ABSSAC Ground Ball Screws

ABSSAC

PRECISION MOTION SINCE 1982

ABSSAC
PRECISION MOTION SINCE 1982

SG series Standardized Precision Ball Screws

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

	Lead											
Shaft dia.	0.5	1	2	2.5	4	5	6	8	10	12	15	20
3	•	•										
4		•	•									
5					•							
6		•	•	•			•		•			
8		•	•	•	•	•		•		•		
10		•	•		•	•			•		•	
12			•						•			
14			•		•							
15						•			•			•

Accuracy Grade & Axial play

Accuracy grade of SG series (Standardized Precision Ball Screws) are based on JIS C3 and JIS C5. According to accuracy grade, Axial play 0 (Preload: C3) and 0.005mm or less (C5) are in stock.

Material & Surface hardness

SG series (Standardized Precision Ball Screws) consists of Shaft and Nut materials SCM415 (Carburizing and quenching) and Surface hardness is HRC58~62.

Lubrication

SG series(Standardized Precision Ball Screws) 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, ABSSAC 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 ABSSAC.

Model number notation

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

SG	04	01	—	046	R	085	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 units after end-journal machining)
⑤ Thread direction(R=Right-hand)
⑥ Screw Shaft total length(mm)
(Specify in 1mm units)
⑦ Accuracy grade(C3 or C5)
⑧ Shaft supported end profile
(Refer to Fig. A-22 below : A-type,B-type,C-type)
⑨ Anti-rust oil or Lubricant
0 : ABSSAC grease (MSG No.2)
1 : Anti-rust oi(l Non Ruster PZ2)
2 : Multemp PS2 grease
3 : Other
⑩ Nut Flange direction (Refer to Fig. A-23 below)

Fig. A-22 : Shaft supported end profile

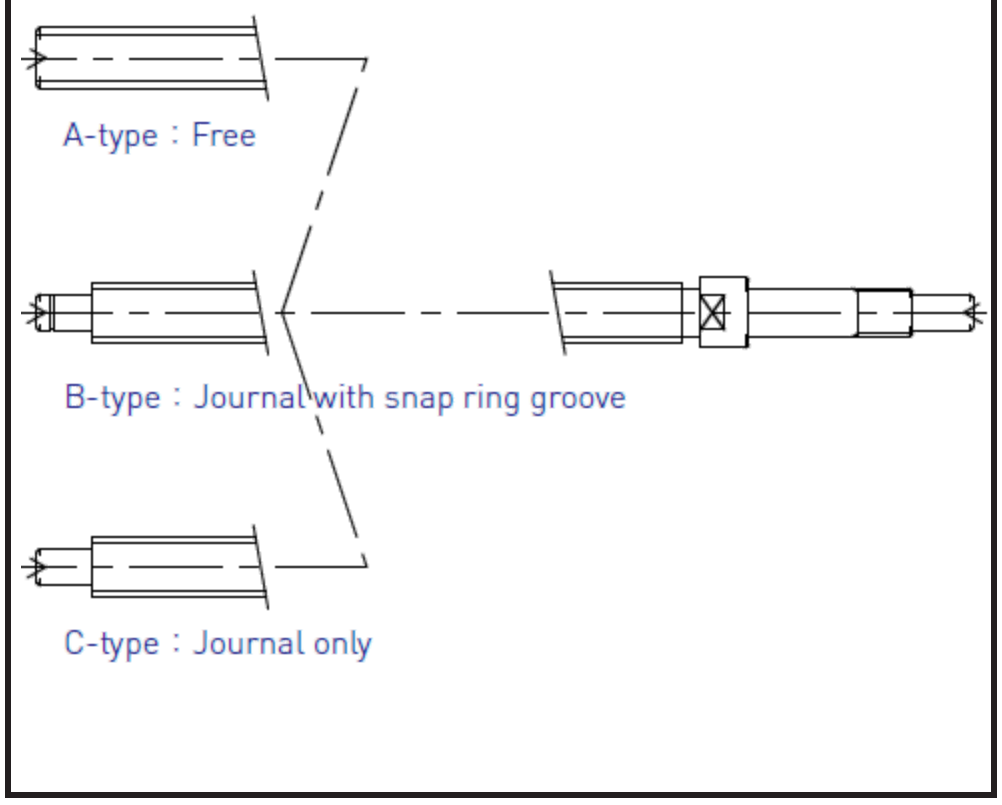
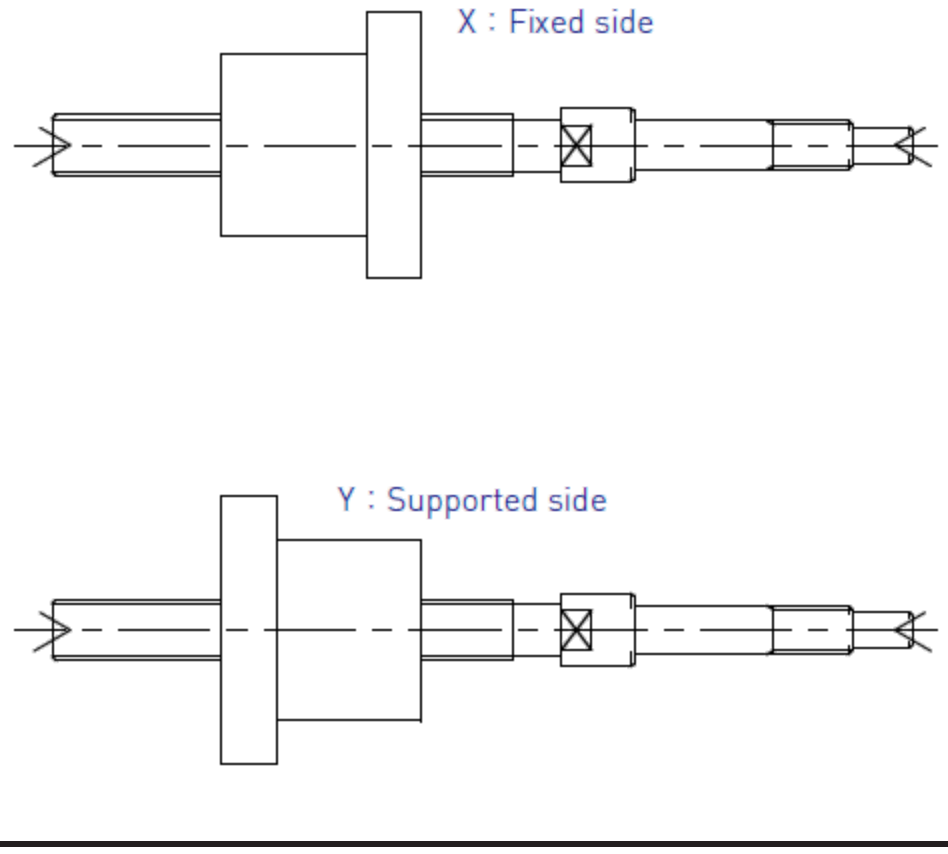


Fig. A-23 : Nut Flange direction

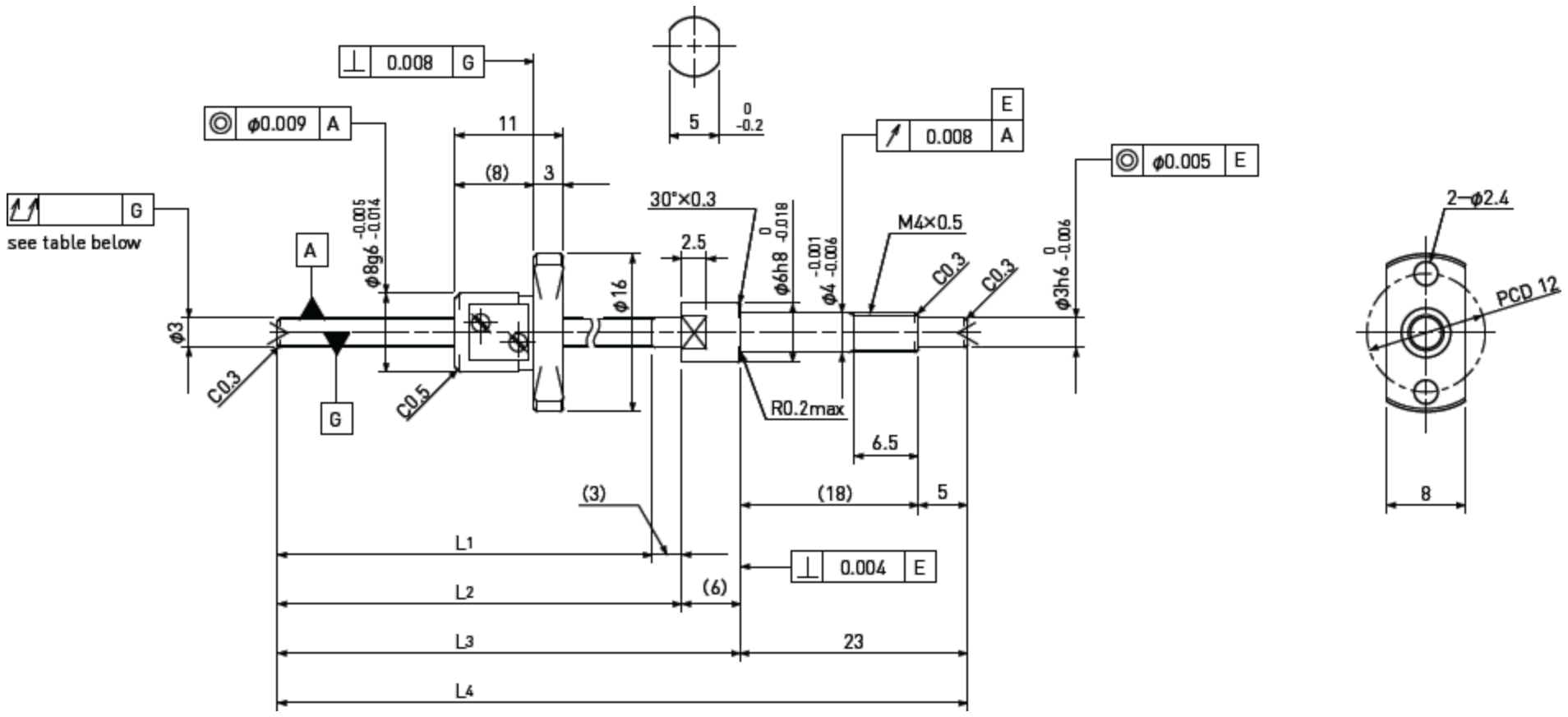


Note 1) The detail of end-journal dimension for each size is shown from next page.
Note 2) ABSSAC does not make additional Nut machining.
Note 3) The specification is subject to change without notice.
Note 4) If the other configuration except (A,B,C) is requested, please contact ABSSAC.

ABSSAC
PRECISION MOTION SINCE 1982

Standard products in stock SG series

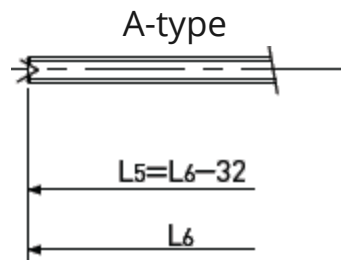
SG0300.5 | Shaft dia. ø3 | Lead 0.5mm | C3



Unit : mm

Ball Screw Specifications	
Ball size	ø0.4
Number of thread	1
Thread direction	Right
Shaft root dia.	ø2.6
Number of circuit	2.7×1
Shaft/Nut Material	SCM415H
Surface hardness	HRC58~62 (Thread area)
Anti-rust treatment	Anti-rust oil

Supported-side end-journal profile



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

Support-unit Recommendation		
	Supported-side:	-
	Fixed-side:	EK4

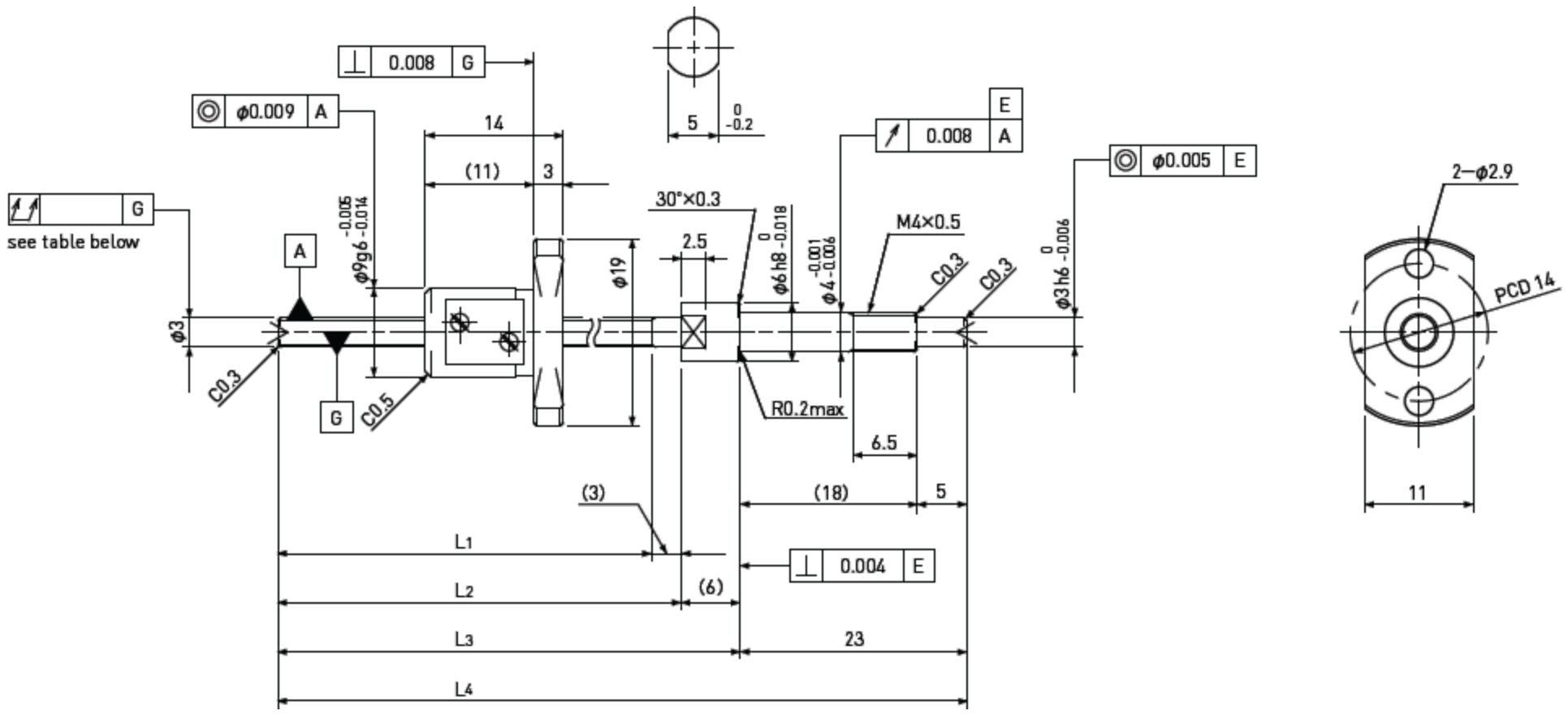
Unit : mm

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
SG0300.5-038R070C3	25	C3	38	41	47	70	±0.008	0.008	0.025	~0.005	-	150	220

ABSSAC
PRECISION MOTION SINCE 1982

Standard products in stock SG series

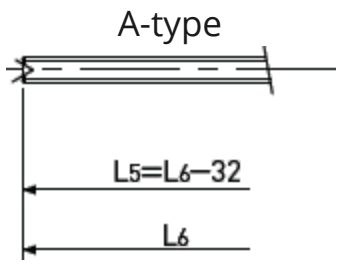
SG0301 | Shaft dia. ø3 | Lead 1mm | C3



Unit : mm

Ball Screw Specifications	
Ball size	ø0.6
Number of thread	1
Thread direction	Right
Shaft root dia.	ø2.4
Number of circuit	3.7×1
Shaft/Nut Material	SCM415H
Surface hardness	HRC58~62 (Thread area)
Anti-rust treatment	Anti-rust oil

Supported-side end-journal profile



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

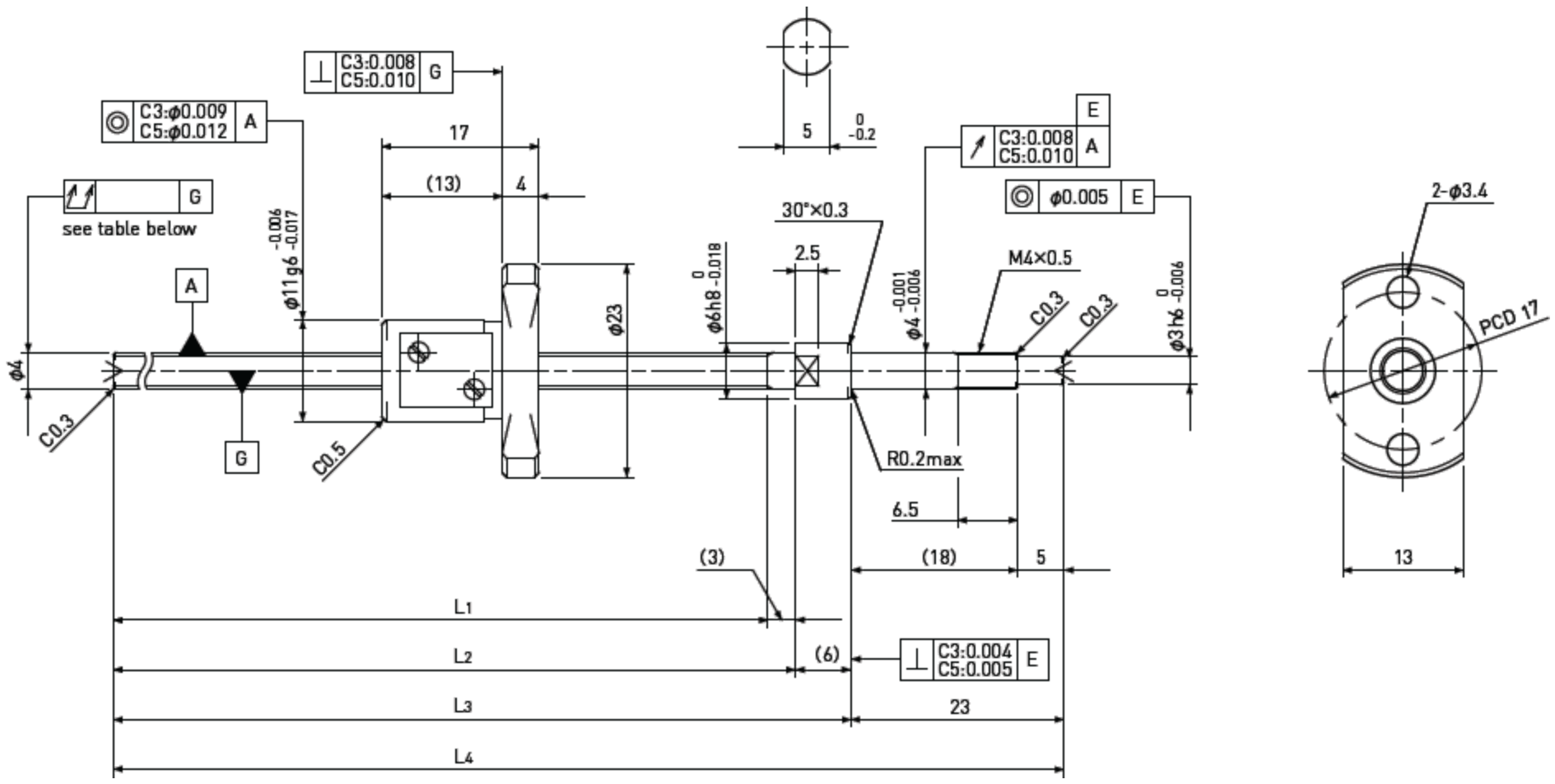
Support-unit Recommendation		
	Supported-side:	-
	Fixed-side:	EK4

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
SG0301-038R070C3	20	C3	38	41	47	70	±0.008	0.008	0.025	~0.005	-	330	440

Standard products in stock SG series

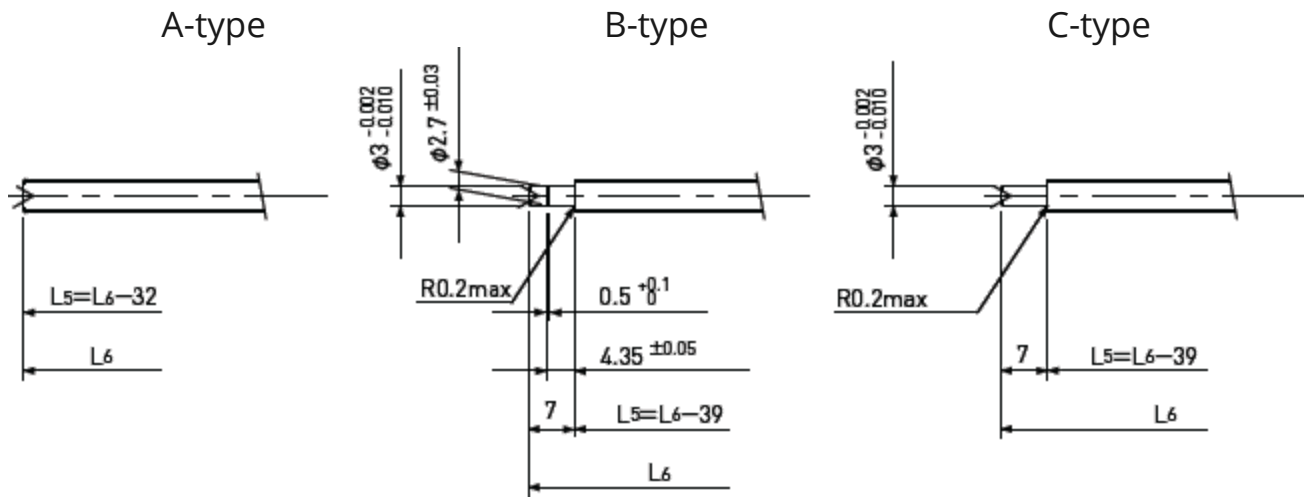
SG0401 | Shaft dia. ø4 | Lead 1mm | C3&C5



Unit : mm

Ball Screw Specifications	
Ball size	ø0.8
Number of thread	1
Thread direction	Right
Shaft root dia.	ø3.3
Number of circuit	3.7×1
Shaft/Nut Material	SCM415H
Surface hardness	HRC58~62 (Thread area)
Anti-rust treatment	Anti-rust oil

Supported-side end-journal profile



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

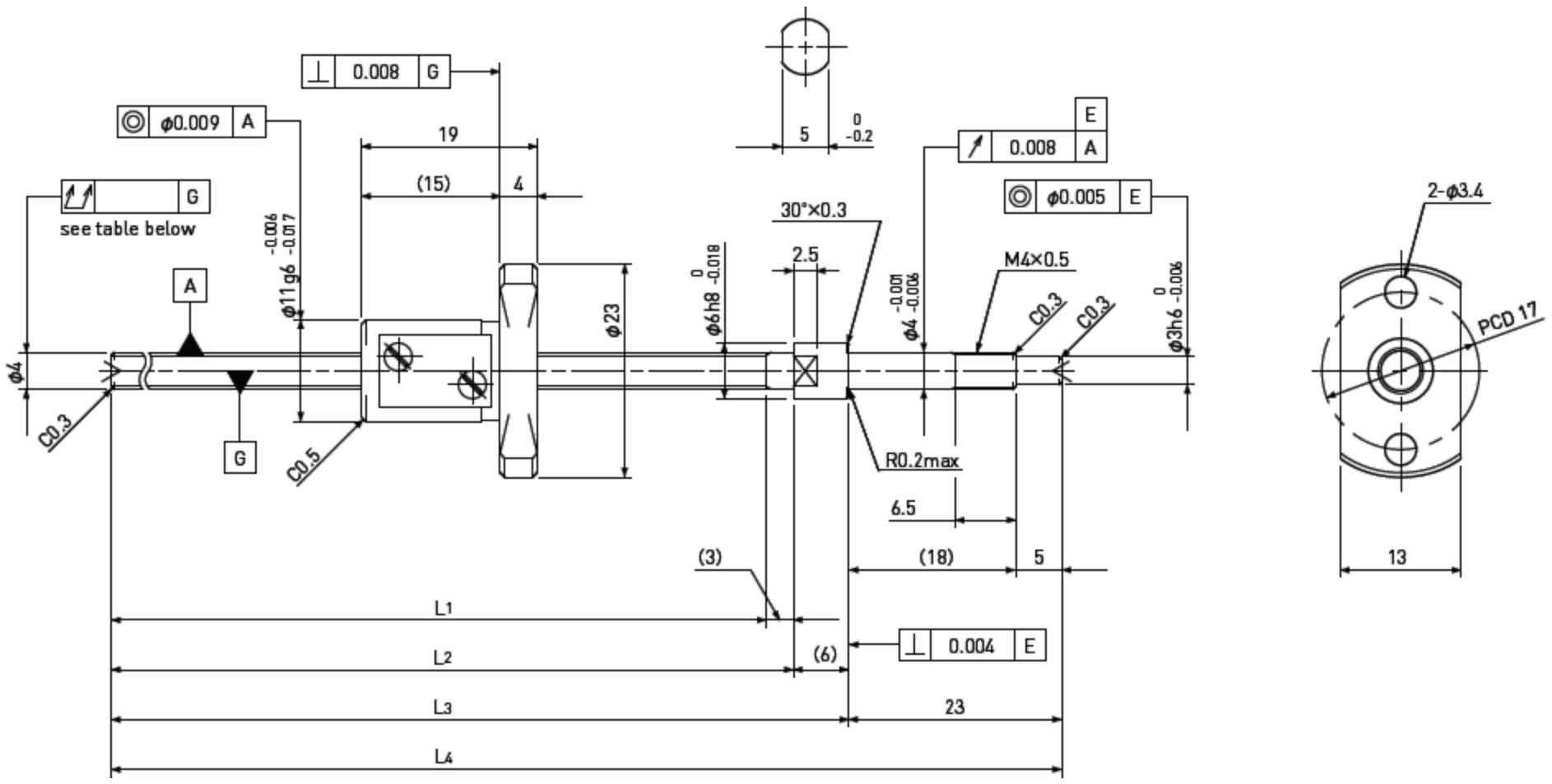
Support-unit Recommendation		
Supported-side:	SUP03-S	
Fixed-side:	EK4	

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
SG0401-063R095C3	45	C3	63	66	72	95	±0.008	0.008	0.025	0 Spacer Ball (1:1)	~0.004	350	400
SG0401-083R115C3	65	C3	83	86	92	115	±0.008	0.008	0.025				
SG0401-103R135C3	85	C3	103	106	112	135	±0.010	0.008	0.035				
SG0401-063R095C5	45	C5	63	66	72	95	±0.018	0.018	0.035	~0.005	-	560	790
SG0401-083R115C5	65	C5	83	86	92	115	±0.018	0.018	0.035				
SG0401-103R135C5	85	C5	103	106	112	135	±0.020	0.018	0.050				

Standard products in stock SG series

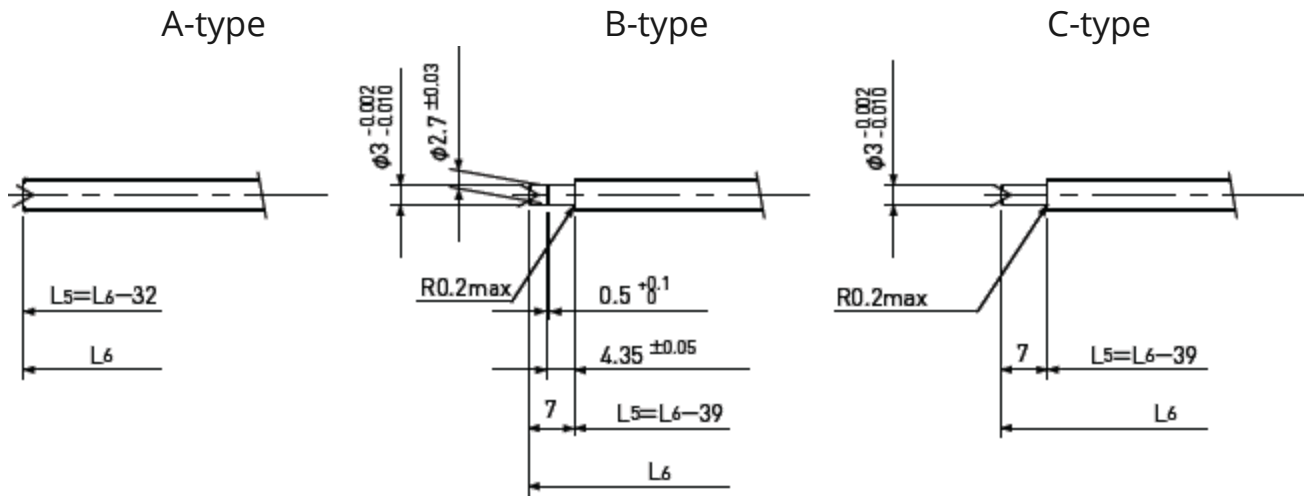
SG0402 | Shaft dia. ø4 | Lead 2mm | C3



Unit : mm

Ball Screw Specifications	
Ball size	ø0.8
Number of thread	1
Thread direction	Right
Shaft root dia.	ø3.3
Number of circuit	2.7×1
Shaft/Nut Material	SCM415H
Surface hardness	HRC58~62 (Thread area)
Anti-rust treatment	Anti-rust oil

Supported-side end-journal profile



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

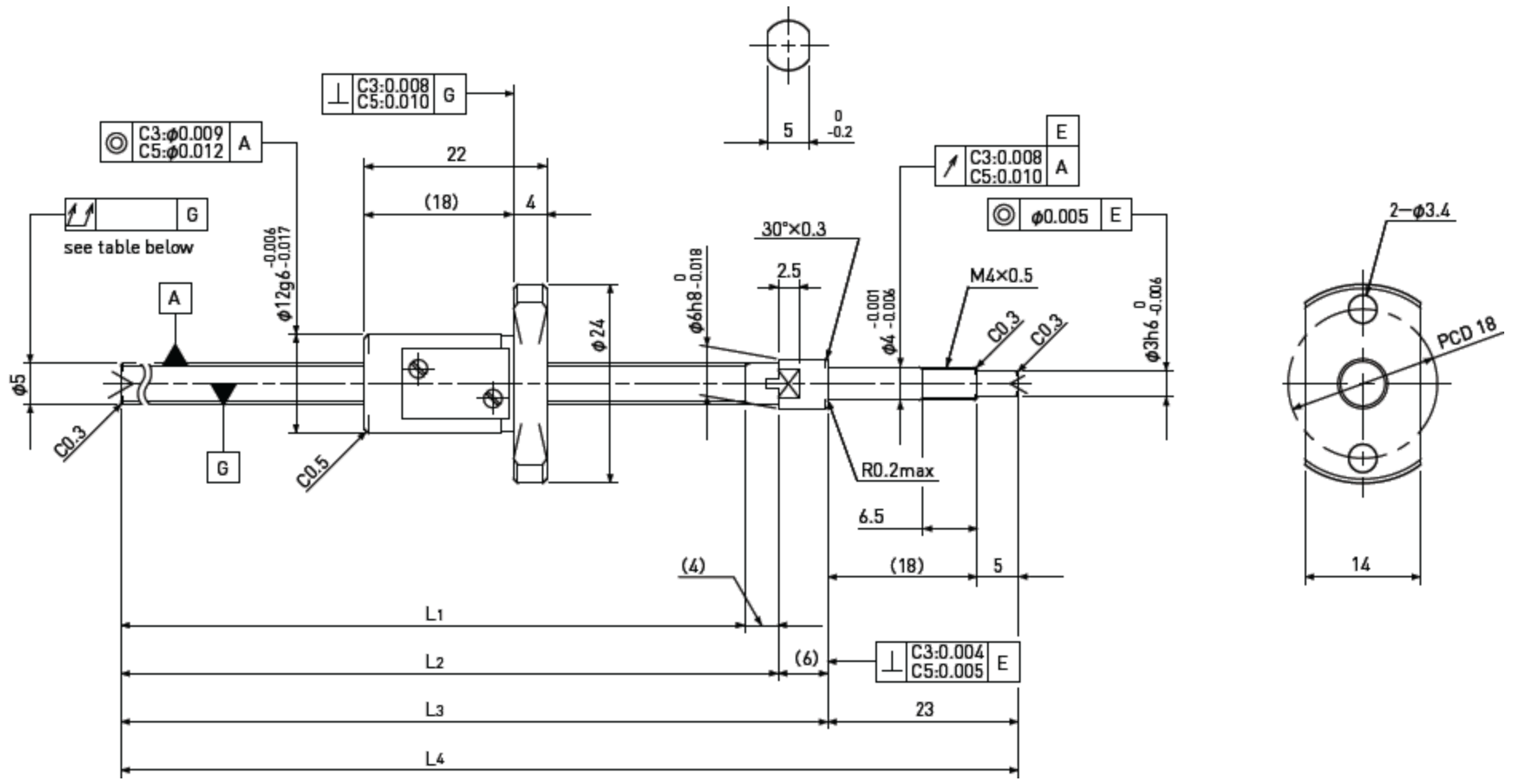
Support-unit Recommendation		
Supported-side:	SUP03-S
Fixed-side:	EK4

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
SG0402-103R135C3	80	C3	103	106	112	135	±0.010	0.008	0.035	~0.005	-	420	570

Standard products in stock SG series

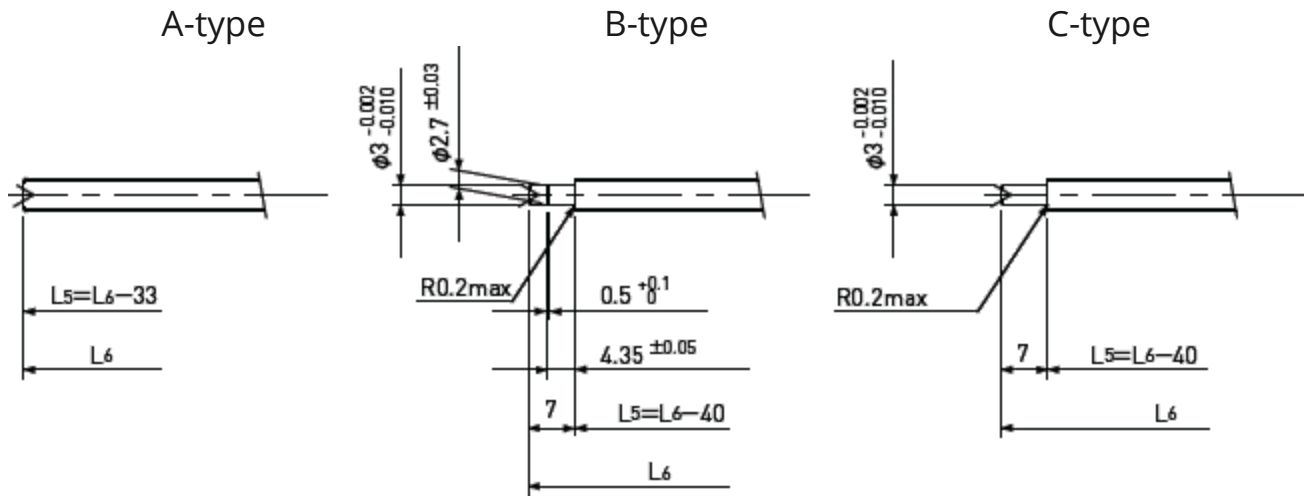
SG0504 | Shaft dia. ø5 | Lead 4mm | C3&C5



Unit : mm

Ball Screw Specifications	
Ball size	ø0.8
Number of thread	1
Thread direction	Right
Shaft root dia.	ø4.3
Number of circuit	2.7×1
Shaft/Nut Material	SCM415H
Surface hardness	HRC58~62 (Thread area)
Anti-rust treatment	Anti-rust oil

Supported-side end-journal profile



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

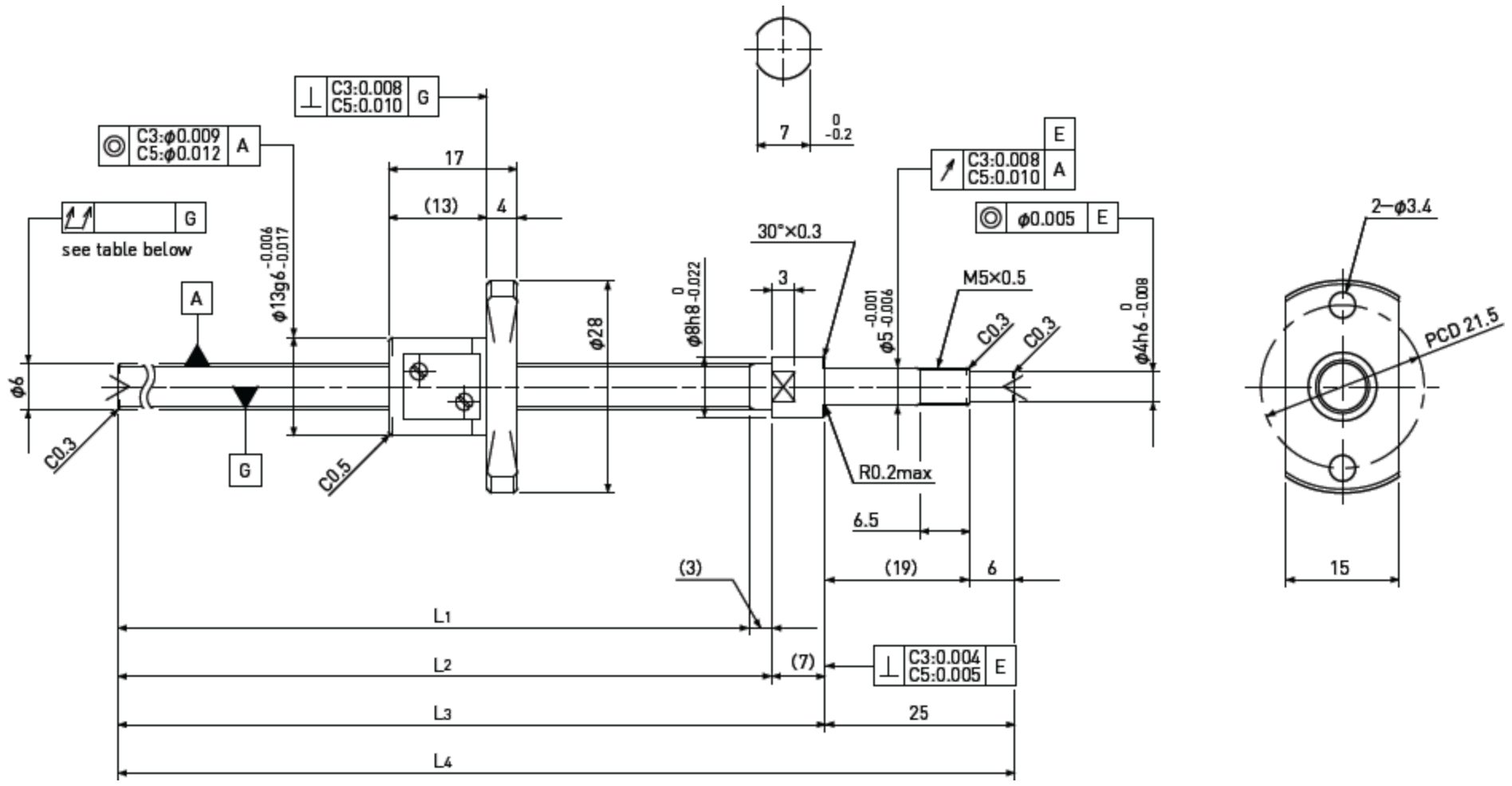
Support-unit Recommendation	
Supported-side:	SUP03-S
Fixed-side:	EK4

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
SG0504-062R095C3	40	C3	62	66	72	95	±0.008	0.008	0.025	0 Spacer Ball (1:1)	~0.005	300	360
SG0504-112R145C3	90	C3	112	116	122	145	±0.010	0.008	0.035				
SG0504-062R095C5	40	C5	62	66	72	95	±0.018	0.018	0.035	~0.005	-	470	720
SG0504-112R145C5	90	C5	112	116	122	145	±0.020	0.018	0.050				

Standard products in stock SG series

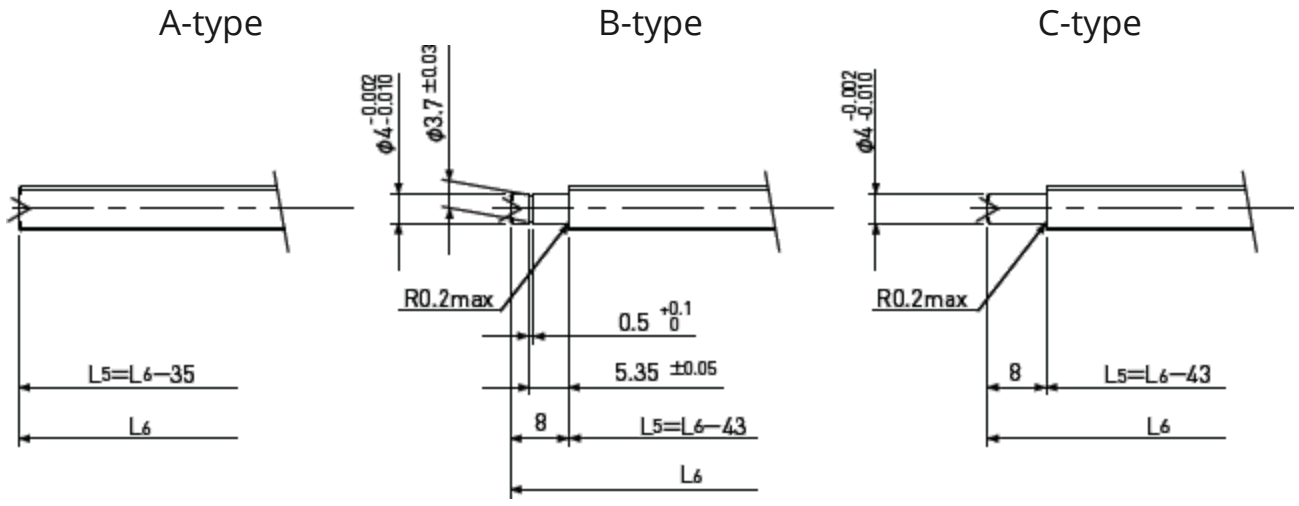
SG0601 | Shaft dia. ø6 | Lead 1mm | C3&C5



Unit : mm

Ball Screw Specifications	
Ball size	ø0.8
Number of thread	1
Thread direction	Right
Shaft root dia.	ø5.3
Number of circuit	3.7×1
Shaft/Nut Material	SCM415H
Surface hardness	HRC58~62 (Thread area)
Anti-rust treatment	Anti-rust oil

Supported-side end-journal profile



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

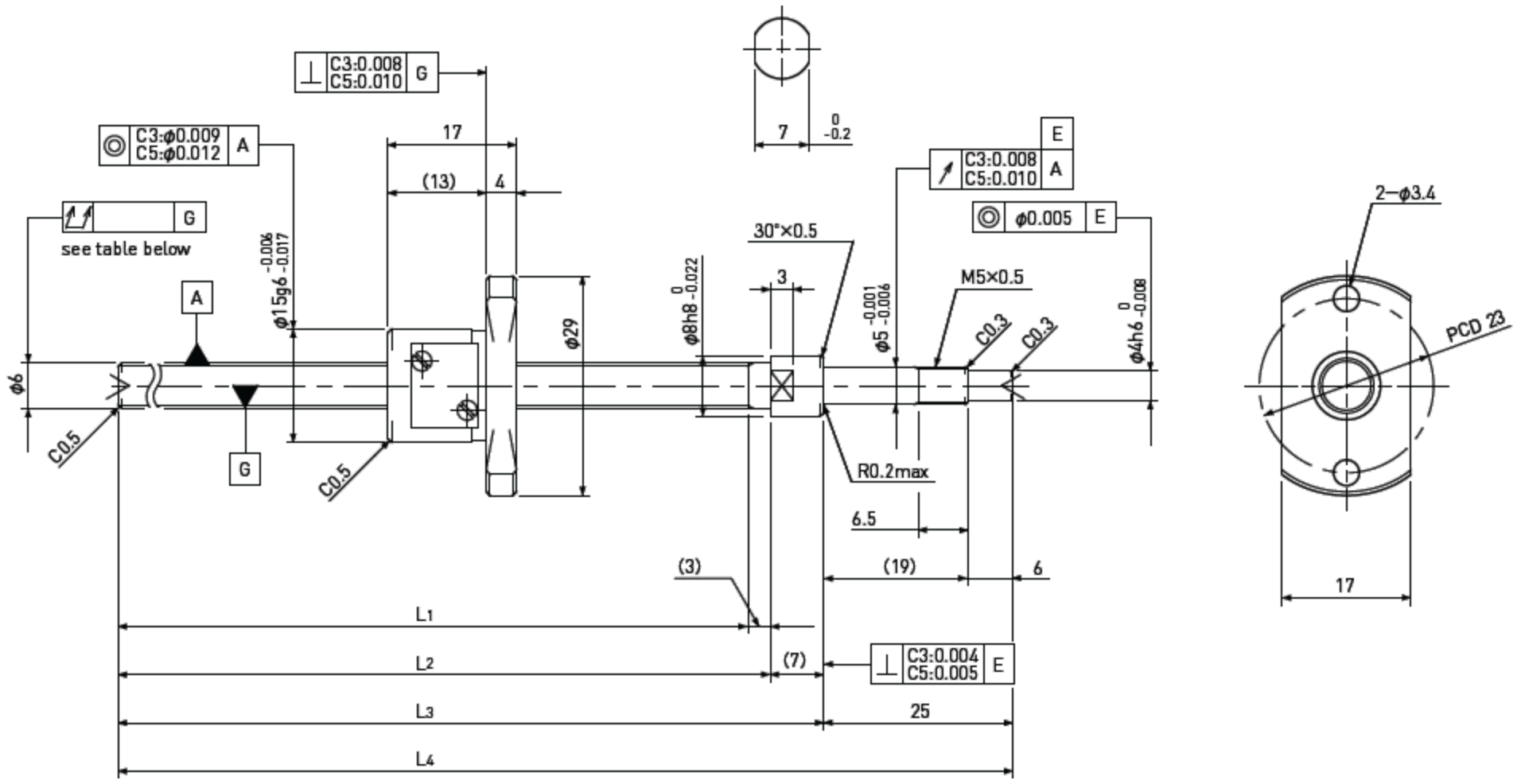
Support-unit Recommendation		
Supported-side:	SUP04-S	
Fixed-side:	EK5	

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
SG0601-085R120C3	65	C3	85	88	95	120	±0.008	0.008	0.025	0 Spacer Ball (1:1)	~0.006	430	610
SG0601-110R145C3	90	C3	110	113	120	145	±0.010	0.008	0.035				
SG0601-135R170C3	115	C3	135	138	145	170	±0.010	0.008	0.035				
SG0601-085R120C5	65	C5	85	88	95	120	±0.018	0.018	0.035	~0.005	-	680	1200
SG0601-110R145C5	90	C5	110	113	120	145	±0.020	0.018	0.050				
SG0601-135R170C5	115	C5	135	138	145	170	±0.020	0.018	0.050				

Standard products in stock SG series

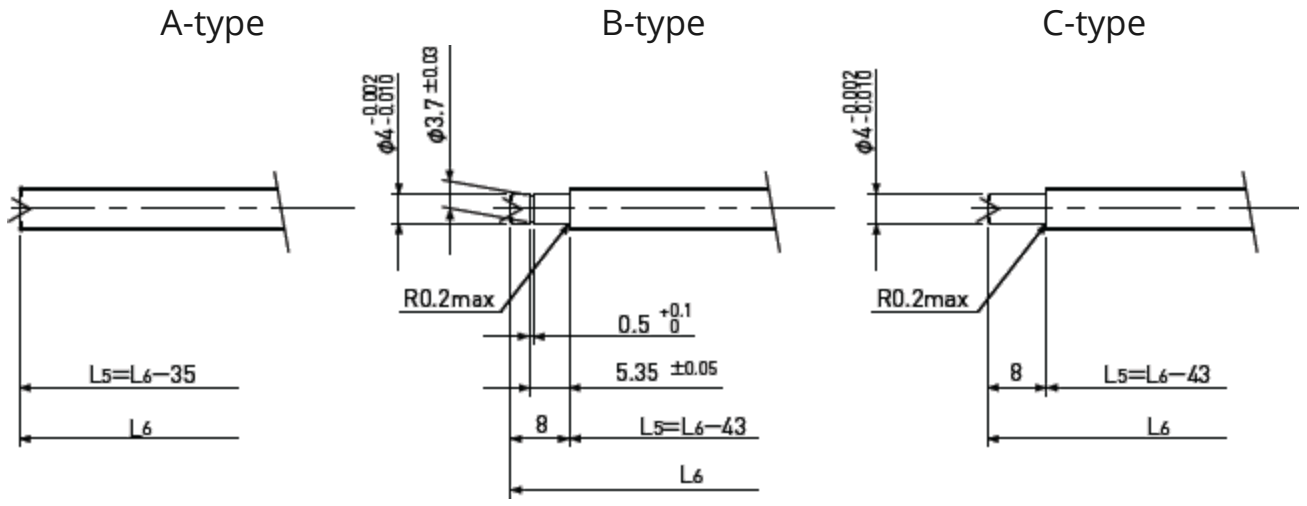
SG0602 | Shaft dia. ø6 | Lead 2mm | C3&C5



Unit : mm

Ball Screw Specifications	
Ball size	ø1.0
Number of thread	1
Thread direction	Right
Shaft root dia.	ø5.1
Number of circuit	2.7×1
Shaft/Nut Material	SCM415H
Surface hardness	HRC58~62 (Thread area)
Anti-rust treatment	Anti-rust oil

Supported-side end-journal profile



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

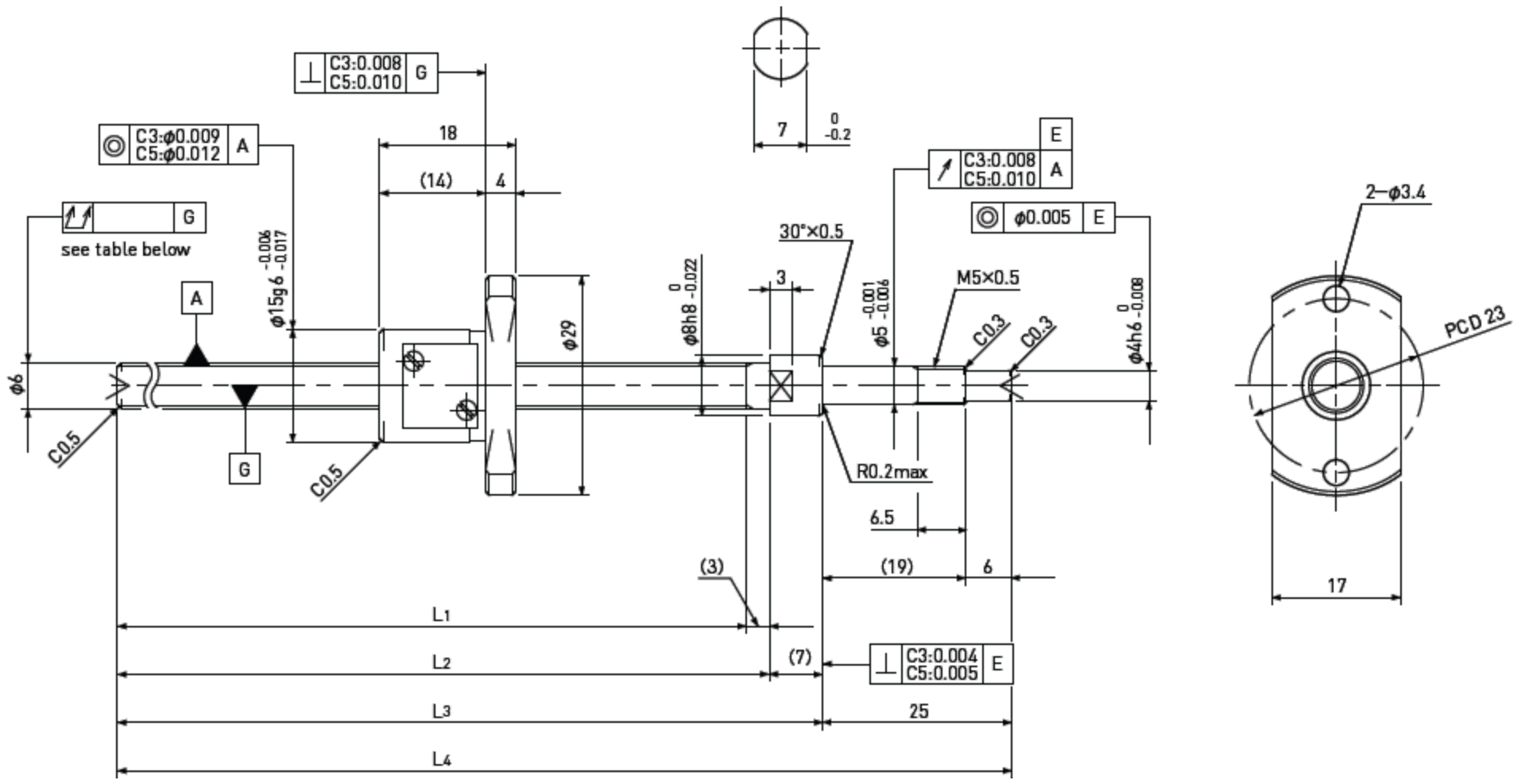
Support-unit Recommendation		
Supported-side:	SUP04-S	
Fixed-side:	EK5	

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
SG0602-085R120C3	65	C3	85	88	95	120	±0.008	0.008	0.025	0 Spacer Ball (1:1)	0.003~0.007	470	590
SG0602-135R170C3	115	C3	135	138	145	170	±0.010	0.008	0.035				
SG0602-085R120C5	65	C5	85	88	95	120	±0.018	0.018	0.035	~0.005	-	750	1200
SG0602-135R170C5	115	C5	135	138	145	170	±0.020	0.018	0.050				

Standard products in stock SG series

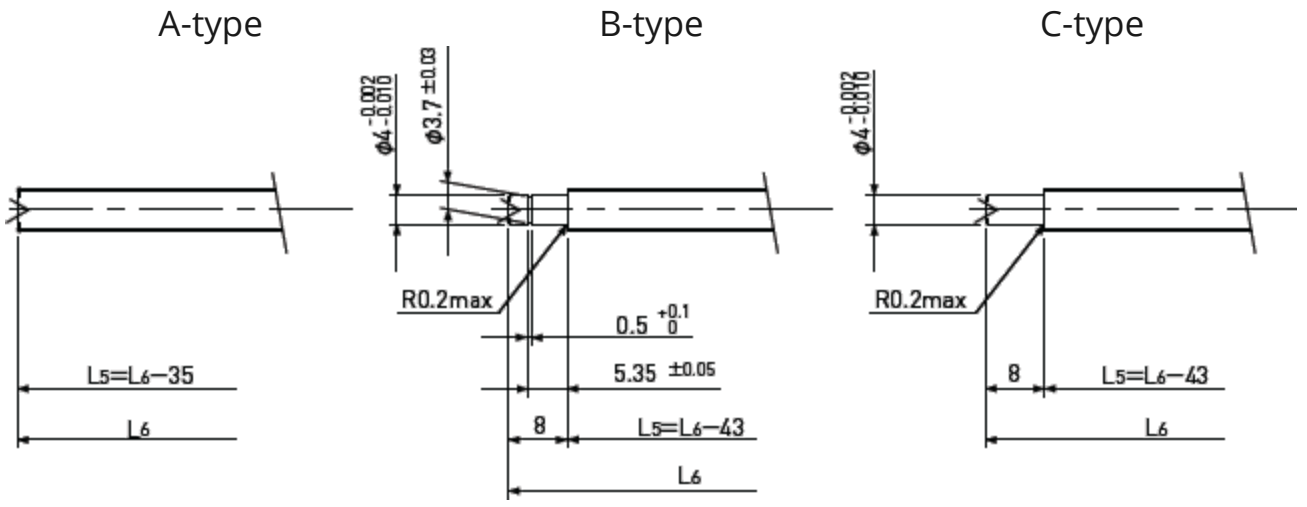
SG0602.5 | Shaft dia. ø6 | Lead 2.5mm | C3&C5



Unit : mm

Ball Screw Specifications	
Ball size	ø1.0
Number of thread	1
Thread direction	Right
Shaft root dia.	ø5.1
Number of circuit	2.7×1
Shaft/Nut Material	SCM415H
Surface hardness	HRC58~62 (Thread area)
Anti-rust treatment	Anti-rust oil

Supported-side end-journal profile



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

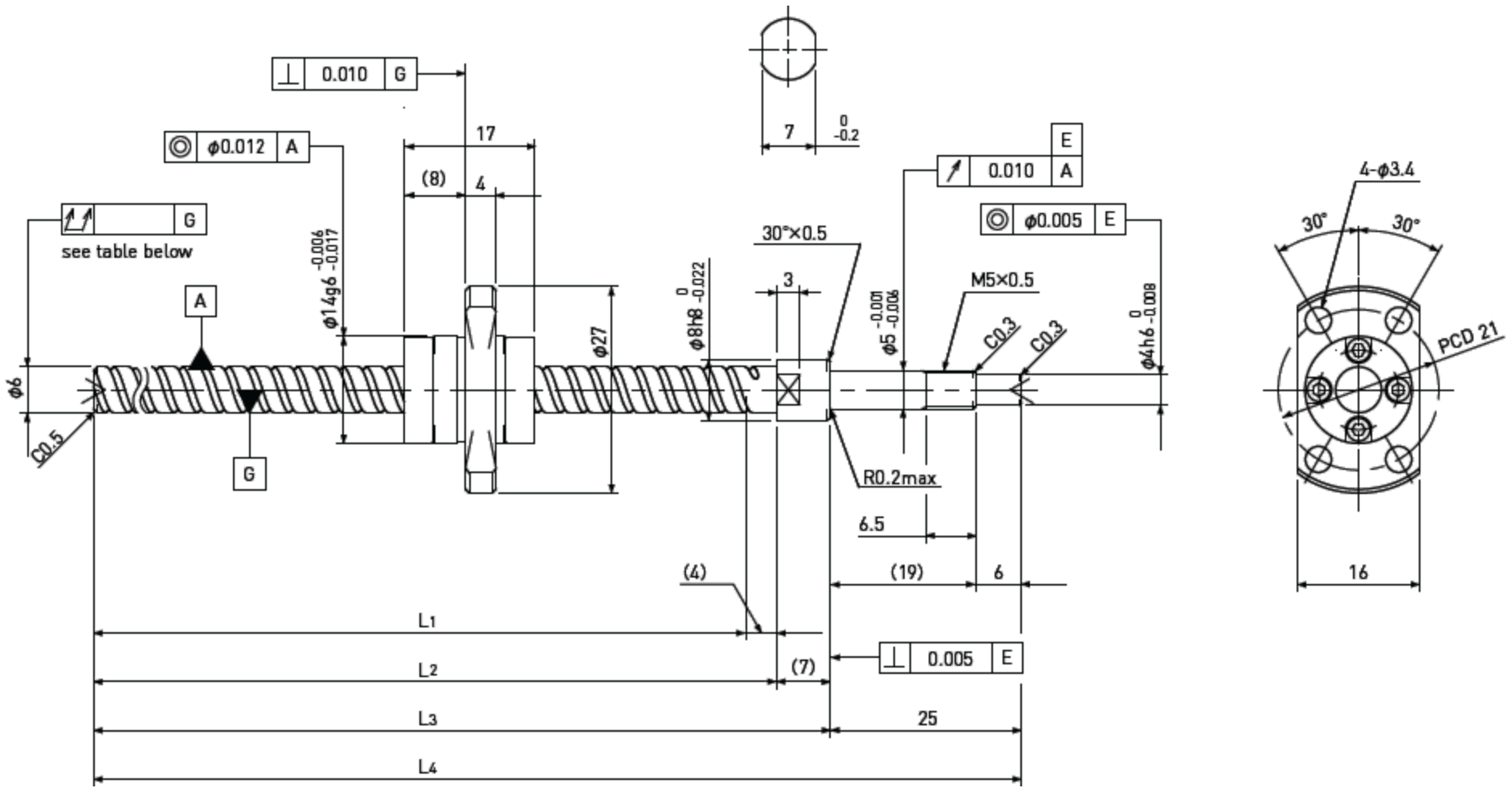
Support-unit Recommendation		
Supported-side:	SUP04-S	
Fixed-side:	EK5	

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
SG0602.5-085R120C3	65	C3	85	88	95	120	±0.008	0.008	0.025	0 Spacer Ball (1:1)	0.003~0.007	470	590
SG0602.5-135R170C3	115	C3	135	138	145	170	±0.010	0.008	0.035				
SG0602.5-085R120C5	65	C5	85	88	95	120	±0.018	0.018	0.035	~0.005	-	750	1200
SG0602.5-135R170C5	115	C5	135	138	145	170	±0.020	0.018	0.050				

