

Ball Screws for ISO (DIN) Standard

NSGF / NSRF Series

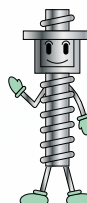
Vol.35.1



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

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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

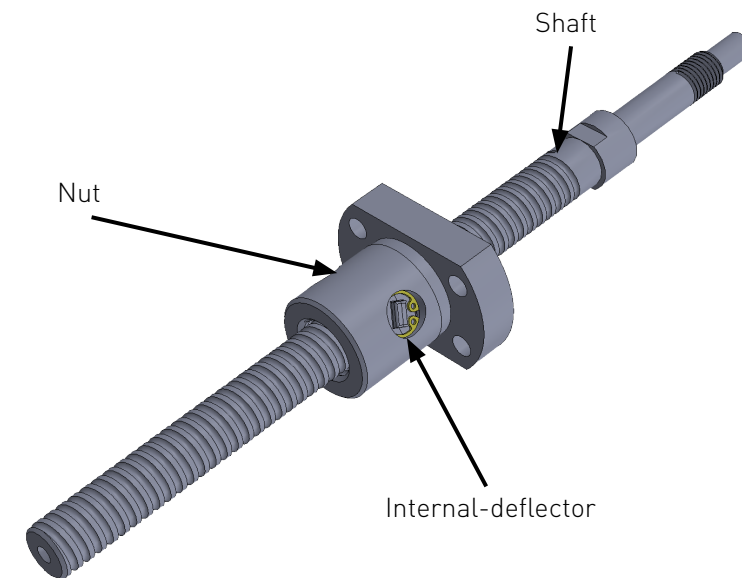
To meet customers' short lead time requirements, KSS keeps selected models in stock.
The end-journal configuration is standardized, allowing customers to reduce design workload.
KSS's advanced machining expertise enables highly accurate end-machining.

●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.

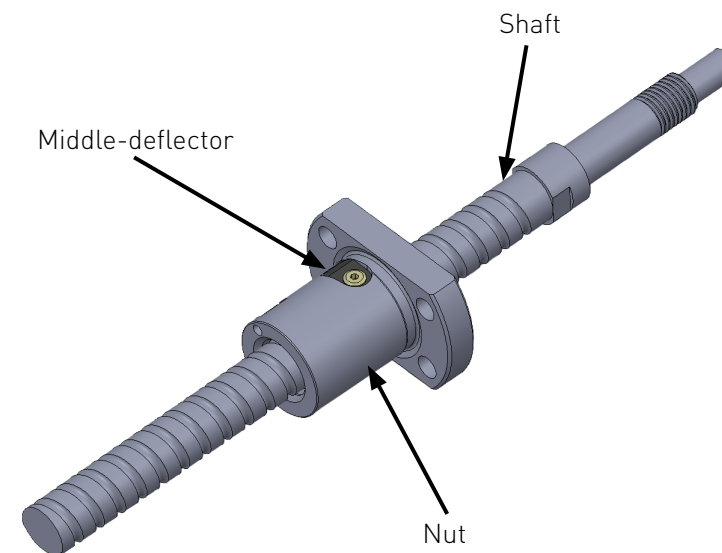
●Construction of Ball Screw

【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.

NSGF series Standardized Precision Ball Screws compliant to ISO/DIN Standards

This series is the Standard stock Ball Screws compliant to ISO/DIN Standards on Ball Nut outer diameter. Precision Ball Screws which are accuracy C3, C5 and have machined shaft end at fixed side in advance are available. Short delivery is available by machining supported end in accordance with customer's request.

●Combination of Shaft nominal dia. & Lead

Unit: mm

Shaft dia. \ Lead	1	2	4	5
4	6			
6	7	8		
8	9	10		11
10		12	13	
12		14	15	16

Note 1) The number in a table : showing a page in this catalogue.

●Accuracy Grade & Axial play

Accuracy grade of NSGF series (Standardized Precision Ball Screws compliant to ISO/DIN Standards) are 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 in stock.

●Material & Surface hardness

NSGF series (Standardized Precision Ball Screws compliant to ISO/DIN Standards) consists of Shaft and Nut materials SCM415 (Carburizing and quenching) and Surface hardness is HRC58~62.

●Lubrication

NSGF series (Standardized Precision Ball Screws compliant to ISO/DIN Standards) without end-journal machining will be applied with anti-rust oil for rust prevention. Anti-rust oil does not have lubricating function so that please apply Grease or lubrication oil when using the Ball Screws. If there is no specific instruction, KSS would recommend our original Grease (MSG No.2) as standard lubricant. Please feel free to contact us.

●Customized products

It will be a customized product other than the above. Please ask KSS.

●Model number notation

Please use model number below when additional end-journal machining is requested.

NSGF 04 01 — 46 R 85 C3 B 1 X

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

- ① Ball Screws Series No.
- ② Screw Shaft nominal diameter(mm)
- ③ Lead(mm)
- ④ Screw thread length(mm)
(Specify in 1mm unit after end-journal machining)
- ⑤ Thread direction(R=Right-hand)
- ⑥ Screw Shaft total length(mm)
(Specify in 1mm unit)
- ⑦ Accuracy grade(C3 or C5)
- ⑧ Shaft supported end profile
Refer to Fig. A-1 below : A-type,B-type,C-type,
D-type(other)
- ⑨ Anti-rust oil or Lubricant
0 : KSS grease (MSG No.2)
1 : Anti-rust oil(Non Ruster PZ2)
2 : Multemp PS2 grease
3 : Other
- ⑩ Nut M-thread direction (Refer to Fig. A-2 below)

Fig. A-1 : Shaft supported end profile

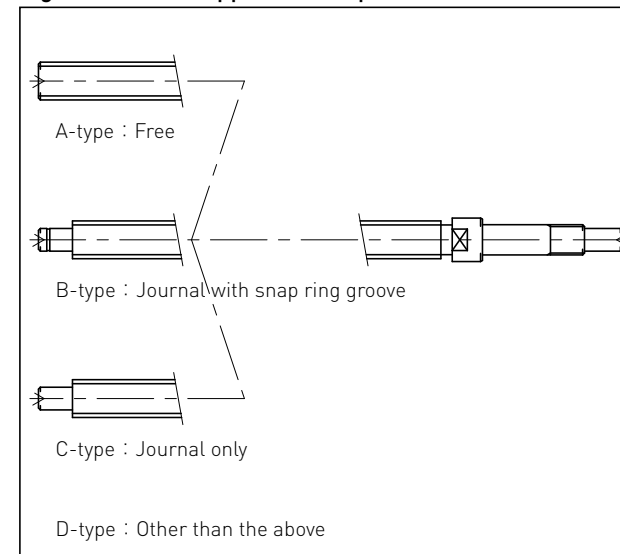
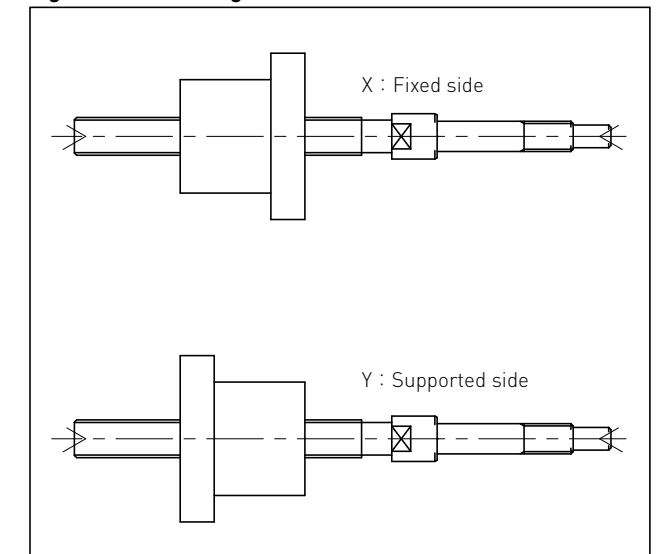


Fig. A-2 : Nut Flange direction



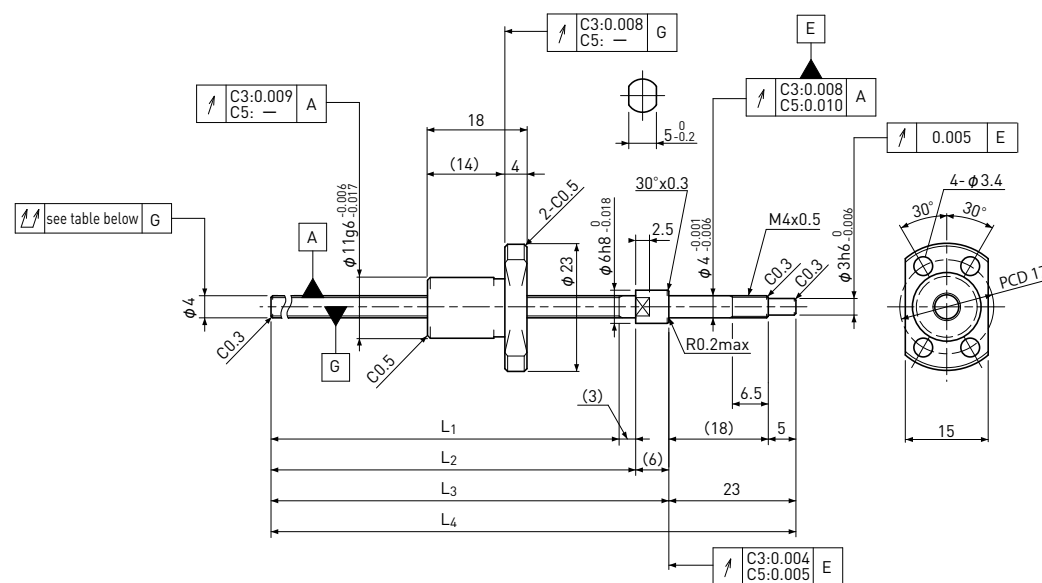
●Note

- 1) The detail of end-journal dimension for each size is shown from next page.
- 2) KSS does not make additional Nut machining.
- 3) The specification is subject to change without notice.
- 4) If the other configuration except (A,B,C) is requested, please contact KSS.

Standard products in stock NSGF series

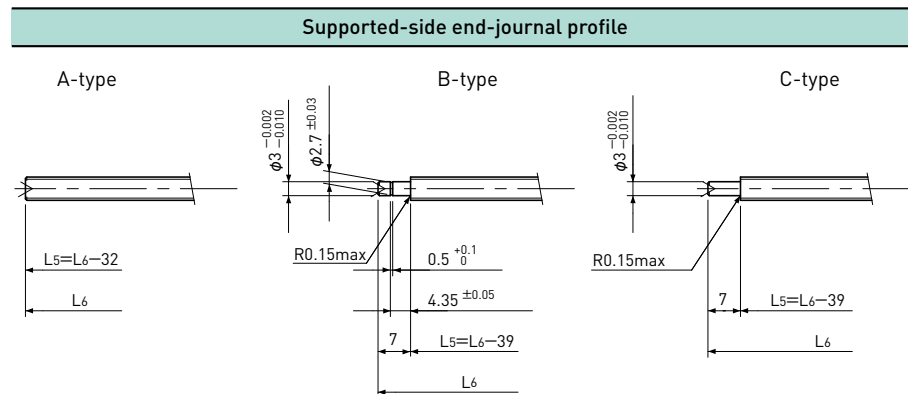
NSGF0401 | Shaft dia. $\phi 4$ Lead1mm

C3&C5



Unit:mm

Ball Screw Specifications	
BCD	$\phi 4.15$
Thread direction	Right
Shaft, Nut material	SCM415H
Surface hardness	HRC58~62 (Thread area)
Anti-rust treatment	Anti-rust oil



L_5 : Thread length after end-journal machining.
 L_6 : Total length after end-journal machining.

Support-unit Recommendation	Supported-side	
	Supported-side	Fixed-side
	MSU-4CS/4GS	MSU-4C/4G

D-type : Other than the above.

