

Ball Screws for High-Speed Machine Tools

HMS Series

The SRC recirculation system series is a wonderful addition to our lineup of ball screws for machine tools, including our well-established HMC and HMD series*. This new series is particularly suited for machining centers for high precision machining.

New!



■ Features

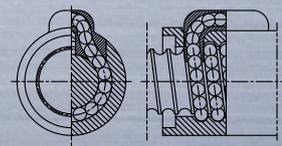
1. High speed

Permissible rotational speed ($d \cdot n$ value) has increased from 135 000 to 160 000.

2. Low noise

By adopting SRC recirculation system, the sound pressure level has been reduced by 5 dB compared with our existing product.

*SRC recirculation system: A high speed, low noise recirculation system used in the well accepted HTF-SRC Series designed for heavy load applications.



Ball Screws for High-Speed Machine Tools HMS Series

Ball screw specifications

- Accuracy grade/axial play
Accuracy grade: C3 and C5 grades of JIS standard
Axial play: 0 (offset preload)
- Nut dimensions
Nut mounting and external dimensions are the same as existing tube type ball screws.
Please see Table 2 for specifications and dimensions.

*For any specifications other than the above, please contact NSK.

Optional specifications

- Cooling ball screws
- Ball screws for twin-drive systems

Maximum feed speed

By adopting the SRC recirculation system, the permissible rotational speed ($d \cdot n$ value) is improved and the maximum feed speed has been substantially increased.

$d \cdot n$ value: Increased to 160 000 from 135 000 in the existing products.

* d : shaft diameter (mm), n : rotational speed (min^{-1})

Please see Table 1 for permissible rotational speed and maximum feed speed.

Table 1 Permissible rotational speed and maximum feed speed Unit: mm

Lead	Permissible rotational speed (min^{-1})	8	10	12
Shaft dia.				
40	4 000	—	40 m/min	48 m/min
45	3 550	28 m/min	—	—
50	3 200	—	32 m/min	38 m/min

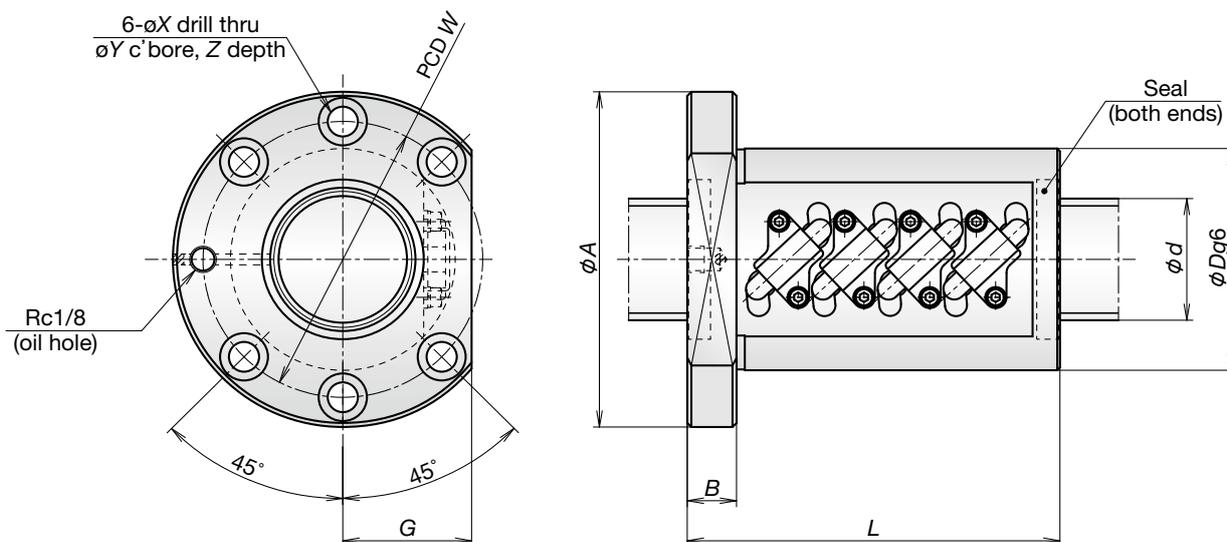


Table 2 Nut dimensions

Model No.	Shaft dia. d	Lead l	Basic load rating (kN)		Axial rigidity K ($\text{N}/\mu\text{m}$)	External dimensions					Mounting hole dimensions			
			Dynamic C_a	Static C_oa		L	D	A	B	G	X	Y	Z	W
ZFRC4010-10	40	10	52.0	137	1 090	166	82	124	18	47	11	17.5	11	102
ZFRC4012-10	40	12	61.0	155	1 110	192	86	128	18	48	11	17.5	11	106
ZFRC4508-10	45	8	37.3	118	1 160	136	82	124	18	47	11	17.5	11	102
ZFRC5010-10	50	10	57.7	175	1 320	166	93	135	18	51	11	17.5	11	113
ZFRC5012-10	50	12	77.6	214	1 360	198	100	146	22	55	14	20	13	122

Notes: 1. All of the above are right-hand screws.

2. Value shown as rigidity K is the value when 5% of the basic dynamic load rating C_a has been applied as the preload.

Handling precautions: Maximum operating temperature; 60°C (at outside diameter of ball nut)

For more information about NSK products, please contact: www.nsk.com



NSK used environmentally friendly paper and printing methods for this publication.