Standard products in stock SG series

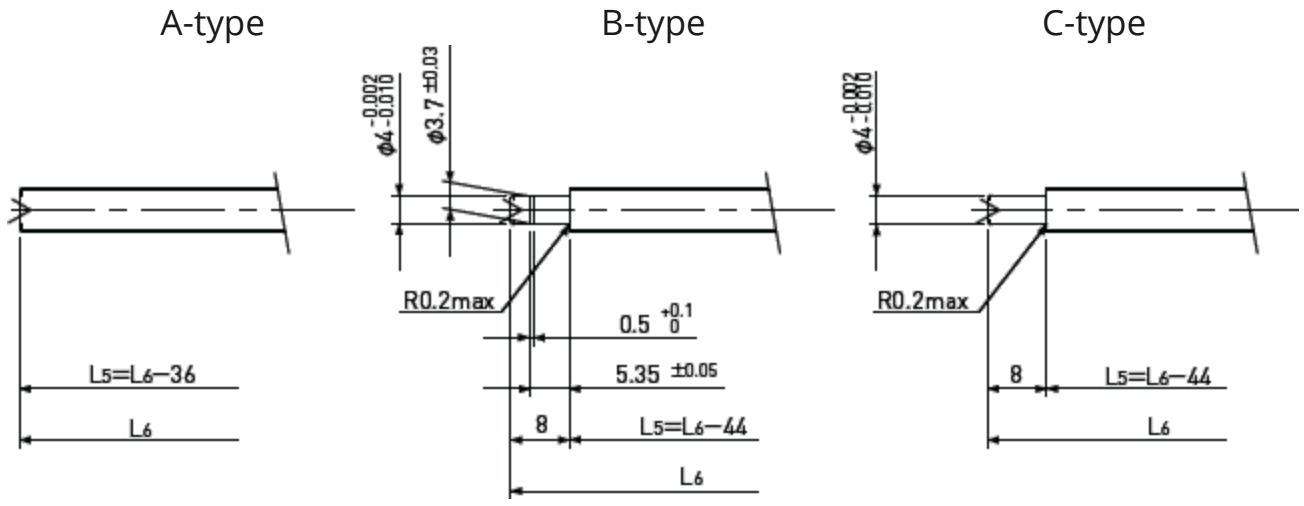
SG0606 | Shaft dia. ø6 | Lead 6mm | C5



Unit : mm

Ball Screw Specifications	
Ball size	ø1.0
Number of thread	2
Thread direction	Right
Shaft root dia.	ø5.2
Number of circuit	1.6×2
Shaft/Nut Material	SCM415H
Surface hardness	HRC58~62 (Thread area)
Anti-rust treatment	Anti-rust oil

Supported-side end-journal profile



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

Support-unit Recommendation		
Supported-side:	SUP04-S	
Fixed-side:	EK5	

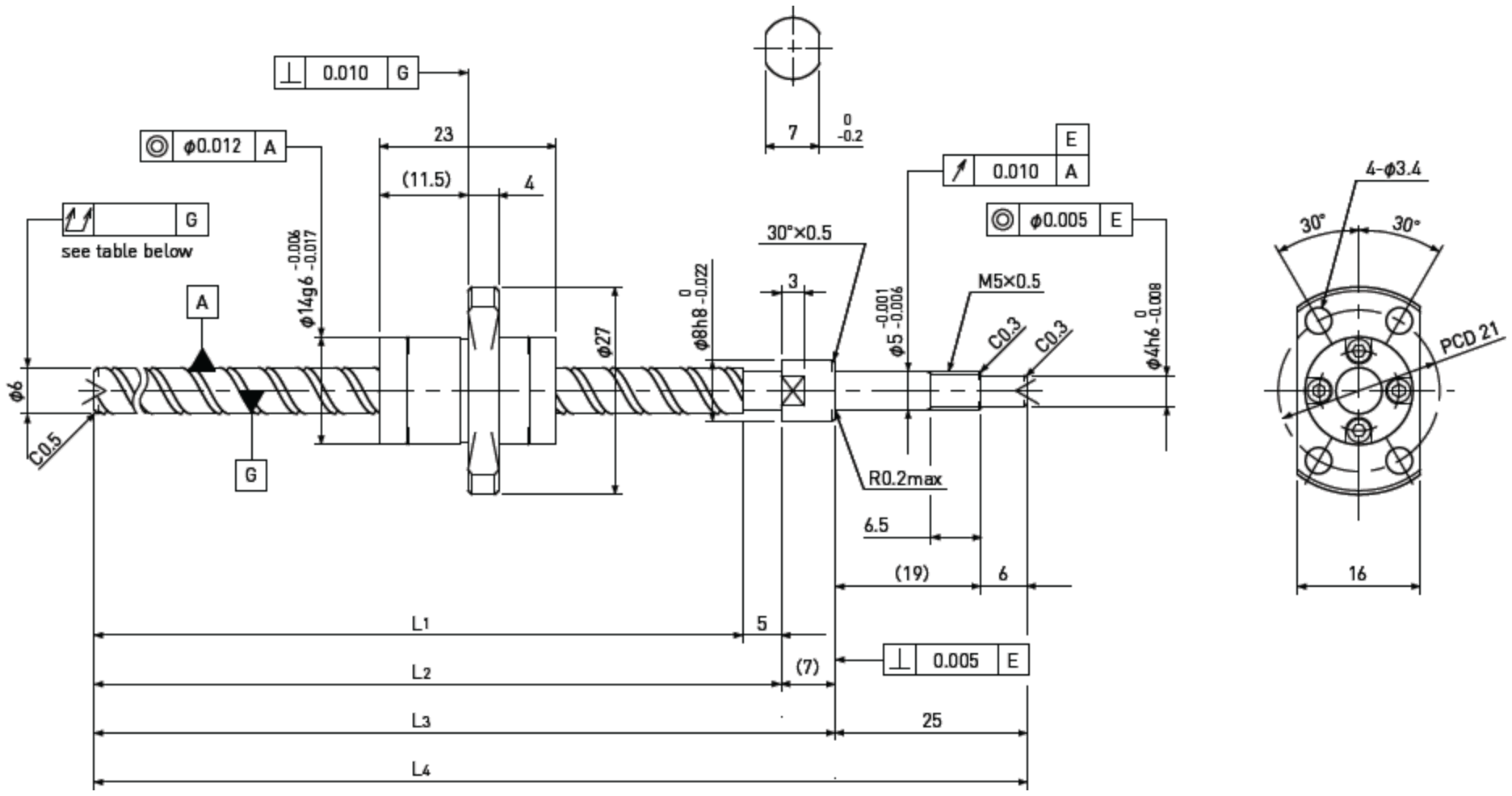
Unit : mm

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
SG0606-084R120C5	65	C5	84	88	95	120	±0.018	0.018	0.035	~0.005	-	870	1450
SG0606-134R170C5	115	C5	134	138	145	170	±0.020	0.018	0.050				

ABSSAC
PRECISION MOTION SINCE 1982

Standard products in stock SG series

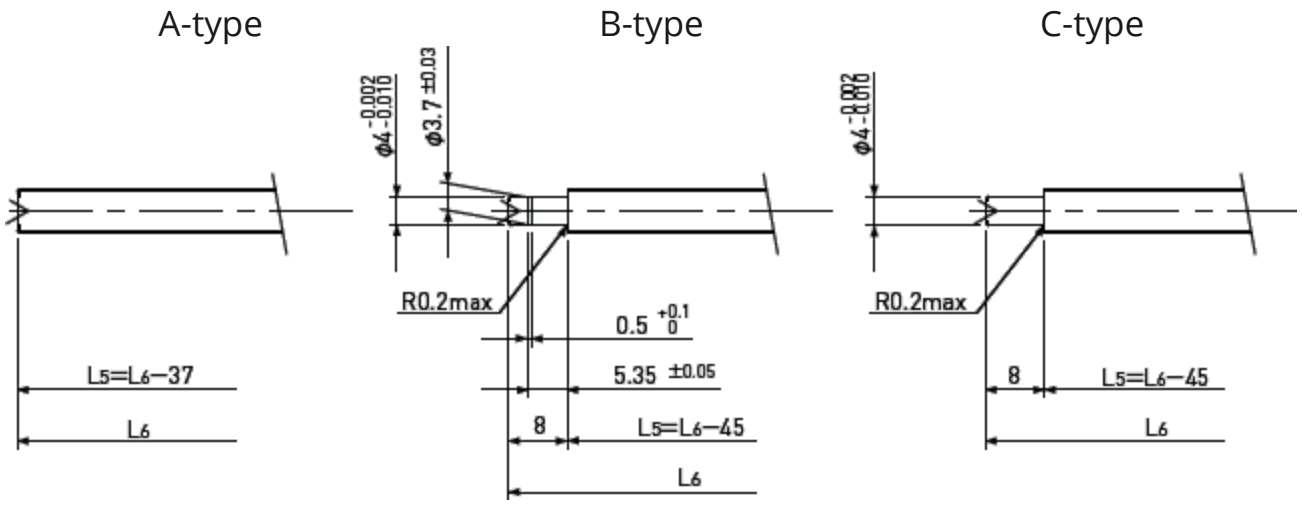
SG0610 | Shaft dia. ø6 | Lead 10mm | C5



Unit : mm

Ball Screw Specifications	
Ball size	ø1.2
Number of thread	2
Thread direction	Right
Shaft root dia.	ø5.0
Number of circuit	1.2×1
Shaft/Nut Material	SCM415H
Surface hardness	HRC58~62 (Thread area)
Anti-rust treatment	Anti-rust oil

Supported-side end-journal profile



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

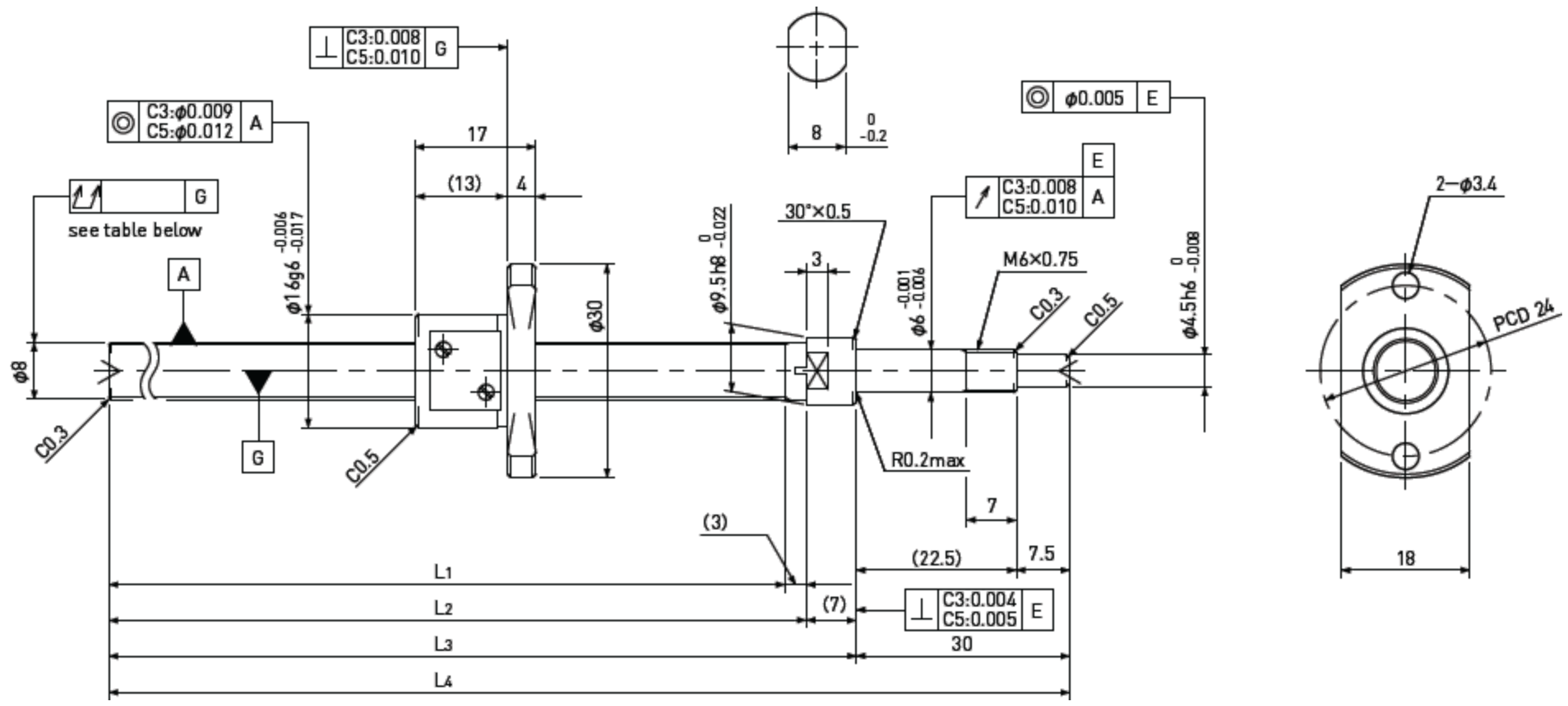
Support-unit Recommendation		
Supported-side:	SUP04-S	
Fixed-side:	EK5	

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
SG0610-133R170C5	110	C5	133	138	145	170	±0.020	0.018	0.050	~0.005	-	950	1600

Standard products in stock SG series

SG0801 | Shaft dia. ø8 | Lead 1mm | C3&C5

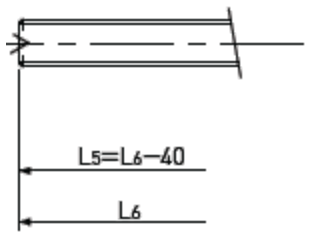


Unit : mm

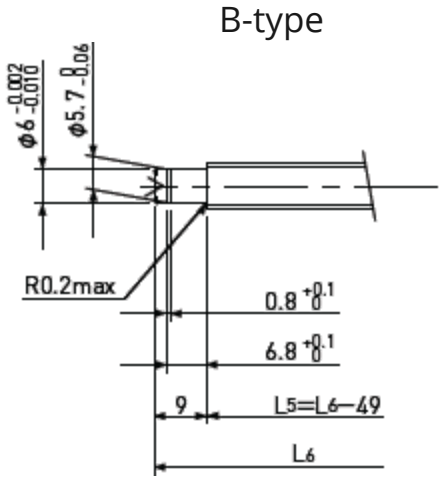
Ball Screw Specifications	
Ball size	ø0.8
Number of thread	1
Thread direction	Right
Shaft root dia.	ø7.3
Number of circuit	3.7×1
Shaft/Nut Material	SCM415H
Surface hardness	HRC58~62 (Thread area)
Anti-rust treatment	Anti-rust oil

Supported-side end-journal profile

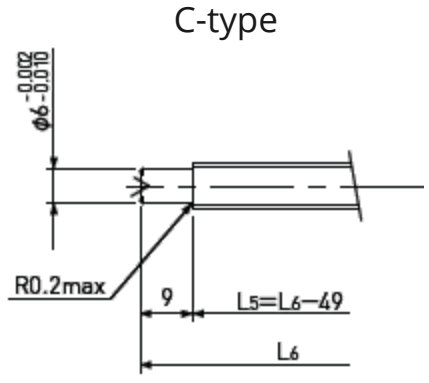
A-type



B-type



C-type



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

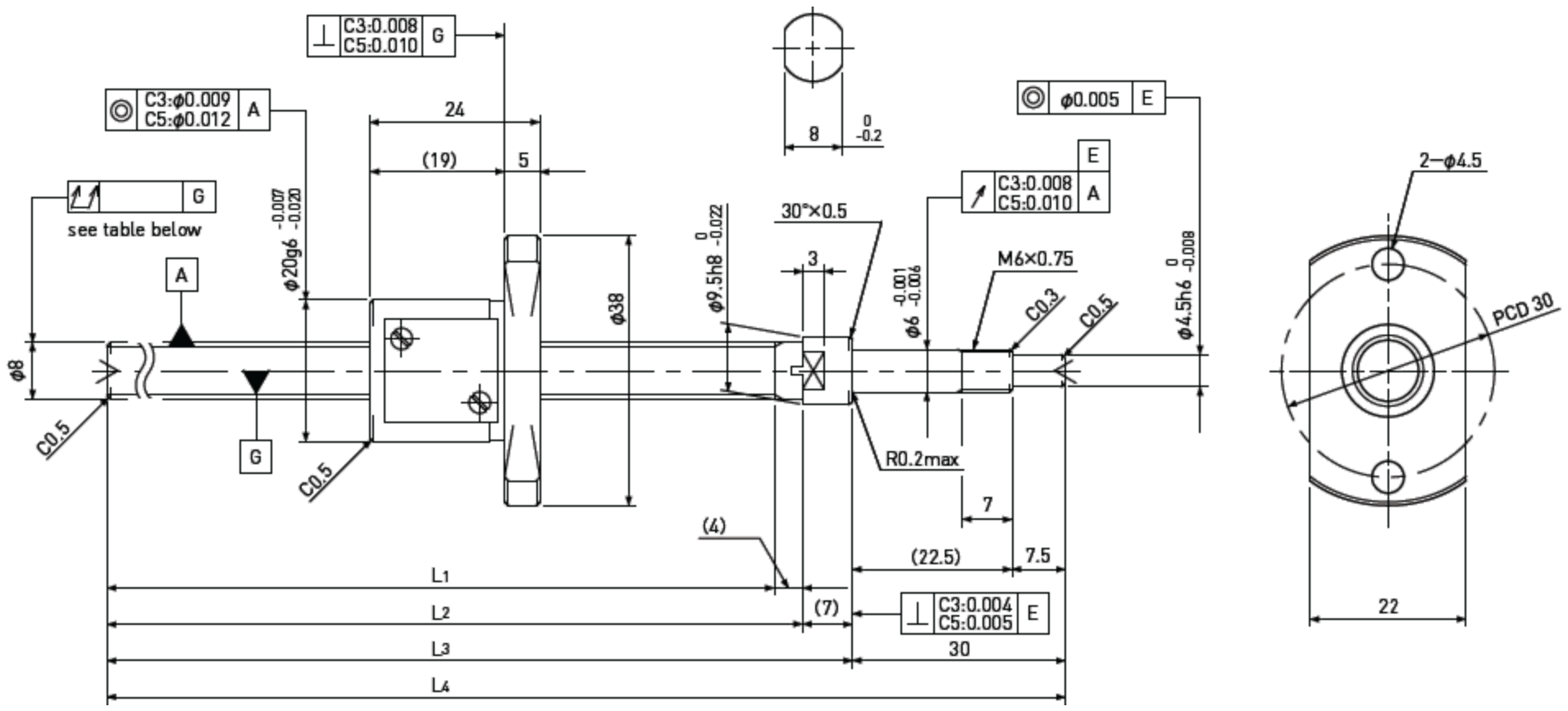
Support-unit Recommendation		
Supported-side:	EF6	
Fixed-side:	EK6	

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
SG0801-100R140C3	80	C3	100	103	110	140	±0.008	0.008	0.035	0 Spacer Ball (1:1)	0.002~0.008	490	820
SG0801-130R170C3	110	C3	130	133	140	170	±0.010	0.008	0.035				
SG0801-160R200C3	140	C3	160	163	170	200	±0.010	0.008	0.035				
SG0801-210R250C3	190	C3	210	213	220	250	±0.012	0.008	0.050				
SG0801-100R140C5	80	C5	100	103	110	140	±0.018	0.018	0.050	~0.005	-	780	1650
SG0801-130R170C5	110	C5	130	133	140	170	±0.020	0.018	0.050				
SG0801-160R200C5	140	C5	160	163	170	200	±0.020	0.018	0.050				
SG0801-210R250C5	190	C5	210	213	220	250	±0.023	0.018	0.065				

Standard products in stock SG series

SG0802 | Shaft dia. Ø8 | Lead 2mm | C3&C5

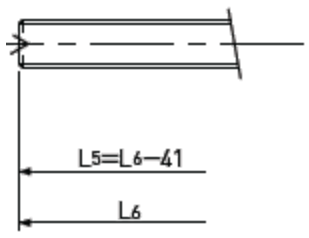


Unit : mm

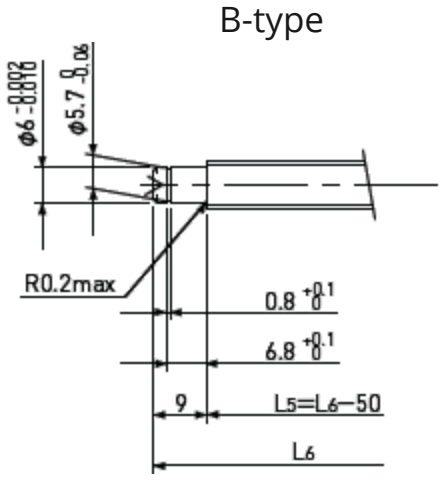
Ball Screw Specifications	
Ball size	ø1.5875
Number of thread	1
Thread direction	Right
Shaft root dia.	ø6.6
Number of circuit	3.7×1
Shaft/Nut Material	SCM415H
Surface hardness	HRC58~62 (Thread area)
Anti-rust treatment	Anti-rust oil

Supported-side end-journal profile

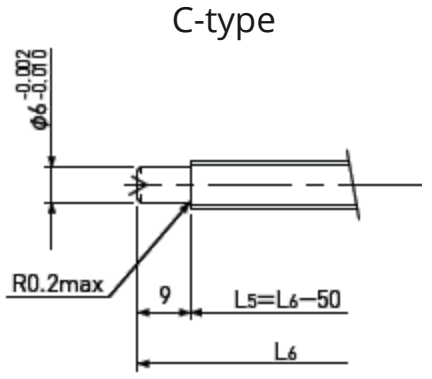
A-type



B-type



C-type



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

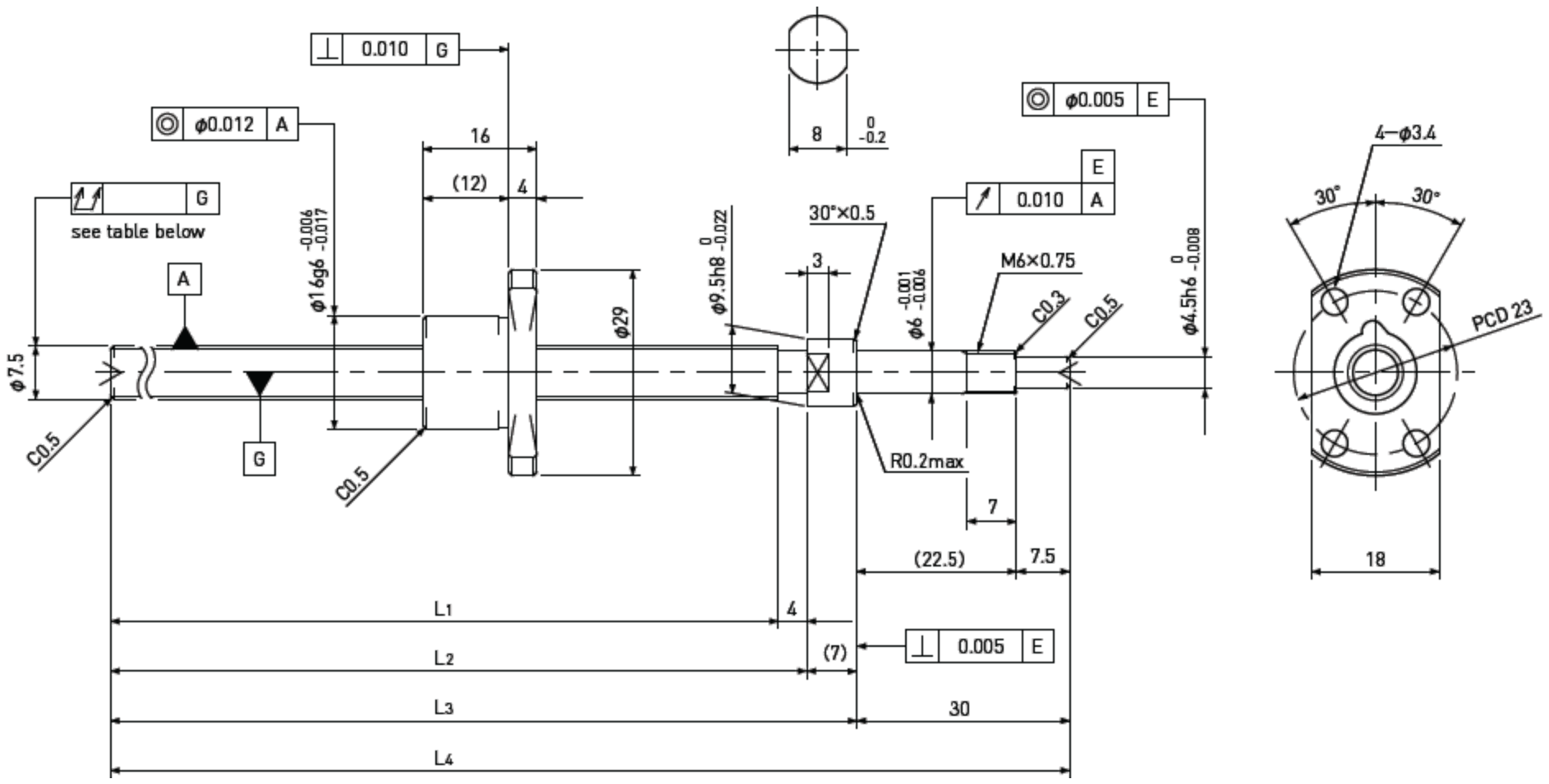
Support-unit Recommendation		
Supported-side:	EF6	
Fixed-side:	EK6	

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
SG0802-099R140C3	75	C3	99	103	110	140	±0.008	0.008	0.035	0 Spacer Ball (1:1)	0.004~0.020	1550	2100
SG0802-129R170C3	105	C3	129	133	140	170	±0.010	0.008	0.035				
SG0802-159R200C3	135	C3	159	163	170	200	±0.010	0.008	0.035				
SG0802-209R250C3	185	C3	209	213	220	250	±0.012	0.008	0.050				
SG0802-099R140C5	75	C5	99	103	110	140	±0.018	0.018	0.050	~0.005	-	2400	4100
SG0802-129R170C5	105	C5	129	133	140	170	±0.020	0.018	0.050				
SG0802-159R200C5	135	C5	159	163	170	200	±0.020	0.018	0.050				
SG0802-209R250C5	185	C5	209	213	220	250	±0.023	0.018	0.065				

Standard products in stock SG series

SG0802.5 | Shaft dia. ø8 | Lead 2.5mm | C5

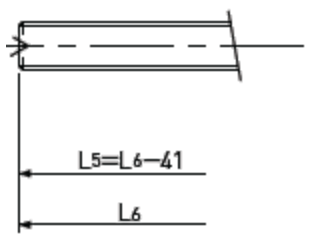


Unit : mm

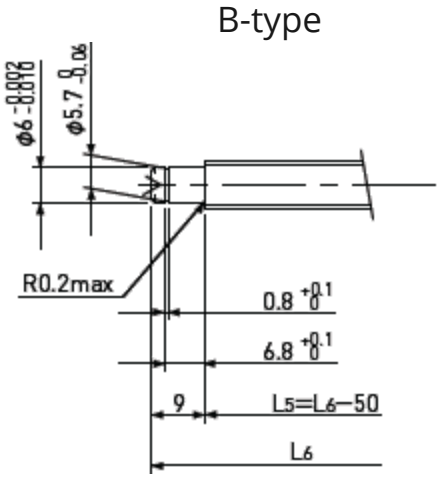
Ball Screw Specifications	
Ball size	ø1.5875
Number of thread	1
Thread direction	Right
Shaft root dia.	ø6.3
Number of circuit	2.7×1
Shaft/Nut Material	SCM415H
Surface hardness	HRC58~62 (Thread area)
Anti-rust treatment	Anti-rust oil

Supported-side end-journal profile

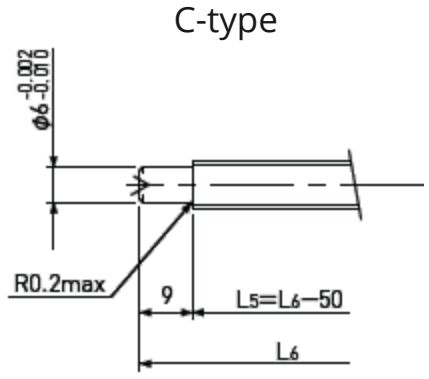
A-type



B-type



C-type



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

Support-unit Recommendation	
Supported-side:	EF6
Fixed-side:	EK6

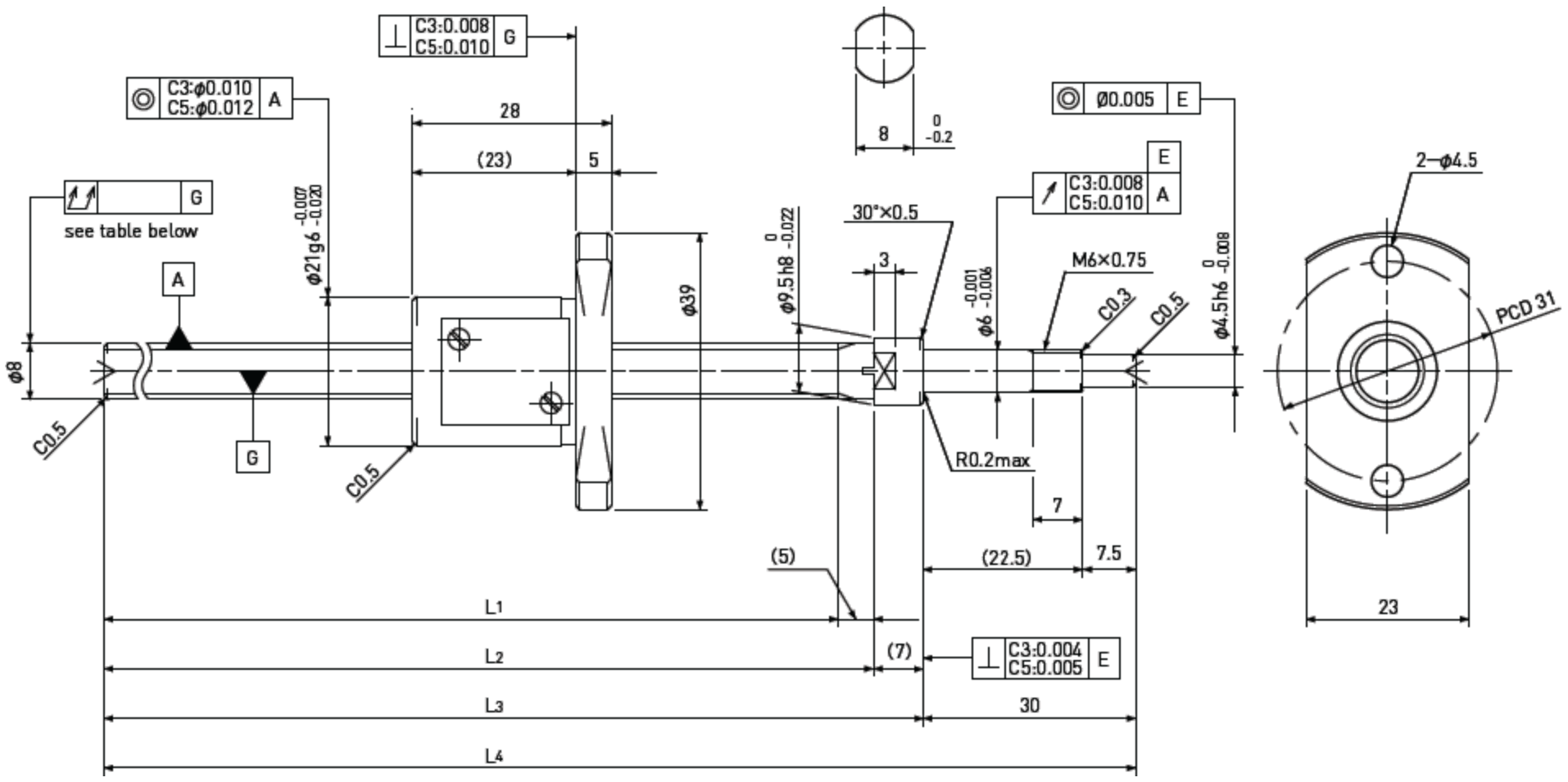
Unit : mm

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
SG0802.5-129R170C5	110	C5	129	133	140	170	±0.020	0.018	0.050	~0.005	-	1850	3000
SG0802.5-209R250C5	190	C5	209	213	220	250	±0.023	0.018	0.065				

ABSSAC
PRECISION MOTION SINCE 1982

Standard products in stock SG series

SG0804 | Shaft dia. ø8 | Lead 4mm | C3&C5

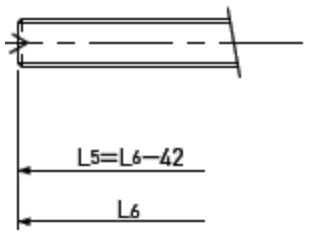


Unit : mm

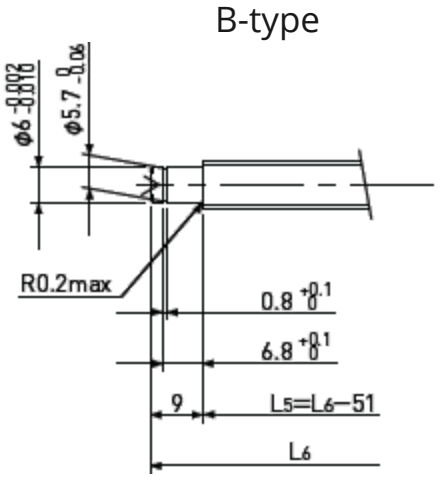
Ball Screw Specifications	
Ball size	ø2.0
Number of thread	1
Thread direction	Right
Shaft root dia.	ø6.2
Number of circuit	2.7×1
Shaft/Nut Material	SCM415H
Surface hardness	HRC58~62 (Thread area)
Anti-rust treatment	Anti-rust oil

Supported-side end-journal profile

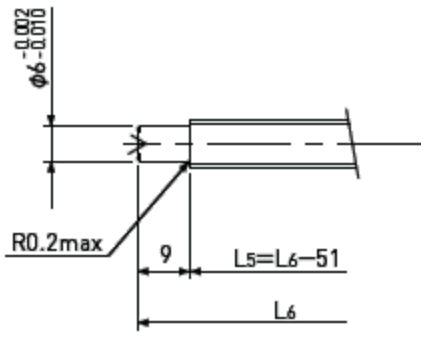
A-type



B-type



C-type



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

Support-unit Recommendation		
Supported-side:	EF6	
Fixed-side:	EK6	

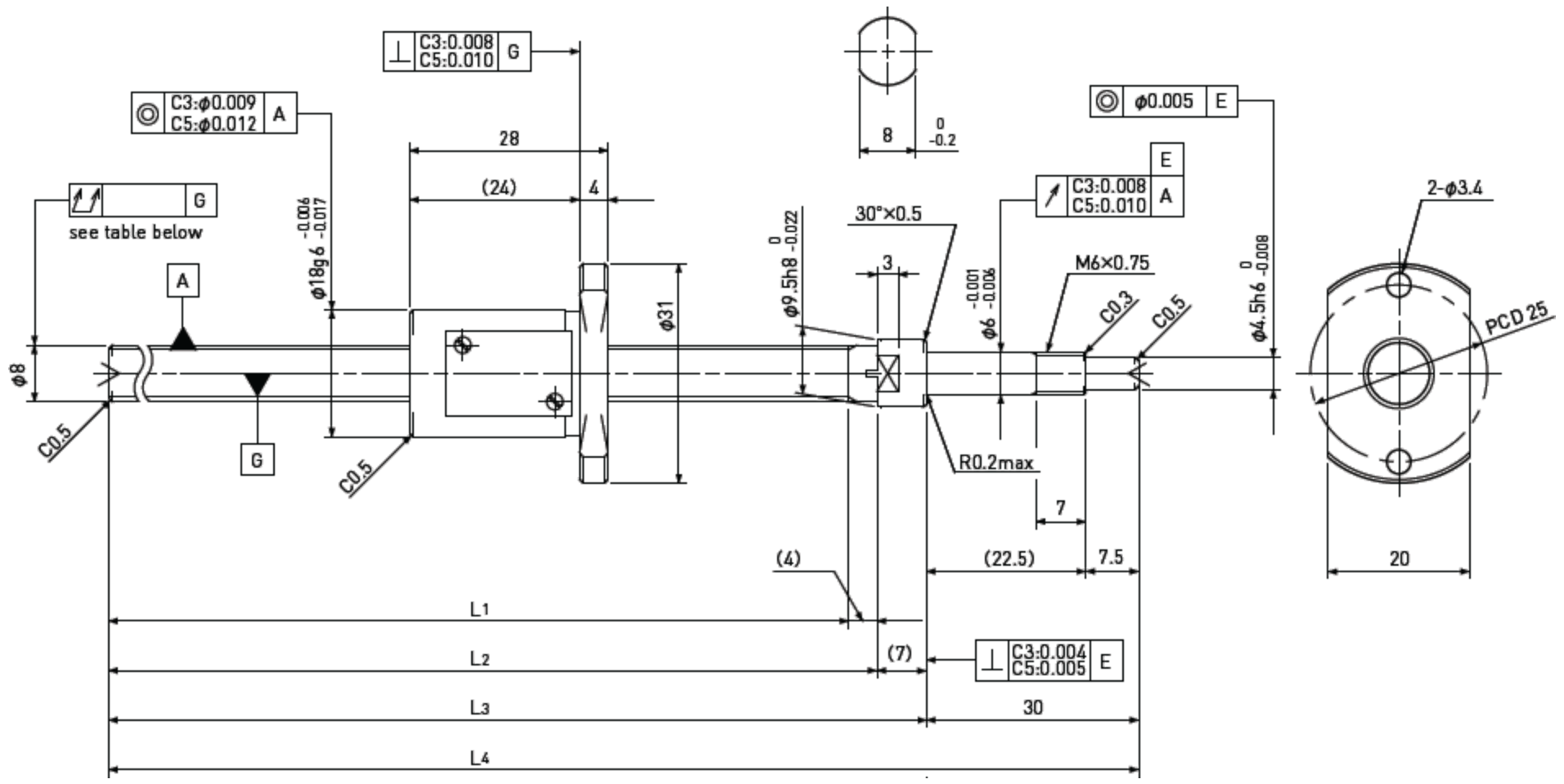
Unit : mm

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
SG0804-098R140C3	70	C3	98	103	110	140	±0.008	0.008	0.035	0 Spacer Ball (1:1)	~0.015	1650	2100
SG0804-208R250C3	180	C3	208	213	220	250	±0.012	0.008	0.050				
SG0804-098R140C5	70	C5	98	103	110	140	±0.018	0.018	0.050	~0.005	-	2600	4200
SG0804-208R250C5	180	C5	208	213	220	250	±0.023	0.018	0.065				

ABSSAC
PRECISION MOTION SINCE 1982

Standard products in stock SG series

SG0805 | Shaft dia. Ø8 | Lead 5mm | C3&C5

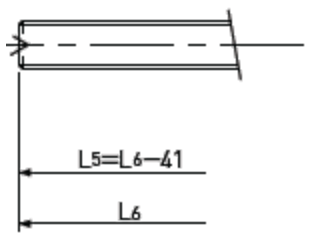


Unit : mm

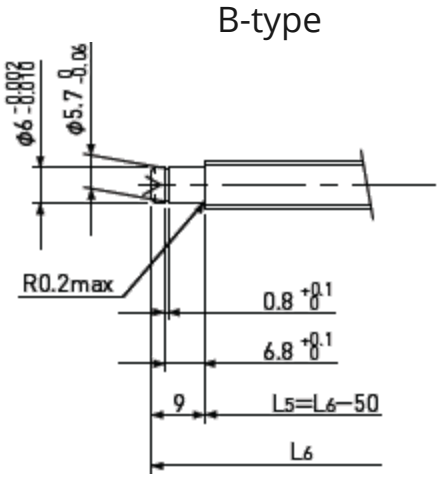
Ball Screw Specifications	
Ball size	ø1.5875
Number of thread	1
Thread direction	Right
Shaft root dia.	ø6.6
Number of circuit	2.7×1
Shaft/Nut Material	SCM415H
Surface hardness	HRC58~62 (Thread area)
Anti-rust treatment	Anti-rust oil

Supported-side end-journal profile

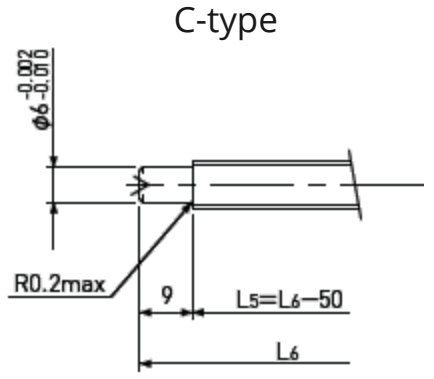
A-type



B-type



C-type



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

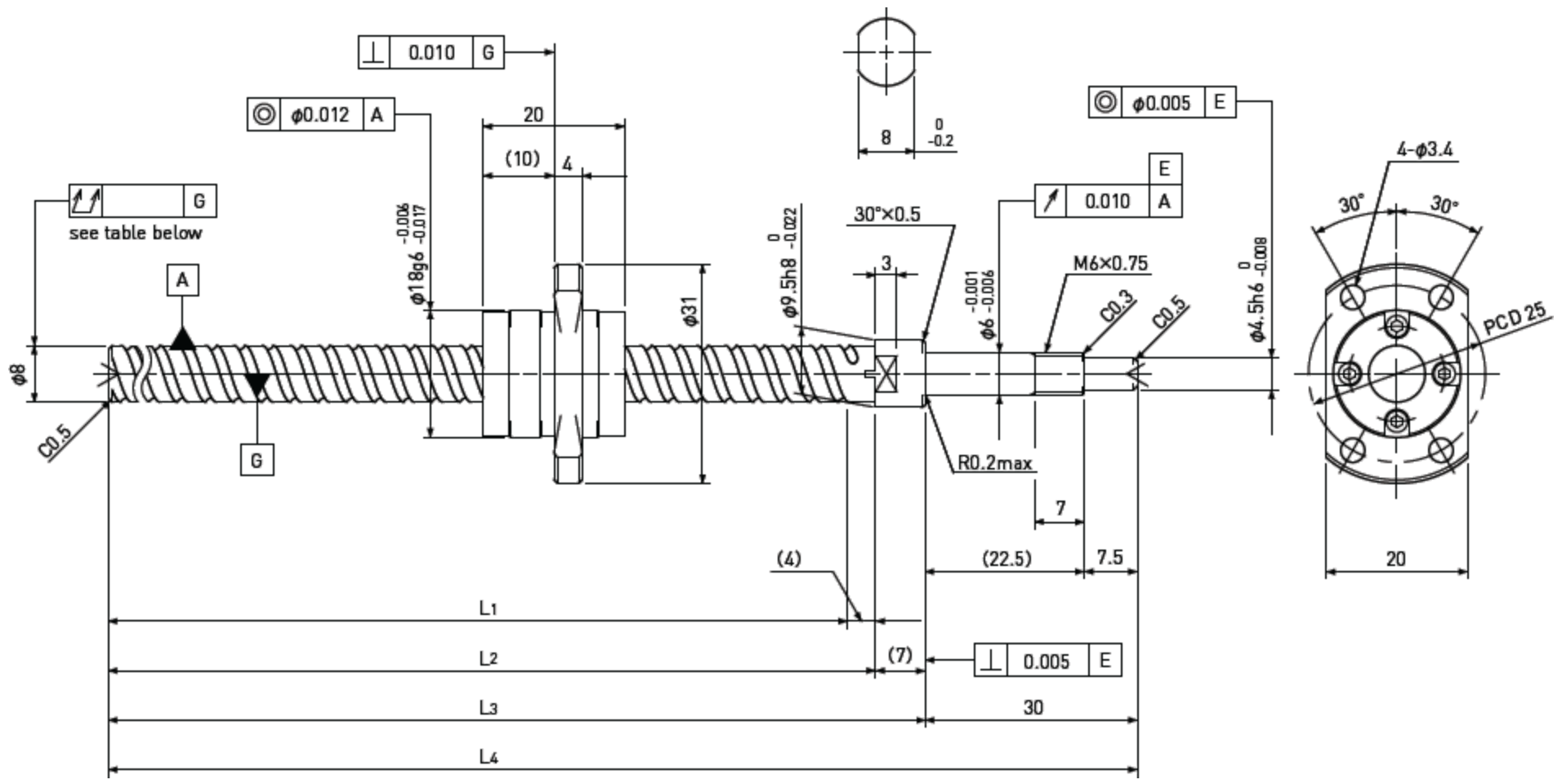
Support-unit Recommendation		
	Supported-side:	EF6
	Fixed-side:	EK6

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
SG0805-099R140C3	70	C3	99	103	110	140	±0.008	0.008	0.035	0 Spacer Ball (1:1)	~0.015	1150	1500
SG0805-209R250C3	180	C3	209	213	220	250	±0.012	0.008	0.050				
SG0805-099R140C5	70	C5	99	103	110	140	±0.018	0.018	0.050	~0.005	-	1850	3000
SG0805-209R250C5	180	C5	209	213	220	250	±0.023	0.018	0.065				

Standard products in stock SG series

SG0808 | Shaft dia. Ø8 | Lead 8mm | C5

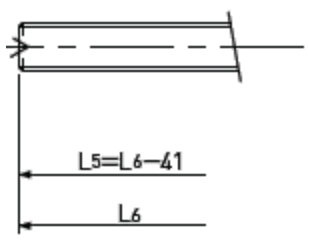


Unit : mm

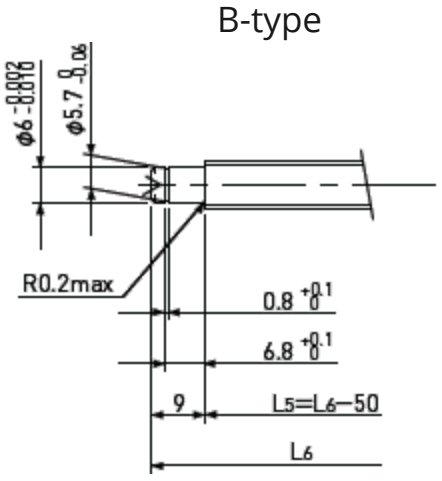
Ball Screw Specifications	
Ball size	ø1.5875
Number of thread	2
Thread direction	Right
Shaft root dia.	ø6.7
Number of circuit	1.6×2
Shaft/Nut Material	SCM415H
Surface hardness	HRC58~62 (Thread area)
Anti-rust treatment	Anti-rust oil

Supported-side end-journal profile

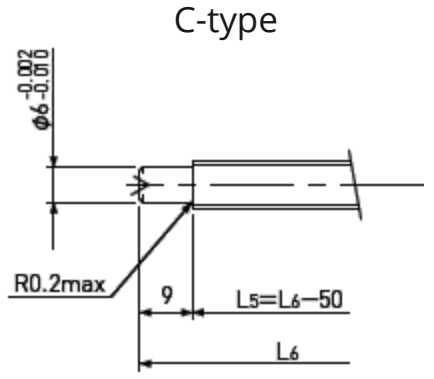
A-type



B-type



C-type



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

Support-unit Recommendation	
Supported-side:	EF6
Fixed-side:	EK6

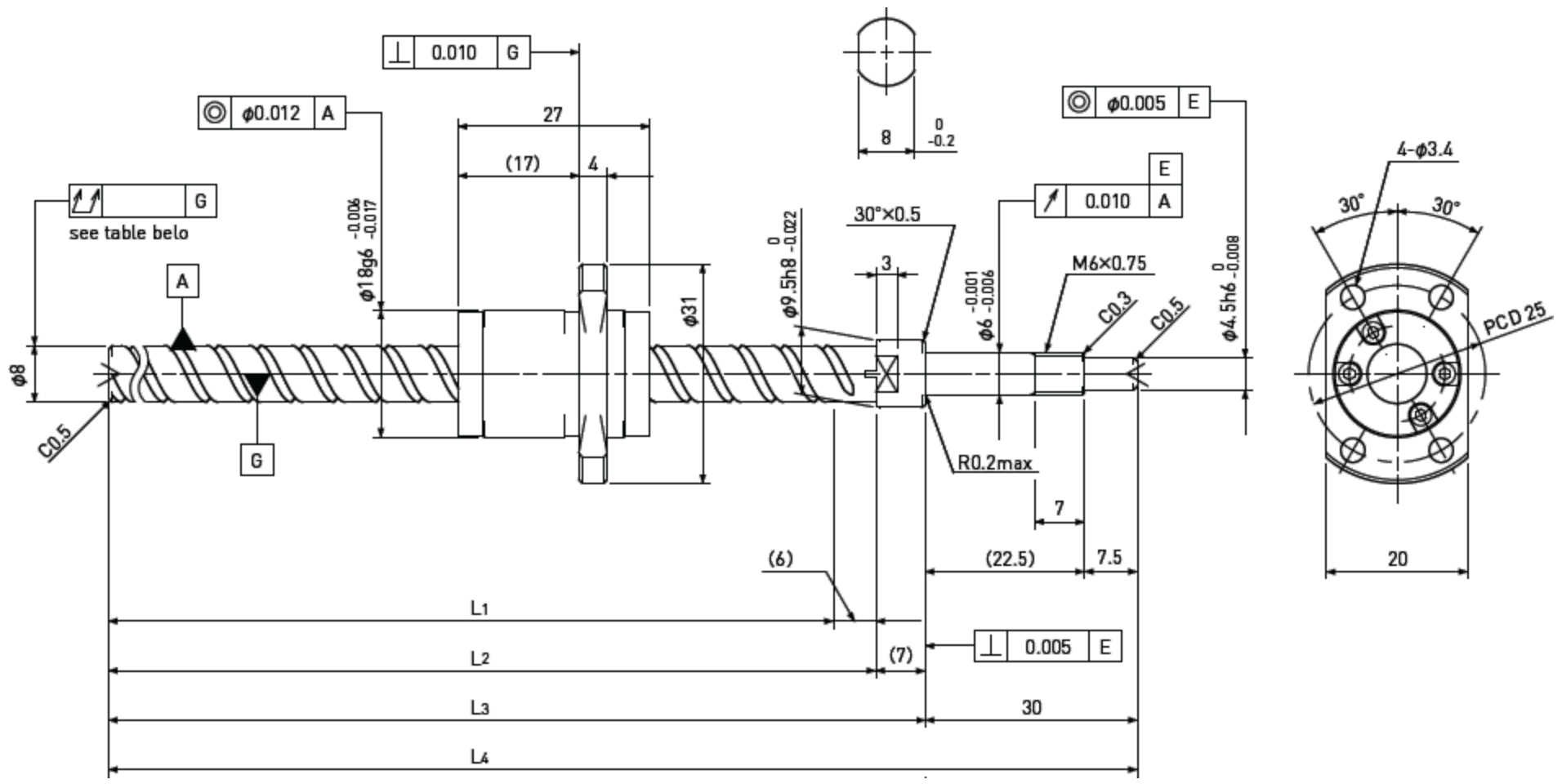
Unit : mm

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
SG0808-099R140C5	75	C5	99	103	110	140	±0.018	0.018	0.050	~0.005	-	2200	3800
SG0808-209R250C5	185	C5	209	213	220	250	±0.023	0.018	0.065				

ABSSAC
PRECISION MOTION SINCE 1982

Standard products in stock SG series

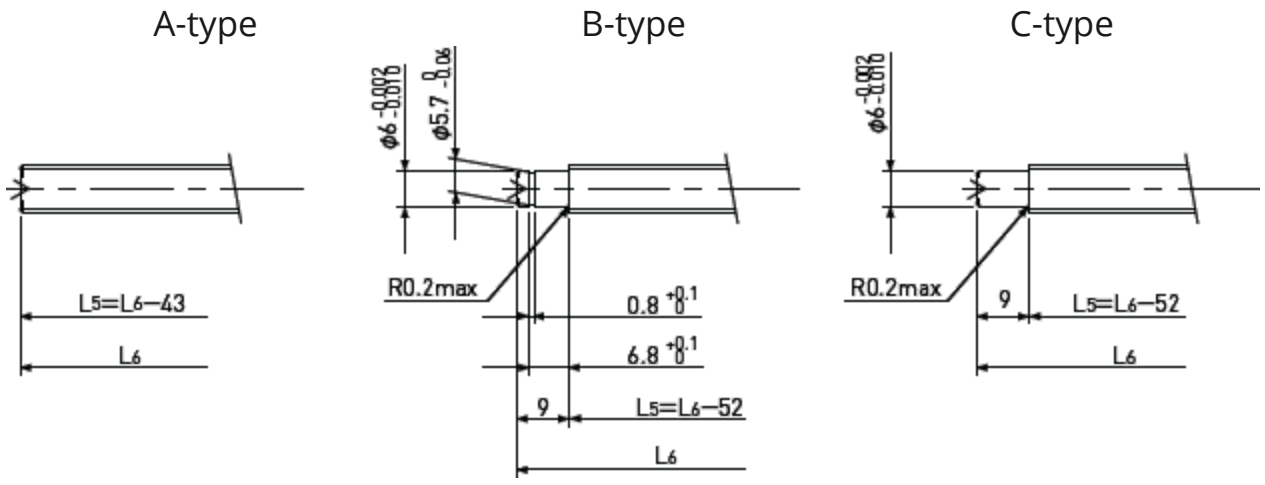
SG0812 | Shaft dia. Ø8 | Lead 12mm | C5



Unit : mm

Ball Screw Specifications	
Ball size	ø1.5875
Number of thread	2
Thread direction	Right
Shaft root dia.	ø6.7
Number of circuit	1.6×2
Shaft/Nut Material	SCM415H
Surface hardness	HRC58~62 (Thread area)
Anti-rust treatment	Anti-rust oil

Supported-side end-journal profile



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

Support-unit Recommendation	
Supported-side:	EF6
Fixed-side:	EK6

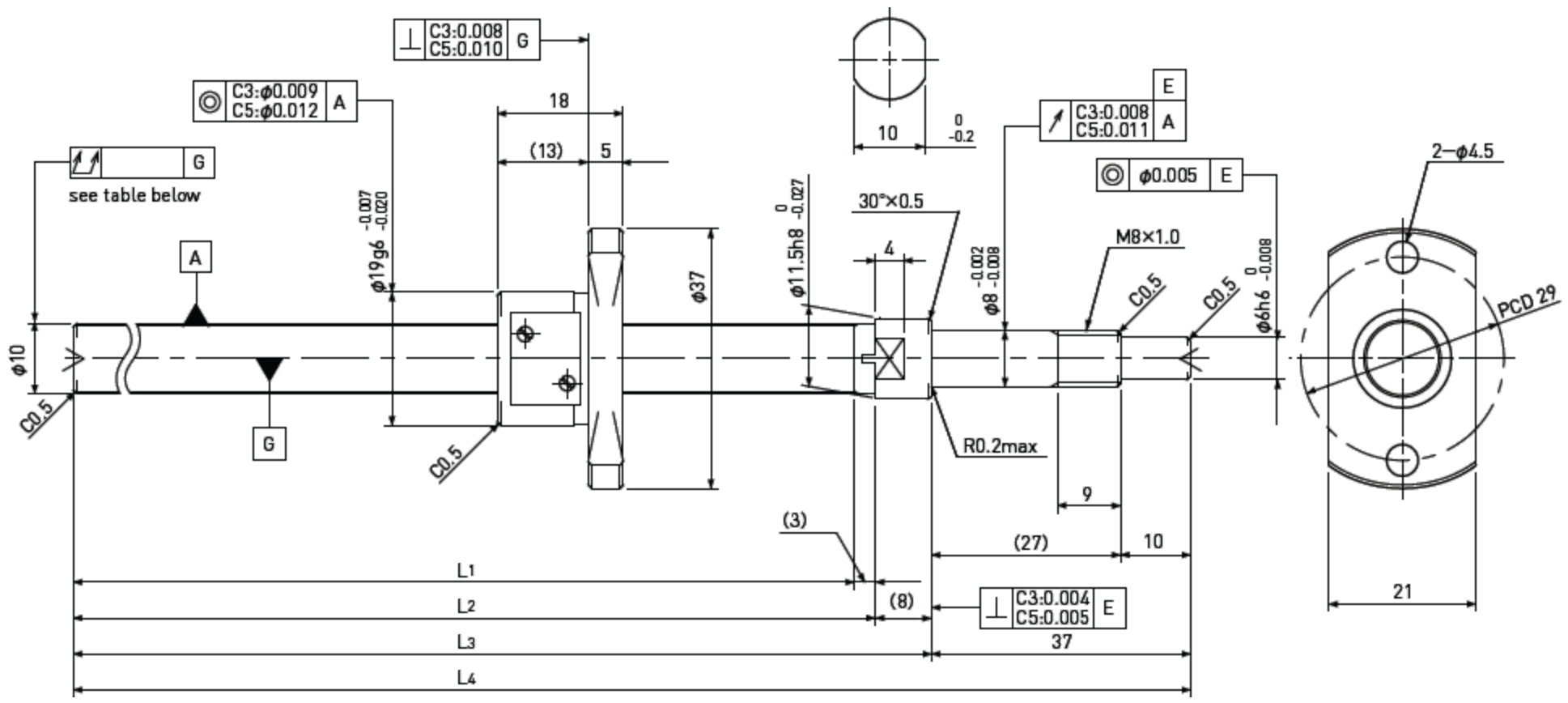
Unit : mm

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
SG0812-097R140C5	70	C5	97	103	110	140	±0.018	0.018	0.050	~0.005	-	2200	4000
SG0812-207R250C5	180	C5	207	213	220	250	±0.023	0.018	0.065				

ABSSAC
PRECISION MOTION SINCE 1982

Standard products in stock SG series

SG1001 | Shaft dia. ø10 | Lead 1mm | C3&C5

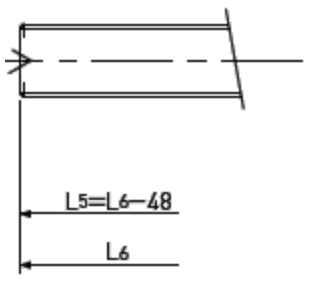


Unit : mm

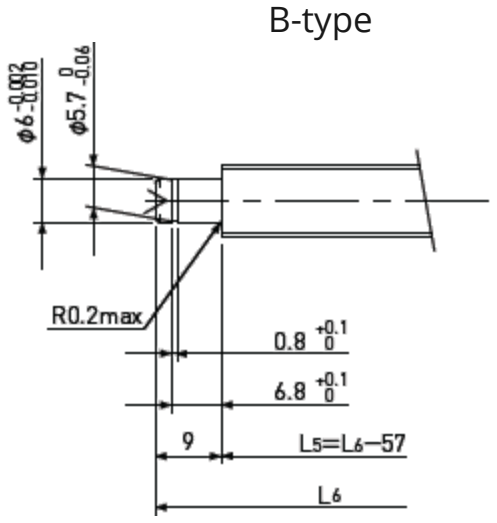
Ball Screw Specifications	
Ball size	ø0.8
Number of thread	1
Thread direction	Right
Shaft root dia.	ø9.3
Number of circuit	3.7×1
Shaft/Nut Material	SCM415H
Surface hardness	HRC58~62 (Thread area)
Anti-rust treatment	Anti-rust oil

Supported-side end-journal profile

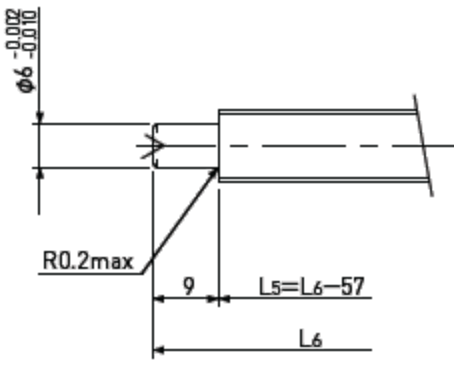
A-type



B-type



C-type



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

Support-unit Recommendation		
Supported-side:	EF8	
Fixed-side:	EK8	

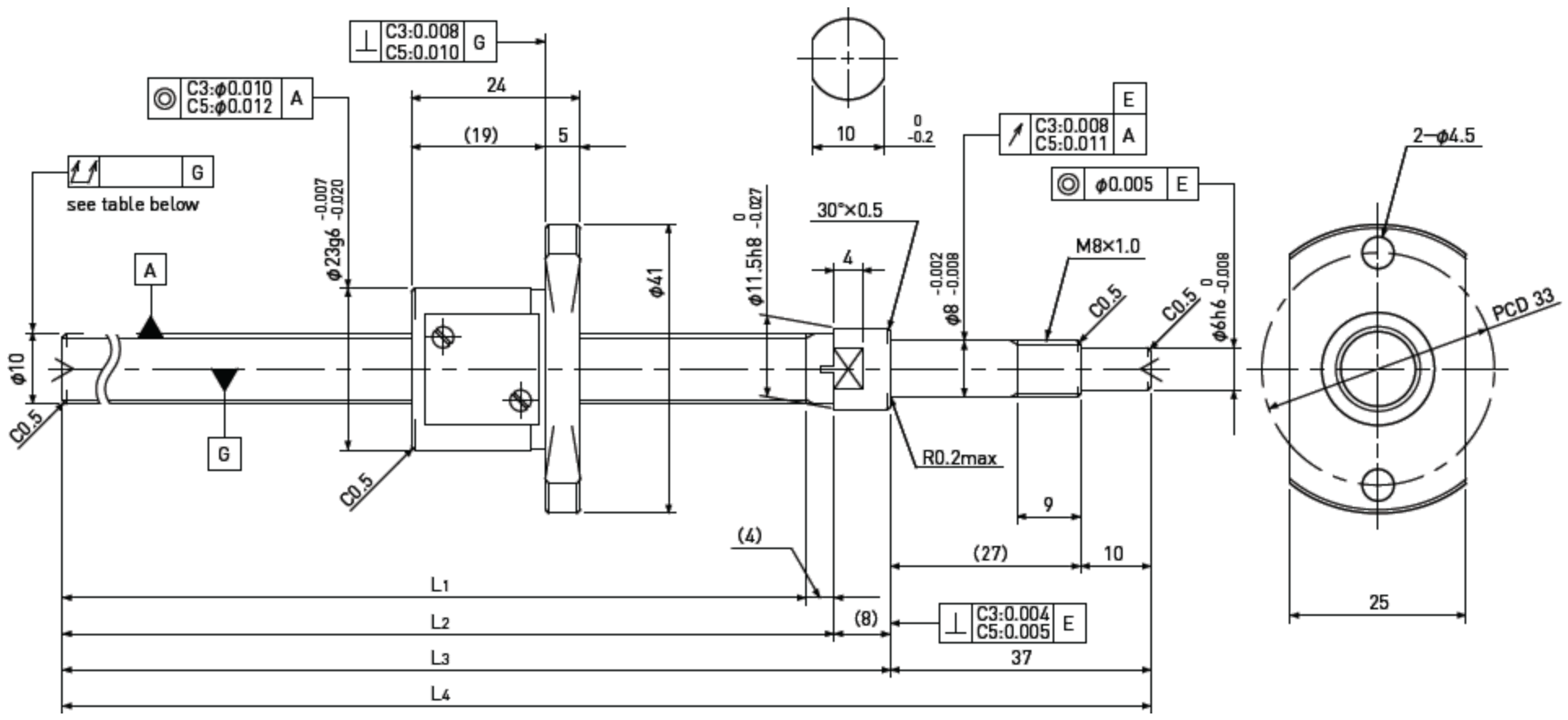
Unit : mm

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
SG1001-112R160C3	90	C3	112	115	123	160	±0.010	0.008	0.035	0 Spacer Ball (1:1)	~0.020	530	1000
SG1001-162R210C3	140	C3	162	165	173	210	±0.010	0.008	0.040				
SG1001-212R260C3	190	C3	212	215	223	260	±0.012	0.008	0.040				
SG1001-262R310C3	240	C3	262	265	273	310	±0.012	0.008	0.040				
SG1001-112R160C5	90	C5	112	115	123	160	±0.020	0.018	0.040	~0.005	-	840	2000
SG1001-162R210C5	140	C5	162	165	173	210	±0.020	0.018	0.055				
SG1001-212R260C5	190	C5	212	215	223	260	±0.023	0.018	0.055				
SG1001-262R310C5	240	C5	262	265	273	310	±0.023	0.018	0.055				

