

Ball Screws for ISO (DIN) Standard

NSGF / NSRF Series

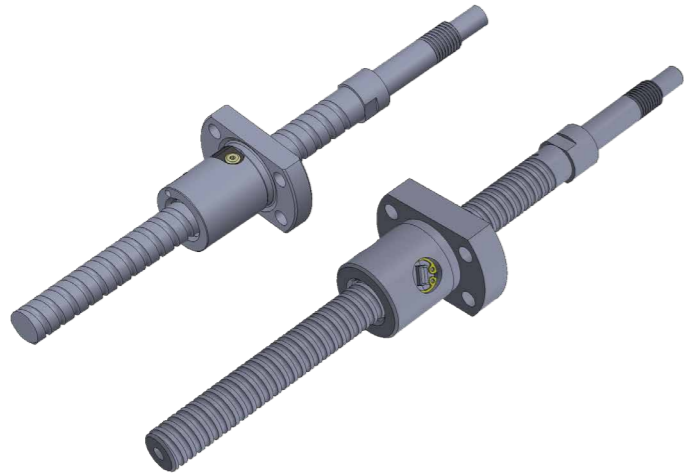
Vol.35.0



Ball Screws with Nut outer diameter conforming to ISO standard
(ISO 3408-2 series1 / DIN 69051-5)



Ball Screws for ISO (DIN) Standard Outline



●Features

- Reinforced recirculating device and optimized Ball track of circulation improve reliability of rotational performance and durability.
- Designed with respect for SDGs.
Flange type Nuts are available and adhesive-free to reduce disposal loss.
- ISO standard Ball Screws are available in a series of Ground Ball Screw(Precision Class) and Rolled Ball Screw Products. These products offer a choice of accuracy and cost, and are designed for ease of use.

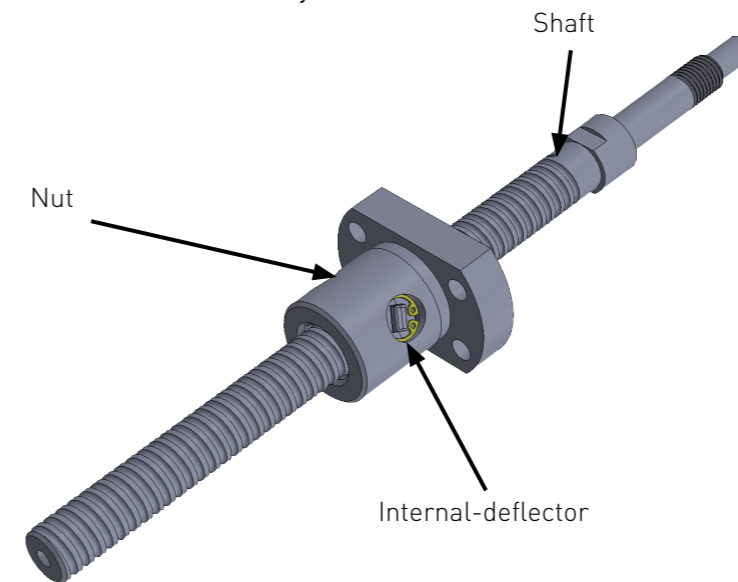
●Standard Products

To meet customers' short lead time requirements, KSS keeps selected models in stock.
The end-journal configuration is standardized, allowing customers to reduce design workload.
KSS's advanced machining expertise enables highly accurate end-machining.

●Customized products

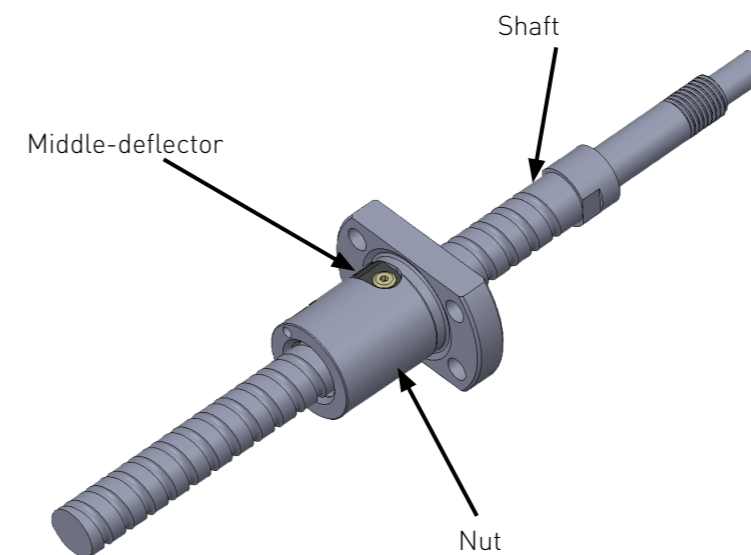
Products other than selected models in stock are considered customized products. To reduce the customer's design workload, Flanged type Nuts and M-thread type Nuts are standardized.
Please contact KSS if you need products outside our standardized models – including nonstandard configurations or dimensions.
For products in stainless steel, or with surface treatment, please also inquire with KSS.

