



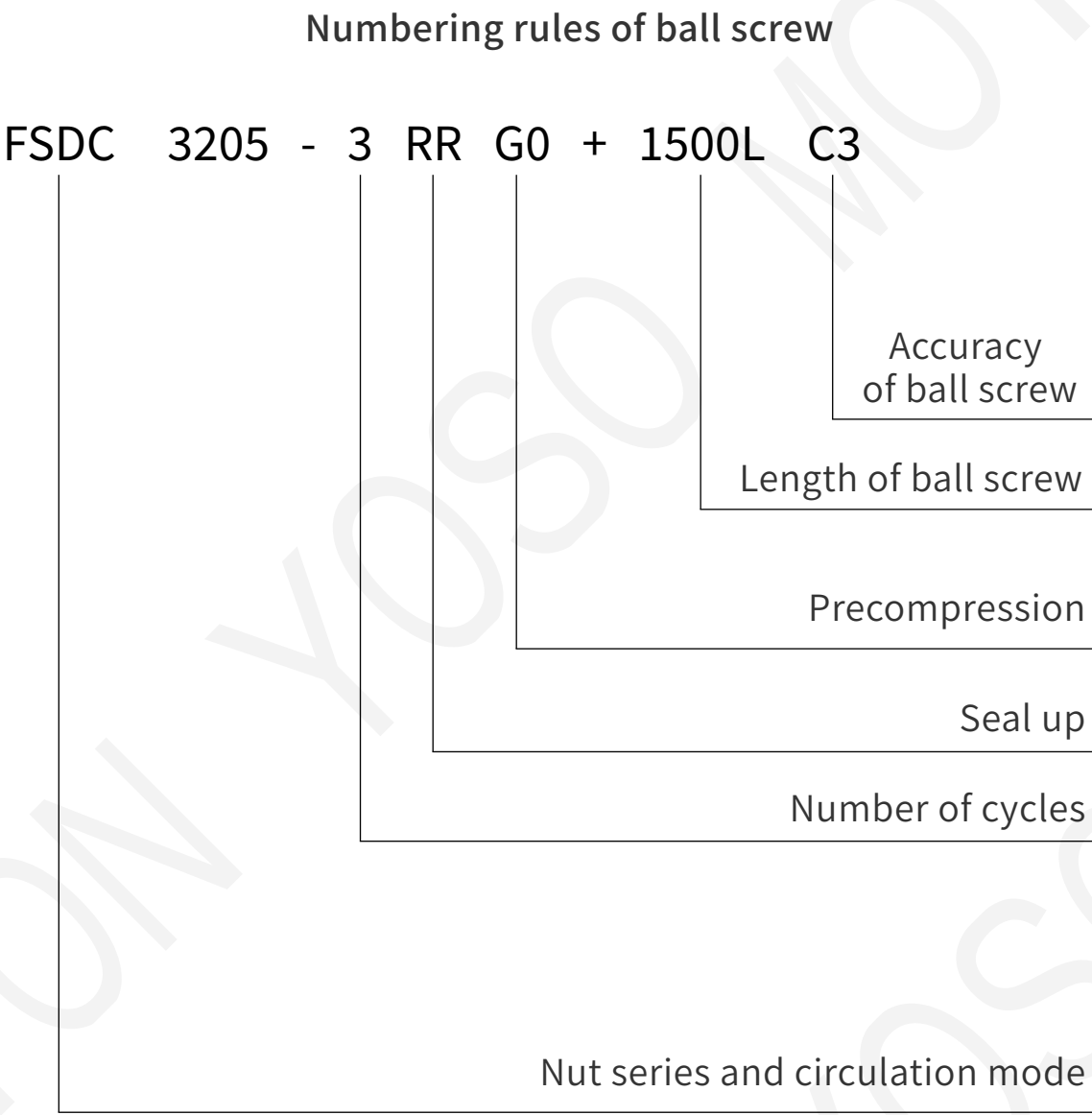
PRECISION BALL SCREW

CONTENT

Numbering rules and meanings.....	01
Structure type of ball screw.....	02
Lead accuracy of ball screw.....	03
Shape and postion tolerance of mounting datum plane of ball screw.....	04
Applicable accuracy grade of various machines.....	05
Parameter calculation and selection of ball screw.....	06
FSDC compact high speed precision ball screw.....	07
FSDC compact high speed precision ball screw.....	09
FDDC compact high speed precision ball screw.....	13
FSIC internal circulation floating ball screw.....	19
FDIC internal circulation floating gasket preloading ball screw.....	25
FDIS internal circulation floating thread preloaded ball screw.....	31
FSVC/FDVC heavy duty ball screw.....	33
FSVC heavy duty ball screw.....	35
FDVC large heavy-duty gasket preloaded ball screw.....	37
Swivel nut assembly unit.....	39
YS-BLR light load rotary nut combination unit.....	41
External circulation high load screw(FDW、FDDW).....	43
FDW External circulation high load screw.....	45
FDDW External circulation high load screw.....	55
IF Heavy-Duty Ball Screw Introduction.....	59
HTF-SRC series Heavy duty ball screw.....	61

High precision screw

■ Numbering rules and meanings



■ Structure type of ball screw

YOSO precision ball screw is standardized into 6 nut types shown in the figure. In addition, in order to meet the requirements of customers, we can produce non-standard nuts with special shapes (such as square, axis intersection, etc.), special properties (such as high temperature resistance, corrosion resistance, etc.) and super specifications (such as extension and heavy load). If there is any need, please contact us.

FSDC / FDDC
(high speed and high precision)



FSIC Type



FDIS Type



FSVC / FDVC Type
(high speed and high precis)



FDIC Type



FDW Type



High precision screw

Lead accuracy of ball screw

Accuracy class:
According to the scope of use and requirements, the ball screw is divided into two types: positioning ball screw (P) and driving ball screw (T). The accuracy level is mainly divided into seven levels, i.e. level 1.2.3.4.5.7.10.
Level 1 accuracy is the highest and gradually decreases
Stroke deviation and variation (see figure-1 and table-2)

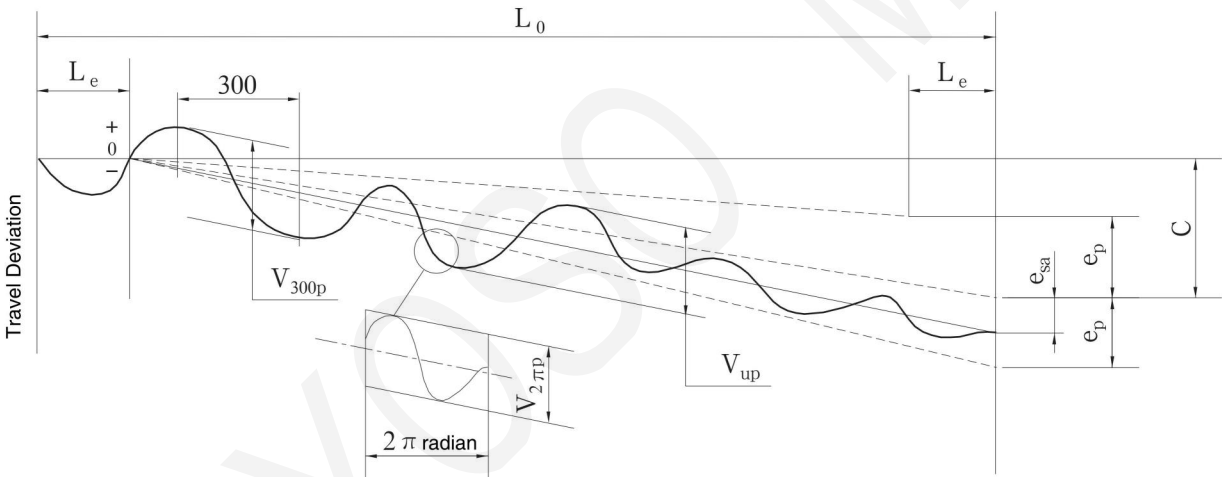


Figure-1

Table-2 stroke deviation and variation (from GB / t17587.3)

Project No.	Inspection contents	Symbol	Effective travel (mm)	Accuracy class						
				1	2	3	4	5	7	10
1	Stroke variation in any 300 stroke	V_{300p}	—	6	8	12	16	23	52	210
2	2π variation	$V_{2\pi p}$	本项仅适用于P类	4	5	6	7	8	—	—
3	Average travel deviation within effective travel L (this item is only applicable to class P ball screw)	e_p	≤315	6	8	12	16	23	—	—
			>315~400	7	9	13	18	25	—	—
			>400~500	8	10	15	20	27	—	—
			>500~630	9	11	16	22	32	—	—
			>630~800	10	13	18	25	36	—	—
			>800~1000	11	15	21	29	40	—	—
			>1000~1250	13	18	24	34	47	—	—
			>1250~1600	15	21	29	40	55	—	—
			>1600~2000	18	25	35	48	65	—	—
			>2000~2500	22	30	41	57	78	—	—
			>2500~3150	26	36	50	69	96	—	—
			>3150~4000	32	45	62	86	115	—	—
			>4000~5000	—	—	76	110	140	—	—
			>5000~6300	—	—	—	—	170	—	—
Note:if the thread length of ball screw exceeds 6300mm,please consult with our company										
	Average travel deviation within effective travel L (this item is only applicable to class P ball screw)	e_p	$e_p \pm \frac{2L}{300} V_{300p}$	Note:1)stroke compensation value C=0 2)Vopsee item No.1 in this table						

Project No.	Inspection contents	Symbol	Effective travel (mm)	Accuracy class						
				1	2	3	4	5	7	10
4	Stroke variation within the effective stroke L_w (this item is only applicable to class P ball screw)	V_w	≤ 315	6	8	12	16	23	—	—
			$>315\sim 400$	6	9	12	18	25	—	—
			$400\sim 500$	7	9	13	19	26	—	—
			$500\sim 630$	7	10	14	20	29	—	—
			$>630\sim 800$	8	11	16	22	31	—	—
			$>800\sim 1000$	9	12	17	24	34	—	—
			$>1000\sim 1250$	10	14	19	27	39	—	—
			$>1250\sim 1600$	11	16	22	31	44	—	—
			$>1600\sim 2000$	13	18	25	36	51	—	—
			$>2000\sim 2500$	15	21	29	41	59	—	—
			$>2500\sim 3150$	17	24	34	49	69	—	—
			$>3150\sim 4000$	21	29	41	58	82	—	—
			$>4000\sim 5000$	—	—	49	70	99	—	—
			$>5000\sim 6300$	—	—	—	—	119	—	—
Note1:the effective stroke L_w of the T-type ball screw rod (internal stroke variation)is generally not checked Note2:if the thread length of ball screw exceeds 6300mm,please consult with our company										

The effective travel L_u is calculated as follows:

$L_u = L_1 - 2L_e$

Where: L_u — effective stroke, mm L_1 — total length of screw thread, mm L_e — excess distance, mm (see table-3)

Table-3

Nominal lead P_{h0}	$2.5 \leq P_{h0} \leq 12$	$12 \leq P_{h0} \leq 40$	40
Remaining distance L_e	$4P_{h0}$	$3P_{h0}$	$2.5P_{h0}$

Shape and position tolerance of mounting datum plane of ball screw (See figure-2 and table-4)

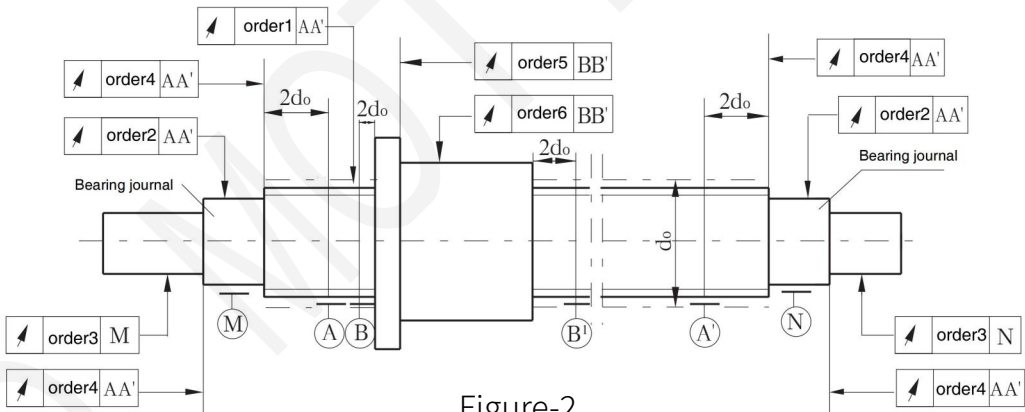


Figure-2

High precision screw

Applicable accuracy grade of various machines

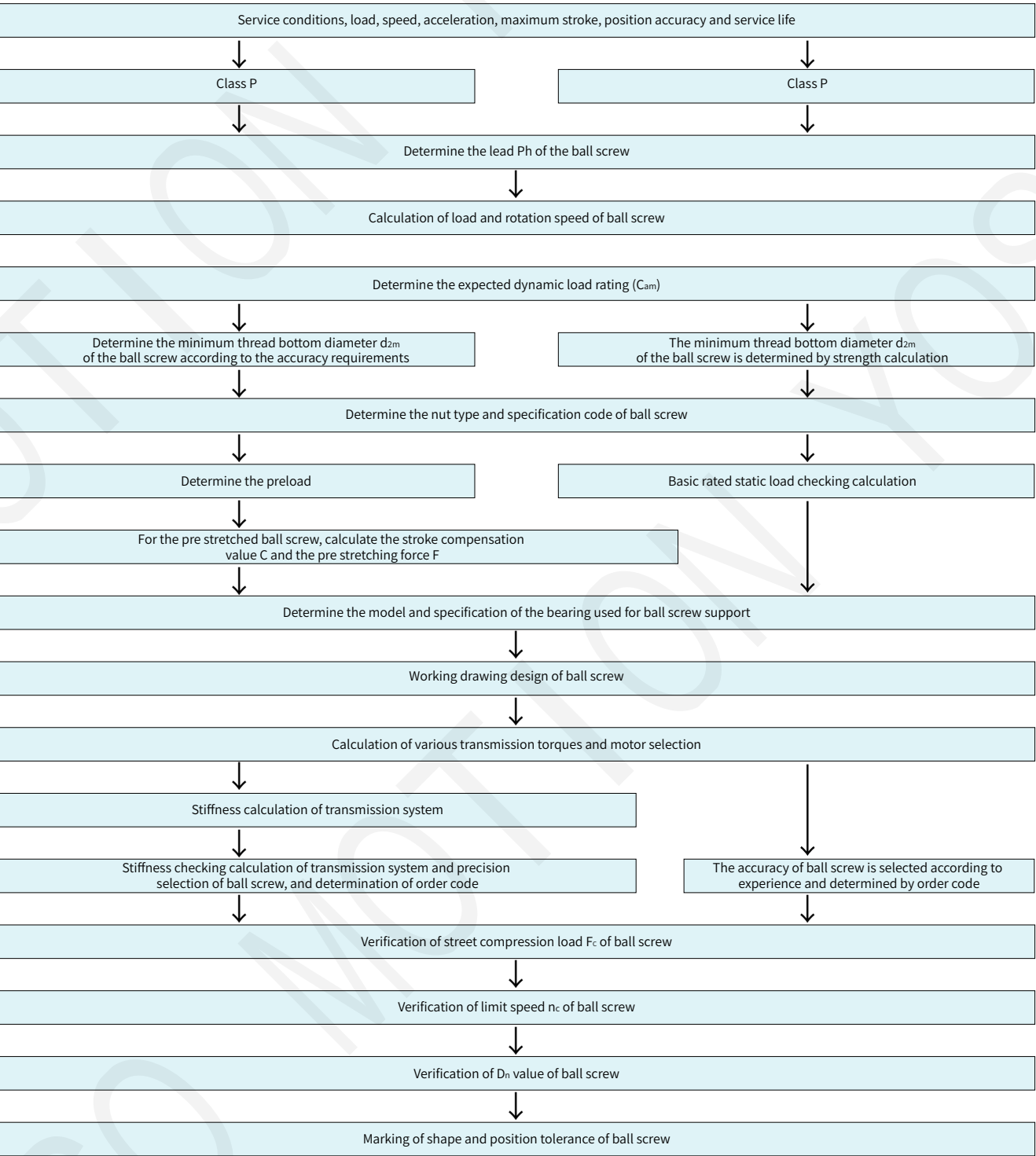
The following table is an example of selecting accuracy levels according to different uses according to the actual experience of Jingpeng Machinery & Equipment (Shanghai) Co., Ltd. ○ the mark indicates the range of accuracy level used more. Through this table, the accuracy grade of the ball screw can be preliminarily selected. In addition, the accuracy grade of the ball screw with the positioning accuracy that meets the actual requirements can be confirmed by the list of "stroke deviation and variation" (table-2 on page P03).

Purpose		NC machine tool																	
		Lathe		Milling and boring machine		machining center		drilling machine		Jig boring machine		Grinding machine		EDM machine		Wire cutting machine		Punch	Laser processing machinery
Axis		X	Z	XY	Z	XY	Z	XY	Z	XY	Z	XY	Z	XY	Z	XY	Z	XY	Z
Accuracy class	P1	○		○		○				○	○	○	○	○	○	○	○		
	P2	○		○	○	○	○					○	○	○	○	○	○		
	P3	○	○	○	○	○	○	○				○	○	○	○	○	○	○	○
	P4	○	○	○	○	○	○	○						○	○	○	○	○	○
	P5	○	○	○	○			○	○							○	○	○	○
	P7																		○
	P10																		○

Purpose		Semiconductor / Printed Board Manufacturing Equipment							Industrial robot				Metallurgical equipment machinery	Electric injection molding machine	Three dimensional measuring instrument	Rubber and plastic machinery	Image processing equipment
		General machinery Special machinery	Exposure Equipment	Chemical Treatment Equipment	Lead welding machin	Detector	Electronic parts plug-in machine	Punching machine for printed board	Orthogonality assemble	other	Vertical multi joint type assemble	other					
Accuracy class	P1		○		○	○		○							○		○
	P2				○	○	○	○	○						○		
	P3	○		○			○	○	○		○						
	P4	○		○			○	○	○		○						
	P5	○		○			○	○	○	○	○	○	○	○		○	
	P7	○		○					○	○	○	○	○	○		○	
	P10	○		○						○				○		○	

Parameter calculation and selection of ball screw

Calculation steps and processes



High precision screw

■ FSDC compact high speed precision ball screw

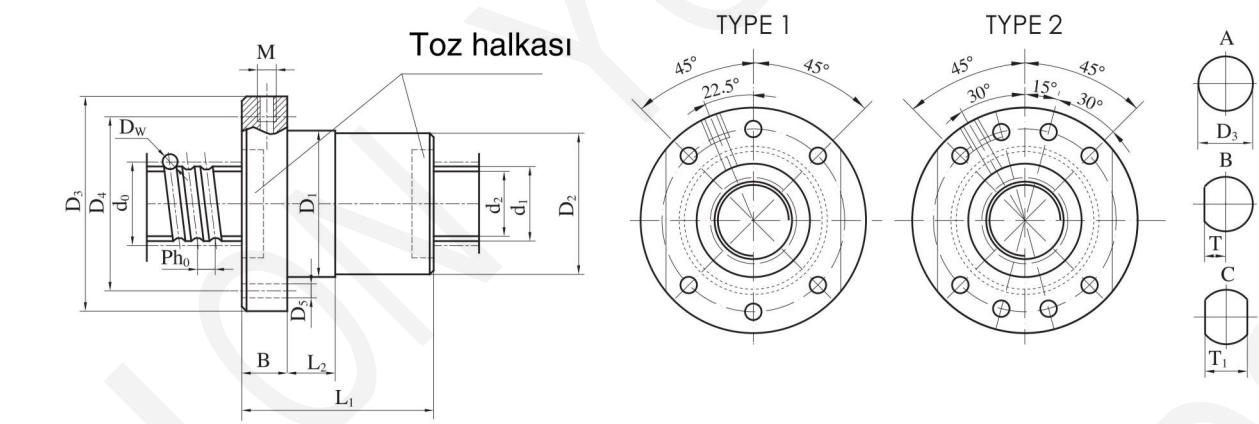


Note:
(1) K_c is the theoretical calculation value when the preload FP is $0.1Ca$ and the axial load F is $0.3Ca$;
(2) When the axial load F is not equal to $0.3Ca$

$$K'_c = K_c \left(\frac{F}{0.3C_a} \right)^{\frac{1}{3}}$$

Where:
 KC is the stiffness value in the table;
(3) This type of ball screw is suitable for high-speed applications;
(4) Normal working environment temperature range $\pm 80^{\circ}C$;
(5) Special requirements shall be put forward when ordering.

Specification code	Nominal diameter	Nomina lead	Outer diameter of screw	Bottom diameter of screw	Steel ball diameter	Number of cycles	Basic rated load		Rigidity K_c N/ μm
	d_0	P_{h0}	d_1	d_2	D_w	N	Dynamic load C_a kN	Static load C_{0a} kN	
	d_0	P_{h0}	d_1	d_2	D_w	N			
FSDC3210-4-J FSDC3210-5-J	32 32	10 10	32 32	26.9 26.9	6.35 6.35	4 5	44.7 54.8	112 141.9	663 824
FSDC3212-4-J FSDC3212-5-J	32 32	12 12	32 32	26.9 26.9	6.35 6.35	4 5	44.6 54.6	111.8 141.7	670 832
FSDC3216-4-J	32	16	32	26.9	6.35	4	44.3	111.3	675
FSDC4010-4-J FSDC4010-5-J	40 40	10 10	40 40	34.9 34.9	6.35 6.35	4 5	50.3 61.6	142.4 180.3	781 970
FSDC4012-4-J FSDC4012-5-J	40 40	12 12	40 40	34.9 34.9	6.35 6.35	4 5	50.2 61.5	142.2 180.1	793 985
FSDC4016-4-J FSDC4016-5-J	40 40	16 16	40 40	34.9 34.9	6.35 6.35	4 5	50 61.2	141.7 179.5	806 1001
FSDC5010-4-J FSDC5010-5-J	50 50	10 10	50 50	44.9 44.9	6.35 6.35	4 5	55.9 68.5	180.2 228.3	905 1125
FSDC5012-4-J FSDC5012-5-J	50 50	12 12	50 50	44.9 44.9	6.35 6.35	4 5	55.8 68.4	180.1 228.1	925 1150
FSDC5016-4-J FSDC5016-5-J	50 50	16 16	50 50	44.9 44.9	6.35 6.35	4 5	55.7 68.2	180 227.6	950 1180



High precision screw

FSDC compact high speed precision ball screw

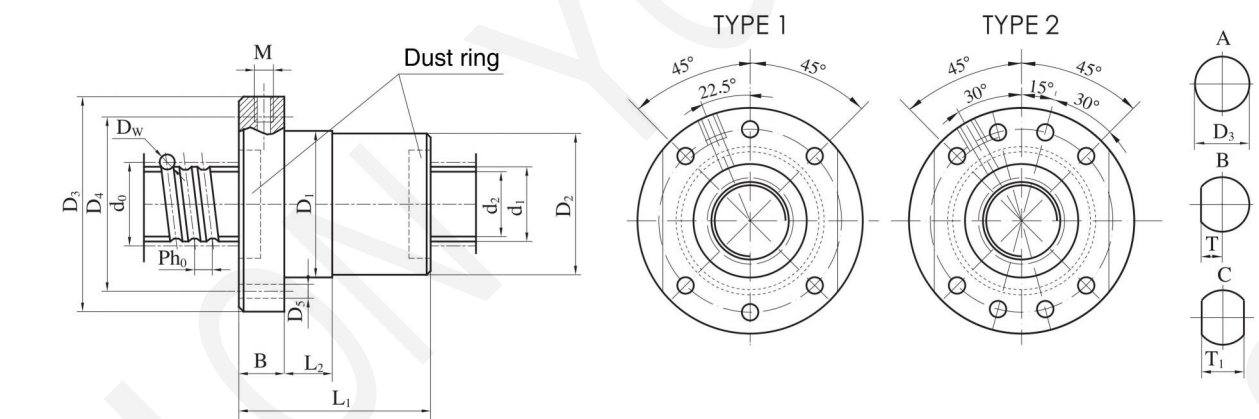


Note:
(1). KC is the theoretical calculation value when the preload FP is 0.1Caand the axial load F is 0.3Ca;
(2). When the axial load F is not equal to 0.3Ca

$$K'_c=K_c(\frac{F}{0.3C_a})^{\frac{1}{3}}$$

Where:
KC is the stiffness value in the table;
(3) This type of ball screw is suitable for high-speed applications;
(4) Normal working environment temperature range ± 80°C;
(5) Special requirements shall be put forward when ordering.