ABSSAC
PRECISION MOTION SINCE 1982

Standard products in stock SG series

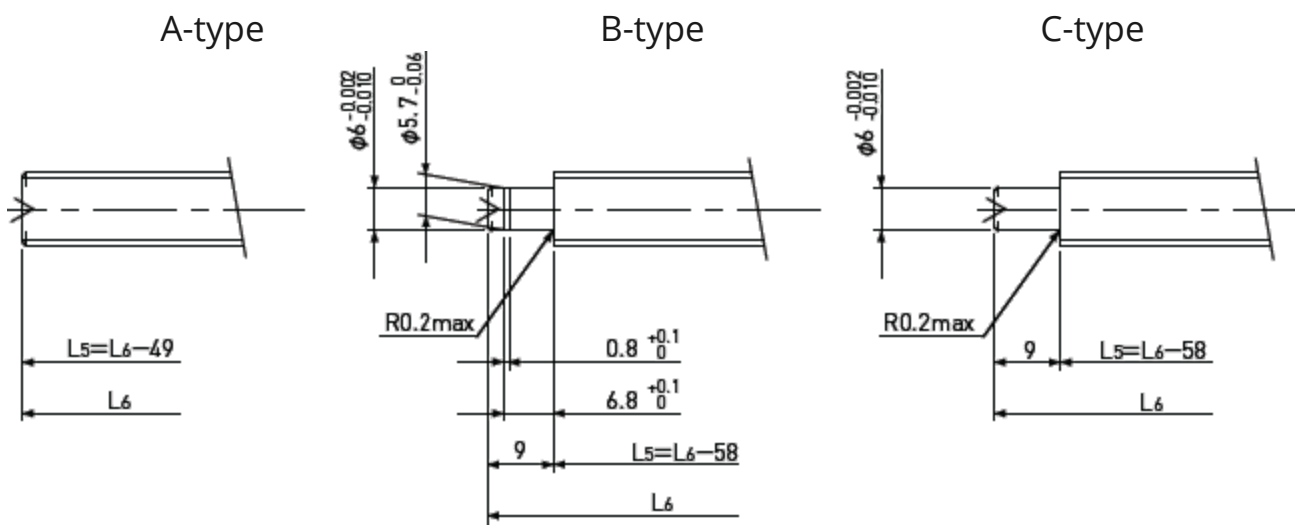
SG1002 | Shaft dia. ø10 | Lead 2mm | C3&C5



Unit : mm

Ball Screw Specifications	
Ball size	ø1.5875
Number of thread	1
Thread direction	Right
Shaft root dia.	ø8.6
Number of circuit	3.7×1
Shaft/Nut Material	SCM415H
Surface hardness	HRC58~62 (Thread area)
Anti-rust treatment	Anti-rust oil

Supported-side end-journal profile



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

Support-unit Recommendation		
Supported-side:	EF8	
Fixed-side:	EK8	

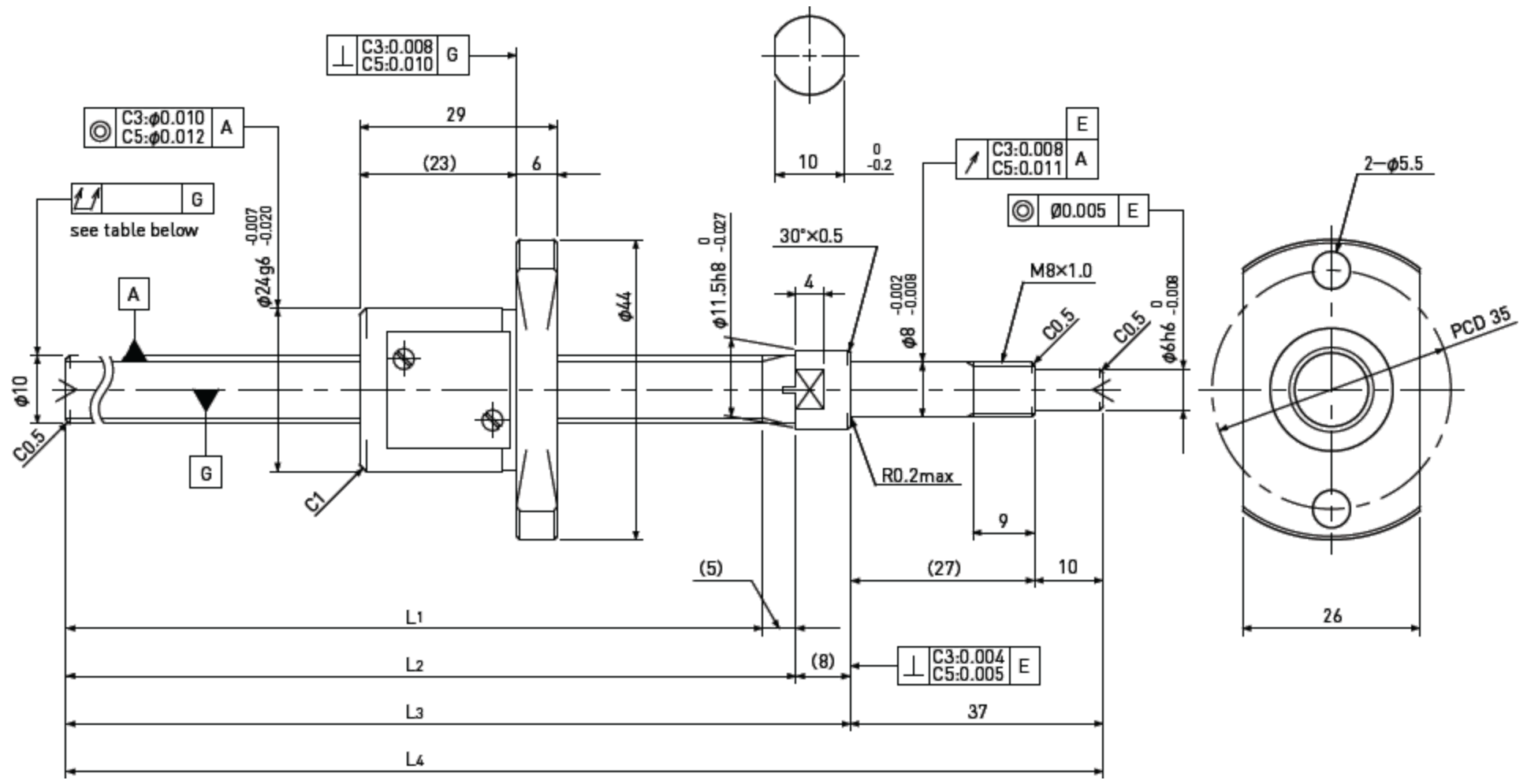
Unit : mm

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
SG1002-111R160C3		C3	111	115	123	160	±0.010	0.008	0.035	0 Spacer Ball (1:1)	0.006~0.030	1750	2700
SG1002-161R210C3		C3	161	165	173	210	±0.010	0.008	0.040				
SG1002-211R260C3		C3	211	215	223	260	±0.012	0.008	0.040				
SG1002-261R310C3		C3	261	265	273	310	±0.012	0.008	0.040				
SG1002-111R160C5		C5	111	115	123	160	±0.020	0.018	0.040	~0.005	-	2700	5300
SG1002-161R210C5		C5	161	165	173	210	±0.020	0.018	0.055				
SG1002-211R260C5		C5	211	215	223	260	±0.023	0.018	0.055				
SG1002-261R310C5		C5	261	265	273	310	±0.023	0.018	0.055				

ABSSAC
PRECISION MOTION SINCE 1982

Standard products in stock SG series

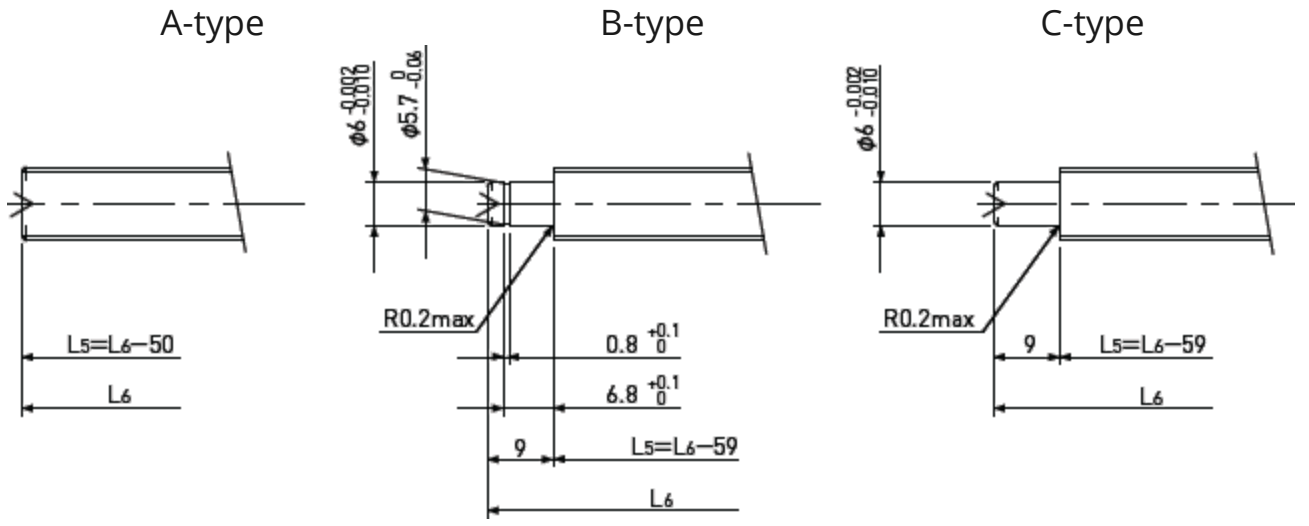
SG1004 | Shaft dia. ø10 | Lead 4mm | C3&C5



Unit : mm

Ball Screw Specifications	
Ball size	ø2.0
Number of thread	1
Thread direction	Right
Shaft root dia.	ø8.2
Number of circuit	2.7×1
Shaft/Nut Material	SCM415H
Surface hardness	HRC58~62 (Thread area)
Anti-rust treatment	Anti-rust oil

Supported-side end-journal profile



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

Support-unit Recommendation		
Supported-side:	EF8	
Fixed-side:	EK8	

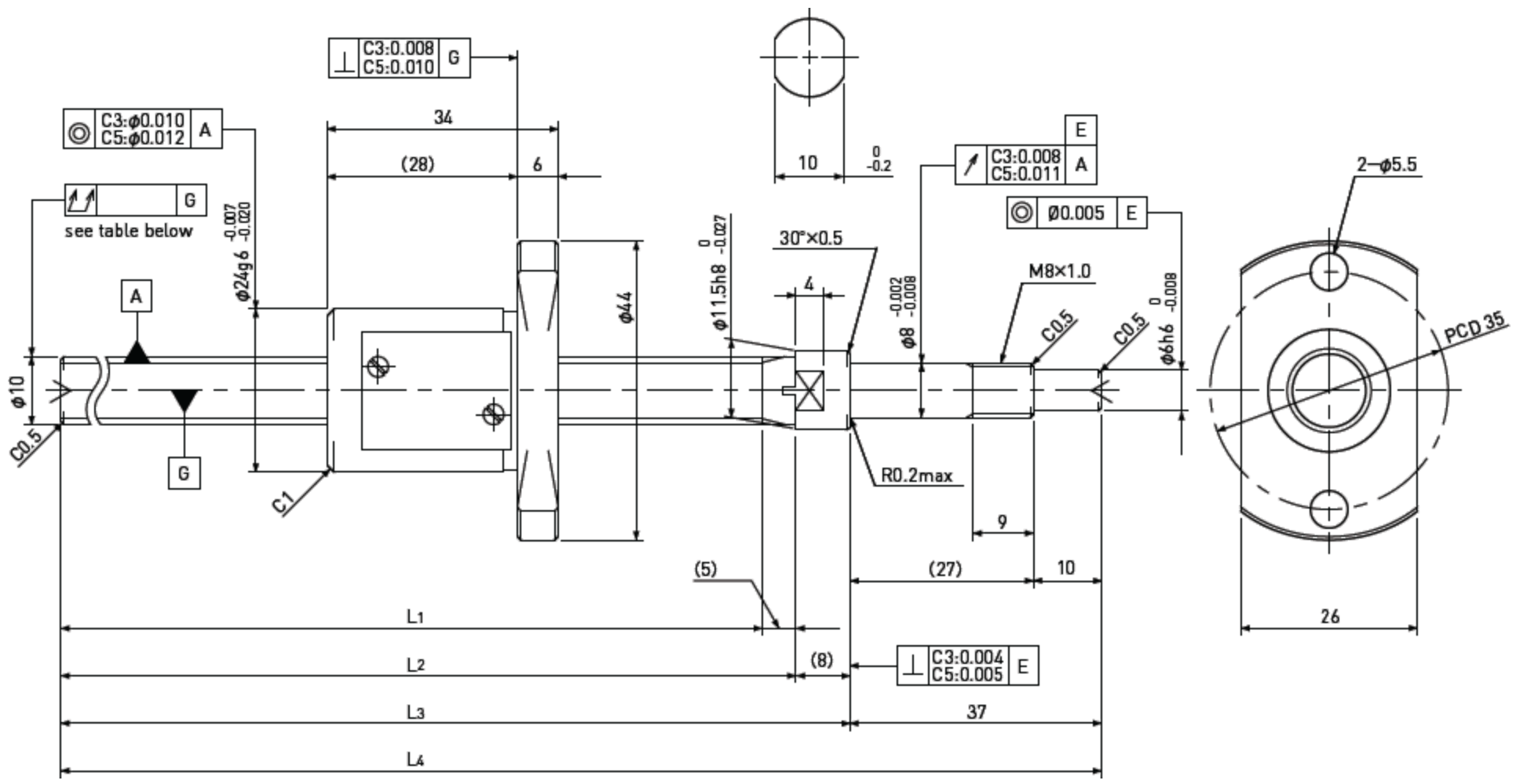
Unit : mm

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
SG1004-110R160C3	80	C3	110	115	123	160	±0.010	0.008	0.035	0 Spacer Ball (1:1)	0.005~0.040	1800	2600
SG1004-260R310C3	230	C3	260	265	273	310	±0.012	0.008	0.040				
SG1004-110R160C5	80	C5	110	115	123	160	±0.020	0.018	0.040	~0.005	-	3000	5200
SG1004-260R310C5	230	C5	260	265	273	310	±0.023	0.018	0.055				

ABSSAC
PRECISION MOTION SINCE 1982

Standard products in stock SG series

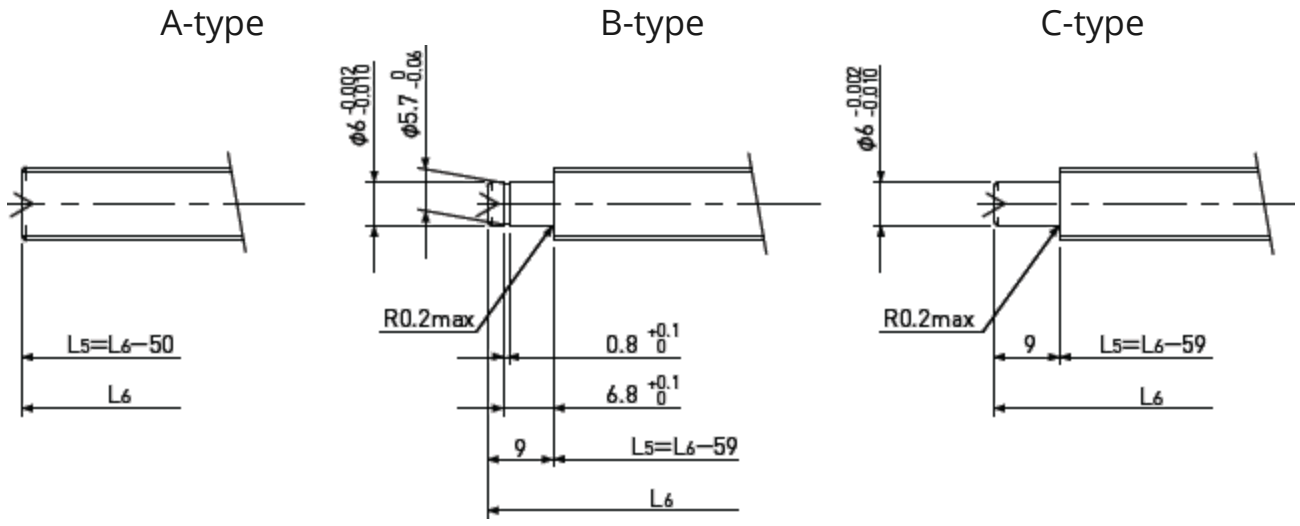
SG1005 | Shaft dia. Ø10 | Lead 5mm | C3&C5



Unit : mm

Ball Screw Specifications	
Ball size	ø2.0
Number of thread	1
Thread direction	Right
Shaft root dia.	ø8.2
Number of circuit	2.7×1
Shaft/Nut Material	SCM415H
Surface hardness	HRC58~62 (Thread area)
Anti-rust treatment	Anti-rust oil

Supported-side end-journal profile



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

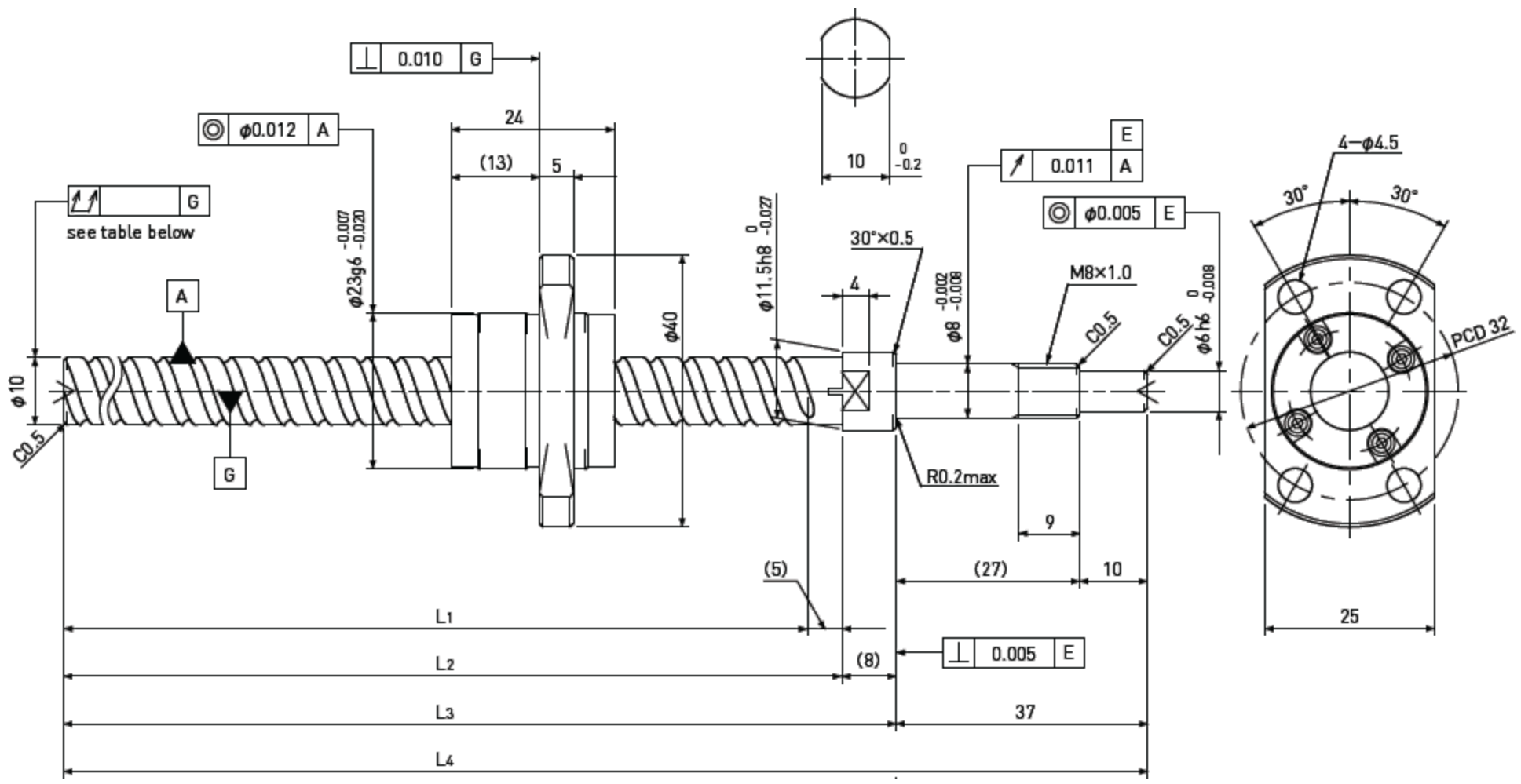
Support-unit Recommendation		
Supported-side:	EF8	
Fixed-side:	EK8	

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
SG1005-110R160C3	75	C3	110	115	123	160	±0.010	0.008	0.035	0 Spacer Ball (1:1)	0.005~0.040	1800	2600
SG1005-260R310C3	225	C3	260	265	273	310	±0.012	0.008	0.040				
SG1005-110R160C5	75	C5	110	115	123	160	±0.020	0.018	0.040	~0.005	-	3000	5200
SG1005-260R310C5	225	C5	260	265	273	310	±0.023	0.018	0.055				

Standard products in stock SG series

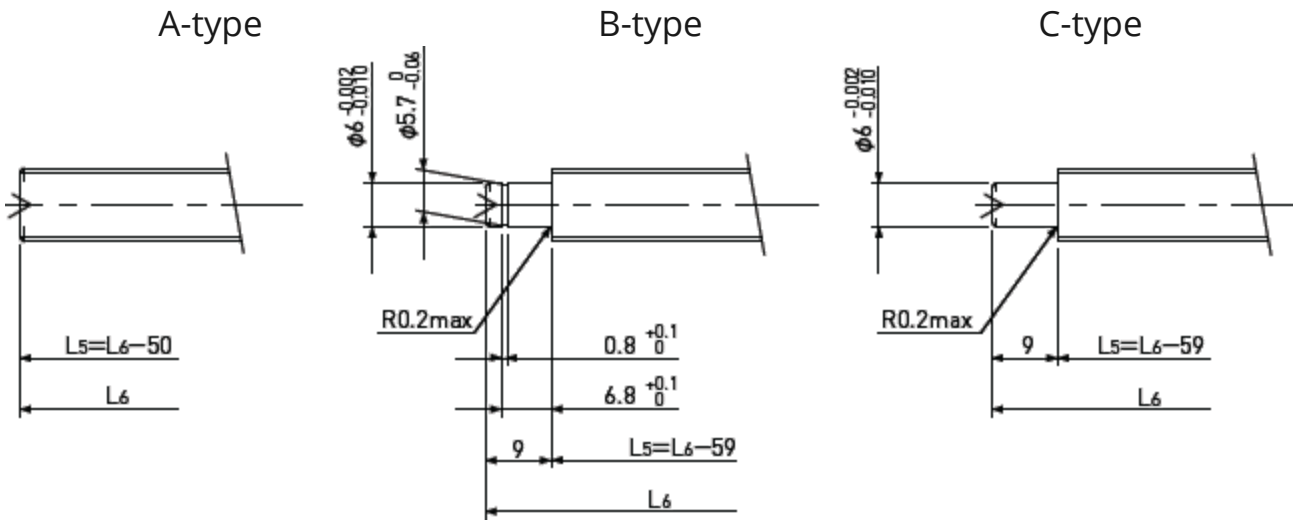
SG1010 | Shaft dia. ø10 | Lead 10mm | C5



Unit : mm

Ball Screw Specifications	
Ball size	ø2.0
Number of thread	2
Thread direction	Right
Shaft root dia.	ø8.4
Number of circuit	1.6×2
Shaft/Nut Material	SCM415H
Surface hardness	HRC58~62 (Thread area)
Anti-rust treatment	Anti-rust oil

Supported-side end-journal profile



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

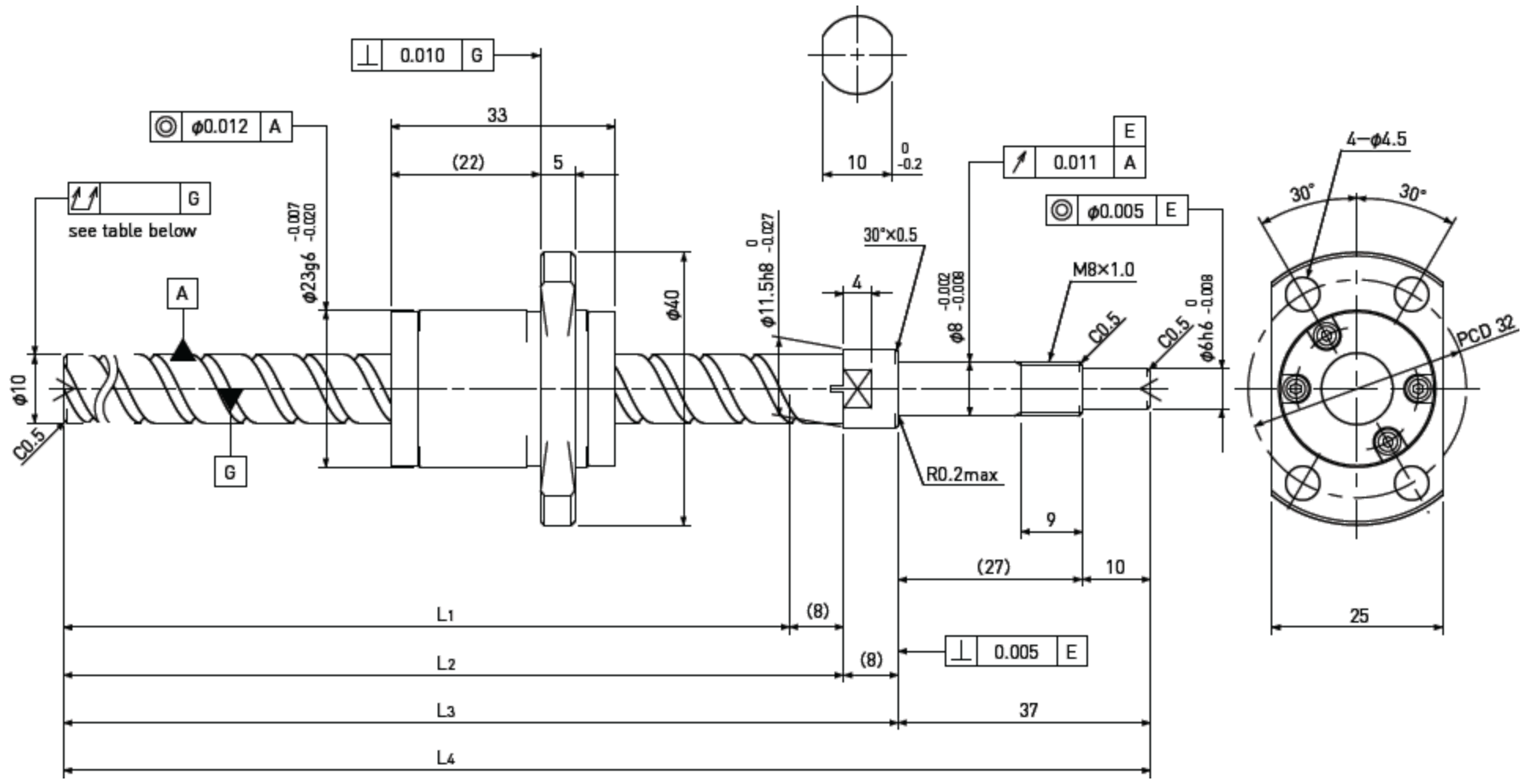
Support-unit Recommendation		
Supported-side:	EF8	
Fixed-side:	EK8	

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
SG1010-110R160C5	85	C5	110	115	123	160	±0.020	0.018	0.040	~0.005	-	3300	5900
SG1010-260R310C5	235	C5	260	265	273	310	±0.023	0.018	0.055				

Standard products in stock SG series

SG1015 | Shaft dia. ø10 | Lead 15mm | C5

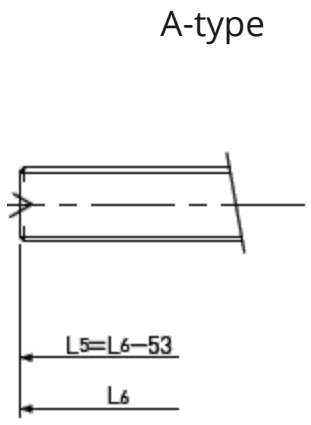


Unit : mm

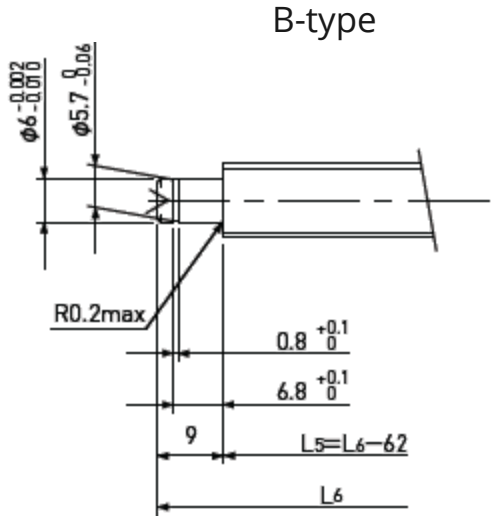
Ball Screw Specifications	
Ball size	ø2.0
Number of thread	2
Thread direction	Right
Shaft root dia.	ø8.4
Number of circuit	1.6×2
Shaft/Nut Material	SCM415H
Surface hardness	HRC58~62 (Thread area)
Anti-rust treatment	Anti-rust oil

Supported-side end-journal profile

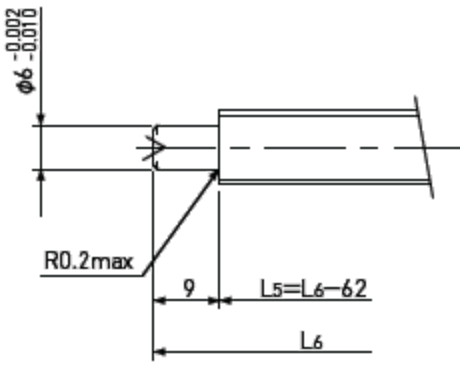
A-type



B-type



C-type



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

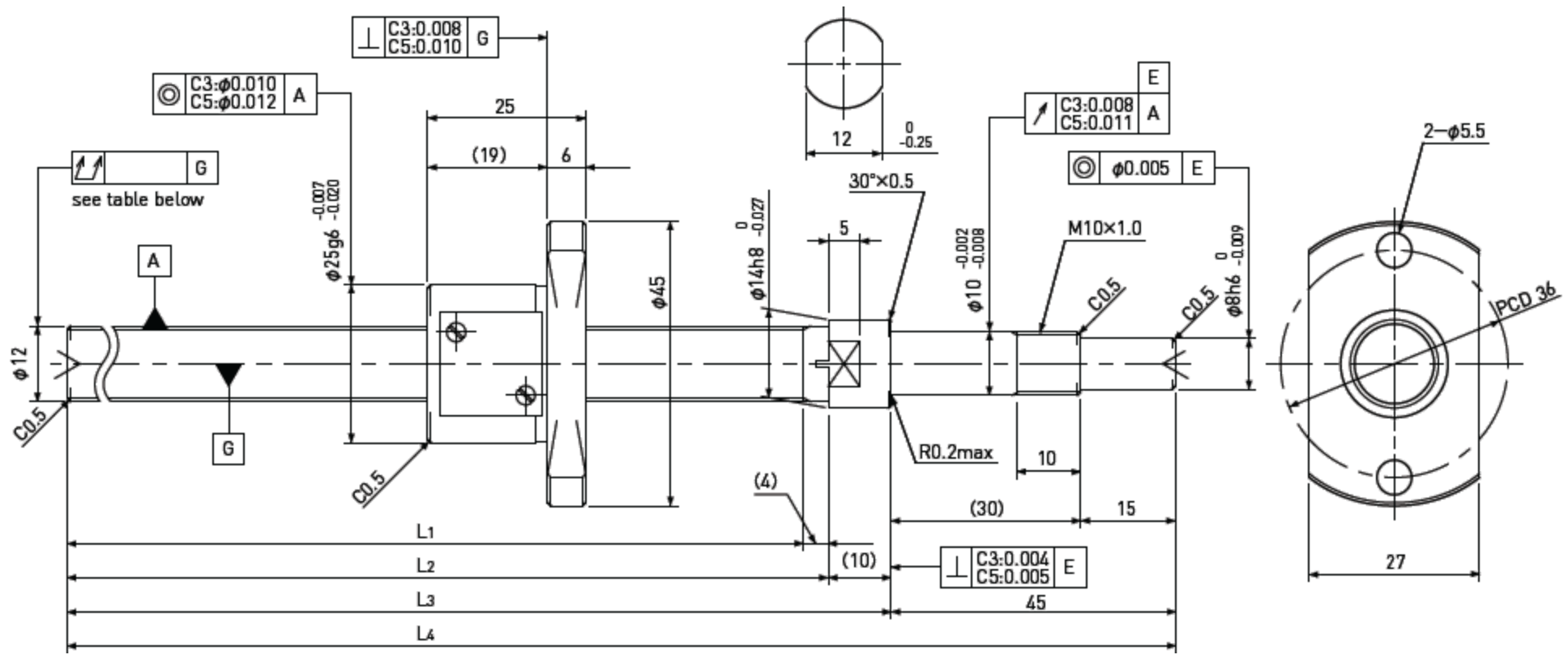
Support-unit Recommendation	
Supported-side:	EF8
Fixed-side:	EK8

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
SG1015-107R160C5	70	C5	107	115	123	160	±0.020	0.018	0.040	~0.005	-	3300	6400
SG1015-257R310C5	220	C5	257	265	273	310	±0.023	0.018	0.055				

Standard products in stock SG series

SG1202 | Shaft dia. ø12 | Lead 2mm | C3&C5

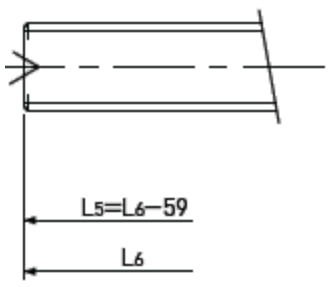


Unit : mm

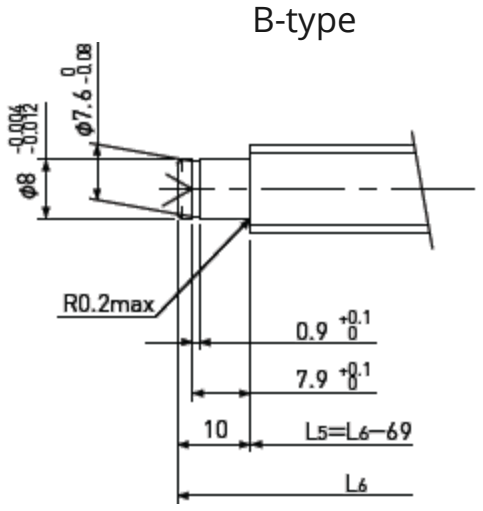
Ball Screw Specifications	
Ball size	ø1.5875
Number of thread	1
Thread direction	Right
Shaft root dia.	ø10.6
Number of circuit	3.7×1
Shaft/Nut Material	SCM415H
Surface hardness	HRC58~62 (Thread area)
Anti-rust treatment	Anti-rust oil

Supported-side end-journal profile

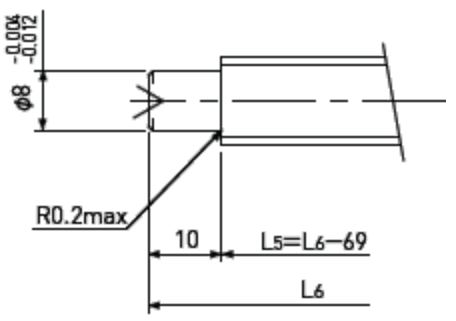
A-type



B-type



C-type



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

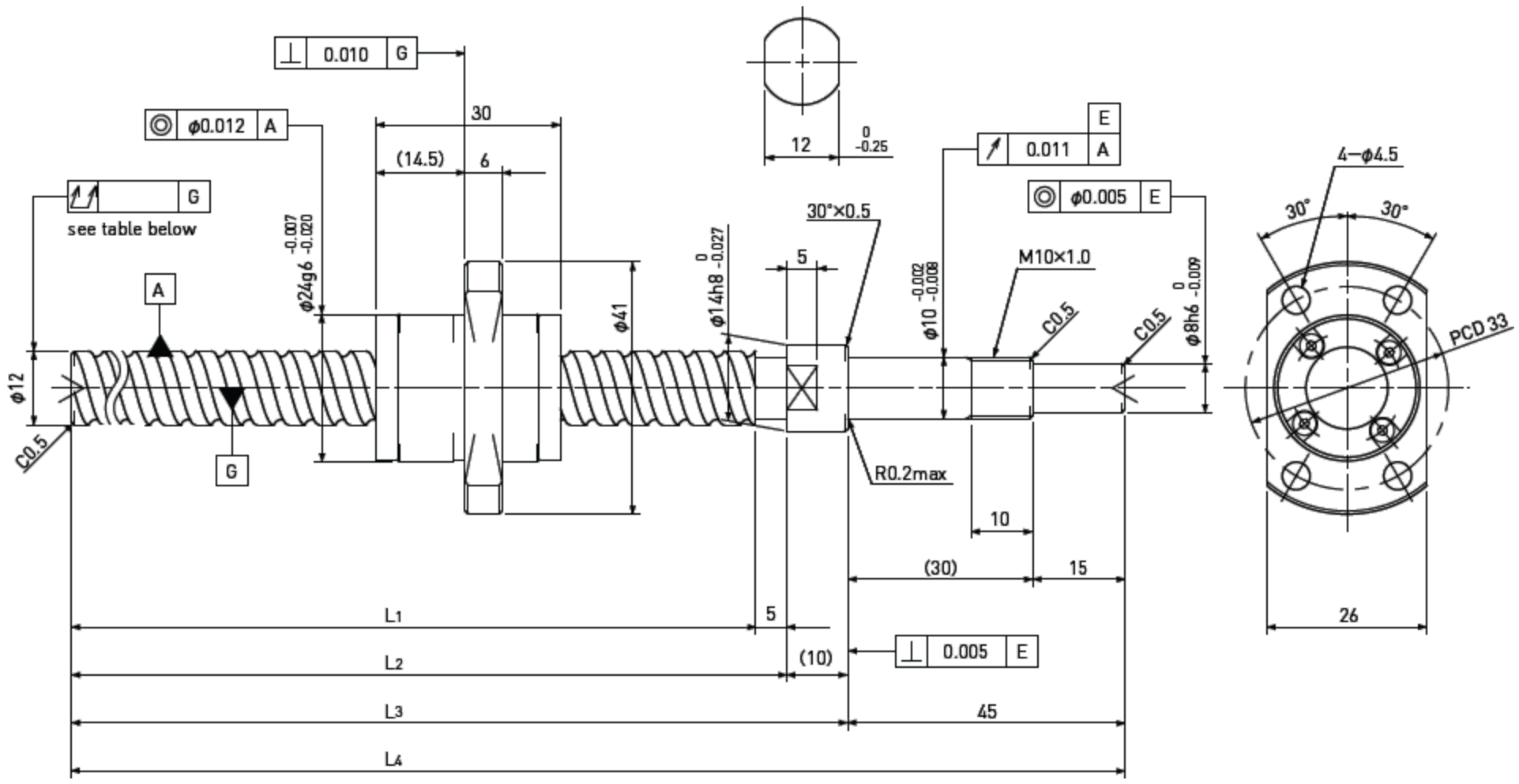
Support-unit Recommendation	
Supported-side:	EF10
Fixed-side:	EK10

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
SG1202-141R200C3	115	C3	141	145	155	200	±0.008	0.008	0.035	0 Spacer Ball (1:1)	0.008~0.040	1900	3200
SG1202-191R250C3	165	C3	191	195	205	250	±0.008	0.008	0.040				
SG1202-241R300C3	215	C3	241	245	255	300	±0.008	0.008	0.040				
SG1202-291R350C3	265	C3	291	295	305	350	±0.008	0.008	0.050				
SG1202-341R400C3	315	C3	341	345	355	400	±0.010	0.010	0.050				
SG1202-141R200C5	115	C5	141	145	155	200	±0.008	0.018	0.040	~0.005	-	3000	6400
SG1202-191R250C5	165	C5	191	195	205	250	±0.008	0.018	0.055				
SG1202-241R300C5	215	C5	241	245	255	300	±0.008	0.018	0.055				
SG1202-291R350C5	265	C5	291	295	305	350	±0.008	0.018	0.065				
SG1202-341R400C5	315	C5	341	245	355	400	±0.010	0.020	0.065				

Standard products in stock SG series

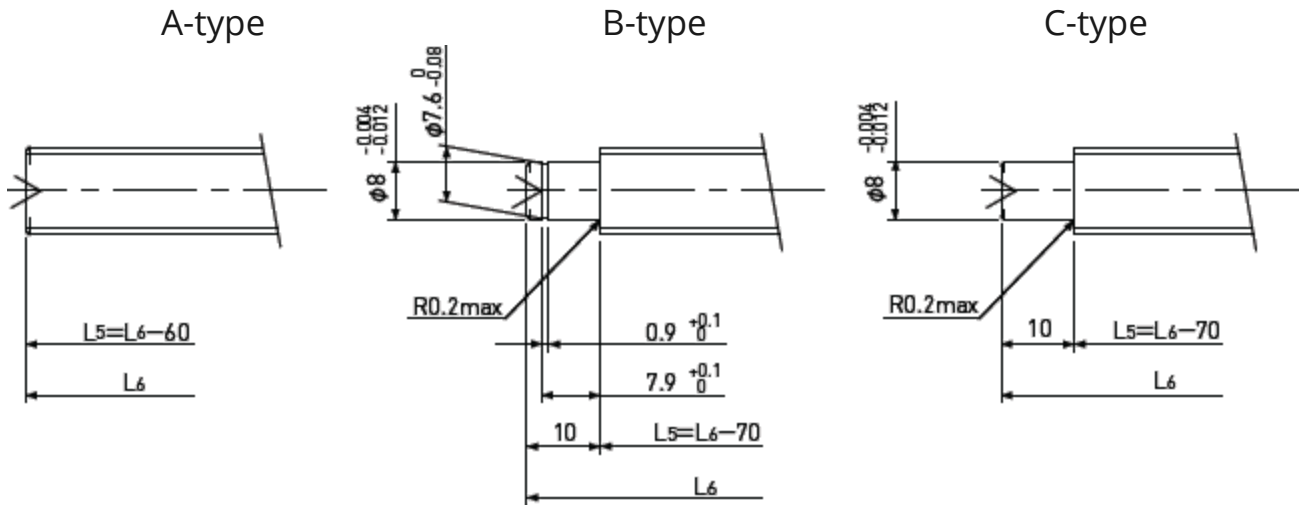
SG1210 | Shaft dia. ø12 | Lead 10mm | C5



Unit : mm

Ball Screw Specifications	
Ball size	ø2.381
Number of thread	2
Thread direction	Right
Shaft root dia.	ø10.2
Number of circuit	1.7×2
Shaft/Nut Material	SCM415H
Surface hardness	HRC58~62 (Thread area)
Anti-rust treatment	Anti-rust oil

Supported-side end-journal profile



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

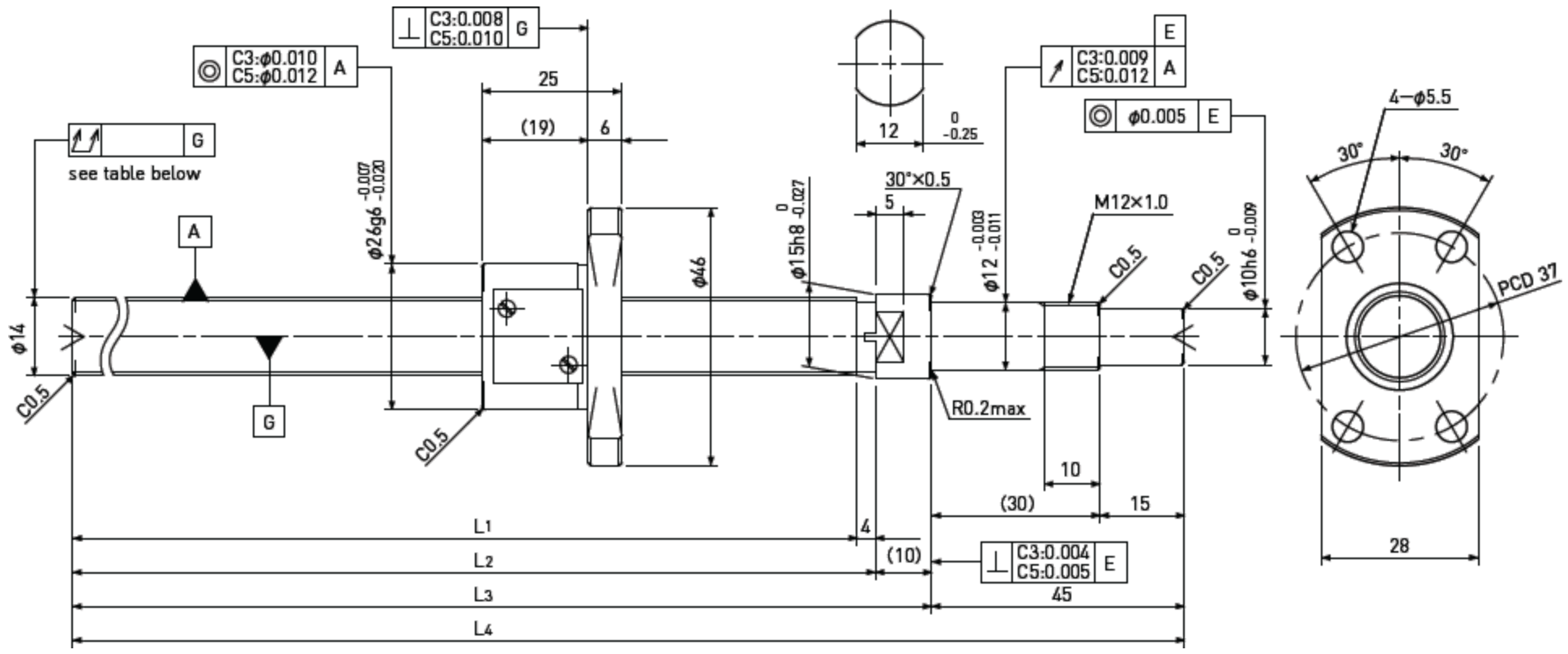
Support-unit Recommendation		
Supported-side:	EF10	
Fixed-side:	EK10	

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
SG1210-240R300C5	210	C5	240	245	255	300	±0.023	0.018	0.055	~0.005	-	5100	9800
SG1210-340R400C5	310	C5	340	345	355	400	±0.025	0.020	0.065				

Standard products in stock SG series

SG1402 | Shaft dia. ø14 | Lead 2mm | C3&C5

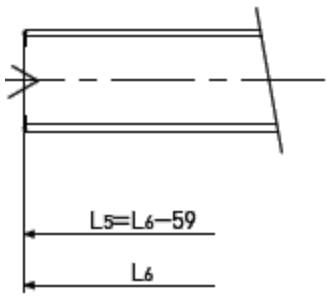


Unit : mm

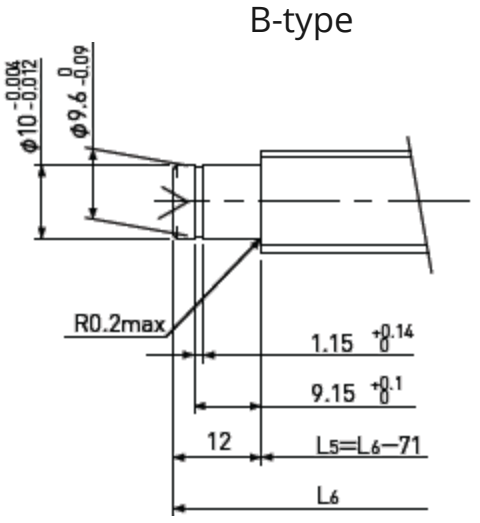
Ball Screw Specifications	
Ball size	ø1.5875
Number of thread	1
Thread direction	Right
Shaft root dia.	ø12.6
Number of circuit	3.7×1
Shaft/Nut Material	SCM415H
Surface hardness	HRC58~62 (Thread area)
Anti-rust treatment	Anti-rust oil

Supported-side end-journal profile

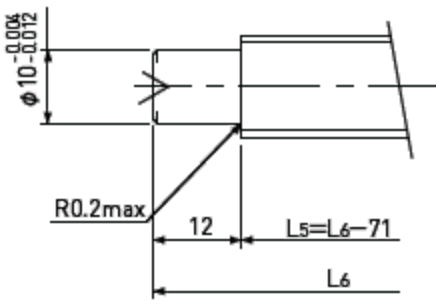
A-type



B-type



C-type



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

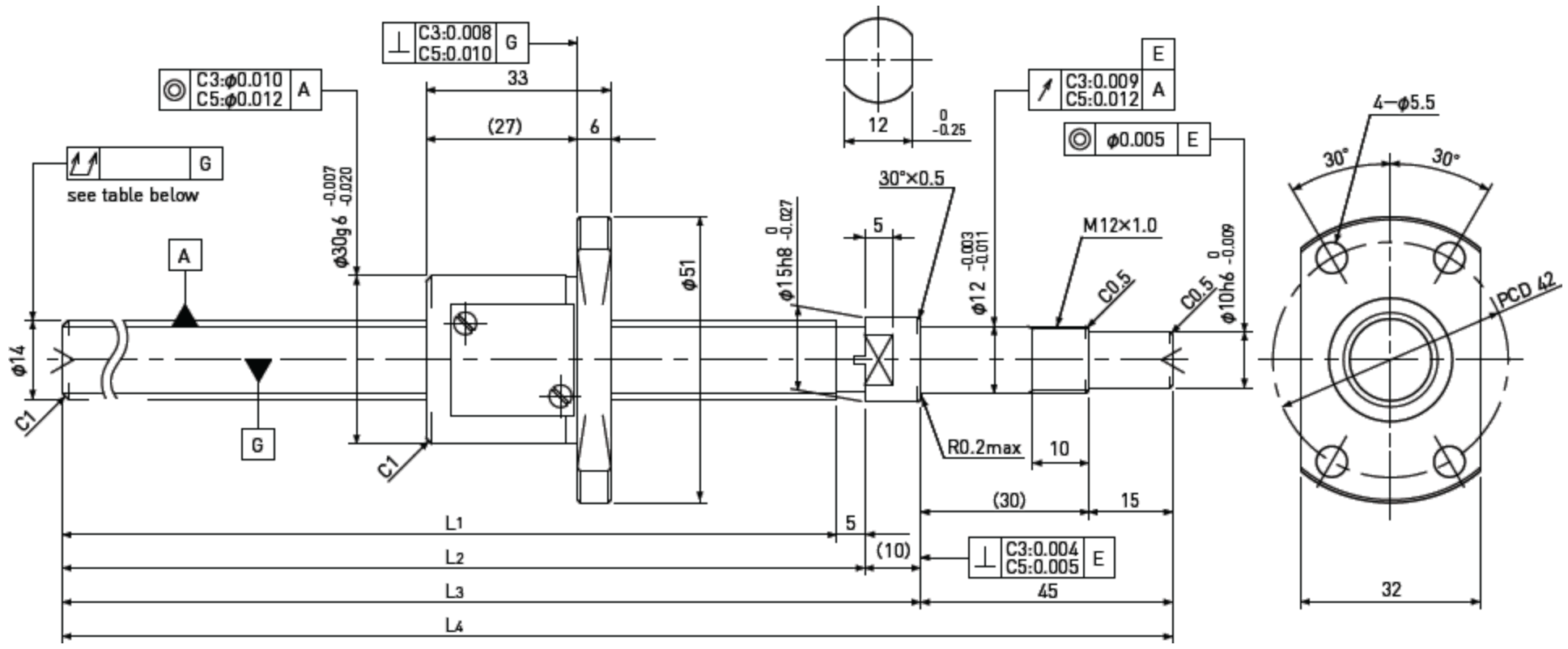
Support-unit Recommendation	
Supported-side:	EF12
Fixed-side:	EK12

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
SG1402-141R200C3	115	C3	141	145	155	200	±0.010	0.008	0.025	0 Spacer Ball (1:1)	0.010~0.050	2000	3800
SG1402-191R250C3	165	C3	191	195	205	250	±0.010	0.008	0.030				
SG1402-241R300C3	215	C3	241	245	255	300	±0.012	0.008	0.030				
SG1402-291R350C3	265	C3	291	295	305	350	±0.012	0.008	0.040				
SG1402-391R450C3	365	C3	391	395	405	450	±0.013	0.010	0.050				
SG1402-141R200C5	115	C5	141	145	155	200	±0.020	0.018	0.040	~0.005	-	3200	7500
SG1402-191R250C5	165	C5	191	195	205	250	±0.020	0.018	0.045				
SG1402-241R300C5	215	C5	241	245	255	300	±0.023	0.018	0.045				
SG1402-291R350C5	265	C5	291	295	305	350	±0.023	0.018	0.055				
SG1402-391R450C5	365	C5	391	395	405	450	±0.025	0.020	0.060				

Standard products in stock SG series

SG1404 | Shaft dia. ø14 | Lead 4mm | C3&C5

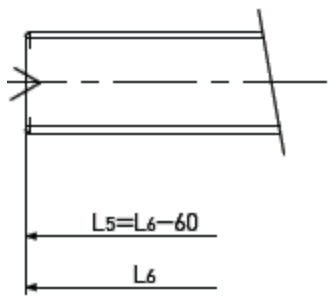


Unit : mm

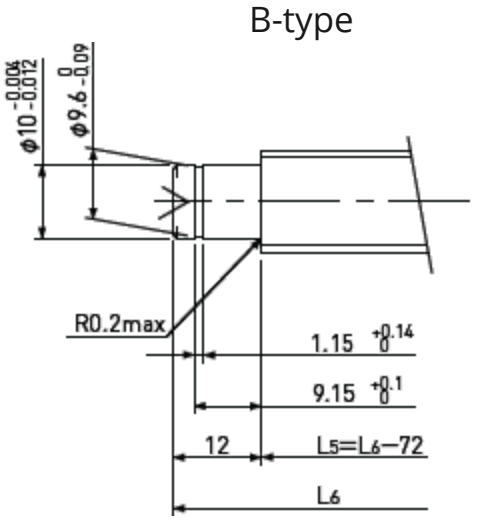
Ball Screw Specifications	
Ball size	ø2.381
Number of thread	1
Thread direction	Right
Shaft root dia.	ø11.8
Number of circuit	3.7×1
Shaft/Nut Material	SCM415H
Surface hardness	HRC58~62 (Thread area)
Anti-rust treatment	Anti-rust oil

Supported-side end-journal profile

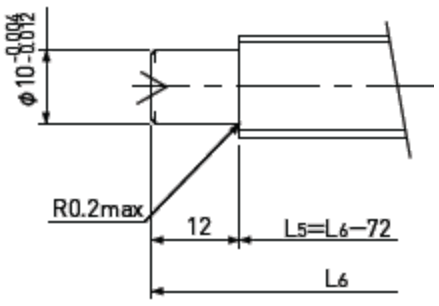
A-type



B-type



C-type



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

Support-unit Recommendation	
Supported-side:	EF12
Fixed-side:	EK12

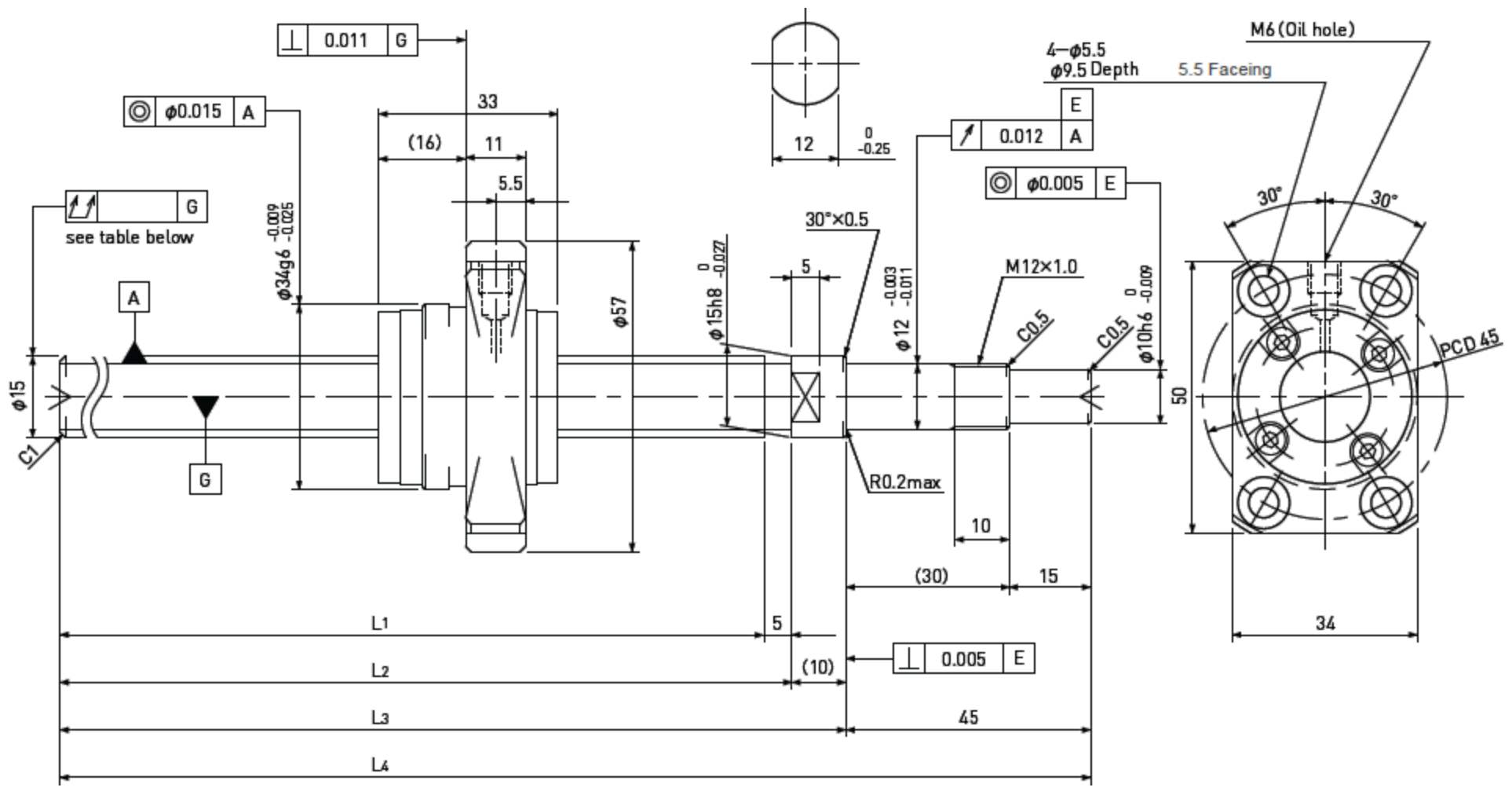
Unit : mm

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
SG1404-190R250C3	155	C3	190	195	205	250	±0.010	0.008	0.030	0 Spacer Ball (1:1)	0.020~0.070	3600	5800
SG1404-240R300C3	205	C3	240	245	255	300	±0.012	0.008	0.030				
SG1404-290R350C3	255	C3	290	295	305	350	±0.012	0.008	0.040				
SG1404-390R450C3	355	C3	390	395	405	450	±0.013	0.010	0.050				
SG1404-490R550C3	455	C3	490	495	505	550	±0.015	0.010	0.055				
SG1404-190R250C5	155	C5	190	195	205	250	±0.020	0.018	0.045	~0.005	-	5700	11600
SG1404-240R300C5	205	C5	240	245	255	300	±0.023	0.018	0.045				
SG1404-290R350C5	255	C5	290	295	305	350	±0.023	0.018	0.055				
SG1404-390R450C5	355	C5	390	395	405	450	±0.025	0.020	0.060				
SG1404-490R550C5	455	C5	490	495	505	550	±0.027	0.020	0.075				

ABSSAC
PRECISION MOTION SINCE 1982

Standard products in stock SG series

SG1505 | Shaft dia. ø15 | Lead 5mm | C5

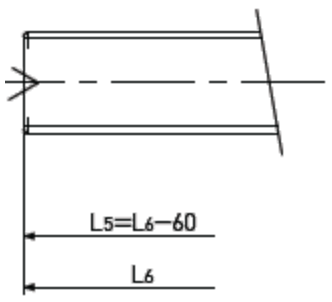


Unit : mm

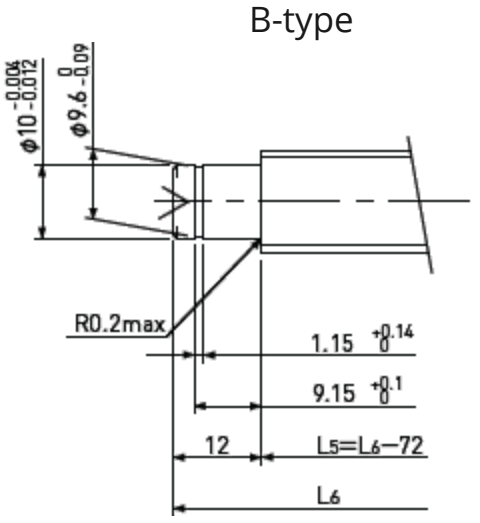
Ball Screw Specifications	
Ball size	ø3.175
Number of thread	1
Thread direction	Right
Shaft root dia.	ø12.2
Number of circuit	3.7×1
Shaft/Nut Material	SCM415H
Surface hardness	HRC58~62 (Thread area)
Anti-rust treatment	Anti-rust oil

