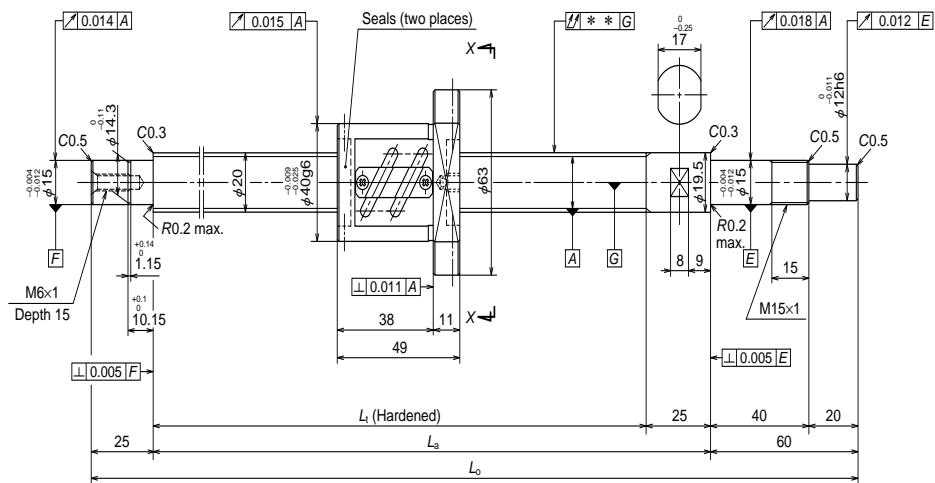


Finished shaft end SA Type

(Fine lead) Dia. 20, Lead 4

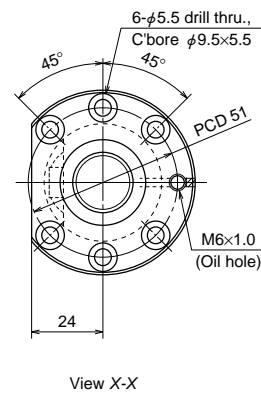


Nut models: PFT

NSK

ø20×4

Unit: mm



Ball screw specifications		
Shaft dia. x Lead / Direction of turn	20x4/Right	
Preload / Ball recirculation	P preload / Return tube	
Ball dia. / Ball circle dia.	2.381/20.3	
Effective turns of balls	2.5x2	
Screw shaft root diameter	17.8	
Accuracy grade / Preload	C5/Z	
Basic load rating (N)	Dynamic C_a	5420
	Static C_{0a}	10700
Preload (N)	294	
Dynamic friction torque, median, (N·cm)	3.9	
Spacer ball	Yes	
Factory packed grease	Refer to Remarks 2.	
Internal spatial volume of nut (cm ³)	2.7	
Standard volume of grease replenishing (cm ³)	1.4	

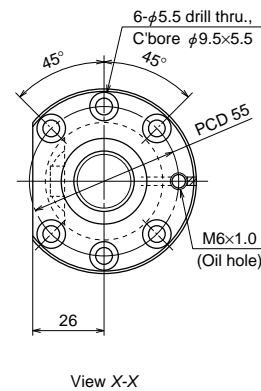
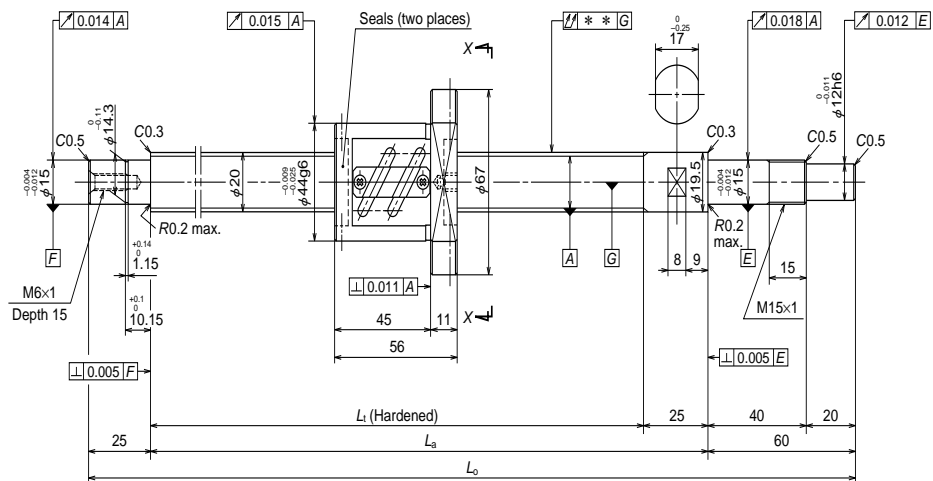
Recommended support unit	For drive side	For opposite to drive side
	WBK15-01A (square)	○
WBK15S-01 (square)		○
WBK15-11 (round)	○	

