Ballscrew

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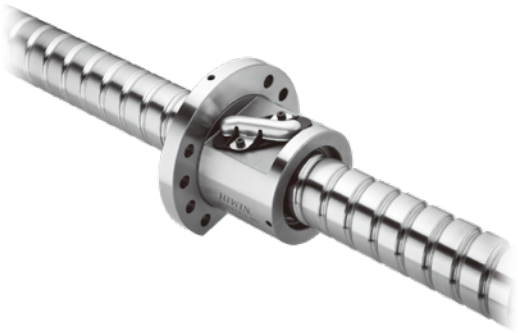
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(2) Super T Series

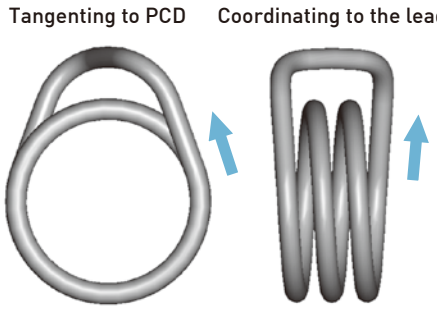


a. application

CNC machinery, precision machine tools, industrial machinery, electrical machinery, high speed machinery.

b. design principles:

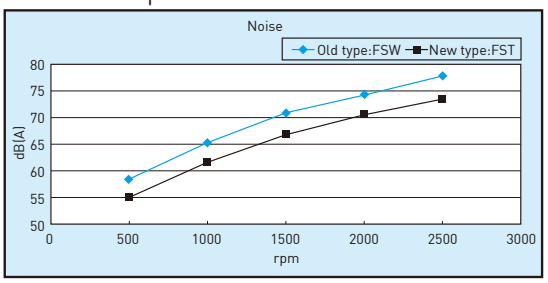
Optimal design of the recirculation path can reduce noise generated by impact of balls to reduce noise level. (Note: the DN value should be defined by ball diameters and using conditions)



c. features

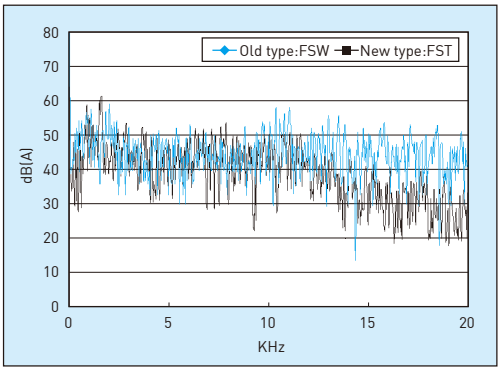
(a)Low noise (lower 3~5dB than general series)

Finest design of recirculation can absorb noise from the impact of balls to reduce noise level.



(b)Qualified tone

Super T recirculating components not only can reduce the sound pressure level, but also efficiently lower the middle and high frequency range better than conventional ballscrews, producing no shrill fricative and better sound quality.



(c) Low vibration and smooth operation

The tangent recirculation substantially reduces impact force of running balls and the resistance of guiding balls, so the vibration of the nut is gentler and the rotation is smoother and more stable.

(3) Super Z Series



a. application

Miniature Ballscrew is suitable for outer diameter smaller than 20.

The suitable application is :

Semiconductor / Inspection machine / Medical equipment / LCD / Robot / SPM / Special environment machine / Electric machine

b. features:

(a) Long Service Life: Dynamic loading 20~30% higher

(b) Compact Design: Nut diameter 15~30% smaller

(c) Smooth: Drag torque variation 20~30% lower

(d) High Speed & High Acceleration/Deceleration: Dm-N value 160,000. MAX. acceleration 1.5G

(e) Accuracye: C0~C10

5. Specification Illustration

HIWIN manufactures ballscrews according to customers' blueprints or specifications. Please read the following information for an understanding of ballscrew design.