Unit:mm

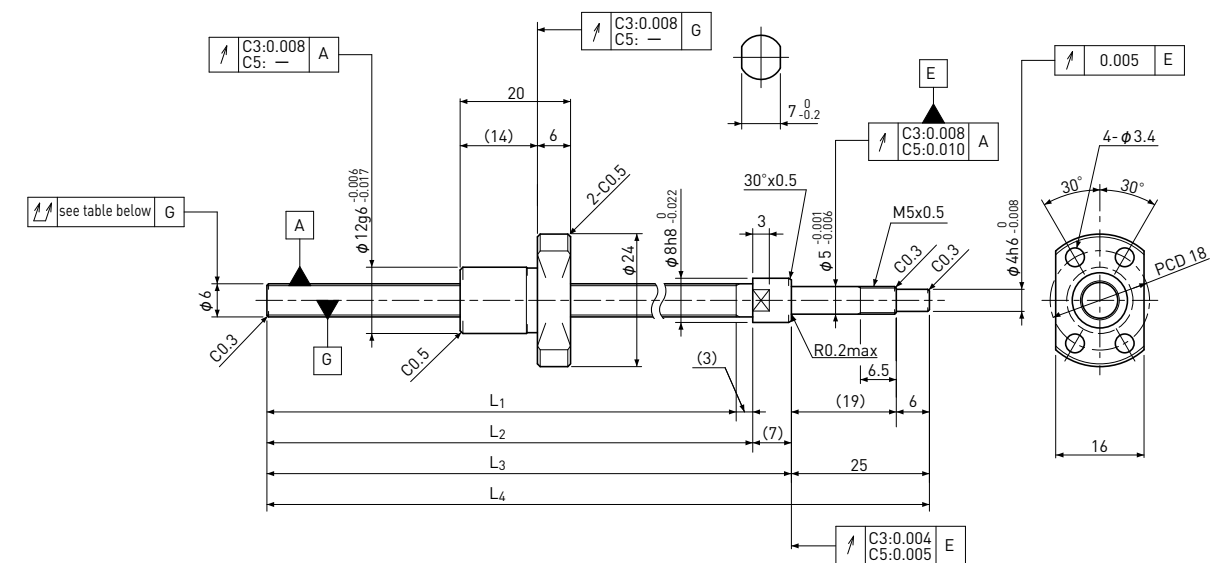
Ball Screw Model	Travel	Grade	Shaft length				Lead accuracy		Total Run-out	Axial play	Preload Torque Nm	Basic Load Rating N	
			L_1	L_2	L_3	L_4	Travel deviation e_p	Variation V_u				Dynamic C_a	Static C_{oa}
NSGF0401- 63R 95C3	40	C3	63	66	72	95	± 0.008	0.008	0.025	0	~ 0.002	450	600
NSGF0401-103R135C3	80	C3	103	106	112	135	± 0.010	0.008	0.035				
NSGF0401- 63R 95C5	40	C5	63	66	72	95	± 0.018	0.018	0.035	~ 0.005	—	450	600
NSGF0401-103R135C5	80	C5	103	106	112	135	± 0.020	0.018	0.050				

Note) Please refer to page 5 for order code of end-journal machining.

Standard products in stock NSGF series

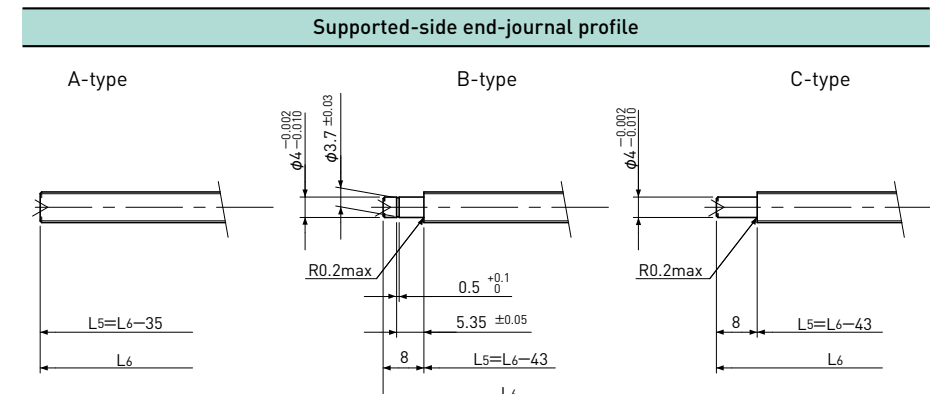
NSGF0601 | Shaft dia. $\phi 6$ Lead1mm

C3&C5



Unit:mm

Ball Screw Specifications	
BCD	$\phi 6.20$
Thread direction	Right
Shaft, Nut material	SCM415H
Surface hardness	HRC58~62 (Thread area)
Anti-rust treatment	Anti-rust oil



L_5 : Thread length after end-journal machining.
 L_6 : Total length after end-journal machining.

Support-unit Recommendation	Supported-side	
	Supported-side	Fixed-side
	MSU-5CS/5GS	MSU-5C/5G

D-type : Other than the above.

Unit:mm

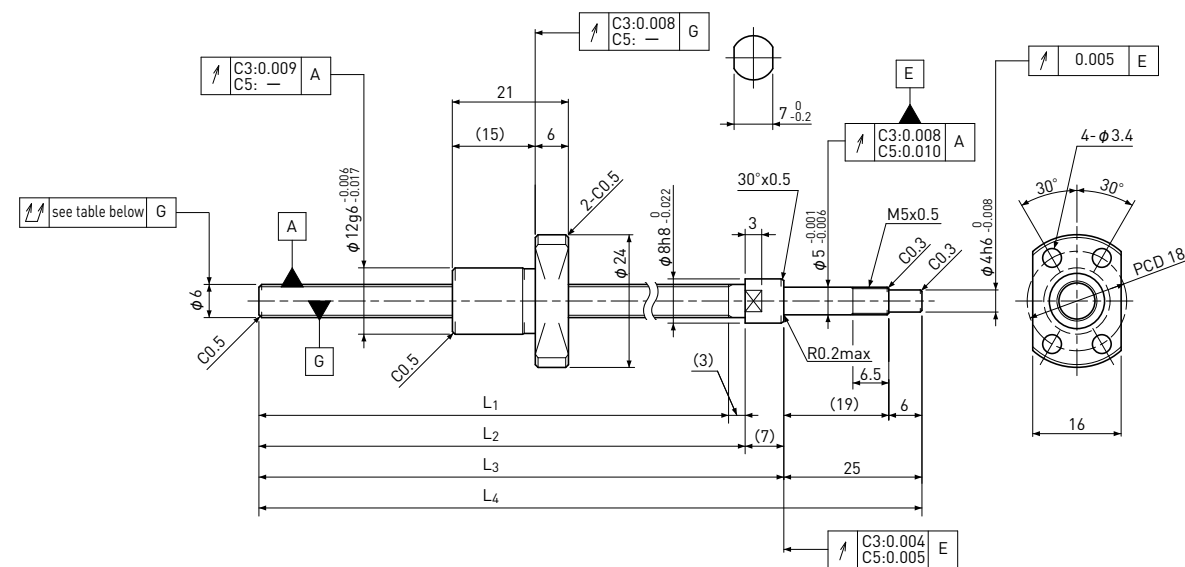
Ball Screw Model	Travel	Grade	Shaft length				Lead accuracy		Total Run-out	Axial play	Preload Torque Nm	Basic Load Rating N	
			L_1	L_2	L_3	L_4	Travel deviation e_p	Variation V_u				Dynamic C_a	Static C_{oa}
NSGF0601- 85R120C3	60	C3	85	88	95	120	± 0.008	0.008	0.025	0	~ 0.002	560	950
NSGF0601-135R170C3	110	C3	135	138	145	170	± 0.010	0.008	0.035				
NSGF0601- 85R120C5	60	C5	85	88	95	120	± 0.018	0.018	0.035	~ 0.005	—	560	950
NSGF0601-135R170C5	110	C5	135	138	145	170	± 0.020	0.018	0.050				

Note) Please refer to page 5 for order code of end-journal machining.

Standard products in stock NSGF series

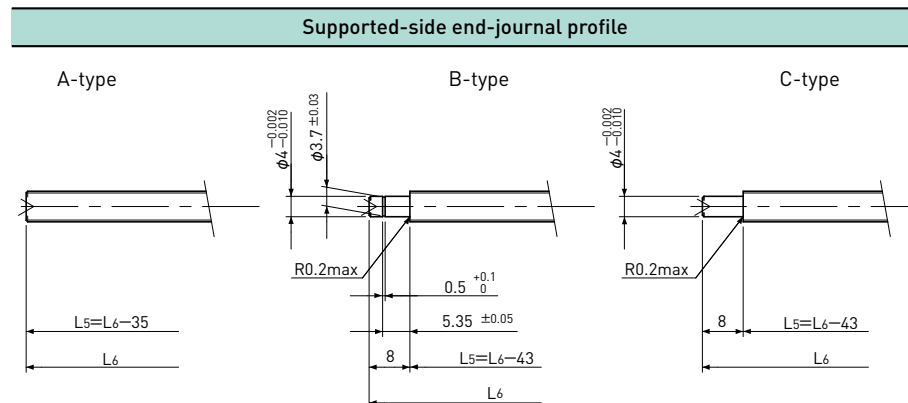
NSGF0602 | Shaft dia. $\phi 6$ Lead 2mm

C3&C5



Unit:mm

Ball Screw Specifications	
BCD	$\phi 6.20$
Thread direction	Right
Shaft, Nut material	SCM415H
Surface hardness	HRC58~62 (Thread area)
Anti-rust treatment	Anti-rust oil



L5: Thread length after end-journal machining.
L6: Total length after end-journal machining.

Support-unit Recommendation	Supported-side	
	Supported-side	Fixed-side
	MSU-5CS/5GS	MSU-5C/5G

D-type : Other than the above.

Unit:mm

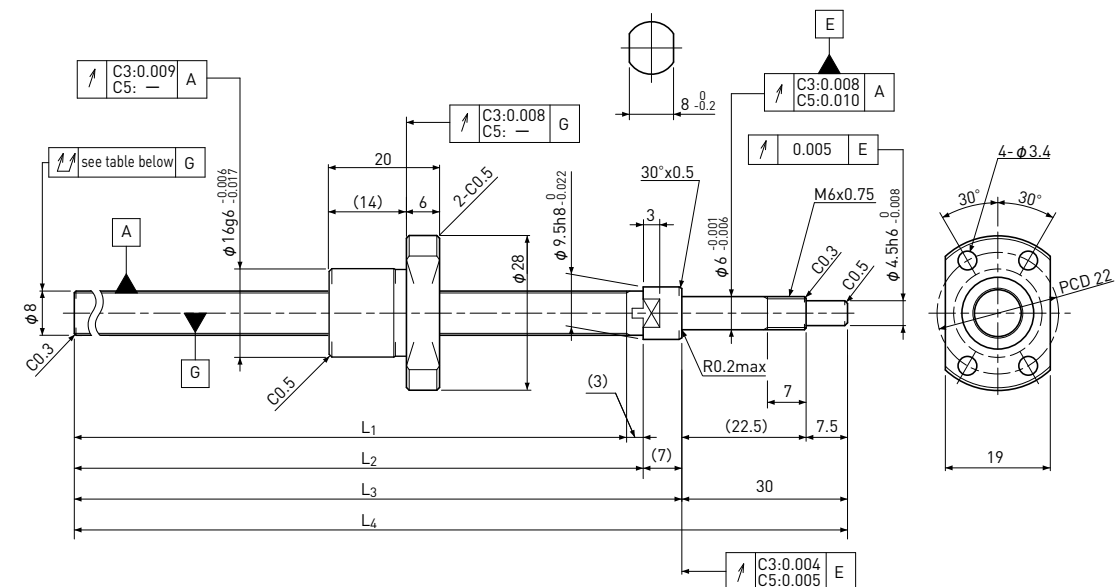
Ball Screw Model	Travel	Grade	Shaft length				Lead accuracy		Total Run-out	Axial play	Preload Torque Nm	Basic Load Rating N	
			L1	L2	L3	L4	Travel deviation e_p	Variation V_u				Dynamic C_a	Static C_{oa}
NSGF0602- 85R120C3	60	C3	85	88	95	120	± 0.008	0.008	0.025	0	~ 0.0039	770	1150
NSGF0602-135R170C3	110	C3	135	138	145	170	± 0.010	0.008	0.035				
NSGF0602- 85R120C5	60	C5	85	88	95	120	± 0.018	0.018	0.035	~ 0.005	—	770	1150
NSGF0602-135R170C5	110	C5	135	138	145	170	± 0.020	0.018	0.050				

Note) Please refer to page 5 for order code of end-journal machining.