Supported-side end-journal profile

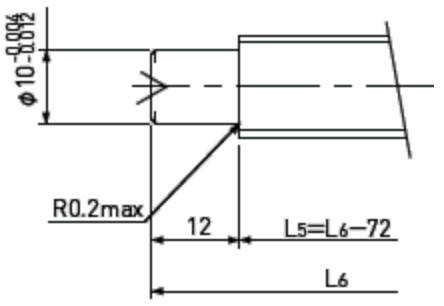
A-type



B-type



C-type



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

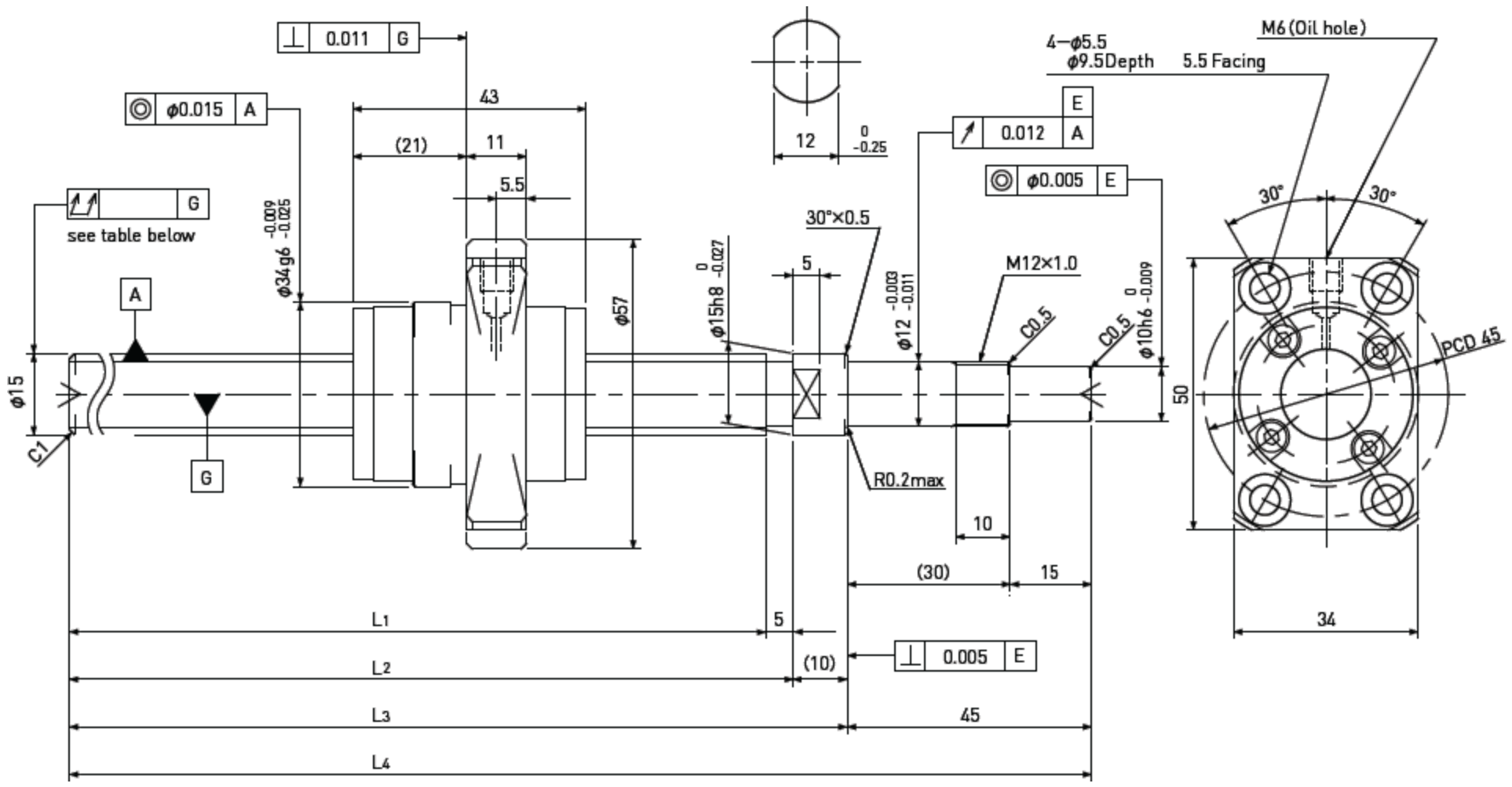
Support-unit Recommendation		
Supported-side:	EF12	
Fixed-side:	EK12	

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
SG1505-340R400C5	305	C5	340	345	355	400	±0.025	0.020	0.055	~0.005	-	8900	17000
SG1505-540R600C5	505	C5	540	545	555	600	±0.030	0.023	0.075				

Standard products in stock SG series

SG1510 | Shaft dia. ø15 | Lead 10mm | C5

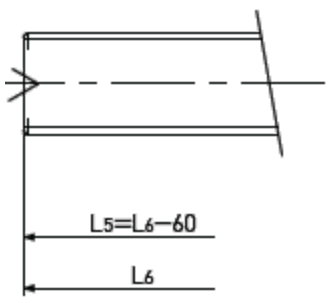


Unit : mm

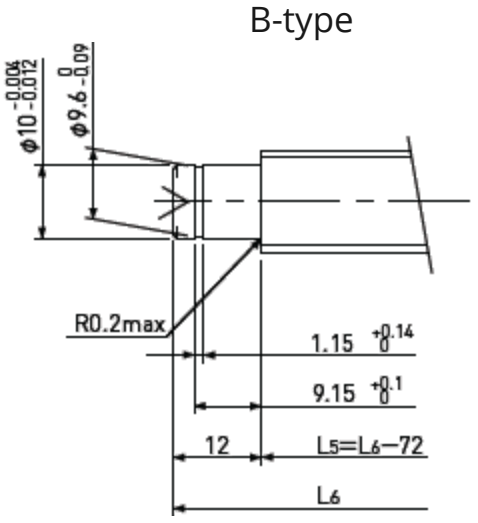
Ball Screw Specifications	
Ball size	ø3.175
Number of thread	2
Thread direction	Right
Shaft root dia.	ø12.2
Number of circuit	2.7×2
Shaft/Nut Material	SCM415H
Surface hardness	HRC58~62 (Thread area)
Anti-rust treatment	Anti-rust oil

Supported-side end-journal profile

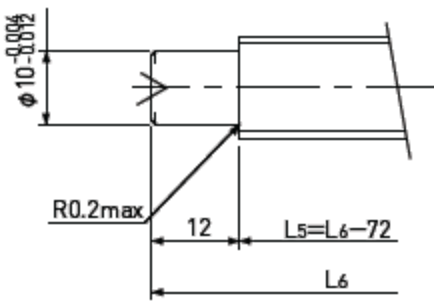
A-type



B-type



C-type



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

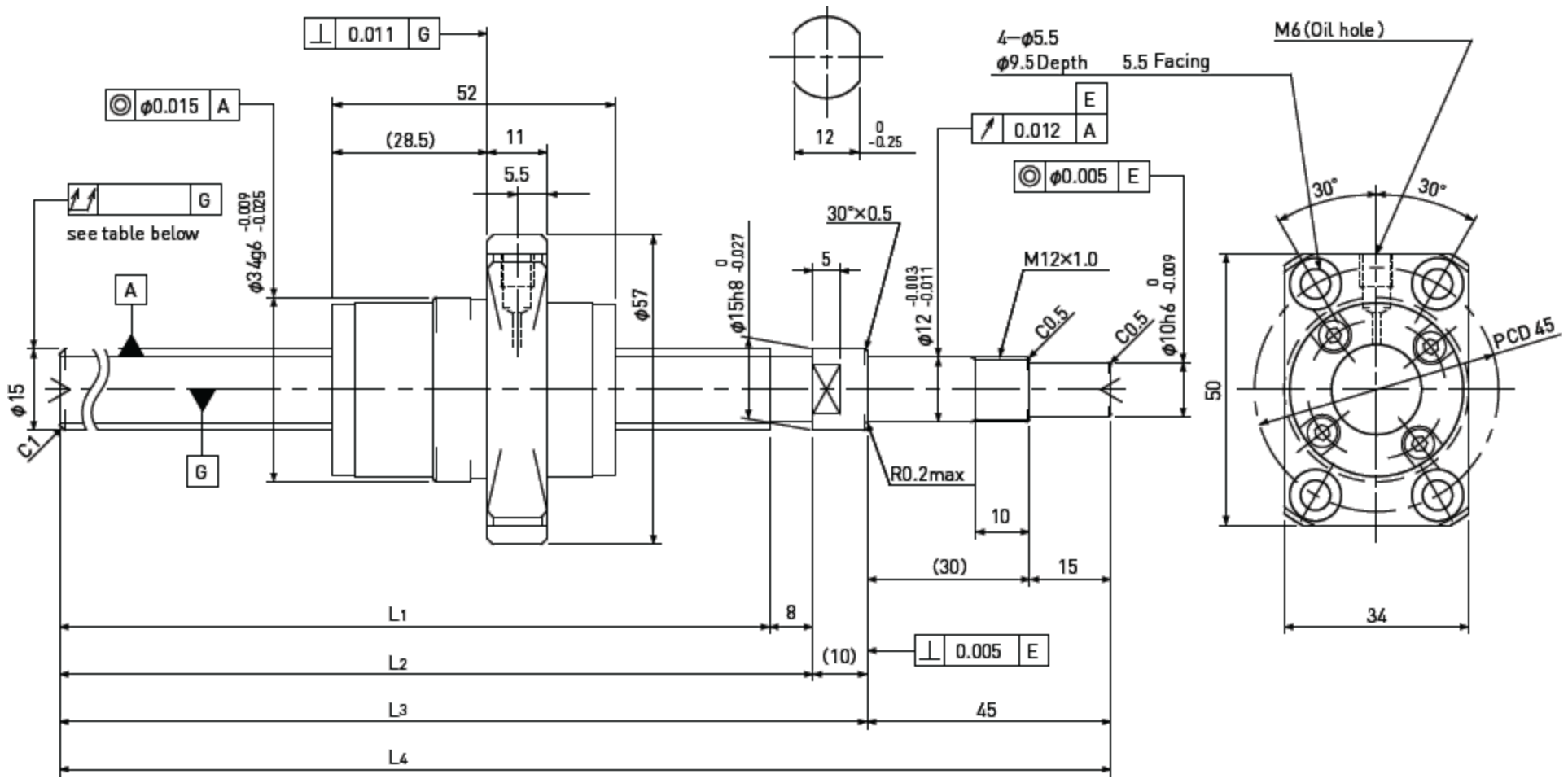
Support-unit Recommendation		
Supported-side:	EF12	
Fixed-side:	EK12	

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
SG1510-340R400C5	295	C5	340	345	355	400	±0.025	0.020	0.055	~0.005	-	12000	25000
SG1510-540R600C5	495	C5	540	545	555	600	±0.030	0.023	0.075				

Standard products in stock SG series

SG1520 | Shaft dia. ø15 | Lead 20mm | C5

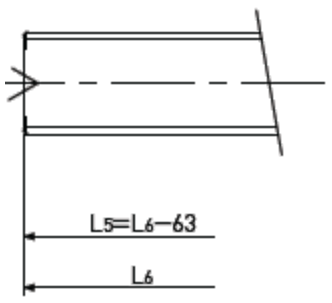


Unit : mm

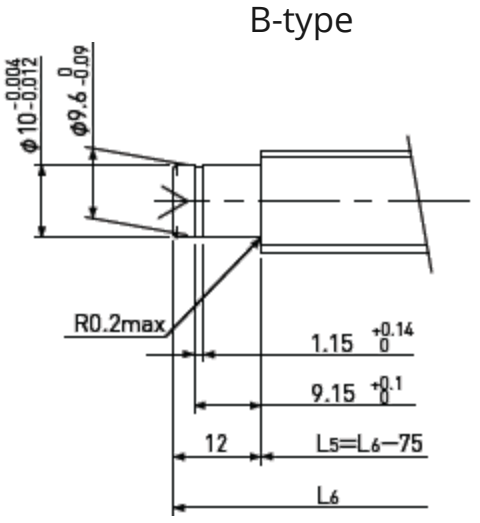
Ball Screw Specifications	
Ball size	ø3.175
Number of thread	2
Thread direction	Right
Shaft root dia.	ø12.4
Number of circuit	1.7×2
Shaft/Nut Material	SCM415H
Surface hardness	HRC58~62 (Thread area)
Anti-rust treatment	Anti-rust oil

Supported-side end-journal profile

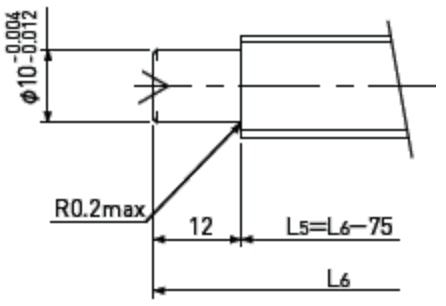
A-type



B-type



C-type



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

Support-unit Recommendation		
Supported-side:	EF12	
Fixed-side:	EK12	

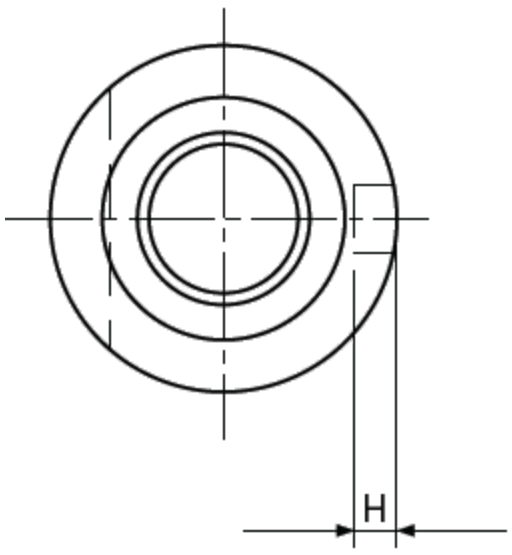
Unit : mm

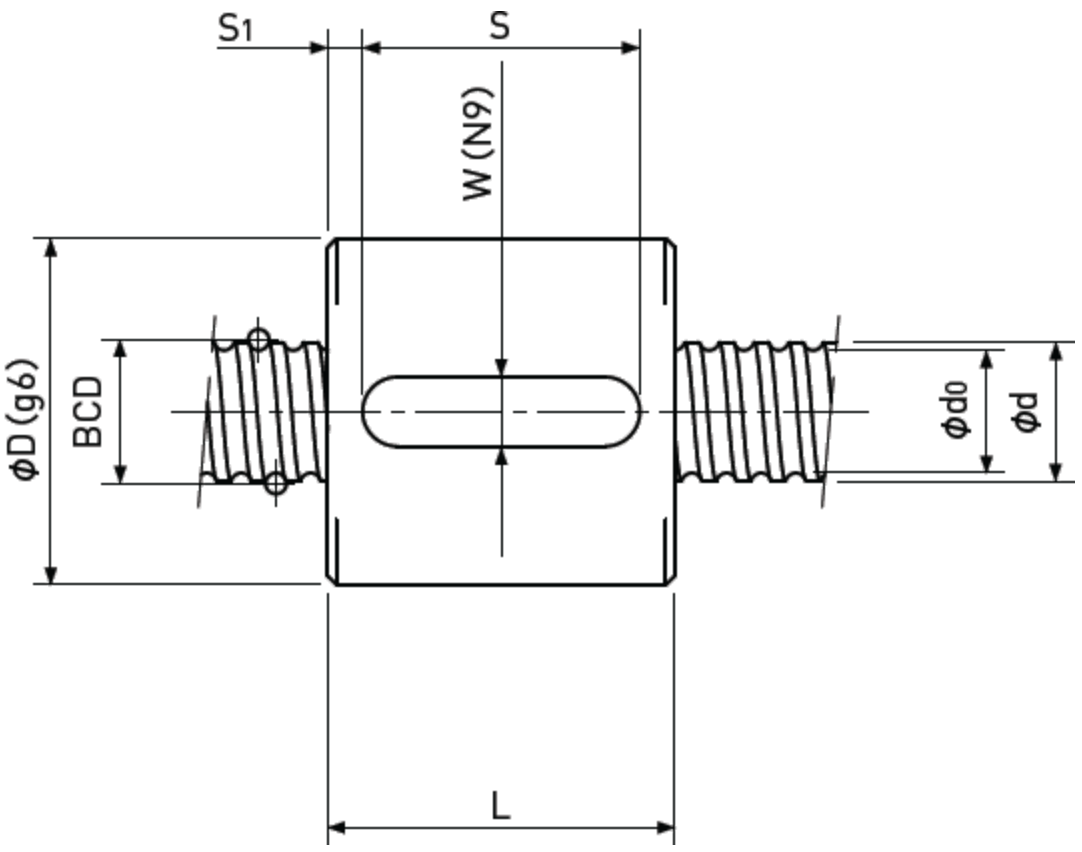
Ball Screw Model	Travel	Grade	Shaft length				Lead accuracy		Total Run-out //	Axial play	Preload Torque Nm	Basic Load Rating N	
			L_1	L_2	L_3	L_4	Travel deviation e_P	Variation V_u				Dynamic Ca	Static Coa
SG1520-337R400C5	285	C5	337	345	355	400	±0.025	0.020	0.055	~0.005	-	8000	16000
SG1520-537R600C5	485	C5	537	545	555	600	±0.030	0.023	0.075				

Precision Ball Screws

Sleeve type Single Nut

Backlash type/Preload type





Unit : mm

Ball Nut Model number	Shaft nominal dia. d	Lead	Ball size	BCD	Lead angle	Root dia. d_0	Number of Circuit	Basic Load Rating N		Nut Rigidity N/μm
								Dynamic Ca	Static Coa	
BS 0301 B	3	1	0.6	3.18	5□°43'	2.4	3.7×1	330 / -	440 / -	42 / -
BS 0401 A	4	1	0.8	4.15	4□°23'	3.3	2.7×1	420 / 270	570 / 290	40 / 34
BS 0401 B	4	1	0.8	4.15	4□°23'	3.3	3.7×1	560 / 350	790 / 400	54 / 45
BS 0402 A	4	2	0.8	4.15	8□°43'	3.3	2.7×1	420 / 260	570 / 290	39 / 33
BS 0403 A	4	3	0.8	4.15	12□°57'	3.3	2.7×1	420 / -	570 / -	39 / -
BS 0501 B	5	1	0.8	5.15	3□°32'	4.3	3.7×1	630 / 400	1000 / 500	65 / 55
BS 0504 A	5	4	0.8	5.15	13□°53'	4.3	2.7×1	470 / 300	720 / 360	47 / 39
BS 0601 B	6	1	0.8	6.15	2□°58'	5.3	3.7×1	680 / 430	1200 / 610	75 / 63
BS 0601.5 B	6	1.5	1	6.2	4□°24'	5.1	3.7×1	980 / 620	1600 / 800	79 / 67
BS 0602 A	6	2	1	6.2	5□°52'	5.1	2.7×1	750 / 470	1200 / 590	58 / 49
BS 0602 B	6	2	1	6.2	5□°52'	5.1	3.7×1	980 / 620	1600 / 800	79 / 67
BS 0602.5 A	6	2.5	1	6.2	7□°19'	5.1	2.7×1	750 / 470	1200 / 590	59 / 49

Ball Nut Model number	Nut dimension					
	D	L	W	H	S	S_1
BS 0301 B	9	12	2	1.2	8	2
BS 0401 A	10	12	2	1.2	8	2
BS 0401 B	11	14	3	1.8	8	3
BS 0402 A	11	16	3	1.8	8	4
BS 0403 A	11	20	3	1.8	8	6
BS 0501 B	12	14	3	1.8	8	3
BS 0504 A	12	22	3	1.8	12	5
BS 0601 B	13	14	3	1.8	10	2
BS 0601.5 B	14	16	3	1.8	10	3
BS 0602 A	15	15	3	1.8	10	2.5
BS 0602 B	15	18	3	1.8	12	3
BS 0602.5 A	15	16	3	1.8	10	3

Basic Load Rating N		Nut Rigidity N/μm
Dynamic Ca	Static Coa	
1000 / 640	3300 / 1650	164 / 138
		Preload type
		Backlash type

Note 1) The diameter of one of the Screw Shaft ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.

Note 2) Ball Nut dimension is without seal at both ends. If the seals are required, Ball Nut dimension should be changed, in that case, please ask ABSSAC. Some type of Ball Nuts cannot equip with seals, please ask ABSSAC representative.

Note 3) The Rigidity values shown in the table are theoretical values of Ball Nut Rigidity calculated from the amount of Elastic Displacement under the following conditions. Backlash type; Apply the Axial load equivalent to 30% of the Basic Dynamic Load Rating Ca. Preload type; Apply the Preload equivalent to 5% of the Basic Dynamic Load Rating Ca. For Axial load or Preload condition other than the above, see the formula in p-A823, you can calculate Rigidity using this formula.

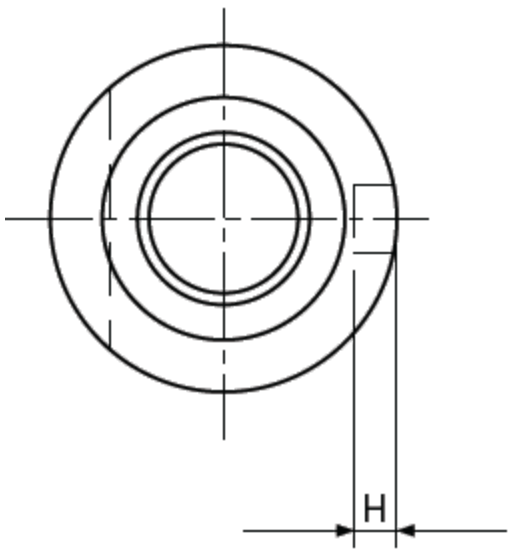
Note 4) All models are Right-hand screw. If Left-hand screw is required, please ask ABSSAC representative.

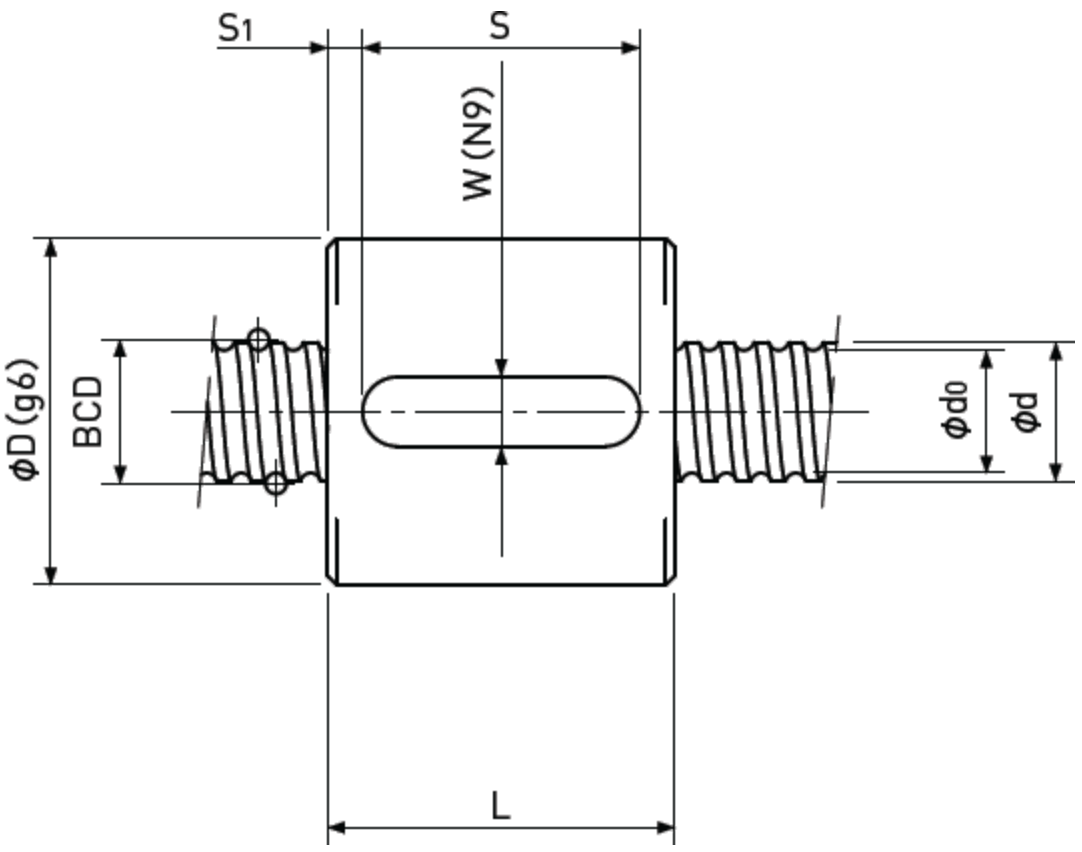
Note 5) Basic Load Rating and Rigidity for Backlash type and Preload type are described in the same cell.

Precision Ball Screws

Sleeve type Single Nut

Backlash type/Preload type





Unit : mm

Ball Nut Model number	Shaft nominal dia. d	Lead	Ball size	BCD	Lead angle	Root dia. d_0	Number of Circuit	Basic Load Rating N		Nut Rigidity N/μm
								Dynamic Ca	Static Coa	
BS 0801 B	8	1	0.8	8.15	2□°15'	7.3	3.7×1	780 / 490	1650 / 820	95 / 80
BS 0801.5 B	8	1.5	1	8.2	3□°20'	7.1	3.7×1	1100 / 700	2200 / 1100	99 / 83
BS 0802 A□(1)	8	2	1	8.2	4□°26'	7.1	2.7×1	850 / 540	1600 / 800	74 / 61
BS 0802 B□(1)	8	2	1	8.2	4□°26'	7.1	3.7×1	1100 / 700	2200 / 1100	99 / 83
BS 0802 A□(2)	8	2	1.5875	8.3	4□°23'	6.6	2.7×1	1850 / 1150	3000 / 1500	82 / 69
BS 0802 B□(2)	8	2	1.5875	8.3	4□°23'	6.6	3.7×1	2400 / 1550	4100 / 2100	111 / 94
BS 0802.5 A□(1)	8	2.5	1.5875	8	5□°41'	6.3	2.7×1	1850 / -	3000 / -	80 / -
BS 0802.5 A□(2)	8	2.5	1.5875	8.3	5□°29'	6.6	2.7×1	1850 / 1150	3000 / 1500	82 / 69
BS 0802.5 B	8	2.5	1.5875	8.3	5□°29'	6.6	3.7×1	2400 / 1550	4100 / 2100	111 / 93
BS 0803 A	8	3	2	8.3	6□°34'	6.2	2.7×1	2600 / 1650	4200 / 2100	85 / 70
BS 0803 B	8	3	2	8.3	6□°34'	6.2	3.7×1	3500 / 2200	5700 / 2800	116 / 97
BS 0804 A	8	4	2	8.3	8□°43'	6.2	2.7×1	2600 / 1650	4200 / 2100	84 / 70
BS 0805 A	8	5	1.5875	8.3	10□°51'	6.6	2.7×1	1850 / 1150	3000 / 1500	82 / 67

Ball Nut Model number	Nut dimension					
	D	L	W	H	S	S_1
BS 0801 B	16	14	3	1.8	10	2
BS 0801.5 B	16	16	3	1.8	10	3
BS 0802 A□(1)	16	15	3	1.8	10	2.5
BS 0802 B□(1)	16	18	3	1.8	12	3
BS 0802 A□(2)	20	17	4	2.5	12	2.5
BS 0802 B□(2)	20	20	4	2.5	16	2
BS 0802.5 A□(1)	16	16	3	1.8	8	4
BS 0802.5 A□(2)	20	19	4	2.5	12	3.5
BS 0802.5 B	20	22	4	2.5	16	3
BS 0803 A	20	22	4	2.5	16	3
BS 0803 B	20	26	4	2.5	20	3
BS 0804 A	21	26	4	2.5	20	3
BS 0805 A	18	28	4	2.5	20	4

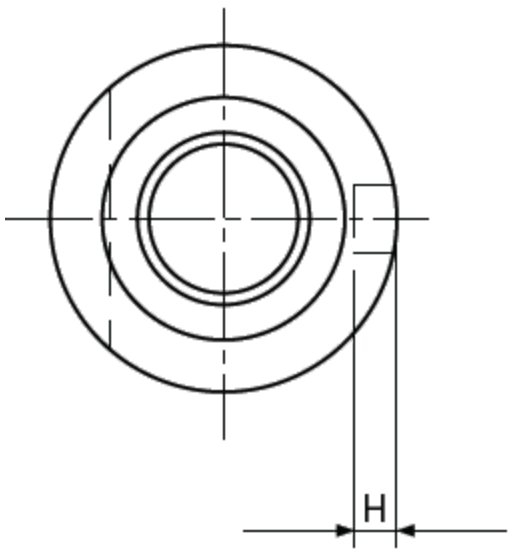
Basic Load Rating N		Nut Rigidity N/μm	
Dynamic Ca	Static Coa		
1000 / 640	3300 / 1650	164 / 138	
			Preload type
			Backlash type

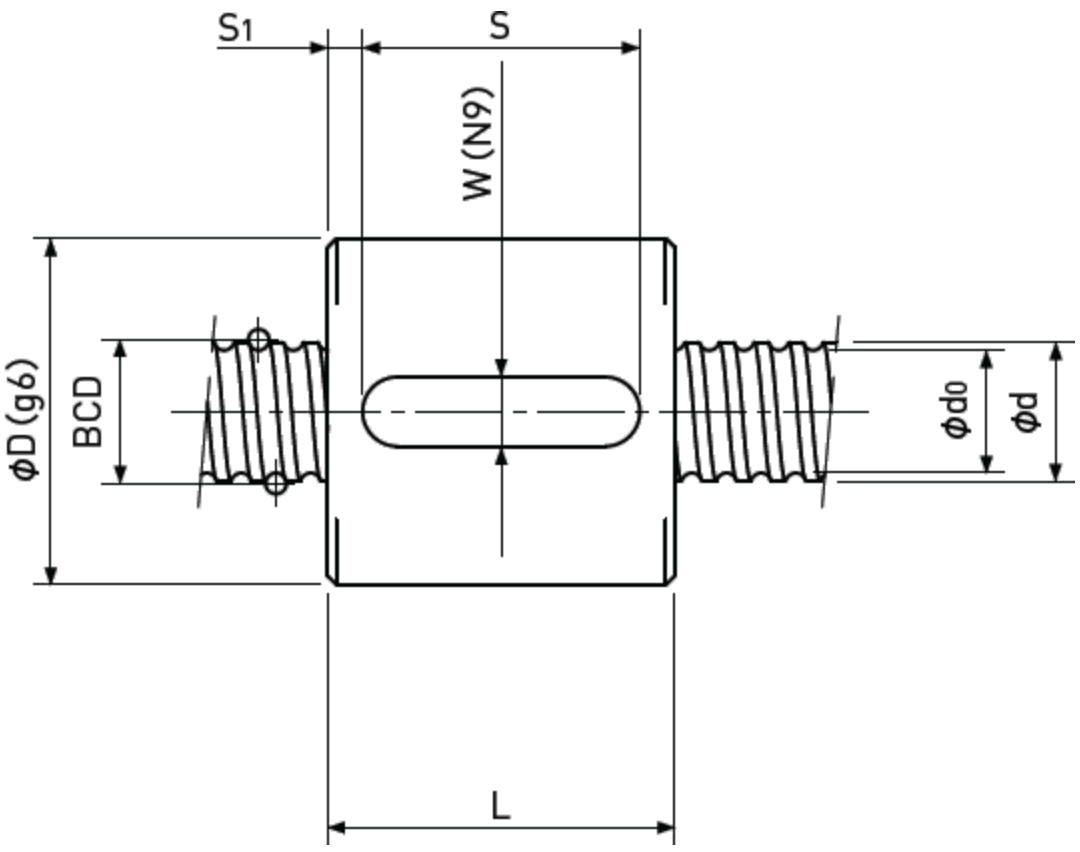
Note 1) The diameter of one of the Screw Shaft ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.
Note 2) Ball Nut dimension is without seal at both ends. If the seals are required, Ball Nut dimension should be changed, in that case, please ask ABSSAC. Some type of Ball Nuts cannot equip with seals, please ask ABSSAC representative.
Note 3) The Rigidity values shown in the table are theoretical values of Ball Nut Rigidity calculated from the amount of Elastic Displacement under the following conditions. Backlash type; Apply the Axial load equivalent to 30% of the Basic Dynamic Load Rating Ca. Preload type; Apply the Preload equivalent to 5% of the Basic Dynamic Load Rating Ca. For Axial load or Preload condition other than the above, see the formula in p-A823, you can calculate Rigidity using this formula.
Note 4) All models are Right-hand screw. If Left-hand screw is required, please ask ABSSAC representative.
Note 5) Basic Load Rating and Rigidity for Backlash type and Preload type are described in the same cell.

Precision Ball Screws

Sleeve type Single Nut

Backlash type/Preload type





Unit : mm

Ball Nut Model number	Shaft nominal dia. d	Lead	Ball size	BCD	Lead angle	Root dia. d_0	Number of Circuit	Basic Load Rating N		Nut Rigidity N/μm
								Dynamic Ca	Static Coa	
BS 1001 B	10	1	0.8	10.15	1□°48'	9.3	3.7×1	840 / 530	2000 / 1000	113 / 95
BS 1001.5 B	10	1.5	1	10.2	2□°41'	9.1	3.7×1	1250 / 790	2800 / 1400	120 / 101
BS 1002 A	10	2	1.5875	10.3	3□°32'	8.6	2.7×1	2100 / 1300	3800 / 1900	100 / 82
BS1002 B	10	2	1.5875	10.3	3□°32'	8.6	3.7×1	2700 / 1750	5300 / 2700	134 / 112
BS 1002.5 A	10	2.5	1.5875	10.3	4□°25'	8.6	2.7×1	2100 / 1300	3800 / 1900	100 / 82
BS 1002.5 B	10	2.5	1.5875	10.3	4□°25'	8.6	3.7×1	2700 / 1750	5300 / 2700	133 / 112
BS 1003 A	10	3	2	10.3	5□°18'	8.2	2.7×1	3000 / 1800	5200 / 2600	103 / 84
BS 1003 B	10	3	2	10.3	5□°18'	8.2	3.7×1	3900 / 2500	7200 / 3600	140 / 118
BS 1004 A	10	4	2	10.3	7□°03'	8.2	2.7×1	3000 / 1800	5200 / 2600	104 / 86
BS 1004 B	10	4	2	10.3	7□°03'	8.2	3.7×1	3900 / 2500	7200 / 3600	139 / 118
BS 1005 A□(1)	10	5	2	10.3	8□°47'	8.2	2.7×1	3000 / -	5200 / -	103 / -
BS 1005 A□(2)	10	5	2	10.3	8□°47'	8.2	2.70 ×1	3000 / 1800	5200 / 2600	103 / 85

Ball Nut Model number	Nut dimension					
	D	L	W	H	S	S_1
BS 1001 B	19	14	3	1.8	10	2
BS 1001.5 B	19	16	3	1.8	10	3
BS 1002 A	23	17	5	3	12	2.5
BS1002 B	23	20	5	3	16	2
BS 1002.5 A	24	19	5	3	12	3.5
BS 1002.5 B	24	22	5	3	16	3
BS 1003 A	24	22	5	3	16	3
BS 1003 B	24	26	5	3	20	3
BS 1004 A	24	26	5	3	20	3
BS 1004 B	24	30	5	3	20	5
BS 1005 A□(1)	23	26	5	3	16	5
BS 1005 A□(2)	24	34	5	3	28	3

Basic Load Rating N		Nut Rigidity N/μm
Dynamic Ca	Static Coa	
1000 / 640	3300 / 1650	164 / 138
		Preload type
		Backlash type

Note 1) The diameter of one of the Screw Shaft ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.

Note 2) Ball Nut dimension is without seal at both ends. If the seals are required, Ball Nut dimension should be changed, in that case, please ask ABSSAC. Some type of Ball Nuts cannot equip with seals, please ask ABSSAC representative.

Note 3) The Rigidity values shown in the table are theoretical values of Ball Nut Rigidity calculated from the amount of Elastic Displacement under the following conditions. Backlash type; Apply the Axial load equivalent to 30% of the Basic Dynamic Load Rating Ca. Preload type; Apply the Preload equivalent to 5% of the Basic Dynamic Load Rating Ca. For Axial load or Preload condition other than the above, see the formula in p-A823, you can calculate Rigidity using this formula.

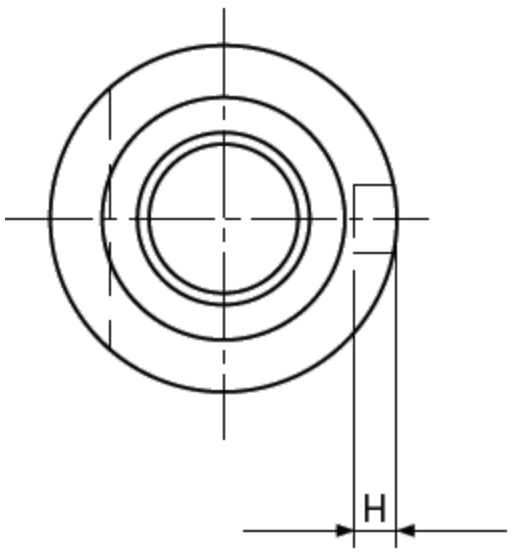
Note 4) All models are Right-hand screw. If Left-hand screw is required, please ask ABSSAC representative.

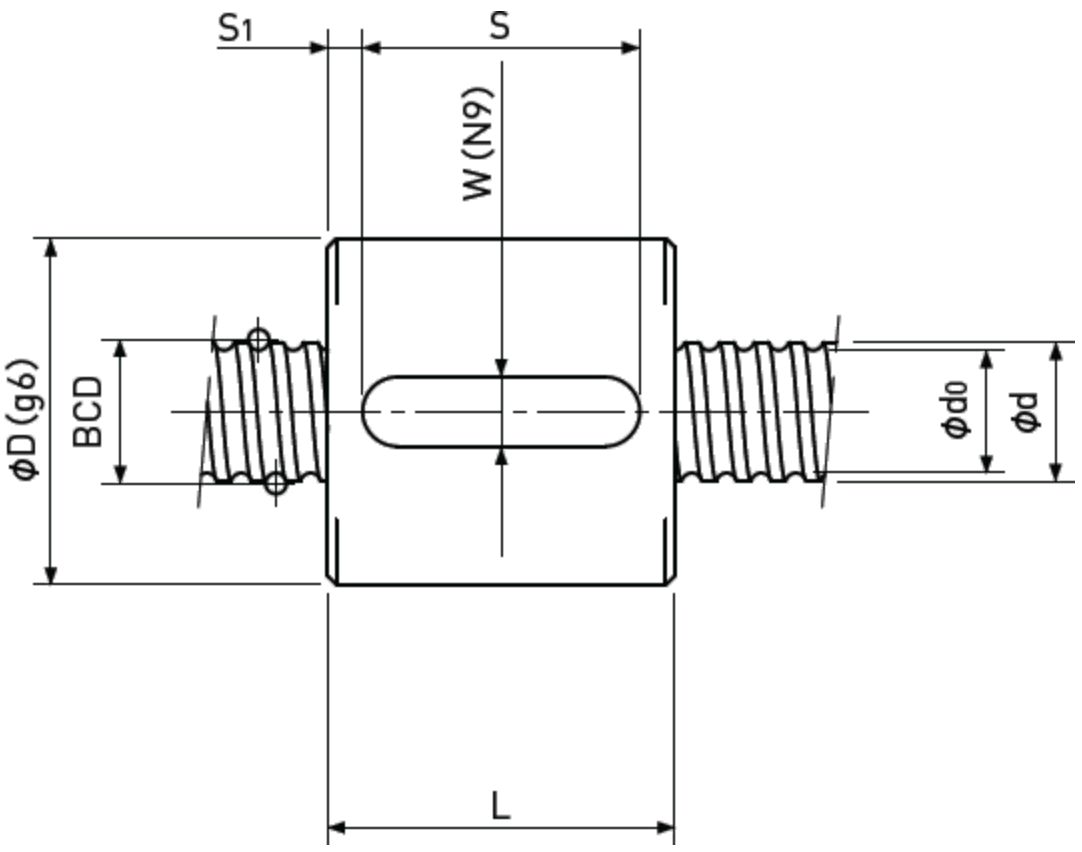
Note 5) Basic Load Rating and Rigidity for Backlash type and Preload type are described in the same cell.

Precision Ball Screws

Sleeve type Single Nut

Backlash type/Preload type





Unit : mm

Ball Nut Model number	Shaft nominal dia. d	Lead	Ball size	BCD	Lead angle	Root dia. d_0	Number of Circuit	Basic Load Rating N		Nut Rigidity N/μm
								Dynamic Ca	Static Coa	
BS 1201 B	12	1	0.8	12.15	1°30'	11.3	3.7×1	910 / 570	2400 / 1200	131 / 110
BS 1202 B	12	2	1.5875	12.3	2°58'	10.6	3.7×1	3000 / 1900	6400 / 3200	156 / 132
BS 1202.5 B	12	2.5	1.5875	12.3	3°42'	10.6	3.7×1	3000 / 1850	6400 / 3200	156 / 130
BS 1203 B	12	3	2	12.3	4°26'	10.2	3.7×1	4300 / 2800	8700 / 4300	162 / 137
BS 1204 B	12	4	2.381	12.3	5°55'	9.8	3.7×1	5400 / 3400	10200 / 5100	165 / 139
BS 1205 A	12	5	2.381	12.3	7°22'	9.8	2.7×1	4100 / 2500	7400 / 3700	122 / 101
BS 1401 B	14	1	0.8	14.15	1°17'	13.3	3.7×1	960 / 610	2900 / 1450	148 / 124
BS 1402 B	14	2	1.5875	14.3	2°33'	12.6	3.7×1	3200 / 2000	7500 / 3800	176 / 148
BS 1402.5 B	14	2.5	1.5875	14.3	3°11'	12.6	3.7×1	3200 / 2000	7500 / 3700	176 / 148
BS 1403 B	14	3	2	14.3	3°49'	12.2	3.7×1	4600 / 2900	10100 / 5000	184 / 154
BS 1404 B	14	4	2.381	14.3	5°05'	11.8	3.7×1	5700 / 3600	11600 / 5800	187 / 157
BS 1405 B	14	5	2.381	14.3	6°21'	11.8	3.7×1	5700 / 3600	11600 / 5800	186 / 157

Ball Nut Model number	Nut dimension					
	D	L	W	H	S	S_1
BS 1201 B	22	14	4	2.5	10	2
BS 1202 B	25	20	5	3	16	2
BS 1202.5 B	26	22	5	3	16	3
BS 1203 B	28	26	5	3	20	3
BS 1204 B	28	31	5	3	25	3
BS 1205 A	28	31	5	3	25	3
BS 1401 B	26	16	5	3	10	3
BS 1402 B	26	20	5	3	16	2
BS 1402.5 B	28	22	5	3	16	3
BS 1403 B	30	26	5	3	20	3
BS 1404 B	30	31	5	3	25	3
BS 1405 B	30	38	5	3	28	5

Basic Load Rating N		Nut Rigidity N/μm	
Dynamic Ca	Static Coa		
1000 / 640	3300 / 1650	164 / 138	Preload type
			Backlash type

Note 1) The diameter of one of the Screw Shaft ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.

Note 2) Ball Nut dimension is without seal at both ends. If the seals are required, Ball Nut dimension should be changed, in that case, please ask ABSSAC. Some type of Ball Nuts cannot equip with seals, please ask ABSSAC representative.

Note 3) The Rigidity values shown in the table are theoretical values of Ball Nut Rigidity calculated from the amount of Elastic Displacement under the following conditions. Backlash type; Apply the Axial load equivalent to 30% of the Basic Dynamic Load Rating Ca. Preload type; Apply the Preload equivalent to 5% of the Basic Dynamic Load Rating Ca. For Axial load or Preload condition other than the above, see the formula in p-A823, you can calculate Rigidity using this formula.

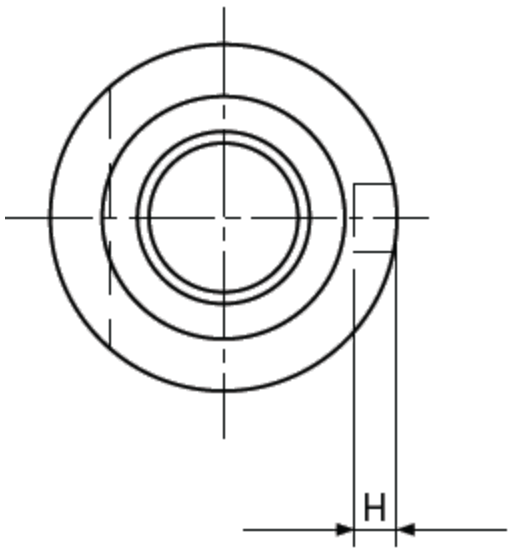
Note 4) All models are Right-hand screw. If Left-hand screw is required, please ask ABSSAC representative.

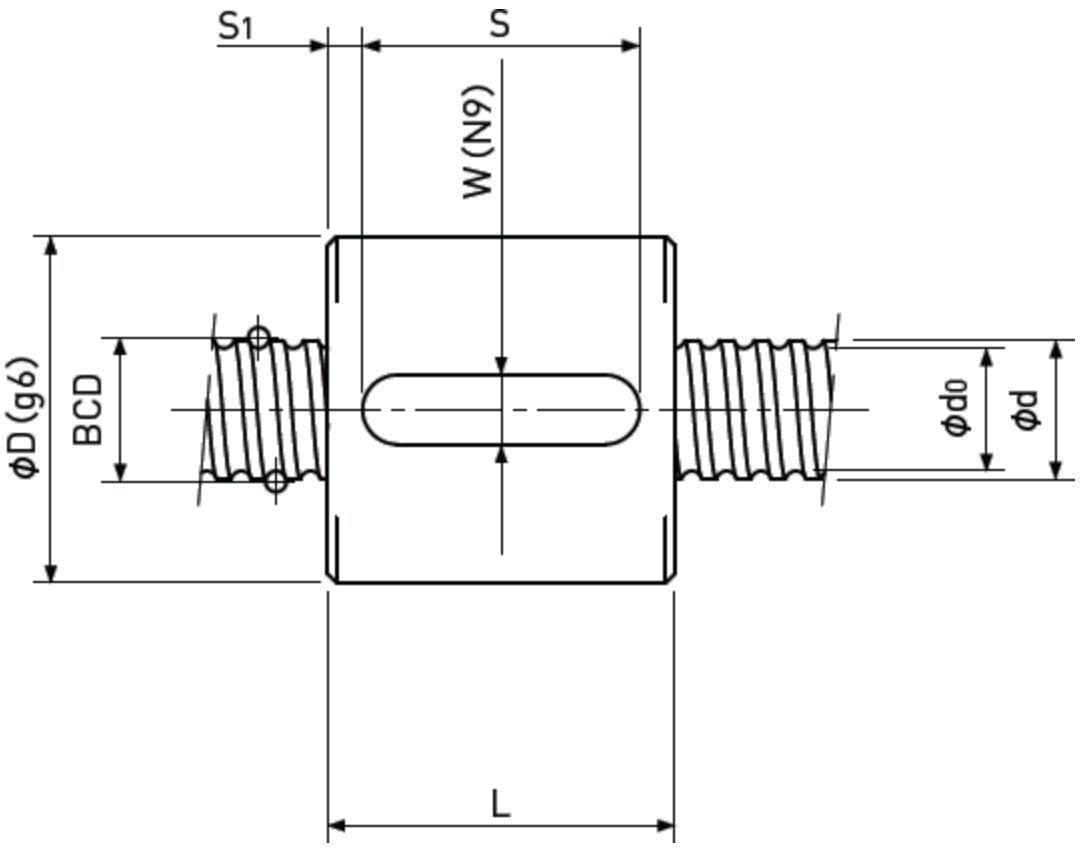
Note 5) Basic Load Rating and Rigidity for Backlash type and Preload type are described in the same cell.

Precision Ball Screws

Sleeve type Single Nut

Backlash type/Preload type





Unit : mm

Ball Nut Model number	Shaft nominal dia. d	Lead	Ball size	BCD	Lead angle	Root dia. d_0	Number of Circuit	Basic Load Rating N		Nut Rigidity N/μm
								Dynamic Ca	Static Coa	
BS 1601 B	16	1	0.8	16.15	1□°08'	15.3	3.7×1	1000 / 640	3300 / 1650	164 / 138
BS 1602 B	16	2	1.5875	16.3	2□°14'	14.6	3.7×1	3400 / 2100	8600 / 4300	197 / 163
BS 1602.5 B	16	2.5	1.5875	16.3	2□°48'	14.6	3.7×1	3400 / 2100	8600 / 4300	197 / 163
BS 1603 B	16	3	2	16.3	3□°21'	14.2	3.7×1	4900 / 3100	11600 / 5800	205 / 172
BS 1604 B	16	4	2.381	16.3	4□°28'	13.8	3.7×1	6200 / 3900	13600 / 6800	209 / 174
BS 1605 B	16	5	3.175	16.5	5□°31'	13.2	3.7×1	9100 / 5700	18200 / 9100	217 / 182

Ball Nut Model number	Nut dimension					
	D	L	W	H	S	S_1
BS 1601 B	28	16	5	3	10	3
BS 1602 B	28	20	5	3	16	2
BS 1602.5 B	28	22	5	3	16	3
BS 1603 B	32	26	5	3	20	3
BS 1604 B	34	32	5	3	25	3.5
BS 1605 B	38	38	5	3	28	5

Basic Load Rating N		Nut Rigidity N/μm
Dynamic Ca	Static Coa	
1000 / 640	3300 / 1650	164 / 138
		Preload type
		Backlash type

Note 1) The diameter of one of the Screw Shaft ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.

Note 2) Ball Nut dimension is without seal at both ends. If the seals are required, Ball Nut dimension should be changed, in that case, please ask ABSSAC. Some type of Ball Nuts cannot equip with seals, please ask ABSSAC representative.

Note 3) The Rigidity values shown in the table are theoretical values of Ball Nut Rigidity calculated from the amount of Elastic Displacement under the following conditions. Backlash type; Apply the Axial load equivalent to 30% of the Basic Dynamic Load Rating Ca. Preload type; Apply the Preload equivalent to 5% of the Basic Dynamic Load Rating Ca. For Axial load or Preload condition other than the above, see the formula in p-A823, you can calculate Rigidity using this formula.

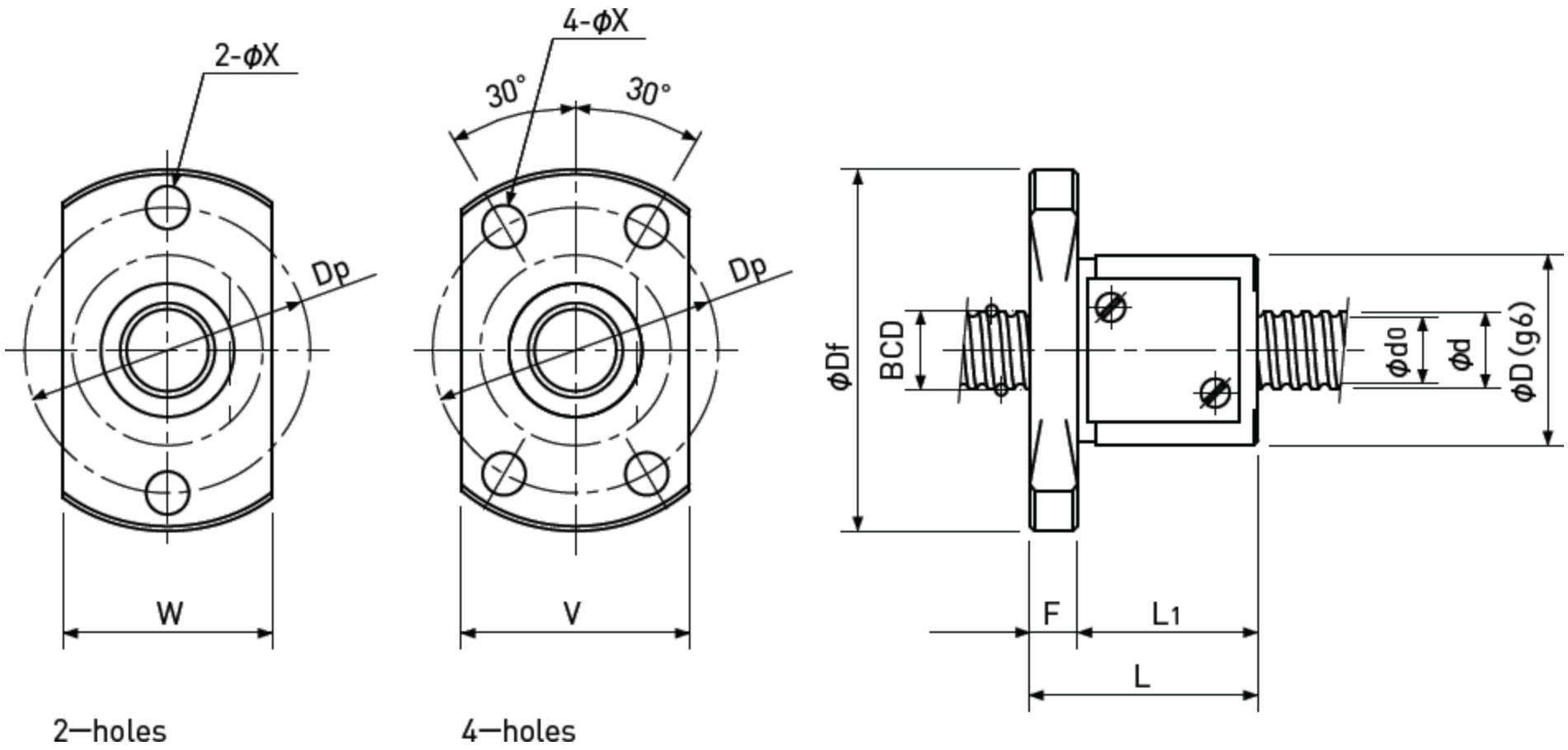
Note 4) All models are Right-hand screw. If Left-hand screw is required, please ask ABSSAC representative.

Note 5) Basic Load Rating and Rigidity for Backlash type and Preload type are described in the same cell.

Precision Ball Screws

Single Nut with Flange

Backlash type/Preload type



Type-1: Return-plate type

Unit : mm

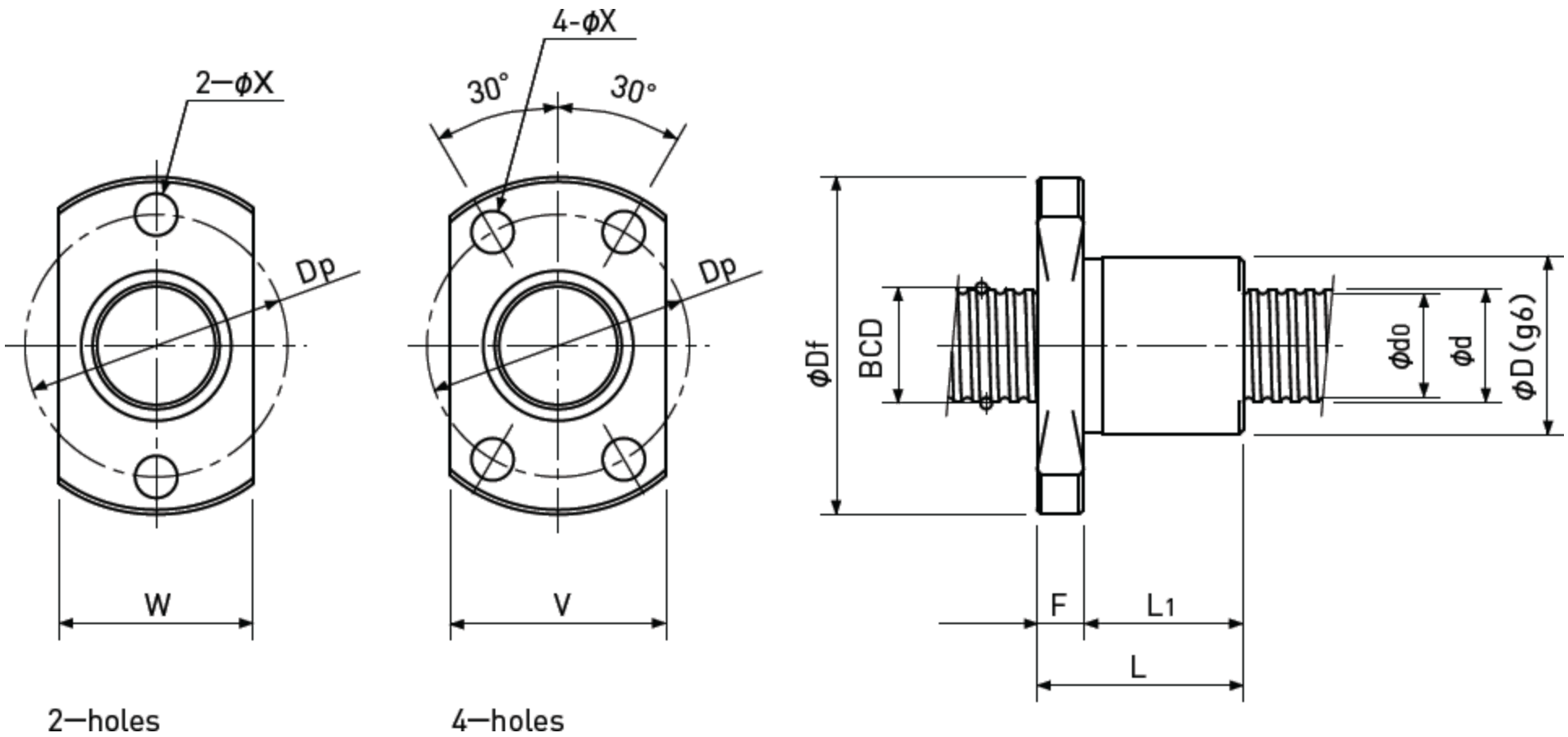
Ball Nut Model number	Shaft nominal dia. d	Lead	Ball size	BCD	Lead angle	Root dia. d_0	Number of Circuit	Basic Load Rating N		Nut Rigidity N/μm
								Dynamic Ca	Static Coa	
FBS 01800.5 A	1.8	0.5	0.4	1.95	4□°40'	1.5	2.7□×1	110 / □-	130 / □-	19 / □-
FBS 0300.5 A	3	0.5	0.4	3.1	2□°56'	2.6	2.7□×1	150 / □-	220 / □-	29 / □-
FBS 0301 B	3	1	0.6	3.18	5□°43'	2.4	3.7□×1	330 / □-	440 / □-	42 / □-
FBS 0400.5 A	4	0.5	0.4	4.1	2□°13'	3.6	2.7□×1	160 / □-	290 / □-	36 / □-
FKB 0401 A	4	1	0.6	4.15	4□°23'	3.4	1□×3	300 / 300	430 / 430	38 / 59
FBS 0401 A	4	1	0.8	4.15	4□°23'	3.3	2.7□×1	420 / 270	570 / 290	40 / 34
FBS 0401 B	4	1	0.8	4.15	4□°23'	3.3	3.7□×1	560 / 350	790 / 400	54 / 45
FBS 0402 A	4	2	0.8	4.15	8□°43'	3.3	2.7□×1	420 / 260	570 / 290	39 / 33
FBS 0403 A	4	3	0.8	4.15	12□°57'	3.3	2.7□×1	420 / □-	570 / □-	39 / □-
FEB 0404 A	4	4	0.8	4.2	16□°51'	3.3	2.6□×2	750 / □-	1150 / □-	73 / □-

Ball Nut Model number	Nut dimension									
	Nut type	D	Df	L	L_1	F	W	V	Dp	Bolt Hole X
FBS 01800.5 A	1	6	14	8.5	7	1.5	8	□-	10	2.4
FBS 0300.5 A	1	8	16	11	8	3	8	□-	12	2.4
FBS 0301 B	1	9	19	14	11	3	11	□-	14	2.9
FBS 0400.5 A	1	10	20	13	10	3	12	□-	15	2.9
FKB 0401 A	2	9	19	13	10	3	11	13	14	2.9
FBS 0401 A	1	10	20	12	9	3	12	14	15	2.9
FBS 0401 B	1	11	23	17	13	4	13	15	17	3.4
FBS 0402 A	1	11	23	19	15	4	13	15	17	3.4
FBS 0403 A	1	11	23	21	17	4	13	15	17	3.4
FEB 0404 A	3	11	23	17.5	11	3	□-	15	17	3.4

Precision Ball Screws

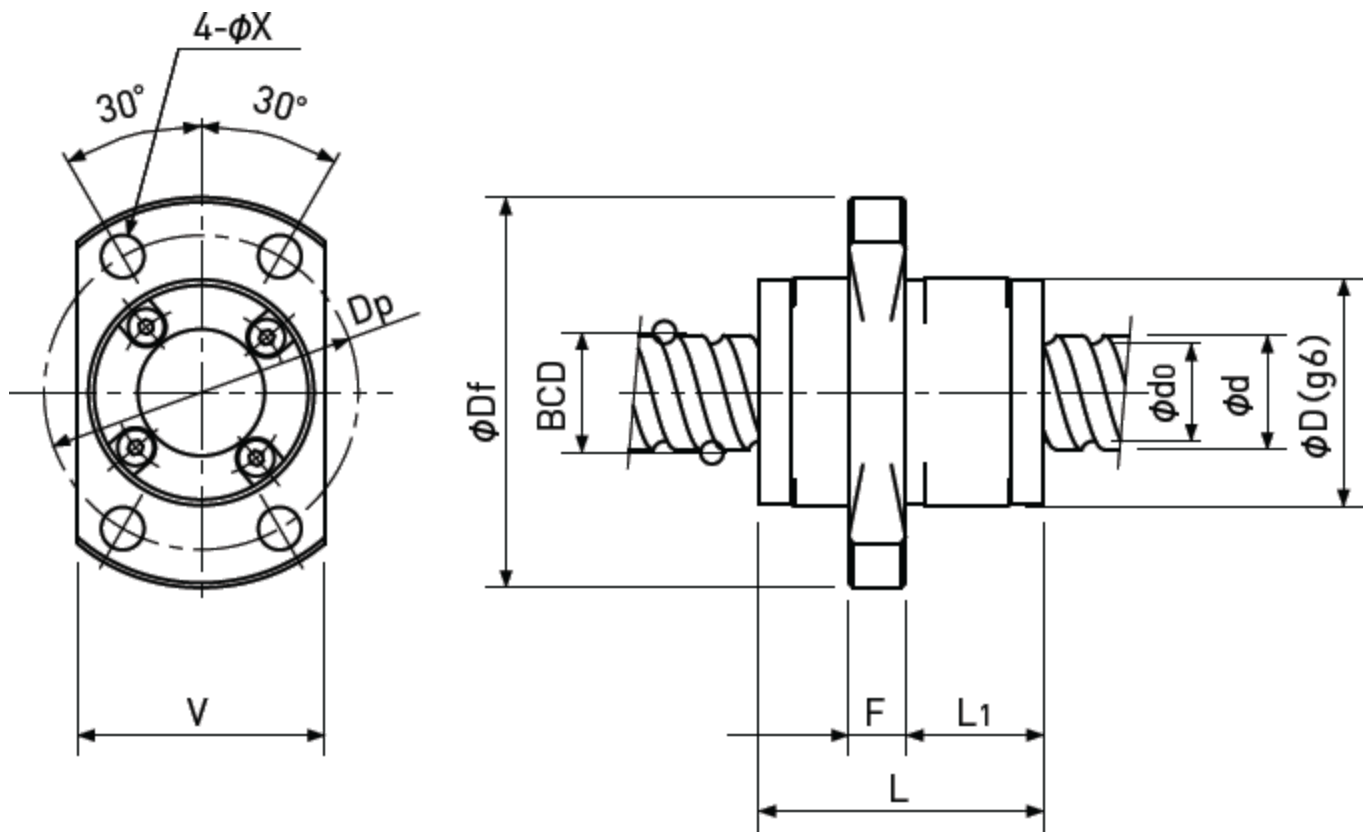
Single Nut with Flange

Backlash type/Preload type



2—holes 4—holes

Type-2: Internal-deflector type or End-deflector type



Type-3: End-cap type or End-deflector type

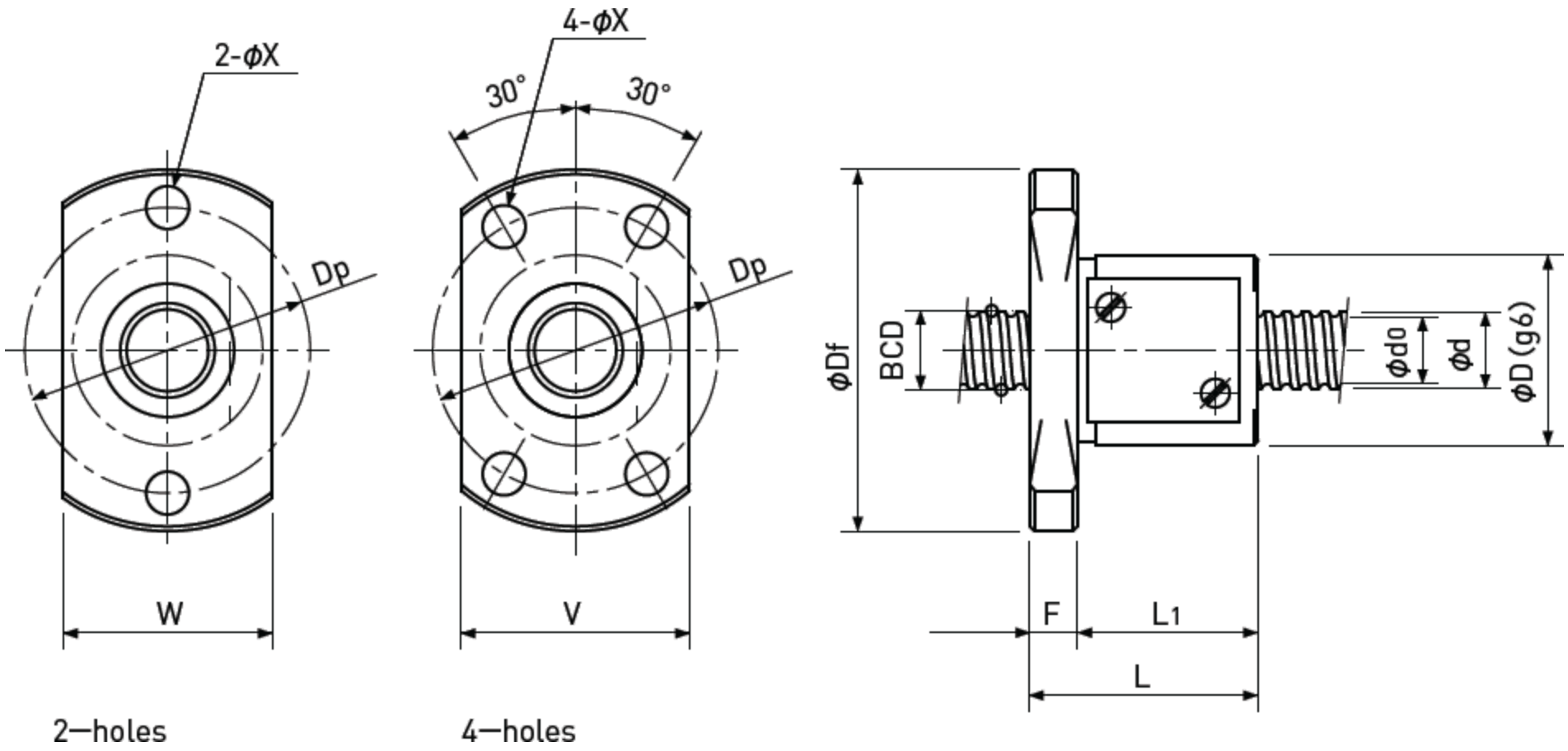
Basic Load Rating N		Nut Rigidity N/μm
Dynamic Ca	Static Coa	
1000 / 640	3300 / 1650	164 / 138
		Preload type
		Backlash type

Note 1) The diameter of one of the Screw Shaft ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.
Note 2) Ball Nut dimension is without seal at the both ends. If the seals are required, Ball Nut dimension should be changed, in that case, please ask ABSSAC. Some type of Ball Nuts cannot equip with seals, please ask ABSSAC representative.
Note 3) The Rigidity values shown in the table are theoretical values of Ball Nut Rigidity calculated from the amount of Elastic Displacement under the following conditions.
Backlash type ; Apply the Axial load equivalent to 30% of the Basic Dynamic Load Rating Ca.
Preload type ; Apply the Preload equivalent to 5% of the Basic Dynamic Load Rating Ca.
Note 4) All models are Right-hand Screw. If Left-hand Screw is required, please ask ABSSAC representative.
Note 5) Basic Load Rating and Rigidity for Backlash type and Preload type are described in the same cell.