1. Nominal diameter.
2. Thread lead.
3. Thread length, total length.
4. End journal configuration.
5. Nut configuration
6. Accuracy grade (lead deviation, geometrical tolerance).
7. Working speed.
8. Maximum static load, working load, preload drag torque.
9. Nut safety requirements.
10. Lubrication hole position.

HIWIN Ballscrew Nomenclature

1R40 - 10B2 - PFDWE2 - 800 - 1000 - 0.0035 - M

Start type
1.Single start
2.Double start
3.Triple start
4.Four start
5:Five Start

Right hand screw

Nominal diameter

Lead

Number of turns

Preload type
P : Compression type
O : Offset type

Nut Start type
D : High lead double start
T : High lead triple start
Q : High lead quatemary start
F : High lead five start

Nut shape
S : Square nut
R : Round
F : Nut with flange

Note :
D : Biaxial Movement
M : Stainless
H : Hollow Shaft
L : Heavy Load

Lead deviation in random 300mm travel path thread length

Total length

Thread length

Optional Functions :
E2 : Self-lubrication
R1 : Rotating Nut
C1,C2 : Cool Type
Q1 : Spacer

Circulation type
V : Tubes above nut body
(Re-circulation Tube above the nut body)
W : Tubes within nut body
(Re-circulation Tube within the nut body)
B : Bonded tube
I : Internal cap
H : End cap
C : Super S series
T : Super T series
P : RD series
(Re-circulation Tube above the nut body)
S : RD series
(Re-circulation Tube within the nut body)

Nut type
S : Single nut
D : Double nut

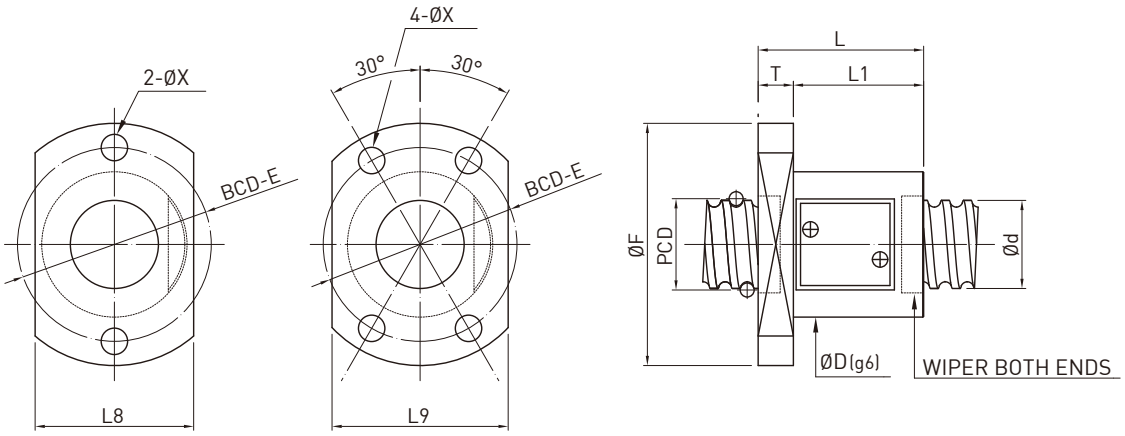
Number of turns

A : 1.5, B: 2.5, C: 3.5	T3 : 3	S1 : 1.8x1	U1 : 2.8x1	K2 : 2	X : 2.8, Y : 3.8, Z : 4.8
A2 : 1.5x2	T4 : 4	S2 : 1.8x2	U2 : 2.8x2	K3 : 3	X2 : 2.8x2
B2 : 2.5x2	T5 : 5	S4 : 1.8x4	V2 : 0.8x2	K4 : 4	Y2 : 3.8x2
C1 : 3.5x1	T6 : 6				Z2 : 4.8x2

Note : 1. Different diameters and leads are available upon request.
2. Right hand thread is standard, left hand thread is available upon request.
3. Longer lengths are available upon request.
4. Stainless steel is available upon request, please contact HIWIN engineer.
5. Complete ballscrew Inquiry on page 197~198 and please contact HIWIN engineer.
6. If you need to order DIN 69051 type, please mark "DIN".