Standard products in stock NSGF series

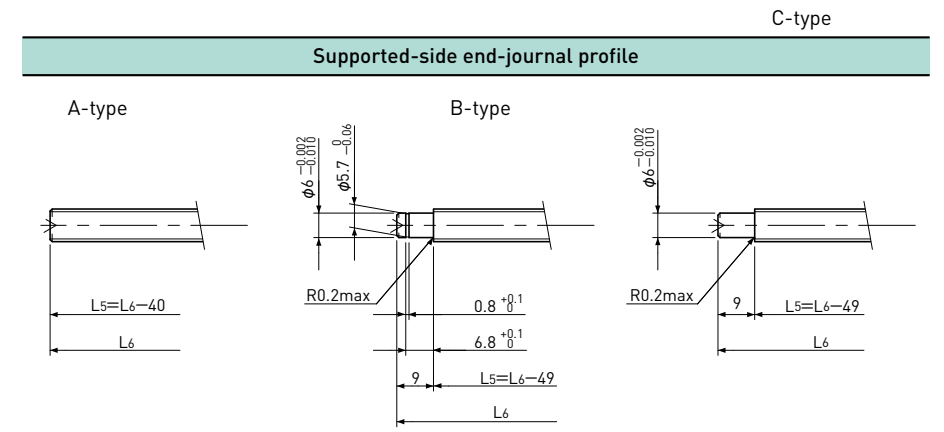
NSGF0801 | Shaft dia. $\phi 8$ Lead 1mm

C3&C5



Unit:mm

Ball Screw Specifications	
BCD	$\phi 8.20$
Thread direction	Right
Shaft, Nut material	SCM415H
Surface hardness	HRC58~62 (Thread area)
Anti-rust treatment	Anti-rust oil



L5: Thread length after end-journal machining.
L6: Total length after end-journal machining.

Support-unit Recommendation	Supported-side	
	Supported-side	Fixed-side
	MSU-6CS/6GS	MSU-6C/6G

D-type : Other than the above.

Unit:mm

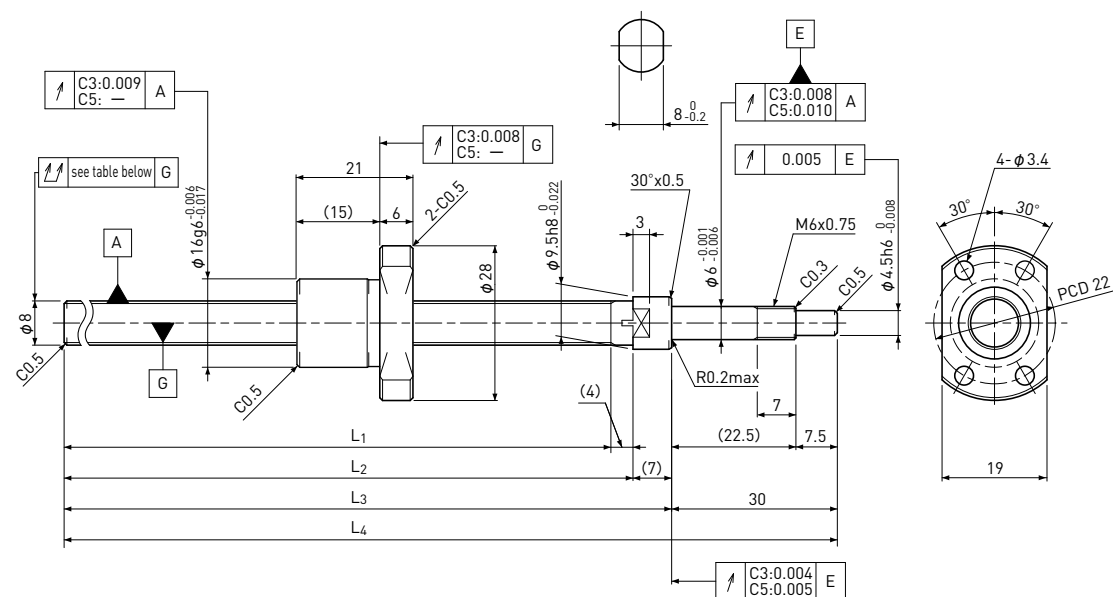
Ball Screw Model	Travel	Grade	Shaft length				Lead accuracy		Total Run-out	Axial play	Preload Torque Nm	Basic Load Rating N	
			L1	L2	L3	L4	Travel deviation e_p	Variation V_u				Dynamic C_a	Static C_{oa}
NSGF0801-100R140C3	75	C3	100	103	110	140	± 0.008	0.008	0.035	0	~ 0.0029	650	1300
NSGF0801-160R200C3	135	C3	160	163	170	200	± 0.010	0.008	0.035				
NSGF0801-100R140C5	75	C5	100	103	110	140	± 0.018	0.018	0.050	~ 0.005	—	650	1300
NSGF0801-160R200C5	135	C5	160	163	170	200	± 0.020	0.018	0.050				

Note) Please refer to page 5 for order code of end-journal machining.

Standard products in stock NSGF series

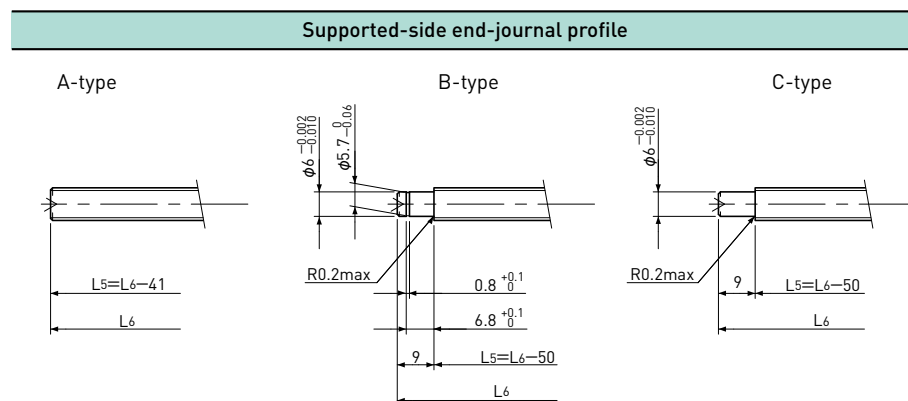
NSGF0802 | Shaft dia. $\phi 8$ Lead 2mm

C3&C5



Unit:mm

Ball Screw Specifications	
BCD	$\phi 8.30$
Thread direction	Right
Shaft, Nut material	SCM415H
Surface hardness	HRC58~62 (Thread area)
Anti-rust treatment	Anti-rust oil



L_5 : Thread length after end-journal machining.
 L_6 : Total length after end-journal machining.

Support-unit Recommendation	Supported-side	
	Supported-side	Fixed-side
	MSU-6CS/6GS	MSU-6C/6G

D-type : Other than the above.

Unit:mm

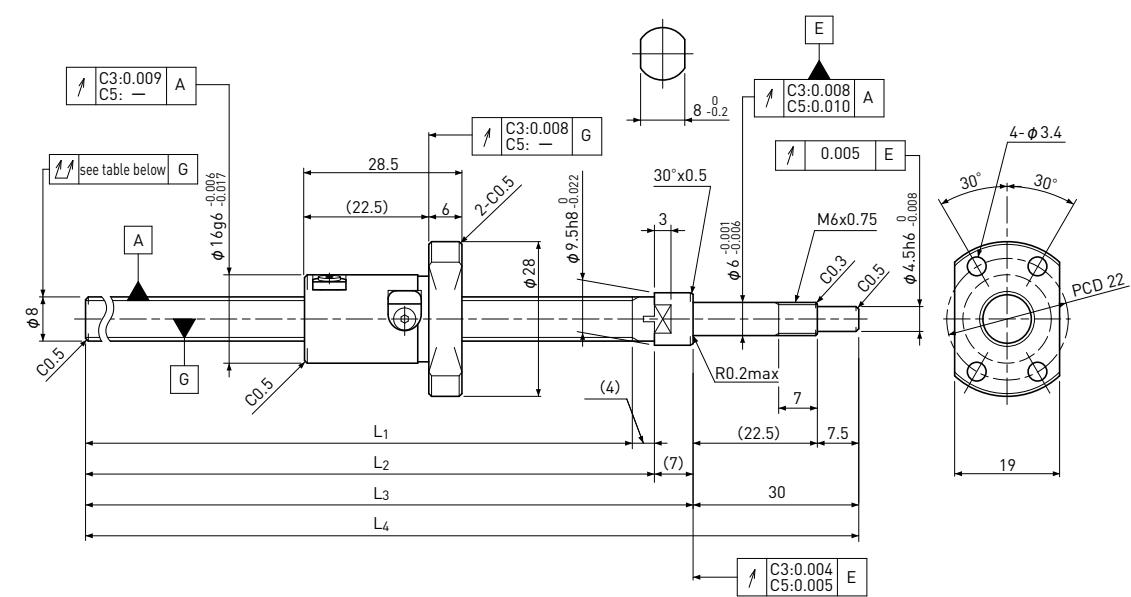
Ball Screw Model	Travel	Grade	Shaft length				Lead accuracy		Total Run-out	Axial play	Preload Torque Nm	Basic Load Rating N	
			L ₁	L ₂	L ₃	L ₄	Travel deviation e_p	Variation V_u				Dynamic Ca	Static Coa
NSGF0802- 99R140C3	75	C3	99	103	110	140	± 0.008	0.008	0.035	0	~0.0075	1300	2300
NSGF0802-159R200C3	135	C3	159	163	170	200	± 0.010	0.008	0.035				
NSGF0802- 99R140C5	75	C5	99	103	110	140	± 0.018	0.018	0.050	~0.005	—	1300	2300
NSGF0802-159R200C5	135	C5	159	163	170	200	± 0.020	0.018	0.050				

Note) Please refer to page 5 for order code of end-journal machining.

Standard products in stock NSGF series

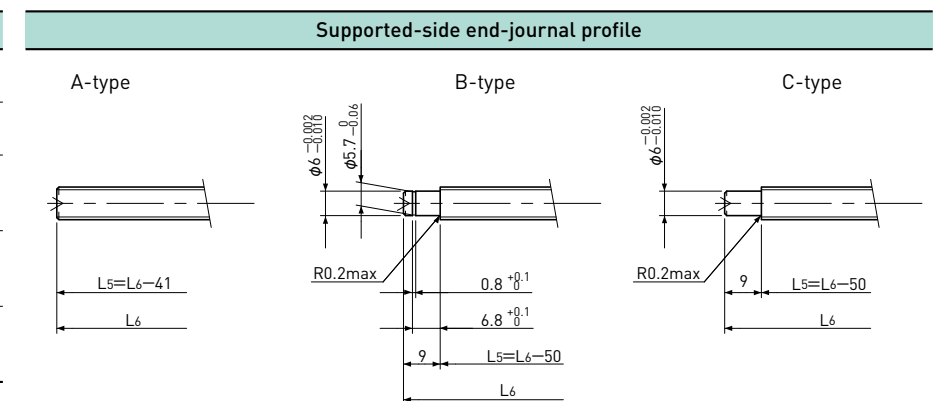
NSGF0805 | Shaft dia. $\phi 8$ Lead 5mm

C3&C5



Unit:mm

Ball Screw Specifications	
BCD	$\phi 8.30$
Thread direction	Right
Shaft, Nut material	SCM415H
Surface hardness	HRC58~62 (Thread area)
Anti-rust treatment	Anti-rust oil



L_5 : Thread length after end-journal machining.
 L_6 : Total length after end-journal machining.