●Construction of Ball Screw 【Internal-deflector system】



Adopted to screw lead 1mm and 2mm

【Middle-deflector system】



Adopted to screw lead 4mm and 5mm

●Precision Ball Screws and Rolled Ball Screws

Production procedures vary by accuracy requested from customers. Precision Ball Screws with high accuracy by Grinding process and Rolled Ball Screws with formed groove by Rolling dies (Tooling for Rolling process) can be classified.
Generally, C5 or higher grade is manufactured by Grinding process and accuracy of C7, C10 are manufactured by Rolling process. It is also possible to produce C7, C10 by Grinding when Rolling dies do not exist.

Ball Screws for ISO (DIN) Standard Customized products

In order to meet the needs of customer's requested design, we offer customized products.

●Variety of Customized products

Customized Precision Ball Screws(NSG series) and Rolled Ball Screws(NSR series) are both standardized in Ball Nut dimension only.

●Model number notation

NSG F 04 01 Z — 063 R 095 C3 — 0
① ② ③ ④ ⑤ — ⑥ ⑦ ⑧ ⑨ — ⑩

- ①Ball Screws Series No.
NSG : Precision Ball Screw
NSR : Rolled Ball Screw
- ②Nut type
None:Single Nut with M-thread
F:Single Nut with Flange
- ③Screw Shaft nominal diameter(mm)
- ④Lead(mm)
- ⑤Customized product identification
Z:Customized products
- ⑥Screw thread length(mm)
- ⑦Thread direction(R=Right-hand)
- ⑧Screw Shaft total length(mm)
- ⑨Accuracy grade(C3, C5, Ct7, Ct10)
- ⑩Axial play(μ m)

●Accuracy Grade & Axial play

Accuracy grade of NSG Precision Ball Screw type is based on C3 and C5 (JIS B 1192-3). According to accuracy grade, Axial play 0 (Preload: C3) and 0.005mm or less (C5) are available.
Accuracy grade of NSR Rolled Ball Screw type is based on Ct7 (Axial play 20 μ m or less) and Ct10 (Axial play 50 μ m or less).

●Material & Surface hardness

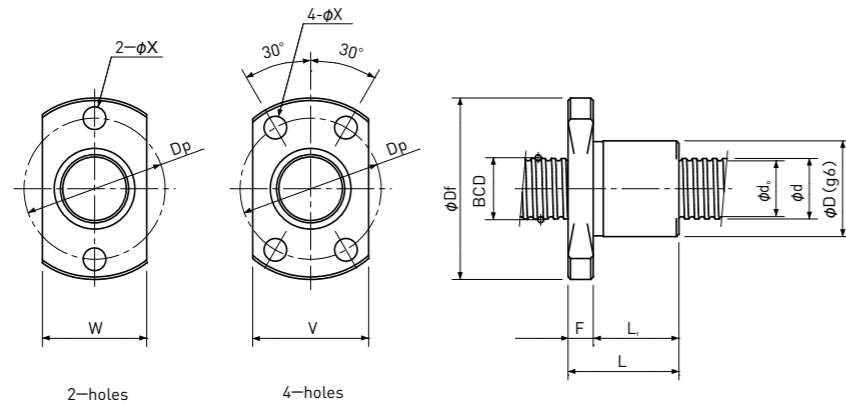
NSG series consists of Shaft and Nut materials SCM415(Carburizing and quenching) and Surface hardness is HRC58~62.
NSR series consists of Shaft materials S55C (Induction hardening)and SCM415(carburizing and quenching) depending on the size. Nut is made of materials SCM415(carburizing and quenching).
The surface hardness of NSR Shaft is HRC58-62.

●Lubrication

If there is no specific instruction, KSS would recommend our original Grease (MSG No.2) as standard lubricant.