6.2 Dimensions for Precision Ground Ballscrews

FSZ Type ◀ Standard Product



Model	Size		P.C.D.	RD	Ball Dia.	Circuits	Stiffness K (kgf/μm)	Dynamic Load C(kgf)	Static Load Co(kgf)	Nut			Flange					Bolt
	Nominal Dia.	Lead								D	L	L1	F	T	BCD-E	L8	L9	X
6-2B1	6	2	6.2	4.638	1.5	2.6x1	9	220	340	15	20	16	29	4	23	17	18	3.4
8-2B1	8	2	8.2	6.638	1.5	2.6x1	11.9	250	460	16	20	16	31	4	24	18	18	3.4
9-3D1	9	3	9.2	7.136	2	4.6x1	23.9	620	1190	20	33	27	38	6	29	22	29	4.5
10-2B1	10	2	10.2	8.638	1.5	2.6x1	14	280	580	18	24.5	19.5	34	5	26	19	21	4.5
10-2.5B1	10	2.5	10.2	8.136	2	2.6x1	15.5	410	770	20	23	18	37	5	29	21	22	4.5
10-2.5C1	10	2.5	10.2	8.136	2	3.6x1	21.3	550	1070	20	25	20	37	5	29	21	22	4.5
10-3.6D1	10	3.6	10.25	7.792	2.381	4.6x1	27.2	820	1550	25	36	30	46	6	36	28	28	5.5
10-4B1	10	4	10.25	7.792	2.381	2.6x1	15.2	500	870	21	30	25	38	5	29	21	22	4.5
12-4B1	12	4	12.25	9.792	2.381	2.6x1	18.6	570	1100	22.5	30	25	40	5	32	22	24	4.5
12-4C1	12	4	12.25	9.792	2.381	3.6x1	25.4	750	1520	22.5	34	29	40	5	32	22	24	4.5
12-5B1	12	5	12.25	9.792	2.381	2.6x1	18.7	560	1090	22.5	33	27	40	6	32	27	27	4.5
14-4B1	14	4	14.25	11.792	2.381	2.6x1	20.3	600	1250	24.5	29	23	46	6	35	26	27	5.5
14-4C1	14	4	14.25	11.792	2.381	3.6x1	27.8	800	1730	24.5	33	27	46	6	35	26	27	5.5
16-2B1	16	2	16.2	14.638	1.5	2.6x1	18.6	340	940	23.5	24	18	45	6	34	26	27	5.5
16-5B1	16	5	16.6	13.324	3.175	2.6x1	24.1	950	1960	29	34	28	49	6	38	30	30	5.5
16-5C1	16	5	16.6	13.324	3.175	3.6x1	33	1260	2710	29	39	33	49	6	38	30	30	5.5
20-4B1	20	4	20.25	17.792	2.381	2.6x1	26.5	720	1850	30.5	34	24	58	10	47	44	44	5.5
20-4C1	20	4	20.25	17.792	2.381	3.6x1	36.1	950	2560	30.5	38	28	58	10	47	44	44	5.5
25-4B1	25	4	25.25	22.792	2.381	2.6x1	30.8	800	2370	35.5	34	24	58	10	47	44	44	6.6
25-4C1	25	4	25.25	22.792	2.381	3.6x1	42.1	1060	3280	35.5	38	28	58	10	47	44	44	6.6
32-4B1	32	4	32.25	29.792	2.381	2.6x1	35.2	880	3040	42.5	34	24	80	12	65	62	62	9
32-4C1	32	4	32.25	29.792	2.381	3.6x1	48.2	1170	4210	42.5	38	28	80	12	65	62	62	9

Note: Rigidity without preload: The axial load is calculated by 30% of dynamic load.