Specification code	Nominal diameter	Nomina lead	Outer diameter of screw	Bottom diameter of screw	Steel ball diameter	Number of cycles	Basic rated load		Rigidity Kc N/μm
	d0	Ph0	d1	d2	Dw	N	Dynamic load Ca kN	Static load Coa kN	
FSDC2510-4	25	10	24	3.969	21.1	4	20.8	52.5	505
FSDC3206-5	32	6	31	3.969	28.1	5	29.4	89.2	742
FSDC3210-4	32	10	31	6.35	26.4	4	44.7	112	663
FSDC3210-5	32	10	31	6.35	26.4	5	54.8	141.9	824
FSDC3212-4	32	12	31	6.35	26.4	4	44.6	111.8	670
FSDC3212-5	32	12	31	6.35	26.4	5	54.6	141.7	832
FSDC4010-5	40	10	39	6.35	34.4	5	61.6	180.3	970
FSDC4012-5	40	12	39	6.35	34.4	5	61.5	180.1	985
FSDC4016-5	40	16	39	6.35	34.4	5	61.2	179.5	1001
FSDC4020-5	40	20	39	6.35	34.4	5	61	178.6	1015
FSDC4025-4	40	25	39	6.35	34.4	4	49.4	140	814
FSDC5010-5	50	10	49	6.35	44.4	5	68.5	228.3	1125
FSDC5012-5	50	12	49	6.35	44.4	5	68.4	228.1	1150
FSDC5016-5	50	16	49	6.35	44.4	5	68.2	227.6	1180
FSDC5020-5	50	20	49	6.35	44.4	5	68.1	226.9	1211
FSDC5025-4	50	25	49	6.35	44.4	4	55.3	178.3	980
FSDC5030-4	50	30	49	6.35	44.4	4	54.9	177.4	978
FSDC5040-3	50	40	49	6.35	44.4	3	41.4	128.4	728



Nut installation connection dimension												Specification code
D1(g6)	D2(^{+0.1} _{-0.1})	L2	D3	B	D4	D5	TYPE	T	T1	M	L1	
45	45	15	65	11	54	6.6	1	25.5	51	M6	65	FSDC2510-4
53	53	10	87	12	72	9		31	62	M6	58	FSDC3206-5
62	62	15	92	14	77	9		37	74	M6	73	FSDC3210-4
62	62	15	92	14	77	9		37	74	M6	83	FSDC3210-5
62	62	15	92	14	77	9		37	74	M6	81	FSDC3212-4
62	62	15	92	14	77	9		37	74	M6	93	FSDC3212-5
70	70	20	100	14	85	9	2	37.5	75	M8×1	83	FSDC4010-5
70	70	20	100	14	85	9		37.5	75	M8×1	92	FSDC4012-5
70	70	30	100	14	85	9		37.5	75	M8×1	113	FSDC4016-5
70	70	30	100	14	85	9		37.5	75	M8×1	132	FSDC4020-5
70	70	30	100	14	85	9		37.5	75	M8×1	133	FSDC4025-4
82	82	20	118	16	100	11		46	92	M8×1	91	FSDC5010-5
82	82	20	118	16	100	11		46	92	M8×1	100	FSDC5012-5
82	82	30	118	16	100	11		46	92	M8×1	117	FSDC5016-5
82	82	30	118	16	100	11		46	92	M8×1	139	FSDC5020-5
82	82	30	118	16	100	11		46	92	M8×1	139	FSDC5025-4
82	82	30	118	16	100	11		46	92	M8×1	159	FSDC5030-4
82	82	30	118	16	100	11		46	92	M8×1	155	FSDC5040-3

High precision screw

FSDC compact high speed precision ball screw

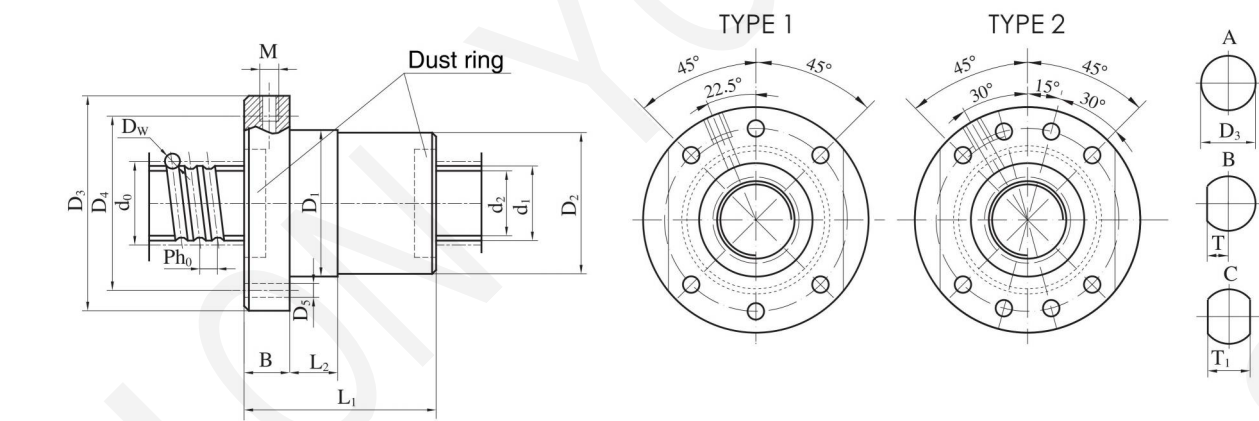


Note:
(1) K_c is the theoretical calculation value when the preload FP is $0.1C_a$;and the axial load F is $0.3C_a$;
(2)When the axial load F is not equal to $0.3C_a$

$$K'_c=K_c\left(\frac{F}{0.3C_a}\right)^{\frac{1}{3}}$$

Where:
 KC is the stiffness value in the table;
(3) This type of ball screw is suitable for high-speed applications;
(4) Normal working environment temperature range $\pm 80^{\circ}C$;
(5) Special requirements shall be put forward when ordering.

Specification code	Nominal diameter	Nominal lead	Outer diameter lead	Steel ball diameter	Bottom diameter of screw	Number of cycles	Basic rated load		Rigidity K_c N/ μm
	d_0	P_{h0}	d_i	D_w	d_2	n	Dynamic load C_a kN	Static load C_{0a} kN	
FSDC6310-5	63	10	61	6.35	56.4	5	75.5	285.8	1331
FSDC6312-5	63	12	61	6.35	56.4	5	75.4	285.6	1362
FSDC6312-5	63	12	61	7.938	55.3	5	102.7	356.6	1405
FSDC6316-5	63	16	61	6.35	56.4	55	75.3	285.2	1403
FSDC6316-5	63	16	61	10	53.9	5	140	446	1506
FSDC6320-5	63	20	61	6.35	56.4	5	75.1	284.7	1426
FSDC6320-5	63	20	61	10	53.9	5	139.7	445.8	1530
FSDC6325-4	63	25	61	6.35	56.4	4	61.1	224.1	1160
FSDC6325-4	63	25	61	10	53.9	4	113.7	350.7	1244
FSDC6330-4	63	30	61	6.35	56.4	4	60.8	223.3	1164
FSDC6330-4	63	30	61	10	53.9	4	113.2	349.5	1248
FSDC6340-4	63	40	61	6.35	56.4	4	60.1	221.4	1160
FSDC6340-4	63	40	61	10	53.9	4	111.8	346.9	1242



High precision screw

FDDC Compact high speed precision ball screw

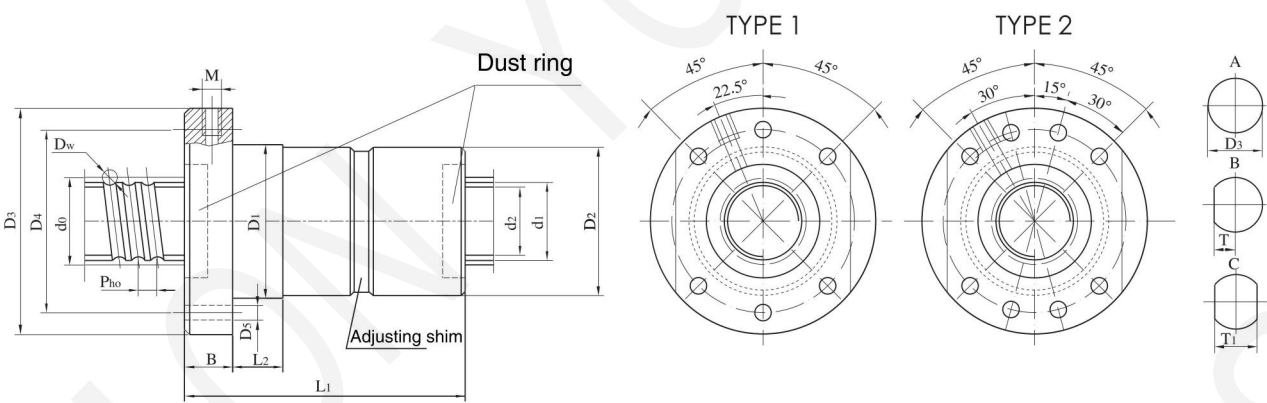


Note:
(1) KC is the theoretical calculation value when the preload FP is 0.1Ca;and the axial load F is 0.3Ca;
(2) When the axial load F is not equal to 0.3 Ca

$$K'_c=K_c(\frac{F}{0.3C_a})^{\frac{1}{3}}$$

Where:
KC is the stiffness value in the table;
(3)This type of ball screw is suitable for high-speed applications;
(4) Normal working environment temperature range ± 80 °C;
(5) Special requirements shall be put forward when ordering.

Specification code	Nominal diameter	Nomina lead	Outer diameter of screw	Bottom diameter of screw	Steel ball diameter	Number of cycles	Basic rated load		Rigidity Kc N/μm
	d0	Pn0	d1	d2	Dw	N	Dynamic load Ca kN	Static load Coa kN	
	d0	Pn0	d1	d2	Dw	N	Dynamic load Ca kN	Static load Coa kN	
FDDC3210-4-J	32	10	32	26.9	6.35	4	44.7	112	1060
FDDC3210-5-J	32	10	32	26.9	6.35	5	54.8	141.9	1329
FDDC3212-4-J	32	12	32	26.9	6.35	4	44.6	111.8	1062
FDDC3212-5-J	32	12	32	26.9	6.35	5	54.6	141.7	1331
FDDC3216-4-J	32	16	32	26.9	6.35	4	44.3	111.3	1059
FDDC4010-4-J	40	10	40	34.9	6.35	4	50.3	142.4	1268
FDDC4010-5-J	40	10	40	34.9	6.35	5	61.6	180.3	1589
FDDC4012-4-J	40	12	40	34.9	6.35	4	50.2	142.2	1274
FDDC4012-5-J	40	12	40	34.9	6.35	5	61.5	180.1	1597
FDDC4016-4-J	40	16	40	34.9	6.35	4	50	141.7	1278
FDDC4016-5-J	40	16	40	34.9	6.35	5	61.2	179.5	1601
FDDC5010-4-J	50	10	50	44.9	6.35	4	55.9	180.2	1502
FDDC5010-5-J	50	10	50	44.9	6.35	5	68.5	228.3	1883
FDDC5012-4-J	50	12	50	44.9	6.35	4	55.8	180.1	1515
FDDC5012-5-J	50	12	50	44.9	6.35	5	68.4	228.1	1900
FDDC5016-4-J	50	16	50	44.9	6.35	4	55.7	180	1529
FDDC5016-5-J	50	16	50	44.9	6.35	5	68.2	227.6	1915



High precision screw

■ FDDC high speed precision ball screw

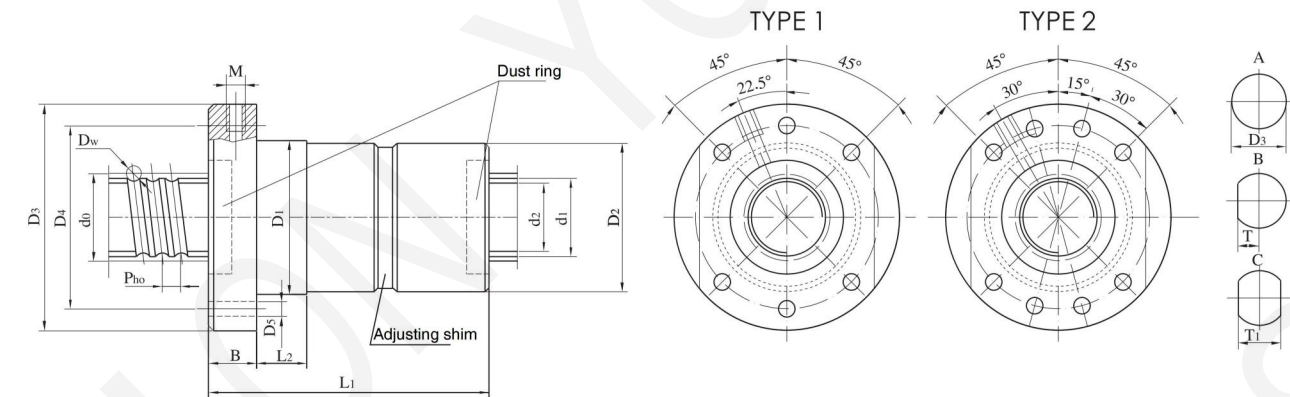


Note:
(1) K_c is the theoretical calculation value when the preload FP is $0.1C_a$;and the axial load F is $0.3C_a$;
(2) When the axial load F is not equal to $0.3C_a$

$$K'_c = K_c \left(\frac{F}{0.3C_a} \right)^{\frac{1}{3}}$$

Where:
 K_c is the stiffness value in the table;
(3) This type of ball screw is suitable for high-speed applications;
(4) Normal working environment temperature range $\pm 80^{\circ}\text{C}$;
(5) Special requirements shall be put forward when ordering.

Specification code	Nominal diameter	Nomina lead	Outer diameter of screw	Bottom diameter of screw	Steel ball diameter	Number of cycles	Basic rated load		Rigidity K_c N/ μm
	d_0	P_{h0}	d_1	d_2	D_w	N	Dynamic load C_a kN	Static load C_{0a} kN	
FDDC2510-4	25	10	24	3.969	21.1	4	20.8	52.5	792
FDDC3206-5	32	6	31	3.969	28.1	5	29.4	89.2	1226
FDDC3210-4	32	10	31	6.35	26.4	4	44.7	112	1064
FDDC3210-5	32	10	31	6.35	26.4	5	54.8	141.9	1334
FDDC3212-4	32	12	31	6.35	26.4	4	44.6	111.8	1066
FDDC3212-5	32	12	31	6.35	26.4	5	54.6	141.7	1335
FDDC4010-5	40	10	39	6.35	34.4	5	61.6	180.3	1598
FDDC4012-5	40	12	39	6.35	34.4	5	61.5	180.1	1604
FDDC4016-5	40	16	39	6.35	34.4	5	61.2	179.5	1607
FDDC4020-5	40	20	39	6.35	34.4	5	61	178.6	1603
FDDC4025-4	40	25	39	6.35	34.4	4	49.4	140	1268
FDDC5010-5	50	10	49	6.35	44.4	5	68.5	228.3	1903
FDDC5012-5	50	12	49	6.35	44.4	5	68.4	228.1	1916
FDDC5016-5	50	16	49	6.35	44.4	5	68.2	227.6	1928
FDDC5020-5	50	20	49	6.35	44.4	5	68.1	226.9	1931
FDDC5025-4	50	25	49	6.35	44.4	4	55.3	178.3	1536
FDDC5030-4	50	30	49	6.35	44.4	4	54.9	177.4	1525
FDDC5040-3	50	40	49	6.35	44.4	3	41.4	128.4	1110



Nut installation connection dimension												Specification code
D_1 (g6)	D_2 ($\frac{g6}{h7}$)	L_2	D_3	B	D_4	D_5	TYPE	T	T_1	M	L_1	
45	45	15	65	11	54	6.6	1	25.5	51	M6	122	FDDC2510-4
53	53	10	87	12	72	9		31	62	M6	107	FDDC3206-5
62	62	15	92	14	77	9		37	74	M6	135	FDDC3210-4
62	62	15	92	14	77	9		37	74	M6	135	FDDC3210-5
62	62	15	92	14	77	9		37	74	M6	149	FDDC3212-4
62	62	15	92	14	77	9		37	74	M6	173	FDDC3212-5
70	70	20	100	14	85	9	2	37.5	75	M8×1	155	FDDC4010-5
70	70	20	100	14	85	9		37.5	75	M8×1	173	FDDC4012-5
70	70	30	100	14	85	9		37.5	75	M8×1	213	FDDC4016-5
70	70	30	100	14	85	9		37.5	75	M8×1	257	FDDC4020-5
70	70	30	100	14	85	9		37.5	75	M8×1	251	FDDC4025-4
82	82	20	118	16	100	11		46	92	M8×1	163	FDDC5010-5
82	82	20	118	16	100	11		46	92	M8×1	181	FDDC5012-5
82	82	30	118	16	100	11		46	92	M8×1	217	FDDC5016-5
82	82	30	118	16	100	11		46	92	M8×1	264	FDDC5020-5
82	82	30	118	16	100	11		46	92	M8×1	258	FDDC5025-4
82	82	30	118	16	100	11		46	92	M8×1	302	FDDC5030-4
82	82	30	118	16	100	11		46	92	M8×1	306	FDDC5040-3

High precision screw

■ FDDC high speed precision ball screw

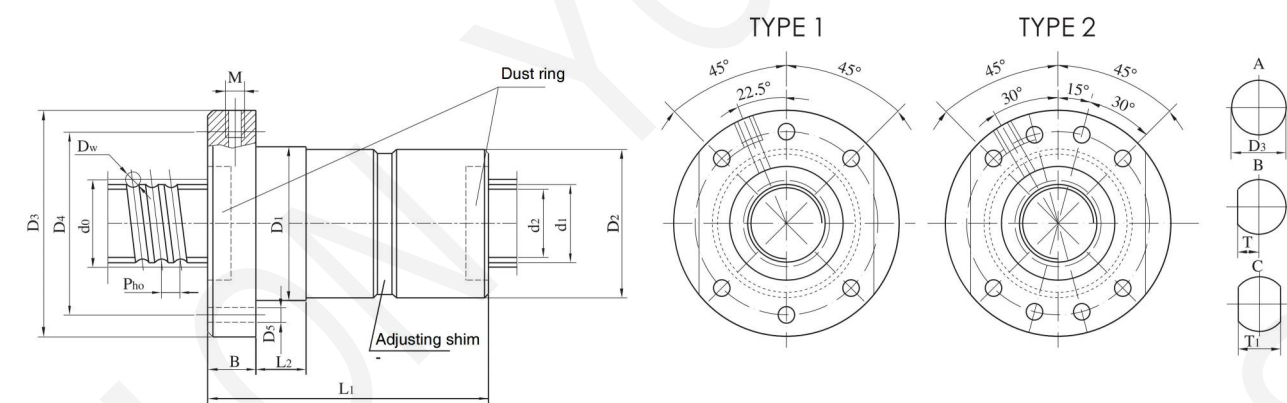


Note:
(1) K_c is the theoretical calculation value when the preload FP is $0.1C_a$;and the axial load F is $0.3C_a$;
(2)When the axial load F is not equal to $0.3C_a$

$$K'_c=K_c\left(\frac{F}{0.3C_a}\right)^{\frac{1}{3}}$$

Where:
 KC is the stiffness value in the table;
(3) This type of ball screw is suitable for high-speed applications;
(4) Normal working environment temperature range $\pm 80^{\circ}C$;
(5) Special requirements shall be put forward when ordering.

Specification code	Nominal diameter	Nominal lead	Outer diameter lead	Steel ball diameter	Bottom diameter of screw	Number of cycles	Basic rated load		Rigidity K_c N/ μm
	d_0	P_{h0}	d_i	D_w	d_2	n	Dynamic load C_a kN	Static load C_{0a} kN	
FDDC6310-5	63	10	61	6.35	56.4	5	75.5	285.8	2238
FDDC6312-5	63	12	61	6.35	56.4	5	75.4	285.6	2260
FDDC6312-5	63	12	61	7.938	55.3	5	102.7	356.6	2335
FDDC6316-5	63	16	61	6.35	56.4	5	75.3	285.2	2285
FDDC6316-5	63	16	61	10	53.9	5	140	446	2446
FDDC6320-5	63	20	61	6.35	56.4	5	75.1	284.7	2296
FDDC6320-5	63	20	61	10	53.9	5	139.7	445.8	2456
FDDC6325-4	63	25	61	6.35	56.4	4	61.1	224.1	1834
FDDC6325-4	63	25	61	10	53.9	4	113.7	350.7	1962
FDDC6330-4	63	30	61	6.35	56.4	4	60.8	223.3	1829
FDDC6330-4	63	30	61	10	53.9	4	113.2	349.5	1957
FDDC6340-3	63	40	61	6.35	56.4	3	46	162.3	1343
FDDC6340-3	63	40	61	10	53.9	3	85.6	254.4	1431



High precision screw

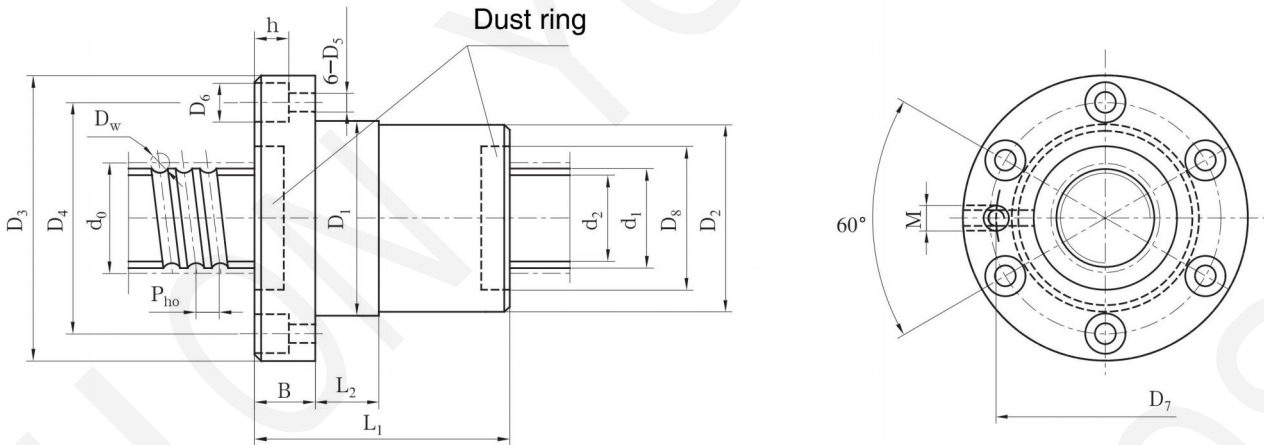
■ FSIC internal circulation floating ball screw



Note:
(1) K_c is the theoretical calculation value when the preload FP is $0.1C_a$;and the axial load F is $0.3C_a$;
(2) When the axial load F is not equal to $0.3C_a$

$$K'_c = K_c \left(\frac{F}{0.3C_a} \right)^{\frac{1}{3}}$$

Where:
 K_c is the stiffness value in the table;
(3) Normal working environment temperature range $\pm 80^{\circ}C$;
(4) Special requirements shall be put forward when ordering.