Unit: mm

Ball screw No.	Stroke		Screw shaft length		
	Nominal	Maximum (L ₁ —Nut length)	L ₁	L _a	L _o
			W2002SA-1P-C5Z4	150	176
W2002SA-2P-C5Z4	200	226	275	300	385
W2003SA-1P-C5Z4	300	326	375	400	485
W2004SA-1P-C5Z4	400	426	475	500	585
W2005SA-1P-C5Z4	500	526	575	600	685
W2006SA-1P-C5Z4	600	626	675	700	785

Lead accuracy			Shaft run-out ** λ	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
T	e _p	v _u			Supporting condition	
					Fixed - Simple support	Fixed - Fixed
-0.005	0.023	0.018	0.045	1.1	3000	3000
-0.007	0.023	0.018	0.045	1.2	3000	3000
-0.009	0.025	0.020	0.055	1.5	3000	3000
-0.011	0.027	0.020	0.070	1.7	3000	3000
-0.014	0.030	0.023	0.085	1.9	3000	3000
-0.016	0.035	0.025	0.085	2.1	3000	3000

- Remarks
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use. Refer to Page D13 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.



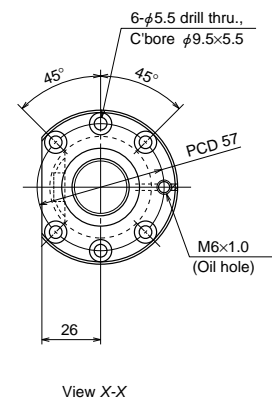
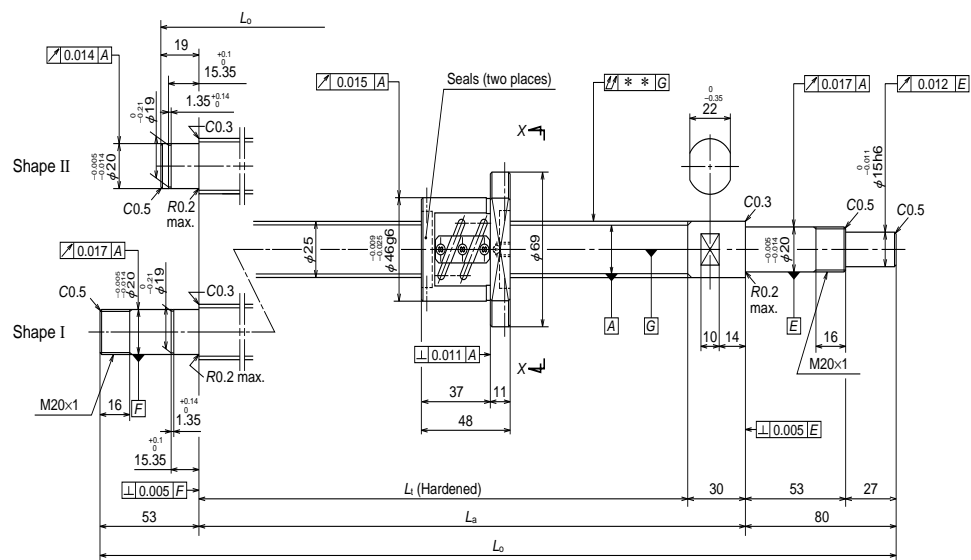
Ball screw specifications		
Shaft dia. x Lead / Direction of turn	20x5/Right	
Preload / Ball recirculation	P preload / Return tube	
Ball dia. / Ball circle dia.	3.175/20.5	
Screw shaft root diameter	17.2	
Effective turns of balls	2.5x2	
Accuracy grade / Preload	C5/Z	
Basic load rating (N)	Dynamic C_a	9410
	Static C_{0a}	17100
Preload (N)	490	
Dynamic friction torque, median, (N·cm)	7.8	
Spacer ball	Yes	
Factory packed grease	Refer to Remarks 2.	
Internal spatial volume of nut (cm ³)	4.3	
Standard volume of grease replenishing (cm ³)	2.2	

