	10	36	38	40	5.5	M6×1	1×3	488	940
☆	SFUR 1605-3		5	3.175	28	48	10	42	38	40	5.5	M6×1	1×3	666	1143
☆	SFUR 1605-4		5	3.175	28	48	10	50	38	40	5.5	M6×1	1×4	888	1525
☆	SFUR 1610-3		10	3.175	28	48	10	57	38	40	5.5	M6×1	1×3	716	1232
	SFUR 2004-3	20	4	2.381	36	58	10	42	47	44	6.6	M6×1	1×3	541	1187
☆	SFUR 2005-3		5	3.175	36	58	10	42	47	44	6.6	M6×1	1×3	749	1495
☆	SFUR 2005-4		5	3.175	36	58	10	51	47	44	6.6	M6×1	1×4	999	1994
	SFUR 2504-3	25	4	2.381	40	62	10	42	51	48	6.6	M6×1	1×3	605	1534
☆	SFUR 2505-3		5	3.175	40	62	10	42	51	48	6.6	M6×1	1×3	839	1935
☆	SFUR 2505-4		5	3.175	40	62	10	51	51	48	6.6	M6×1	1×4	1119	2581
☆	SFUR 2510-3		10	4.762	40	62	10	70	51	48	6.6	M6×1	1×3	1427	2771
☆	SFUR 2510-4		10	4.762	40	62	12	85	51	48	6.6	M6×1	1×4	1903	3695
☆	SFUR 3205-4	32	5	3.175	50	80	12	52	65	62	9	M6×1	1×4	1264	3402
	SFUR 3210-3		10	6.35	50	80	12	74	65	62	9	M6×1	1×3	2319	4575
	SFUR 3210-4		10	6.35	50	80	12	90	65	62	9	M6×1	1×4	3092	6101
	SFUR 4005-4	40	5	3.175	63	93	14	55	78	70	9	M8×1	1×4	1407	4341
	SFUR 4010-3		10	6.35	63	93	14	71	78	70	9	M8×1	1×3	2610	5834
	SFUR 4010-4		10	6.35	63	93	14	93	78	70	9	M8×1	1×4	3480	7779
	SFUR 5010-4	50	10	6.35	75	110	16	93	93	85	11	M8×1	1×4	3898	10325
	SFUR 6310-4	63	10	6.35	90	125	18	98	108	95	11	M8×1	1×4	4401	13611
	SFUR 6320-4		20	9.525	95	135	20	149	115	100	13.5	M8×1	1×4	7404	19008
	SFUR 8010-4	80	10	6.35	105	145	20	98	125	110	13.5	M8×1	1×4	4900	17366
	SFUR 8020-4		20	9.525	125	165	25	154	145	130	13.5	M8×1	1×4	8403	25345

Note:with sign ☆ can poduce left helix

Size Table of DFU Ball Screws



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

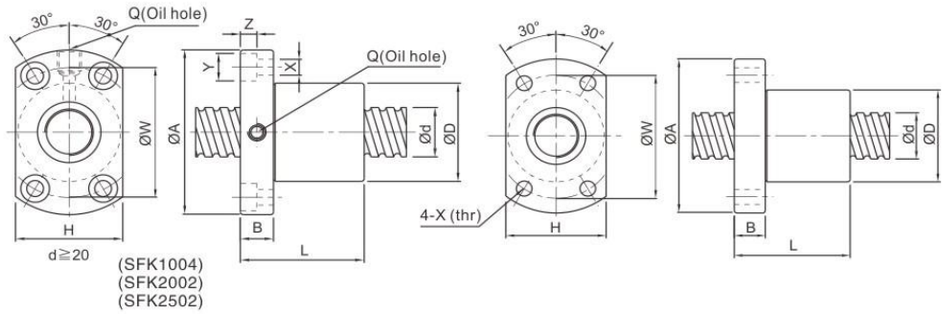
Ca:Basic Dynamic Rating Load(Kgf) Coa: Basic Static Rating Load(Kgf)