High precision screw

■ FSIC internal circulation floating ball screw



Note:

(1) K_c is the theoretical calculation value when the preload FP is $0.1C_a$; and the axial load F is $0.3C_a$;

(2) When the axial load F is not equal to $0.3Ca$

$$K'_c = K_c \left(\frac{F}{0.3C_a} \right)^{\frac{1}{3}}$$

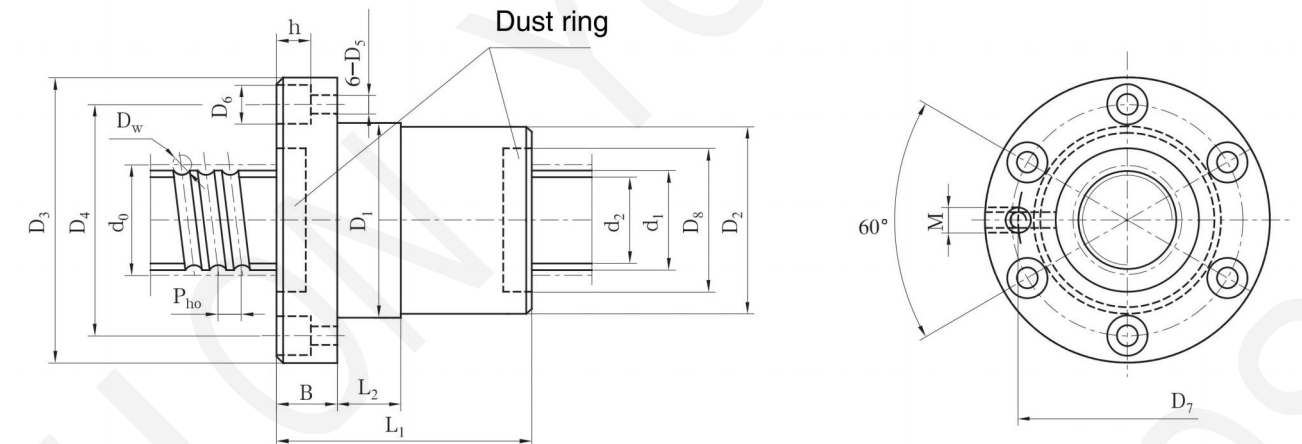
Where:

K_c is the stiffness value in the table;

(3) Normal working environment temperature range $\pm 80^{\circ}\text{C}$;

(4) Special requirements shall be put forward when ordering.

Specification code	Nominal diameter	Nominal lead	Outer diameter of screw	Steel ball diameter	Bottom diameter of screw	Number of cycles	Basic rated load		Rigidity Kc N/μm
	d ₀	P _{h0}	d ₁	D _w	d ₂	N	Dynamic load	Static load	
							Ca kN	Coa kN	
FSIC4006-3 FSIC4006-5	40 40	6 6	38.9 38.9	3.969 3.969	35.9 35.9	3 5	15.9 24.6	47.6 79.3	404.0 660.0
FSIC4008-3 FSIC4008-5	40 40	8 8	38.6 38.6	5 5	34.9 34.9	3 5	21.7 33.7	59.3 98.8	429.0 700.0
FSIC4010-3 FSIC4010-5	40 40	10 10	39.5 39.5	7.144 7.144	34.3 34.3	3 5	45.1 70.0	114.4 190.7	555.0 905.0
FSIC4012-4 FSIC4012-5	40 40	12 12	38 38	7.144 7.144	32.7 32.7	4 5	57.7 69.9	152.3 190.4	743.0 920.0
FSIC5005-3 FSIC5005-5	50 50	5 5	49 49	3.5 3.5	46.4 46.4	3 5	14.8 23.0	54.2 90.3	453.0 742.0
FSIC5006-3 FSIC5006-5	50 50	6 6	49 49	3.969 3.969	46 46	3 5	17.6 27.4	61.2 102.0	472.0 772.0
FSIC5008-3 FSIC5008-5	50 50	8 8	49 49	5 5	45.3 45.3	3 5	24.1 37.3	75.5 125.8	504.0 823.0
FSIC5010-3 FSIC5010-5	50 50	1 10	49 49	7.144 7.144	43.8 43.8	3 5	50.5 78.3	145.1 241.8	650.0 1062.0
FSIC5012-4 FSIC5012-5	50 50	12 12	49 49	7.144 7.144	43.8 43.8	4 5	64.5 78.2	193.3 241.6	875.0 1084.0



Nut installation connection dimension													Specification code
D ₁ (g6)	D ₂ ($\frac{41}{32}$)	L ₂	D ₃	B	D ₄	D ₅	D ₆	H	D ₇	M	D ₈	L ₁	
60 60	60 60	10 10	94 94	15 15	75 75	9 9	15 15	9 9	74 74	M6 M6	48 48	53 68	FSIC4006-3 FSIC4006-5
63 63	63 63	15 15	108 108	18 18	85 85	11 11	18 18	11 11	85 85	M6 M6	50 50	67 87	FSIC4008-3 FSIC4008-5
63 63	63 63	20 20	108 108	18 18	85 85	11 11	18 18	11 11	80 80	M8x1 M8x1	52 52	78 101	FSIC4010-3 FSIC4010-5
63 63	63 63	20 20	108 108	18 18	85 85	11 11	18 18	11 11	85 85	M8x1 M8x1	50 50	105 116	FSIC4012-4 FSIC4012-5
71 71	71 71	10 10	110 110	15 15	90 90	9 9	15 15	9 9	84 84	M8x1 M8x1	60 60	47 58	FSIC5005-3 FSIC5005-5
71 71	71 71	15 15	110 110	15 15	90 90	9 9	15 15	9 9	84 84	M8x1 M8x1	60 60	53 68	FSIC5006-3 FSIC5006-5
75 75	75 75	15 15	118 118	18 18	95 95	11 11	18 18	11 11	90 90	M8x1 M8x1	60 60	68 84	FSIC5008-3 FSIC5008-5
75 75	75 75	15 15	118 118	18 18	95 95	11 11	18 18	11 11	90 90	M8x1 M8x1	62 62	77 102	FSIC5010-3 FSIC5010-5
75 75	75 75	20 20	118 118	18 18	95 95	11 11	18 18	11 11	90 90	M8x1 M8x1	60 60	104 123	FSIC5012-4 FSIC5012-5

High precision screw

■ FSIC internal circulation floating ball screw

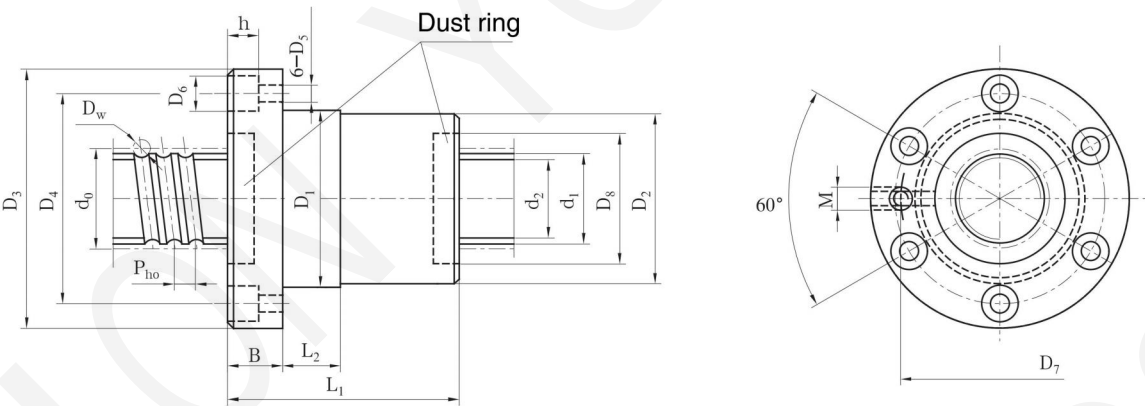


Note:
(1) K_c is the theoretical calculation value when the preload FP is $0.1C_a$; and the axial load F is $0.3C_a$;
(2) When the axial load F is not equal to $0.3C_a$

$$K'_c = K_c \left(\frac{F}{0.3C_a} \right)^{\frac{1}{3}}$$

Where:
 K_c is the stiffness value in the table;
(3) Normal working environment temperature range $\pm 80^\circ\text{C}$;
(4) Special requirements shall be put forward when ordering.

Specification code	Nominal diameter	Nominal lead	Outer diameter of screw	Bottom diameter of screw	Steel ball diameter	Number of cycles	Basic rated load		Rigidity K_c N/ μm
	d_n	P_{h0}	d_i	d_2	D_w	N	Dynamic load C_a kN	Static load C_o kN	
FSIC6308-4	63	8	61	5	57.3	4	34.3	129.4	787.0
FSIC6308-5	63	8	61	5	57.3	5	41.6	161.7	975.0
FSIC6310-4	63	10	61	7.144	55.7	4	71.7	244.5	999.0
FSIC6310-5	63	10	61	7.144	55.7	5	86.8	305.6	1237.0
FSIC6312-4	63	12	61	7.144	55.8	4	71.6	244.4	1025.0
FSIC6312-5	63	12	61	7.144	55.8	5	86.8	305.4	1270.0
FSIC6316-4	63	16	61	10	53.8	4	112.5	338.5	1106.0
FSIC6316-5	63	16	61	10	53.8	5	136.4	423.1	1370.0
FSIC6320-4	63	20	61	10	53.8	4	112.3	337.9	1126.0
FSIC6320-5	63	20	61	10	53.8	5	136.0	422.3	1395.0
FSIC8010-4	80	10	78	7.144	72.7	4	81.4	325.8	1151.0
FSIC8010-5	80	10	78	7.144	72.7	5	98.6	407.3	1427.0
FSIC8012-4	80	12	78	7.144	72.7	4	81.4	325.7	1232.0
FSIC8012-5	80	12	78	7.144	72.7	5	98.6	407.2	1527.0
FSIC8016-4	80	16	78	10	70.8	4	122.9	419.6	1284.0
FSIC8016-5	80	16	78	10	70.8	5	148.8	524.5	1591.0
FSIC8020-4	80	20	78	10	70.8	4	122.7	419.1	1314.0
FSIC8020-5	80	20	78	10	70.8	5	148.6	523.9	1627.0
FSIC10016-4	100	16	97	10	89.8	4	137.4	539.2	1506.0
FSIG10016-5	100	16	97	10	89.8	5	166.5	674.0	1866.0
FSIC10020-4	100	20	97	10	89.8	4	137.3	538.8	1552.0
FSIC10020-5	100	20	97	10	89.8	5	166.3	673.6	1924.0
FSIC12016-5	120	16	117	10	109.8	5	181.0	824.0	2083.0
FSIC12016-7	120	16	117	10	109.8	7	241.7	1153.6	2880.0
FSIC12020-5	120	20	117	10	109.8	5	180.8	823.6	2166.0
FSIC12020-7	120	20	117	10	109.8	7	241.5	1153.0	2993.0



Nut installation connection dimension													Specification code
$D_1(g6)$	$D_2(\frac{+0.1}{-0.2})$	L_2	D_3	B	D_4	D_5	D_6	H	D_7	M	D_8	L_1	
90	90	20	132	18	110	11	18	11	104	M8×1	75	76	FSIC6308-4
90	90	20	132	18	110	11	18	11	104	M8×1	75	87	FSIC6308-5
90	90	20	138	22	112	13.5	22	13	112	M8×1	75	95	FSIC6310-4
90	90	20	138	22	112	13.5	22	13	112	M8×1	75	107	FSIC6310-5
90	90	20	138	22	112	13.5	22	13	112	M8×1	75	105	FSIC6312-4
90	90	20	138	22	112	13.5	22	13	112	M8×1	75	123	FSIC6312-5
95	95	30	148	28	118	13.5	22	13	118	M8×1	75	140	FSIC6316-4
95	95	30	148	28	118	13.5	22	13	118	M8×1	75	163	FSIC6316-5
95	95	40	148	28	118	13.5	22	13	118	M8×1	75	165	FSIC6320-4
95	95	40	148	28	118	13.5	22	13	118	M8×1	75	189	FSIC6320-5
105	105	20	156	22	130	13.5	22	13	130	M8×1	90	95	FSIC8010-4
105	105	20	156	22	130	13.5	22	13	130	M8×1	90	107	FSIC8010-5
110	110	25	158	22	132	13.5	22	13	132	M8×1	90	105	FSIC8012-4
110	110	25	158	22	132	13.5	22	13	132	M8×1	90	123	FSIC8012-5
118	118	30	168	28	140	13.5	22	13	140	M8×1	95	145	FSIC8016-4
118	118	30	168	28	140	13.5	22	13	140	M8×1	95	165	FSIC8016-5
118	118	40	168	28	140	13.5	22	13	140	M10×1	95	166	FSIC8020-4
118	118	40	168	28	140	13.5	22	13	140	M10×1	95	194	FSIC8020-5
140	140	40	204	28	170	17.5	28	17	170	M10×1	115	145	FSIC10016-4
140	140	40	204	28	170	17.5	28	17	170	M10×1	115	165	FSIC10016-5
140	140	40	204	28	170	17.5	28	17	170	M10×1	115	170	FSIC10020-4
140	140	40	204	28	170	17.5	28	17	170	M10×1	115	194	FSIC10020-5
160	160	40	225	28	190	17.5	28	17	190	M10×1	135	165	FSIC12016-5
160	160	40	225	28	190	17.5	28	17	190	M10×1	135	205	FSIC12016-7
160	160	40	225	28	190	17.5	28	17	190	M10×1	135	194	FSIC12020-5
160	160	40	225	28	190	17.5	28	17	190	M10×1	135	242	FSIC12020-7

High precision screw

■ FDIC internal circulation floating gasket preloading ball screw

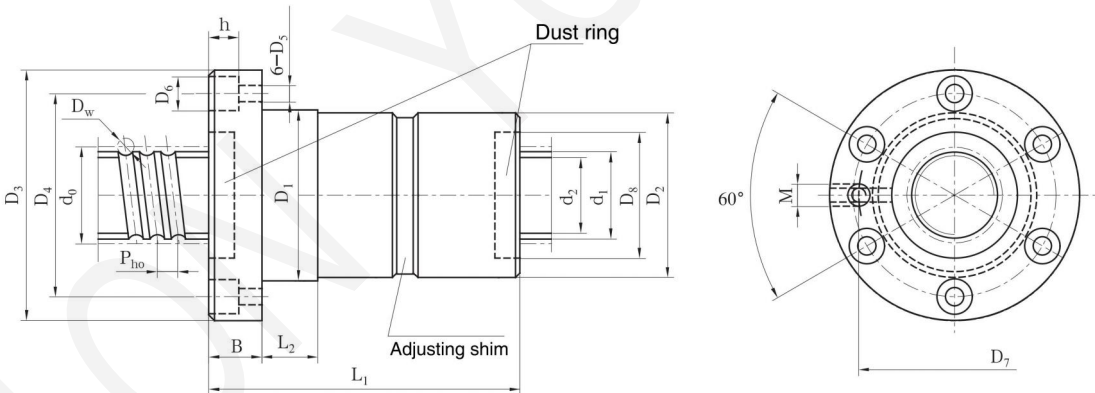


Note:
(1) K_c is the theoretical calculation value when the preload FP is $0.1C_a$;and the axial load F is $0.3C_a$;
(2) When the axial load F is not equal to $0.3C_a$

$$K'_c = K_c \left(\frac{F}{0.3C_a} \right)^{\frac{1}{3}}$$

Where:
 K_c is the stiffness value in the table;
(3) Normal working environment temperature range $\pm 80^{\circ}\text{C}$;
(4) Special requirements shall be put forward when ordering.

Specification code	Nominal diameter	Nomina lead	Outer diameter of screw	Steel ball diameter	Bottom diameter of screw	Number of cycles	Basic rated load		Rigidity K_c N/ μm
	d_0	P_{h0}	d_1	D_w	D_2	N	Dynamic load C_a kN	Static load C_o kN	
FDIC1204-3	12	4	11.3	2.381	9.5	3	4.2	7.3	226.0
FDIC1604-3	16	4	15.3	2.381	13.5	3	5.2	11.0	311.0
FDIC1605-3	16	5	15.5	3.5	12.9	3	8.1	14.6	303.0
FDIC2004L-3	20	4	19.3	2.381	17.5	3	5.8	14.0	377.0
FDIC2004R-3	20	4	19.1	3	16.9	3	7.6	16.5	367.0
FDIC2005-3	20	5	19.5	3.5	16.9	3	9.5	198	384.0
FDIC2504-3	25	4	24.1	3	21.9	3	8.8	22.3	461.0
FDIC2505-3	25	5	24.5	3.5	21.9	3	10.6	25.1	460.0
FDIC2506-3	25	6	23.9	3.969	20.9	3	12.3	27.2	455.0
FDIC3204-3	32	4	31.1	3	28.9	3	9.9	29.1	562.0
FDIC3204-5	32	4	31.1	3	28.9	5	15.4	48.5	917.0
FDIC3205-3	32	5	31.5	3.5	28.9	3	12.3	34.3	585.0
FDIC3205-5	32	5	31.5	3.5	28.9	5	19.1	57.2	953.0
FDIC3206-3	32	6	30.9	3.969	27.9	3	14.3	37.3	581.0
FDIC3206-5	32	6	30.9	3.969	27.9	5	22.2	62.2	947.0
FDIC3208-3	32	8	30.6	5	26.9	3	19.2	45.8	592.0
FDIC3208-5	32	8	30.6	5	26.9	5	29.9	76.3	965.0
FDIC3210-3	32	10	31	5.953	26.5	3	23.9	53.4	601.0
FDIC3210-5	32	10	31	5.953	26.5	5	37.1	89.0	978.0
FDIC4005-3	40	5	39.5	3.5	36.9	3	13.4	42.3	681.0
FDIC4005-5	40	5	39.5	3.5	36.9	5	20.8	70.5	1110.0



Nut installation connection dimension													Specification code
$D_1(g6)$	$D_2(^{+0.1}_{-0.2})$	L_2	D_3	B	D_4	D_5	D_6	H	D_7	M	D_8	L_1	
22	22	10	44	8	32	4.8	8.5	4.5	32	M2.5	16	66	FDIC1204-3
28	28	10	52	10	38	5.8	10	6	32	M6	20	69	FDIC1604-3
28	28	10	52	10	38	5.8	10	6	32	M6	22	83	FDIC1605-3
36	36	10	62	11	48	5.8	10	6	40	M6	25	73	FDIC2004L-3
36	36	10	62	11	48	5.8	10	6	40	M6	25	72	FDIC2004R-3
36	36	10	62	11	48	5.8	10	6	40	M6	25	83	FDIC2005-3
40	40	10	66	11	53	5.8	10	6	46	M6	30	74	FDIC2504-3
40	40	10	66	11	53	5.8	10	6	46	M6	30	84	FDIC2505-3
40	40	10	66	11	53	5.8	10	6	46	M6	30	97	FDIC2506-3
50	50	10	76	11	63	5.8	10	6	56	M6	38	73	FDIC3204-3
50	50	10	76	11	63	5.8	10	6	56	M6	38	92	FDIC3204-5
50	50	10	82	13	67	7	12	7	62	M6	38	85	FDIC3205-3
50	50	10	82	13	67	7	12	7	62	M6	38	108	FDIC3205-5
50	50	10	82	13	67	7	12	7	62	M6	38	99	FDIC3206-3
50	50	10	82	13	67	7	12	7	62	M6	38	127	FDIC3206-5
50	50	10	82	13	67	7	12	7	62	M6	42	123	FDIC3208-3
50	50	10	82	13	67	7	12	7	62	M6	42	152	FDIC3208-5
53	53	15	90	15	71	9	15	9	70	M6	44	146	FDIC3210-3
53	53	15	90	15	71	9	15	9	70	M6	44	191	FDIC3210-5
60	60	10	94	15	75	9	15	9	75	M6	48	88	FDIC4005-3
60	60	10	94	15	75	9	15	9	75	M6	48	111	FDIC4005-5

High precision screw

FDIC internal circulation floating gasket preloading ball screw

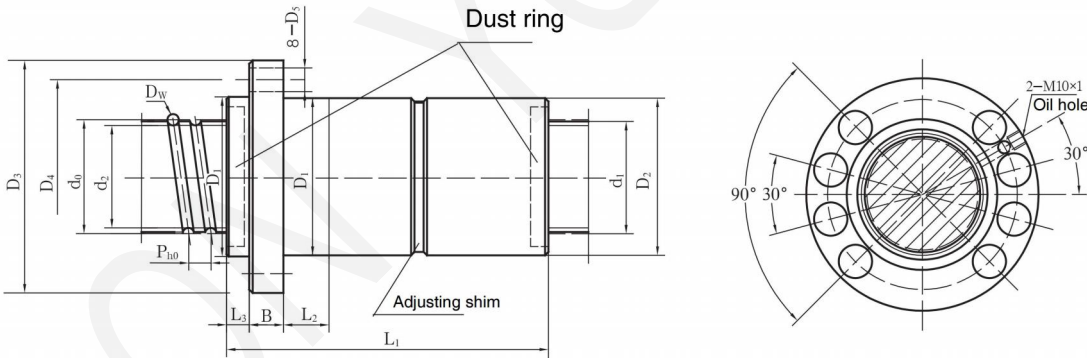


Note:
(1) K_c is the theoretical calculation value when the preload FP is $0.1C_a$;and the axial load F is $0.3C_a$;
(2) When the axial load F is not equal to $0.3C_a$

$$K'_c = K_c \left(\frac{F}{0.3C_a} \right)^{\frac{1}{3}}$$

Where:
 K_c is the stiffness value in the table;
(3) Normal working environment temperature range $\pm 80^\circ\text{C}$;
(4) Special requirements shall be put forward when ordering.