Support-unit Recommendation	Supported-side	
	Supported-side	Fixed-side
	MSU-6CS/6GS	MSU-6C/6G

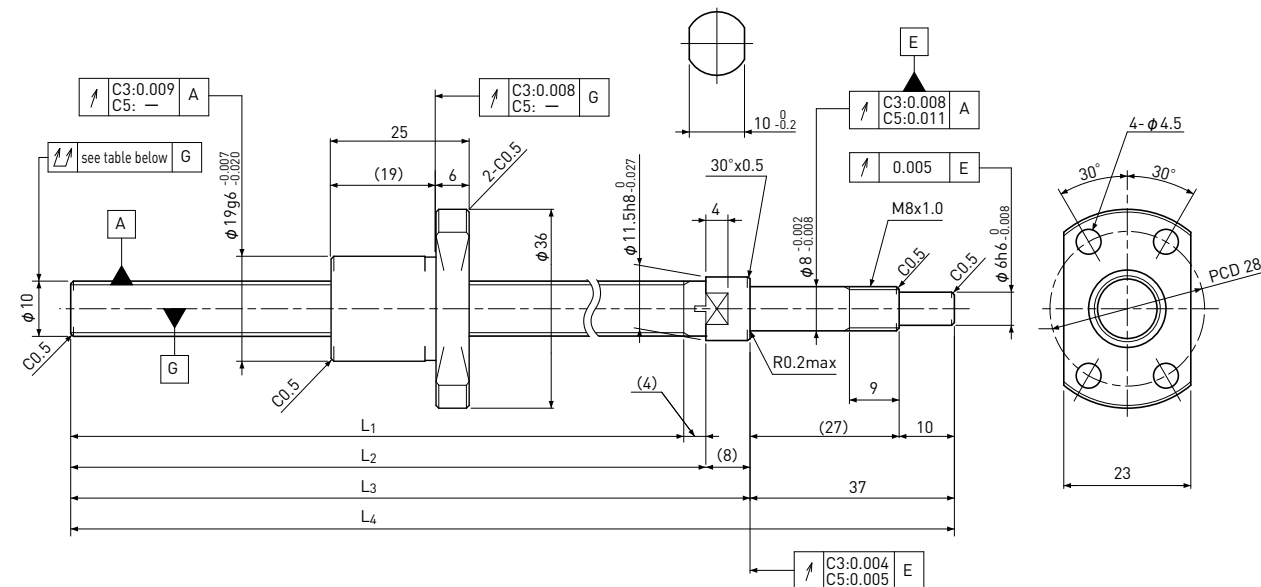
D-type : Other than the above.

Unit:mm

Ball Screw Model	Travel	Grade	Shaft length				Lead accuracy		Total Run-out	Axial play	Preload Torque Nm	Basic Load Rating N	
			L ₁	L ₂	L ₃	L ₄	Travel deviation e_p	Variation V_u				Dynamic Ca	Static Coa
NSGF0805- 99R140C3	65	C3	99	103	110	140	± 0.008	0.008	0.035	0 Spacer Ball (1:1)	~0.0104	1150	1500
NSGF0805-209R250C3	175	C3	209	213	220	250	± 0.012	0.008	0.050				
NSGF0805- 99R140C5	65	C5	99	103	110	140	± 0.018	0.018	0.050	~0.005	—	1850	3000
NSGF0805-209R250C5	175	C5	209	213	220	250	± 0.023	0.018	0.065				

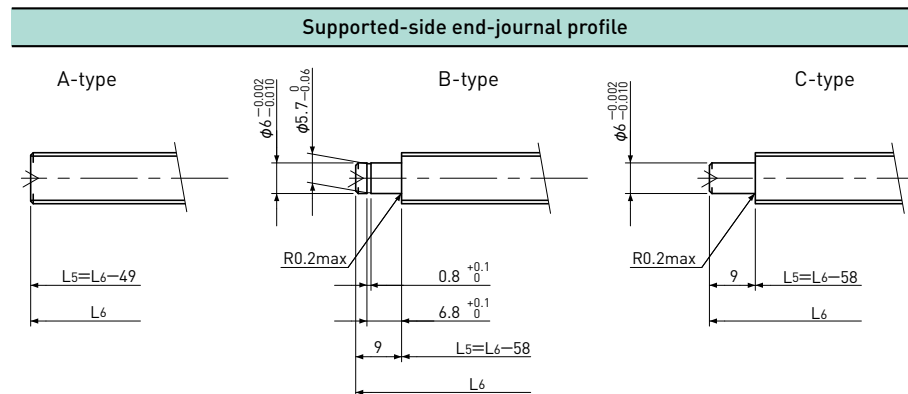
Note) Please refer to page 5 for order code of end-journal machining.

Standard products in stock NSGF series

NSGF1002 | Shaft dia. $\phi 10$ Lead 2mm**C3&C5**

Unit: mm

Ball Screw Specifications	
BCD	$\phi 10.30$
Thread direction	Right
Shaft, Nut material	SCM415H
Surface hardness	HRC58~62 (Thread area)
Anti-rust treatment	Anti-rust oil



L_5 : Thread length after end-journal machining.
 L_6 : Total length after end-journal machining.

Support-unit Recommendation	Supported-side	
	Supported-side	Fixed-side
	MSU-8CS/8GS	MSU-8C/8G

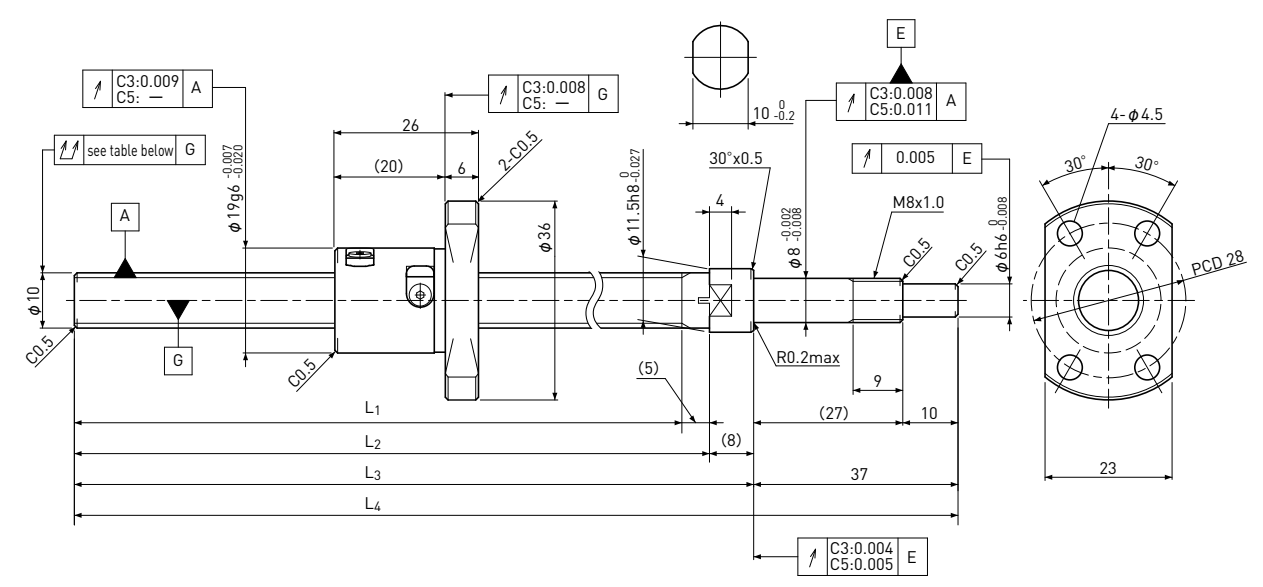
D-type : Other than the above.

Unit: mm

Ball Screw Model	Travel	Grade	Shaft length				Lead accuracy		Total Run-out	Axial play	Preload Torque Nm	Basic Load Rating N	
			L_1	L_2	L_3	L_4	Travel deviation e_p	Variation V_u				Dynamic C_a	Static C_{oa}
NSGF1002-111R160C3	80	C3	111	115	123	160	± 0.010	0.008	0.035	0	~ 0.0131	2050	3650
NSGF1002-211R260C3	180	C3	211	215	223	260	± 0.012	0.008	0.040				
NSGF1002-111R160C5	80	C5	111	115	123	160	± 0.020	0.018	0.040	~ 0.005	—	2050	3650
NSGF1002-211R260C5	180	C5	211	215	223	260	± 0.023	0.018	0.055				

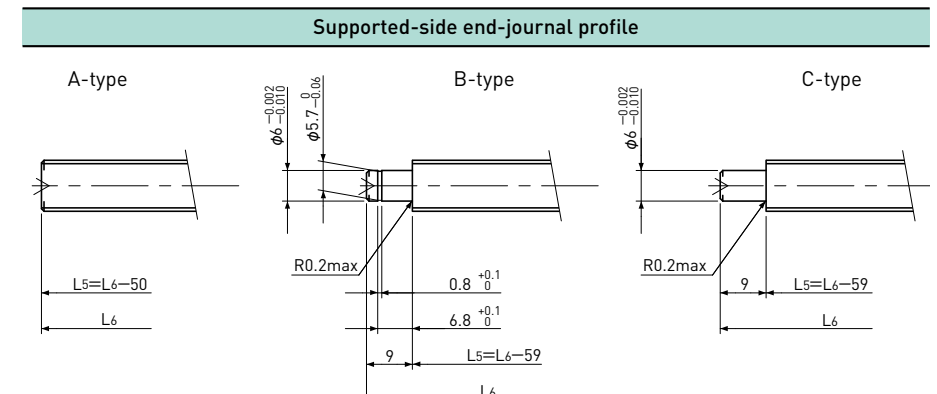
Note) Please refer to page 5 for order code of end-journal machining.

Standard products in stock NSGF series

NSGF1004 | Shaft dia. $\phi 10$ Lead 4mm**C3&C5**

Unit: mm

Ball Screw Specifications 諸元	
BCD	$\phi 10.30$
Thread direction	Right
Shaft, Nut material	SCM415H
Surface hardness	HRC58~62 (Thread area)
Anti-rust treatment	Anti-rust oil



L_5 : Thread length after end-journal machining.
 L_6 : Total length after end-journal machining.

Support-unit Recommendation	Supported-side	
	Supported-side	Fixed-side
	MSU-8CS/8GS	MSU-8C/8G

D-type : Other than the above.

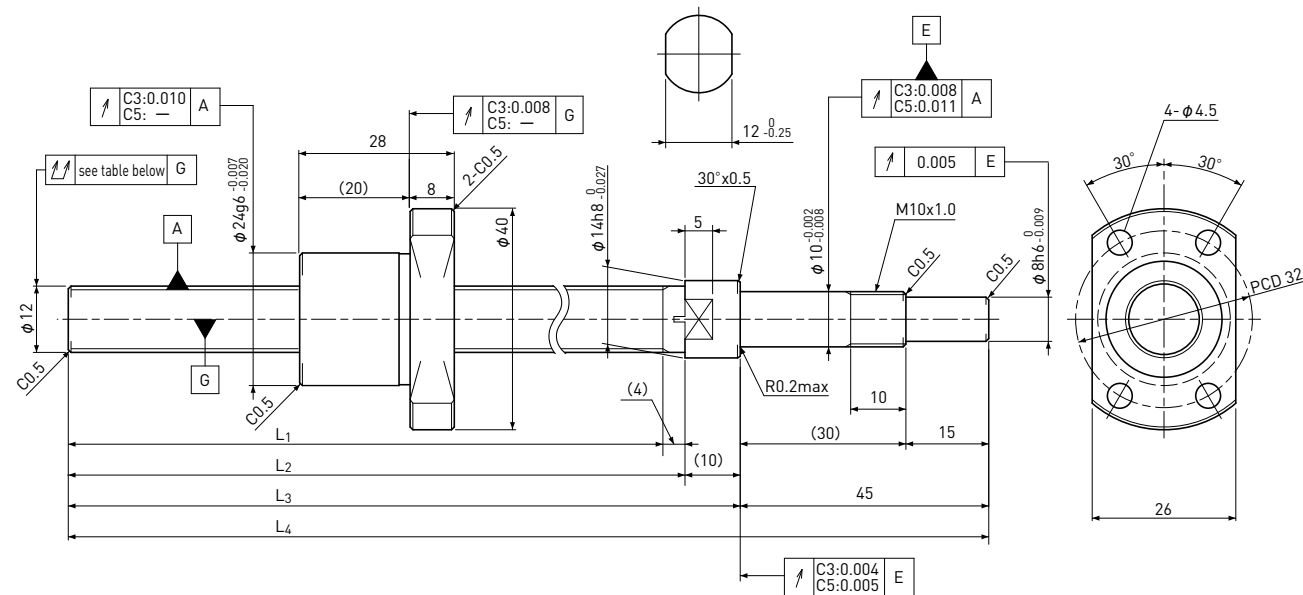
Unit: mm

Ball Screw Model	Travel	Grade	Shaft length				Lead accuracy		Total Run-out	Axial play	Preload Torque Nm	Basic Load Rating N	
			L_1	L_2	L_3	L_4	Travel deviation e_p	Variation V_u				Dynamic C_a	Static C_{oa}
NSGF1004-110R160C3	80	C3	110	115	123	160	± 0.010	0.008	0.035	0 Spacer Ball (1:1)	~ 0.0163	1800	2600
NSGF1004-260R310C3	230	C3	260	265	273	310	± 0.012	0.008	0.040				
NSGF1004-110R160C5	80	C5	110	115	123	160	± 0.020	0.018	0.040	~ 0.005	—	3000	5200
NSGF1004-260R310C5	230	C5	260	265	273	310	± 0.023	0.018	0.055				

Note) Please refer to page 5 for order code of end-journal machining.