Precision Ball Screws

Single Nut with Flange

Backlash type/Preload type



Type-1: Return-plate type

Unit : mm

Ball Nut Model number	Shaft nominal dia. d	Lead	Ball size	BCD	Lead angle	Root dia. d_0	Number of Circuit	Basic Load Rating N		Nut Rigidity N/μm
								Dynamic Ca	Static Coa	
FBS 0500.5 A	5	0.5	0.4	5.1	1□°47'	4.6	2.7□×1	180 / □-	370 / □-	44 / □-
FKB 0501 A	5	1	0.6	5.15	3□°32'	4.4	1□×3	330 / 330	560 / 560	45 / 70
FBS 0501 B	5	1	0.8	5.15	3□°32'	4.3	3.7□×1	630 / 400	1000 / 500	65 / 55
FBS 0504 A	5	4	0.8	5.15	13□°53'	4.3	2.7□×1	470 / 300	720 / 360	47 / 39

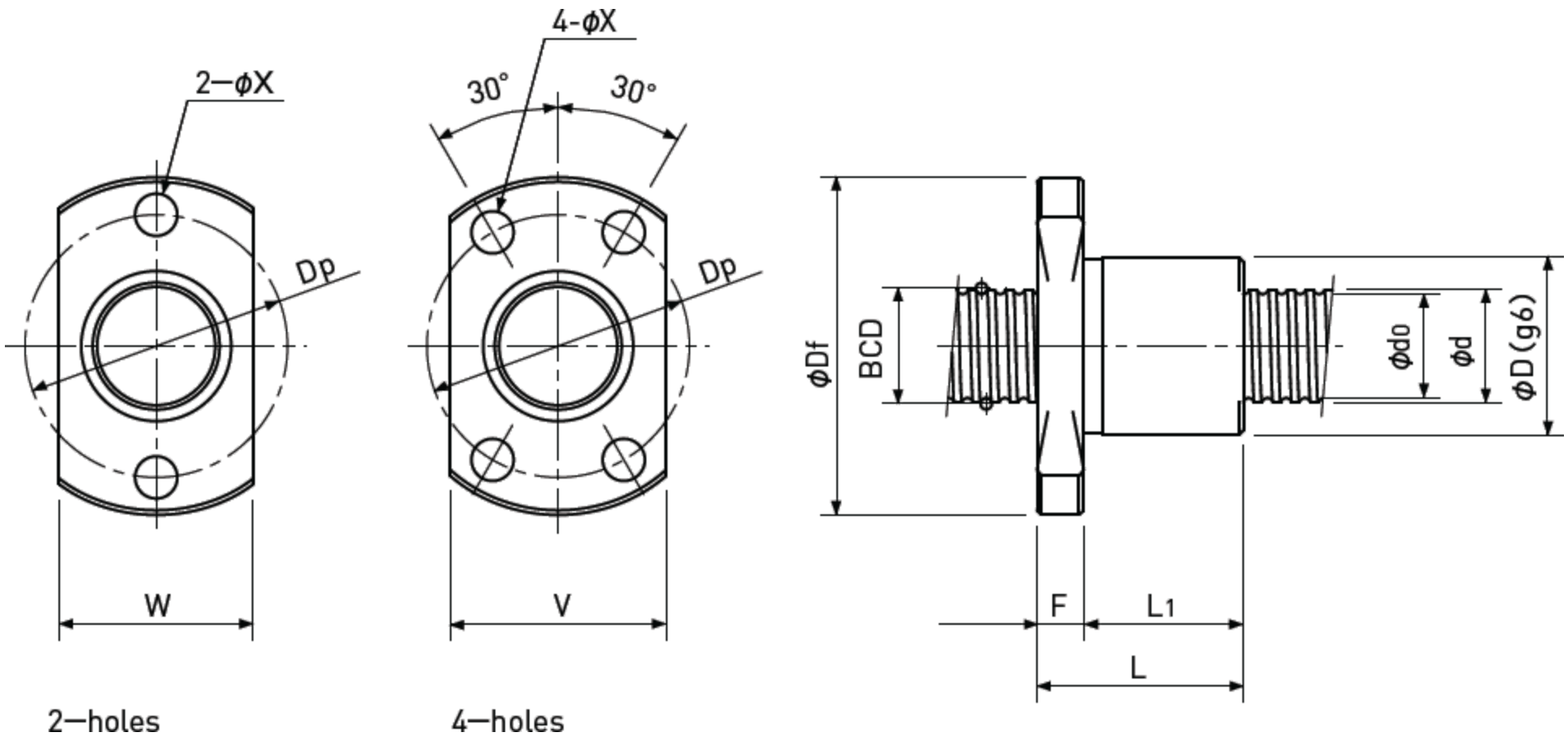
Basic Load Rating N		Nut Rigidity N/μm	
Dynamic Ca	Static Coa		
1000 / 640	3300 / 1650	164 / 138	
			Preload type
			Backlash type

Note 1) The diameter of one of the Screw Shaft ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.
Note 2) Ball Nut dimension is without seal at the both ends. If the seals are required, Ball Nut dimension should be changed, in that case, please ask ABSSAC. Some type of Ball Nuts cannot equip with seals, please ask ABSSAC representative.
Note 3) The Rigidity values shown in the table are theoretical values of Ball Nut Rigidity calculated from the amount of Elastic Displacement under the following conditions.
Backlash type ; Apply the Axial load equivalent to 30% of the Basic Dynamic Load Rating Ca.
Preload type ; Apply the Preload equivalent to 5% of the Basic Dynamic Load Rating Ca.
Note 4) All models are Right-hand Screw. If Left-hand Screw is required, please ask ABSSAC representative.
Note 5) Basic Load Rating and Rigidity for Backlash type and Preload type are described in the same cell.

Precision Ball Screws

Single Nut with Flange

Backlash type/Preload type



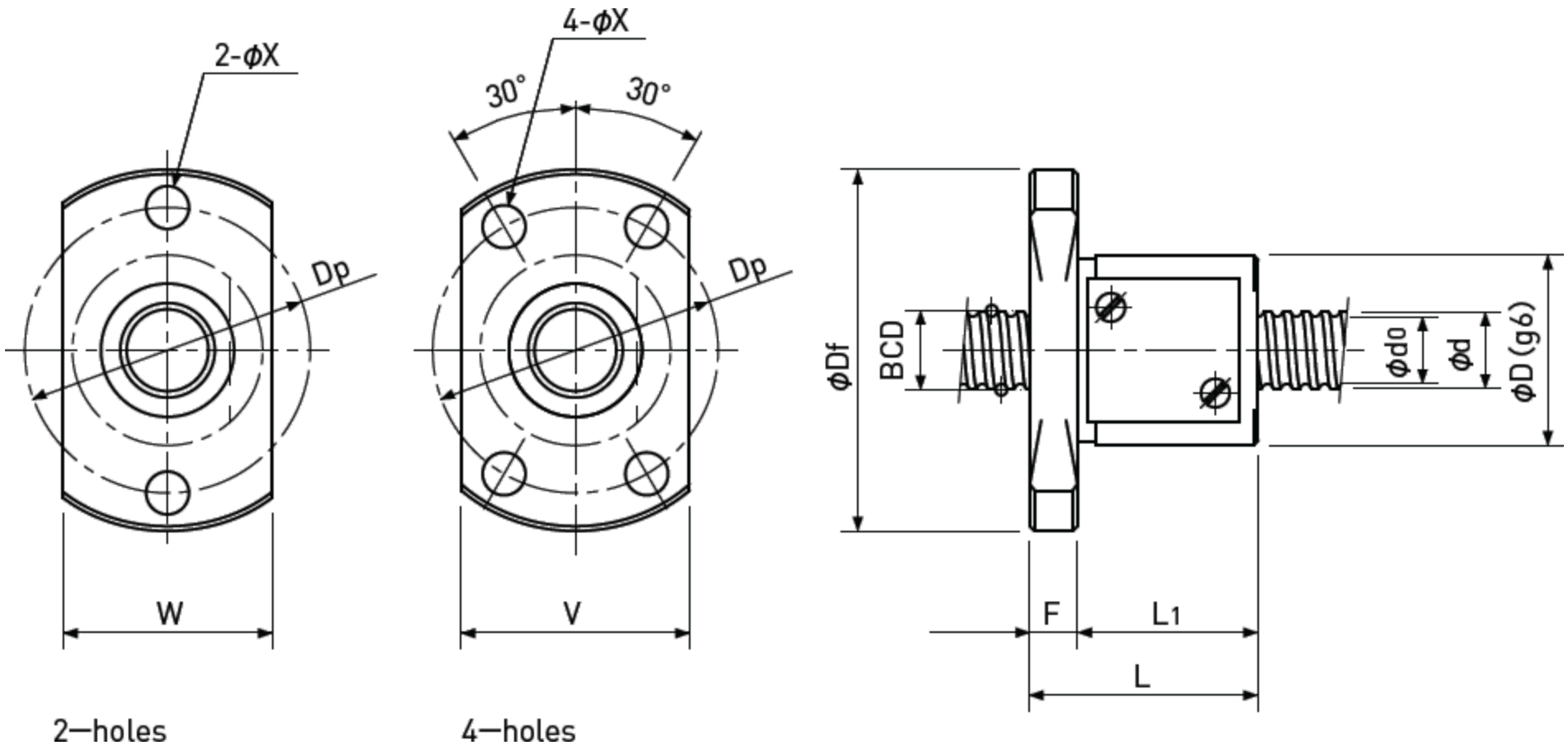
Type-2: Internal-deflector type or End-deflector type

Ball Nut Model number	Nut dimension									
	Nut type	D	Df	L	L_1	F	W	V	Dp	Bolt Hole X
FBS 0500.5 A	1	11	23	13	10	3	13	□-	17	3.4
FKB 0501 A	2	10	20	13	10	3	12	14	15	2.9
FBS 0501 B	1	12	24	17	13	4	14	15	18	3.4
FBS 0504 A	1	12	24	22	18	4	14	15	18	3.4

Precision Ball Screws

Single Nut with Flange

Backlash type/Preload type



Type-1: Return-plate type

Unit : mm

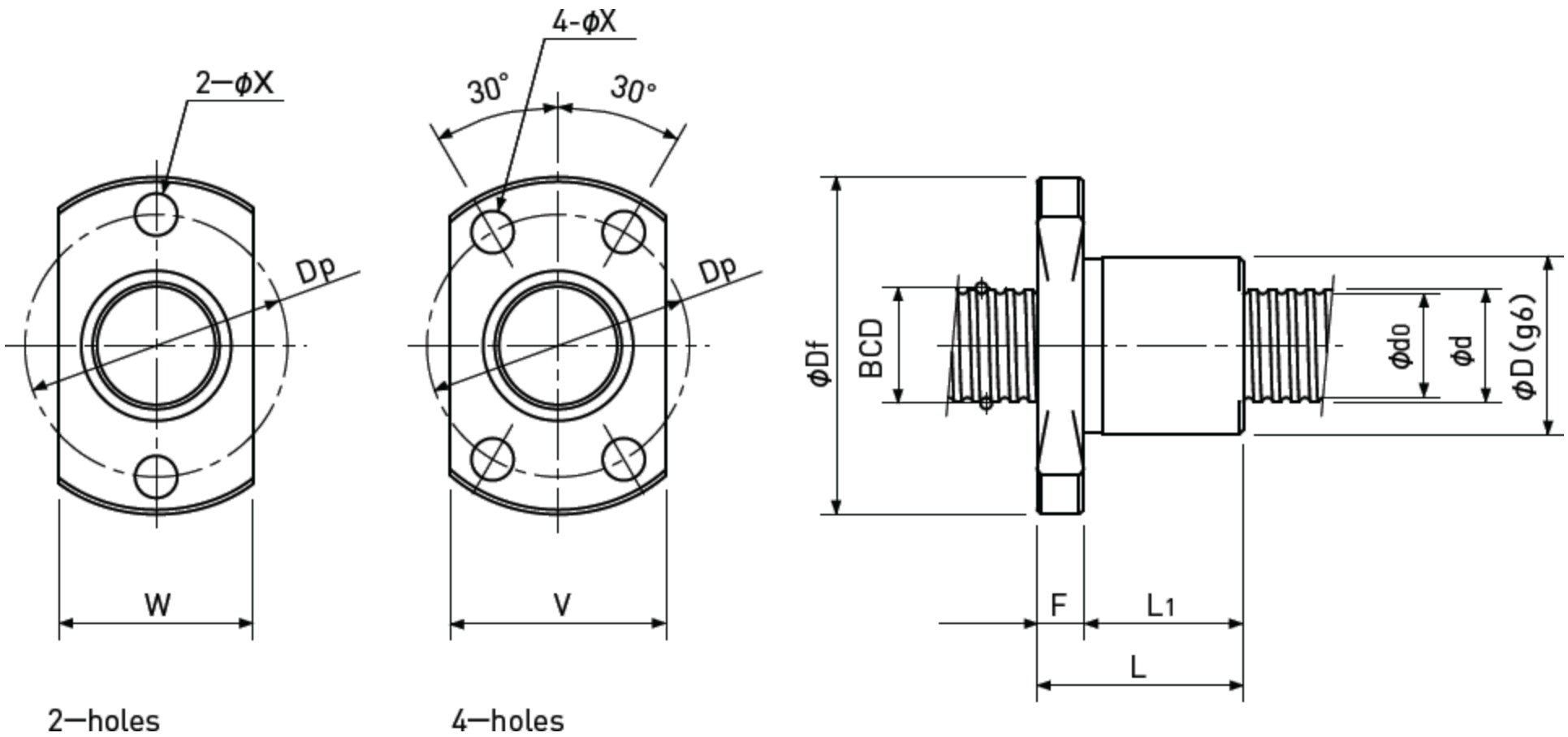
Ball Nut Model number	Shaft nominal dia. d	Lead	Ball size	BCD	Lead angle	Root dia. d_0	Number of Circuit	Basic Load Rating N		Nut Rigidity N/μm
								Dynamic Ca	Static Coa	
FBS 0600.5 A	6	0.5	0.4	6.1	1□°30'	5.6	2.7□×1	190 / □-	440 / □-	50 / □-
FKB 0601 A	6	1	0.8	6.2	2□°56'	5.3	1□×3	560 / 560	950 / 950	55 / 86
FBS 0601 B	6	1	0.8	6.15	2□°58'	5.3	3.7□×1	680 / 430	1200 / 610	75 / 63
FBS 0601.5 B	6	1.5	1	6.2	4□°24'	5.1	3.7□×1	980 / 620	1600 / 800	79 / 67
FBS 0602 A	6	2	1	6.2	5□°52'	5.1	2.7□×1	750 / 470	1200 / 590	58 / 49
FBS 0602 B	6	2	1	6.2	5□°52'	5.1	3.7□×1	980 / 620	1600 / 800	79 / 67
FBS 0602.5 A	6	2.5	1	6.2	7□°19'	5.1	2.7□×1	750 / 470	1200 / 590	59 / 49
FEB 0606 A	6	6	1	6.3	16□°52'	5.2	1.6□×2	870 / □-	1450 / □-	67 / □-
FEB 0610 A	6	10	1.2	6.3	26□°48'	5	1.2□×2	950 / □-	1600 / □-	50 / □-
FEB 0612 A	6	12	1.2	6.3	31□°13'	5	0.7□×2	600 / □-	950 / □-	29 / □-

Ball Nut Model number	Nut dimension									
	Nut type	D	Df	L	L_1	F	W	V	Dp	Bolt Hole X
FBS 0600.5 A	1	12	25	13	10	3	14	□-	19	3.4
FKB 0601 A	2	11	23	14.5	11	3.5	13	15	17	3.4
FBS 0601 B	1	13	28	17	13	4	15	17	21.5	3.4
FBS 0601.5 B	1	14	28	19	15	4	16	17	22	3.4
FBS 0602 A	1	15	29	17	13	4	17	18	23	3.4
FBS 0602 B	1	15	29	21	17	4	17	18	23	3.4
FBS 0602.5 A	1	15	29	18	14	4	17	18	23	3.4
FEB 0606 A	3	14	27	17	8	4	□-	16	21	3.4
FEB 0610 A	3	14	27	23	11.5	4	□-	16	21	3.4
FEB 0612 A	3	14	27	16	8.3	4	□-	16	21	3.4

Precision Ball Screws

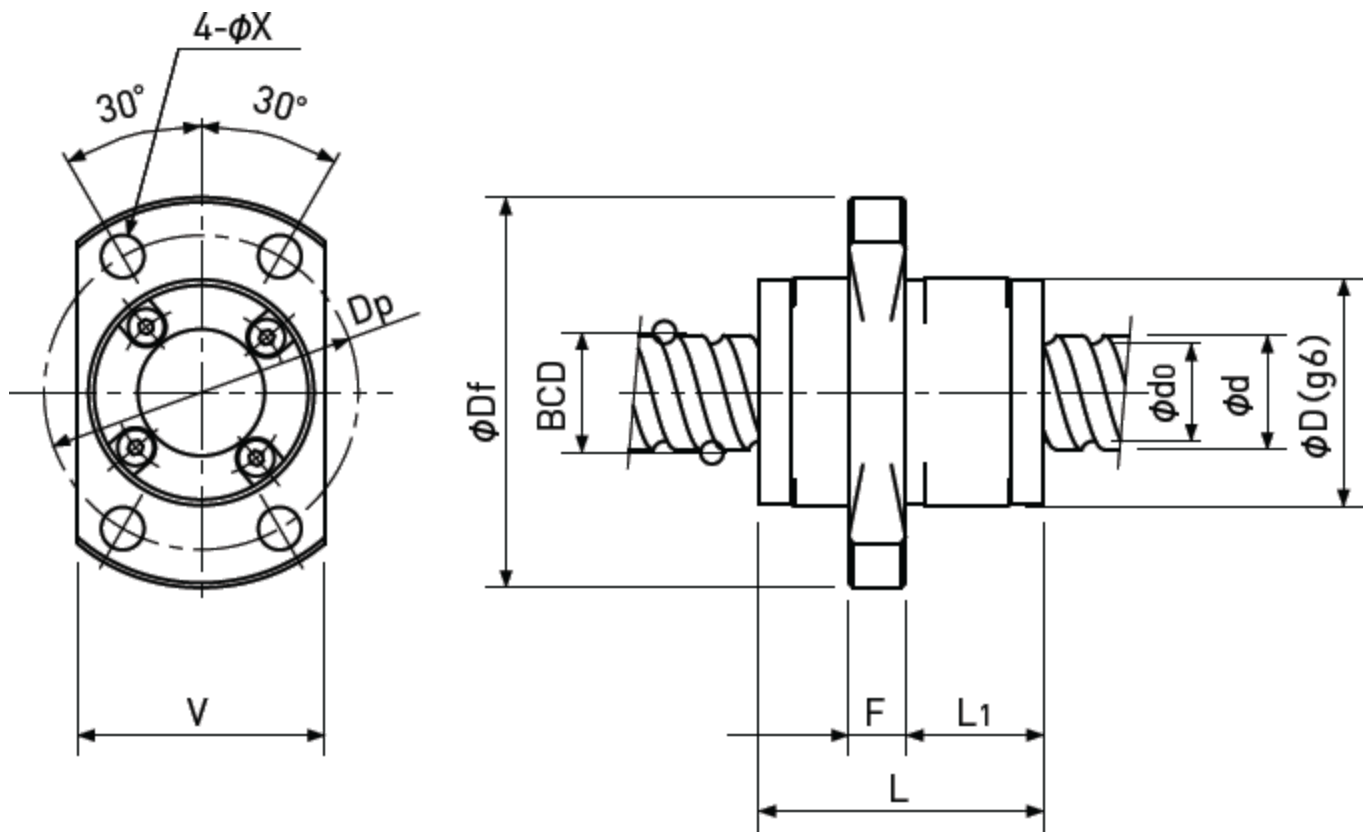
Single Nut with Flange

Backlash type/Preload type



2—holes 4—holes

Type-2: Internal-deflector type or End-deflector type



Type-3: End-cap type or End-deflector type

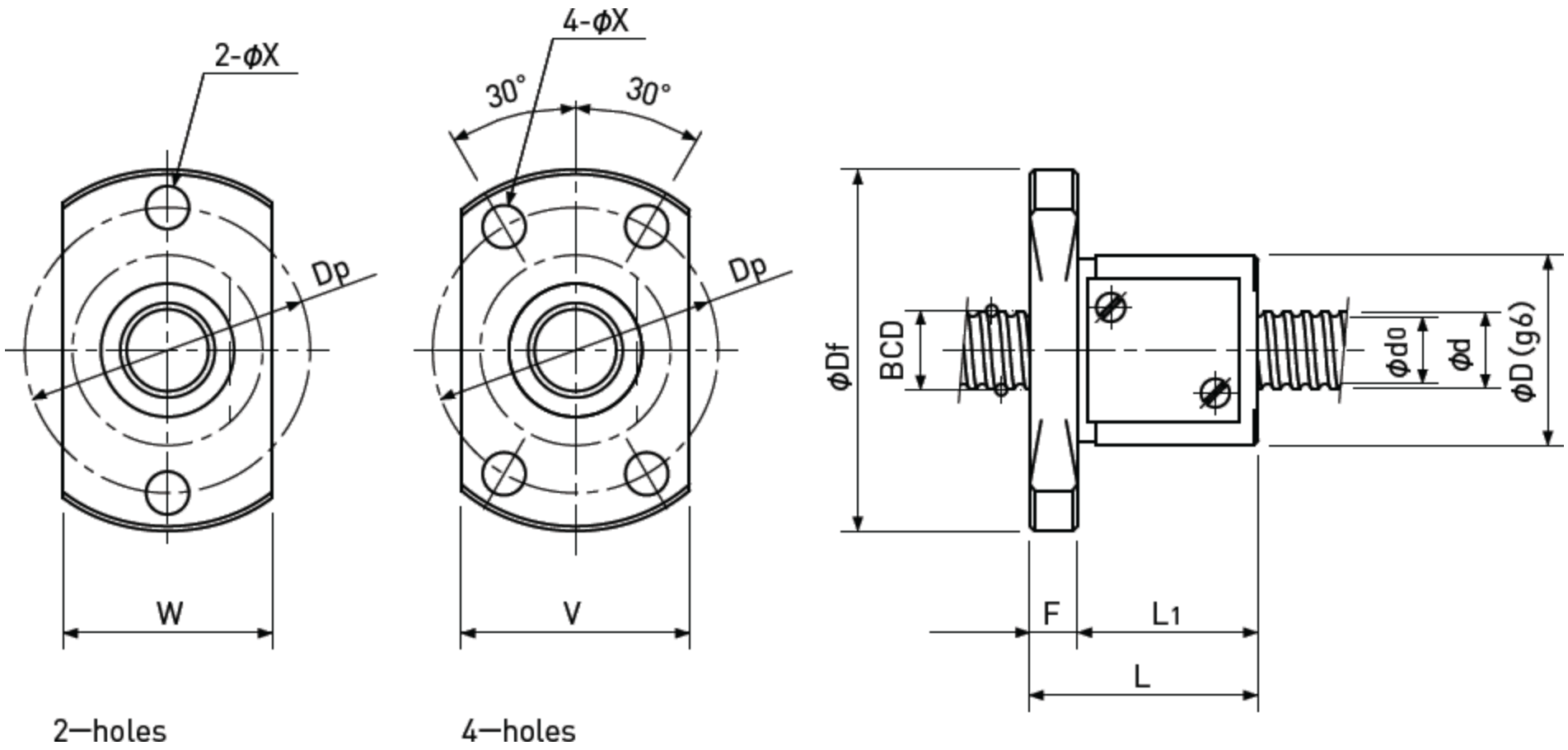
Basic Load Rating N		Nut Rigidity N/μm
Dynamic Ca	Static Coa	
1000 / 640	3300 / 1650	164 / 138
		Preload type
		Backlash type

Note 1) The diameter of one of the Screw Shaft ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.
Note 2) Ball Nut dimension is without seal at the both ends. If the seals are required, Ball Nut dimension should be changed, in that case, please ask ABSSAC. Some type of Ball Nuts cannot equip with seals, please ask ABSSAC representative.
Note 3) The Rigidity values shown in the table are theoretical values of Ball Nut Rigidity calculated from the amount of Elastic Displacement under the following conditions.
Backlash type ; Apply the Axial load equivalent to 30% of the Basic Dynamic Load Rating Ca.
Preload type ; Apply the Preload equivalent to 5% of the Basic Dynamic Load Rating Ca.
Note 4) All models are Right-hand Screw. If Left-hand Screw is required, please ask ABSSAC representative.
Note 5) Basic Load Rating and Rigidity for Backlash type and Preload type are described in the same cell.

Precision Ball Screws

Single Nut with Flange

Backlash type/Preload type



Type-1: Return-plate type

Unit : mm

Ball Nut Model number	Shaft nominal dia. d	Lead	Ball size	BCD	Lead angle	Root dia. d_0	Number of Circuit	Basic Load Rating N		Nut Rigidity N/μm
								Dynamic Ca	Static Coa	
FBS 0800.5 A	8	0.5	0.4	8.1	1□°08'	7.6	2.7□×1	220 / □-	590 / □-	64 / □-
FKB 0801 A	8	1	0.8	8.2	2□°13'	7.3	1□×3	650 / 650	1300 / 1300	70 / 109
FBS 0801 B	8	1	0.8	8.15	2□°15'	7.3	3.7□×1	780 / 490	1650 / 820	95 / 80
FKB 0801.5 A	8	1.5	1	8.3	3□°18'	7.2	1□×3	890 / 890	1650 / 1650	73 / 113
FBS 0801.5 B	8	1.5	1	8.2	3□°20'	7.1	3.7□×1	1100 / 700	2200 / 1100	99 / 83
FKB 0802 A	8	2	1.2	8.3	4□°23'	7	1□×3	1300 / 1300	2300 / 2300	77 / 121
FBS 0802 A□(1)	8	2	1	8.2	4□°26'	7.1	2.7□×1	850 / 540	1600 / 800	74 / 61
FBS 0802 B□(1)	8	2	1	8.2	4□°26'	7.1	3.7□×1	1100 / 700	2200 / 1100	99 / 83
FBS 0802 A□(2)	8	2	1.5875	8.3	4□°23'	6.6	2.7□×1	1850 / 1150	3000 / 1500	82 / 69
FBS 0802 B□(2)	8	2	1.5875	8.3	4□°23'	6.6	3.7□×1	2400 / 1550	4100 / 2100	111 / 94

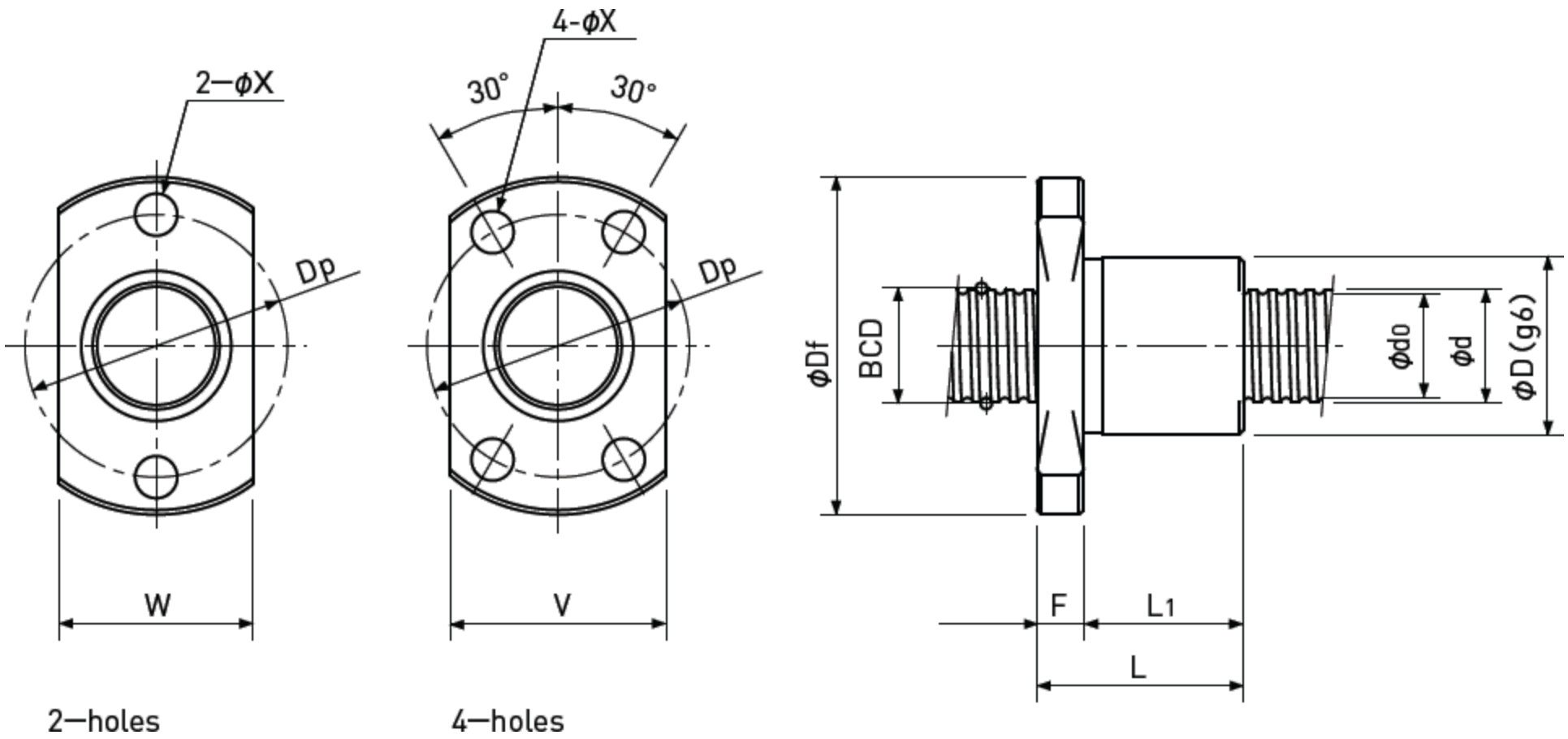
Basic Load Rating N		Nut Rigidity N/μm	
Dynamic Ca	Static Coa		
1000 / 640	3300 / 1650	164 / 138	
			Preload type
			Backlash type

Note 1) The diameter of one of the Screw Shaft ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.
Note 2) Ball Nut dimension is without seal at the both ends. If the seals are required, Ball Nut dimension should be changed, in that case, please ask ABSSAC. Some type of Ball Nuts cannot equip with seals, please ask ABSSAC representative.
Note 3) The Rigidity values shown in the table are theoretical values of Ball Nut Rigidity calculated from the amount of Elastic Displacement under the following conditions.
Backlash type ; Apply the Axial load equivalent to 30% of the Basic Dynamic Load Rating Ca.
Preload type ; Apply the Preload equivalent to 5% of the Basic Dynamic Load Rating Ca.
Note 4) All models are Right-hand Screw. If Left-hand Screw is required, please ask ABSSAC representative.
Note 5) Basic Load Rating and Rigidity for Backlash type and Preload type are described in the same cell.

Precision Ball Screws

Single Nut with Flange

Backlash type/Preload type



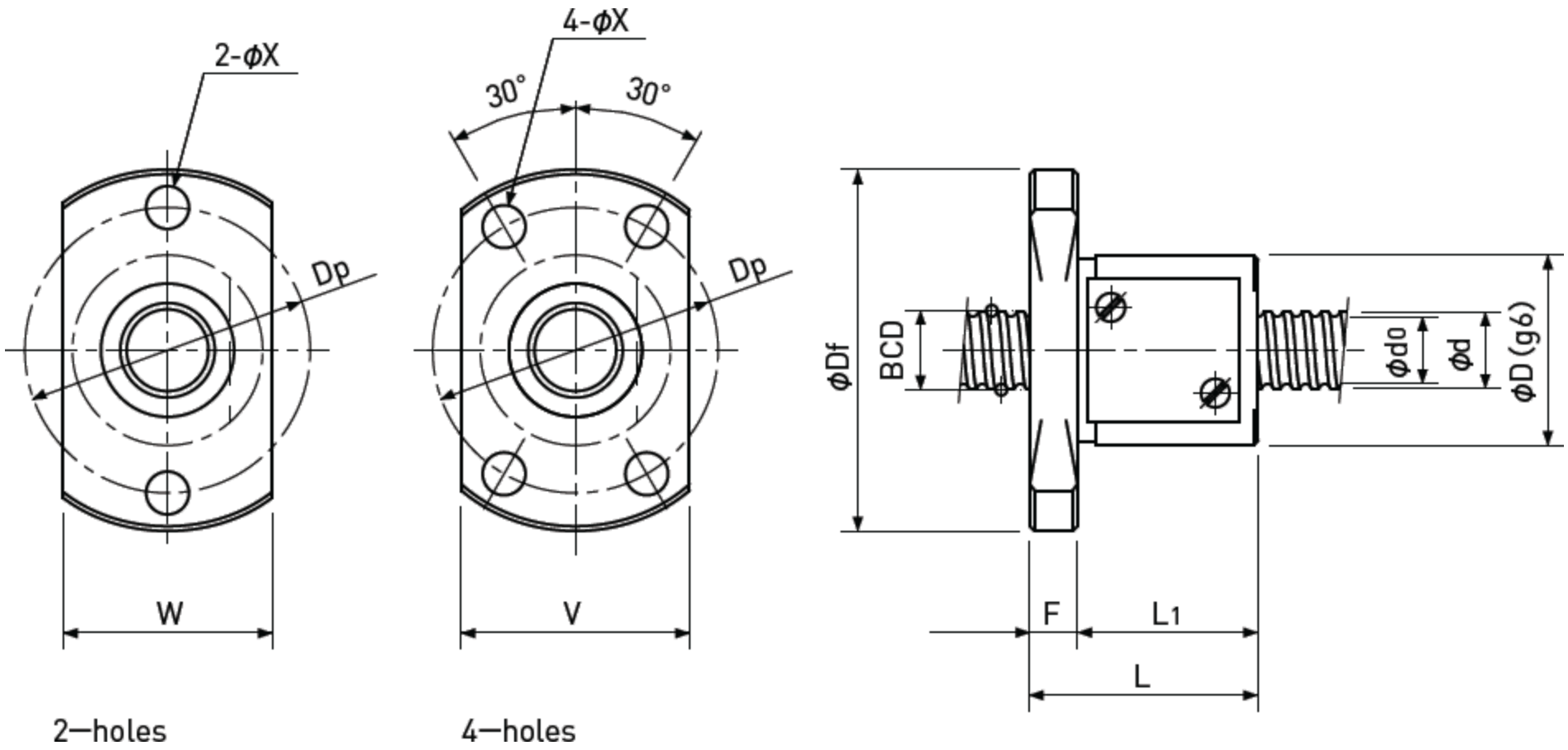
Type-2: Internal-deflector type or End-deflector type

Ball Nut Model number	Nut dimension									
	Nut type	D	Df	L	L_1	F	W	V	Dp	Bolt Hole X
FBS 0800.5 A	1	14	27	13	10	3	16	□-	21	3.4
FKB 0801 A	2	13	26	15	11	4	15	17	20	3.4
FBS 0801 B	1	16	30	17	13	4	18	18	24	3.4
FKB 0801.5 A	2	15	28	20	16	4	17	19	22	3.4
FBS 0801.5 B	1	16	30	19	15	4	18	18	24	3.4
FKB 0802 A	2	15	28	18	14	4	17	19	22	3.4
FBS 0802 A□(1)	1	16	30	17	13	4	18	18	24	3.4
FBS 0802 B□(1)	1	16	30	21	17	4	18	18	24	3.4
FBS 0802 A□(2)	1	20	38	21	16	5	22	23	30	4.5
FBS 0802 B□(2)	1	20	38	24	19	5	22	23	30	4.5

Precision Ball Screws

Single Nut with Flange

Backlash type/Preload type



Type-1: Return-plate type

Unit : mm

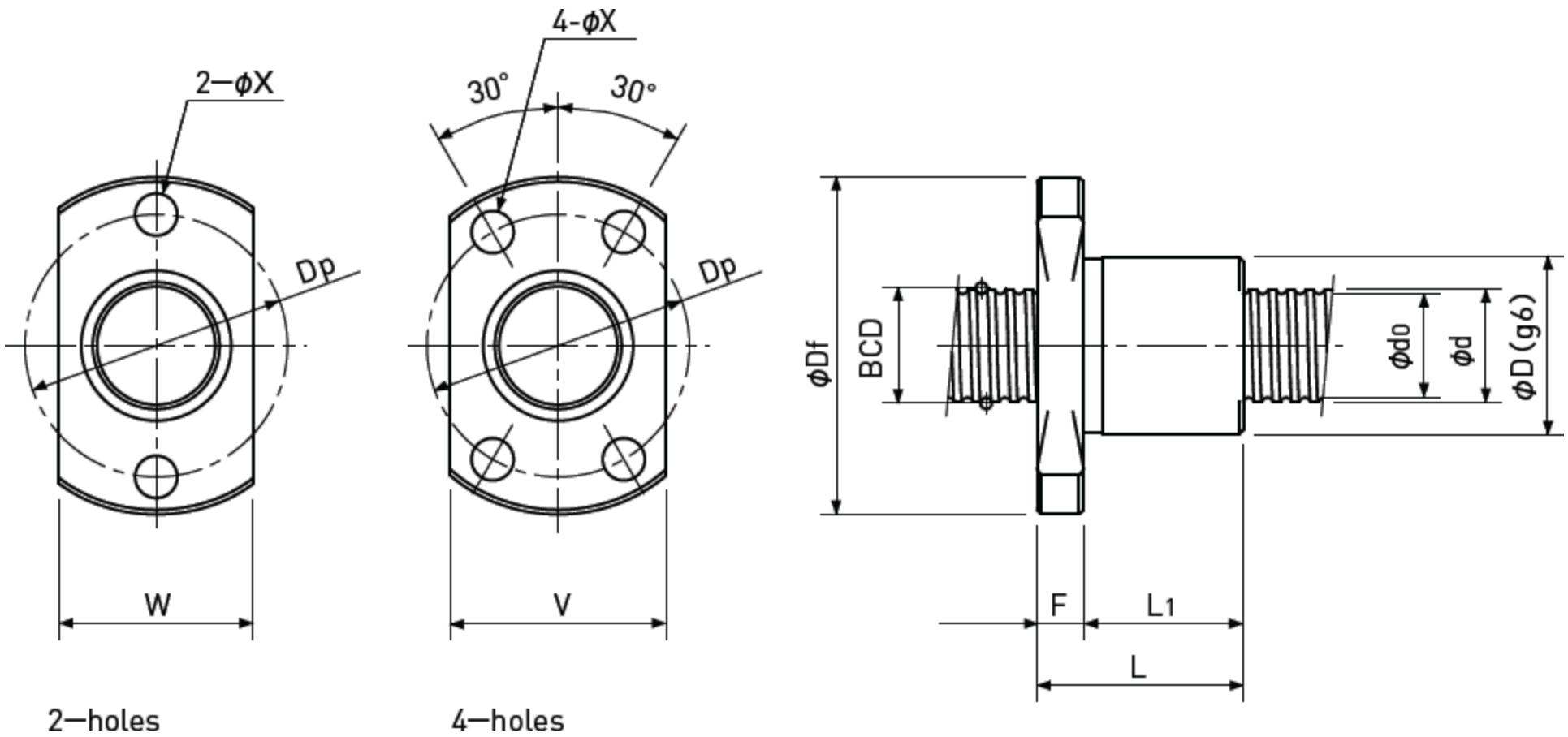
Ball Nut Model number	Shaft nominal dia. d	Lead	Ball size	BCD	Lead angle	Root dia. d_0	Number of Circuit	Basic Load Rating N		Nut Rigidity N/μm
								Dynamic Ca	Static Coa	
FDB 0802.5 A	8	2.5	1.5875	8	5□°41'	6.3	2.7□×1	1850 / □-	3000 / □-	80 / □-
FBS 0802.5 A	8	2.5	1.5875	8.3	5□°29'	6.6	2.7□×1	1850 / 1150	3000 / 1500	82 / 69
FBS 0802.5 B	8	2.5	1.5875	8.3	5□°29'	6.6	3.7□×1	2400 / 1550	4100 / 2100	111 / 93
FBS 0803 A	8	3	2	8.3	6□°34'	6.2	2.7□×1	2600 / 1650	4200 / 2100	85 / 70
FBS 0803 B	8	3	2	8.3	6□°34'	6.2	3.7□×1	3500 / 2200	5700 / 2800	116 / 97
FBS 0804 A	8	4	2	8.3	8□°43'	6.2	2.7□×1	2600 / 1650	4200 / 2100	84 / 70
FBS 0805 A	8	5	1.5875	8.3	10□°51'	6.6	2.7□×1	1850 / 1150	3000 / 1500	82 / 67
FEB 0808 A	8	8	1.5875	8.4	16□°52'	6.7	1.6□×2	2200 / □-	3800 / □-	95 / □-
FEB 0810 A	8	10	1.5875	8.4	20□°45'	6.7	1.6□×2	2200 / □-	3900 / □-	92 / □-
FEB 0812 A	8	12	1.5875	8.4	24□°27'	6.7	1.6□×2	2200 / □-	4000 / □-	90 / □-

Ball Nut Model number	Nut dimension									
	Nut type	D	Df	L	L_1	F	W	V	Dp	Bolt Hole X
FDB 0802.5 A	2	16	29	16	12	4	□-	18	23	3.4
FBS 0802.5 A	1	20	38	23	18	5	22	23	30	4.5
FBS 0802.5 B	1	20	38	26	21	5	22	23	30	4.5
FBS 0803 A	1	20	38	25	20	5	22	23	30	4.5
FBS 0803 B	1	20	38	29	24	5	22	23	30	4.5
FBS 0804 A	1	21	39	28	23	5	23	23	31	4.5
FBS 0805 A	1	18	31	28	24	4	20	20	25	3.4
FEB 0808 A	3	18	31	20	10	4	□-	20	25	3.4
FEB 0810 A	3	18	31	24	13	4	□-	20	25	3.4
FEB 0812 A	3	18	31	27	17	4	□-	20	25	3.4

Precision Ball Screws

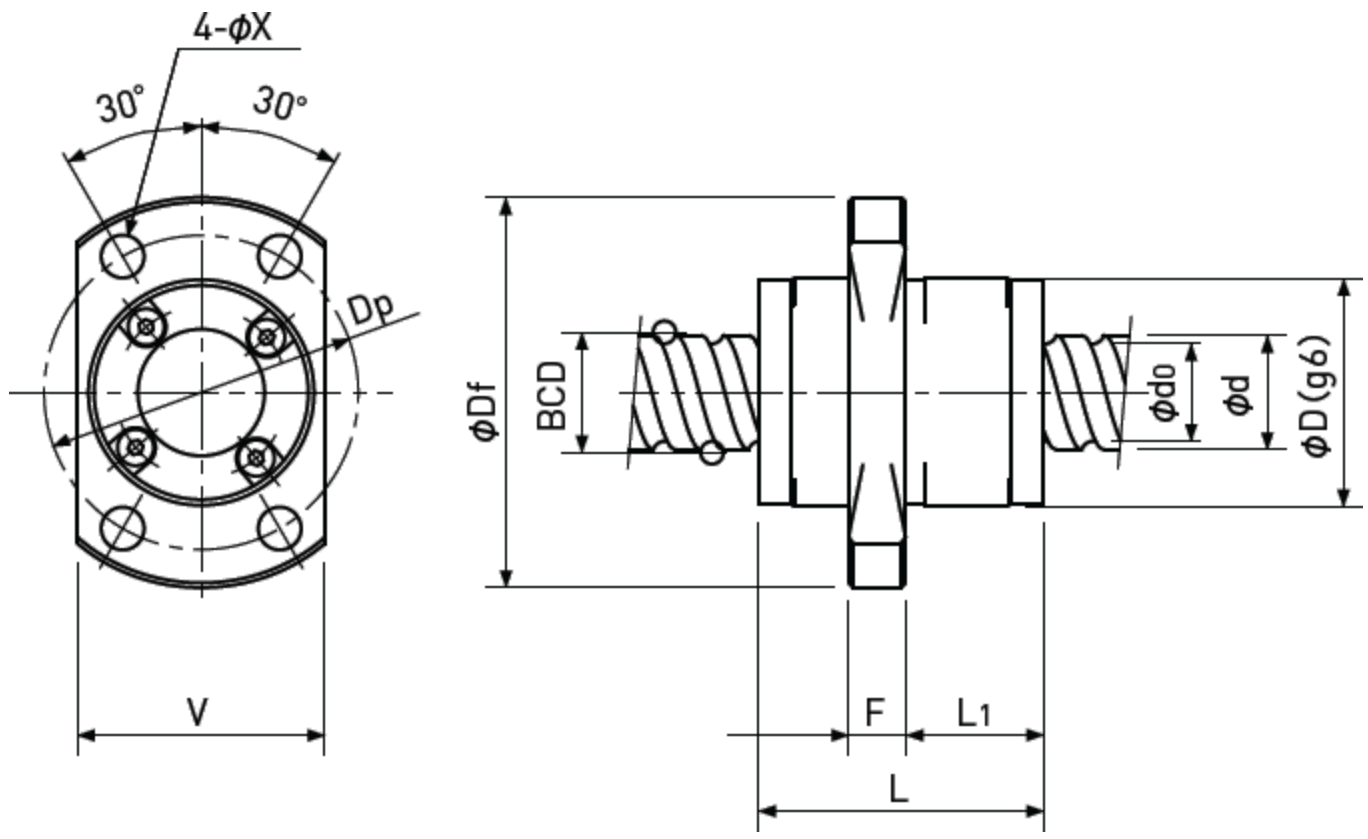
Single Nut with Flange

Backlash type/Preload type



2—holes 4—holes

Type-2: Internal-deflector type or End-deflector type



Type-3: End-cap type or End-deflector type

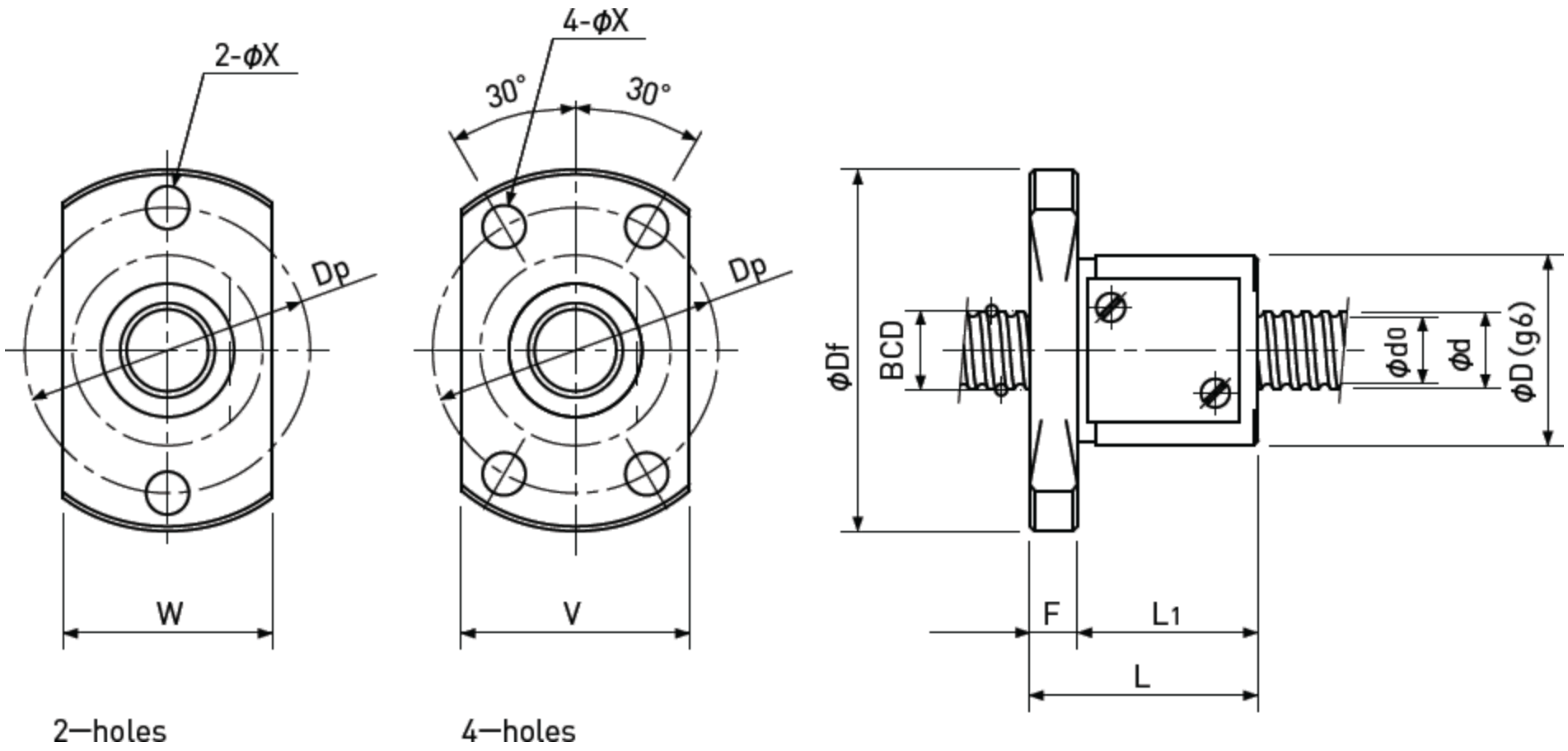
Basic Load Rating N		Nut Rigidity N/μm
Dynamic Ca	Static Coa	
1000 / 640	3300 / 1650	164 / 138
		Preload type
		Backlash type

Note 1) The diameter of one of the Screw Shaft ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.
Note 2) Ball Nut dimension is without seal at the both ends. If the seals are required, Ball Nut dimension should be changed, in that case, please ask ABSSAC. Some type of Ball Nuts cannot equip with seals, please ask ABSSAC representative.
Note 3) The Rigidity values shown in the table are theoretical values of Ball Nut Rigidity calculated from the amount of Elastic Displacement under the following conditions.
Backlash type ; Apply the Axial load equivalent to 30% of the Basic Dynamic Load Rating Ca.
Preload type ; Apply the Preload equivalent to 5% of the Basic Dynamic Load Rating Ca.
Note 4) All models are Right-hand Screw. If Left-hand Screw is required, please ask ABSSAC representative.
Note 5) Basic Load Rating and Rigidity for Backlash type and Preload type are described in the same cell.

Precision Ball Screws

Single Nut with Flange

Backlash type/Preload type



Type-1: Return-plate type

Unit : mm

Ball Nut Model number	Shaft nominal dia. d	Lead	Ball size	BCD	Lead angle	Root dia. d_0	Number of Circuit	Basic Load Rating N		Nut Rigidity N/μm
								Dynamic Ca	Static Coa	
FKB 1001 A	10	1	0.8	10.2	1□°47'	9.3	1□×3	720 / 720	1650 / 1650	84 / 131
FBS 1001 B	10	1	0.8	10.15	1□°48'	9.3	3.7□×1	840 / 530	2000 / 1000	113 / 95
FKB 1001.5 A	10	1.5	1	10.3	2□°39'	9.2	1□×3	990 / 990	2100 / 2100	87 / 136
FBS 1001.5 B	10	1.5	1	10.2	2□°41'	9.1	3.7□×1	1250 / 790	2800 / 1400	120 / 101
FKB 1002 A	10	2	1.2	10.3	3□°32'	9	1□×3	1450 / 1450	3000 / 3000	93 / 144
FBS 1002 A	10	2	1.5875	10.3	3□°32'	8.6	2.7□×1	2100 / 1300	3800 / 1900	100 / 82
FBS 1002 B	10	2	1.5875	10.3	3□°32'	8.6	3.7□×1	2700 / 1750	5300 / 2700	134 / 112
FKB 1002.5 A	10	2.5	1.5875	10.4	4□°23'	8.7	1□×3	2100 / 2100	3800 / 3800	96 / 150
FBS 1002.5 A	10	2.5	1.5875	10.3	4□°25'	8.6	2.7□×1	2100 / 1300	3800 / 1900	100 / 82
FBS 1002.5 B	10	2.5	1.5875	10.3	4□°25'	8.6	3.7□×1	2700 / 1750	5300 / 2700	133 / 112

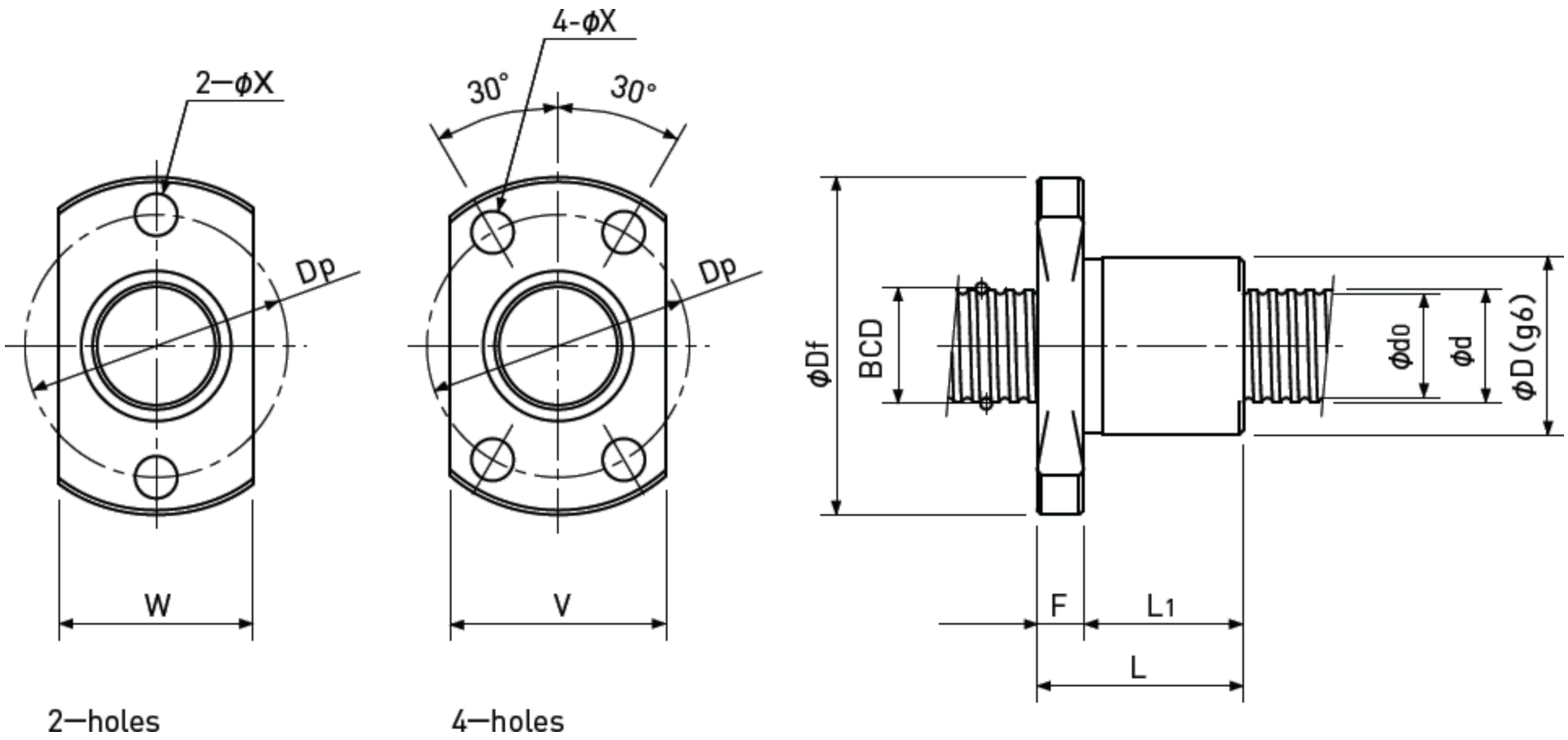
Basic Load Rating N		Nut Rigidity N/μm
Dynamic Ca	Static Coa	
1000 / 640	3300 / 1650	164 / 138
		Preload type
		Backlash type

Note 1) The diameter of one of the Screw Shaft ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.
Note 2) Ball Nut dimension is without seal at the both ends. If the seals are required, Ball Nut dimension should be changed, in that case, please ask ABSSAC. Some type of Ball Nuts cannot equip with seals, please ask ABSSAC representative.
Note 3) The Rigidity values shown in the table are theoretical values of Ball Nut Rigidity calculated from the amount of Elastic Displacement under the following conditions.
Backlash type ; Apply the Axial load equivalent to 30% of the Basic Dynamic Load Rating Ca.
Preload type ; Apply the Preload equivalent to 5% of the Basic Dynamic Load Rating Ca.
Note 4) All models are Right-hand Screw. If Left-hand Screw is required, please ask ABSSAC representative.
Note 5) Basic Load Rating and Rigidity for Backlash type and Preload type are described in the same cell.