Specification code	Nominal diameter	Nominal lead	Outer diameter of screw	Steel ball diameter	Bottom diameter of screw	Number of cycles	Basic rated load		Rigidity K_c N/ μm
							Dynamic load C_a kN	Static load C_o kN	
FDIC4006-3	40	6	38.9	3.969	35.9	3	15.9	47.6	695.0
FDIC4006-5	40	6	38.9	3.969	35.9	5	24.6	79.3	1132.0
FDIC4008-3	40	8	38.6	5	34.9	3	21.7	59.3	723.0
FDIC4008-5	40	8	38.6	5	34.9	5	33.7	98.8	1179.0
FDIC4010-3	40	10	39.5	7.144	34.3	3	45.1	114.4	943.0
FDIC4010-5	40	10	39.5	7.144	34.3	5	70.0	190.7	1537.0
FDIC4012-3	40	12	38	7.144	32.7	3	57.7	152.3	1248.0
FDIC4012-5	40	12	38	7.144	32.7	5	69.9	190.4	1545.0
FDIC5005-3	50	5	49	3.5	46.4	3	14.8	54.2	810.0
FDIC5005-5	50	5	49	3.5	46.4	5	23.0	90.3	1322.0
FDIC5006-3	50	6	49	3.969	46	3	17.6	61.2	831.0
FDIC5006-5	50	6	49	3.969	46	5	27.4	102.0	1357.0
FDIC5008-3	50	8	49	5	45.3	3	24.1	75.5	864.0
FDIC5008-5	50	8	49	5	45.3	5	37.3	125.8	1408.0
FDIC5010-3	50	10	49	7.144	43.8	3	50.5	145.1	1125.0
FDIC5010-5	50	10	49	7.144	43.8	5	78.3	241.8	1587.0
FDIC5012-4	50	12	49	7.144	43.8	4	64.5	193.3	1492.0
FDIC5012-5	50	12	49	7.144	43.8	5	78.2	241.6	1847.0



Nut installation connection dimension													Specification code
D1(g6)	D2($^{+0.1}_{-0.2}$)	L2	D3	B	D4	D5	D6	H	D7	M	D8	L1	
60	60	10	94	15	75	9	15	9	74	M6	48	101	FDIC4006-3
60	60	10	94	15	75	9	15	9	74	M6	48	128	FDIC4006-5
63	63	15	108	18	85	11	18	11	85	M6	50	128	FDIC4008-3
63	63	15	108	18	85	11	18	11	85	M6	50	163	FDIC4008-5
63	63	20	108	18	85	11	18	11	80	M8×1	52	146	FDIC4010-3
63	63	20	108	18	85	11	18	11	80	M8×1	52	193	FDIC4010-5
63	63	20	108	18	85	11	18	11	80	M8×1	50	164	FDIC4012-3
63	63	20	108	18	85	11	18	11	80	M8×1	50	227	FDIC4012-5
71	71	10	110	15	90	9	15	9	84	M8×1	60	87	FDIC5005-3
71	71	10	110	15	90	9	15	9	84	M8×1	60	111	FDIC5005-5
71	71	15	110	15	90	9	15	9	84	M8×1	60	101	FDIC5006-3
71	71	15	110	15	90	9	15	9	84	M8×1	60	130	FDIC5006-5
75	75	15	118	18	95	11	18	11	90	M8×1	60	127	FDIC5008-3
75	75	15	118	18	95	11	18	11	90	M8×1	60	163	FDIC5008-5
75	75	15	118	18	95	11	18	11	90	M8×1	62	147	FDIC5010-3
75	75	15	118	18	95	11	18	11	90	M8×1	62	194	FDIC5010-5
75	75	20	118	18	95	11	18	11	90	M8×1	60	195	FDIC5012-4
75	75	20	118	18	95	11	18	11	90	M8×1	60	223	FDIC5012-5

High precision screw

■ FDIC internal circulation floating gasket preloading ball screw

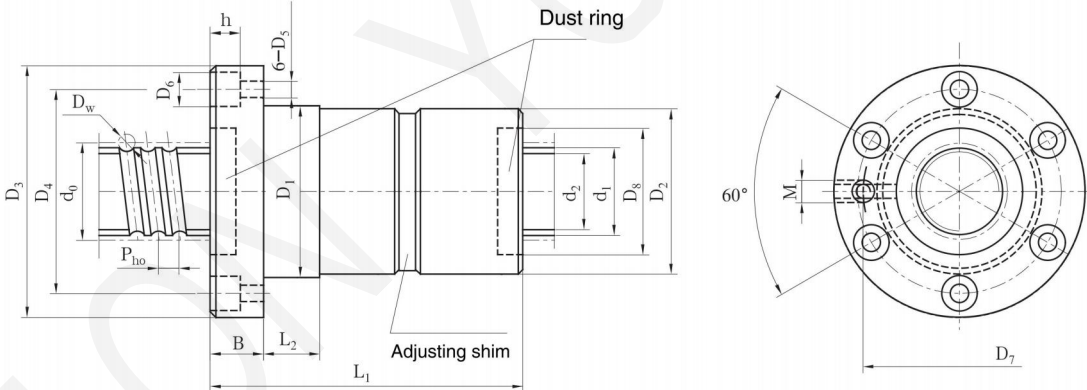


Note:
(1) K_c is the theoretical calculation value when the preload FP is $0.1C_a$; and the axial load F is $0.3C_a$;
(2) When the axial load F is not equal to $0.3C_a$

$$K'_c = K_c \left(\frac{F}{0.3C_a} \right)^{\frac{1}{3}}$$

Where:
 K_c is the stiffness value in the table;
(3) Normal working environment temperature range $\pm 80^\circ\text{C}$;
(4) Special requirements shall be put forward when ordering.

Specification code	Nominal diameter	Nominal lead	Outer diameter of screw	Steel ball diameter	Bottom diameter of screw	Number of cycles	Basic rated load		Rigidity K_c N/ μm
							Dynamic load C_a kN	Static load C_o kN	
	d_0	P_{h0}	d_1	D_w	D_2	N			
FDIC6308-4	63	8	61	5	57.3	4	34.3	129.4	1370.0
FDIC6308-5	63	8	61	5	57.3	5	41.6	161.7	1697.0
FDIC6310-4	63	10	61	7.144	55.7	4	71.7	244.5	1756.0
FDIC6310-5	63	10	61	7.144	55.7	5	86.8	305.6	2174.0
FDIC6312-4	63	12		7.144	55.8	4	71.6	244.4	1775.0
FDIC6312-5	63	12	61	7.144	55.8	5	86.8	305.4	2198.0
FDIC6316-4	63	16	61	10	53.8	4	112.5	338.5	1877.0
FDIC6316-5	63	16	61	10	53.8	5	136.4	423.1	2324.0
FDIC6320-4	63	20	61	10	53.8	4	112.3	337.9	1888.0
FDIC6320-5	63	20	61	10	53.8	5	136.0	422.3	2337.0
FDIC8010-4	80	10	78	7.144	72.7	4	81.4	325.8	2123.0
FDIC8010-5	80	10	78	7.144	72.7	5	98.6	407.3	2629.0
FDIC8012-4	80	12	78	7.144	72.7	4	81.4	325.7	2189.0
FDIC8012-5	80	12	78	7.144	72.7	5	98.6	407.2	2710.0
FDIC8016-4	80	16	78	10	70.8	4	122.9	419.6	2201.0
FDIC8016-5	80	16	78	10	70.8	5	148.8	524.5	2723.0
FDIC8020-4	80	20	78	10	70.8	4	122.7	419.1	2220.0
FDIC8020-5	80	20	78	10	70.8	5	148.6	523.9	2747.0
FDIC10016-4	100	16	97	10	89.8	4	137.4	539.2	2639.0
FDIC10016-5	100	16	97	10	89.8	5	166.5	674.0	3268.0
FDIC10020-4	100	20	97	10	89.8	4	137.3	538.8	2672.0
FDIC10020-5	100	20	97	10	89.8	5	166.3	673.6	3309.0
FDIC12016-5	120	16	117	10	109.8	5	181.0	824.0	3747.0
FDIC12016-7	120	16	117	10	109.8	7	241.7	1153.6	5170.0
FDIC12020-5	120	20	117	10	109.8	5	180.8	823.6	3810.0
FDIC 12020-7	120	20	117	10	109.8	7	241.5	1153.0	5256.0



High precision screw

■ FDIS internal circulation floating thread preloaded ball screw

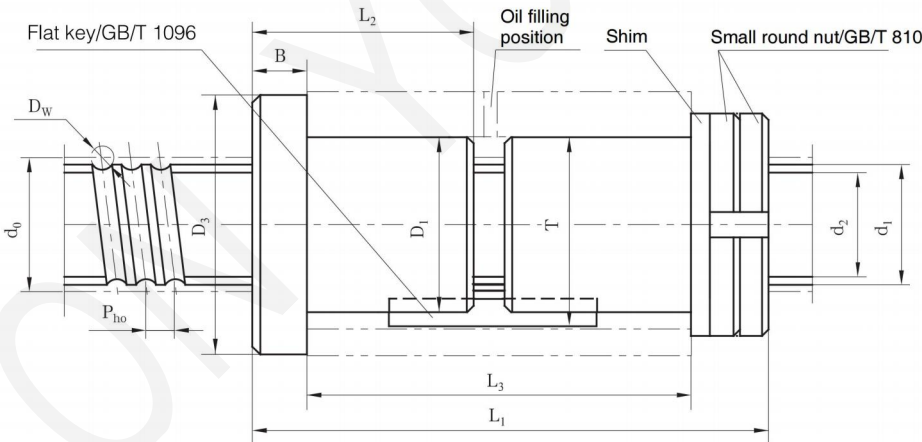


Note:
(1) K_c is the theoretical calculation value when the preload FP is $0.1C_a$;and the axial load F is $0.3C_a$;
(2) When the axial load F is not equal to $0.3C_a$

$$K'_c = K_c \left(\frac{F}{0.3C_a} \right)^{\frac{1}{3}}$$

Where:
 K_c is the stiffness value in the table;
(3) Normal working environment temperature range $\pm 80^{\circ}\text{C}$;
(4) Special requirements shall be put forward when ordering.

Specification code	Nominal diameter	Nomina lead	Outer diameter of screw	Bottom diameter of screw	Steel ball diameter	Number of cycles	Basic rated load		Rigidity K_c N/ μm
	d_o	P_{ho}	d_1	d_2	D_w	N	Dynamic load C_a kN	Static load C_oa kN	
FDIS2004L-3	20	4	19.3	2.381	17.5	3	5.8	14.0	372.0
FDIS2004R-3	20	4	19.1	3	16.9	3	7.6	16.5	363.0
FDIS2005-3	20	5	19.5	3.5	16.9	3	9.5	19.8	385.0
FDIS2505-3	25	5	24.5	3.5	21.9	3	10.6	25.1	462.0
FDIS2506-3	25	6	23.9	3.969	20.9	3	12.3	27.2	458.0
FDIS3205-3	32	5	31.5	3.5	28.9	3	12.3	34.3	585.0
FDIS3206-3	32	6	30.9	3.969	27.9	3	14.3	37.3	581.0
FDIS4006-3	40	6	38.9	3.969	35.9	3	15.9	47.6	695.0
FDIS4008-3	40	8	38.6	5	34.9	3	21.7	59.3	720.0
FDIS4010-3	40	10	39.5	7.144	34.3	3	45.1	114.4	946.0
FDIS4012-3	40	12	38	7.144	32.7	3	57.7	152.3	1029.0
FDIS5006-4	50	6	49	3.969	46	4	22.6	81.6	1098.0
FDIS5008-4	50	8	49	5	45.3	4	30.8	100.6	1138.0
FDIS5010-4	50	10	49	7.144	43.8	4	64.6	193.5	1480.0
FDIS5012-4	50	12	49	7.144	43.8	4	64.5	193.3	1492.0
FDIS6308-4	63	8	61	5	57.3	4	34.3	129.4	1354.0
FDIS6310-4	63	10	61	7.144	55.7	4	71.7	244.5	1756.0
FDIS6312-4	63	12	61	7.144	55.8	4	71.6	244.4	1775.0
FDIS8010-4	80	10	78	7.144	72.7	4	81.4	325.8	2156.0
FDIS8012-4	80	12	78	7.144	72.7	4	81.4	325.7	2189.0



Nut installation connection dimension							Small round nut GB/T 810	Flat key GB/T 1096	Specification code
$D_1(h6)$	D_3	L_1	L_2	L_3	B	T			
30	45	70	28	44	6	32	M30×1.5	4×4×30	FDIS2004L-3
30	45	70	28	44	6	32	M30×1.5	4×4×30	FDIS2004R-3
34	48	81	34	55	6	36.5	M33×1.5	5×5×40	FDIS2005-3
42	58	84	34.5	55	8	44.5	M42×1.5	5×5×40	FDIS2505-3
45	62	95	41	66	8	48	M45×1.5	6×6×45	FDIS2506-3
50	68	88	37	55	8	52.5	M48×1.5	5×5×40	FDIS3205-3
50	68	99	41	66	8	53	M48×1.5	6×6×45	FDIS3206-3
60	80	101	42	66	10	63	M60×2	6×6×45	FDIS4006-3
60	80	119	52	84	10	63	M60×2	8×7×55	FDIS4008-3
65	85	140	62	102	13	68	M64×2	6×6×60	FDIS4010-3
65	85	161	75	121	15	68	M64×2	6×6×60	FDIS4012-3
72	95	117	50	78	10	75.5	M72×2	8×7×55	FDIS5006-4
75	95	144	64	102	12	79	M72×2	12×8×80	FDIS5008-4
75	95	167	76	124	13	79	M72×2	12×8×100	FDIS5010-4
75	95	191	89	146	15	79	M72×2	12×8×110	FDIS5012-4
85	110	144	64	102	12	89	M85×2	12×8×80	FDIS6308-4
90	115	168	77	124	14	95	M90×2	16×10×100	FDIS6310-4
90	115	195	90	150	15	95	M90×2	16×10×110	FDIS6312-4
110	135	180	79	127	15	116	M110×2	20×12×110	FDIS8010-4
110	135	204	91	150	16	116	M110×2	20×12×110	FDIS8012-4

High precision screw

FSVC/FDVC heavy duty ball screw

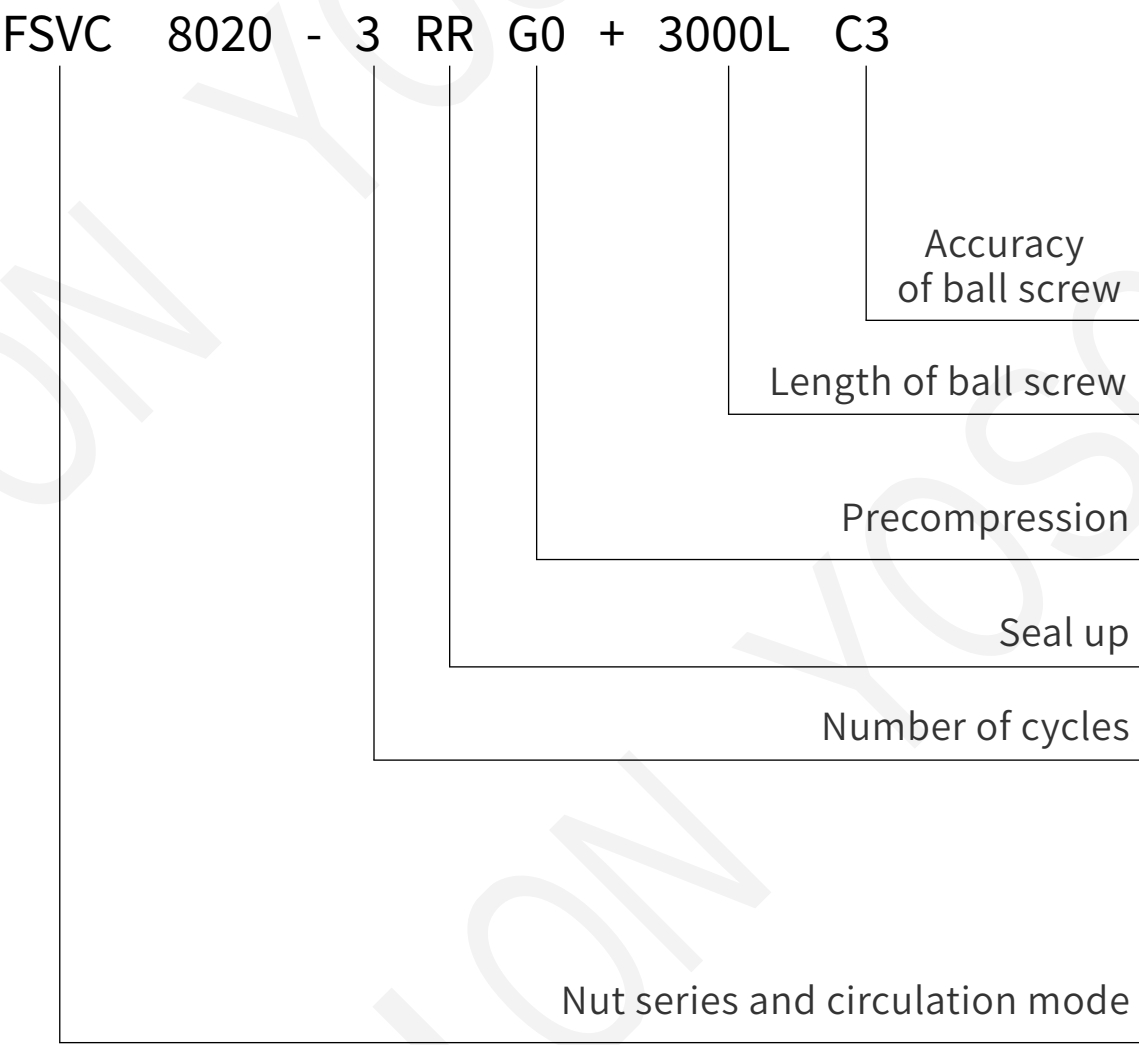
Product application range

Large and heavy-duty CNC lathes, CNC boring machines, CNC milling machines, large steel smelting equipment, jacks, spinning machines and other mechanical equipment

Introduction to product design, manufacturing and testing technology

Length and heavy load have always been important problems to be overcome in manufacturing large heavy-duty ball screws. This series of products have overcome the technologies of design, heat treatment, alignment, raceway forming and dynamic detection. In terms of structural design, the product adopts a design structure with multi-path large-diameter ball circulation circuit. The maximum rated dynamic load of the product is 126 tons and the maximum rated static load is 595 tons. Jingpeng machinery has put into use a series of equipment, such as a 10m large lathe, a 10m hard body rotary milling machine, a 10m large grinder, a 10m medium frequency quenching machine, a 10m large straightening machine, a 10m laser screw stroke error measuring instrument, and has taken the lead in establishing the first single 10m ball screw production line in China.

Numbering rules and meanings



Specifications, models and dynamic and static load parameters

Nominal diamete (mm)	Lead (mm)	Spherical diameter (mm)	Rated dynamic load Ca(KN) of different turns n			Rated static load Coa(KN)of different turns n		
D ₀	P _h	D _w	n=4	n=5	n=8	n=4	n=5	n=8
80	20	12.700			305.1			1074.7
	25	12.700		203.7	305.1		670.5	1072.8
	32	12.700		202.8	303.9		668.4	1069.5
100	20	12.700		233.7	350.1		887.3	1419.7
	25	15.875		304.3	457		1050.5	16793
	32	15.875		304.3	455.9		1047.4	1675.9
	40	15.875	250.2			835.5		
125	20	12.700		258	386.6		1103.2	1765.1
	25	18.256		406.2	608.5		1523.5	2437.6
	32	20.638		463.0	693.6		1665.2	2664.4
	40	20.638	381.2				1329.7	
160	20	12.700		2919	437.3		1493.2	2389.1
	25	18.256		464.5	695.9		2015.5	3224.7
	32	20.638		543.9	814.8		2306.2	3690
	40	25.4	592			2213.4		
200	25	18.256		532.9	798.3		2736.4	4378.3
	32	20.638		605.3	906.8		2949.6	4719.4
	40	25.4	670.8		1257.5		2882.8	5949.6

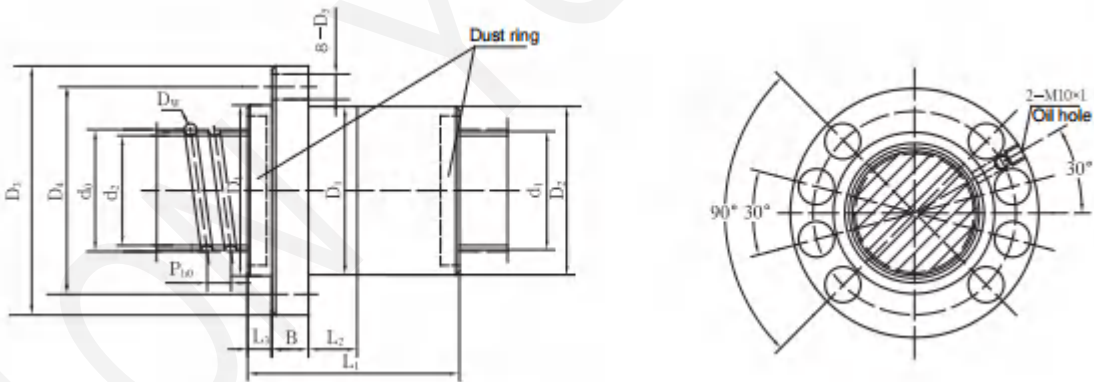
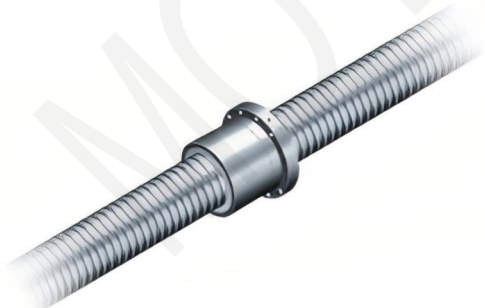
High precision screw

FSVC heavy duty ball screw

Note:
(1)KC is the theoretical calculation value when the preload FP is 0.1Ca
and the axial load F is 0.3Ca;
(2)When the axial load F is not equal to 0.3 Ca,

$$K'_c = K_c \left(\frac{F}{0.3C_a} \right)^{\frac{1}{3}}$$

Where:
KC is the stiffness value in the table;
(3)This type of ball screw is suitable for use under high temperature
conditions;
(4)Special requirements shall be put forward when ordering.