NSGF1202 | Shaft dia. $\phi 12$ Lead 2mm

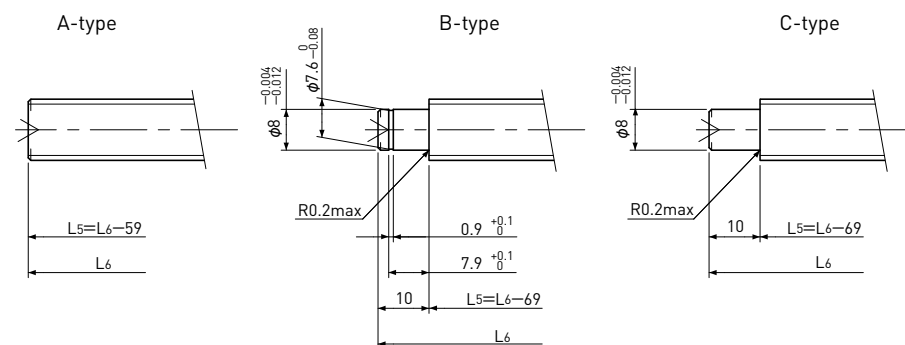
C3&C5



Unit:mm

Ball Screw Specifications	
BCD	φ 12.30
Thread direction	Right
Shaft, Nut material	SCM415H
Surface hardness	HRC58~62 (Thread area)
Anti-rust treatment	Anti-rust oil

Supported-side end-journal profile



L₅: Thread length after end-journal machining.
L₆: Total length after end-journal machining.

Support-unit Recommendation	Supported-side	—
	Fixed-side	—

D-type : Other than the above.

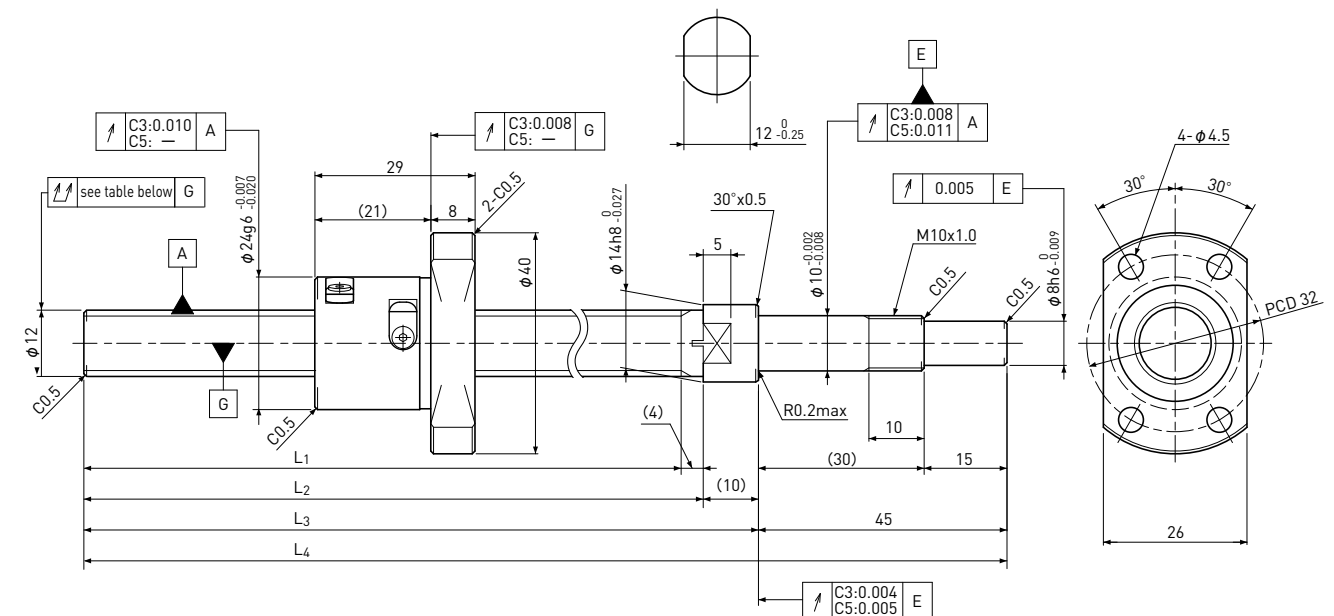
Unit:mm

Ball Screw Model	Travel	Grade	Shaft length				Lead accuracy		Total Run-out 	Axial play	Preload Torque Nm	Basic Load Rating N	
			L ₁	L ₂	L ₃	L ₄	Travel deviation e _p	Variation V _u				Dynamic Ca	Static Coa
NSGF1202-141R200C3	110	C3	141	145	155	200	±0.010	0.008	0.035	0	~0.0157	2250	4550
NSGF1202-241R300C3	210	C3	241	245	255	300	±0.012	0.008	0.040				
NSGF1202-341R400C3	310	C3	341	345	355	400	±0.013	0.010	0.050				
NSGF1202-141R200C5	110	C5	141	145	155	200	±0.020	0.018	0.040	~0.005	—	2250	4550
NSGF1202-241R300C5	210	C5	241	245	255	300	±0.023	0.018	0.055				
NSGF1202-341R400C5	310	C5	341	345	355	400	±0.025	0.020	0.065				

Note) Please refer to page 5 for order code of end-journal machining.

NSGF1204 | Shaft dia. $\phi 12$ Lead 4mm

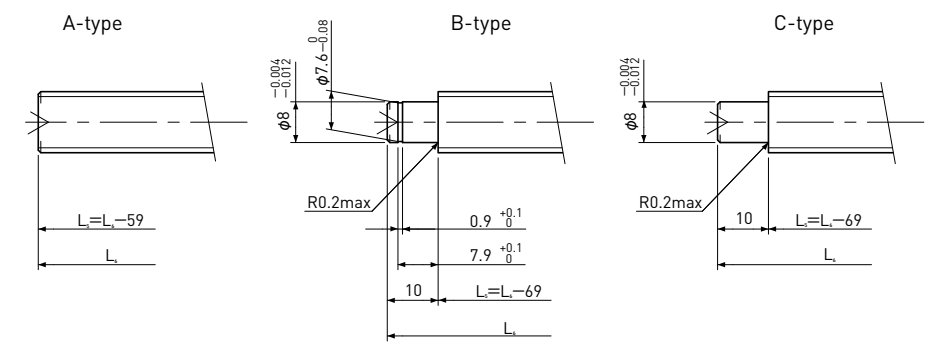
C3&C5 |



Unit:mm

Ball Screw Specifications	
BCD	φ 12.30
Thread direction	Right
Shaft, Nut material	SCM415H
Surface hardness	HRC58~62 (Thread area)
Anti-rust treatment	Anti-rust oil

Supported-side end-journal profile



L₅: Thread length after end-journal machining.
L₆: Total length after end-journal machining.

Support-unit Recommendation	Supported-side	—
	Fixed-side	—

D-type : Other than the above.

Unit:mm

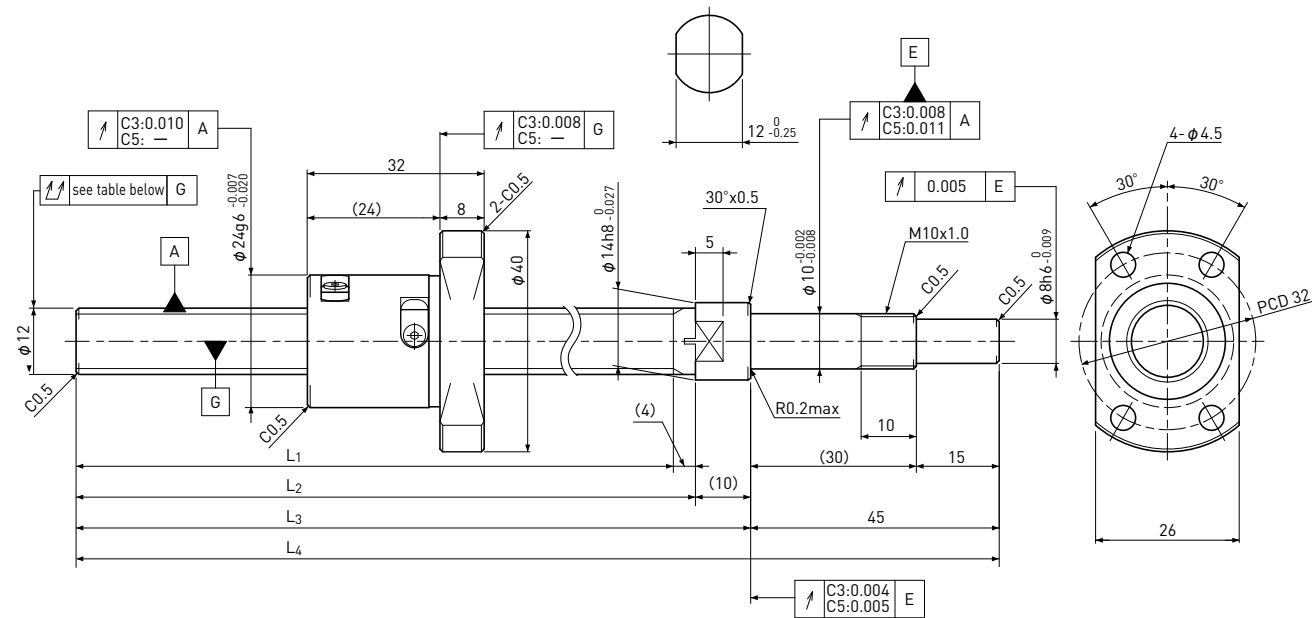
Ball Screw Model	Travel	Grade	Shaft length				Lead accuracy		Total Run-out 	Axial play	Preload Torque Nm	Basic Load Rating N	
			L ₁	L ₂	L ₃	L ₄	Travel deviation e _p	Variation V _u				Dynamic Ca	Static Coa
NSGF1204-141R200C3	110	C3	141	145	155	200	±0.010	0.008	0.035	0 Spacer Ball (1:1)	~0.0247	2500	3700
NSGF1204-241R300C3	210	C3	241	245	255	300	±0.012	0.008	0.040				
NSGF1204-341R400C3	310	C3	341	345	355	400	±0.013	0.010	0.050				
NSGF1204-141R200C5	110	C5	141	145	155	200	±0.020	0.018	0.040	~0.005	—	4100	7400
NSGF1204-241R300C5	210	C5	241	245	255	300	±0.023	0.018	0.055				
NSGF1204-341R400C5	310	C5	341	345	355	400	±0.025	0.020	0.065				

Note) Please refer to page 5 for order code of end-journal machining.