Unit:mm

	Model no.	d	l		Dimension									Load Rating Ca(kgf)	Load Rating Coa(kgf)
					D	A	B	L	W	H	X	Q	n		
	DFUR 1604-3	16	4	2.381	28	48	10	80	38	40	5	M6×1	1×3	488	940
☆	DFUR 1605-4		5	3.175	28	48	10	100	38	40	5	M6×1	1×4	885	1525
☆	DFUR 1610-3		10	3.175	28	48	10	118	38	40	5	M6×1	1×3	716	1232
	DFUR 2004-3	20	4	2.381	36	58	10	80	47	44	6.6	M6×1	1×3	541	1187
☆	DFUR 2005-4		5	3.175	36	58	10	101	47	44	6.6	M6×1	1×4	999	1994
	DFUR 2504-3	25	4	2.381	40	62	10	80	51	48	6.6	M6×1	1×3	605	1534
☆	DFUR 2505-4		5	3.175	40	62	10	101	51	48	6.6	M6×1	1×4	1119	2581
☆	DFUR 2510-4		10	4.762	40	62	12	145	51	48	6.6	M6×1	1×4	1927	2771
☆	DFUR 3205-4	32	5	3.175	50	80	12	102	65	62	9	M6×1	1×4	1264	3402
	DFUR 3210-4		10	6.35	50	80	12	162	65	62	9	M6×1	1×4	3092	6101
	DFUR 4005-4	40	5	3.175	63	93	14	105	78	70	9	M8×1	1×4	1407	4341
	DFUR 4010-4		10	6.35	63	93	14	165	78	70	9	M8×1	1×4	3480	7979
	DFUR 5010-4	50	10	6.35	75	110	16	171	93	85	11	M8×1	1×4	3898	10325
	DFUR 6310-4	63	10	6.35	90	125	18	182	108	95	11	M8×1	1×4	4401	13611
	DFUR 6320-4		20	9.525	95	135	20	290	115	100	13.5	M8×1	1×4	7404	19008
	DFUR 8010-4	80	10	6.35	105	145	20	182	125	110	13.5	M8×1	1×4	4900	17366
	DFUR 8020-4		20	9.525	125	165	25	295	145	130	13.5	M8×1	1×4	8403	25345

Note:with sign ☆ can poduce left helix

Size Table of SFK Ball Screws



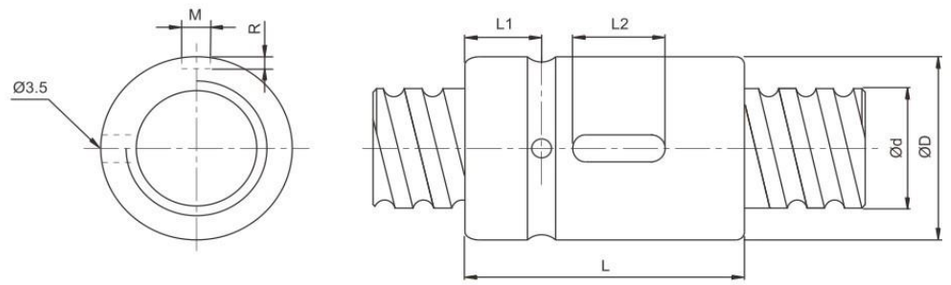
I:Lead Da:Ball Diameter n:Number of Circuits K:Stiffness(Kgf/μm)

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

Unit:mm

Model no.	d	l	Da	Dimension											Load Rating Ca(kgf)	Load Rating Coa(kgf)
				D	A	B	L	W	H	X	Y	Z	Q	n		
SFKR0401	4	1	0.8	10	20	3	12	15	14	2.9	-	-	-	1×2	64	97
SFKR0601	6	1	0.8	12	24	3.5	15	18	16	3.4	-	-	-	1×3	111	224
SFKR0801	8	1	0.8	14	27	4	16	21	18	3.4	-	-	-	1×4	161	403
SFKR0802		2	1.2	14	27	4	16	21	18	3.4	-	-	-	1×3	222	458
SFKR082.5		2.5	1.2	16	29	4	26	23	20	3.4	-	-	-	1×3	221	457
SFKR1002	10	2	1.2	18	35	5	28	27	22	4.5	-	-	-	1×3	243	569
SFKR1004		4	2	26	46	10	34	36	28	4.5	8	4.5	M6	1×3	468	905
SFKR1204	12	2	1.2	20	37	5	28	29	24	4.5	-	-	-	1×4	334	906
SFKR1205		4	2.5	24	40	6	28	32	25	3.5	-	-	-	1×3	454	722
SFKR 1202		5	2.5	22	37	8	39	29	24	4.5	-	-	-	1×3	675	1316
SFKR 1402	14	2	1.2	21	40	6	23	31	26	5.5	-	-	-	1×4	354	1053
SFKR1602	16	2	1.2	25	43	10	40	35	29	5.5	-	-	M6	1×4	373	1200
SFKR2002	20	2	1.2	50	80	15	55	65	68	6.5	10.5	6	M6	1×6	581	2284
SFKR2502	25	2	1.2	50	80	13	43	65	68	6.5	10.5	6	M6	1×5	540	2381