Specification code	Nominal diameter	Nominal lead	Outer diameter of screw	Steel ball diameter	Bottom diameter of screw	Number of cycles	Basic rated load		Rigidity Kc N/μm
							Dynamic load Ca kN	Static load Coa kN	
	d ₀	P _{h0}	d ₁	D _w	D ₂	N			
FSVC8020-8	80	20	78	12.7	68.9	8	305.1	1074.7	2498.5
FSVC8025-5	80	25	78	12.7	68.9	5	203.7	670.5	1619.0
FSVC8025-8	80	25	78	12.7	68.9	8	305.1	1072.8	2538.1
FSVC8032-5	80	32	78	12.7	68.9	5	202.8	668.4	1636.1
FSVC8032-8	80	32	78	12.7	68.9	8	303.9	1069.5	2564.5
FSVC10020-5	100	20	97	12.7	87.9	5	233.7	887.3	1896.9
FSVC10020-8	100	20	97	12.7	87.9	8	350.1	1419.7	2976.5
FSVC10025-5	100	25	97	15.875	85.7	5	304.3	1050.5	1904.3
FSVC10025-8	100	25	97	15.875	85.7	8	457.0	1679.3	3058.3
FSVC10032-5	100	32	97	15.875	85.7	5	304.3	1047.4	1985.4
FSVC10032-8	100	32	97	15.875	85.7	8	455.9	1675.9	3113.0
FSVC10040-4	100	40	97	15.875	85.7	4	250.2	835.5	1620.5
FSVC12520-5	125	20	123.5	12.7	114.4	5	258.0	1103.2	2236.0
FSVC12520-8	125	20	123.5	12.7	114.4	8	386.6	1765.1	3514.0
FSVC12525-5	125	25	123.5	18.256	110.6	5	406.2	1523.5	2304.0
FSVC12525-8	125	25	123.5	18.256	110.6	8	608.5	2437.6	3615.0
FSVC12532-5	125	32	123.5	20.638	109.2	5	463.0	1665.2	2254.0
FSVC12532-8	125	32	123.5	20.638	109.2	8	693.6	2664.4	3536.0
FSVC12540-4	125	40	123.5	20.638	109.2	4	381.2	1329.7	1848.0
FSVC16020-5	160	20	156.5	12.7	147.4	5	291.9	1493.2	2732.0
FSVC16020-8	160	20	156.5	12.7	147.4	8	437.3	2389.1	4294.0
FSVC16025-5	160	25	156.5	18.256	143.6	5	464.5	2015.5	2809.0
FSVC16025-8	160	25	156.5	18.256	143.6	8	695.9	3224.7	4410.0
FSVC16032-5	160	32	156.5	20.638	142.2	5	543.9	2306.2	2867.0
FSVC16032-8	160	32	156.5	20.638	142.2	8	814.8	3690.0	4499.0
FSVC16040-4	160	40	156.5	25.4	138.6	4	592.0	2213.4	2356.0
FSVC20025-5	200	25	196.5	18.256	183.6	5	532.9	2736.4	3345.0
FSVC20025-8	200	25	196.5	18.256	183.6	8	798.3	4378.3	5257.0
FSVC20032-5	200	32	196.5	20.638	182.2	5	605.3	2949.6	3415.0
FSVC20032-8	200	32	196.5	20.638	182.2	8	906.8	4719.4	5363.0
FSVC20040-4	200	40	196.5	25.4	178.6	4	670.8	2882.8	2929.0
FSVC20040-8	200	40	196.5	25.4	178.6	8	1257.5	5949.6	5748.0

Nut installation connection dimension									Specification code
D ₁ (g6)	D ₂ ($\frac{H7}{g6}$)	L ₂	L ₃	D ₃	B	D ₅	D ₄	L ₁	
125	125	25	15	170	32	13.5	150	218	FSVC8020-8
125	125	25	15	170	32	13.5	150	189	FSVC8025-5
125	125	25	15	170	32	13.5	150	264	FSVC8025-8
125	125	25	15	170	32	13.5	150	231	FSVC8032-5
125	125	25	15	170	32	13.5	150	327	FSVC8032-8
150	150	25	20	207	32	17.5	180	160	FSVC10020-5
150	150	25	20	207	32	17.5	180	220	FSVC10020-8
150	150	25	20	207	32	17.5	180	196	FSVC10025-5
150	150	25	20	207	32	17.5	180	271	FSVC10025-8
150	150	25	20	207	32	17.5	180	240	FSVC10032-5
150	150	25	20	207	32	17.5	180	336	FSVC10032-8
150	150	40	20	207	36	17.5	180	238	FSVC10040-4
170	170	25	25	244	36	22	210	158	FSVC12520-5
170	170	25	25	244	36	22	210	218	FSVC12520-8
190	190	25	25	258	36	22	224	204	FSVC12525-5
190	190	25	25	258	36	22	224	279	FSVC12525-8
190	190	25	25	258	36	22	224	252	FSVC12532-5
190	190	25	25	258	36	22	224	348	FSVC12532-8
190	190	40	25	258	40	22	224	252	FSVC12540-4
220	220	25	25	294	40	22	260	163	FSVC16020-5
220	220	25	25	294	40	22	260	223	FSVC16020-8
240	240	40	25	314	40	22	280	201	FSVC16025-5
240	240	40	25	314	40	22	280	276	FSVC16025-8
240	240	40	25	314	40	22	280	241	FSVC16032-5
240	240	40	25	314	40	22	280	337	FSVC16032-8
240	240	40	25	314	40	22	280	251	FSVC16040-4
280	280	40	25	349	50	22	315	195	FSVC20025-5
280	280	40	25	349	50	22	315	270	FSVC20025-8
280	280	40	25	349	50	22	315	242	FSVC20032-5
280	280	40	25	349	50	22	315	338	FSVC20032-8
300	300	40	25	369	50	22	335	252	FSVC20040-4
300	300	40	25	369	50	22	335	412	FSVC20040-8

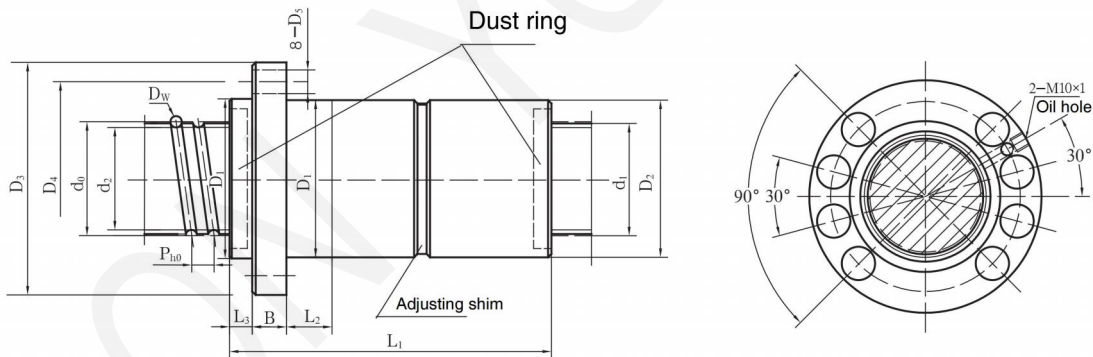
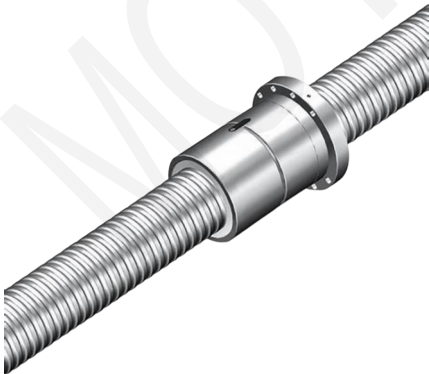
High precision screw

FDVC large heavy-duty gasket preloaded ball screw

- Note:
- (1) KC is the theoretical calculation value when the preload FP is 0.1Ca and the axial load F is 0.3Ca;
 - (2)When the axial load F is not equal to 0.3 Ca,

$$K'_c = K_c \left(\frac{F}{0.3C_a} \right)^{\frac{1}{3}}$$

- Where:
- Kc is the stiffness value in the table;
- (3)This type of ball screw is suitable for use under high temperature conditions;
 - (4)Special requirements shall be put forward when ordering.



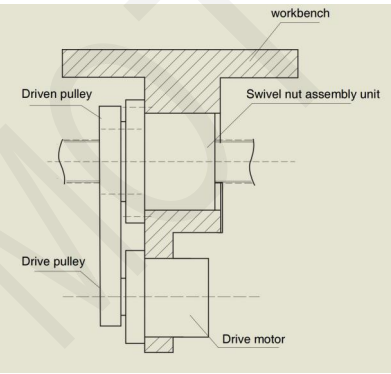
Specification code	Nominal diameter	Nominal lead	Outer diameter of screw	Steel ball diameter	Bottom diameter of screw	Number of cycles	Basic rated load		Rigidity Kc N/μm
							Dynamic load Ca kN	Static load Coa kN	
FDVC8020-8	80	20	78	12.7	68.9	8	305.1	1074.7	4196.1
FDVC8025-5	80	25	78	12.7	68.9	5	203.7	670.5	2692.3
FDVC8025-8	80	25	78	12.7	68.9	8	305.1	1072.8	4216.8
FDVC8032-5	80	32	78	12.7	68.9	5	202.8	668.4	2693.9
FDVC8032-8	80	32	78	12.7	68.9	8	303.9	1069.5	4219.3
FDVC10020-5	100	20	97	12.7	87.9	5	233.7	887.3	3230.1
FDVC10020-8	100	20	97	12.7	87.9	8	350.1	1419.7	5061.2
FDVC10025-5	100	25	97	15.875	85.7	5	304.3	1050.5	3260.5
FDVC10025-8	100	25	97	15.875	85.7	8	457.0	1679.3	5156.6
FDVC10032-5	100	32	97	15.875	85.7	5	304.3	1047.4	3308.7
FDVC10032-8	100	32	97	15.875	85.7	8	455.9	1675.9	5182.9
FDVC10040-4	100	40	97	15.875	85.7	4	250.2	835.5	2676.1
FSVC12520-5	125	20	123.5	12.7	114.4	5	258.0	1103.2	3961.0
FSVC12520-8	125	20	123.5	12.7	114.4	8	386.6	1765.1	6212.0
FSVC12525-5	125	25	123.5	18.256	110.6	5	406.2	1523.5	3929.0
FSVC12525-8	125	25	123.5	18.256	110.6	8	608.5	2437.6	6156.0
FSVC12532-5	125	32	123.5	20.638	109.2	5	463.0	1665.2	3788.0
FSVC12532-8	125	32	123.5	20.638	109.2	8	693.6	2664.4	5935.0
FSVC12540-4	125	40	123.5	20.638	109.2	4	381.2	1329.7	3074.0
FSVC16020-5	160	20	156.5	12.7	147.4	5	291.9	1493.2	4879.0
FSVC16020-8	160	20	156.5	12.7	147.4	8	437.3	2389.1	7651.0
FSVC16025-5	160	25	156.5	18.256	143.6	5	464.5	2015.5	4844.0
FSVC16025-8	160	25	156.5	18.256	143.6	8	695.9	3224.7	7592.0
FSVC16032-5	160	32	156.5	20.638	142.2	5	543.9	2306.2	4871.0
FSVC16032-8	160	32	156.5	20.638	142.2	8	814.8	3690.0	7633.0
FSVC16040-4	160	40	156.5	25.4	138.6	4	592.0	2213.4	3970.0
FDVC20025-5	200	25	196.5	18.256	183.6	5	532.9	2736.4	5954.0
FDVC20025-8	200	25	196.5	18.256	183.6	8	798.3	4378.3	9336.0
FDVC20032-5	200	32	196.5	20.638	182.2	5	605.3	2949.6	5953.0
FDVC20032-8	200	32	196.5	20.638	182.2	8	906.8	4719.4	9331.0
FDVC20040-4	200	40	196.5	25.4	178.6	4	670.8	2882.8	4986.0

Nut installation connection dimension									Specification code
D1(g6)	D2($\frac{H7}{g6}$)	L2	L3	D3	B	D5	D4	L1	
125	125	25	15	170	32	13.5	150	218	FSVC8020-8
125	125	25	15	170	32	13.5	150	189	FSVC8025-5
125	125	25	15	170	32	13.5	150	264	FSVC8025-8
125	125	25	15	170	32	13.5	150	231	FSVC8032-5
125	125	25	15	170	32	13.5	150	327	FSVC8032-8
150	150	25	20	207	32	17.5	180	160	FSVC10020-5
150	150	25	20	207	32	17.5	180	220	FSVC10020-8
150	150	25	20	207	32	17.5	180	196	FSVC10025-5
150	150	25	20	207	32	17.5	180	271	FSVC10025-8
150	150	25	20	207	32	17.5	180	240	FSVC10032-5
150	150	25	20	207	32	17.5	180	336	FSVC10032-8
150	150	40	20	207	36	17.5	180	238	FSVC10040-4
170	170	25	25	244	36	22	210	158	FSVC12520-5
170	170	25	25	244	36	22	210	218	FSVC12520-8
190	190	25	25	258	36	22	224	204	FSVC12525-5
190	190	25	25	258	36	22	224	279	FSVC12525-8
190	190	25	25	258	36	22	224	252	FSVC12532-5
190	190	25	25	258	36	22	224	348	FSVC12532-8
190	190	40	25	258	40	22	224	252	FSVC12540-4
220	220	25	25	294	40	22	260	163	FSVC16020-5
220	220	25	25	294	40	22	260	223	FSVC16020-8
240	240	40	25	314	40	22	280	201	FSVC16025-5
240	240	40	25	314	40	22	280	276	FSVC16025-8
240	240	40	25	314	40	22	280	241	FSVC16032-5
240	240	40	25	314	40	22	280	337	FSVC16032-8
240	240	40	25	314	40	22	280	251	FSVC16040-4
280	280	40	25	349	50	22	315	358	FDVC20025-5
280	280	40	25	349	50	22	315	508	FDVC20025-8
280	280	40	25	349	50	22	315	434	FDVC20032-5
280	280	40	25	349	50	22	315	626	FDVC20032-8
300	300	40	25	369	50	22	335	452	FDVC20040-4

High precision screw

Swivel nut assembly unit

The rotating nut assembly unit is a transmission system that converts the rotating motion of the ball nut into the linear motion of the nut itself (or the ball screw). It is an extension of the ball screw. Its main components are composed of the ball screw pair, the rolling bearing pair, the nut seat, the pre tightening adjustment (locking) device, the dust-proof device and the lubricating oil circuit. The installation structure is as follows:



1. Characteristics of rotating nut combination unit

- Inertia is low. Taking nut rotation as the active drive greatly reduces the moment of inertia of the mechanical motion system, improves the limit speed of the system, facilitates high-speed transmission, and makes the selected motor power smaller than taking screw rotation as the active drive.
- High rigidity. The size of the bearing arranged on the outer circle of the nut is larger than that of the way in which the screw rod rotates as the active drive; At the same time, since the screw rod does not rotate, there is no need to install a bearing on its journal, which can exert a greater axial pretension force on the screw rod, so that the rigidity of the whole set of ball screw rod can be greatly improved.
- Multi nut drive. Multiple rotating nut combination units can be installed on one ball screw. Multiple worktables are driven simultaneously or separately, and their movements do not interfere with each other.
- Simple design and installation. The rotary nut combination unit integrates multiple functional components, simplifies the design and facilitates installation and commissioning.
- other. Since the screw rod does not rotate, there is no circumferential friction at the middle auxiliary support, and there is no local heating problem; When the positioning accuracy is very high and the hollow cooling structure of the screw rod is adopted considering the influence of temperature rise, it is easier to cool the pipe joint because the screw rod does not rotate

Hot tip

- It is suggested that when the length diameter ratio of the screw rod is ≥ 80 and the depth is even ≥ 60 , several radial auxiliary supports should be set in the middle of the screw rod.
- In addition to the necessary installation interface dimensions of the rotating nut assembly unit, the sample also provides "recommended type dimension- of screw shaft journal" and "recommended type dimensions of synchronous belt pulley (gear)" for the convenience of design for the reference of the main engine designer.
- The standard series products of our company are given in the sample. If the standard series products can not meet the needs, please contact our company for special orders.

2. Accuracy of rotating nut assembly unit

Refer to the standard GB/T17587.3 for ball screw

3. Pre tightening of rotating nut assembly unit

This sample introduces two structural types: light load and heavy load. The light-duty rotary nut assembly unit is generally not pre tightened and is used as a transmission device. The heavy-duty rotary nut combination unit adopts gasket pre tightening, which is generally pre tightened according to 5% of the rated dynamic load of the model before delivery

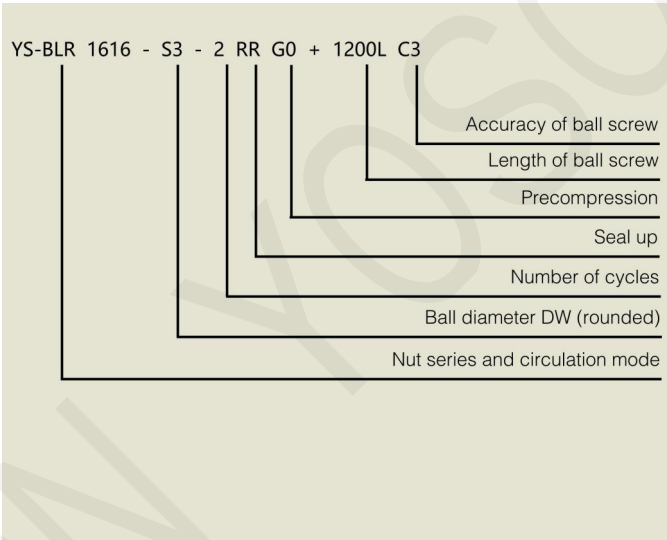
4. Lubrication of rotating nut assembly unit

The nut seat is equipped with a standard metric lubrication interface. According to the working conditions, centralized lubrication at the gas station or manual oil injection lubrication can be adopted. Two oil paths, one for rolling bearing lubrication and the other for ball nut lubrication.

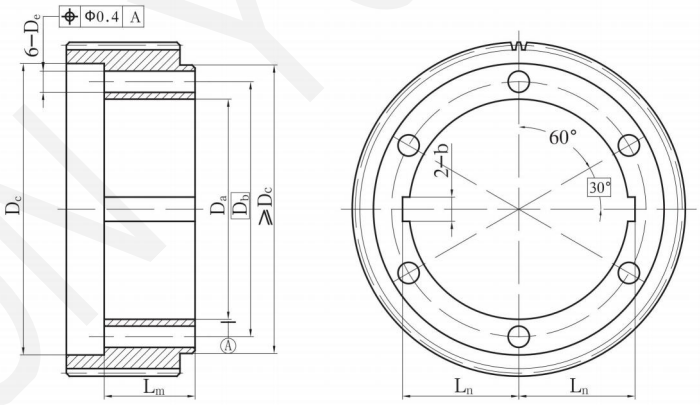
5. Dust prevention of rotating nut assembly unit

The combination unit has been equipped with conventional dust-proof devices for the ball screws and ball bearings. It is recommended to install other dust-proof (cover, sleeve) devices on the workbench, which is more conducive to reducing wear and prolonging service life.

6. Numbering rules and meanings

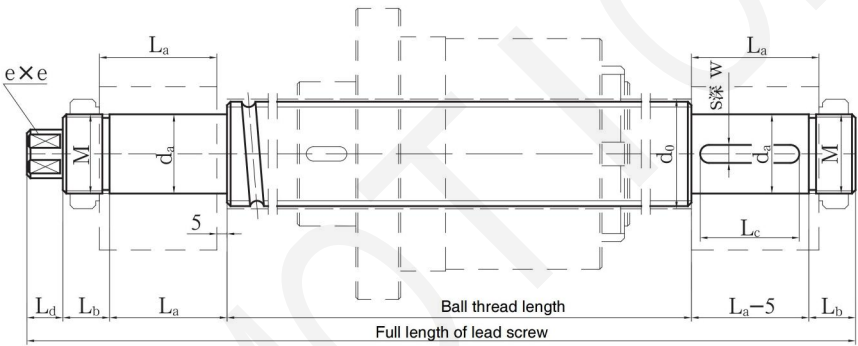


7. Recommended type and size of synchronous pulley (gear)



Serial number	Da(H8)	Db	Lm	Dc	De	b(H9)	Ln(°)
1	75	90	15	105	9	12	41.8
5	95	110	15	125	9	12	51.8
3	100	118	15	133	9	12	53.8
4	120	138	35	156	11	12	63.8
5	145	165	45	185	14	12	76.3

8. Recommended type and size of screw shaft journal

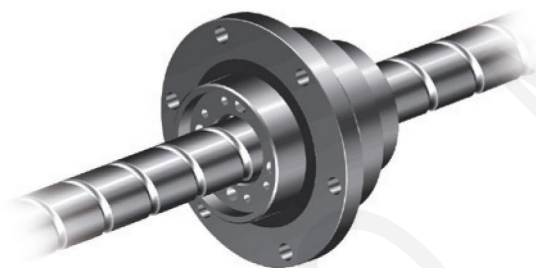


Note: the installation direction of nut seat flange shown in the figure is the default direction

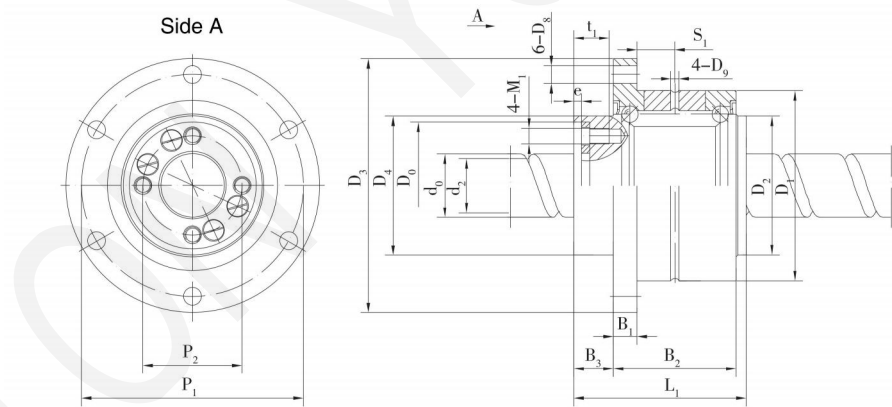
Nominal diameter d ₀	d _s (h7)	L _a	M	L _b	r(N9)	w	L _c	e	L _d
50	40	100	M40x1.5	40	12	4.5	80	27	30
63	50	125	M40x1.5	40	12	4.5	80	32	30
80	65	160	M40x2	50	12	4.5	80	36	30
100	80	200	M40x2	50	20	7	125	50	30