Precision Ball Screws

Single Nut with Flange

Backlash type/Preload type



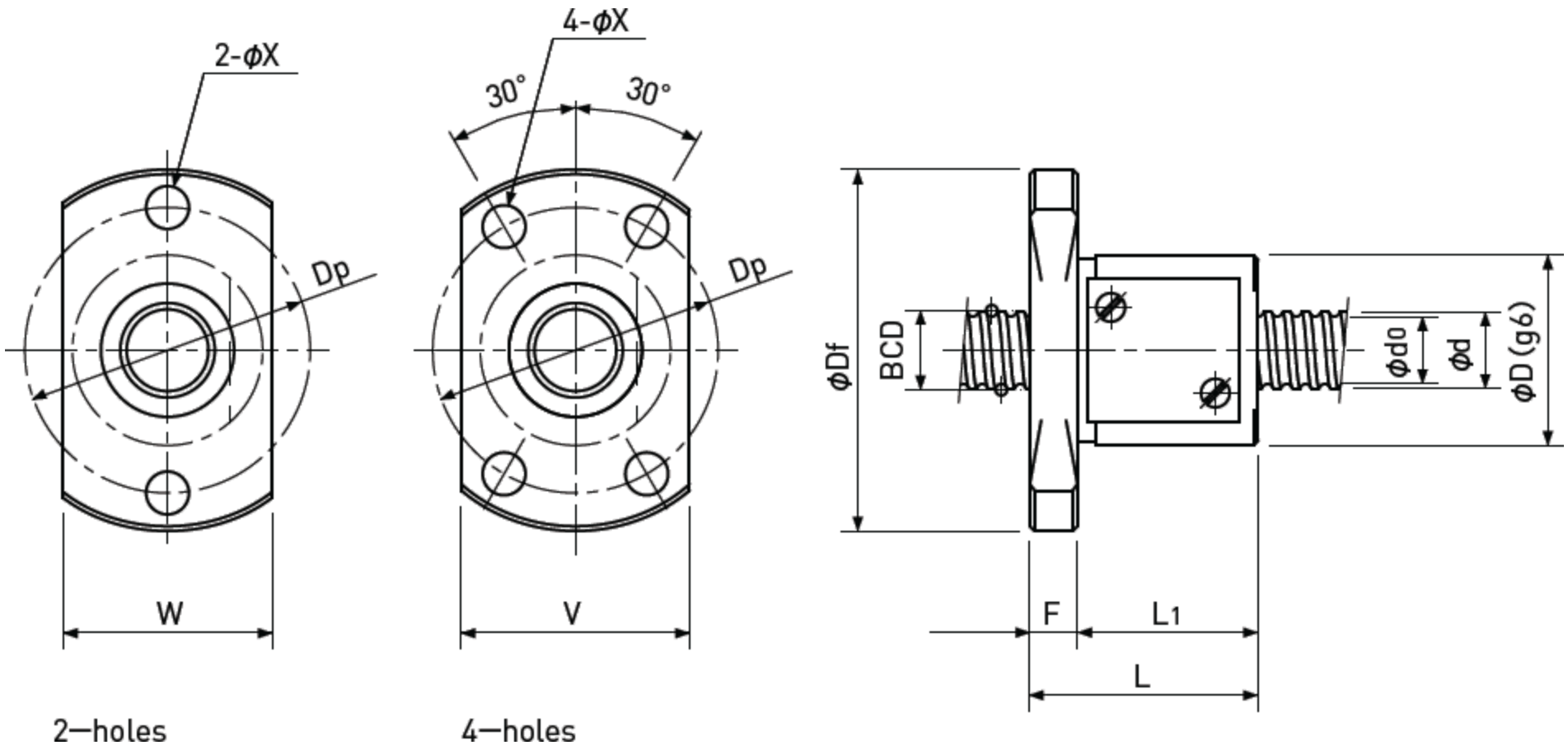
Type-2: Internal-deflector type or End-deflector type

Ball Nut Model number	Nut dimension									
	Nut type	D	Df	L	L_1	F	W	V	Dp	Bolt Hole X
FKB 1001 A	2	15	28	15	11	4	17	19	22	3.4
FBS 1001 B	1	19	37	18	13	5	21	22	29	4.5
FKB 1001.5 A	2	17	34	21	16	5	19	21	26	4.5
FBS 1001.5 B	1	19	37	20	15	5	21	22	29	4.5
FKB 1002 A	2	17	34	19	14	5	19	21	26	4.5
FBS 1002 A	1	23	41	21	16	5	25	25	33	4.5
FBS 1002 B	1	23	41	24	19	5	25	25	33	4.5
FKB 1002.5 A	2	18	35	21	16	5	20	22	27	4.5
FBS 1002.5 A	1	24	44	24	18	6	26	27	35	5.5
FBS 1002.5 B	1	24	44	27	21	6	26	27	35	5.5

Precision Ball Screws

Single Nut with Flange

Backlash type/Preload type



Type-1: Return-plate type

Unit : mm

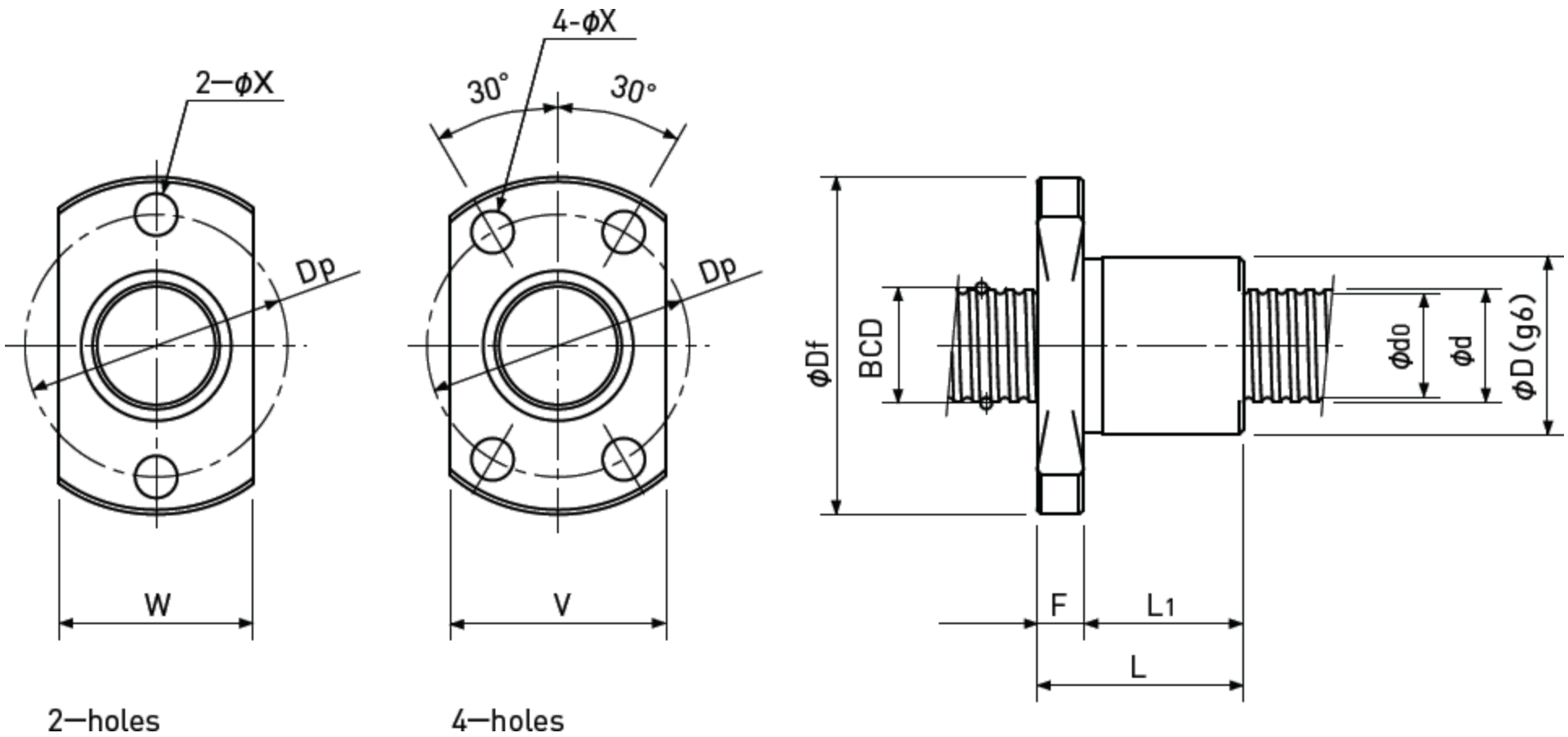
Ball Nut Model number	Shaft nominal dia. d	Lead	Ball size	BCD	Lead angle	Root dia. d_0	Number of Circuit	Basic Load Rating N		Nut Rigidity N/μm
								Dynamic Ca	Static Coa	
FBS 1003 A	10	3	2	10.3	5□°18'	8.2	2.7□×1	3000 / 1800	5200 / 2600	103 / 84
FBS 1003 B	10	3	2	10.3	5□°18'	8.2	3.7□×1	3900 / 2500	7200 / 3600	140 / 118
FBS 1004 A	10	4	2	10.3	7□°03'	8.2	2.7□×1	3000 / 1800	5200 / 2600	104 / 86
FBS 1004 B	10	4	2	10.3	7□°03'	8.2	3.7□×1	3900 / 2500	7200 / 3600	139 / 118
FDB 1005 A	10	5	2	10.3	8□°47'	8.2	2.7□×1	3000 / □-	5200 / □-	103 / □-
FBS 1005 A	10	5	2	10.3	8□°47'	8.2	2.7□×1	3000 / 1800	5200 / 2600	103 / 85
FEB 1010 A	10	10	2	10.5	16□°52'	8.4	1.6□×2	3300 / □-	5900 / □-	117 / □-
FEB 1012 A	10	12	2	10.5	19□°59'	8.4	1.6□×2	3300 / □-	6200 / □-	115 / □-
FEB 1015 A	10	15	2	10.5	24□°27'	8.4	1.6□×2	3300 / □-	6400 / □-	110 / □-
FEB 1020 A	10	20	1.5875	10.4	31□°28'	8.7	0.7□×4	2100 / □-	4000 / □-	88 / □-
FEB 1025 A	10	25	1.5875	10.4	37□°25'	8.7	0.7□×4	2100 / □-	4000 / □-	82 / □-
FEB 1030 A	10	30	1.5875	10.4	42□°33'	8.7	0.7□×4	2100 / □-	4000 / □-	76 / □-

Ball Nut Model number	Nut dimension									
	Nut type	D	Df	L	L_1	F	W	V	Dp	Bolt Hole X
FBS 1003 A	1	24	44	26	20	6	26	27	35	5.5
FBS 1003 B	1	24	44	30	24	6	26	27	35	5.5
FBS 1004 A	1	24	44	29	23	6	26	27	35	5.5
FBS 1004 B	1	24	44	33	27	6	26	27	35	5.5
FDB 1005 A	2	23	40	26	21	5	□-	25	32	4.5
FBS 1005 A	1	24	44	34	28	6	26	27	35	5.5
FEB 1010 A	3	23	40	24	13	5	□-	25	32	4.5
FEB 1012 A	3	23	40	28	17	5	□-	25	32	4.5
FEB 1015 A	3	23	40	33	22	5	□-	25	32	4.5
FEB 1020 A	3	20	37	23	13	5	□-	22	29	4.5
FEB 1025 A	3	20	37	27.5	17.5	5	□-	22	29	4.5
FEB 1030 A	3	20	37	31.5	21.7	5	□-	22	29	4.5

Precision Ball Screws

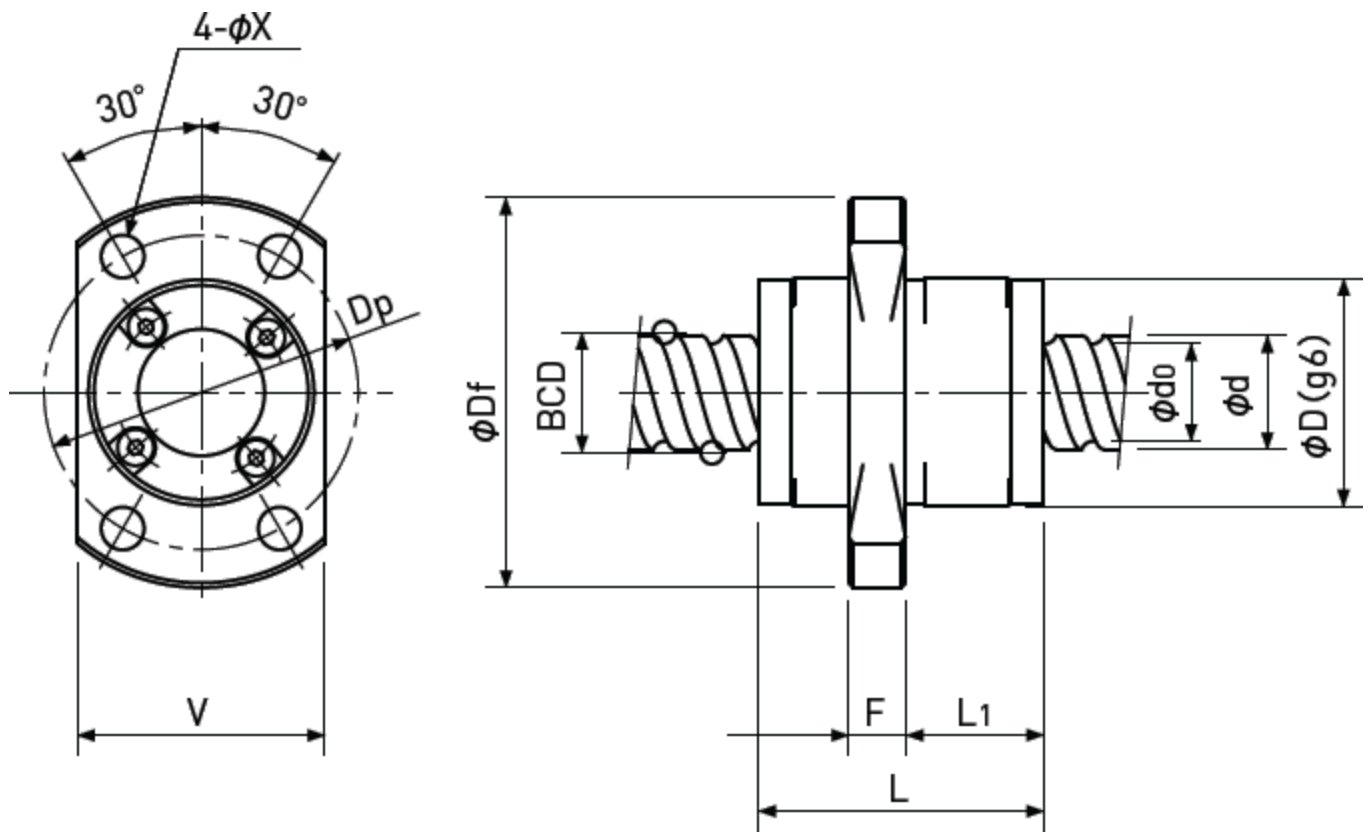
Single Nut with Flange

Backlash type/Preload type



2—holes 4—holes

Type-2: Internal-deflector type or End-deflector type



Type-3: End-cap type or End-deflector type

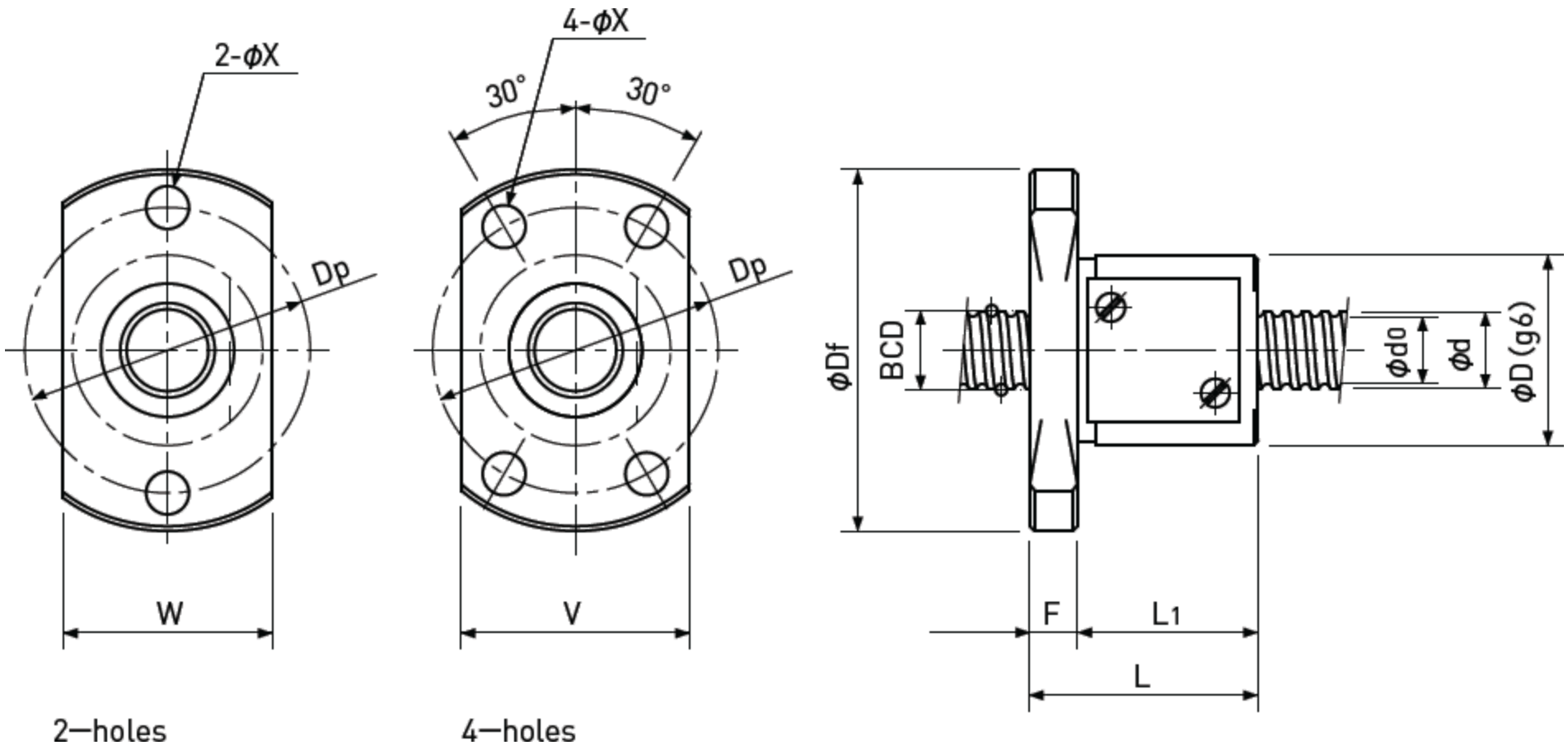
Basic Load Rating N		Nut Rigidity N/μm
Dynamic Ca	Static Coa	
1000 / 640	3300 / 1650	164 / 138
		Preload type
		Backlash type

Note 1) The diameter of one of the Screw Shaft ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.
Note 2) Ball Nut dimension is without seal at the both ends. If the seals are required, Ball Nut dimension should be changed, in that case, please ask ABSSAC. Some type of Ball Nuts cannot equip with seals, please ask ABSSAC representative.
Note 3) The Rigidity values shown in the table are theoretical values of Ball Nut Rigidity calculated from the amount of Elastic Displacement under the following conditions.
Backlash type ; Apply the Axial load equivalent to 30% of the Basic Dynamic Load Rating Ca.
Preload type ; Apply the Preload equivalent to 5% of the Basic Dynamic Load Rating Ca.
Note 4) All models are Right-hand Screw. If Left-hand Screw is required, please ask ABSSAC representative.
Note 5) Basic Load Rating and Rigidity for Backlash type and Preload type are described in the same cell.

Precision Ball Screws

Single Nut with Flange

Backlash type/Preload type



Type-1: Return-plate type

Unit : mm

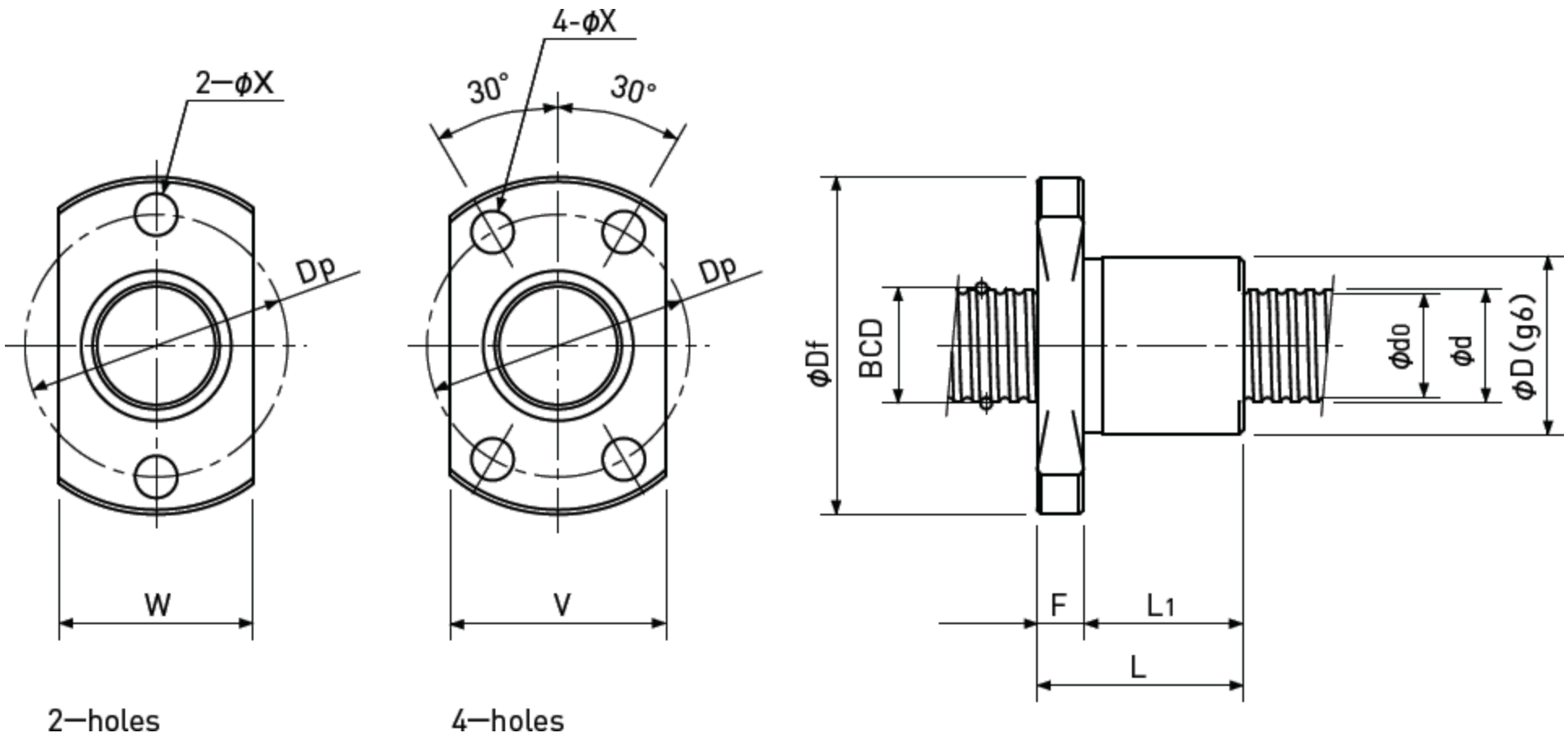
Ball Nut Model number	Shaft nominal dia. d	Lead	Ball size	BCD	Lead angle	Root dia. d_0	Number of Circuit	Basic Load Rating N		Nut Rigidity N/μm
								Dynamic Ca	Static Coa	
FKB 1201 A	12	1	0.8	12.2	1□°30'	11.3	1□×3	780 / 780	2000 / 2000	97 / 152
FBS 1201 B	12	1	0.8	12.15	1□°30'	11.3	3.7□×1	910 / 570	2400 / 1200	131 / 110
FKB 1202 A	12	2	1.2	12.3	2□°58'	11	1□×3	1600 / 1600	3700 / 3700	109 / 169
FBS 1202 B	12	2	1.5875	12.3	2□°58'	10.6	3.7□×1	3000 / 1900	6400 / 3200	156 / 132
FKB 1202.5 A	12	2.5	1.5875	12.4	3□°41'	10.7	1□×3	2300 / 2300	4700 / 4700	112 / 174
FBS 1202.5 B	12	2.5	1.5875	12.3	3□°42'	10.6	3.7□×1	3000 / 1850	6400 / 3200	156 / 130
FKB 1203 A	12	3	2	12.5	4□°22'	10.4	1□×3	3100 / 3100	5700 / 5700	115 / 179
FBS 1203 B	12	3	2	12.3	4□°26'	10.2	3.7□×1	4300 / 2800	8700 / 4300	162 / 137
FBS 1204 B	12	4	2.381	12.3	5□°55'	9.8	3.7□×1	5400 / 3400	10200 / 5100	165 / 139
FBS 1205 A	12	5	2.381	12.3	7□°22'	9.8	2.7□×1	4100 / 2500	7400 / 3700	122 / 101
FEB 1210 A	12	10	2.381	12.65	14□°7'	10.2	1.7□×2	5100 / □-	9800 / □-	152 / □-

Ball Nut Model number	Nut dimension									
	Nut type	D	Df	L	L_1	F	W	V	Dp	Bolt Hole X
FKB 1201 A	2	17	34	16	11	5	19	21	26	4.5
FBS 1201 B	1	22	40	18	13	5	24	24	32	4.5
FKB 1202 A	2	19	36	19	14	5	21	23	28	4.5
FBS 1202 B	1	25	45	25	19	6	27	27	36	5.5
FKB 1202.5 A	2	20	37	21	16	5	22	24	29	4.5
FBS 1202.5 B	1	26	46	27	21	6	28	28	37	5.5
FKB 1203 A	2	22	41	32	26	6	24	26	32	5.5
FBS 1203 B	1	28	48	30	24	6	30	30	39	5.5
FBS 1204 B	1	28	48	33	27	6	30	30	39	5.5
FBS 1205 A	1	28	48	33	27	6	30	30	39	5.5
FEB 1210 A	3	24	41	30	14.5	6	□-	26	33	4.5

Precision Ball Screws

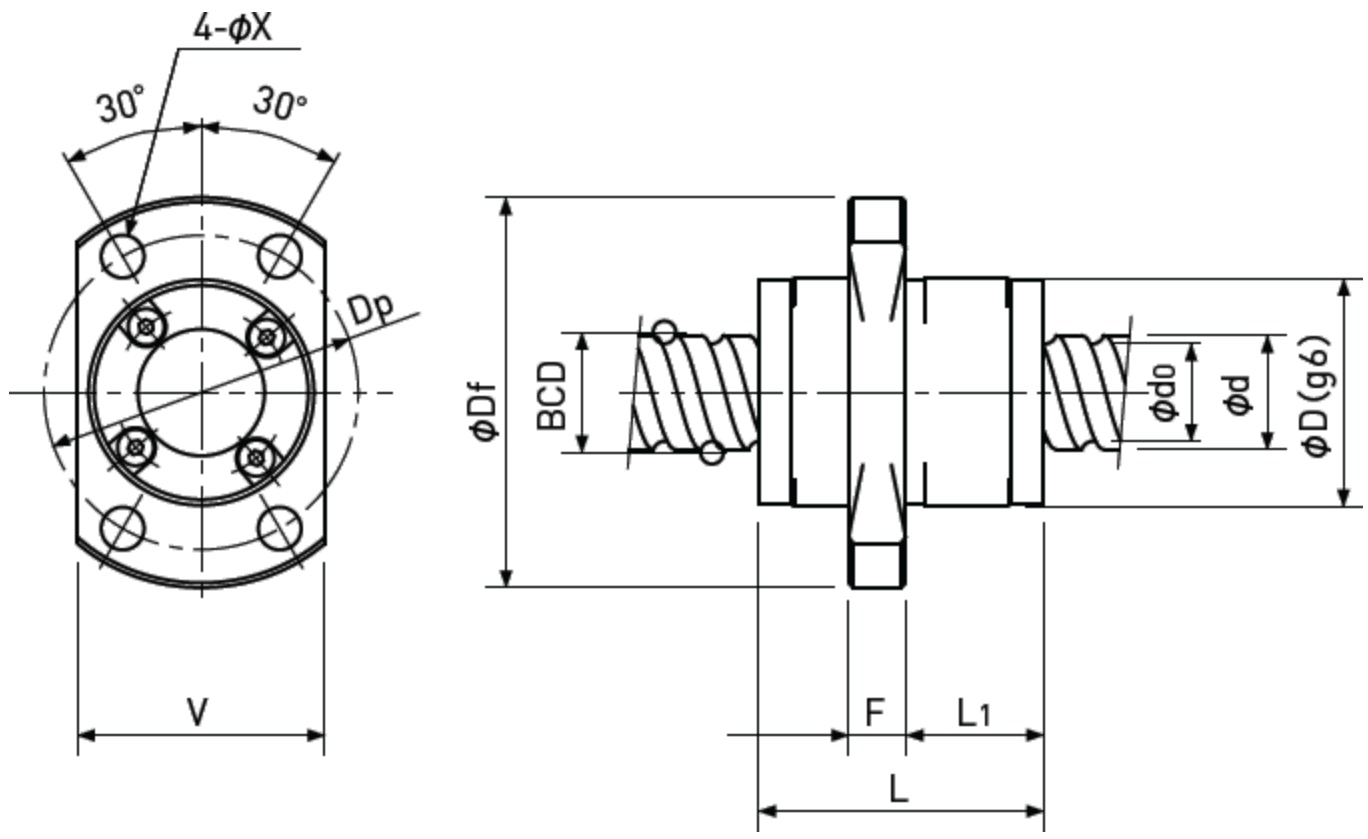
Single Nut with Flange

Backlash type/Preload type



2—holes 4—holes

Type-2: Internal-deflector type or End-deflector type



Type-3: End-cap type or End-deflector type

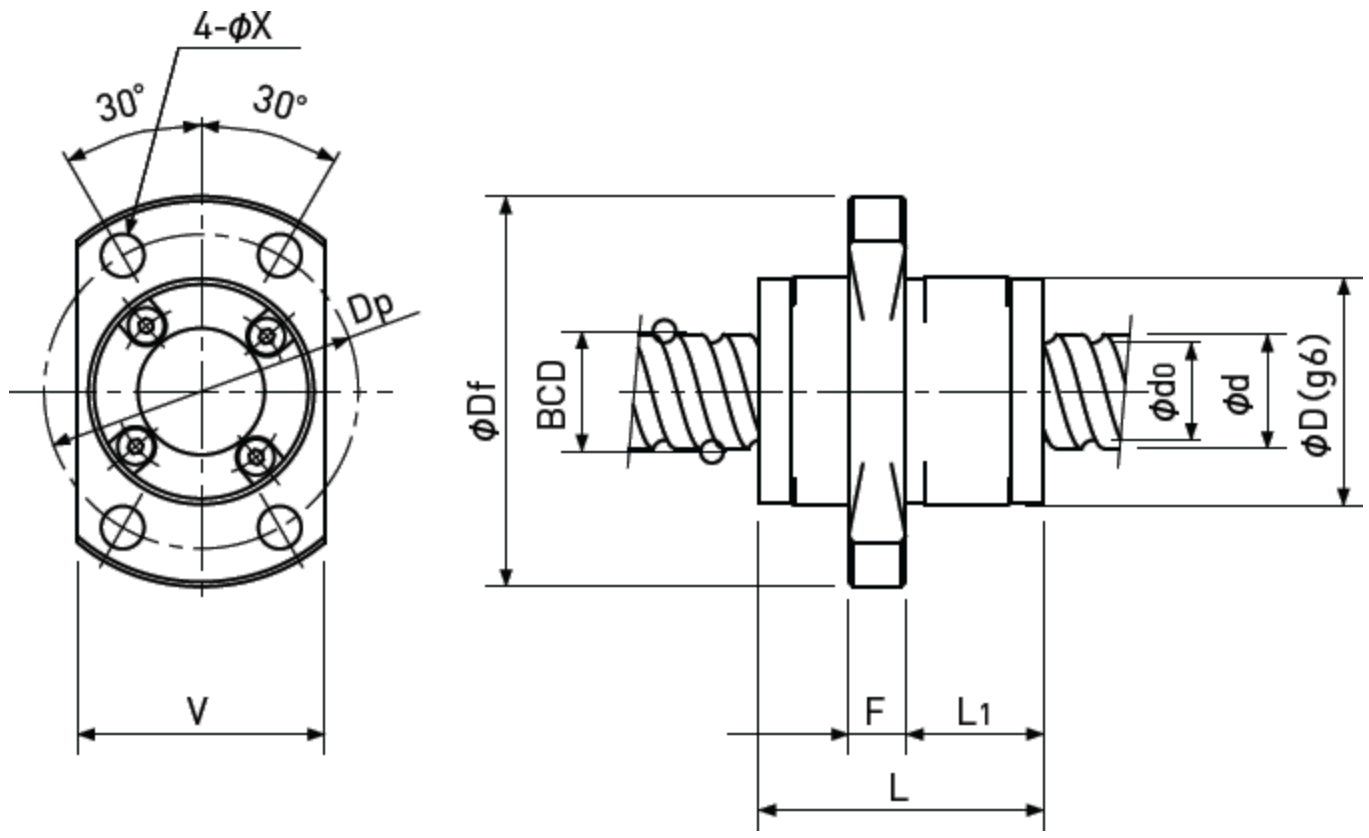
Basic Load Rating N		Nut Rigidity N/μm
Dynamic Ca	Static Coa	
1000 / 640	3300 / 1650	164 / 138
		Preload type
		Backlash type

Note 1) The diameter of one of the Screw Shaft ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.
Note 2) Ball Nut dimension is without seal at the both ends. If the seals are required, Ball Nut dimension should be changed, in that case, please ask ABSSAC. Some type of Ball Nuts cannot equip with seals, please ask ABSSAC representative.
Note 3) The Rigidity values shown in the table are theoretical values of Ball Nut Rigidity calculated from the amount of Elastic Displacement under the following conditions.
Backlash type ; Apply the Axial load equivalent to 30% of the Basic Dynamic Load Rating Ca.
Preload type ; Apply the Preload equivalent to 5% of the Basic Dynamic Load Rating Ca.
Note 4) All models are Right-hand Screw. If Left-hand Screw is required, please ask ABSSAC representative.
Note 5) Basic Load Rating and Rigidity for Backlash type and Preload type are described in the same cell.

Precision Ball Screws

Single Nut with Flange

Backlash type/Preload type



Type-3: End-cap type or End-deflector type

Unit : mm

Ball Nut Model number	Shaft nominal dia. d	Lead	Ball size	BCD	Lead angle	Root dia. d_0	Number of Circuit	Basic Load Rating N		Nut Rigidity N/μm
								Dynamic Ca	Static Coa	
FEB 1312 A	13	12	2.381	13.5	15□°48'	11	1.6□×2	5000 / □-	9900 / □-	151 / □-
FEB 1315 A	13	15	2.381	13.5	19□°29'	11	1.6□×2	5000 / □-	10300 / □-	147 / □-
FEB 1320 A	13	20	2.381	13.5	25□°15'	11	1.6□×2	5000 / □-	10700 / □-	142 / □-

Ball Nut Model number	Nut dimension									
	Nut type	D	Df	L	L_1	F	W	V	Dp	Bolt Hole X
FEB 1312 A	3	28	45	30	17	5	□-	30	37	4.5
FEB 1315 A	3	28	45	35	22	5	□-	30	37	4.5
FEB 1320 A	3	28	45	43	29	5	□-	30	37	4.5

Basic Load Rating N		Nut Rigidity N/μm
Dynamic Ca	Static Coa	
1000 / 640	3300 / 1650	164 / 138
		Preload type
		Backlash type

Note 1) The diameter of one of the Screw Shaft ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.
Note 2) Ball Nut dimension is without seal at the both ends. If the seals are required, Ball Nut dimension should be changed, in that case, please ask ABSSAC. Some type of Ball Nuts cannot equip with seals, please ask ABSSAC representative.
Note 3) The Rigidity values shown in the table are theoretical values of Ball Nut Rigidity calculated from the amount of Elastic Displacement under the following conditions.
Backlash type ; Apply the Axial load equivalent to 30% of the Basic Dynamic Load Rating Ca.
Preload type ; Apply the Preload equivalent to 5% of the Basic Dynamic Load Rating Ca.
Note 4) All models are Right-hand Screw. If Left-hand Screw is required, please ask ABSSAC representative.
Note 5) Basic Load Rating and Rigidity for Backlash type and Preload type are described in the same cell.

Precision Ball Screws

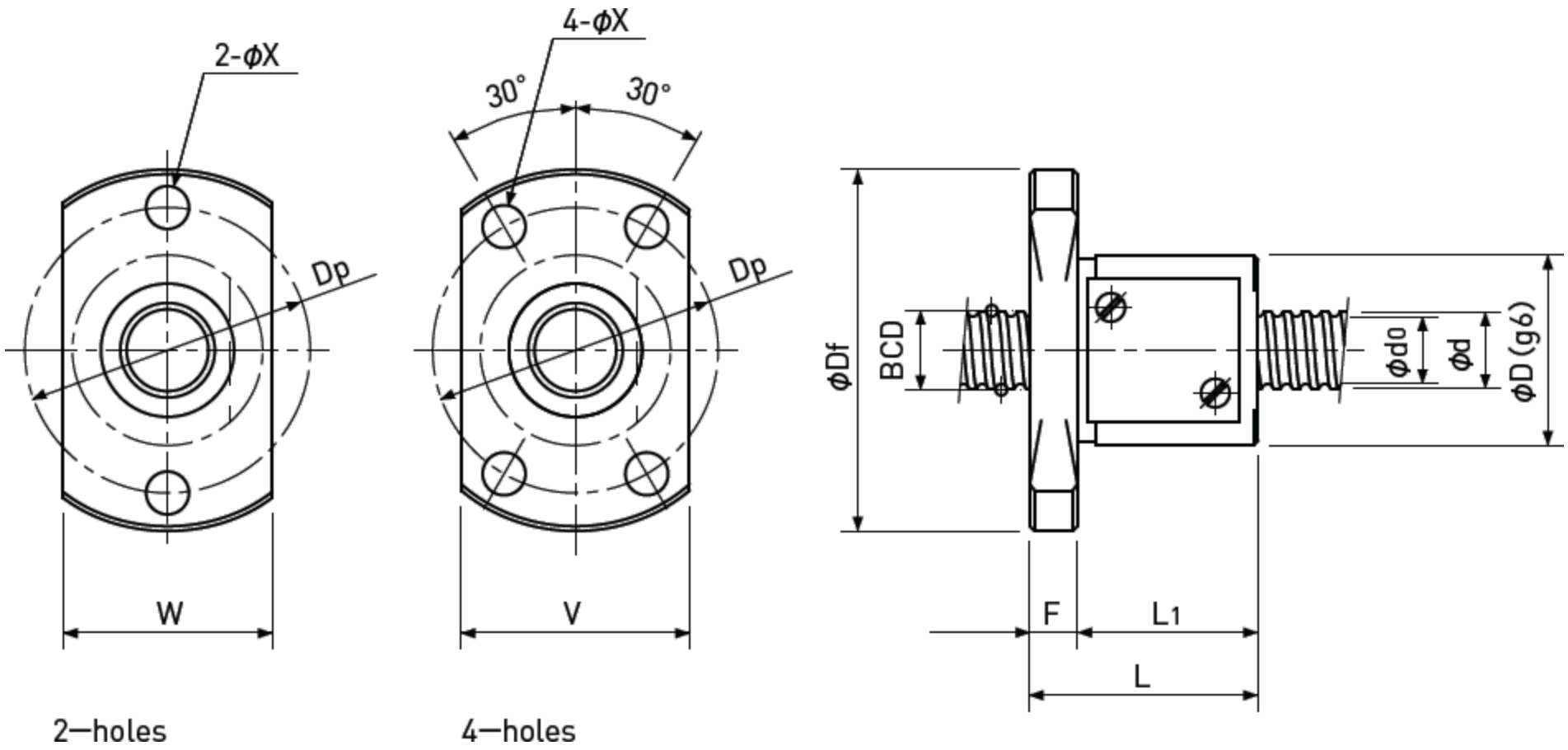
Single Nut with Flange

Backlash type/Preload type

Precision Ball Screws

Single Nut with Flange

Backlash type/Preload type



Type-1: Return-plate type

Unit : mm

Ball Nut Model number	Shaft nominal dia. d	Lead	Ball size	BCD	Lead angle	Root dia. d_0	Number of Circuit	Basic Load Rating N		Nut Rigidity N/μm
								Dynamic Ca	Static Coa	
FBS 1401 B	14	1	0.8	14.15	1□°17'	13.3	3.7□×1	960 / 610	2900 / 1450	148 / 124
FKB 1402 A	14	2	1.2	14.3	2□°33'	13	1□×3	1700 / 1700	4300 / 4300	122 / 190
FBS 1402 B	14	2	1.5875	14.3	2□°33'	12.6	3.7□×1	3200 / 2000	7500 / 3800	176 / 148
FKB 1402.5 A	14	2.5	1.5875	14.4	3□°10'	12.7	1□×3	2500 / 2500	5600 / 5600	127 / 197
FBS 1402.5 B	14	2.5	1.5875	14.3	3□°11'	12.6	3.7□×1	3200 / 2000	7500 / 3700	176 / 148
FKB 1403 A	14	3	2	14.5	3□°46'	12.4	1□×3	3400 / 3400	6800 / 6800	131 / 204
FBS 1403 B	14	3	2	14.3	3□°49'	12.2	3.7□×1	4600 / 2900	10100 / 5000	184 / 154
FKB 1404 A	14	4	2.381	14.65	4□°58'	11.9	1□×3	4500 / 4500	8600 / 8600	136 / 212
FBS 1404 B	14	4	2.381	14.3	5□°05'	11.8	3.7□×1	5700 / 3600	11600 / 5800	187 / 157
FBS 1405 B	14	5	2.381	14.3	6□°21'	11.8	3.7□×1	5700 / 3600	11600 / 5800	186 / 157

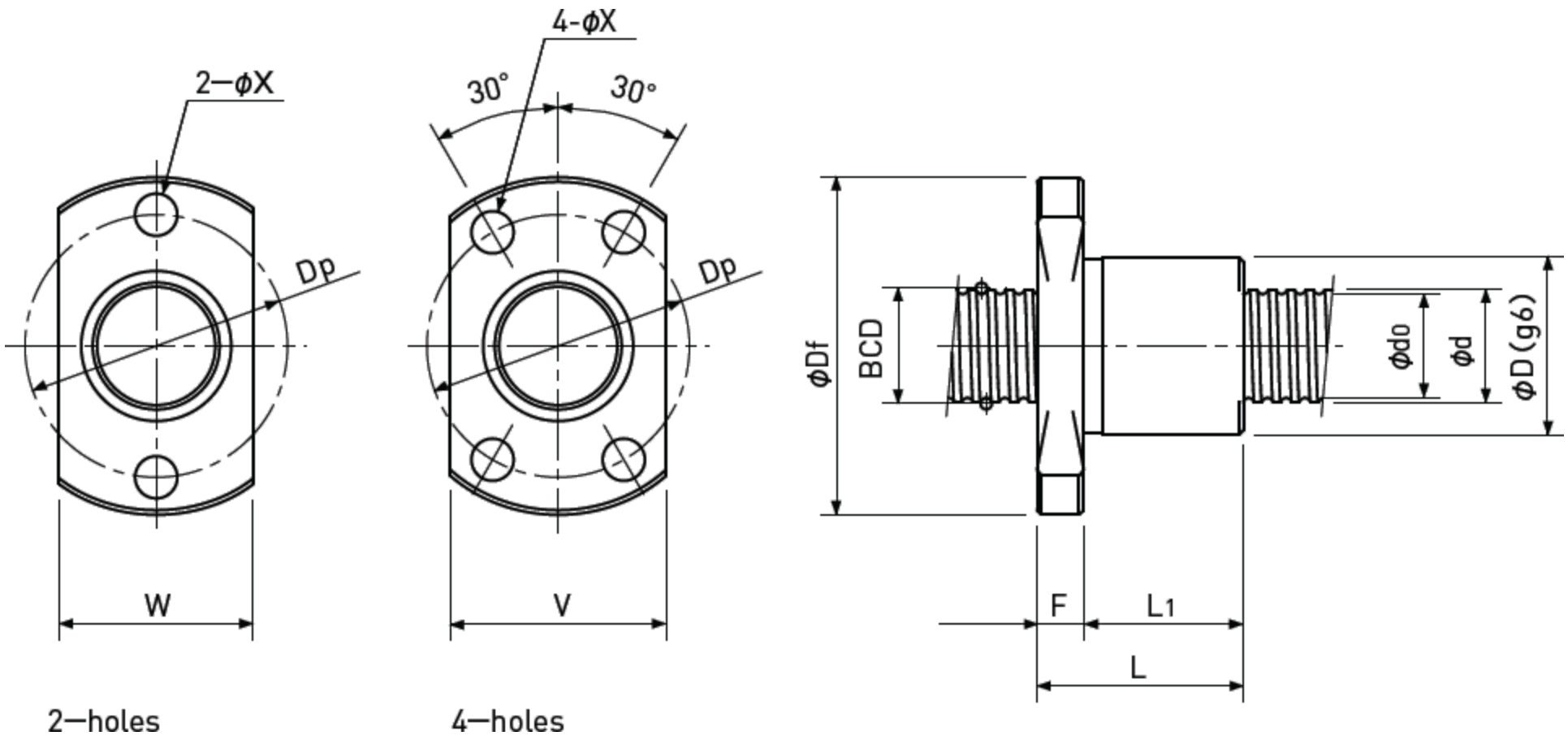
Basic Load Rating N		Nut Rigidity N/μm	
Dynamic Ca	Static Coa		
1000 / 640	3300 / 1650	164 / 138	
			Preload type
			Backlash type

Note 1) The diameter of one of the Screw Shaft ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.
Note 2) Ball Nut dimension is without seal at the both ends. If the seals are required, Ball Nut dimension should be changed, in that case, please ask ABSSAC. Some type of Ball Nuts cannot equip with seals, please ask ABSSAC representative.
Note 3) The Rigidity values shown in the table are theoretical values of Ball Nut Rigidity calculated from the amount of Elastic Displacement under the following conditions.
Backlash type ; Apply the Axial load equivalent to 30% of the Basic Dynamic Load Rating Ca.
Preload type ; Apply the Preload equivalent to 5% of the Basic Dynamic Load Rating Ca.
Note 4) All models are Right-hand Screw. If Left-hand Screw is required, please ask ABSSAC representative.
Note 5) Basic Load Rating and Rigidity for Backlash type and Preload type are described in the same cell.

Precision Ball Screws

Single Nut with Flange

Backlash type/Preload type



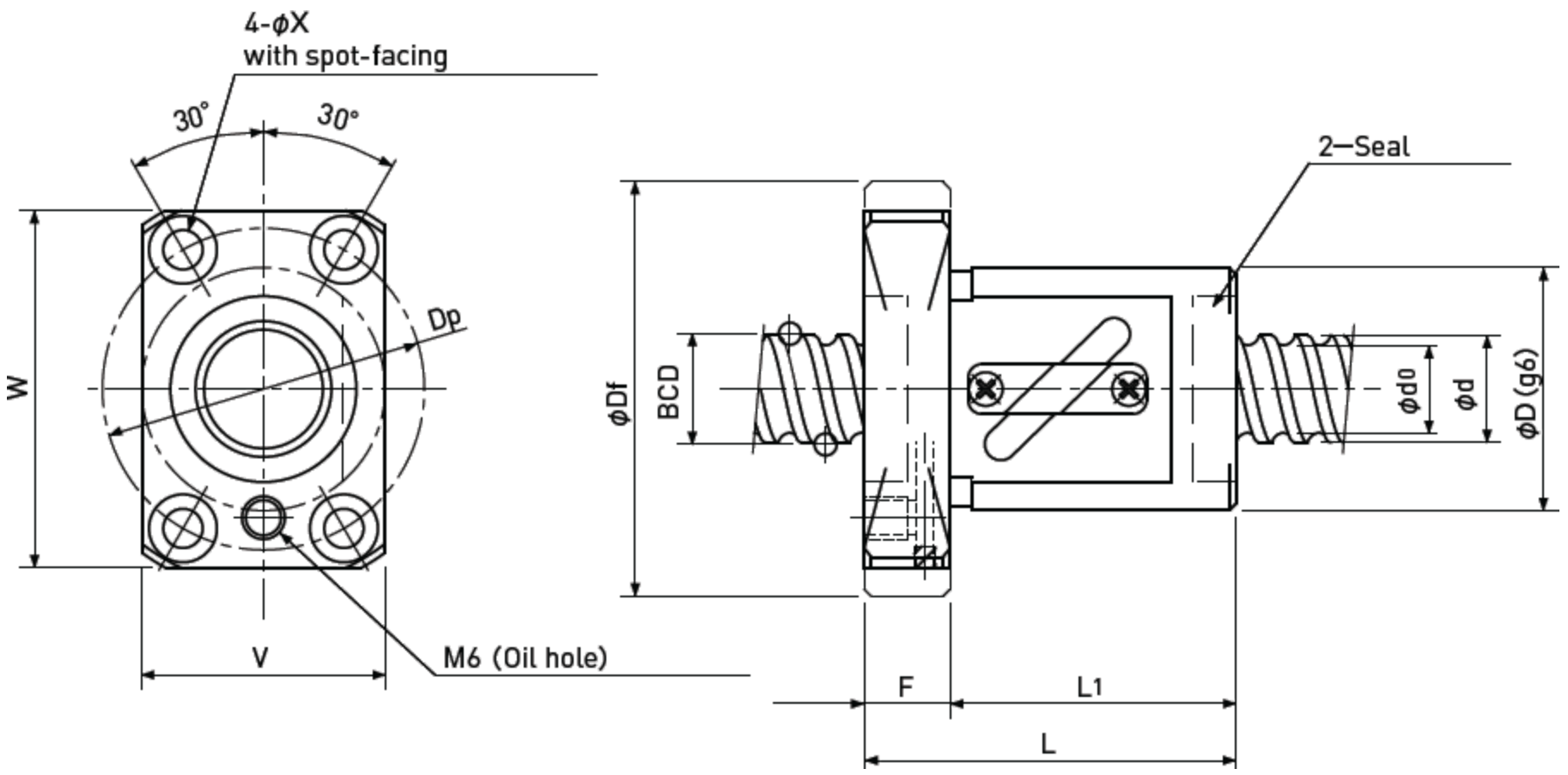
Type-2: Internal-deflector type or End-deflector type

Ball Nut Model number	Nut dimension									
	Nut type	D	Df	L	L_1	F	W	V	Dp	Bolt Hole X
FBS 1401 B	1	26	46	21	15	6	28	28	37	5.5
FKB 1402 A	2	21	40	20	14	6	23	26	31	5.5
FBS 1402 B	1	26	46	25	19	6	28	28	37	5.5
FKB 1402.5 A	2	22	41	22	16	6	24	26	32	5.5
FBS 1402.5 B	1	28	48	27	21	6	30	30	39	5.5
FKB 1403 A	2	24	43	32	26	6	26	27	34	5.5
FBS 1403 B	1	30	51	30	24	6	32	32	42	5.5
FKB 1404 A	2	26	45	29	23	6	28	28	36	5.5
FBS 1404 B	1	30	51	33	27	6	32	32	42	5.5
FBS 1405 B	1	30	51	39	33	6	32	32	42	5.5

Precision Ball Screws

Single Nut with Flange

Backlash type/Preload type



Type-4: Return-tube type

Unit : mm

Ball Nut Model number	Shaft nominal dia. d	Lead	Ball size	BCD	Lead angle	Root dia. d_0	Number of Circuit	Basic Load Rating N		Nut Rigidity N/μm
								Dynamic Ca	Static Coa	
FBS 1504 T	15	4	2.381	15.5	4□°42'	13	2.5□×1	4100 / 2580	8550 / 4300	136 / 112
FEB 1505 A□(1)	15	5	3.175	15.5	5□°41'	12.2	3.7□×1	8900 / □-	17000 / □-	208 / □-
FEB 1505 A□(2)	15	5	3.175	15.5	5□°41'	12.2	3.7□×1	8900 / □-	17000 / □-	208 / □-
FBS 1505 T	15	5	3.175	15.8	5□°45'	12.4	2.5□×1	6900 / 4350	12500 / 6250	148 / 122
FEB 1510 A□(1)	15	10	3.175	15.5	11□°36'	12.2	2.7□×2	12000 / □-	25000 / □-	289 / □-
FEB 1510 A□(2)	15	10	3.175	15.5	11□°36'	12.2	2.7□×2	12000 / □-	25000 / □-	289 / □-
FBS 1510 T	15	10	3.175	15.8	11□°23'	12.4	1.5□×1	4400 / 2540	7900 / 3450	87 / 69
FEB 1520 A□(1)	15	20	3.175	15.75	22□°1'	12.4	1.7□×2	8000 / □-	16000 / □-	178 / □-
FEB 1520 A□(2)	15	20	3.175	15.75	22□°1'	12.4	1.7□×2	8000 / □-	16000 / □-	178 / □-
FBS 1520 T	15	20	3.175	15.8	21□°56'	12.4	1.5□×1	4400 / 2540	7900 / 3450	84 / 67
FEB 1530 A□(1)	15	30	3.175	15.75	31□°14'	12.4	1.7□×2	8000 / □-	16000 / □-	163 / □-
FEB 1530 A□(2)	15	30	3.175	15.75	31□°14'	12.4	1.7□×2	8000 / □-	16000 / □-	163 / □-

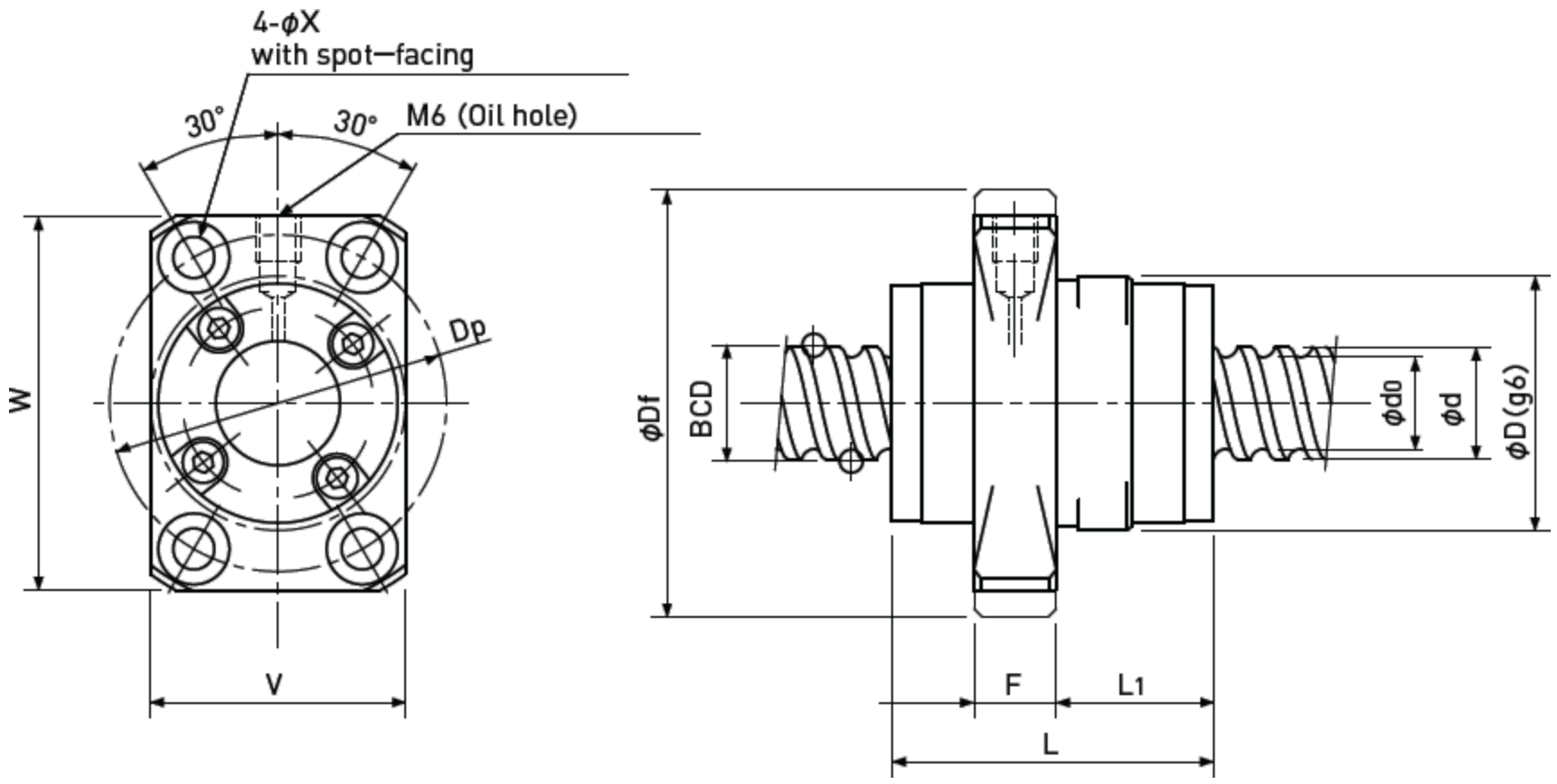
Basic Load Rating N		Nut Rigidity N/μm
Dynamic Ca	Static Coa	
1000 / 640	3300 / 1650	164 / 138
		Preload type
		Backlash type

Note 1) The diameter of one of the Screw Shaft ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.
Note 2) Ball Nut dimension is without seal at the both ends. If the seals are required, Ball Nut dimension should be changed, in that case, please ask ABSSAC. Some type of Ball Nuts cannot equip with seals, please ask ABSSAC representative.
Note 3) The Rigidity values shown in the table are theoretical values of Ball Nut Rigidity calculated from the amount of Elastic Displacement under the following conditions.
Backlash type ; Apply the Axial load equivalent to 30% of the Basic Dynamic Load Rating Ca.
Preload type ; Apply the Preload equivalent to 5% of the Basic Dynamic Load Rating Ca.
Note 4) All models are Right-hand Screw. If Left-hand Screw is required, please ask ABSSAC representative.
Note 5) Basic Load Rating and Rigidity for Backlash type and Preload type are described in the same cell.