Recommended support unit	For drive side		For opposite to drive side	
	For drive side	For opposite to drive side	For drive side	For opposite to drive side
WBK15-01A (square)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
WBK15S-01 (square)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
WBK15-11 (round)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Ball screw No.	Stroke		Screw shaft length		
	Nominal	Maximum (L_t —Nut length)	L_t	L_a	L_o
W2002SA-3P-C5Z5	150	169	225	250	335
W2002SA-4P-C5Z5	200	219	275	300	385
W2003SA-2P-C5Z5	300	319	375	400	485
W2004SA-2P-C5Z5	400	419	475	500	585
W2005SA-2P-C5Z5	500	519	575	600	685
W2007SA-1P-C5Z5	700	719	775	800	885

- Remarks
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use. Refer to Page D13 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.

Lead accuracy			Shaft run-out **	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
T	e_p	v_u			Supporting condition	
			Fixed - Simple support	Fixed - Fixed		
-0.005	0.023	0.018	0.045	1.3	3000	3000
-0.007	0.023	0.018	0.045	1.4	3000	3000
-0.009	0.025	0.020	0.055	1.6	3000	3000
-0.011	0.027	0.020	0.070	1.8	3000	3000
-0.014	0.030	0.023	0.085	2.0	3000	3000
-0.019	0.035	0.025	0.110	2.5	3000	3000



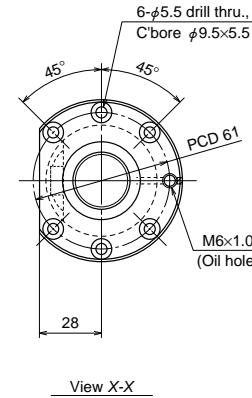
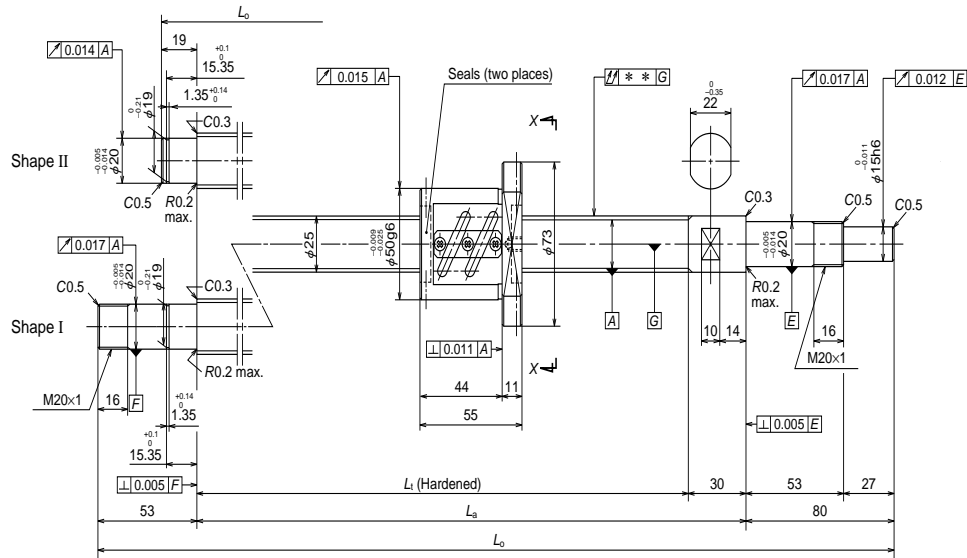
Ball screw specifications		
Shaft dia. x Lead / Direction of turn	25×4/Right	
Preload / Ball recirculation	P preload / Return tube	
Ball dia. / Ball circle dia.	2.381/25.3	
Screw shaft root diameter	22.8	
Effective turns of balls	2.5×2	
Accuracy grade / Preload	C5/Z	
Basic load rating (N)	Dynamic C_a	6020
	Static C_{0a}	13600
Preload (N)	290	
Dynamic friction torque, median, (N·cm)	4.9	
Spacer ball	Yes	
Factory packed grease	Refer to Remarks 2.	
Internal spatial volume of nut (cm ³)	3.2	
Standard volume of grease replenishing (cm ³)	1.6	