NSGF1205

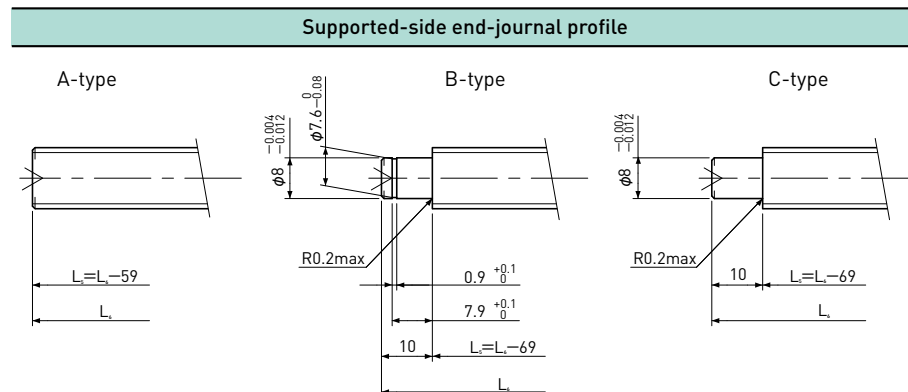
Shaft dia. $\phi 12$ Lead 5mm

C3&C5



Unit: mm

Ball Screw Specifications	
BCD	$\phi 12.30$
Thread direction	Right
Shaft, Nut material	SCM415H
Surface hardness	HRC58~62 (Thread area)
Anti-rust treatment	Anti-rust oil



L_5 : Thread length after end-journal machining.
 L_1 : Total length after end-journal machining.

Support-unit Recommendation	Supported-side	Fixed-side
	—	—

D-type : Other than the above.

Unit: mm

Ball Screw Model	Travel	Grade	Shaft length				Lead accuracy		Total Run-out	Axial play	Preload Torque Nm	Basic Load Rating N	
			L_1	L_2	L_3	L_4	Travel deviation e_p	Variation V_u				Dynamic C_a	Static C_{0a}
NSGF1205-141R200C3	110	C3	141	145	155	200	± 0.010	0.008	0.035	0 Spacer Ball (1:1)	~ 0.0247	2500	3700
NSGF1205-241R300C3	210	C3	241	245	255	300	± 0.012	0.008	0.040				
NSGF1205-341R400C3	310	C3	341	345	355	400	± 0.013	0.010	0.050				
NSGF1205-141R200C5	110	C5	141	145	155	200	± 0.020	0.018	0.040	~ 0.005	—	4100	7400
NSGF1205-241R300C5	210	C5	241	245	255	300	± 0.023	0.018	0.055				
NSGF1205-341R400C5	310	C5	341	345	355	400	± 0.025	0.020	0.065				

Note) Please refer to page 5 for order code of end-journal machining.

NSRF series Standardized Rolled Ball Screws compliant to ISO/DIN Standards

This series is the Rolled Ball Screws compliant to ISO/DIN Standards on Ball Nut outer diameter. Rolled Ball Screws with accuracy Ct7 are available in stock. It is suitable for compact and low cost design. Rolled Ball Screws with end-journal machining are available for short delivery.

●Combination of Shaft nominal dia. & Lead

Unit:mm

Lead Shaft dia.	1	2	4	5
4	20			
6	21	22		
8	23	24		25
10		26	27	
12		28	29	30

Note 1)The numbers in a table : showing a page in this catalogue.

●Model number notation

NSRF **06** **01** **—** **200** **R** **200** **C7**
① ② ③ ④ ⑤ ⑥ ⑦

- ①Rolled Ball Screws Series No.
NSRF : Rolled Ball Screws(ISO/DIN compliance)
- ②Screw Shaft nominal diameter(mm)
- ③Lead(mm)
- ④Screw thread length(mm)
- ⑤Thread direction (R=Right-hand)
- ⑥Screw Shaft total length(mm)
- ⑦Accuracy grade(C7)

●Accuracy Grade & Axial play

Accuracy grade of NSRF series (Standardized Rolled Ball Screws compliant to ISO/DIN Standards) is based on Ct7(JIS B 1192-3). Axial play 0.020mm or less (Ct7)is in stock.

●Material & Surface hardness

Materials and Surface hardness of NSRF series (Standardized Rolled Ball Screws compliant to ISO/DIN Standards) are as follows.

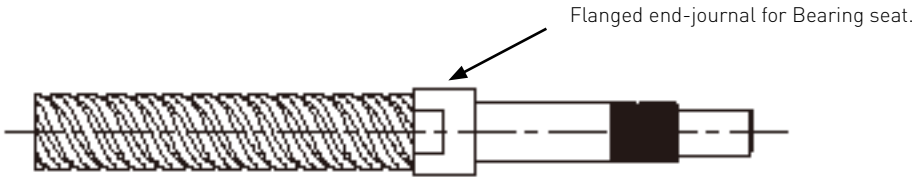
Components	Material	Heat treatment	Surface hardness
Shaft	SCM415 S55C	Carburizing Induction Hardening	HRC58~62 HRC58~62
Nut	SCM415	Carburizing and Quenching	

●Lubrication

NSRF series (Standardized Rolled Ball Screws compliant to ISO/DIN Standard) without end-journal machining are applied with anti-rust oil for rust prevention. Anti-rust oil does not have lubricating function so that please apply the Grease or lubrication oil when using the Ball Screws. If there is no specific instruction, KSS would recommend our original Grease (MSG No.2) as standard lubricant. Please feel free to contact us.

●Others

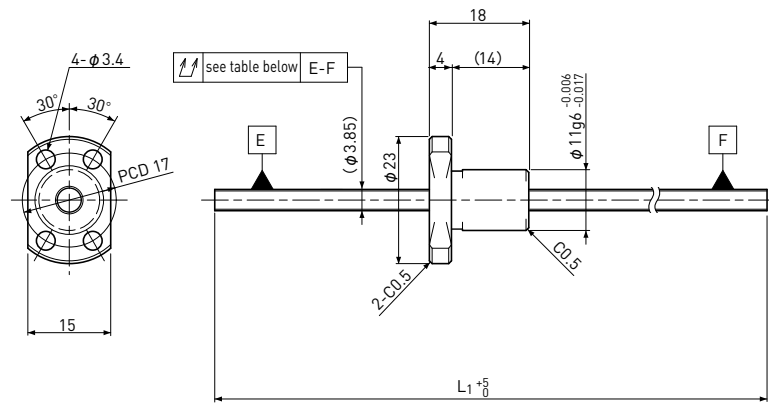
End-journal configuration of NSRF series (Standardized Rolled Ball Screws compliant to ISO/DIN Standards) is not standardized. When you request additional machining, please send us a drawing with end-journal profile. Rolled Ball Screws with Integrated end-journal, which is bigger Bearing face than supported seat, are available as shown below. Please ask KSS.



Standard products in stock NSRF series

NSRF0401 | Shaft dia. $\phi 4$ Lead1mm

Ct7



Unit:mm

Ball Screw Specifications	
BCD	$\phi 4.15$
Thread direction	Right
Shaft, Nut material	SCM415H
Surface hardness	HRC58~62 (Thread area)
Anti-rust treatment	Anti-rust oil

Unit:mm

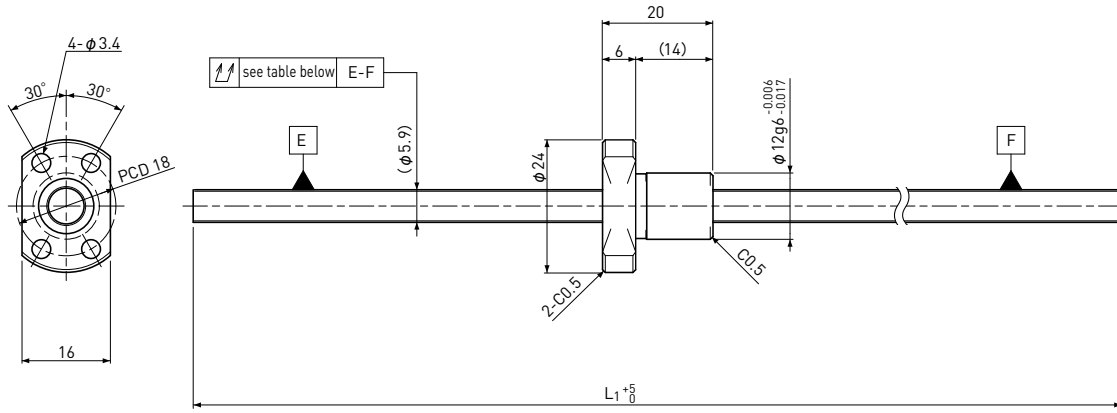
Ball Screw Model	Travel	Grade	Shaft length		Lead accuracy		Total Run-out	Axial play	Preload Torque Nm	Basic Load Rating N	
			L ₁	L ₂	Travel deviation e _p	Variation V ₃₀₀				Dynamic Ca	Static Coa
NSRF0401-100R100C7	75	Ct7	100	—	±0.030	—	0.080	~0.020	—	450	600

Note)Please designate end-journal profile with your sketch.

Standard products in stock NSRF series

NSRF0601 | Shaft dia. $\phi 6$ Lead1mm

Ct7



Unit:mm

Ball Screw Specifications	
BCD	$\phi 6.20$
Thread direction	Right
Material	Shaft S55C Nut SCM415H
Surface hardness	HRC58~62 (Thread area)
Anti-rust treatment	Anti-rust oil

Unit:mm

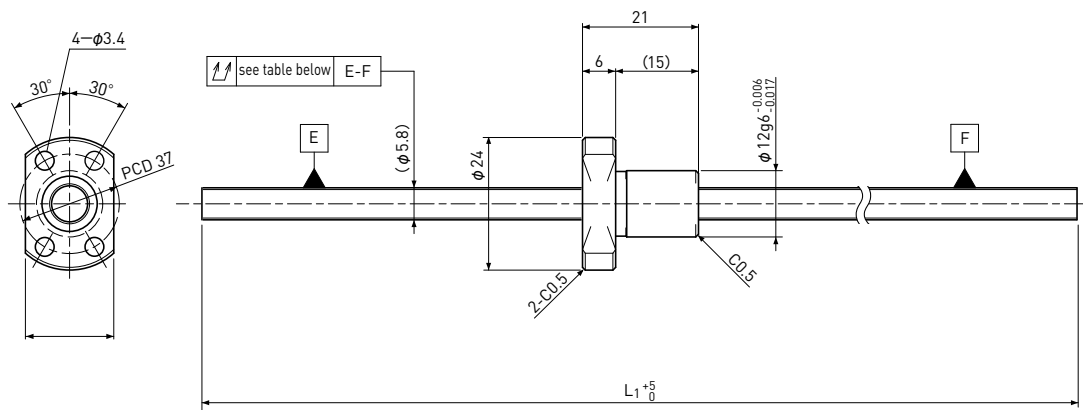
Ball Screw Model	Travel	Grade	Shaft length		Lead accuracy		Total Run-out	Axial play	Preload Torque Nm	Basic Load Rating N	
			L ₁	L ₂	Travel deviation e _p	Variation V ₃₀₀				Dynamic Ca	Static Coa
NSRF0601-200R200C7	175	Ct7	200	—	±0.040	—	0.080	~0.020	—	560	950

Note)Please designate end-journal profile with your sketch.

Standard products in stock NSRF series

NSRF0602 | Shaft dia. $\phi 6$ Lead2mm

Ct7



Unit:mm

Ball Screw Specifications		
BCD		$\phi 6.20$
Thread direction		Right
Material	Shaft	S55C
	Nut	SCM415H
Surface hardness		HRC58~62 (Thread area)
Anti-rust treatment		Anti-rust oil

Unit:mm

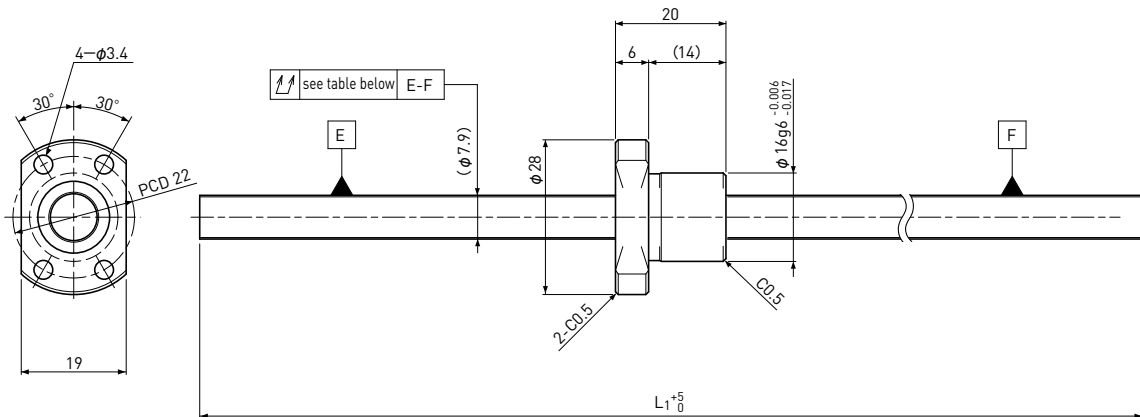
Ball Screw Model	Travel	Grade	Shaft length		Lead accuracy		Total Run-out	Axial play	Preload Torque Nm	Basic Load Rating N	
			L ₁	L ₂	Travel deviation e_p	Variation V_{300}				Dynamic Ca	Static Coa
NSRF0602-200R200C7	175	Ct7	200	—	± 0.040	—	0.080	~ 0.020	—	770	1150

Note)Please designate end-journal profile with your sketch.