Size Table of SCI Ball Screws



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

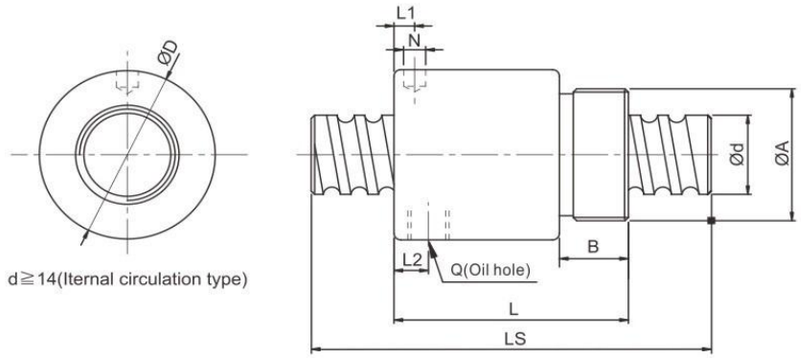
Ca:Basic Dynamic Rating Load(Kgf) Coa: Basic Static Rating Load(Kgf)

Unit:mm

	Model no.	d	l	Da	Dimension							Load Rating Ca(kgf)	Load Rating Coa(kgf)	K kgf/μm
					D	L	L1	L2	M	R	n			
	SCI01604-4	16	4	2.381	30	40	9	15	3	1.5	1×4	973	2406	32
☆	SCI01605-4		5	3.175	30	45	9	20	5	3	1×4	1380	3052	33
	SCI02004-4	20	4	2.381	34	40	9	15	3	1.5	1×4	1066	2987	37
☆	SCI02005-4		5	3.175	34	45	9	20	5	3	1×4	1551	3875	39
	SCI02504-4	25	4	2.381	40	40	9	15	3	1.5	1×4	1180	3795	73
☆	SCI02505-4		5	3.175	40	45	9	20	5	3	1×4	1724	4904	45
	SCI02510-4		10	4.762	46	85	13	30	5	3	1×4	2954	7295	51
☆	SCI03205-4	32	5	3.175	46	45	9	20	5	3	1×4	1922	6343	52
	SCI03210-4		10	6.35	54	85	13	30	5	3	1×4	4805	12208	62
	SCI04005-4	40	5	3.175	56	45	9	20	5	3	1×4	2110	7988	59
	SCI04010-4		10	6.35	62	85	13	30	5	3	1×4	5399	15500	72
	SCI05010-4	50	10	6.35	72	85	13	30	5	3	1×4	6004	19614	83
	SCI06310-4	63	10	6.35	85	85	13	30	6	3.5	1×4	6719	25358	95
	SCI08010-4	80	10	6.35	105	85	13	30	8	4.5	1×4	7346	31953	109

Note:with sign ☆ can poduce left helix

Size Table of BSH Ball Screws



d≧14(Iternal circulation type)

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	L1	N	L2	Q	n			
BSHR0082.5-2.5	8	2.5	1.2	17.5	M15×1P	7.5	23.5	10	3	-	-	2.5×1	189	381	11
BSHR01002-3.5	10	2	1.2	19.5	M17×1P	7.5	22	3	3.2	-	-	3.5×1	277	664	17
BSHR01004-2.5		4	2	25	M20×1P	10	34	3	3	-	-	2.5×1	400	754	14
BSHR01204-3.5	12	4	2.5	25.5	M20×1P	10	34	13	3	-	-	3.5×1	804	1649	23
BSHR01205-3.5		5	2.5	25.5	M20×1P	10	39	16.25	3	-	-	3.5×1	801	1644	24
BSHR01404-3	14	4	2.5	32.1	M25×1.5P	10	35	11	3	-	-	1×3	748	1609	26
BSHR01604-3	16	4	2.381	29	M22×1.5P	8	32	4	3.2	-	-	1×3	759	1804	24
BSHR01605-3		5	3.175	32.5	M26×1.5P	12	42	19.25	3	-	-	1×3	1077	2289	25
BSHR01610-2		10	3.175	32	M26×1.5P	12	50	3	4	3	M4	1×2	675	1316	14
BSHR02005-3	20	5	3.175	38	M35×1.5P	15	45	20.3	3	-	-	1×3	1211	2906	30
BSHR02505-4	25	5	3.175	43	M40×1.5P	19	69	32.11	3	8	M6	1×4	1724	4904	37
BSHR02510-4		10	4.762	43	M40×1.5P	19	84	8	6	8	M6	1×4	2954	7295	41

Remark: The outer diameter θ8~θ16 nut standard does not have a scraper attached.