High precision screw

■ YS-BLR light load rotary nut combination unit



7. Recommended type and size of synchronous pulley (gear)

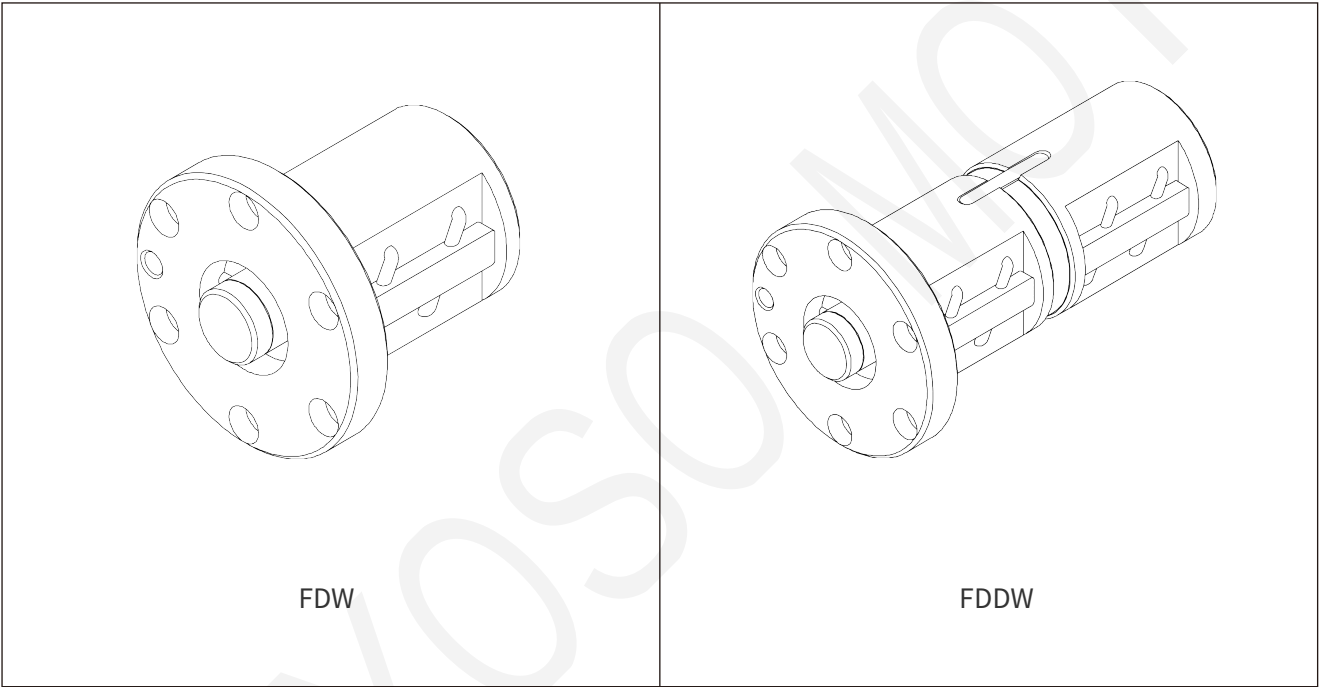


Specification code	Nominal diameter	Nominal lead	Outer diameter of screw d ₁	Number of loaded ball turns	Ball diameter D _w	Bottom diameter of screw D ₂	Nut installation dimension				
							D ₀ (H7)	D ₁ (G6)	L ₁	D ₂	D ₃
YS-BLR1616R-S3-2	16	16	16	2	3	13.7	32	48	43	35	64
YS-BLR2020R-S4-2	20	20	20	2	3.5	16.9	40	56	51	42.5	72
YS-BLR2525R-S4-2	25	25	25	2	3.969	20.5	47	66	66	50	86
YS-BLR3232R-S5-2	32	32	32	2	5	26.7	58	78	80	60	103
YS-BLR4040R-S6-2	40	40	39	2	5.953	34	73	100	95	78	130

Nut installation dimension													Basic rated load of screw		Basic load rating of support bearing		Specification code
D ₄ (h7)	P ₁	P ₂	B ₁	B ₂	B ₃	M ₁	D ₈	e	t ₁	S ₁	D ₉	D ₀	dynamic load C _r (KN)	Static load C _{0a} (KN)	dynamic load C _r (KN)	Static load C _{0a} (KN)	
36	56	25	6	21	10	4	4.5	2	12	5	2.5		4.6	9.1	6.7	12.3	YS-BLR1616R-S3-2
43.5	64	31	6	21	11	5	4.5	2.5	15	5	2.5		7.1	15.3	7.24	15.1	YS-BLR2020R-S4-2
52	75	38	7	25	13	6	5.5	3	18	6	3		9.4	21.8	10.3	22.6	YS-BLR2525R-S4-2
63	89	48	8	25	14	6	6.6	3	18	5	3		14.1	34.7	10.8	26.6	YS-BLR3232R-S5-2
79.5	113	61	10	33	16.5	8	9	3	20	7	4		19.2	49.1	19.9	49.3	YS-BLR4040R-S6-2

External circulation large load screw

■ FDW, FDDW model



1. Structure and specialties

Unprocessed products at the end of the shaft are produced by standardizing the screw shaft of precision ball screws and processing it into a series of mass-produced products of specified length. The screw shaft end is easy to be machined.

In addition, there are single nut FDW type and double nut FDDW type nut models. Please choose the appropriate type according to the purpose of use.

2. dustproof

When dirt or other foreign objects may enter the ball screw, a dust-proof device (such as a telescopic cover, etc.) must be used to completely cover the screw shaft.

3. lubrication

For nuts, lithium soap based lubricating oil has been sealed at the time of delivery.

4. Additional processing of the screw shaft end

Due to the fact that only the effective threaded portion of the screw shaft is surface hardened through induction hardening or carburizing treatment, it is very easy to perform additional machining on the shaft end through a grinder or milling machine.

In addition, as both ends of the screw shaft have central holes, they can accept external cylindrical grinding processing.

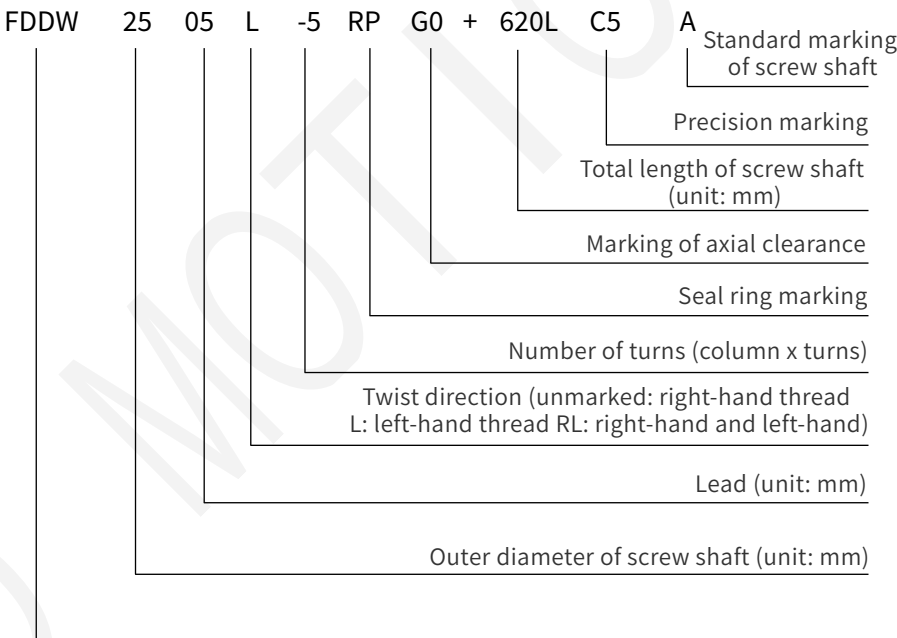
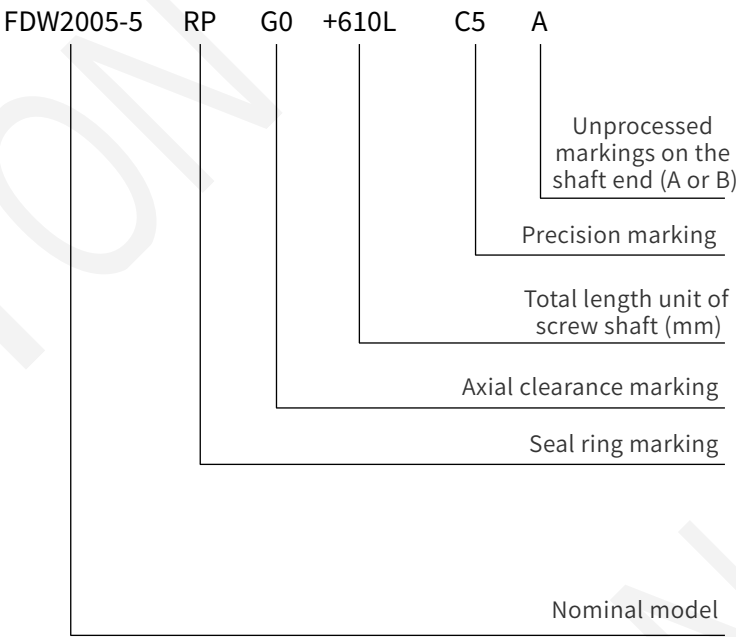
Surface hardness of effective threads	:58 to 64HRC
Surface hardness of the end of the screw shaft	
FDW, FDDW model	:22 to 27HRC

Tips:

We have standardized the shape of the screw shaft end for quick estimation and manufacturing of ball screws.

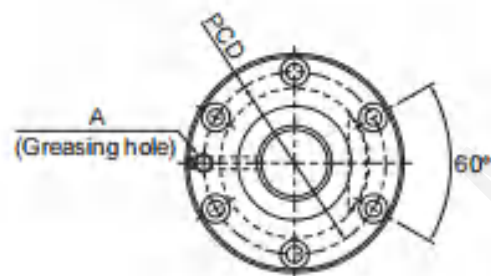
■ The numbering rules and meanings of high load screws in the outer loop

Numbering rules for high load screws in external circulation



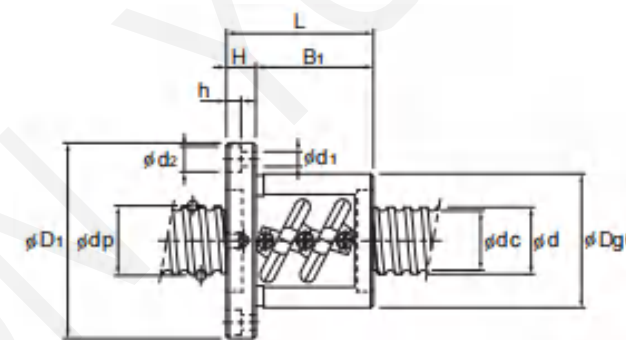
High precision screw

■ External circulation large load screw



FDW

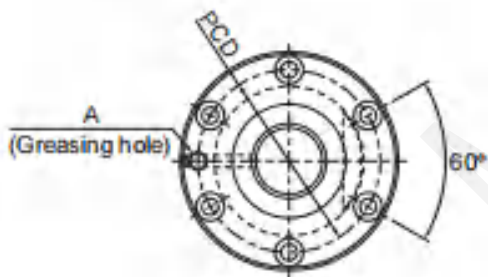
Model No.	Screw shaft outer diameter	Lead	Ball center-to-center diameter	Thread minor diameter	No.of loaded circuits	Basic load rating		Rigidity k
	d	ph	dp	dc	Rows x turns	Ca	C _{oa}	
						kN	kN	N/μm
FDW 2505V-2.5	25	5	25.75	22.2	1×2.5	9.2	21.9	240
FDW 2505V-5	25	5	25.75	22.2	2×2.5	16.7	43.9	460
FDW 2506V-2.5	25	6	26	21.4	1×2.5	12.4	27.4	250
FDW 2506V-5	25	6	26	21.4	2×2.5	22.6	54.8	470
FDW 2805V-2.5	28	5	28.75	25.2	1×2.5	9.7	24.6	250
FDW 2805V-5	28	5	28.75	25.2	2×2.5	17.5	49.2	500
FDW 2805V-7.5	28	5	28.75	25.2	3×2.5	24.8	73.8	740
FDW 2806V-2.5	28	6	28.75	25.2	1×2.5	9.6	24.6	250
FDW 2806V-5	28	6	28.75	25.2	2×2.5	17.5	49.2	500
FDW 2806V-7.5	28	6	28.75	25.2	3×2.5	24.8	73.8	740
FDW 3205V-2.5	32	5	32.75	29.2	1×2.5	10.2	28.1	280
FDW 3205V-5	32	5	32.75	29.2	2×2.5	18.5	56.3	560
FDW3205V-7.5	32	5	32.75	29.2	3×2.5	26.2	84.4	810
FDW 3206V-2.5	32	6	33	28.4	1×2.5	13.9	35.2	290
FDW 3206V-5	32	6	33	28.4	2×2.5	25.2	70.3	580



Nut dimensions								Screw shaft inertial moment/mm	Nut mass	Shaft mass
Outer diameter	Flange diameter	Overall length				Lubrication hole				
D	D ₁	L ₁	H	B ₁	PCD	d ₁ × d ₂ × h	A	kg m²/mm	kg	kg/m
50	73	40	11	29	61	5.5×9.5×5.5	M6	3.01×10 ⁻³	0.52	3.52
50	73	55	11	44	61	5.5×9.5×5.5	M6	3.01×10 ⁻³	0.68	3.52
53	76	44	11	33	64	5.5×9.5×5.5	M6	3.01×10 ⁻³	0.61	3.43
53	76	62	11	51	64	5.5×9.5×5.5	M6	3.01×10 ⁻³	0.91	3.43
55	85	44	12	32	69	6.6×11×6.5	M6	4.74×10 ⁻³	1.02	4.45
55	85	59	12	47	69	6.6×11×6.5	M6	4.74×10 ⁻³	1.06	4.45
55	85	74	12	62	69	6.6×11×6.5	M6	4.74×10 ⁻³	1.16	4.45
55	85	50	12	38	69	6.6×11×6.5	M6	4.74×10 ⁻³	0.87	4.52
55	85	68	12	56	69	6.6×11×6.5	M6	4.74×10 ⁻³	1.09	4.52
55	85	86	12	74	69	6.6×11×6.5	M6	4.74×10 ⁻³	1.3	4.52
58	85	41	12	29	71	6.6×11×6.5	M6	8.08×10 ⁻³	0.76	5.89
58	85	56	12	44	71	6.6×11×6.5	M6	8.08×10 ⁻³	0.94	5.89
58	85	71	12	59	71	6.6×11×6.5	M6	8.08×10 ⁻³	1.13	5.89
62	89	45	12	33	75	6.6×11×6.5	M6	8.08×10 ⁻³	0.94	5.88
62	89	63	12	51	75	6.6×11×6.5	M6	8.08×10 ⁻³	1.21	5.88

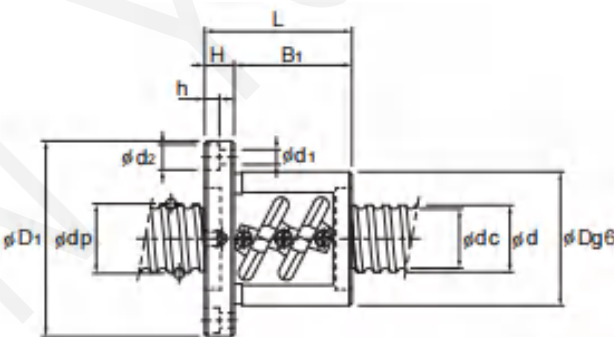
High precision screw

■ External circulation large load screw



FDW

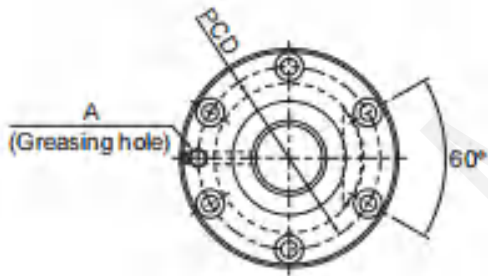
Model No.	Screw shaft outer diameter	Lead	Ball center-to-center diameter	Thread minor diameter	No.of loaded circuits	Basic load rating		Rigidity k
	d	ph	dp	dc	Rows x turns	Ca kN	C _{0a} kN	N/μm
FDW 2508V-2.5	25	8	26.25	20.5	1×2.5	15.8	32.9	250
FDW 2508V-3.5	25	8	26.25	20.5	1×3.5	21.1	46	340
FDW 2508V-5	25	8	26.25	20.5	2×2.5	28.7	65.7	480
FDW 2510V-2.5	25	10	26.25	21.5	1×2.5	15.8	32.9	250
FDW 2810V-2.5	28	10	29.75	22.4	1×2.5	24.3	49	280
FDW 3210V-2.5	32	10	33.75	26.4	1×2.5	26	56.2	310
FDW 3210V-3.5	32	10	33.75	26.4	1×3.5	34.8	78.6	440
FDW 3210V-5	32	10	33.75	26.4	2×2.5	47.3	112.3	620
FDW 3212V-3.5	32	12	34	26.1	1X3.5	40.4	88.5	440
FDW 3216V-5	32	16	33.75	26.4	2×2.5	47.1	113.1	616
FDW 3610V-2.5	36	10	37.75	30.5	1×2.5	27.6	63.3	350
FDW3610V-5	36	10	37.75	30.5	2×2.5	50.1	126.5	680
FDW 3610V-7.5	36	10	37.75	30.5	3×2.5	71	189.8	990
FDW 3612V-2.5	36	12	38	30.1	1×2.5	32.2	71.2	350
FDW 3612V-5	36	12	38	30.1	2×2.5	58.4	142.3	690
FDW 3616V-2.5	36	16	38	30.1	1×2.5	32.1	71.5	350
FDW3620V-1.5	36	20	37.75	30.5	1×1.5	17.7	38.4	215
FDW 4010V-2.5	40	10	41.75	34.4	1×2.5	29	70.4	380
FDW 4010V-3.5	40	10	41.75	34.4	1×3.5	38.8	98.5	520
FDW 4010V-5	40	10	41.75	34.4	2×2.5	52.7	140.7	740
FDW 4012V-2.5	40	12	42	34.1	1X2.5	33.9	79.2	390
FDW 4012V-3.5	40	12	42	34.1	1×3.5	45.3	110.8	530
FDW 4012V-5	40	12	42	34.1	2×2.5	61.6	158.3	750
FDW 4016V-5	40	16	42	34.1	2×2.5	61.5	158.8	740
FDW 4020V-5	40	20	41.75	34.4	2×2.5	52.4	142	736



Outer diameter	Flange diameter	Overall length	Nut dimensions				Lubrication hole	Screw shaft inertial moment/mm	Nut mass	Shaft mass
			H	B ₁	PCD	d ₁ × d ₂ × h				
D	D ₁	L ₁	H	B ₁	PCD	d ₁ × d ₂ × h	A	kg m ² /mm	kg	kg/m
58	85	58	15	43	71	6.6×11×6.5	M6	3.10×10 ⁻³	1.07	3.51
58	85	66	15	51	71	6.6×11×6.5	M6	3.10×10 ⁻³	1.29	3.51
58	85	82	15	67	71	6.6×11×6.5	M6	3.10×10 ⁻³	1.44	3.51
58	85	70	18	52	71	6.6×11×6.5	M6	3.10×10 ⁻³	1.43	3.5
65	106	86	18	68	85	11×17.5×11	M6	4.74×10 ⁻³	2.3	4.15
74	108	70	15	55	90	9×14×8.5	M6	8.08×10 ⁻³	2.2	5.53
74	108	80	15	65	90	9×14×8.5	M6	8.08×10 ⁻³	2.44	5.53
74	108	100	15	85	90	9×14×8.5	M6	8.08×10 ⁻³	2.92	5.53
76	121	98	18	80	98	11×17.5×11	M6	8.08×10 ⁻³	3.4	5.7
74	108	139	18	121	90	9×14×8.5	M6	8.08×10 ⁻³	3.81	5.82
75	120	81	18	63	98	11×17.5×11	M6	1.29×10 ⁻²	2.75	7.1
75	120	111	18	93	98	11×17.5×11	M6	1.29×10 ⁻²	3.45	7.1
75	120	141	18	123	98	11×17.5×11	M6	1.29×10 ⁻²	4.15	7.1
78	123	87	18	69	100	11×17.5×11	M6	1.29×10 ⁻²	3.14	7.99
78	123	123	18	105	100	11×17.5×11	M6	1.29×10 ⁻²	4.07	7.99
78	123	92	18	74	100	11×17.5×11	M6	1.29×10 ⁻²	3.27	7.99
75	114	82	18	64	93	11×17.5×11	M6	1.29×10 ⁻²	2.38	7.54
82	124	73	18	55	102	11×17.5×11	M6	1.97×10 ⁻²	2.86	8.87
82	124	83	18	65	102	11×17.5×11	M6	1.97×10 ⁻²	3.14	8.87
82	124	103	18	85	102	11×17.5×11	M6	1.97×10 ⁻²	3.69	8.87
84	126	83	18	65	104	11×17.5×11	M6	1.97×10 ⁻²	3.31	8.83
84	126	95	18	77	104	11×17.5×11	M6	1.97×10 ⁻²	3.66	8.83
84	126	119	18	101	104	11×17.5×11	M6	1.97×10 ⁻²	4.36	8.83
84	126	144	18	126	104	11×17.5×11	M6	1.97×10 ⁻²	5.52	9.09
82	126	162	18	144	104	11×17.5×11	M6	1.97×10 ⁻²	5.17	9.37

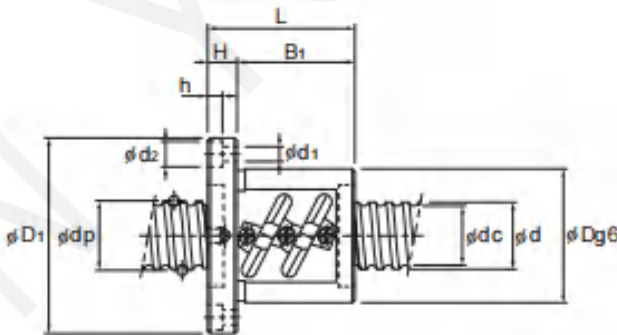
High precision screw

■ External circulation large load screw



FDW

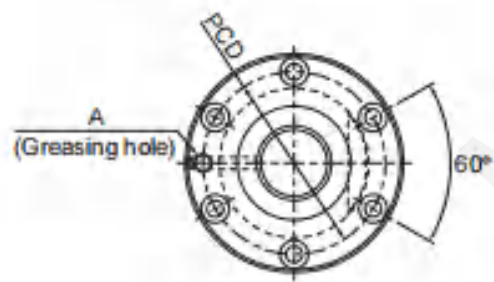
Model No.	Screw shaft outer diameter	Lead	Ball center-to-center diameter	Thread minor diameter	No.of loaded circuits	Basic load rating		Rigidity k
	d	ph	dp	dc	Rows x turns	Ca kN	C _{0a} kN	N/μm
FDW 4510V-2.5	45	10	46.75	39.5	1×2.5	30.6	79.3	420
FDW 4510V-3	45	10	46.75	39.5	2×1.5	35.8	95.1	500
FDW 4510V-5	45	10	46.75	39.5	2×2.5	55.6	158.5	800
FDW 4510V-7.5	45	10	46.75	39.5	3×2.5	78.8	237.8	1190
FDW 4512V-5	45	12	47	39.2	2×2.5	65.2	178.3	820
FDW 4520V-2.5	45	20	47	39.2	1×2.5	35.8	89.7	424
FDW 5010V-2.5	50	10	51.75	44.4	1×2.5	32.1	88.1	450
FDW 5010V-3.5	50	10	51.75	44.4	1×3.5	42.9	123.4	620
FDW 5010V-5	50	10	51.75	44.4	2×2.5	58.2	176.3	880
FDW 5010V-7.5	50	10	51.75	44.4	3×2.5	82.5	264.4	1290
FDW 5012V-2.5	50	12	52.25	43.3	1×2.5	43.4	110.1	470
FDW 5012V-3.5	50	12	52.25	43.3	1×3.5	58	154.1	640
FDW 5012V-5	50	12	52.25	43.3	2×2.5	78.8	220.2	910
FDW 5016V-2.5	50	16	52.7	42.9	1×2.5	72.6	183.1	620
FDW 5016V-5	50	16	52.7	42.9	2×2.5	131.8	366.2	1180
FDW 5020V-2.5	50	20	52.7	42.9	1×2.5	72.5	183.6	620