Standard products in stock NSRF series

NSRF0801 | Shaft dia. $\phi 8$ Lead1mm

Ct7



Unit:mm

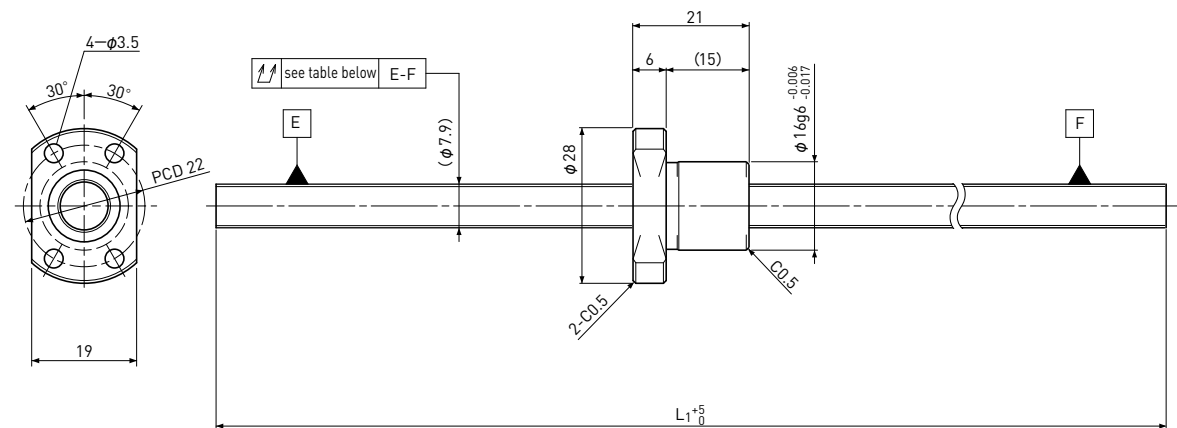
Ball Screw Specifications		
BCD		$\phi 8.20$
Thread direction		Right
Material	Shaft	S55C
	Nut	SCM415H
Surface hardness		HRC58~62 (Thread area)
Anti-rust treatment		Anti-rust oil

Unit:mm

Ball Screw Model	Travel	Grade	Shaft length		Lead accuracy		Total Run-out	Axial play	Preload Torque Nm	Basic Load Rating N	
			L ₁	L ₂	Travel deviation e_p	Variation V_{300}				Dynamic Ca	Static Coa
NSRF0801-230R230C7	205	Ct7	230	—	± 0.052	—	0.080	~ 0.020	—	650	1300

Note)Please designate end-journal profile with your sketch.

Standard products in stock NSRF series

NSRF0802 | Shaft dia. $\phi 8$ Lead 2mm**Ct7**

Unit:mm

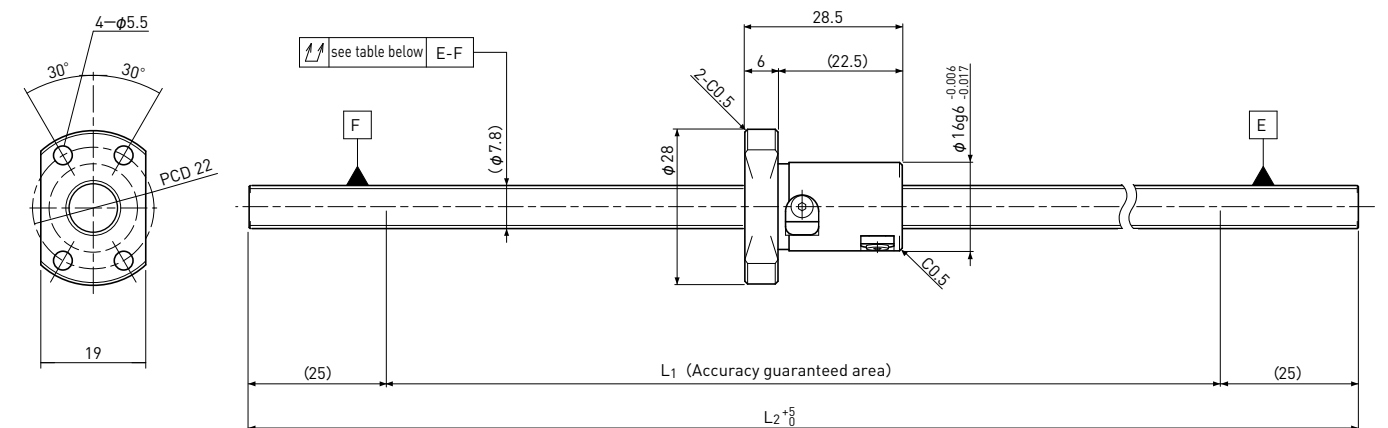
Ball Screw Specifications		
BCD		$\phi 8.30$
Thread direction		Right
Material	Shaft	S55C
	Nut	SCM415H
Surface hardness		HRC58~62 (Thread area)
Anti-rust treatment		Anti-rust oil

Unit:mm

Ball Screw Model	Travel	Grade	Shaft length		Lead accuracy		Total Run-out	Axial play	Preload Torque Nm	Basic Load Rating N	
			L ₁	L ₂	Travel deviation e_p	Variation V_{300}				Dynamic Ca	Static Coa
NSRF0802-230R230C7	205	Ct7	230	—	± 0.052	—	0.080	~ 0.020	—	1300	2300

Note) Please designate end-journal profile with your sketch.

Standard products in stock NSRF series

NSRF0805 | Shaft dia. $\phi 8$ Lead 5mm**Ct7**

Unit:mm

Ball Screw Specifications	
BCD	$\phi 8.30$
Thread direction	Right
Shaft, Nut material	SCM415H
Surface hardness	HRC58~62 (Thread area)
Anti-rust treatment	Anti-rust oil

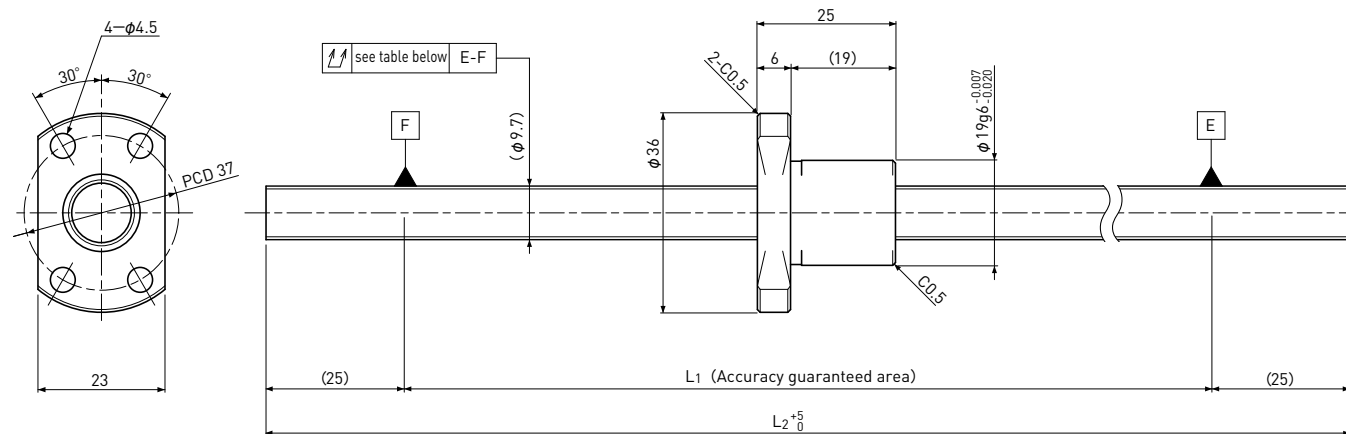
Unit:mm

Ball Screw Model	Travel	Grade	Shaft length		Lead accuracy		Total Run-out	Axial play	Preload Torque Nm	Basic Load Rating N	
			L ₁	L ₂	Travel deviation e_p	Variation V_{300}				Dynamic Ca	Static Coa
NSRF0805-400R400C7	315	Ct7	350	400	± 0.060	0.052	0.120	~ 0.020	—	1850	3000

Note) Please designate end-journal profile with your sketch.

NSRF1002 | Shaft dia. $\phi 10$ Lead 2mm

Ct7



Unit:mm

Ball Screw Specifications	
BCD	φ 10.30
Thread direction	Right
Shaft, Nut material	SCM415H
Surface hardness	HRC58~62 (Thread area)
Anti-rust treatment	Anti-rust oil

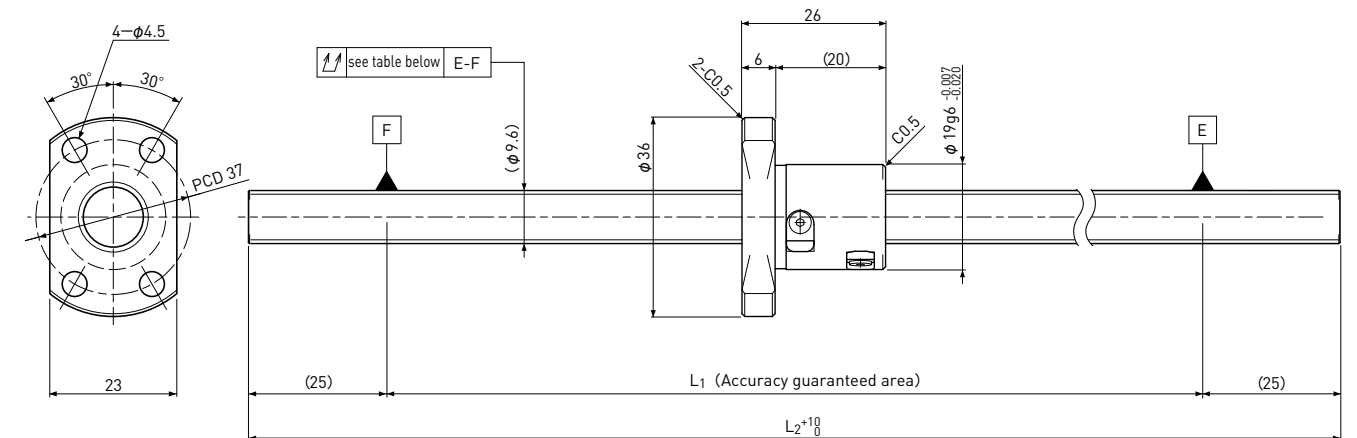
Unit: mm

Ball Screw Model	Travel	Grade	Shaft length		Lead accuracy		Total Run-out 	Axial play	Preload Torque Nm	Basic Load Rating N	
			L ₁	L ₂	Travel deviation e _p	Variation V ₃₀₀				Dynamic C _a	Static C _{0a}
NSRF1002-400R400C7	320	Ct7	350	400	±0.060	0.052	0.080	~0.020	—	2050	3650

Note) Please designate end-journal profile with your sketch.