Recommended support unit	For drive side		For opposite to drive side	
	For drive side	For opposite to drive side	For drive side	For opposite to drive side
WBK20-01 (square)	○	○	○	○
WBK20S-01 (square)	○	○	○	○
WBK20-11 (round)	○	○	○	○

Ball screw No.	Stroke		Screw shaft length		
	Nominal	Maximum (L _t —Nut length)	L _t	L _a	L ₀
W2502SA-1P-C5Z4	150	172	220	250	349
W2502SA-2P-C5Z4	200	222	270	300	399
W2503SA-1P-C5Z4	300	322	370	400	499
W2504SA-1P-C5Z4	400	422	470	500	599
W2505SA-1P-C5Z4	500	522	570	600	733
W2507SA-1P-C5Z4	700	722	770	800	933

- Remarks
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use. Refer to Page D13 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.

Left side shaft end	Lead accuracy			Shaft run-out **	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
	T	e _p	v _u			Supporting condition	
						Fixed - Simple support	Fixed - Fixed
II	-0.005	0.023	0.018	0.035	1.6	2800	—
II	-0.006	0.023	0.018	0.035	1.8	2800	—
II	-0.009	0.025	0.020	0.040	2.2	2800	—
II	-0.011	0.027	0.020	0.050	2.5	2800	—
I	-0.014	0.030	0.023	0.060	3.0	2800	2800
I	-0.018	0.035	0.025	0.075	3.7	2800	2800



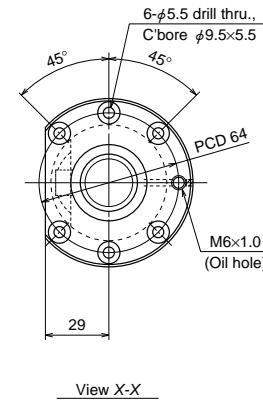
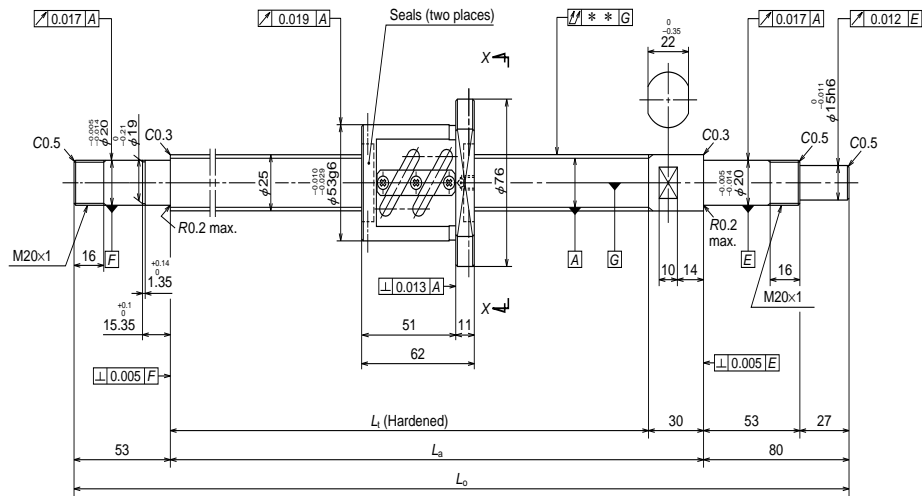
Ball screw specifications		
Shaft dia. x Lead / Direction of turn	25x5/Right	
Preload / Ball recirculation	P preload / Return tube	
Ball dia. / Ball circle dia.	3.175/25.5	
Screw shaft root diameter	22.2	
Effective turns of balls	2.5x2	
Accuracy grade / Preload	C5/Z	
Basic load rating (N)	Dynamic C_a	10400
	Static C_{0a}	21900
Preload (N)	540	
Dynamic friction torque, median, (N·cm)	8.8	
Spacer ball	Yes	
Factory packed grease	Refer to Remarks 2.	
Internal spatial volume of nut (cm ³)	5.0	
Standard volume of grease replenishing (cm ³)	2.5	