Nut dimensions								Screw shaft inertial moment/mm	Nut mass	Shaft mass
Outer diameter	Flange diameter	Overall length	H	B ₁	PCD	d ₁ × d ₂ × h	Lubrication hole A			
D	D ₁	L ₁						kg m ² /mm	kg	kg/m
88	132	81	18	63	110	11×17.5×11	Rc1/8 (PT1/8)	3.16×10 ⁻²	3.43	11.36
88	132	94	18	76	110	11×17.5×11		3.16×10 ⁻²	3.83	11.36
88	132	111	18	93	110	11×17.5×11		3.16×10 ⁻²	4.35	11.36
88	132	141	18	123	110	11×17.5×11		3.16×10 ⁻²	5.26	11.36
90	130	119	18	101	110	11×17.5×11		3.16×10 ⁻²	4.74	11.32
90	130	102	18	84	110	11×17.5×11		3.16×10 ⁻²	4.28	11.1
93	135	73	18	55	113	11X17.5X11		4.82×10 ⁻²	3.33	14.16
93	135	83	18	65	113	11×17.5×11		4.82×10 ⁻²	3.66	14.16
93	135	103	18	85	113	11X17.5X11		4.82×10 ⁻²	4.31	14.16
93	135	133	18	115	113	11×17.5×11		4.82×10 ⁻²	5.28	14.16
100	146	87	22	65	122	14×20×13		4.82×10 ⁻²	4.57	13.82
100	146	99	22	77	122	14×20×13		4.82×10 ⁻²	5.05	13.82
100	146	123	22	101	122	14×20×13		4.82×10 ⁻²	6.02	13.82
105	152	116	25	91	128	14×20×13		4.82×10 ⁻²	6.98	13.71
105	152	164	25	139	128	14×20×13		4.82×10 ⁻²	9.18	13.71
105	152	141	28	113	128	14×20×13		4.82×10 ⁻²	8.32	14.05

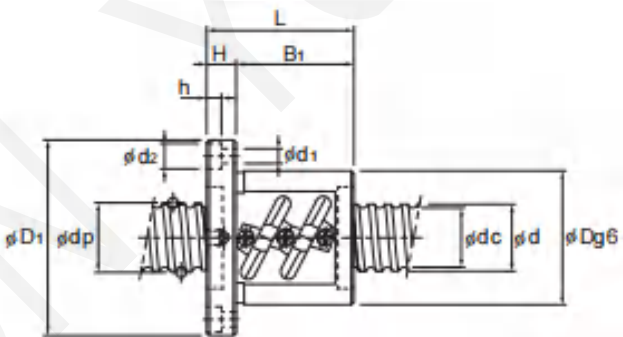
High precision screw

■ External circulation large load screw



FDW

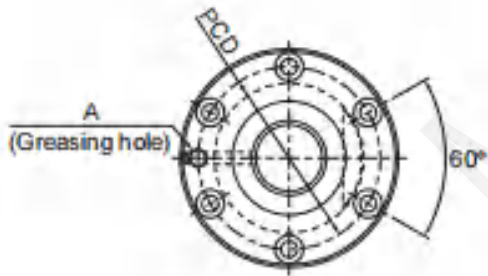
Model No.	Screw shaft outer diameter	Lead	Ball center-to-center diameter	Thread minor diameter	No.of loaded circuits	Basic load rating		Rigidity k
						Ca	C _{0a}	
	d	ph	dp	dc	Rows x turns	kN	kN	N/μm
FDW 5510-2.5	55	10	56.75	49.5	1×2.5	33.4	97	490
FDW 5510-5	55	10	56.75	49.5	2×2.5	60.7	194	950
FDW 5510-7.5	55	10	56.75	49.5	3×2.5	85.9	291.1	1390
FDW 5512-2.5	55	12	57	49.2	1×2.5	39.3	108.8	500
FDW 5512-3	55	12	57	49.2	2×1.5	46	131.3	590
FDW 5512-3.5	55	12	57	49.2	1×3.5	52.4	152.9	680
FDW 5512-5	55	12	57	49.2	2×2.5	71.3	218.5	960
FDW 5512-7.5	55	12	57	49.2	3×2.5	100.9	327.3	1420
FDW 5516-2.5	55	16	57.7	47.9	1×2.5	76.1	201.9	650
FDW 5516-5	55	16	57.7	47.9	2×2.5	138.2	402.8	1280
FDW 5520-2.5	55	20	57.7	47.9	1×2.5	76	201.9	660
FDW 5520-5	55	20	57.7	47.9	2×2.5	138.2	403.8	1280
FDW 6310-2.5	63	10	64.75	57.7	1×2.5	35.4	111.7	550
FDW 6310-5	63	10	64.75	57.7	2×2.5	64.2	222.5	1050
FDW 6310-7.5	63	10	64.75	57.7	3×2.5	90.9	334.2	1550
FDW 6312A-2.5	63	12	65.25	56.3	1×2.5	48.1	139.2	560
FDW 6312A-5	63	12	65.25	56.3	2×2.5	87.4	278.3	1090
FDW 6316-5	63	16	65.7	55.9	2×2.5	147	462.6	1420
FDW 6320-2.5	63	20	65.7	55.9	1×2.5	81	231.3	740
FDW 6310-5	63	20	65.7	55.9	2×2.5	147	463.5	1420



Nut dimensions								Screw shaft inertial moment/mm	Nut mass	Shaft mass
Outer diameter	Flange diameter	Overall length	H	B ₁	PCD	d ₁ × d ₂ × h	Lubrication hole			
D	D ₁	L ₁					A	kg m ² /mm	kg	kg/m
102	144	81	18	63	122	11×17.5×11	Rc1/8 (PT1/8)	7.05×10 ⁻²	4.19	16.43
102	144	111	18	93	122	11×17.5×11		7.05×10 ⁻²	5.36	16.43
102	144	141	18	123	122	11×17.5×11		7.05×10 ⁻²	6.54	16.43
105	147	93	18	75	125	11×17.5×11		7.05×10 ⁻²	5.01	16.29
105	147	107	18	89	125	11×17.5×11		7.05×10 ⁻²	5.6	16.29
105	147	105	18	87	125	11×17.5×11		7.05×10 ⁻²	5.52	16.29
105	147	129	18	111	125	11×17.5×11		7.05×10 ⁻²	6.54	16.29
105	147	165	18	147	125	11×17.5×11		7.05×10 ⁻²	8.07	16.29
110	158	116	25	91	133	14×20×13		7.05×10 ⁻²	7.4	15.46
110	158	164	25	139	133	14×20×13		7.05×10 ⁻²	9.73	15.46
112	158	127	28	99	134	14×20×13		7.05×10 ⁻²	8.4	16.1
112	158	187	28	159	134	14×20×13		7.05×10 ⁻²	11.45	16.1
108	154	77	22	55	130	14×20×13		7.05×10 ⁻²	4.57	21.93
108	154	107	22	85	130	14×20×13		1.21×10 ⁻¹	5.77	21.93
108	154	137	22	115	130	14×20×13		1.21×10 ⁻¹	6.98	21.93
115	161	87	22	65	137	14×20×13		1.21×10 ⁻¹	5.8	21.14
115	161	123	22	101	137	14×20×13		1.21×10 ⁻¹	7.56	21.14
122	184	160	24	136	152	18×26×17.5		1.21×10 ⁻¹	11.82	20.85
122	180	127	28	99	150	18×26×17.5		1.21×10 ⁻¹	10.1	21.57
122	180	187	28	159	150	18×26×17.5		1.21×10 ⁻¹	13.58	21.57

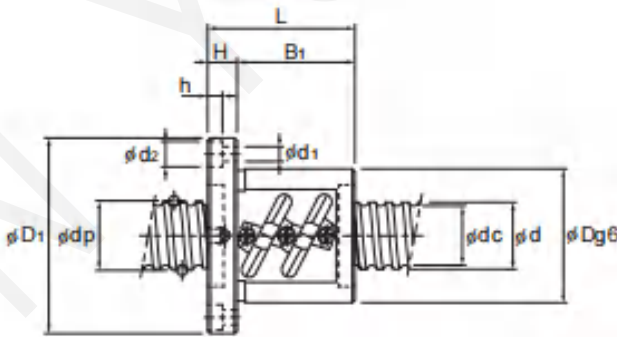
High precision screw

■ External circulation large load screw



FDW

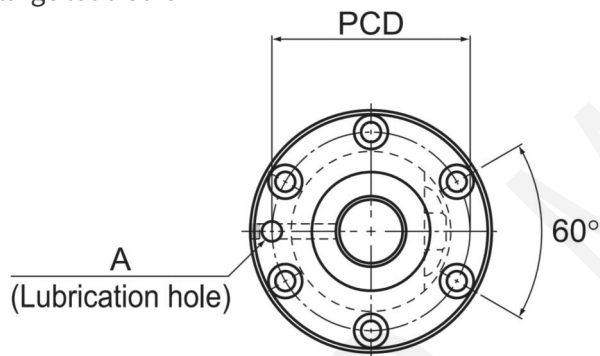
Model No.	Screw shaft outer diameter	Lead	Ball center-to-center diameter	Thread minor diameter	No.of loaded circuits	Basic load rating		Rigidity k
	d	ph	dp	dc	Rows x turns	Ca kN	C _{0a} kN	N/μm
FDW 7010-2.5	70	10	71.75	64.5	1×2.5	36.8	123.5	590
FDW 7010-5	70	10	71.75	64.5	2×2.5	66.9	247	1140
FDW 7010-7.5	70	10	71.75	64.5	3×2.5	94.9	371.4	1680
FDW 7012-2.5	70	12	72	64.2	1×2.5	43.5	139.2	600
FDW 7012-5	70	12	72	64.2	2×2.5	78.9	278.3	1160
FDW 7012-7.5	70	12	72	64.2	3×2.5	111.7	417.5	1710
FDW 7020-5	70	20	72.7	62.9	2×2.5	153.9	514.5	1550
FDW 8010-2.5	80	10	81.75	75.2	1×2.5	38.9	141.1	650
FDW 8010-5	80	10	81.75	75.2	2×2.5	70.6	283.2	1270
FDW 8010-7.5	80	10	81.75	75.2	3×2.5	100	424.3	1860
FDW 8020A-2.5	80	20	82.7	72.9	1×2.5	90.1	294	890
FDW 8020A-5	80	20	82.7	72.9	2×2.5	163.7	589	1720
FDW 8020A-7.5	80	20	82.7	72.9	3×2.5	231.6	883.2	2520
FDW 10020A-2.5	100	20	102.7	92.9	1×2.5	99	368.5	2110
FDW 10020A-5	100	20	102.7	92.9	2×2.5	179.3	737	4080
FDW 10020A-7.5	100	20	102.7	92.9	3×2.5	253.8	1105.4	6010



Nut dimensions								Screw shaft inertial moment/mm	Nut mass	Shaft mass
Outer diameter	Flange diameter	Overall length	H	B ₁	PCD	d ₁ × d ₂ × h	Lubrication hole A			
D	D ₁	L ₁						kg m ² /mm	kg	kg/m
125	167	81	18	63	145	11×17.5×11	Rc1/8 (PT1/8)	1.85×10 ⁻¹	5.8	27.4
125	167	111	18	93	145	11×17.5×11		1.85×10 ⁻¹	7.49	27.4
125	167	141	18	123	145	11×17.5×11		1.85×10 ⁻¹	9.19	27.4
128	170	93	18	75	148	11×17.5×11		1.85×10 ⁻¹	6.89	27.24
128	170	129	18	111	148	11×17.5×11		1.85×10 ⁻¹	9.08	27.24
128	170	165	18	147	148	11×17.5×11		1.85×10 ⁻¹	11.26	27.24
130	186	185	28	157	158	18×26×17.5		3.16×10 ⁻¹	14.5	27
130	176	77	22	55	152	14×20×13		3.16×10 ⁻¹	5.9	36.26
130	176	107	22	85	152	14×20×13		3.16×10 ⁻¹	7.53	36.26
130	176	137	22	115	152	14×20×13		3.16×10 ⁻¹	9.15	36.26
143	204	127	28	99	172	18×26×17.5		3.16×10 ⁻¹	12.68	35.81
143	204	187	28	159	172	18×26×17.5		3.16×10 ⁻¹	17.12	35.81
143	204	247	28	219	172	18×26×17.5		3.16×10 ⁻¹	21.56	35.81
170	243	131	32	99	205	22×32×21.5		7.71×10 ⁻¹	18.28	57.13
170	243	191	32	159	205	22×32×21.5		7.71×10 ⁻¹	24.2	57.13
170	243	251	32	219	205	22×32×21.5		7.71×10 ⁻¹	30.12	57.13

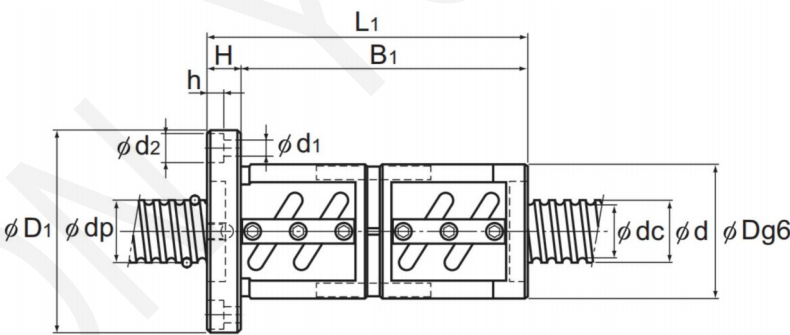
High precision screw

■ External circulation large load screw



FDDW

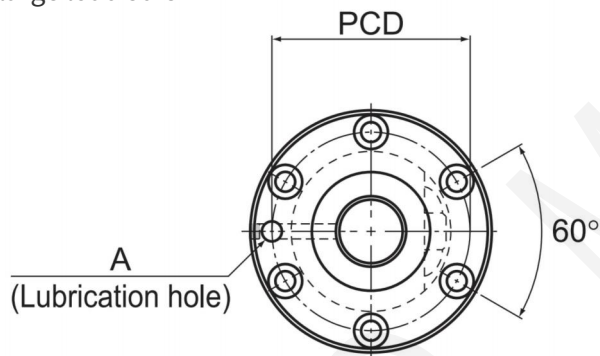
Model No.	Screw shaft outer diameter	Lead	Ball center-to-center diameter	Thread minor diameter	No.of loaded circuits	Basic load rating		Rigidity k
	d	ph	dp	dc	Rows x turns	Ca kN	Coa kN	N/μm
FDDW 5010-7.5	10	10	51.75	44.4	3×2.5	82.5	264.4	2580
FDDW 5510-2.5	55	10	56.75	49.5	1×2.5	33.4	97	970
FDDW 5510-5	55	10	56.75	49.5	2×2.5	60.7	194	1890
FDDW 5510-7.5	55	10	56.75	49.5	3×2.5	85.9	291.1	2770
FDDW 5512-2.5	55	12	57	49.2	1×2.5	39.3	108.8	990
FDDW 5512-3	55	12	57	49.2	2×1.5	46	131.3	1180
FDDW 5512-3.5	55	12	57	49.2	1×3.5	52.4	152.9	1360
FDDW 5512-5	55	12	57	49.2	2×2.5	71.3	218.5	1920
FDDW 5512-7.5	55	12	57	49.2	3×2.5	100.9	327.3	2830
FDDW 5516-2.5	55	16	57.7	47.9	1×2.5	76.1	201.9	1310
FDDW 5516-5	55	16	57.7	47.9	2×2.5	138.2	402.8	2550
FDDW 5520-2.5	55	20	57.7	47.9	1×2.5	76	201.9	1320
FDDW 5520-5	55	20	57.7	47.9	2×2.5	138.2	403.8	2550
FDDW 6310-2.5	63	10	64.75	57.7	1×2.5	35.4	111.7	1090
FDDW 6310-5	63	10	64.75	57.7	2×2.5	64.2	222.5	2100
FDDW 6310-7.5	63	10	64.75	57.7	3×2.5	90.9	334.2	3090
FDDW 6312A-2.5	63	12	65.25	56.3	1×2.5	48.1	139.2	1120
FDDW 6312A-5	63	12	65.25	56.3	2×2.5	87.4	278.3	2160
FDDW 6316-2.5	63	16	65.7	55.9	1×2.5	81.1	231.3	1470
FDDW 6316-5	63	16	65.7	55.9	2×2.5	147	462.6	2840
FDDW 6320-2.5	63	20	65.7	55.9	1×2.5	81	231.3	1470
FDDW 6320-5	63	20	65.7	55.9	2×2.5	147	463.5	2640



Nut dimensions								Screw shaft inertial moment/mm	Nut mass	Shaft mass	Allowable rotational speed
Outer diameter	Flange diameter	Overall length	H	B1	PCD	d1 × d2 × h	Lubrication hole A	kg m ² /mm	kg	kg/m	min ⁻¹
D	D1	L1									
65	106	146	18	128	85	11×17.5×11		4.82×10 ⁻⁶	9.19	14.16	2510
102	144	141	18	123	122	11×17.5×11		7.05×10 ⁻²	6.54	16.43	1230
102	144	201	18	183	122	11×17.5×11		7.05×10 ⁻²	8.88	16.43	1230
102	144	261	18	243	122	11×17.5×11		7.05×10 ⁻²	11.23	16.43	1230
105	147	165	18	147	125	11×17.5×11		7.05×10 ⁻²	8.07	16.29	1220
105	147	191	18	173	125	11×17.5×11		7.05×10 ⁻²	9.17	16.29	1220
105	147	189	18	171	125	11×17.5×11		7.05×10 ⁻²	9.09	16.29	1220
105	147	237	18	219	125	11×17.5×11		7.05×10 ⁻²	11.13	16.29	1220
105	147	309	18	291	125	11×17.5×11		7.05×10 ⁻²	14.19	16.29	1220
110	158	196	25	171	133	14×20×13		7.05×10 ⁻²	11.28	15.46	1210
110	158	292	25	267	133	14×20×13		7.05×10 ⁻²	15.94	15.46	1210
112	158	227	28	199	134	14×20×13		7.05×10 ⁻²	13.49	16.1	1210
112	158	347	28	319	134	14×20×13		7.05×10 ⁻²	19.61	16.1	1210
108	154	137	22	115	130	14×20×13		1.21×10 ⁻¹	6.98	21.93	1080
108	154	197	22	175	130	14×20×13		1.21×10 ⁻¹	9.4	21.93	1080
108	154	257	22	235	130	14×20×13		1.21×10 ⁻¹	11.81	21.93	1080
115	161	159	22	137	137	14×20×13		1.21×10 ⁻¹	9.32	21.14	1070
115	161	231	22	209	137	14×20×13		1.21×10 ⁻¹	12.84	21.14	1070
122	184	208	24	184	152	18×26×17.5		1.21×10 ⁻¹	14.61	20.85	1060
122	184	304	24	280	152	18×26×17.5		1.21×10 ⁻¹	20.19	20.85	1060
122	180	227	28	199	150	18×26×17.5		1.21×10 ⁻¹	15.91	20.85	1060
122	180	347	28	319	150	18×26×17.5		1.21×10 ⁻¹	22.88	20.85	1060

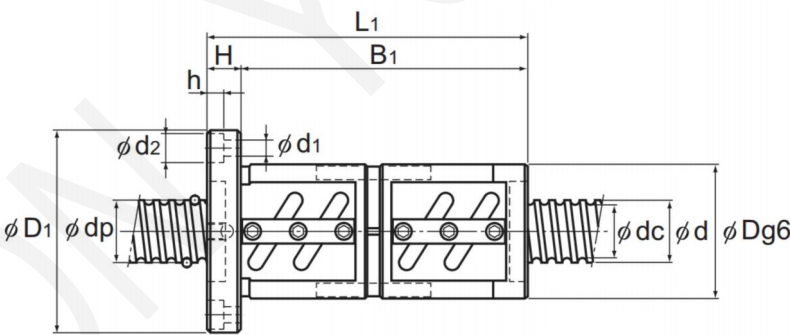
High precision screw

■ External circulation large load screw



FDDW

Model No.	Screw shaft outer diameter	Lead	Ball center-to-center diameter	Thread minor diameter	No.of loaded circuits	Basic load rating		Rigidity k
	d	ph	dp	dc	Rows x turns	Ca kN	Coa kN	N/μm
FDDW 7010-2.5	70	10	71.75	64.5	1×2.5	36.8	123.5	1180
FDDW 7010-5	70	10	71.75	64.5	2×2.5	66.9	247	2280
FDDW 7010-7.5	70	10	71.75	64.5	3×2.5	94.9	371.4	3350
FDDW 7012-25	70	12	72	64.2	1×2.5	43.5	139.2	1200
FDDW 7012-5	70	12	72	64.2	2×1.5	78.9	278.3	2320
FDDW 7012-7.5	70	12	72	64.2	3×3.5	111.7	714.5	3420
FDDW 7020-5	70	20	72.7	62.9	2×2.5	153.9	514.5	3090
FDDW 8010-2.5	80	10	81.75	75.2	1×2.5	38.9	141.1	1300
FDDW 8010-5	80	10	81.75	75.2	2×2.5	70.6	283.2	2530
FDDW 8010-7.5	80	10	81.75	75.2	3×2.5	100	424.3	3720
FDDW 8012-5	80	12	82.3	74.1	2×2.5	96.5	353.8	2620
FDDW 8020A-2.5	80	20	82.7	72.9	1×2.5	90.1	294	1770
FDDW 8020A-5	80	20	82.7	72.9	2×2.5	163.7	589	3430
FDDW 10020A-2.5	100	20	102.7	92.9	1×2.5	99	368.5	2110
FDDW 10020A-5	100	20	102.7	92.9	2×2.5	179.3	737	4080
FDDW 10020A-7.5	100	20	102.7	92.9	3×2.5	253.8	1105.4	6010



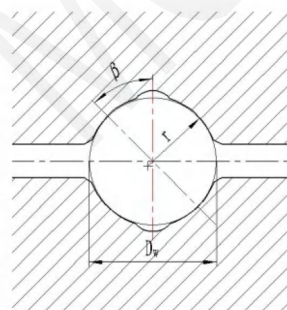
Nut dimensions								Screw shaft inertial moment/mm	Nut mass	Shaft mass	Allowable rotational speed
Outer diameter	Flange diameter	Overall length	H	B1	PCD	d1 × d2 × h	Lubrication hole A				
D	D1	L1						kg m ² /mm	kg	kg/m	min ⁻¹
125	167	141	18	123	145	11×17.5×11	Rc1/8 (PT1/8)	1.85×10 ⁻⁵	9.19	27.4	970
125	167	201	18	183	145	11×17.5×11		1.85×10 ⁻⁵	12.57	27.4	970
125	167	261	18	243	145	11×17.5×11		1.85×10 ⁻⁵	15.96	27.4	970
128	170	165	18	147	148	11×17.5×11		1.85×10 ⁻⁵	11.26	27.24	970
128	170	237	18	219	148	11×17.5×11		1.85×10 ⁻⁵	15.63	27.24	970
128	170	309	18	291	148	11×17.5×11		1.85×10 ⁻⁵	20	27.24	970
130	186	325	28	297	158	18×26×17.5		1.85×10 ⁻⁵	23.4	27	960
130	176	137	22	115	152	14×20×13		3.16×10 ⁻⁵	9.15	36.26	850
130	176	197	22	175	152	14×20×13		3.16×10 ⁻⁵	12.41	36.26	850
130	176	257	22	235	152	14×20×13		3.16×10 ⁻⁵	15.67	36.26	850
135	181	231	22	209	157	14×20×13		3.16×10 ⁻⁵	16.02	35.26	850
143	204	227	28	199	172	18×26×17.5		3.16×10 ⁻⁵	20.08	35.1	840
143	204	347	28	319	172	18×26×17.5		3.16×10 ⁻⁵	28.97	35.81	840
170	243	231	32	199	205	22×32×21.5		7.71×10 ⁻⁵	28.15	57.13	680
170	243	351	32	319	205	22×32×21.5		7.71×10 ⁻⁵	39.99	57.13	680
170	243	471	32	439	205	22×32×21.5		7.71×10 ⁻⁵	51.84	57.13	680

HTF-SRC series Heavy duty ball screw

■ IF Heavy-Duty Ball Screw Introduction

Heavy load

YOSO optimizes the contact angle and raceway arc of the steel ball to achieve higher load-bearing capacity for the ball screw.