NSRF1004 | Shaft dia. $\phi 10$ Lead 4mm

Ct7



Unit:mm

Ball Screw Specifications	
BCD	φ 10.30
Thread direction	Right
Shaft, Nut material	SCM415H
Surface hardness	HRC58~62 (Thread area)
Anti-rust treatment	Anti-rust oil

Unit:mm

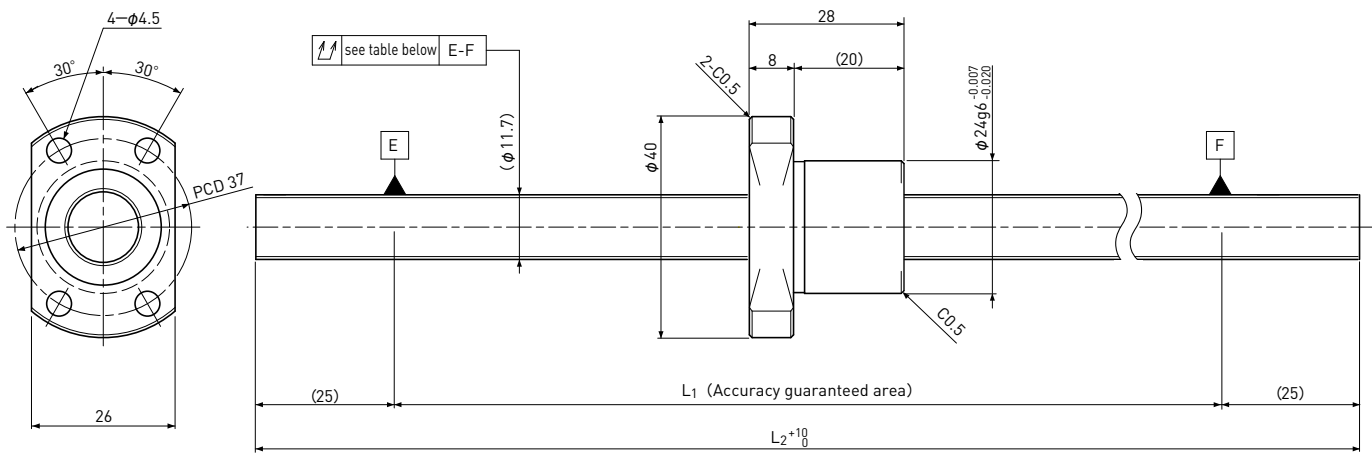
Ball Screw Model	Travel	Grade	Shaft length		Lead accuracy		Total Run-out 	Axial play	Preload Torque Nm	Basic Load Rating N	
			L ₁	L ₂	Travel deviation e _p	Variation V ₃₀₀				Dynamic C _a	Static C _{0a}
NSRF1004-450R450C7	370	Ct7	400	450	±0.069	0.052	0.120	~0.020	—	3000	5200

Note) Please designate end-journal profile with your sketch.

Standard products in stock NSRF series

NSRF1202 | Shaft dia. $\phi 12$ Lead2mm

Ct7



Unit:mm

Ball Screw Specifications	
BCD	$\phi 12.30$
Thread direction	Right
Shaft, Nut material	SCM415H
Surface hardness	HRC58~62 (Thread area)
Anti-rust treatment	Anti-rust oil

Unit:mm

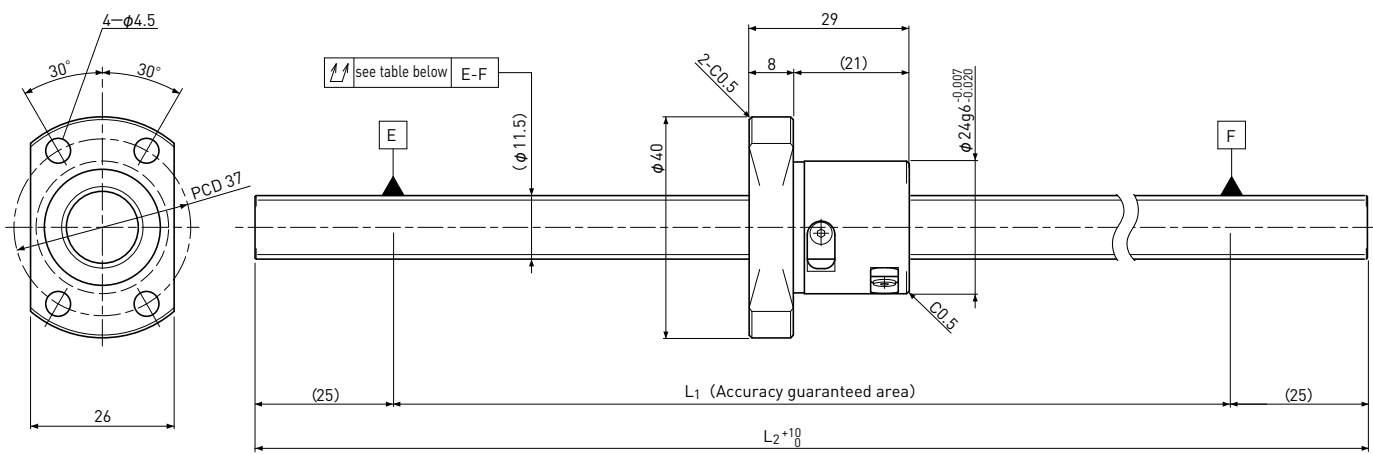
Ball Screw Model	Travel	Grade	Shaft length		Lead accuracy		Total Run-out	Axial play	Preload Torque Nm	Basic Load Rating N	
			L ₁	L ₂	Travel deviation e_p	Variation V_{300}				Dynamic Ca	Static Coa
NSRF1202-450R450C7	370	Ct7	400	450	± 0.069	0.052	0.080	~ 0.020	—	2250	4550

Note) Please designate end-journal profile with your sketch.

Standard products in stock NSRF series

NSRF1204 | Shaft dia. $\phi 12$ Lead4mm

Ct7



Unit:mm

Ball Screw Specifications	
BCD	$\phi 12.30$
Thread direction	Right
Shaft, Nut material	SCM415H
Surface hardness	HRC58~62 (Thread area)
Anti-rust treatment	Anti-rust oil

Unit:mm

Ball Screw Model	Travel	Grade	Shaft length		Lead accuracy		Total Run-out	Axial play	Preload Torque Nm	Basic Load Rating N	
			L ₁	L ₂	Travel deviation e_p	Variation V_{300}				Dynamic Ca	Static Coa
NSRF1204-450R450C7	370	Ct7	400	450	± 0.069	0.052	0.080	~ 0.020	—	4100	7400

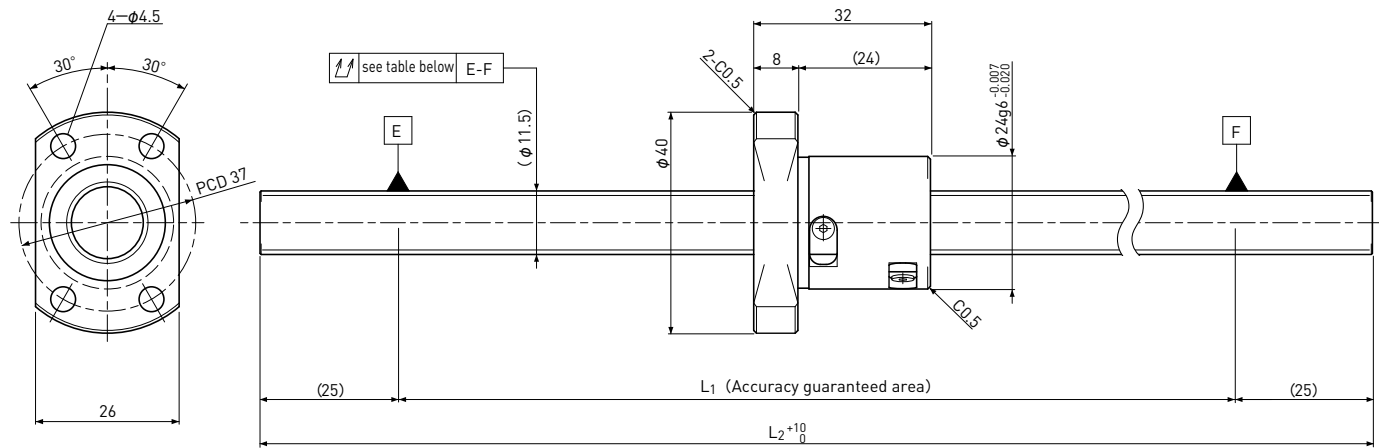
Note) Please designate end-journal profile with your sketch.

Standard products in stock NSRF series

NSRF1205

Shaft dia.φ12 Lead5mm

Ct7



Unit:mm

Ball Screw Specifications	
BCD	φ 12.30
Thread direction	Right
Shaft, Nut material	SCM415H
Surface hardness	HRC58~62 (Thread area)
Anti-rust treatment	Anti-rust oil

Unit:mm

Ball Screw Model	Travel	Grade	Shaft length		Lead accuracy		Total Run-out	Axial play	Preload Torque Nm	Basic Load Rating N	
			L ₁	L ₂	Travel deviation e _p	Variation V ₃₀₀				Dynamic Ca	Static Coa
NSRF1205-450R450C7	360	Ct7	400	450	±0.069	0.052	0.080	~0.020	—	4100	7400

Note)Please designate end-journal profile with your sketch.

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(μm)

●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 20μm or less) and Ct10 (Axial play 50μm or less).

●Material & Surface hardness

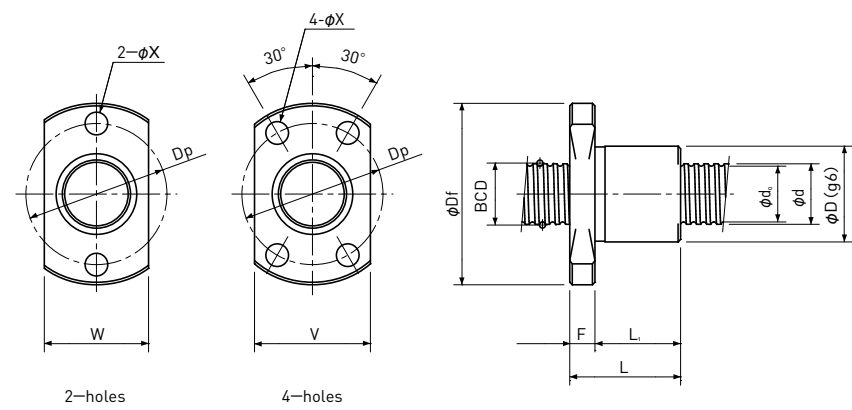
NSG series consists of Shaft and Nut materials SCM415(Carburizing and quenching) and Surface hardness is HRC58~62.
NSR series consists of Shaft materials S55C (Induction hardening)and SCM415(carburizing and quenching) depending on the size. Nut is made of materials SCM415(carburizing and quenching).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

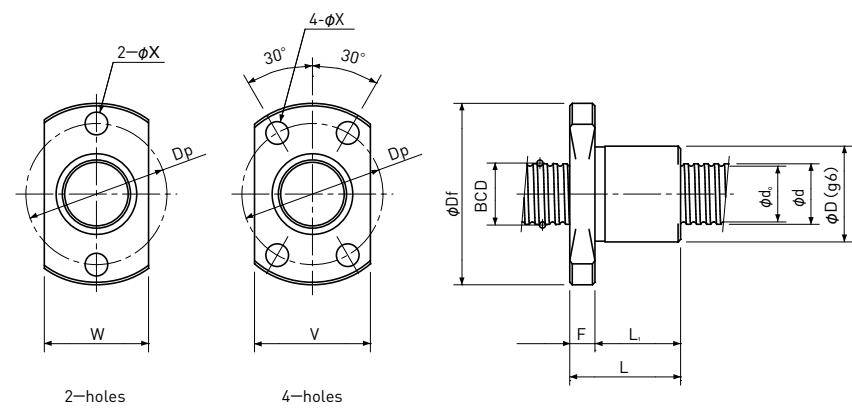
Model number	Shaft nominal dia. d	Lead	BCD	Basic Load Rating N			Nut dimension									Model number
				Dynamic Ca	Static Coa		D	Df	L	L ₁	F	W	V	Dp	Bolt Hole X	
NSGF0401	4	1	4.15	450 / 450	600 / 600		11	23	18	14	4	—	15	17	3.4	NSGF0401
NSGF0601	6	1	6.20	560 / 560	950 / 950		12	24	20	14	6	—	16	18	3.4	NSGF0601
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.

Basic Load Rating N	
Dynamic Ca	Static Coa
1000 / 640	3300 / 1650
Preload type	
Backlash type	

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											
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.

Basic Load Rating N	
Dynamic Ca	Static Coa
1000 / 640	3300 / 1650
Preload type	
Backlash type	