Recommended support unit	For drive side		For opposite to drive side	
	For drive side	For opposite to drive side	For drive side	For opposite to drive side
WBK20-01 (square)	○	○	○	○
WBK20S-01 (square)	○	○	○	○
WBK20-11 (round)	○	○	○	○

Ball screw No.	Stroke		Screw shaft length		
	Nominal	Maximum (L_t —Nut length)	L_t	L_a	L_o
W2502SA-3P-C5Z5	150	165	220	250	349
W2502SA-4P-C5Z5	200	215	270	300	399
W2503SA-2P-C5Z5	300	315	370	400	499
W2504SA-2P-C5Z5	400	415	470	500	599
W2505SA-2P-C5Z5	500	515	570	600	733
W2506SA-1P-C5Z5	600	615	670	700	833
W2507SA-2P-C5Z5	700	715	770	800	933
W2509SA-1P-C5Z5	900	915	970	1000	1133
W2511SA-1P-C5Z5	1000	1115	1170	1200	1333

Left side shaft end	Lead accuracy			Shaft run-out **	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
	T	e_p	v_u			Supporting condition	
						Fixed - Simple support	Fixed - Fixed
II	-0.005	0.023	0.018	0.035	1.8	2800	—
II	-0.006	0.023	0.018	0.035	2.0	2800	—
II	-0.009	0.025	0.020	0.040	2.3	2800	—
II	-0.011	0.027	0.020	0.050	2.7	2800	—
I	-0.014	0.030	0.023	0.060	3.1	2800	2800
I	-0.016	0.035	0.025	0.075	3.4	2800	2800
I	-0.018	0.035	0.025	0.075	3.8	2800	2800
I	-0.023	0.040	0.027	0.090	4.5	2800	2800
I	-0.028	0.046	0.030	0.120	5.2	2480	2800

Remarks 1. We recommend NSK support unit. Refer to Page B433 for details.
 2. Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use. Refer to Page D13 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.