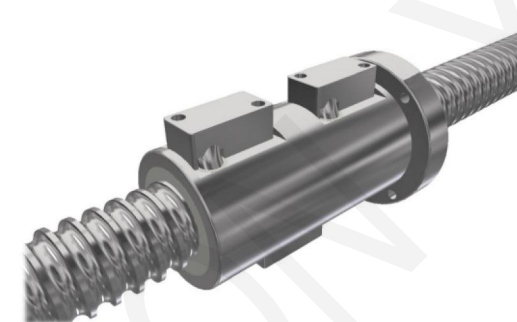
YOSO heavy-duty ball screw pair groove shape β contact angle r raceway radius D_w ball diameter

High speed, low noise

By optimizing the steel ball circulation path, the YOSO HTF-SRC series heavy-duty ball screw pair has an difficult to imitate steel ball circulation path, where the steel ball travels Smooth and smooth operation, higher DN value and lower noise.



■ New Generation Products



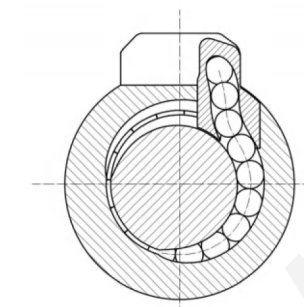
Previous generation SRC steel ball circulation system product



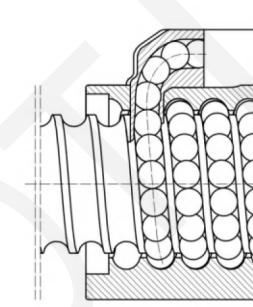
New generation SRCS steel ball circulation system product

The YOSO HTF-SRC series heavy-duty ball screw pair has been fully upgraded, and the upgraded high-speed heavy-duty ball screw pair adopts the SRCS integrated steel ball circulation system. The transmission speed of the previous generation SRC steel ball circulation system has been greatly improved. The maximum DN value of the SRC steel ball circulation system transmission is 100000, and the SRCS integrated steel ball circulation system The DN value is as high as 150000, and the noise level has significantly decreased. The SRC steel ball circulation system is composed of multiple components, while the SRCS steel ball circulation system uses a single body Design and manufacture with a steel ball circulation path that is difficult to imitate, integrating multiple components of the previous generation SRC steel ball circulation system into one part. The SRCS steel ball circulation system can accommodate more load-bearing cycles, with a load-bearing capacity 1.5 times that of the SRC steel ball circulation system, and a heavier weight compared to the previous generation SRC steel ball circulation system. It is lighter and has a simpler appearance.

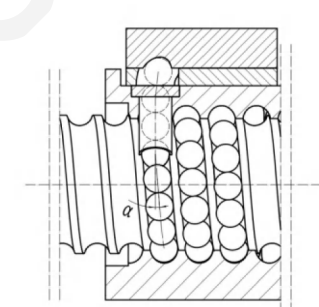
■ Optimize The Running Path Of Steel Ball



SRC cycle and SRC cycle circumferential path diagram



SRCS cyclic spiral radial path diagram



SRC cyclic spiral radial path diagram

The running paths of SRCS and SRC in the circumferential direction of the steel ball are consistent, both smoothly turning along the centerline direction; The difference between SRCS and SRC is that SRCS smoothly rises in the spiral direction along the spiral ascending direction, while SRC rises vertically, forming a turning angle α , so SRCS runs faster and produces less noise than SRC.

YOSO keeps up with the pace of the times and helps equipment manufacturing develop rapidly towards high speed, automation, and intelligence. We have developed various specialized YOSO heavy-duty ball screw by-products for fully electric high-speed servo injection molding machines, servo compression machines, high-precision servo powder forming machines, heavy-duty servo electric cylinders, and other similar products. Currently, a single set of YOSO ball screw pairs has a full coverage of pushing force of 1-200 tons, while multiple sets use up to 1000 tons.

HTF-SRC series Heavy duty ball screw-Specialized for injection molding machine industry

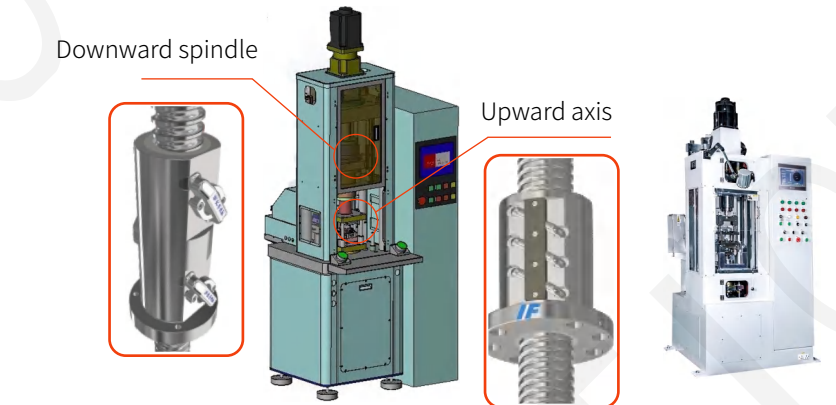
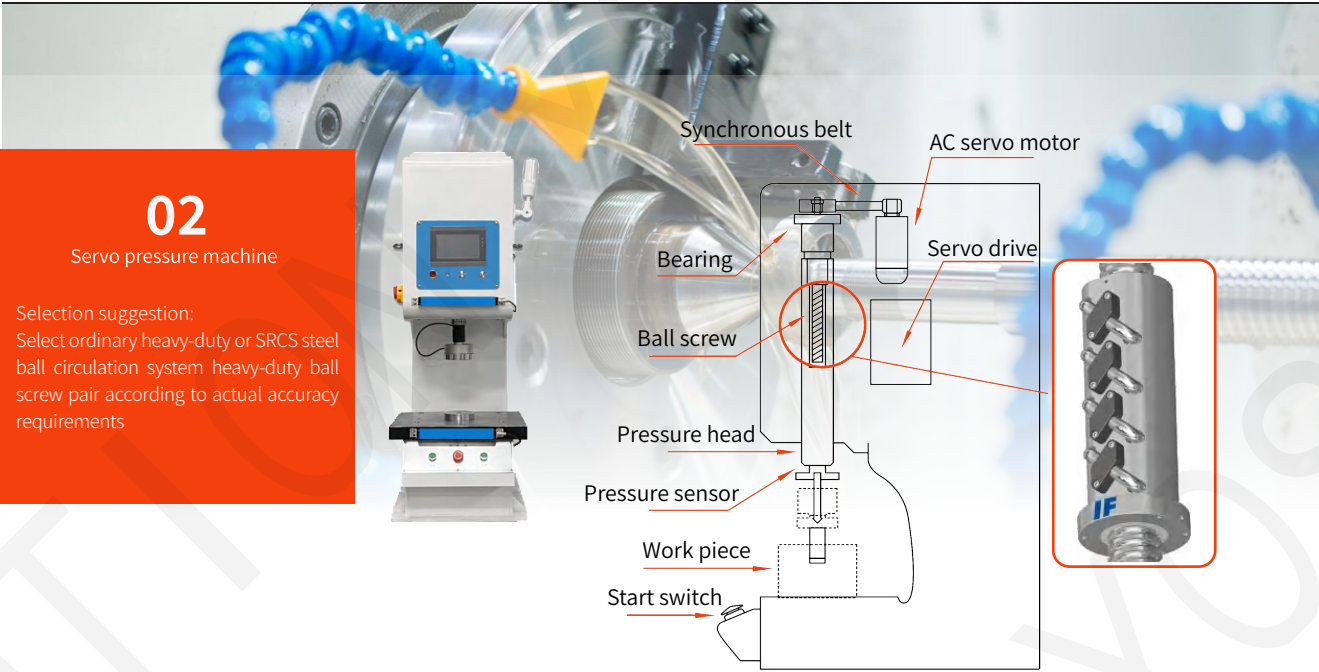
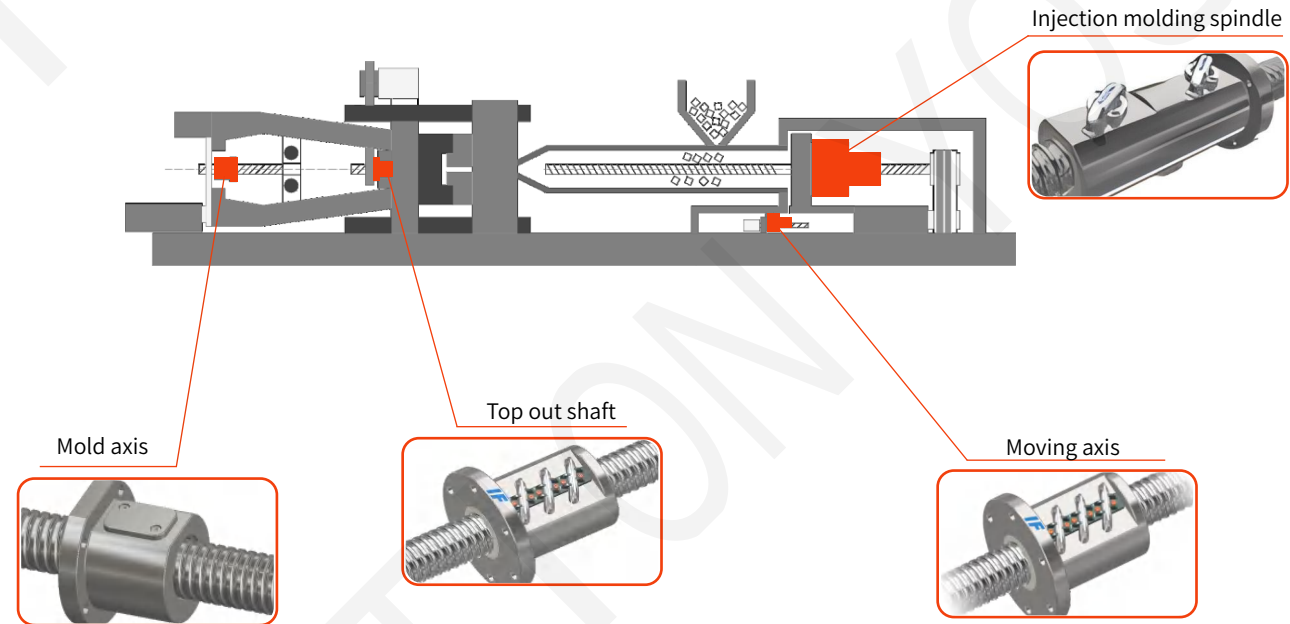
■ External circulation large load screw



01

High speed all electric servo injection molding machine

Selection suggestion:
It is recommended to choose SRCS steel ball circulation system ball screw pairs for injection molding spindles, while ordinary ball screw pairs can be selected for other axes



02

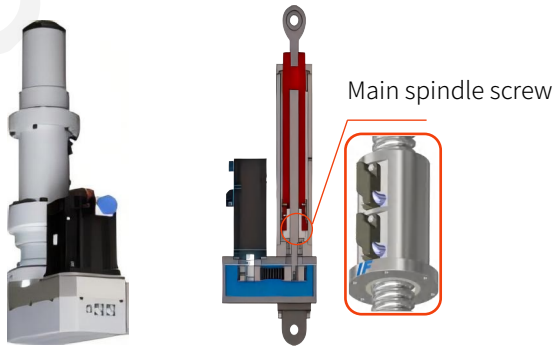
Servo pressure machine

Selection suggestion:
Select ordinary heavy-duty or SRCS steel ball circulation system heavy-duty ball screw pair according to actual accuracy requirements

02

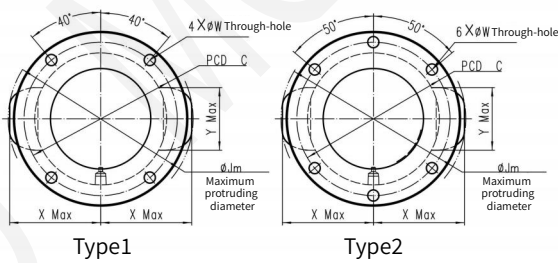
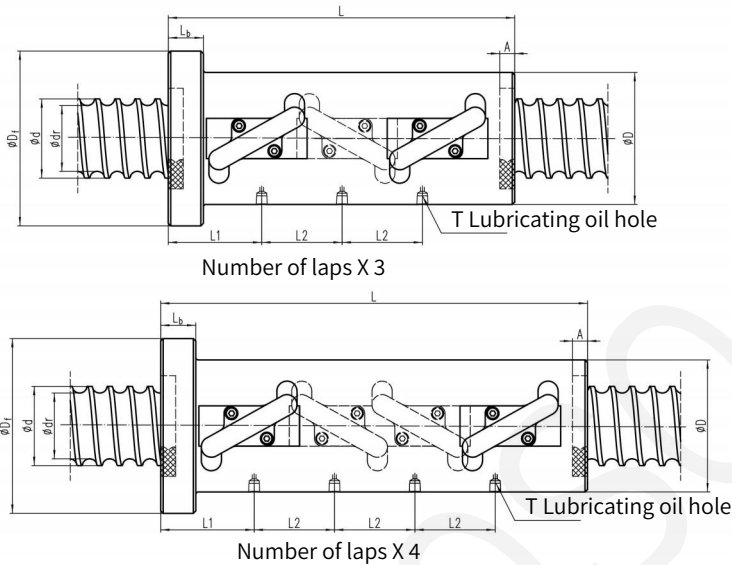
Servo pressure machine

Selection suggestion:
Select ordinary heavy-duty or SRCS steel ball circulation system heavy-duty ball screw pair according to actual accuracy requirements



HTF-SRC series Heavy duty ball screw

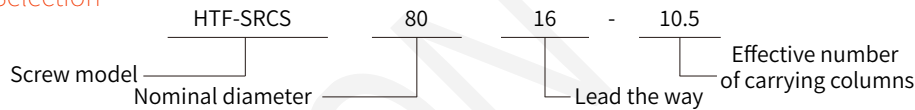
Product Selection Table



Specifications	nominal diameter	Lead the way	Ball diameter	Screw shaft diameter	Effective number of laps	Basic rated load(kN)										Nut size				Location of lubricating oil hole
						Rated dynamic load	E Dangling load	Nut length	Nut external diameter	Flange plate external diameter	Flange plate width	seal ring size	Bolt hole Node size	Bolt hole size	Dimensions of the protruding part of the recycler	X	Y	Jm	Lubricating oil hole	
model	d	P	Dw	dr	Number of turns X number of columns	Ca	Coa	L	D	Df	Lb	A	C	W	X	Y	Jm	T	L1	L2
HTF-SRC(S)5014-7.5	50	14	10	41.3	2.5×3	280	610	202	80	114	28	10	97	9	55	46	112	M6×1	69	42
HTF-SRC(S)5016-7.5		16	12.7	39	2.5×3	380	770	230	95	129	28	12	112	9	66	50	135	Rc1/8	74.5	48
HTF-SRC(S)5020-7.5		20	12.7	39	2.5×3	380	770	270	95	129	28	12	112	9	66	50	135		83.5	60
HTF-SRC(S)50316-7.5		16	12.7	52	2.5×3	430	980	230	105	139	28	12	122	9	73	50	149		74.5	48
HTF-SRC(S)50316-10	63	16	12.7	52	2.5×4	550	1300	278	105	139	28	12	122	9	73	50	149	Rc1/8	74.5	48
HTF-SRC(S)50316-10.5		16	12.7	52	3.5×3	570	1350	278	105	139	28	12	122	9	73	50	149		74.5	64
HTF-SRC(S)50316-14		16	12.7	52	3.5×4	740	1800	342	105	139	28	12	122	9	73	50	149		74.5	64
HTF-SRC(S)50320-7.5		20	15	50	2.5×3	540	1150	279	117	157	32	12	137	11	80	62	163		90	60
HTF-SRC(S)50320-10	80	20	15	50	2.5×4	690	1550	339	117	157	32	12	137	11	80	62	163	Rc1/8	90	60
HTF-SRC(S)50325-10.5		25	15	50	3.5×3	720	1600	405	117	157	32	12	137	11	82	61	168		102	100
HTF-SRC(S)8016-10.5		16	12.7	69	3.5×3	640	1750	280	120	154	32	12	137	9	80	60	165		78.5	64
HTF-SRC(S)8016-14		16	12.7	69	3.5×4	820	2350	344	120	154	32	12	137	9	80	60	165		78.5	64
HTF-SRC(S)8020-10.5	100	20	15	67	3.5×3	800	2050	339	130	170	32	12	150	11	88	64	180	Rc1/8	90	80
HTF-SRC(S)8025-7.5		25	20	63	2.5×3	860	1900	348	145	185	40	18	165	11	100	73	203		112	75
HTF-SRC(S)10020-10.5		20	15	87	3.5×3	890	2600	339	145	185	32	12	165	11	97	78	199		90	80
HTF-SRC(S)10020-14		20	15	87	3.5×4	1140	3450	419	145	185	32	12	165	11	97	78	199		90	80
HTF-SRC(S)10025-10.5	125	25	20	83	3.5×3	1300	3420	423	159	199	40	18	179	11	108	79	220	Rc1/8	112	100
HTF-SRC(S)10025-14		25	20	83	3.5×4	1650	4560	523	159	199	40	18	179	11	108	79	220		112	100
HTF-SRC(S)12520-7.5		20	15	112	2.5×3	750	2400	287	180	222	40	12	201	13	113	94	236		98	60
HTF-SRC(S)12520-10		20	15	112	2.5×4	950	3250	347	180	222	40	12	201	13	113	94	236		98	60
HTF-SRC(S)12525-10.5	160	25	20	108	3.5×3	1450	4350	422	185	230	40	18	206	13	122	98	248	Rc1/8	111.5	100
HTF-SRC(S)12525-14		25	20	108	3.5×4	1850	5850	522	185	230	40	18	206	13	122	98	248		111.5	100
HTF-SRC(S)16025-10.5		25	20	143	3.5×3	1650	5800	444	235	294	62	18	264	18	143	125	295		124.5	100
HTF-SRC(S)16025-14		25	20	143	3.5×4	2100	7800	544	235	294	62	18	264	18	143	125	295		124.5	100

- Note:
- The circulators in this table are arranged on both sides. If single-sided arrangement is required, please contact YOSO
 - This table is the selection table for YOSO heavy-duty ball screws. For more product types, please call us for consultation.

Example of Ball Nut Selection



Selection instructions:

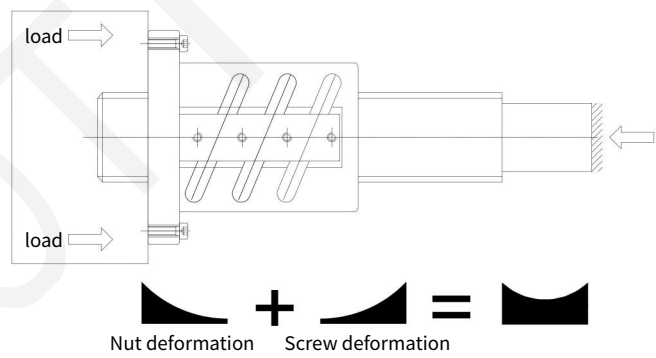
- The HTF-SRC (S) table in the specification and model table can choose between two types of screw types: HTF-SRC or HTF-SRCS. The HTF-SRCS table only has This type of screw flange has two types to choose from: Type I and Type II.
- The maximum operating temperature should not exceed 72 °C, and good lubrication should be ensured during use.
- The right-handed screw is the YOSO standard screw. If you need a left-handed screw, please call for more information.
- When selecting products without sealing rings, the actual total screw diameter is L-A.

Selection of accuracy level and axial clearance

Select the appropriate precision level and axial clearance based on the maximum transmission speed. Generally, the higher the precision level, the greater the axial clearance, and the faster the transmission speed.

Ball screw pair type	Accuracy level	Axial clearance
SRC series and ordinary heavy-duty	T2, T3, T4, T5, T7, T10	X : 0~0.005mm, Z : 0~0.02mm, D : 0~0.05mm
SRCS series heavy-duty	T1, T2, T3, T4, T5	0 ^① , X : 0~0.005mm, Z : 0~0.02mm, D : 0~0.05mm

① The SRCS cycle system ball screw pair can apply a small preload force, with zero axial clearance, achieving more precise transmission.



Design considerations:

In order to fully utilize the good characteristics of heavy-duty ball screw pairs, it is recommended to adopt the installation method shown in the left figure. In addition, if there are frequent short distance reciprocating operations during use, please contact YOSO and provide detailed usage conditions. We will provide you with products that meet your needs in addition to this standard product.

Determination of rated dynamic load

Calculate the rated dynamic load based on the expected working time L_h (hours) of the ball screw pair

$$C_a = \frac{F_m f_w}{100 f_a f_c} \times \sqrt[3]{60 L_h n_m}$$

In the formula:

F_m: Average axial load (N)

L_h: Expected working time (hours)

n_m: Average speed (r/min)

f_a: Accuracy coefficient

f_c: Reliability coefficient

f_w: Load property coefficient

f_a Accuracy coefficient

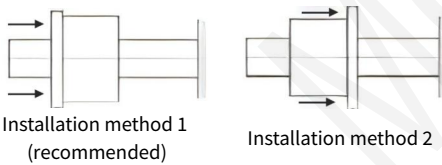
Accuracy level	1, 2, 3	4, 5	7	10
f _a	1.0	0.9	0.8	0.7

f_c Reliability coefficient (Note 1)

Reliability%	90	95	96	97	98	99
f _c	1	0.62	0.53	0.44	0.33	0.21

f_w Load property coefficient

Load properties	No impact (very stable)	Minor impact accompanied	There is impact or vibration
f _w	1~1.2	1.2~1.5	1.5~2



The rated dynamic load C_a refers to the constant load that the ball screw pair steel ball can theoretically withstand in the raceway treatment under the condition of a rated life of 10⁶ revolutions.

Note:

The flange thread installation holes in this sample book are set assuming the use of installation method I; When using installation method II, it is necessary to redesign the threaded installation holes and calculate the bolt strength requirements. Regardless of the installation method used, it is necessary to verify the strength of the ball screw flange, especially when using installation method II, to avoid flange fracture caused by stress concentration!

Note 1:

In general, f_c is taken as 1 (requiring a set of identical ball screw pairs to have a service life exceeding 90% of the desired life under the same conditions)

YOSO German quality, Industrie 4.0 best platform



High speed



Heavy load



Precise

Focusing on the research and production of high-speed heavy-duty precision ball screws

Jingpeng Machinery Equipment (Shanghai) Co., Ltd.

Contact information:

☎ Telephone: 0086-13636560152

📍 Address: Room 1913, Linton Building, Jing'an District, Shanghai

🌐 Website: www.yosomove.com



Whatsapp