Precision Ball Screws

Single Nut with Flange

Backlash type/Preload type



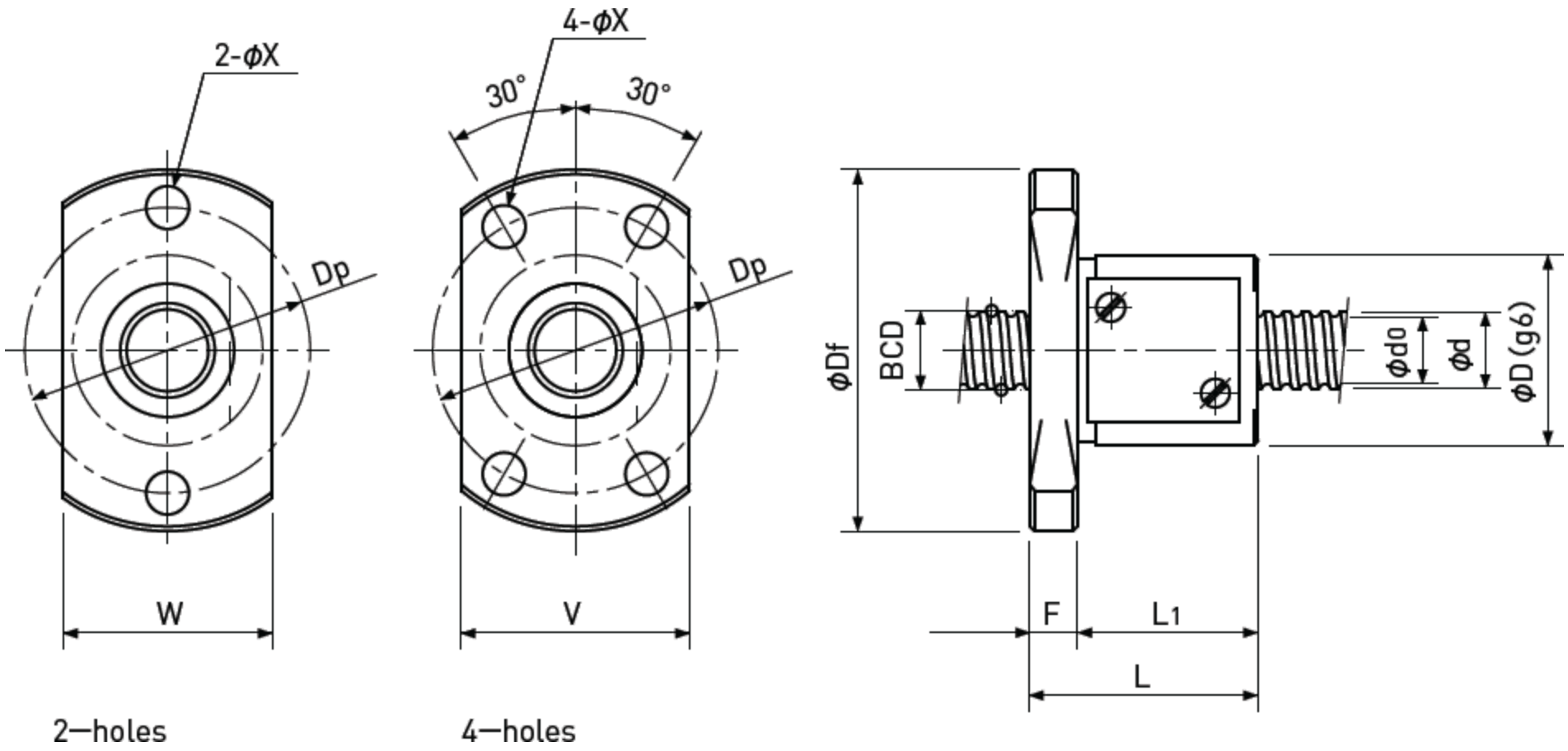
Type-5: End-deflector type

Ball Nut Model number	Nut dimension									
	Nut type	D	Df	L	L_1	F	W	V	Dp	Bolt Hole X
FBS 1504 T	4	32	56	41	31	10	48	32	43	5.5
FEB 1505 A□(1)	5	32	55	33	16	11	49	33	43	5.5
FEB 1505 A□(2)	5	34	57	33	16	11	50	34	45	5.5
FBS 1505 T	4	34	58	44	34	10	50	34	45	5.5
FEB 1510 A□(1)	5	32	55	43	21	11	49	33	43	5.5
FEB 1510 A□(2)	5	34	57	43	21	11	50	34	45	5.5
FBS 1510 T	4	34	58	52	40	12	50	34	45	6
FEB 1520 A□(1)	5	32	55	52	28.5	11	49	33	43	5.5
FEB 1520 A□(2)	5	34	57	52	28.5	11	50	34	45	5.5
FBS 1520 T	4	34	58	62	50	12	50	34	45	6
FEB 1530 A□(1)	5	32	55	71	45.5	11	49	33	43	5.5
FEB 1530 A□(2)	5	34	57	71	45.5	11	50	34	45	5.5

Precision Ball Screws

Single Nut with Flange

Backlash type/Preload type



Type-1: Return-plate type

Unit : mm

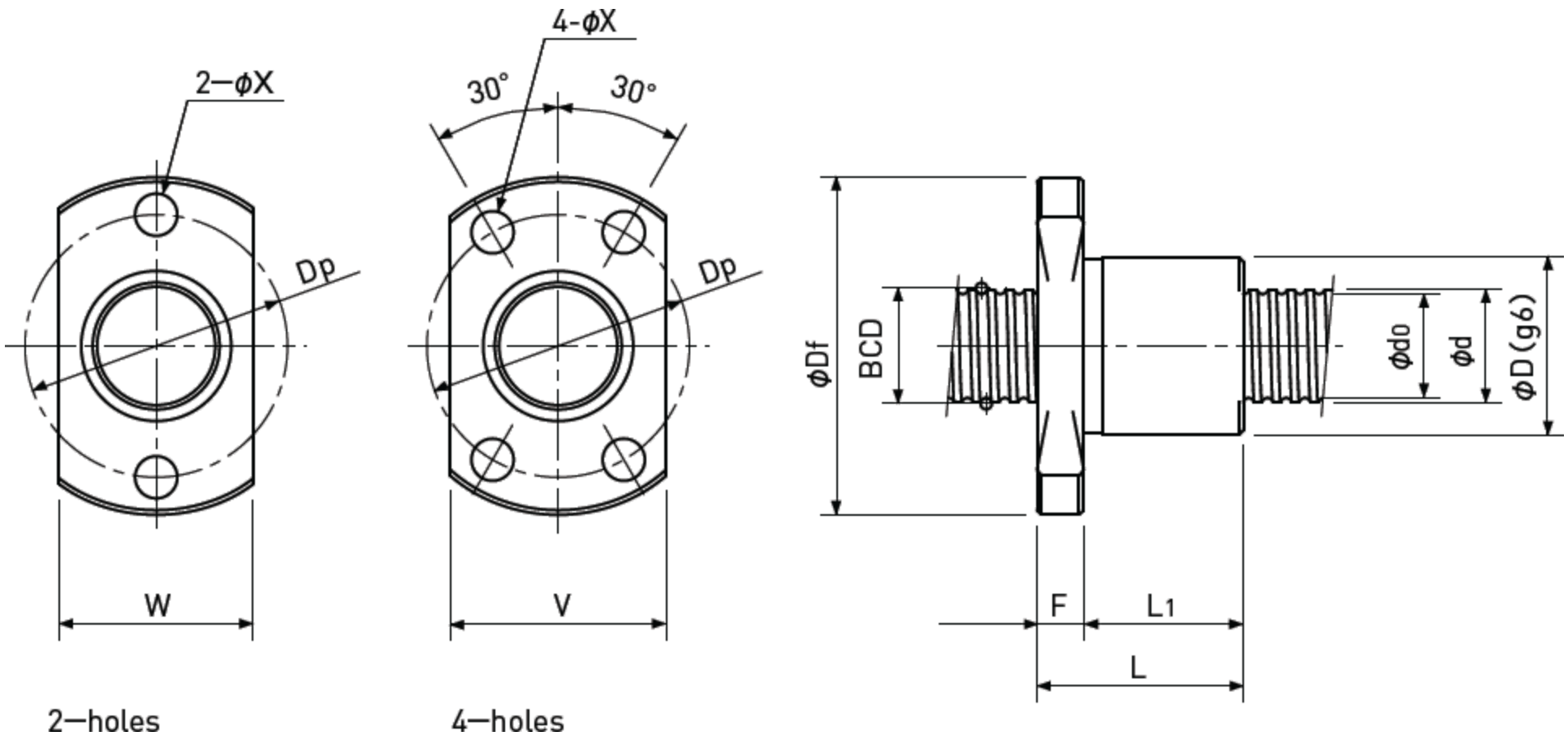
Ball Nut Model number	Shaft nominal dia. d	Lead	Ball size	BCD	Lead angle	Root dia. d_0	Number of Circuit	Basic Load Rating N		Nut Rigidity N/μm
								Dynamic Ca	Static Coa	
FBS 1601 B	16	1	0.8	16.15	1□°08'	15.3	3.7□×1	1000 / 640	3300 / 1650	164 / 138
FKB 1602 A	16	2	1.2	16.3	2□°15'	15	1□×3	1850 / 1850	5000 / 5000	137 / 213
FBS 1602 B	16	2	1.5875	16.3	2□°14'	14.6	3.7□×1	3400 / 2100	8600 / 4300	197 / 163
FKB 1602.5 A	16	2.5	1.5875	16.4	2□°47'	14.7	1□×3	2700 / 2700	6500 / 6500	142 / 221
FBS 1602.5 B	16	2.5	1.5875	16.3	2□°48'	14.6	3.7□×1	3400 / 2100	8600 / 4300	197 / 163
FKB 1603 A	16	3	2	16.5	3□°19'	14.4	1□×3	3600 / 3600	8000 / 8000	146 / 227
FBS 1603 B	16	3	2	16.3	3□°21'	14.2	3.7□×1	4900 / 3100	11600 / 5800	205 / 172
FKB 1604 A	16	4	2.381	16.65	4□°22'	13.9	1□×3	4800 / 4800	10000 / 10000	152 / 237
FBS 1604 B	16	4	2.381	16.3	4□°28'	13.8	3.7□×1	6200 / 3900	13600 / 6800	209 / 174
FBS 1605 B	16	5	3.175	16.5	5□°31'	13.2	3.7□×1	9100 / 5700	18200 / 9100	217 / 182
FBS 2005 T	20	5	3.175	20.8	4□°23'	17.5	2.5□×1	8350 / 5260	17500 / 8750	189 / 157
FBS 2010 T	20	10	4.7625	21	8□°37'	17.7	2.5□×1	13500 / 8350	25100 / 12800	195 / 160

Ball Nut Model number	Nut dimension									
	Nut type	D	Df	L	L_1	F	W	V	Dp	Bolt Hole X
FBS 1601 B	1	28	48	21	15	6	30	30	39	5.5
FKB 1602 A	2	24	43	20	14	6	26	27	34	5.5
FBS 1602 B	1	28	48	25	19	6	30	30	39	5.5
FKB 1602.5 A	2	24	43	22	16	6	26	27	34	5.5
FBS 1602.5 B	1	28	48	27	21	6	30	30	39	5.5
FKB 1603 A	2	26	45	32	26	6	28	28	36	5.5
FBS 1603 B	1	32	53	30	24	6	34	34	44	5.5
FKB 1604 A	2	28	47	29	23	6	30	30	38	5.5
FBS 1604 B	1	34	54	34	28	6	36	36	45	5.5
FBS 1605 B	1	38	57	42	36	6	40	40	48	5.5
FBS 2005 T	4	40	68	48	36	12	60	40	53	6.6
FBS 2010 T	4	46	74	65	50	15	66	46	59	6.6

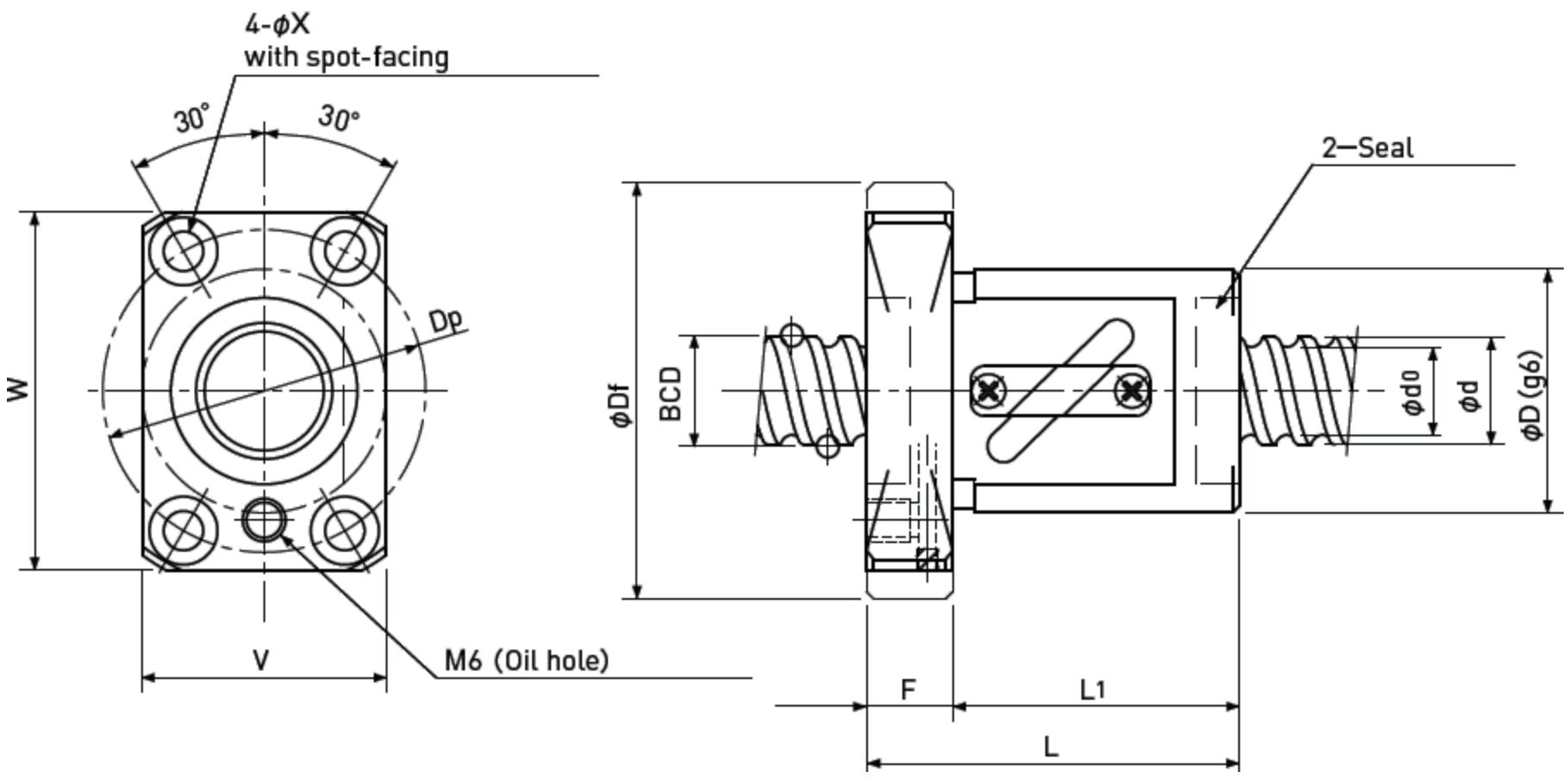
Precision Ball Screws

Single Nut with Flange

Backlash type/Preload type



Type-2: Internal-deflector type or End-deflector type



Type-4: Return-tube type

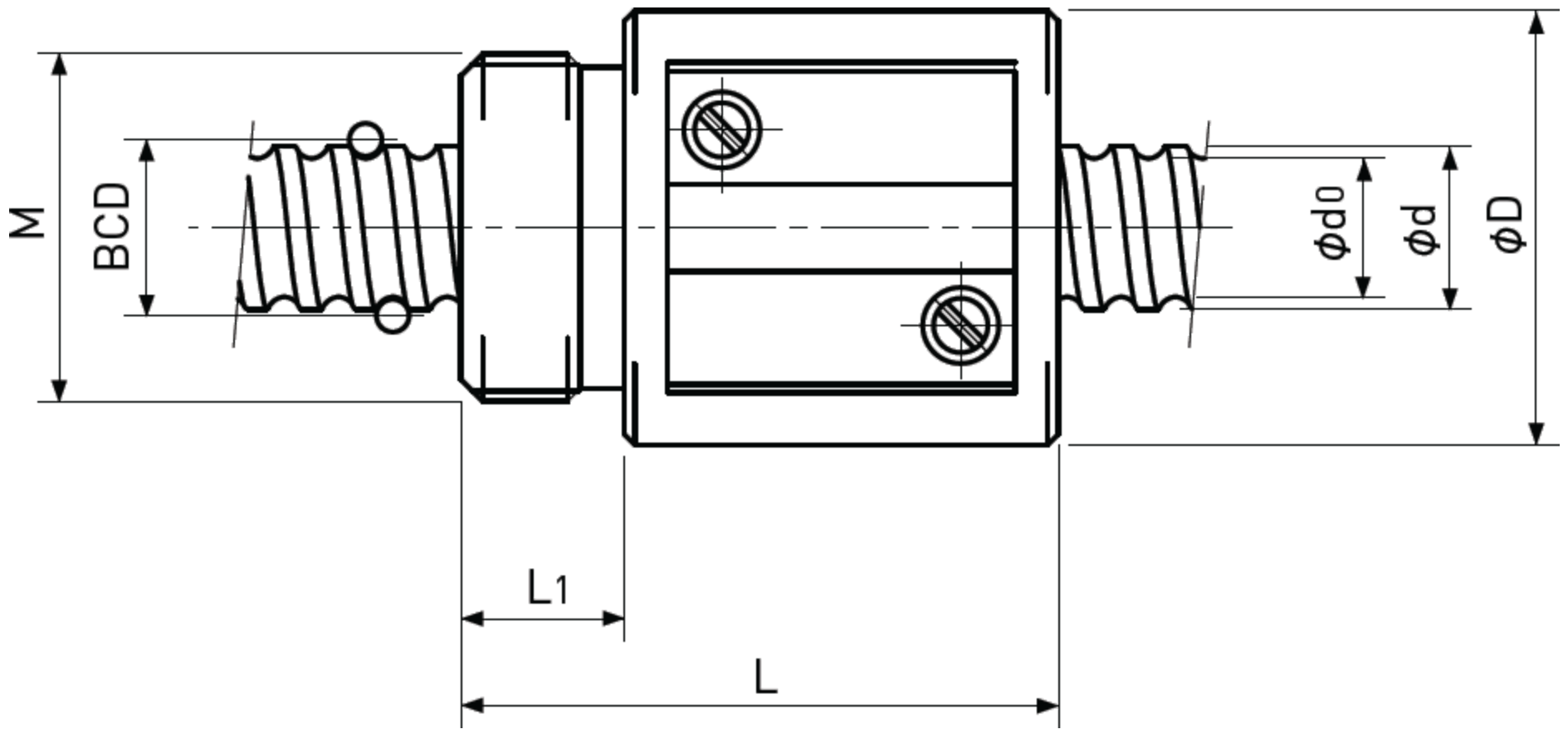
Basic Load Rating N		Nut Rigidity N/μm
Dynamic Ca	Static Coa	
1000 / 640	3300 / 1650	164 / 138
		Preload type
		Backlash type

Note 1) The diameter of one of the Screw Shaft ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.
Note 2) Ball Nut dimension is without seal at the both ends. If the seals are required, Ball Nut dimension should be changed, in that case, please ask ABSSAC. Some type of Ball Nuts cannot equip with seals, please ask ABSSAC representative.
Note 3) The Rigidity values shown in the table are theoretical values of Ball Nut Rigidity calculated from the amount of Elastic Displacement under the following conditions.
Backlash type ; Apply the Axial load equivalent to 30% of the Basic Dynamic Load Rating Ca.
Preload type ; Apply the Preload equivalent to 5% of the Basic Dynamic Load Rating Ca.
Note 4) All models are Right-hand Screw. If Left-hand Screw is required, please ask ABSSAC representative.
Note 5) Basic Load Rating and Rigidity for Backlash type and Preload type are described in the same cell.

Precision Ball Screws

Single Nut with M-thread

Backlash type/Preload type



Type-1: Return-plate type

Unit : mm

Ball Nut Model number	Shaft nominal dia. d	Lead	Ball size	BCD	Lead angle	Root dia. d_0	Number of Circuit	Basic Load Rating N		Nut Rigidity N/μm
								Dynamic Ca	Static Coa	
MS 0401 B	4	1	0.8	4.15	4°23□'	3.3	3.7×1	560 / 350	790 / 400	54 / 45
MS 0602 A	6	2	1	6.2	5°52□'	5.1	2.7×1	750 / 470	1200 / 590	58 / 49
MS 0801.5 B	8	1.5	1	8.2	3°20□'	7.1	3.7×1	1100 / 700	2200 / 1100	99 / 83
MS 0802 B	8	2	1.5875	8.3	4°23□'	6.6	3.7×1	2400 / 1550	4100 / 2100	111 / 94
MS 0802.5 T□i1□j	8	2.5	1.5875	8	5°41□'	6.3	3.5×1	2300 / -	3900 / -	102 / -
MS 0802.5 T□i2□j	8	2.5	1.5875	8	5°41□'	6.3	3.5×1	2300 /-	3900 / -	102 / -
MS 0803 A	8	3	2	8.3	6°34□'	6.2	2.7×1	2600 / 1650	4200 / 2100	85 / 70
MS 0804 T	8	4	1.5875	8	9°03□'	5.9	2.5×1	1750 / -	2800 / -	75 / -
MS 0805 A	8	5	1.5875	8.3	10°51□'	6.6	2.7×1	1850 / 1150	3000 / 1500	82 / 67

Ball Nut Model number	Nut dimension				
	Nut type	D	L	L_1	M
MS 0401 B	1	11	17	4	M9x0.75
MS 0602 A	1	16.5	22	8	M14×1.0
MS 0801.5 B	1	16.5	24	8	M14×1.0
MS 0802 B	1	20	27.5	7.5	M16×1.0
MS 0802.5 T□i1□j	2	16.5	22	8	M14×1.0
MS 0802.5 T□i2□j	2	17.5	25.5	7.5	M15×1.0
MS 0803 A	1	20	28.5	7.5	M16×1.0
MS 0804 T	2	16.5	24	8	M14×1.0
MS 0805 A	1	18	32.5	7.5	M15×1.0

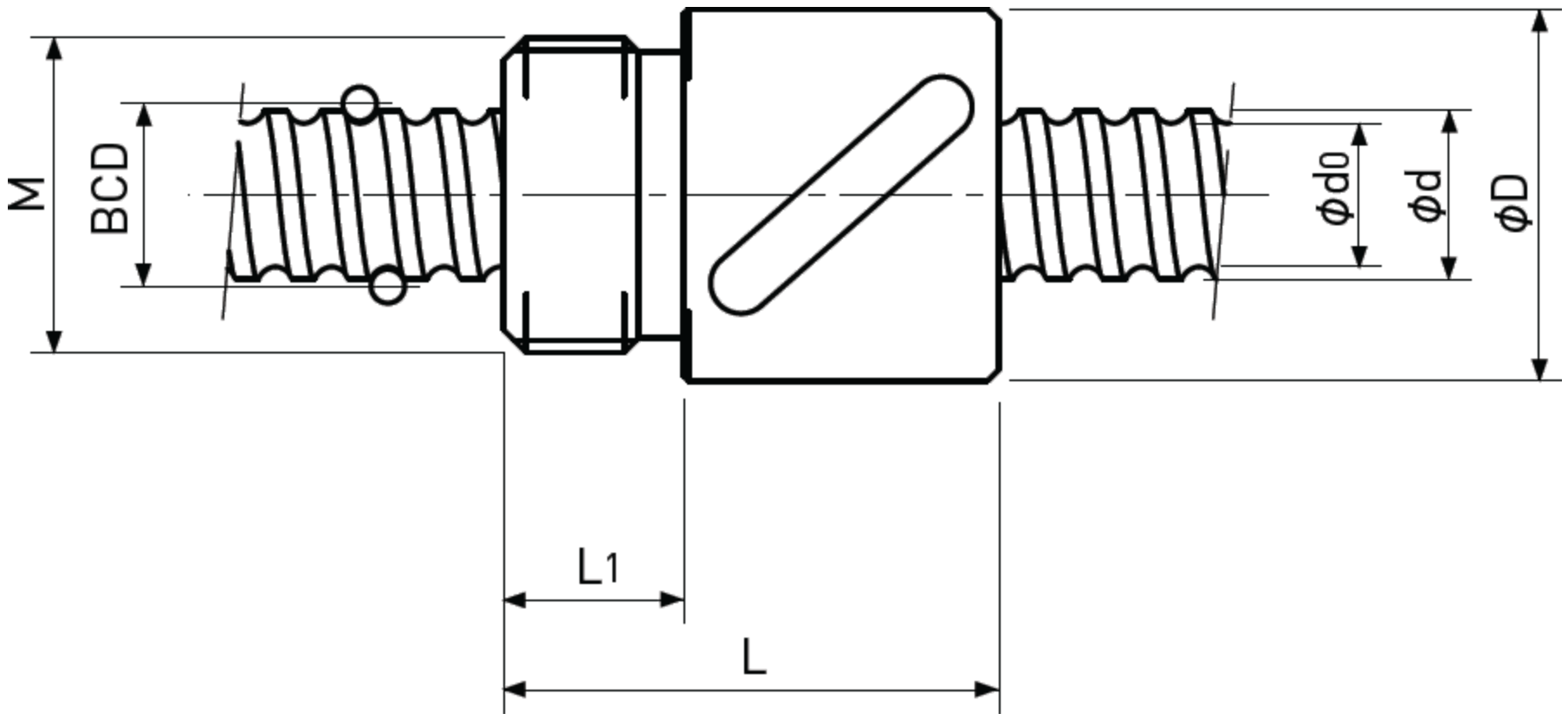
Basic Load Rating N		Nut Rigidity N/μm
Dynamic Ca	Static Coa	
1000 / 640	3300 / 1650	164 / 138
		Preload type
		Backlash type

Note 1) The diameter of one of the Screw Shaft ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.
Note 2) Ball Nut dimension is without seal at the both ends. All type of Ball Nuts cannot equip with seals.
Note 3) The Rigidity values shown in the table are theoretical values of Ball Nut Rigidity calculated from the amount of Elastic Displacement under the following conditions.
Backlash type ; Apply the Axial load equivalent to 30% of the Basic Dynamic Load Rating Ca.
Preload type ; Apply the Preload equivalent to 5% of the Basic Dynamic Load Rating Ca.
Note 4) All models are Right-hand Screw. If Left-hand Screw is required, please ask ABSSAC representative.
Note 5) Across Flats or drill hole is available on the Ball Nut for the convenience of assembly. Please ask ABSSAC representative.
Note 6) Basic Load Rating or Rigidity for Backlash type and Preload type are described in the same cell.

Precision Ball Screws

Single Nut with M-thread

Backlash type/Preload type



Type-2: Return-tube type

Unit : mm

Ball Nut Model number	Shaft nominal dia. d	Lead	Ball size	BCD	Lead angle	Root dia. d_0	Number of Circuit	Basic Load Rating N		Nut Rigidity N/μm
								Dynamic Ca	Static Coa	
MS 1002 B	10	2	1.5875	10.3	3°32□'	8.6	3.7×1	2700 / 1750	5300 / 2700	134 / 112
MS 1202 B	12	2	1.5875	12.3	2°58□'	10.6	3.7×1	3000 / 1900	6400 / 3200	156 / 132
MS 1204 T	12	4	2.381	12.3	5°55□'	9.8	2.5×1	3900 / -	7000 / -	113 / -
MS 1402 B	14	2	1.5875	14.3	2°33□'	12.6	3.7×1	3200 / 2000	7500 / 3800	176 / 148
MS 1404 B	14	4	2.381	14.3	5°05□'	11.8	3.7×1	5700 / 3600	11600 / 5800	187 / 157

Ball Nut Model number	Nut dimension				
	Nut type	D	L	L_1	M
MS 1002 B	1	23	27.5	7.5	M17×1.0
MS 1202 B	1	25	30	10	M20×1.0
MS 1204 T	2	25.5	34	10	M20×1.0
MS 1402 B	1	26	30	10	M22×1.5
MS 1404 B	1	30	38	10	M25×1.0

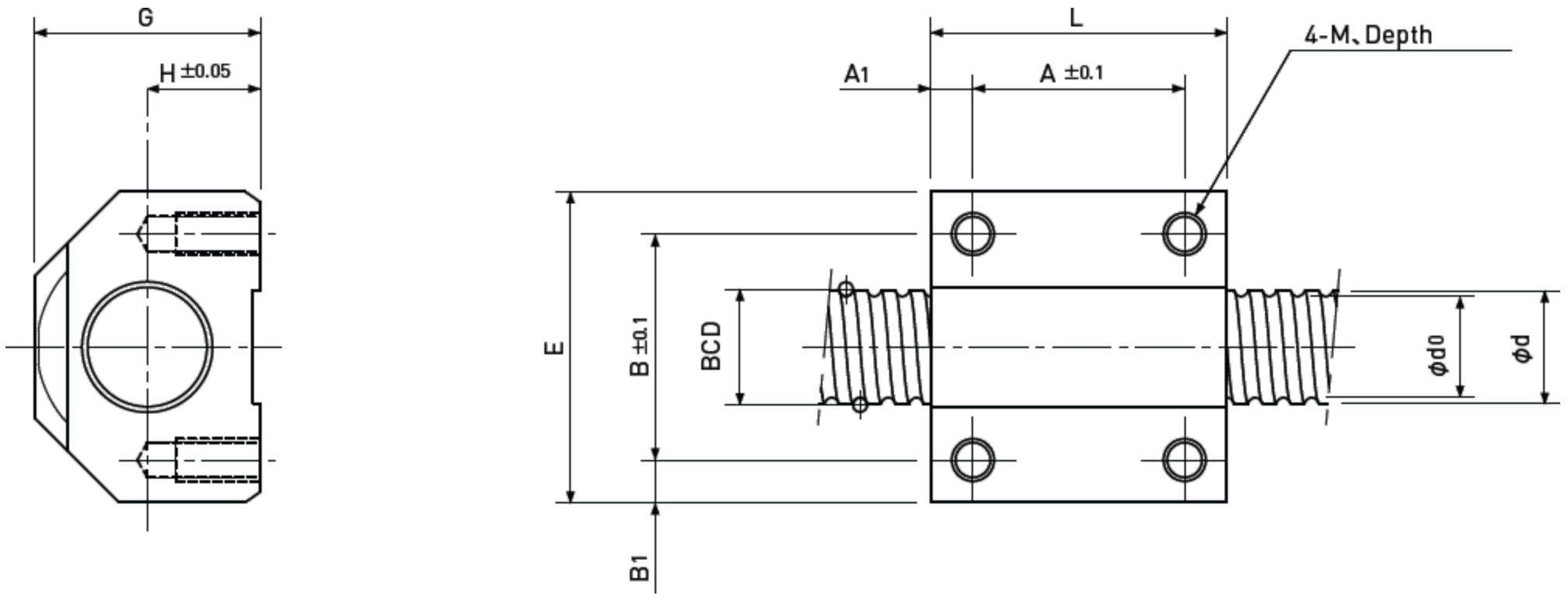
Basic Load Rating N		Nut Rigidity N/μm
Dynamic Ca	Static Coa	
1000 / 640	3300 / 1650	164 / 138
		Preload type
		Backlash type

Note 1) The diameter of one of the Screw Shaft ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.
Note 2) Ball Nut dimension is without seal at the both ends. All type of Ball Nuts cannot equip with seals.
Note 3) The Rigidity values shown in the table are theoretical values of Ball Nut Rigidity calculated from the amount of Elastic Displacement under the following conditions.
Backlash type ; Apply the Axial load equivalent to 30% of the Basic Dynamic Load Rating Ca.
Preload type ; Apply the Preload equivalent to 5% of the Basic Dynamic Load Rating Ca.
Note 4) All models are Right-hand Screw. If Left-hand Screw is required, please ask ABSSAC representative.
Note 5) Across Flats or drill hole is available on the Ball Nut for the convenience of assembly. Please ask ABSSAC representative.
Note 6) Basic Load Rating or Rigidity for Backlash type and Preload type are described in the same cell.

Precision Ball Screws

Square type Single Nut

Backlash type/Preload type



Unit : mm

Ball Nut Model number	Shaft nominal dia. d	Lead	Ball size	BCD	Lead angle	Root dia. d_0	Number of Circuit	Basic Load Rating N		Nut Rigidity N/μm
								Dynamic Ca	Static Coa	
KS 0601 B	6	1	0.8	6.15	2°58'	5.3	3.7×1	680 / 430	1200 / 610	75 / 63
KS 0602 A	6	2	1.0	6.20	5°52'	5.1	2.7×1	750 / 470	1200 / 590	58 / 49
KS 0801 B	8	1	0.8	8.15	2°15'	7.3	3.7×1	780 / 490	1650 / 820	95 / 80
KS 0802 A	8	2	1.0	8.20	4°26'	7.1	2.7×1	850 / 540	1600 / 800	74 / 61
KS 1001 B	10	1	0.8	10.15	1°48'	9.3	3.7×1	840 / 530	2000 / 1000	113 / 95
KS 1002 B	10	2	1.5875	10.30	3°32'	8.6	3.7×1	2700 / 1750	5300 / 2700	134 / 112

Ball Nut Model number	Nut dimension									
	L	E	G	H	A	A_1	B	B_1	M	Z
KS 0601 B	20	20	14	7	14	3	14	3	M3	6
KS 0602 A	20	20	14	7	14	3	14	3	M3	6
KS 0801 B	21	22	16	8	15	3	16	3	M3	6
KS 0802 A	21	22	16	8	15	3	16	3	M3	6
KS 1001 B	26	28	22	12	18	4	20	4	M4	7
KS 1002 B	26	28	23	12	18	4	20	4	M4	7

Basic Load Rating N		Nut Rigidity N/μm
Dynamic Ca	Static Coa	
1000 / 640	3300 / 1650	164 / 138
		Preload type
		Backlash type

Note 1) The diameter of one of the Screw Shaft ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.
Note 2) Ball Nut dimension is without seal at the both ends. All type of Ball Nuts cannot equip with seals.
Note 3) The Rigidity values shown in the table are theoretical values of Ball Nut Rigidity calculated from the amount of Elastic Displacement under the following conditions.
Backlash type ; Apply the Axial load equivalent to 30% of the Basic Dynamic Load Rating Ca.
Preload type ; Apply the Preload equivalent to 5% of the Basic Dynamic Load Rating Ca.
For Axial load or Preload condition other than the above,
see the formula in p-A823, you can calculate Rigidity using this formula.
Note 4) All models are Right-hand Screw. If Left-hand Screw is required, please ask ABSSAC representative.
Note 5) Basic Load Rating and Rigidity for Backlash type and Preload type are described in the same cell.

SD series　Standardized Bi-directional Ball Screws

SD series are economical Ball Screws which moves bi-directionally with a shaft, and perform centering, precise positioning. There are Precision Ball Screws C3, C5 grade.

Accuracy Grade & Axial play

Accuracy grades of SD series (Standardized Bidirectional Precision Ball Screws) are 2 kinds, JIS C3 and JIS C5. Axial play are 0 (Preload : C3) and 0.005mm or less(C5) corresponding to accuracy grades in stock.

Material & Surface hardness

Shafts and Nuts of SD series(Standardized Bidirectional Precision Ball Screws) adopts SCM415 (carburizing and quenching), surface hardness of Ball Screw part is HRC58-62.

Lubrication

SD series(Standardized Bi-directional Precision Ball Screws) are applied with anti-rust oil for rust prevention when unfinished end journal. Since anti-rust oil is not lubricant, apply Grease or lubrication oil before using Ball Screws. If there is no specific instruction, ABSSAC would recommend our original Grease (MSG No.2) as standard lubricant. Please feel free to contact us.

End-journal profile

End-journal configuration of SD series (Standardized Bi-directional Precision Ball Screws) is not standardized. Please ask ABSSAC regarding additional machining with a drawing which shows end-journal profile.

Model number notation

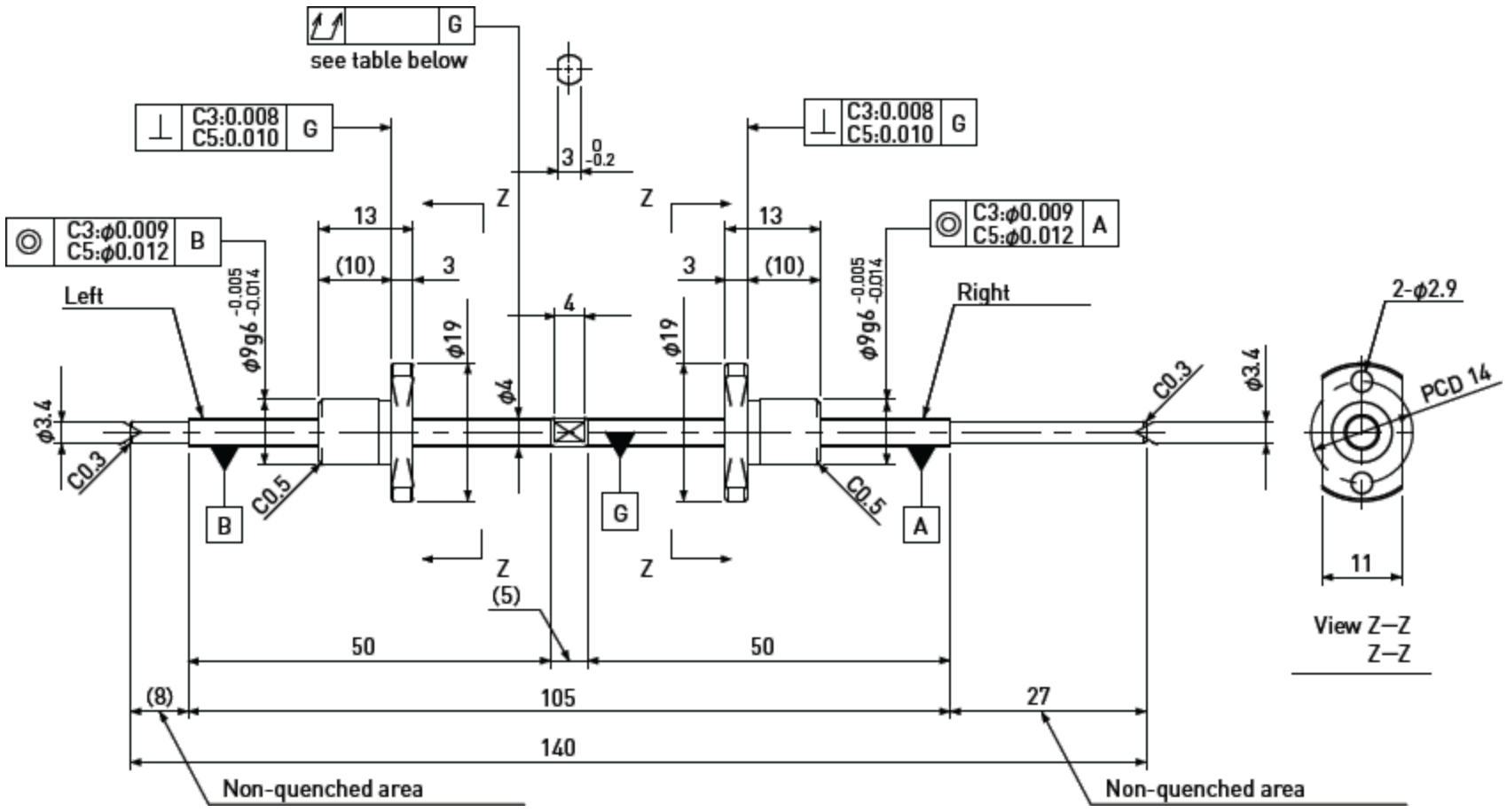
Model number notation of SD series (Standardized Bi-directional Precision Ball Screws) is as follows.

SD	08	01	—	120	L	120	R	300	C5
①	②	③		④	⑤	⑥	⑦	⑧	⑨

① Bi-directional Ball Screws series No.
② Screw Shaft nominal diameter(mm)
③ Lead(mm)
④ Left-side thread length(mm)
⑤ Left-hand
⑥ Right-side thread length(mm)
⑦ Right-hand
⑧ Screw Shaft total length(mm)
⑨ Accuracy grade(C3 or C5)

Standard products in stock SD series

SD0401 | Shaft dia. ø4 | Lead 1mm | C3 & C5



Unit : mm

Ball Screw Specifications	
Ball size	ø0.6
Number of thread	1
Thread direction	Left & Right
Shaft root dia.	ø3.4
Number of circuit	1×3
Shaft/Nut Material	SCM415H
Surface hardness	HRC58~62 (Thread area)
Anti-rust treatment	Anti-rust oil

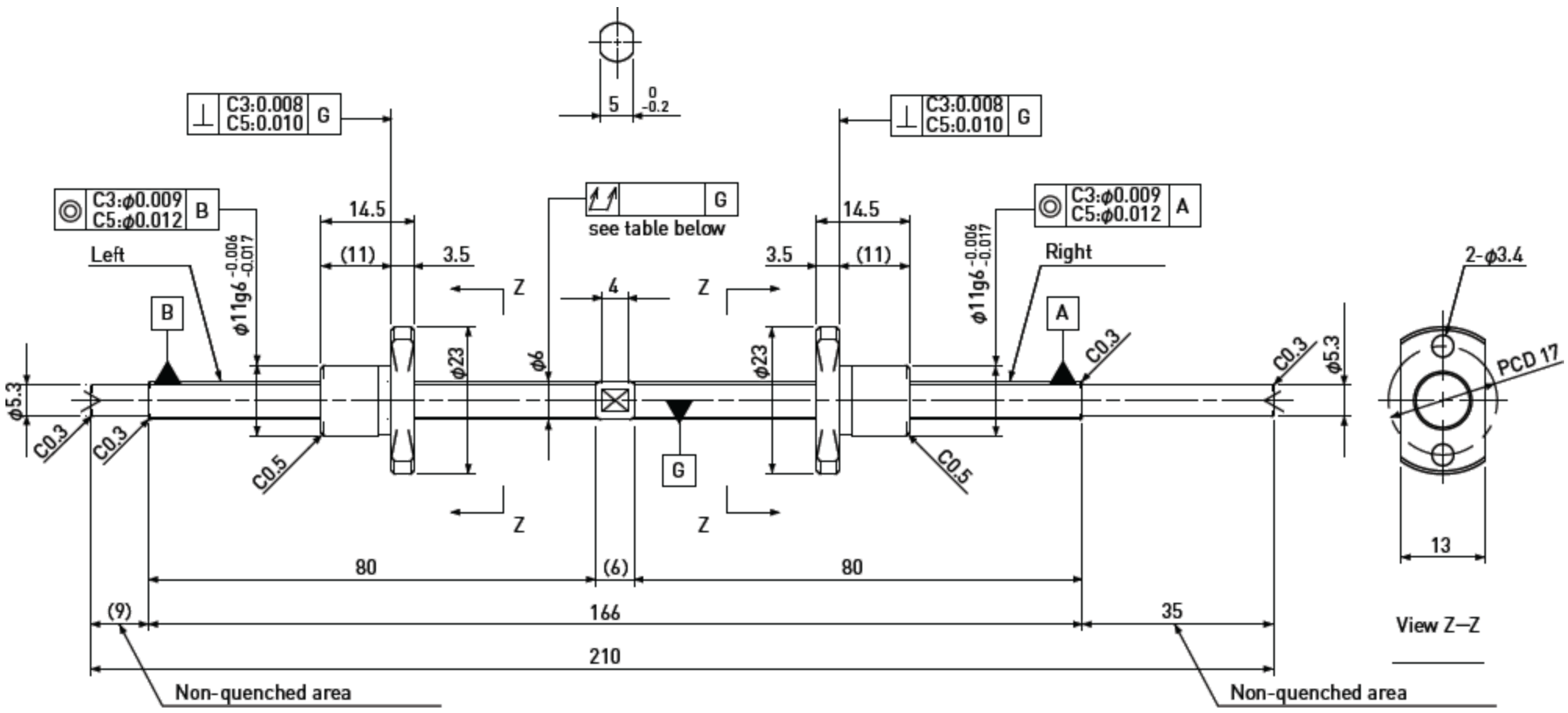
Unit : mm

Ball Screw Model	Travel	Grade	Lead accuracy		Total Run-out //	Axial play	Preload Torque Nm	Basic Load Rating N	
			Travel deviation e_P	Variation V_u				Dynamic Ca	Static Coa
SD0401-50L50R140C3	35	C3	±0.008	0.008	0.035	0	~0.010	300	430
SD0401-50L50R140C5	35	C5	±0.018	0.018	0.050	~0.005	-		

Note 1) Please designate end-journal profile with your sketch.
Note 2) Absolute position of both Nuts related to the Screw Shaft is not under the control.

Standard products in stock SD series

SD0601 | Shaft dia. ø6 | Lead 1mm | C3 & C5



Unit : mm

Ball Screw Specifications	
Ball size	ø0.8
Number of thread	1
Thread direction	Left & Right
Shaft root dia.	ø5.3
Number of circuit	1×3
Shaft/Nut Material	SCM415H
Surface hardness	HRC58~62 (Thread area)
Anti-rust treatment	Anti-rust oil

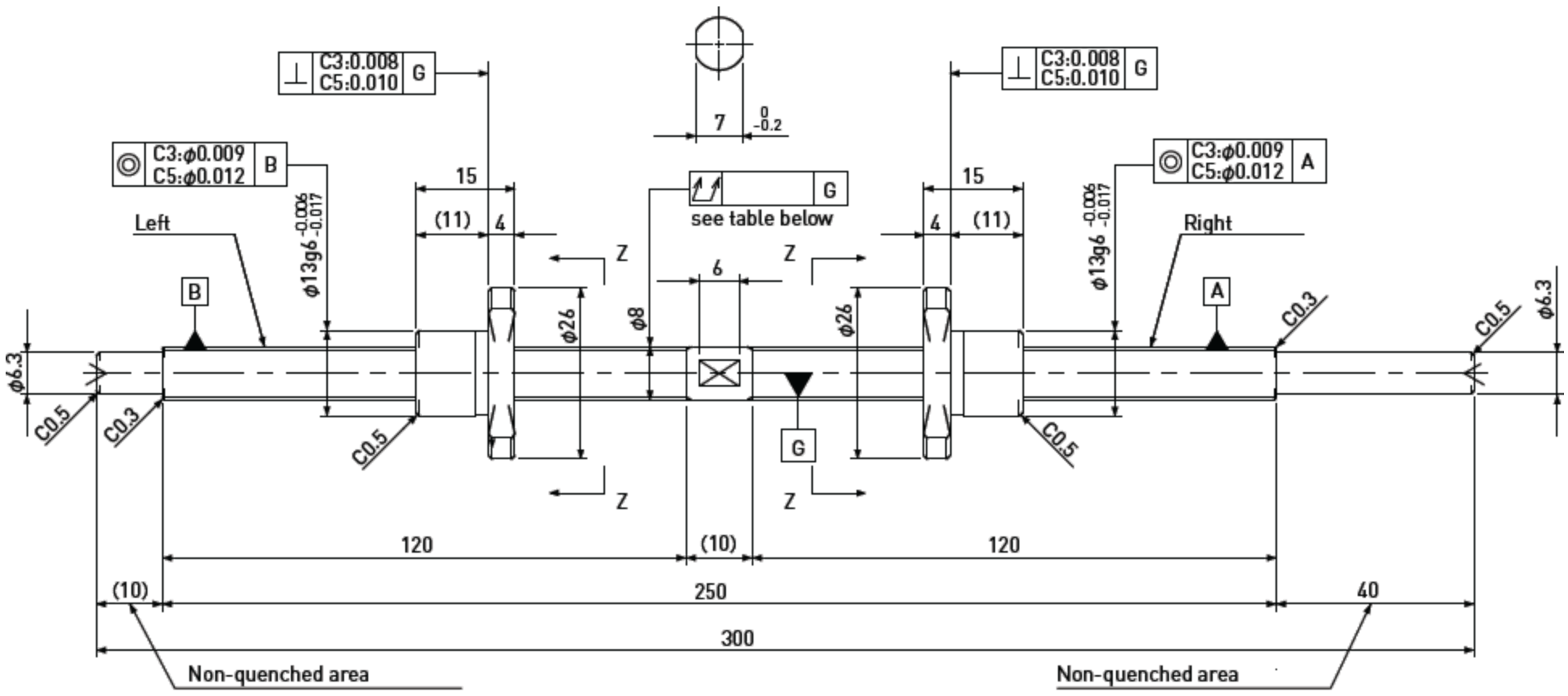
Unit : mm

Ball Screw Model	Travel	Grade	Lead accuracy		Total Run-out ⫽	Axial play	Preload Torque Nm	Basic Load Rating N	
			Travel deviation e_P	Variation V_u				Dynamic Ca	Static Coa
SD0601-80L80R210C3	65	C3	±0.008	0.008	0.050	0	~0.013	550	1000
SD0601-80L80R210C5	65	C5	±0.018	0.018	0.065	~0.005	-		

Note 1) Please designate end-journal profile with your sketch.
Note 2) Absolute position of both Nuts related to the Screw Shaft is not under the control.

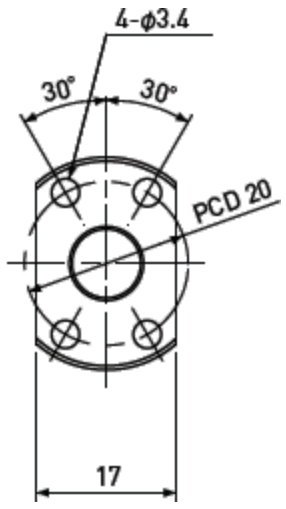
Standard products in stock SD series

SD0801 | Shaft dia. ø8 | Lead 1mm | C3 & C5



Unit : mm

Ball Screw Specifications	
Ball size	ø0.8
Number of thread	1
Thread direction	Left & Right
Shaft root dia.	ø7.3
Number of circuit	1×3
Shaft/Nut Material	SCM415H
Surface hardness	HRC58~62 (Thread area)
Anti-rust treatment	Anti-rust oil



View Z-Z

Unit : mm

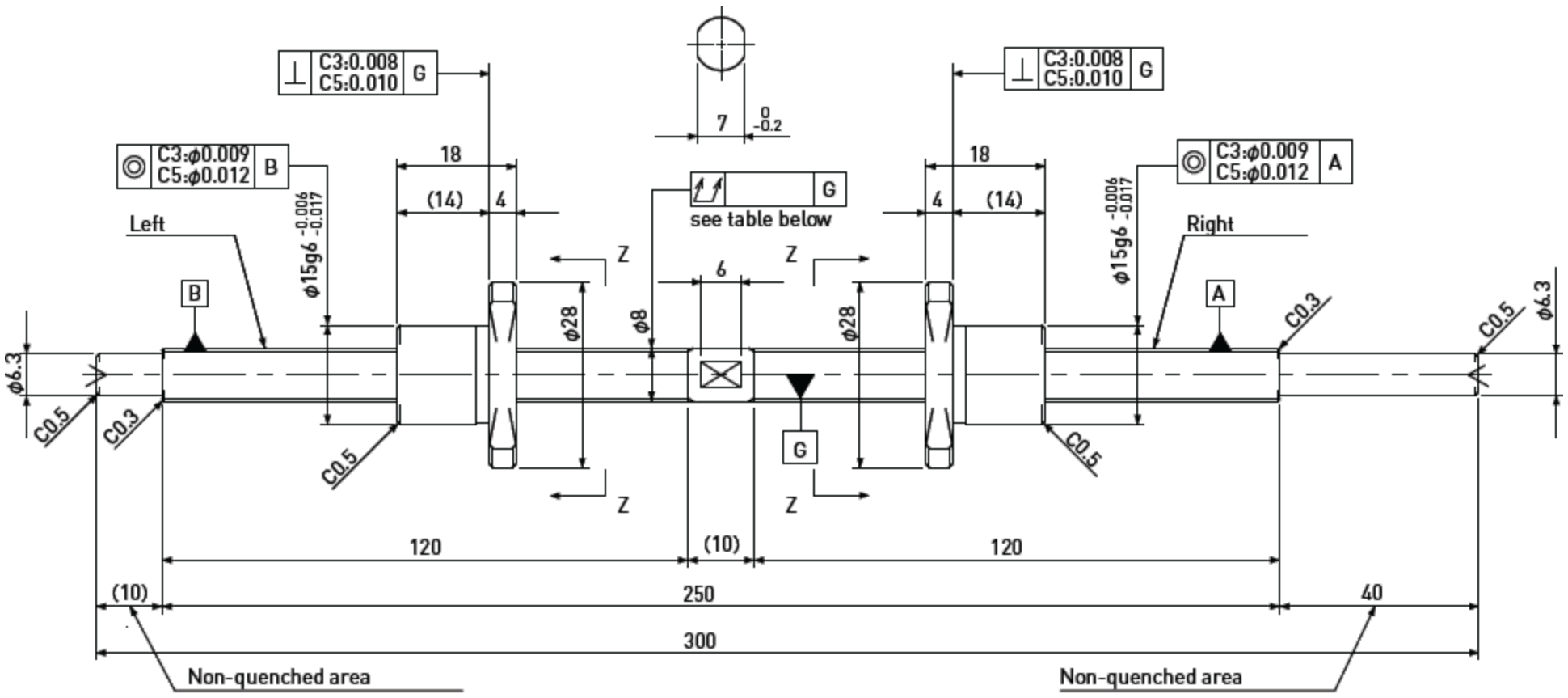
Ball Screw Model	Travel	Grade	Lead accuracy		Total Run-out ⫽	Axial play	Preload Torque Nm	Basic Load Rating N	
			Travel deviation e_P	Variation V_u				Dynamic Ca	Static Coa
SD0801-120L120R300C3	105	C3	±0.010	0.008	0.050	0	~0.018	650	1300
SD0801-120L120R300C5	105	C5	±0.020	0.018	0.065	~0.005	-		

Note 1) Please designate end-journal profile with your sketch.
Note 2) Absolute position of both Nuts related to the Screw Shaft is not under the control.

ABSSAC
PRECISION MOTION SINCE 1982

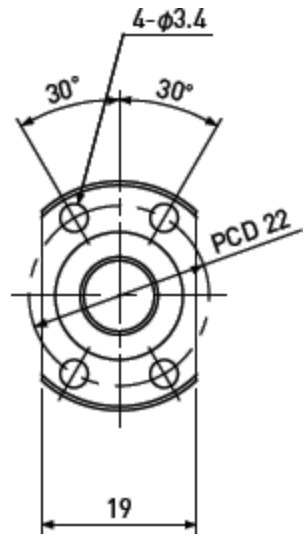
Standard products in stock SD series

SD0802 | Shaft dia. ø8 | Lead 2mm | C3 & C5



Unit : mm

Ball Screw Specifications	
Ball size	ø1.2
Number of thread	1
Thread direction	Left & Right
Shaft root dia.	ø7.0
Number of circuit	1×3
Shaft/Nut Material	SCM415H
Surface hardness	HRC58~62 (Thread area)
Anti-rust treatment	Anti-rust oil



View Z-Z

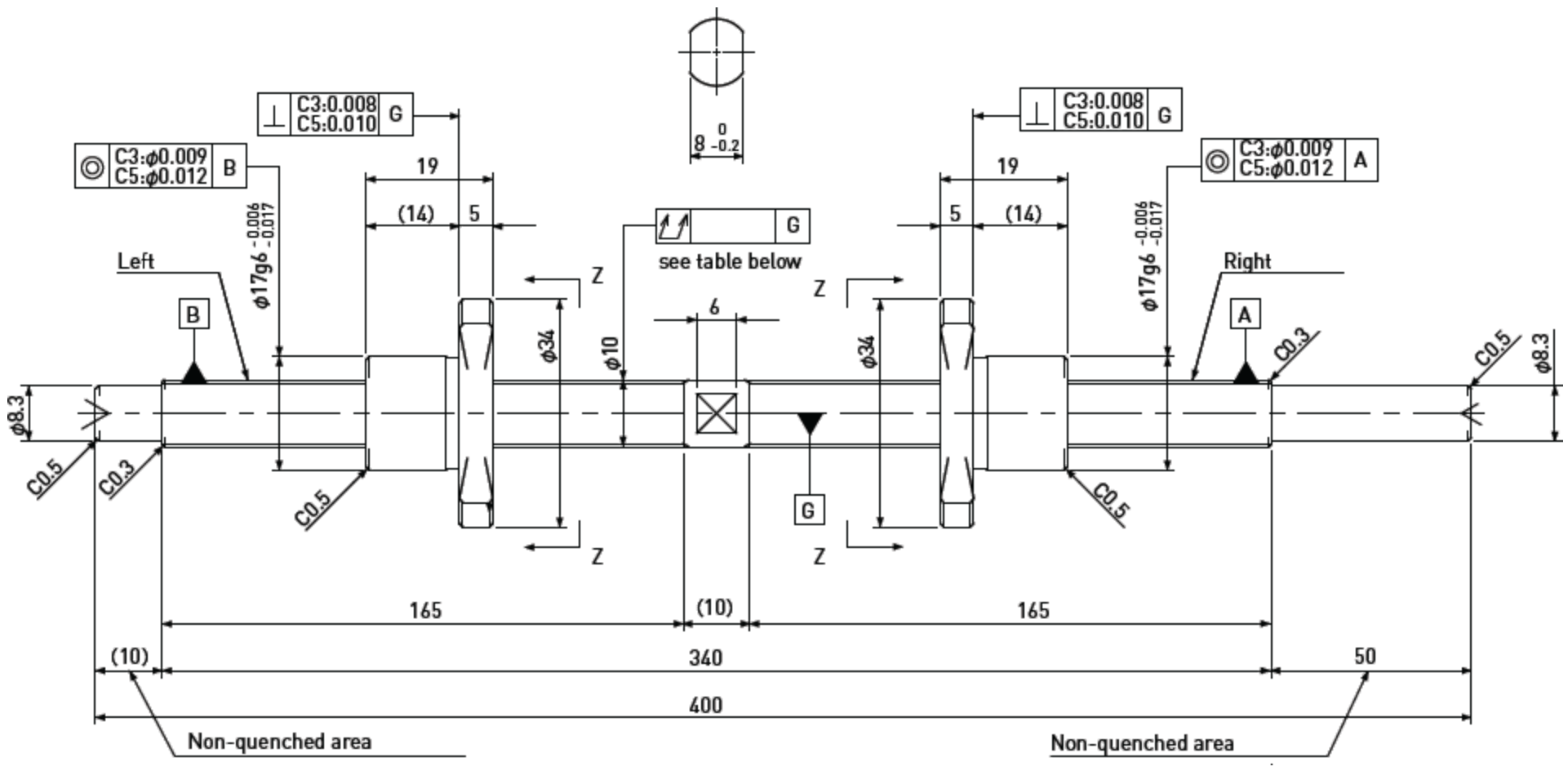
Unit : mm

Ball Screw Model	Travel	Grade	Lead accuracy		Total Run-out //	Axial play	Preload Torque Nm	Basic Load Rating N	
			Travel deviation e_P	Variation V_u				Dynamic Ca	Static Coa
SD0802-120L120R300C3	100	C3	±0.010	0.008	0.050	0	~0.020	1300	2300
SD0802-120L120R300C5	100	C5	±0.020	0.018	0.065	~0.005	-		

Note 1) Please designate end-journal profile with your sketch.
Note 2) Absolute position of both Nuts related to the Screw Shaft is not under the control.

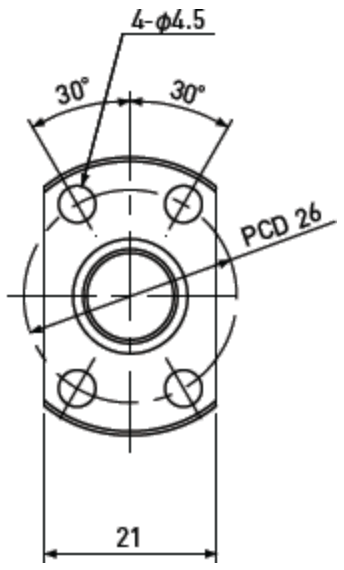
Standard products in stock SD series

SD1002 | Shaft dia. ø10 | Lead 2mm | C3 & C5



Unit : mm

Ball Screw Specifications	
Ball size	ø1.2
Number of thread	1
Thread direction	Left & Right
Shaft root dia.	ø9.0
Number of circuit	1×3
Shaft/Nut Material	SCM415H
Surface hardness	HRC58~62 (Thread area)
Anti-rust treatment	Anti-rust oil



View Z-Z

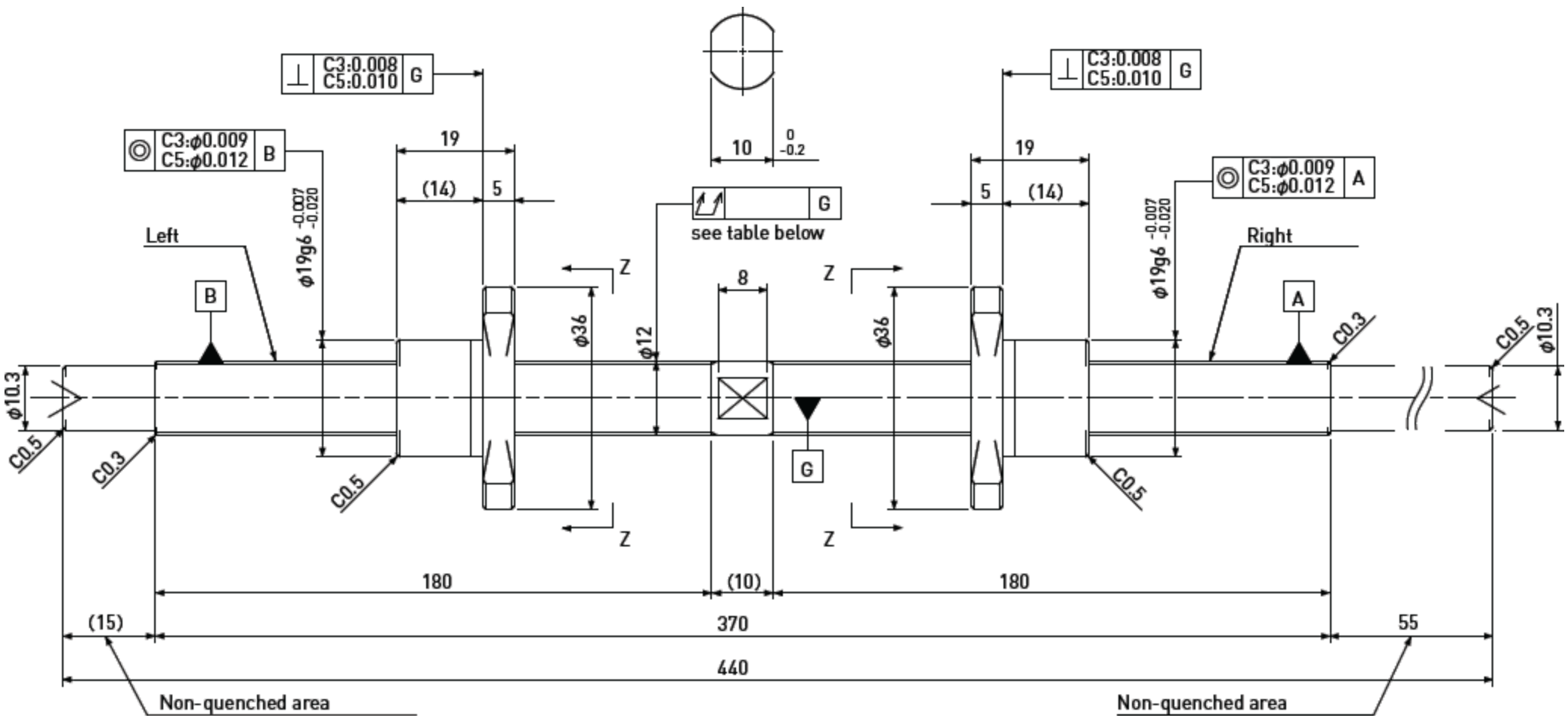
Unit : mm

Ball Screw Model	Travel	Grade	Lead accuracy		Total Run-out ⫽	Axial play	Preload Torque Nm	Basic Load Rating N	
			Travel deviation e_P	Variation V_u				Dynamic Ca	Static Coa
SD1002-165L165R400C3	145	C3	±0.010	0.008	0.050	0	~0.025	1450	3000
SD1002-165L165R400C5	145	C5	±0.020	0.018	0.065	~0.005	-		

Note 1) Please designate end-journal profile with your sketch.
Note 2) Absolute position of both Nuts related to the Screw Shaft is not under the control.