Single Nut with Flange

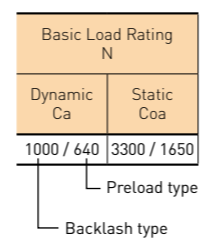
Backlash type/Preload type



Unit: mm

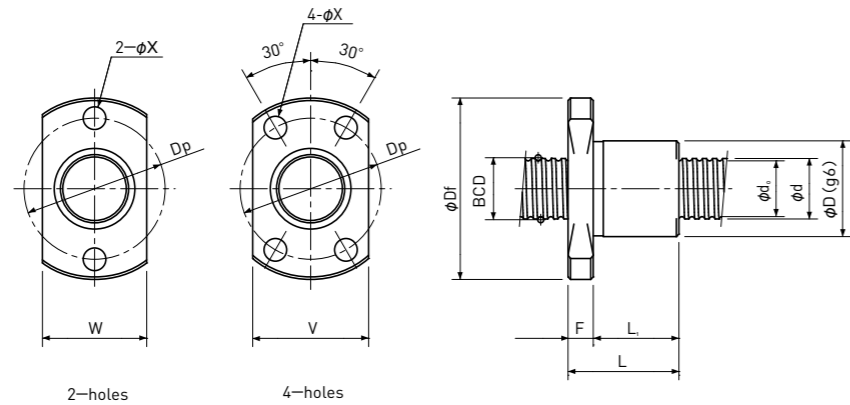
Model number	Shaft nominal dia. d	Lead	BCD	Basic Load Rating N		Nut dimension										Model number
				Dynamic Ca	Static Coa	D	Df	L	L ₁	F	W	V	Dp	Bolt Hole X		
NSGF0401	4	1	4.15	450 / 450	600 / 600	11	23	18	14	4	—	15	17	3.4	NSGF0401	
NSGF0601	6	1	6.20	560 / 560	950 / 950	12	24	20	14	6	—	16	18	3.4	NSGF0601	
NSGF0602	6	2	6.20	770 / 770	1150 / 1150	12	24	21	15	6	—	16	18	3.4	NSGF0602	
NSGF0801	8	1	8.20	650 / 650	1300 / 1300	16	28	20	14	6	—	19	22	3.4	NSGF0801	
NSGF0802	8	2	8.30	1300 / 1300	2300 / 2300	16	28	21	15	6	—	19	22	3.4	NSGF0802	
NSGF0805	8	5	8.30	1850 / 1150	3000 / 1500	16	28	28.5	22.5	6	—	19	22	3.4	NSGF0805	
NSGF1002	10	2	10.30	2050 / 2050	3650 / 3650	19	36	25	19	6	—	23	28	4.5	NSGF1002	
NSGF1004	10	4	10.30	3000 / 1800	5200 / 2600	19	36	26	20	6	—	23	28	4.5	NSGF1004	
NSGF1202	12	2	12.30	2250 / 2250	4550 / 4550	24	40	28	20	8	—	26	32	4.5	NSGF1202	
NSGF1204	12	4	12.30	4100 / 2500	7400 / 3700	24	40	29	21	8	—	26	32	4.5	NSGF1204	

Note 1) NSGF0401 is not specified in DIN standard, therefore conforms to the ISO standard.



Single Nut with Flange

Backlash type



Unit: mm

Model number	Shaft nominal dia. d	Lead	BCD	Basic Load Rating N		Nut dimension										Model number
				Dynamic Ca	Static Coa	D	Df	L	L ₁	F	W	V	Dp	Bolt Hole X		
NSRF0401	4	1	4.15	450 / -	600 / -	11	23	18	14	4	-	15	17	3.4	NSRF0401	
NSRF0601	6	1	6.20	560 / -	950 / -	12	24	20	14	6	-	16	18	3.4	NSRF0601	
NSRF0602	6	2	6.20	770 / -	1150 / -	12	24	21	15	6	-	16	18	3.4	NSRF0602	
NSRF0801	8	1	8.20	650 / -	1300 / -	16	28	20	14	6	-	19	22	3.4	NSRF0801	
NSRF0802	8	2	8.30	1300 / -	2300 / -	16	28	21	15	6	-	19	22	3.4	NSRF0802	
NSRF0805	8	5	8.30	1850 / -	3000 / -	16	28	28.5	22.5	6	-	19	22	3.4	NSRF0805	
NSRF1002	10	2	10.30	2050 / -	3650 / -	19	36	25	19	6	-	23	28	4.5	NSRF1002	
NSRF1004	10	4	10.30	3000 / -	5200 / -	19	36	26	20	6	-	23	28	4.5	NSRF1004	
NSRF1202	12	2	12.30	2250 / -	4550 / -	24	40	28	20	8	-	26	32	4.5	NSRF1202	
NSRF1204	12	4	12.30	4100 / -	7400 / -	24	40	29	21	8	-	26	32	4.5	NSRF1204	

Note 1) NSRF0401 is not specified in DIN standard, therefore conforms to the ISO standard.