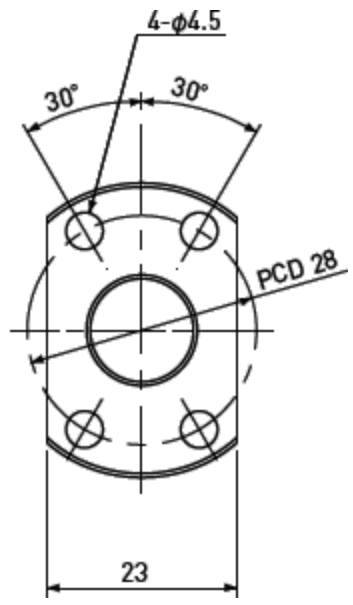
Standard products in stock SD series

SD1202 | Shaft dia. ø12 | Lead 2mm | C3 & C5



Unit : mm

Ball Screw Specifications	
Ball size	ø1.2
Number of thread	1
Thread direction	Left & Right
Shaft root dia.	ø11.0
Number of circuit	1×3
Shaft/Nut Material	SCM415H
Surface hardness	HRC58~62 (Thread area)
Anti-rust treatment	Anti-rust oil



View Z-Z

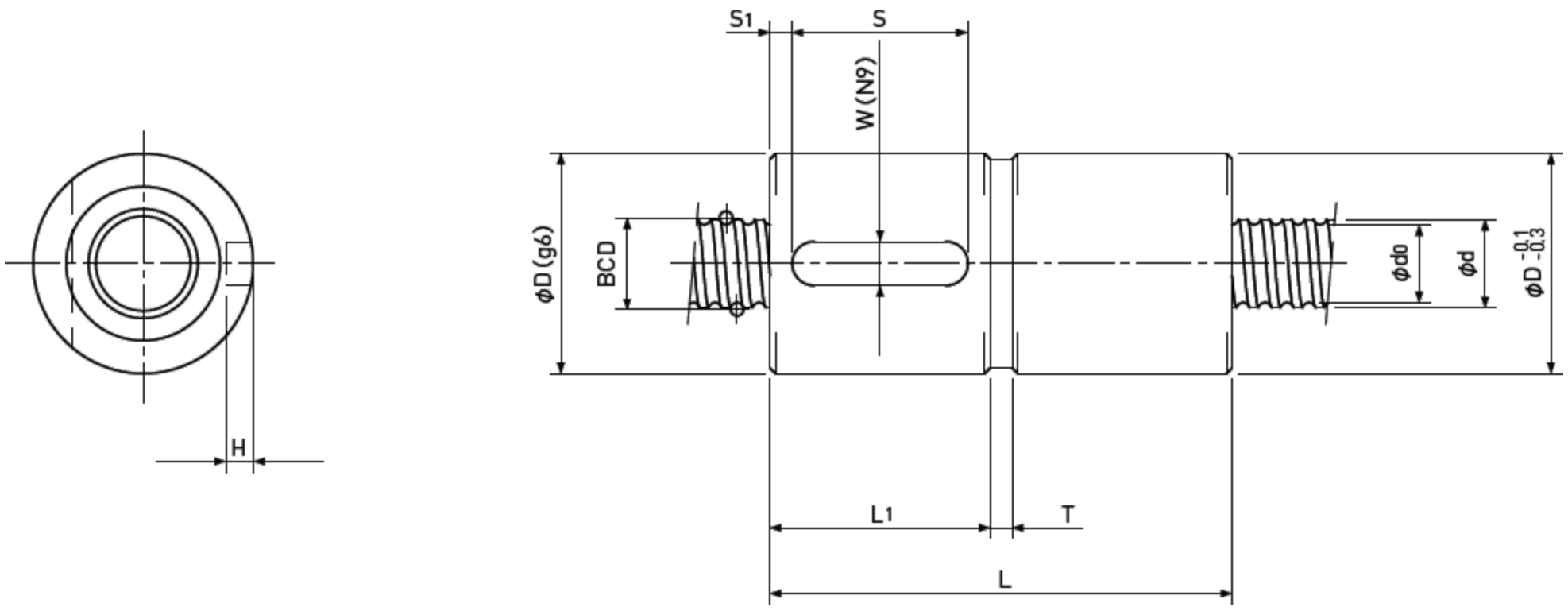
Unit : mm

Ball Screw Model	Travel	Grade	Lead accuracy		Total Run-out //	Axial play	Preload Torque Nm	Basic Load Rating N	
			Travel deviation e_P	Variation V_u				Dynamic Ca	Static Coa
SD1202-180L180R440C3	160	C3	±0.010	0.008	0.065	0	~0.035	1600	3700
SD1202-180L180R440C5	160	C5	±0.020	0.018	0.080	~0.005	-		

Note 1) Please designate end-journal profile with your sketch.
Note 2) Absolute position of both Nuts related to the Screw Shaft is not under the control.

Precision Ball Screws

Sleeve type Double Nut



Unit : mm

Ball Nut Model number	Shaft nominal dia. d	Lead	Ball size	BCD	Lead angle	Root dia. d_0	Number of Circuit	Basic Load Rating N		Nut Rigidity N/μm
								Dynamic Ca	Static Coa	
SWBS 0602 A	6	2	1	6.2	5°52'	5.1	2.7□×1	750	1200	114
SWBS 0602 B	6	2	1	6.2	5°52'	5.1	3.7□×1	980	1600	155
SWBS 0602.5 A	6	2.5	1	6.2	7°19'	5.1	2.7□×1	750	1200	115
SWBS 0802 A□(1□)	8	2	1	8.2	4°26'	7.1	2.7□×1	850	1600	144
SWBS 0802 B□(1□)	8	2	1	8.2	4°26'	7.1	3.7□×1	1100	2200	195
SWBS 0802 A□(2□)	8	2	1.5875	8.3	4°23'	6.6	2.7□×1	1850	3000	162
SWBS 0802 B□(2□)	8	2	1.5875	8.3	4°23'	6.6	3.7□×1	2400	4100	217
SWBS 0802.5 A	8	2.5	1.5875	8.3	5°29'	6.6	2.7□×1	1850	3000	161
SWBS 0802.5 B	8	2.5	1.5875	8.3	5°29'	6.6	3.7□×1	2400	4100	219
SWBS 0803 A	8	3	2	8.3	6°34'	6.2	2.7□×1	2600	4200	167
SWBS 0803 B	8	3	2	8.3	6°34'	6.2	3.7□×1	3500	5700	227

Ball Nut Model number	Nut dimension							
	D	L	L_1	T	W	H	S	S_1
SWBS 0602 A	15	33	15.5	2	3	1.8	10	2.5
SWBS 0602 B	15	38	18	2	3	1.8	12	3
SWBS 0602.5 A	15	33.5	15.5	2.5	3	1.8	10	3
SWBS 0802 A□(1□)	16	31	14.5	2	3	1.8	10	2.5
SWBS 0802 B□(1□)	16	38	18	2	3	1.8	12	3
SWBS 0802 A□(2□)	20	37	17.5	2	4	2.5	12	2.5
SWBS 0802 B□(2□)	20	42	20	2	4	2.5	16	2
SWBS 0802.5 A	20	41.5	19.5	2.5	4	2.5	12	3.5
SWBS 0802.5 B	20	47	22.5	2	4	2.5	16	3
SWBS 0803 A	20	46	22	2	4	2.5	16	3
SWBS 0803 B	20	53	25.5	2	4	2.5	20	3

Note 1) The diameter of one of the Screw Shaft ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.

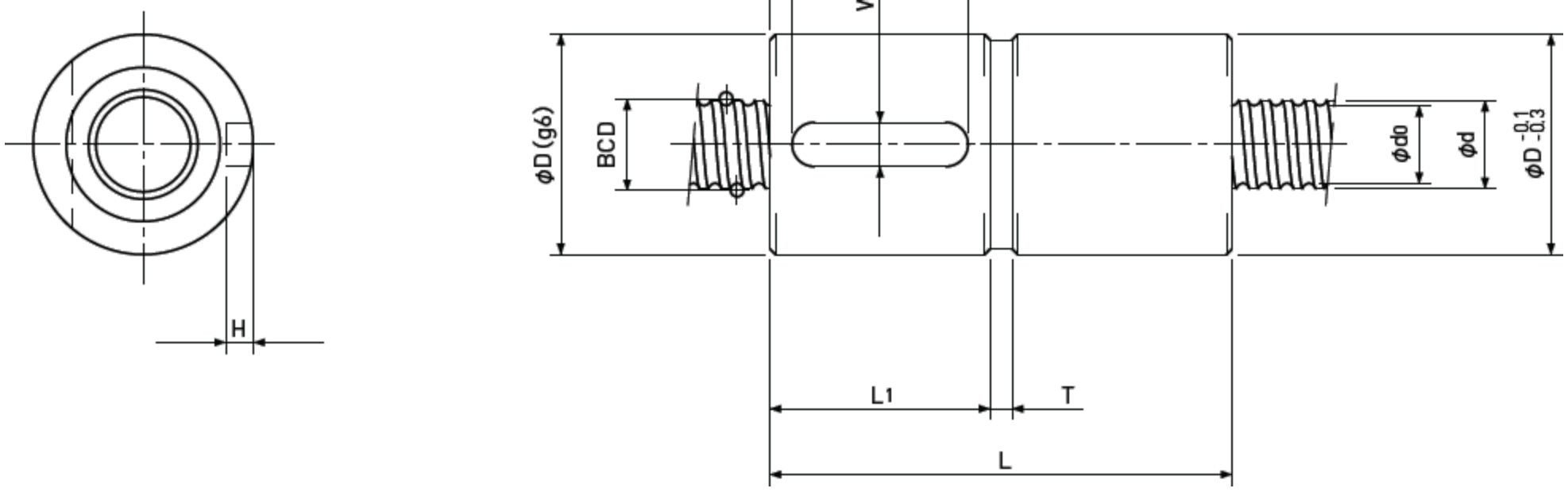
Note 2) Ball Nut dimension is without seal at both ends.
If the seals are required, Ball Nut dimension should be changed, in that case, please ask ABSSAC.
Some type of Ball Nuts cannot equip with seals, please ask ABSSAC representative.

Note 3) Rigidity
The Rigidity values shown in the table are theoretical values calculated from the amount of Elastic Displacement under the Preload equivalent to 10% of the Basic Dynamic Load Rating Ca.

Note 4) All models are Right-hand screw. If Left-hand screw is required, please ask ABSSAC representative.

Precision Ball Screws

Sleeve type Double Nut



Unit : mm

Ball Nut Model number	Shaft nominal dia. d	Lead	Ball size	BCD	Lead angle	Root dia. d_0	Number of Circuit	Basic Load Rating N		Nut Rigidity N/μm
								Dynamic Ca	Static Coa	
SWBS 1002 A	10	2	1.5875	10.3	3°32'	8.6	2.7□×1	2100	3800	196
SWBS 1002 B	10	2	1.5875	10.3	3°32'	8.6	3.7□×1	2700	5300	262
SWBS 1002.5 A	10	2.5	1.5875	10.3	4°25'	8.6	2.7□×1	2100	3800	196
SWBS 1002.5 B	10	2.5	1.5875	10.3	4°25'	8.6	3.7□×1	2700	5300	262
SWBS 1003 A	10	3	2	10.3	5°18'	8.2	2.7□×1	3000	5200	202
SWBS 1003 B	10	3	2	10.3	5°18'	8.2	3.7□×1	3900	7200	275
SWBS 1004 A	10	4	2	10.3	7°03'	8.2	2.7□×1	3000	5200	203
SWBS 1202 B	12	2	1.5875	12.3	2°58'	10.6	3.7□×1	3000	6400	307
SWBS 1202.5 B	12	2.5	1.5875	12.3	3°42'	10.6	3.7□×1	3000	6400	306
SWBS 1203 B	12	3	2	12.3	4°26'	10.2	3.7□×1	4300	8700	318
SWBS 1204 B	12	4	2.381	12.3	5°55'	9.8	3.7□×1	5400	10200	324

Ball Nut Model number	Nut dimension							
	D	L	L_1	T	W	H	S	S_1
SWBS 1002 A	23	37	17.5	2	5	3	12	2.5
SWBS 1002 B	23	42	20	2	5	3	16	2
SWBS 1002.5 A	24	41.5	19.5	2.5	5	3	12	3.5
SWBS 1002.5 B	24	47	22.5	2	5	3	16	3
SWBS 1003 A	24	46	22	2	5	3	16	3
SWBS 1003 B	24	53	25.5	2	5	3	20	3
SWBS 1004 A	24	54	26	2	5	3	20	3
SWBS 1202 B	25	44	20.5	3	5	3	16	2
SWBS 1202.5 B	26	47	22	3	5	3	16	3
SWBS 1203 B	28	56	26.5	3	5	3	20	3
SWBS 1204 B	28	67	32	3	5	3	25	3

Note 1) The diameter of one of the Screw Shaft ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.

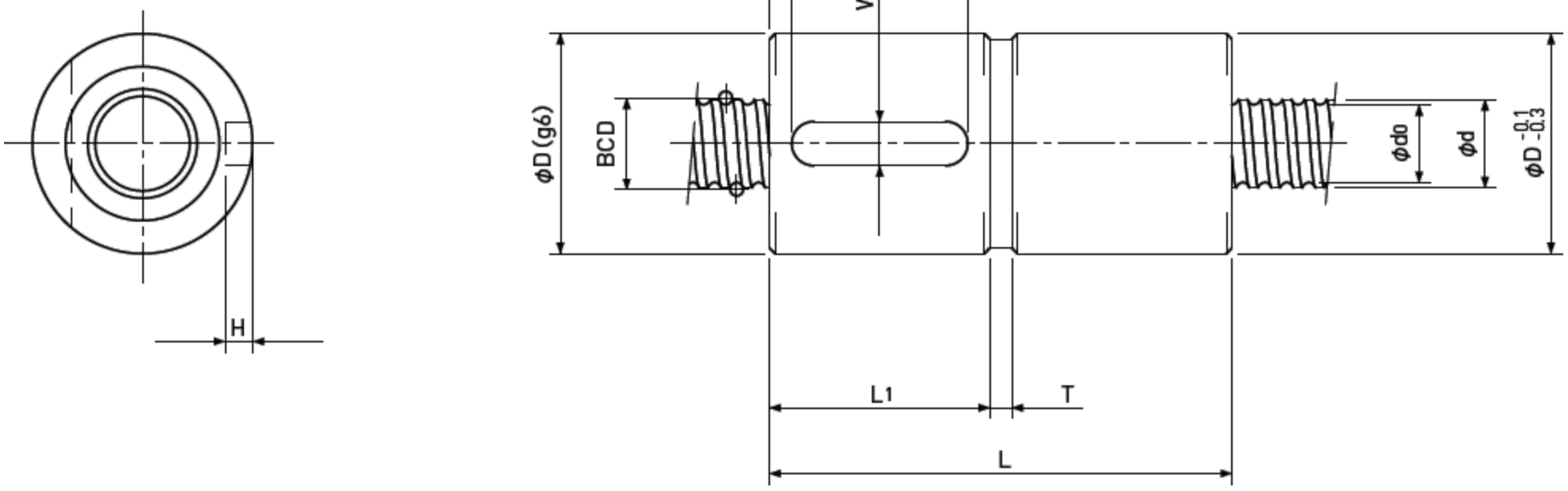
Note 2) Ball Nut dimension is without seal at both ends.
If the seals are required, Ball Nut dimension should be changed, in that case, please ask ABSSAC.
Some type of Ball Nuts cannot equip with seals, please ask ABSSAC representative.

Note 3) Rigidity
The Rigidity values shown in the table are theoretical values calculated from the amount of Elastic Displacement under the Preload equivalent to 10% of the Basic Dynamic Load Rating Ca.

Note 4) All models are Right-hand screw. If Left-hand screw is required, please ask ABSSAC representative.

Precision Ball Screws

Sleeve type Double Nut



Unit : mm

Ball Nut Model number	Shaft nominal dia. d	Lead	Ball size	BCD	Lead angle	Root dia. d_0	Number of Circuit	Basic Load Rating N		Nut Rigidity N/μm
								Dynamic Ca	Static Coa	
SWBS 1402 B	14	2	1.5875	14.3	2°33'	12.6	3.7□×1	3200	7500	345
SWBS 1402.5 B	14	2.5	1.5875	14.3	3°11'	12.6	3.7□×1	3200	7500	345
SWBS 1403 B	14	3	2	14.3	3°49'	12.2	3.7□×1	4600	10100	361
SWBS 1404 B	14	4	2.381	14.3	5°05'	11.8	3.7□×1	5700	11600	366
SWBS 1405 B	14	5	2.381	14.3	6°21'	11.8	3.7□×1	5700	11600	365
SWBS 1602 B	16	2	1.5875	16.3	2°14'	14.6	3.7□×1	3400	8600	386
SWBS 1602.5 B	16	2.5	1.5875	16.3	2°48'	14.6	3.7□×1	3400	8600	385
SWBS 1603 B	16	3	2	16.3	3°21'	14.2	3.7□×1	4900	11600	401
SWBS 1604 B	16	4	2.381	16.3	4°28'	13.8	3.7□×1	6200	13600	409
SWBS 1605 B	16	5	3.175	16.5	5°31'	13.2	3.7□×1	9100	18200	425

Ball Nut Model number	Nut dimension							
	D	L	L_1	T	W	H	S	S_1
SWBS 1402 B	26	44	20.5	3	5	3	16	2
SWBS 1402.5 B	28	47	22	3	5	3	16	3
SWBS 1403 B	30	56	26.5	3	5	3	20	3
SWBS 1404 B	30	67	32	3	5	3	25	3
SWBS 1405 B	30	78	37.5	3	5	3	28	5
SWBS 1602 B	28	44	20.5	3	5	3	16	2
SWBS 1602.5 B	28	47	22	3	5	3	16	3
SWBS 1603 B	32	56	26.5	3	5	3	20	3
SWBS 1604 B	34	68	32	4	5	3	25	3.5
SWBS 1605 B	38	83	39.5	4	5	3	28	5

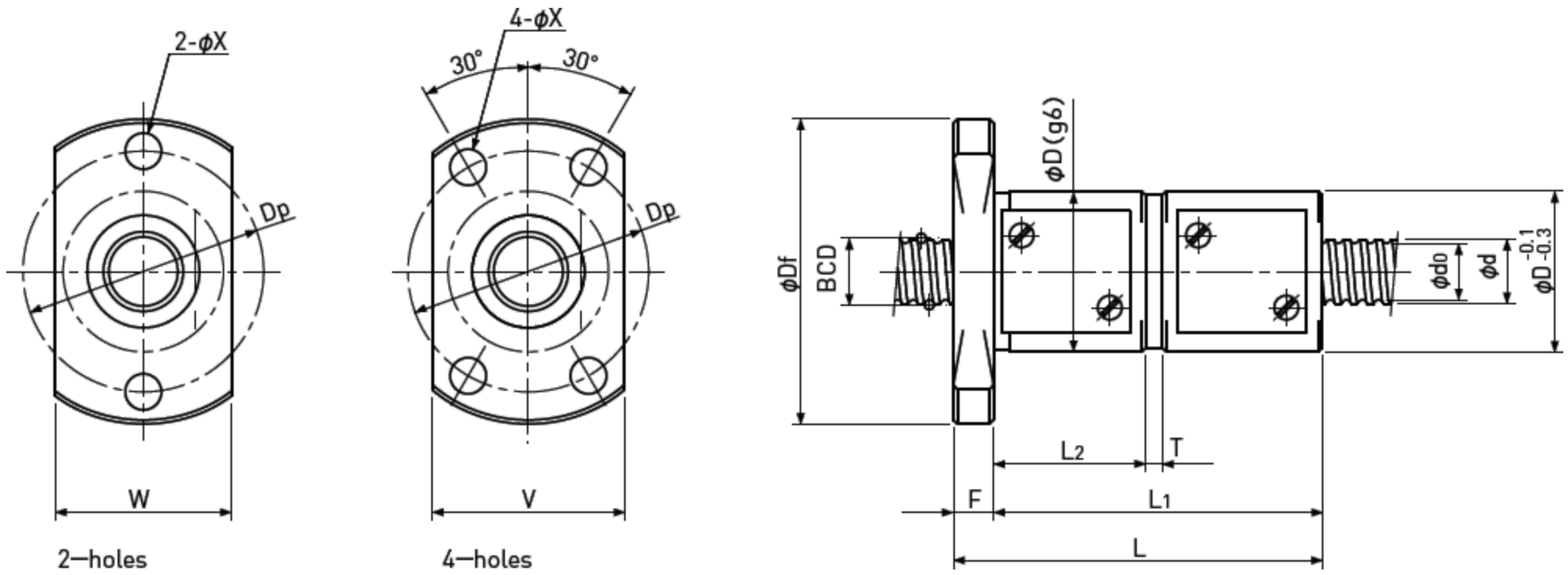
Note 1) The diameter of one of the Screw Shaft ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.

Note 2) Ball Nut dimension is without seal at both ends.
If the seals are required, Ball Nut dimension should be changed, in that case, please ask ABSSAC.
Some type of Ball Nuts cannot equip with seals, please ask ABSSAC representative.

Note 3) Rigidity
The Rigidity values shown in the table are theoretical values calculated from the amount of Elastic Displacement under the Preload equivalent to 10% of the Basic Dynamic Load Rating Ca.

Note 4) All models are Right-hand screw. If Left-hand screw is required, please ask ABSSAC representative.

Double Nut with Flange



Unit : mm

Ball Nut Model number	Shaft nominal dia. d	Lead	Ball size	BCD	Lead angle	Root dia. d_0	Number of Circuit	Basic Load Rating N		Nut Rigidity N/μm
								Dynamic Ca	Static Coa	
FSBS 0602 A	6	2	1	6.2	5□°52□'	5.1	2.7□×1	750	1200	114
FSBS 0602 B	6	2	1	6.2	5□°52□'	5.1	3.7□×1	980	1600	155
FSBS 0602.5 A	6	2.5	1	6.2	7□°19□'	5.1	2.7□×1	750	1200	115
FSBS 0802 A□(1)	8	2	1	8.2	4□°26□'	7.1	2.7□×1	850	1600	144
FSBS 0802 B□(1)	8	2	1	8.2	4□°26□'	7.1	3.7□×1	1100	2200	195
FSBS 0802 A□(2)	8	2	1.5875	8.3	4□°23□'	6.6	2.7□×1	1850	3000	162
FSBS 0802 B□(2)	8	2	1.5875	8.3	4□°23□'	6.6	3.7□×1	2400	4100	217
FSBS 0802.5 A	8	2.5	1.5875	8.3	5□°29□'	6.6	2.7□×1	1850	3000	161
FSBS 0802.5 B	8	2.5	1.5875	8.3	5□°29□'	6.6	3.7□×1	2400	4100	219
FSBS 0803 A	8	3	2	8.3	6□°34□'	6.2	2.7□×1	2600	4200	167
FSBS 0803 B	8	3	2	8.3	6□°34□'	6.2	3.7□×1	3500	5700	227

Ball Nut Model number	Nut dimension										
	D	Df	L	L_1	F	L_2	T	W	V	D_p	Bolt Hole X
FSBS 0602 A	15	29	35	31	4	13.5	2	17	18	23	3.4
FSBS 0602 B	15	29	41	37	4	17	2	17	18	23	3.4
FSBS 0602.5 A	15	29	35.5	31.5	4	13.5	2	17	18	23	3.4
FSBS 0802 A□(1)	16	30	33	29	4	12.5	2	18	18	24	3.4
FSBS 0802 B□(1)	16	30	41	37	4	17	2	18	18	24	3.4
FSBS 0802 A□(2)	20	38	41	36	5	16.5	2	22	23	30	4.5
FSBS 0802 B□(2)	20	38	46	41	5	19	2	22	23	30	4.5
FSBS 0802.5 A	20	38	45.5	40.5	5	18.5	2.5	22	23	30	4.5
FSBS 0802.5 B	20	38	51	46	5	21.5	2	22	23	30	4.5
FSBS 0803 A	20	38	49	44	5	20	2	22	23	30	4.5
FSBS 0803 B	20	38	56	51	5	23.5	2	22	23	30	4.5

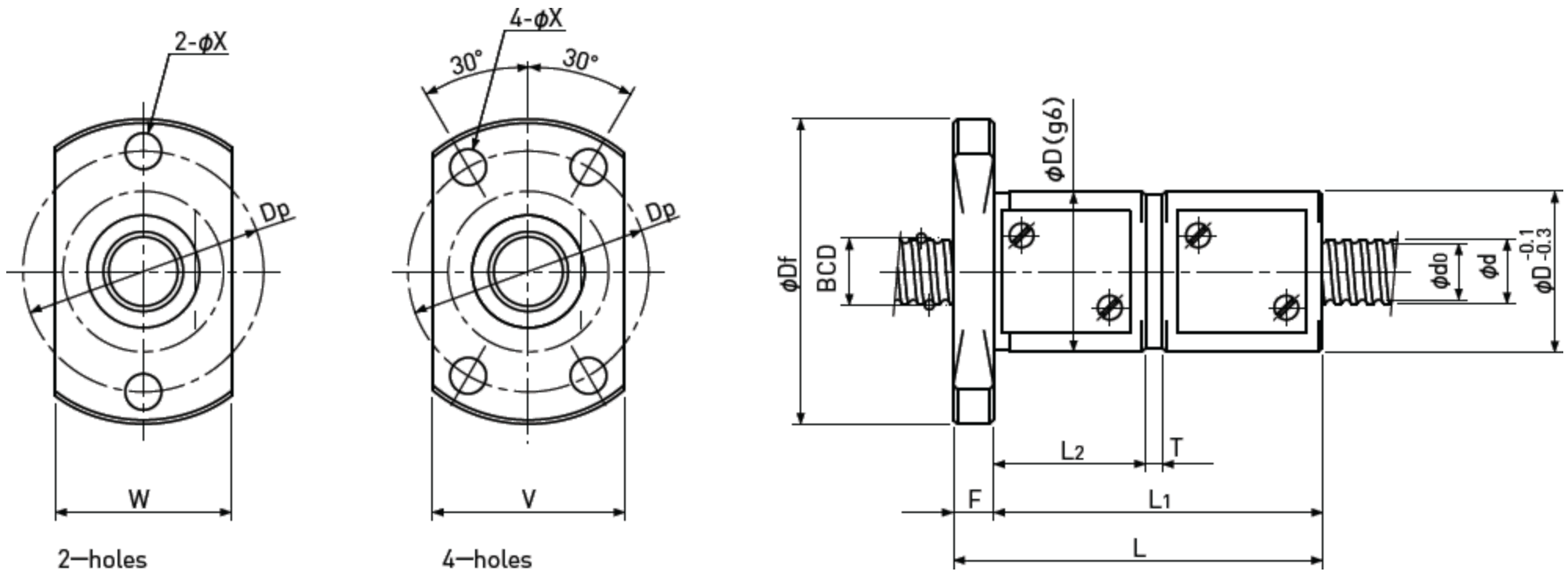
Note 1) The diameter of one of the Screw Shaft ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.

Note 2) Ball Nut dimension is without seal at both ends.
If the seals are required, Ball Nut dimension should be changed, in that case, please ask ABSSAC.
Some type of Ball Nuts cannot equip with seals, please ask ABSSAC representative.

Note 3) Rigidity
The Rigidity values shown in the table are theoretical values calculated from the amount of Elastic Displacement under the Preload equivalent to 10% of the Basic Dynamic Load Rating Ca.

Note 4) All models are Right-hand screw. If Left-hand screw is required, please ask ABSSAC representative.

Double Nut with Flange



Unit : mm

Ball Nut Model number	Shaft nominal dia. d	Lead	Ball size	BCD	Lead angle	Root dia. d_0	Number of Circuit	Basic Load Rating N		Nut Rigidity N/μm
								Dynamic Ca	Static Coa	
FSBS 1002 A	10	2	1.5875	10.3	3□°32□'	8.6	2.7□×1	2100	3800	196
FSBS 1002 B	10	2	1.5875	10.3	3□°32□'	8.6	3.7□×1	2700	5300	262
FSBS 1002.5 A	10	2.5	1.5875	10.3	4□°25□'	8.6	2.7□×1	2100	3800	196
FSBS 1002.5 B	10	2.5	1.5875	10.3	4□°25□'	8.6	3.7□×1	2700	5300	262
FSBS 1003 A	10	3	2	10.3	5□°18□'	8.2	2.7□×1	3000	5200	202
FSBS 1003 B	10	3	2	10.3	5□°18□'	8.2	3.7□×1	3900	7200	275
FSBS 1004 A	10	4	2	10.3	7□°03□'	8.2	2.7□×1	3000	5200	203
FSBS 1202 B	12	2	1.5875	12.3	2□°58□'	10.6	3.7□×1	3000	6400	307
FSBS 1202.5 B	12	2.5	1.5875	12.3	3□°42□'	10.6	3.7□×1	3000	6400	306
FSBS 1203 B	12	3	2	12.3	4□°26□'	10.2	3.7□×1	4300	8700	318
FSBS 1204 B	12	4	2.381	12.3	5□°55□'	9.8	3.7□×1	5400	10200	324

Ball Nut Model number	Nut dimension										
	D	Df	L	L_1	F	L_2	T	W	V	D_p	Bolt Hole X
FSBS 1002 A	23	41	41	36	5	16.5	2	25	25	33	4.5
FSBS 1002 B	23	41	46	41	5	19	2	25	25	33	4.5
FSBS 1002.5 A	24	44	46.5	40.5	6	18.5	2.5	26	27	35	5.5
FSBS 1002.5 B	24	44	52	46	6	21.5	2	26	27	35	5.5
FSBS 1003 A	24	44	50	44	6	20	2	26	27	35	5.5
FSBS 1003 B	24	44	57	51	6	23.5	2	26	27	35	5.5
FSBS 1004 A	24	44	57	51	6	23	2	26	27	35	5.5
FSBS 1202 B	25	45	49	43	6	19.5	3	27	27	36	5.5
FSBS 1202.5 B	26	46	52	46	6	21	3	28	28	37	5.5
FSBS 1203 B	28	48	60	54	6	24.5	3	30	30	39	5.5
FSBS 1204 B	28	48	69	63	6	28	3	30	30	39	5.5

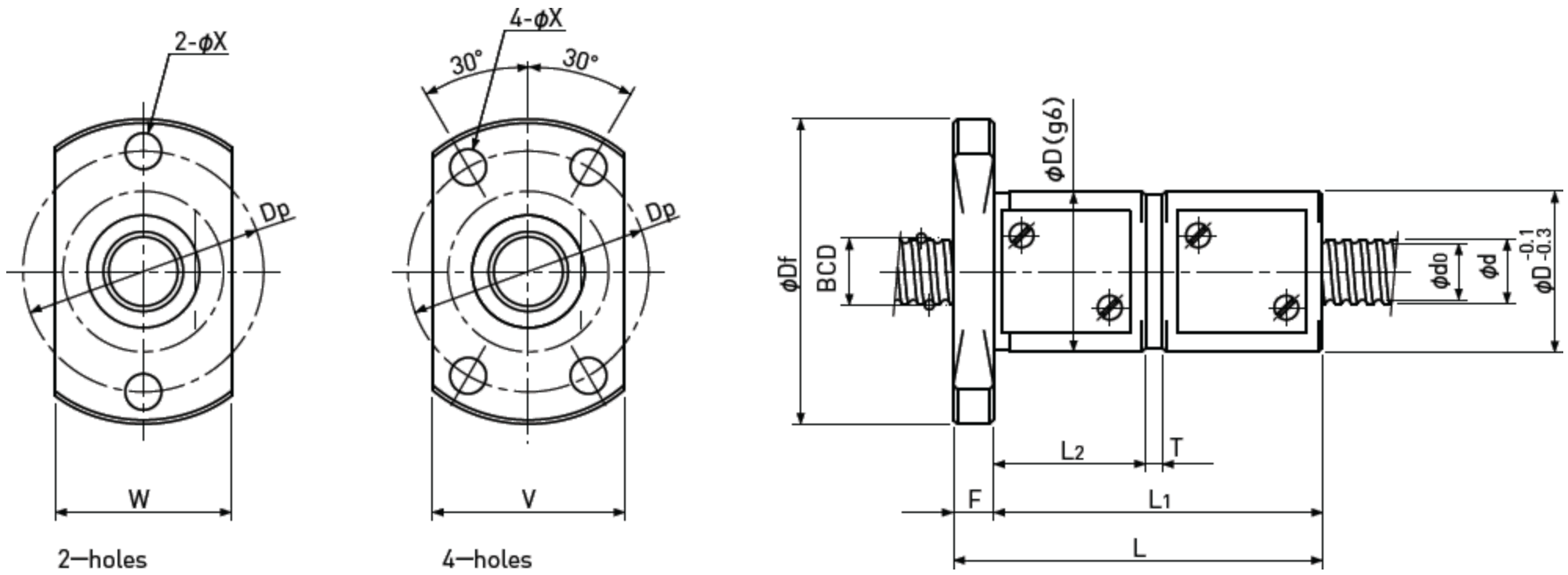
Note 1) The diameter of one of the Screw Shaft ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.

Note 2) Ball Nut dimension is without seal at both ends.
If the seals are required, Ball Nut dimension should be changed, in that case, please ask ABSSAC.
Some type of Ball Nuts cannot equip with seals, please ask ABSSAC representative.

Note 3) Rigidity
The Rigidity values shown in the table are theoretical values calculated from the amount of Elastic Displacement under the Preload equivalent to 10% of the Basic Dynamic Load Rating Ca.

Note 4) All models are Right-hand screw. If Left-hand screw is required, please ask ABSSAC representative.

Double Nut with Flange



Unit : mm

Ball Nut Model number	Shaft nominal dia. d	Lead	Ball size	BCD	Lead angle	Root dia. d_0	Number of Circuit	Basic Load Rating N		Nut Rigidity N/μm
								Dynamic Ca	Static Coa	
FSBS 1402 B	14	2	1.5875	14.3	2□°33□'	12.6	3.7□×1	3200	7500	345
FSBS 1402.5 B	14	2.5	1.5875	14.3	3□°11□'	12.6	3.7□×1	3200	7500	345
FSBS 1403 B	14	3	2	14.3	3□°49□'	12.2	3.7□×1	4600	10100	361
FSBS 1404 B	14	4	2.381	14.3	5□°05□'	11.8	3.7□×1	5700	11600	366
FSBS 1405 B	14	5	2.381	14.3	6□°21□'	11.8	3.7□×1	5700	11600	365
FSBS 1602 B	16	2	1.5875	16.3	2□°14□'	14.6	3.7□×1	3400	8600	386
FSBS 1602.5 B	16	2.5	1.5875	16.3	2□°48□'	14.6	3.7□×1	3400	8600	385
FSBS 1603 B	16	3	2	16.3	3□°21□'	14.2	3.7□×1	4900	11600	401
FSBS 1604 B	16	4	2.381	16.3	4□°28□'	13.8	3.7□×1	6200	13600	409
FSBS 1605 B	16	5	3.175	16.5	5□°31□'	13.2	3.7□×1	9100	18200	425

Ball Nut Model number	Nut dimension										
	D	Df	L	L_1	F	L_2	T	W	V	D_p	Bolt Hole X
FSBS 1402 B	26	46	49	43	6	19.5	3	28	28	37	5.5
FSBS 1402.5 B	28	48	52	46	6	21	3	30	30	39	5.5
FSBS 1403 B	30	51	60	54	6	24.5	3	32	32	42	5.5
FSBS 1404 B	30	51	69	63	6	28	3	32	32	42	5.5
FSBS 1405 B	30	51	79	73	6	32.5	3	32	32	42	5.5
FSBS 1602 B	28	48	49	43	6	19.5	3	30	30	39	5.5
FSBS 1602.5 B	28	48	52	46	6	21	3	30	30	39	5.5
FSBS 1603 B	32	53	60	54	6	24.5	3	34	34	44	5.5
FSBS 1604 B	34	54	70	64	6	28	4	36	36	45	5.5
FSBS 1605 B	38	57	87	81	6	37.5	4	40	40	48	5.5

Note 1) The diameter of one of the Screw Shaft ends must be less than the Screw Shaft Root diameter, otherwise Ball Nut cannot be installed.

Note 2) Ball Nut dimension is without seal at both ends.
If the seals are required, Ball Nut dimension should be changed, in that case, please ask ABSSAC.
Some type of Ball Nuts cannot equip with seals, please ask ABSSAC representative.

Note 3) Rigidity
The Rigidity values shown in the table are theoretical values calculated from the amount of Elastic Displacement under the Preload equivalent to 10% of the Basic Dynamic Load Rating Ca.

Note 4) All models are Right-hand screw. If Left-hand screw is required, please ask ABSSAC representative.

COPYRIGHT

ABSSAC
PRECISION MOTION SINCE 1982

STANDARD CONDITIONS OF SALE

1. Interpretation

1.1 In these Conditions:
"Buyer" means the person who accepts a quotation of the Seller for the sale of the Goods or whose order for the Goods is accepted by the Seller
"Goods" means the goods (including any instalment of the goods or any parts for them) which the Seller is to supply in accordance with these Conditions
"Seller" means ABSSAC LIMITED a company incorporated in England and whose registered number is 1677177.
"Conditions" means the standard terms and conditions of sale set out in this document and (unless the context otherwise requires) includes any special terms and conditions agreed in writing between the Buyer and the Seller
"Contract" means the Contract for the purchase and sale of the Goods
"Writing" includes telex, cable, facsimile transmission, E-Mail and comparable means of communication

1.2 Any reference in these Conditions to any provision of a statute shall be construed as a reference to that provision as amended, re-enacted or extended at the relevant time

1.3 The headings in these Conditions are for convenience only and shall not affect their interpretation

2. Basis of the sale

2.1 Subject to Condition 3 below, the Seller shall sell and the Buyer shall purchase the Goods in accordance with any oral or written order of the Buyer which is accepted by the Seller, or any written quotation of the Seller which is accepted by the Buyer, subject to these Conditions which shall govern the Contract to the exclusion of any other terms and conditions subject to which any such quotation is accepted or purported to be accepted, or any such order is made or purported to be made, by the Buyer

2.2 No variation, addition or waiver of any of these Conditions shall be effective unless it is in Writing and signed by a duly authorised representative of both the Seller and the Buyer

2.3 The Seller's employees or agents are not authorised to make any representations concerning the Goods unless confirmed by the Seller in Writing. In entering into the Contract the Buyer acknowledges that it does not rely on any such representations which are not so confirmed

2.4 Samples supplied and advice or recommendations as to storage, application or use of the Goods given by the Seller or its employees or agents to the Buyer or its employees or agents are for guidance only and any such matter which is not confirmed in Writing by the Seller is followed or acted upon entirely at the Buyer's own risk and accordingly the Seller shall not be liable for any such advice or recommendation which is not so confirmed then the Buyer should depend on their accuracy only after obtaining specific written confirmation to that effect from the Seller

2.5 Any typographical, clerical or other error or omission in any sales literature, quotation, price list, acceptance of offer, invoice or other document or information issued by the Seller shall be subject to correction without any liability on the part of the Seller

3. Quotations and acceptance of orders

3.1 Quotations issued by the Seller are invitations to order Goods from the Seller. No Contract will exist until the Seller has accepted the Buyer's order in accordance with condition 3.3.

3.2 Subject to condition 3.1 the price in the quotation should be valid for a period of 30 days from the date of the quotation unless otherwise advised by the Seller in Writing

3.3 The Seller shall not be bound by any order submitted by the Buyer unless and until confirmed by the Seller in Writing

3.4 Scheduled call off purchase orders made by the Buyer with the Seller are for twelve month periods only, or until 19th December ofthat year, depending which comes first unless otherwise agreed in Writing by the Seller

3.5 The Buyer is committed to purchasing any remaining amount of products on his purchase order if the Buyer decides to cancel the order mid schedule unless otherwise agreed in Writing by the Seller

3.6 No order which has been accepted by the Seller may be cancelled by the Buyer except with the agreement in Writing of the Seller on the terms that the Buyer shall indemnify the Seller in full against all loss (including loss of profit), costs (including the costs of all labour and materials used), damages, charges and expenses incurred by the Seller as a result of cancellation.

3.7 Compliance with United States Export Regulations
It is Abssac's policy to request, if applicable, the end use and end user details in all sales and repairs of USA origin products and in all transfers of technical data or software to ensure compliance with applicable u.s. export control laws and regulations. Because the products you are purchasing may be used outside of the United States, we will need confirmation of the following from the (buyer). It is on the onus of the buyer to ensure that Abssac is informed of the following information.

1.1 (Buyer) will not export or re-export any USA origin products, technology or software to Cuba, Iran, Iraq, Libya, North Korea, Sudan, or Syria, unless otherwise authorized by the United States Govern ment.

2.1 (Buyer) will not sell, transfer, export or re-export any USA origin products for use in activities which involve the development, production, use or stockpiling of nuclear, chemical or biological weapons or missiles, nor use USA origin products in any facilities which are engaged in activities relating to such weapons.

3.1 (Buyer) acknowledge that u.s. law prohibits the sale, transfer, export or re-export or other participation in any export transaction involving USA origin products with individuals or companies listed in the u.s. Commerce Department's Table of Denial Orders, the u.s. Treasury Department's list of Specially Designated Nationals or the u.s. Department of State's list of individuals debarred from receiving Munitions List items.

4.1 (Buyer) will abide by all applicable u.s. export control laws and regulations for any products purchased from USA origin products, software or technology.

5.1 (Buyer) agree that the export control requirements in No. 1-4 above shall survive the completion, early termination, cancellation or expiration of the applicable purchase order, agreement or contract.

4. Specifications

4.1 The Buyer shall be responsible to the Seller for ensuring the accuracy of the terms of any order (including any applicable specification) submitted by the Buyer, and for giving the Seller any necessary information relating to the Goods within a sufficient time to enable the Seller to perform the Contract in accordance with its terms

4.2 The quantity, quality and description of any specification for the Goods shall be those set out in the Seller's quotation (if accepted by the Buyer) or the Buyer's order (if accepted by the Seller)

4.3 If Goods are supplied in accordance with the Buyer's specifications the Buyer shall be solely responsible for the specifications and ensuring that they are accurate

4.4 If any technical calculations are made by the Seller using information supplied by the Buyer the Buyer accepts that they are responsible for supplying accurate technical information and accordingly the Seller is not liable in respect of calculations based on incorrect information given

4.5 If Goods are to be manufactured or any process is to be applied to the Goods by the Seller in accordance with a specification or request submitted by the Buyer or should any change be made to the Goods at the request of the Buyer the Buyer shall indemnify the Seller against all loss damages costs and expenses awarded against or incurred by the Seller in connection with or paid or agreed to be paid by the Seller in settlement of any claims for infringement of any patent, copy right, design, trade mark or other industrial or intellectual property rights of any person which results from the Seller's use of the Buyers specification

4.6 The Seller reserves the rights to make any changes in the specification of the Goods which are required to conform with any applicable statutory or EC requirements or, where the Goods are to be supplied to the Seller's specification, which do not materially affect their quality or performance

4.7 At all times the buyer has the responsibility to adequately guard and maintain the product supplied in accordance with relevant operation manuals, service factors and health and safety legislation applicable for any product supplied by ABSSAC Limited.

4.8 The seller (Abssac Limited) shall not in any event be liable for any consequential damages, secondary charges, expenses for installing or disconnecting, or losses or injuries to persons or property resulting from any alleged defect in the product or any use of the product, and lor in manner that exceeds its design, duty cycle and or ability.

4.9 It remains the responsibility of the buyer to test any samples or other products that the seller will provide for fatigue, stress and general ability in the application. All products that the seller provides and are used in both real and test situations are considered by Abssac Ltd to have been thoroughly tested to meet and exceed the anticipated life and duty requirement of the product in its application by the buyer. It remains the responsibility of the buyerto give all technical information to the seller and all buyers are responsible for meeting health and safety measures and adequately guarding users and all associated parties against all and any possible failures in line with the health and safety requirements.

Other Where recommended guidelines of serviceable or replaceable parts and maintenance/inspection requirements are exceeded or ignored by the user and/or buyer, no warranty or other claim can or will exist. Where minimum or maximum values/sizes/limits/dimensions/fitting instructions and technical data of parts are ignored/abused/extended/not applied/not actioned or used in excess ofthe design or standard parameters ofthe product by the user and/or buyer then no warranty claim or other claim can exist.

No warranty or other claim can exist or be made by the user or buyer or other to the seller or its agent or other for any part used in motor sport, military or aviation. No warranty is given to this type of application.

All or any secondary or further processes/disassembly/machining/ heating/drying/coating or any other additional process the originally supplied product or associated part/product after dispatch from the seller or its agent voids any warranty claim or other claim.

It remains the responsibility of the buyer or user to advise us the seller of any and all certification/test/traceable certification requirement.

Conversations may be recorded as part of our ongoing customer service program.

5. Packaging

5.1 Packaging for the Goods shall be at the discretion of the Seller which has the right to pack the Goods in such a manner and with such materials and in such quantities as in his absolute discretion thinks fit unless detailed packaging instructions are received from the Buyer prior to agreeing a price for the Goods which the Seller agrees to in Writing

6. Price of the Goods

6.1 Price of the Goods shall be the Seller's quoted price or, where no price has been quoted (or a quoted price is no longer valid) the price listed in the Seller's published price list current at the date of acceptance of this order. Where the Goods are supplied for export from the United Kingdom, the Seller's published export price list shall apply. All prices quoted are valid for 30 days only or until earlier acceptance by the Buyer, after which time they may be altered by the Seller without given giving written notice to the Buyer

6.2 The price is exclusive of any applicable value added tax, which the Buyer shall be additionally liable to pay to the Seller

6.3 All prices stated shall be subject to variation at the sole discretion of the Seller at any time without prior notice and the Seller shall notify the Buyer of any variation before delivery of the Goods

7. Payment

7.1 Liability for payment for the Goods supplied to customers who have a trading account with the Seller shall arise on delivery and payment in cash is due 30 days from the date of the invoice or as otherwise specifically agreed in Writing by the Seller. Payment shall be due and the company shall be entitled to sue for the price whether or not property in the Goods has passed by virtue of condition 10 and not withstanding the delivery may not have taken place as a result of the Buyer's wrongful or refusal to accept delivery. The time of payment of the price shall be of the essence of the Contract

7.2 Liability for payment forthe Goods supplied on a proforma invoice basis for customers who do not have a trading account with the Seller shall be prior to delivery of the Goods. The ti me of payment of the price shall be of the essence of the Contract. It is the Buyer's responsibility to give written notice to the Seller of any payment under proforma invoice arrangements

7.3 Sums paid after the due date shall pay interest until the day payment is received at the rate of 5% per annum above the base rate from time to time of National Westminster Bank Pic occurring from day to day from the date of delivery until the date of payment in full

7.4 If the recovery of sums outstanding from the Buyer is passed to a debt collection agency the Buyer shall pay the Seller's costs in instructing the said debt collection agency and all ancillary legal costs

7.5 Without prejudice to any other rights or remedies ofthe Seller any in default of the Buyer in making payment on the due date shall entitle the Seller to suspend deliveries under the Contract or any other Contract so long as the default continues and break the Contract as repudiated by the Buyer and determined if the Buyer has not within 14 days of receiving written notice from the Seller paid all sums due to the Seller.

8. Delivery

8.1 Delivery shall take place when the Goods are unloaded at or delivered to the Buyer's premises or other delivery location agreed between the Seller and the Buyer exceptthat if the Buyer collects or arranges collection of the Goods from the Seller's premises, or nominates a carrier for the Goods delivery shall take place when the Goods are loaded on the collection or carriers vehicle

8.2 Any dates quoted for delivery of the Goods are approximate only and the Seller will not be liable for any delay in delivery of the Goods however so caused. Time for delivery shall not be of the essence of the Contract unless previously agreed by the Seller in Writing. The Goods may be delivered by the Seller in advance of the quoted delivery date upon giving responsible notice to the Buyer

8.3 The Buyer shall accept immediate delivery or arrange to collect the Goods or arrange suitable storage, failing which the company may either:

8.3.1 effect delivery by whatever means they think most appropriate; or

8.3.2 arrange storage atthe Buyer's risk and expense pending delivery; or

8.3.3 re-sell or otherwise dispose ofthe Goods without prejudice to any other rights the Seller may have against the Buyer for breach of Contract or otherwise

8.4 Where the agreement provides for delivery by instalments each delivery shall constitute a separate Contract and failure by the Seller to deliver any one or more of the instalments in accordance with these Conditions or any claim by the Buyer in respect of any one or more instalments shall not entitle the Buyer to treat the Contract as a whole as repudiated

8.5 The Buyershall not be entitled to reject the Goods by reason only of short delivery

8.6 The quantity of the Goods delivered under the Contract shall be recorded by the Seller upon dispatch from the Seller's factory or warehouse and the Seller's records shall be accepted by the Buyer as conclusive evidence of the quantity delivered.

8.7 It is the Buyer's responsibilityto notify the seller if Goods have not been received by the Buyer within seven days of the date of receipt of the Seller's invoice, therefore, if no notification is made the Buyer shall be deemed to have received the Goods.

8.8 If the Seller fails to deliver the Goods (or any instalment) for any reason other then any cause beyond the Seller's reasonable control or the Buyer's fault, and the Seller is accordingly liable to the Buyer, the Seller's liability shall be limited to the excess (if any) of the cost to the Buyer (in the cheapest available market) of similar Goods to replace those not delivered over the price of the Goods. The seller is under no obligation or liability in respect of failure to complete or delay or failure to deliver the goods comprised in any order or contract caused directly or indirectly by act of war or terrorism, strikes, lockouts, labour troubles, breakdowns, delays in transport, accidents, delay in obtaining material, fire, government prohibition, delivery of necessary fuel requirements, any and all problems or other restrictions relating to design or other manufacturing difficulties that arise during an order.

8.9 If the Buyer fails to take delivery of the Goods or fails to give the Seller adequate delivery instructions at the time stated for delivery (otherwise than by reason of any cause beyond the Buyer's reasonable control or by reason of the Seller's fault) then, with out prejudice to any other right or remedy available to the Seller, the Seller may:

8.9.1 store the Goods until actual delivery and charge the Buyer for the reasonable costs (including insurance) of storage;
or

8.9.2 sell the Goods at the best price readily obtainable and (after deducting all reasonable storage and selling expenses) account to the Buyer for the excess over the price under the Contract or charge the Buyer for any shortfall below the price under the Contract

9. Examinations and claims

9.1 The Buyer shall upon delivery examine the Goods and shall promptly (but in any event within seven working days of delivery) notify in Writing the Seller and the carrier, where relevant, of any apparent damage defect or shortage.

9.2 The Buyer shall comply with the carriers rules, regulations and requirements so as, when appropriate, to the Seller to make a claim against the carrier in respect of any damage or loss in transit.

9.3 Claims in respect of damage defects or shortage not apparent on examination and under clause 9.1 must be notified in Writing to the Seller within 7 days of the date of delivery

9.4 Notification under clauses 9.1 to 9.3 above shall be first made by telephone then by notice in Writing delivered by facsimile transmission or by first class recorded delivery mail and addressed to Abssac Limited Units 19/20 Bond Industrial Estate Wickhamford Evesham Worcs WRll 7RH.

9.5 In default of such notification the seller shall be deemed conclusively to have properly preformed its obligations under the Contract.

10. Property and risk

10.1 All risk including that of dam age to or loss of the Goods shall pass to the Buyer:

10.1.1 at the time when the Seller notifies the Buyer that the Goods are available for collection the case of Goods to be supplied at the Seller's premises
or

10.1.2 at the time of delivery but prior to unloading or if the Buyer wrongfully fails to take delivery of the Goods at the time when the Seller has tendered to delivery of the Goods in the case of Goods to be supplied otherwise than at the Seller's premises or;

10.1.3 at the time of delivery of the Goods to a carrier for delivery to the Buyer in the case of Goods to be supplied in a manner otherwise than as set out in Conditions 10.1.1 or 10.1.2 above

10.2 The Buyer shall fully insure the Goods against all risks from the times stipulated forthe passing of risk in condition 10.1 above up to the time when the proprietary rights in such Goods pass to the Buyer

10.3 Property (both legal and beneficial) in the Goods shall remain in the company until all sums owing to the Seller whether under the Contract or any other Contract at any time between the Seller and the Buyer made prior to the date of the Contract ("the Indebtedness) shall have been paid in full, until such time the Buyer shall hold the Goods as bailee for the Seller

10.4 The Buyer shall not be entitled to pledge or in any way charge by way of security for any indebtedness any of the Goods which remain the property of the Seller, but if the Buyer does so all moneys owing by the Buyer to the Seller shall (without prejudice to any other right or remedy of the Seller) forthwith become due and payable

10.5 The Buyer until otherwise notified by the Seller or on the happening of any of the event specified in Condition 10.7 ("the Events") may in the ordinary course of business sell the Goods and pass property in them ("the Re-Sale") subject to the stipulations ("the Stipulations") imposed in Condition 1 0.5

10.6 The Stipulations are that until the Indebtedness has been fully discharged;

10.6.1 the Goods shall not be converted into any other product or mixed with any other Goods to make another product ("the New Product") nor will the Buyer sell the New Product and property in it ("the Sale") but if the Buyer in breach of the above provision does convert or mix the Goods property in the New Product shall atthe earliest moment that such vesting is possible, vest and remain in the Seller whether or not property in the Goods is at the moment extinguished

10.6.2 the Re-Sale shall be for the account of the Seller and, unless the Seller by written notice requires the paymentto it of the proceeds ofthe Re-Sale ("the Proceeds") to the extent of the Indebtedness, in which case the Buyer shall forthwith on receipt of such notice or as soon as thereafter as it shall receive the Proceeds makes its payment, the Buyer shall retain the Proceeds in a separate bank accountto the order of the Seller and not mix them with any other monies

10.6.3 in the event of a breach by the Buyer of its obligations under additions 10.6.1 the Seller shall have the right to trace the Proceeds in to any other moneys which may have been mixed and the Buyer shall indemnify the Seller on a full indemnity basis against loss, damage, costs or expenses incurred in such tracing

10.6.4 until the Re-Sale the Seller has have the right to repossess the Goods or take possession of the New Product at any time and for this purpose shall have the right to enter on to any premises or land in the ownership or possession of the Buyer and remove the Goods and/or the New Product not withstanding that they are affixed to such premises or land and the Buyer shall indemnifythe Seller on a full indemnity basis against all loss, damage, costs or expenses so arising including loss, damage, costs or expenses in respect of third party claims. Such taking of possession re delivery shall be without prejudice in the obligation of the Buyer to purchase Goods

10.6.5 the Goods and the New Product shall until their Re-Sale or Sale be stored separately, protected and insured and identified and clearly marked as the Seller's property

10.7 The Events are;

10.7.1 The giving of any notice to the Buyer that a receiver, manager, administrative receiver, supervisor, nominee or administrator is to be or has been appointed over any of the property or assets of the Buyer or that a petition to wind up the Buyer is to be or has been presented or that an application for an administration order is to be or has been made or any notice of a resolution to wind up the Buyer (say for the purposes of bona fide reconstruction or amalgamation)

10.7.2 A decision by the Buyer that the Buyer intends to make any arrangement or composition with its creditors generally.

10.7.3 Where the Buyer pursuant to section 123 or 268 of the Insolvency Act 1986 appears to be unable to pay a debt or appears to have no reasonable prospects of being able to pay a debt

10.7.4 any distress or execution levied as threatened to be levied on any property or assets of the Buyer

10.7.5 the inability of the Buyer to pay its debts as they fall due

10.7.6 on receipt of notification from the company under Condition 10.5 or on the happening of any of the Events the Buyer shall immediately deliver the Goods and the New Product property in which the Product is reserved to or is vested in the Seller to such address as the Seller shall specify in default of which or in the alternative, the Seller shall have the right to enter on any premises or land in the ownership or possession of the Buyer in order to recover the Goods and the New Product and the Buyer shall indemnify the Seller on a full indemnity basis against all loss, damage, costs or expenses as arising including loss, damage, cost or expenses in respect of third party claims

11. Breach by or insolvency by the Buyer

11.1 if the Buyer shall not comply with any of its obligations to the Seller or upon the occurrence of any of the Events referred to in clause 10.7 the Seller shall have the right forthwith to terminate the Contract but without affecting any other claim right or remedy of the Seller against the Buyer and without any liabilityto the Buyer, and if the Goods have been delivered but not paid for the price shall become immediately due and payable notwithstanding any previous agreement or arrangement to the contrary

12. Export Terms

12.1 In these Conditions "Incoterms" mean the international rules for the interpretation of trade terms of the International Chambers of Commerce as in force at the date when the Contract is made. Unless the Context otherwise requires, any term or expression which is defined in or given a particular meaning my the provisions Incoterms shall have the same meaning in these Conditions, but if there is any conflict between the provisions of Incoterms and these Conditions, the latter shall prevail

12.2 Where the Goods are supplied for export from the United Kingdom, the provisions of this clause 12 shall (subject to any special terms agreed in Writing between the Buyer and the Seller) apply not withstanding any other provision of these Conditions

12.3 The Buyer shall be responsible for complying with any legislation or regulations governing the importation of the Goods in to the country or destination and forthe payment of any duties on them

12.4 Unless otherwise agreed in Writing between the Buyer and the Seller, the Goods shall be delivered fob the air or sea port of shipment and the Sellers shall be under no obligation to give notice under section 32(3) of the Sale Of Goods Act 1979

12.5 The Buyer shall be responsible for arranging for testing and inspection of the Goods at the Sellers premises before shipment. The Seller shall have no liability for any claim in respect of any defect in the Goods which would be apparent on inspection and which is made after shipment, or in respect of any damage during transit

12.6 Payment of all amounts due to the Seller shall be made by irrevocable letter of credit opened by the Buyer in favour of the Seller and confirmed by a bank acceptable by the Seller, or by telegraphic transfer in to the Sellers aforementioned bank account or if the Seller agrees in Writing on or before acceptance of the Buyer order to waive this requirement, by acceptance by the Buyer and delivery to the Seller of a bill of exchange drawn on the Buyer payable 60 days after sight of the order to the Seller at such branch of National Westminster Bank in England as may be specified in the bill of exchange

12.7 Unless otherwise specifically agreed between the Seller and the Buyer all Exports sales shall be made by delivery to the Buyer's premises and the Seller's prices shall be increased to cover the Seller's costs in making such deliveries

12.8 The Buyer warrants that if an import licence or permit is required for the importation of the Goods into the county or destination then such import licence or permit has been obtained or would be obtain prior to shipment

13. Cancelation, suspension and termination

13.1 If the Buyer shall purport to cancel the whole or any part of the Contract the Seller may by notice in Writing to the Buyer elect to treat the Contract as repudiated and the Buyers shall thereupon be liable to pay the Seller by way of liquidated damages a sum equal to all the expenses incurred by the Seller in connection with the Contract including an appropriate amount in respect of administration overheads, costs and loss of profit. The Sellers reasonable estimate of the expenses incurred shall be final and binding on the parties

13.2 If for any cause whatsoever beyond its control the Seller is unable to make any delivery on the applicable delivery date or preform any of its obligations under the Contract the Seller may be notice in Writing to the Seller terminate the Contract or suspend the Contract without liability of any loss or damage thereby occurred by the Buyer

14. Intellectual property

14.1 The Buyer shall not infringe any patent, trade name, registered design, copyright industrial or other intellectual property right belonging to the Seller in relation to the Goods or any other goods or matters supplied by the Seller with or in relation to the Goods

14.2 The Buyer shall promptly reportto the Seller particulars of any use by any person of a patent, trade name, registered design, trade mark or get up of Goods which might amountto infringement of any patent, trade mark, registered design, copy right, industrial or other intellectual property right attaching to the Goods or to unfair competition on passing off

14.3 In the event that it comes to the notice of the Buyer that any person alleges that a patent, trade name, registered design, copy right, industrial or other intellectual property right is invalid or that they infringe any rights of that person or that they are open to any form of attach the Buyer shall not make any omissions but shall promptly report the matter to the Seller

14.4 The Seller shall have conduct of all proceedings relating to any patent, trade name, registered design, copy right, industrial or other intellectual property right attaching to the Goods

15. Force majeure

15.1 In so far as the performance of the Contract by the Seller may be affected by any strike, any lack of available, shipping or transport or materials, any restriction regulation or decree by any local or municipal authority or government department or by any cause beyond the Seller's reasonable control (which shall be construed without reference to the proceeding causes) the Seller may elect at its absolute discretion either;

15.1.1 to terminate the Contract or;

15.1.2 to proceed to preform or continue performance under the Contract within a reasonable time after the termination of such events of circumstance

15.2 In the event that the Seller makes an election under clause 15.1 the Buyer shall accept the Goods or such part of them as are delivered to it not withstanding any delay

16. Exclusion of Contract (rights of the third party) Act 1999

16.1 Nothing in these Conditions will confer on any third party any benefit or the right to enforce any terms of these Conditions

17. Proper law

17.1 The Contract is and shall be deemed to be made in England and shall in all respects be governed by English Law and shall be subject to the non-exclusive jurisdiction of the English Court

18. General

18.1 Any notice required or permitted to be given by either party to the other under these Conditions shall be in Writing and addressed to that other party at its registered office or principal place of business or such other address as may atthe relevanttime having been notified pursuant to this provision to the party giving the notice

18.2 No waiver by the Seller of any breach of the Contract by the Buyer shall be consider as a waiver of any subsequent breach of the same or any other provision

18.3 If any provision of these Conditions is held by any competent authority to be invalided or unenforceable in whole or in part the validity of the other provisions of these Conditions and the remainder of the provision in question shall not be affected

18.4 No liability, warranty or any other claim can or will exist for any product(s) during or as a consequence of or any consequence whatsoever resulting directly or indirectly from or in connection with any of the following regardless of any other contributory cause or event from :
Terrorism Terrorism is defined as any act or acts including and not limited to the use or threat of force/violence/harm or damage to life or property orthe threat of such harm or damage including harm or damage by nuclear and or chemical and or biological and or radiological means. Caused or occasioned by any persons or groups or so claimed in whole or in part for political religious ideological or similar purposes. Or, any action taken in controlling preventing suppressing or in anyway relating to the above.
War War or invasion, act of foreign enemy hostilities of a warlike operation or operations (whether war be declared or not) civil war rebellion revolution insurrection civil commotion assuming the proportions of or amounting to an uprising military or usurped power. Or any action taken in controlling preventing suppressing or in any way relating to any of the above.

18.5 Any dispute arising under or in connection with these Conditions or the sale ofthe Goods shall be referred to arbitration by a single arbitrator appointed by agreement or (in default) nominated on the application of either party by the president forthetime being of the Law Society.
Abssac Limited may make changes to the contents/ improvements and/or changes in the product(s) or service(s) described in this publication at any time.

August 2013.