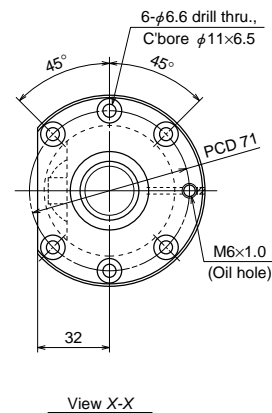
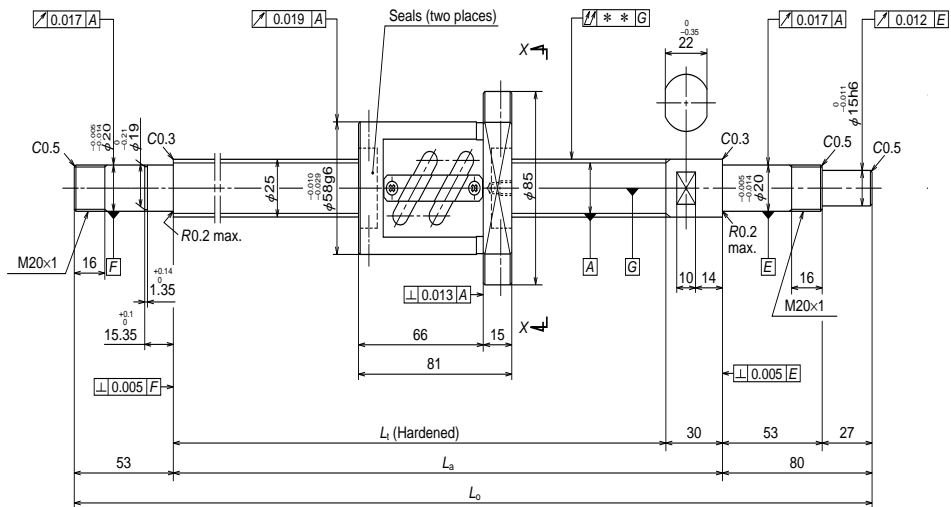
Ball screw specifications		
Shaft dia. x Lead / Direction of turn	25×6/Right	
Preload / Ball recirculation	P preload / Return tube	
Ball dia. / Ball circle dia.	3.969/25.5	
Screw shaft root diameter	21.4	
Effective turns of balls	2.5×2	
Accuracy grade / Preload	C5/Z	
Basic load rating (N)	Dynamic C _a	14100
	Static C _{0a}	26800
Preload (N)	685	
Dynamic friction torque, median, (N·cm)	13.8	
Spacer ball	Yes	
Factory packed grease	Refer to Remarks 2.	
Internal spatial volume of nut (cm ³)	7.0	
Standard volume of grease replenishing (cm ³)	3.5	

Recommended support unit	For drive side		For opposite to drive side	
	For drive side	For opposite to drive side	For drive side	For opposite to drive side
WBK20-01 (square)	○	○	○	○
WBK20S-01 (square)	○	○	○	○
WBK20-11 (round)	○	○	○	○

Ball screw No.	Stroke		Screw shaft length		
	Nominal	Maximum (L _t —Nut length)	L _t	L _a	L _o
W2503SA-3P-C5Z6	250	308	370	400	533
W2505SA-3P-C5Z6	450	508	570	600	733
W2507SA-3P-C5Z6	650	708	770	800	933
W2511SA-2P-C5Z6	1050	1108	1170	1200	1333

Lead accuracy			Shaft run-out **	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
T	e _p	v _u			Supporting condition	
					Fixed - Simple support	Fixed - Fixed
-0.009	0.025	0.020	0.050	2.5	2800	2800
-0.014	0.030	0.023	0.060	3.2	2800	2800
-0.018	0.035	0.025	0.075	3.9	2800	2800
-0.028	0.046	0.030	0.120	5.2	2410	2800

- Remarks
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use. Refer to Page D13 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.



Ball screw specifications		
Shaft dia. x Lead / Direction of turn	25×10/Right	
Preload / Ball recirculation	P preload / Return tube	
Ball dia. / Ball circle dia.	4.762/25.5	
Screw shaft root diameter	20.5	
Effective turns of balls	1.5×2	
Accuracy grade / Preload	C5/Z	
Basic load rating (N)	Dynamic C _a	11600
	Static C _{0a}	19000
Preload (N)	585	
Dynamic friction torque, median, (N·cm)	13.8	
Spacer ball	Yes	
Factory packed grease	Refer to Remarks 2.	
Internal spatial volume of nut (cm ³)	9.5	
Standard volume of grease replenishing (cm ³)	4.8	

Recommended support unit	For drive side		For opposite to drive side	
	For drive side	For opposite to drive side	For drive side	For opposite to drive side
WBK20-01 (square)	○	○	○	○
WBK20S-01 (square)	○	○	○	○
WBK20-11 (round)	○	○	○	○

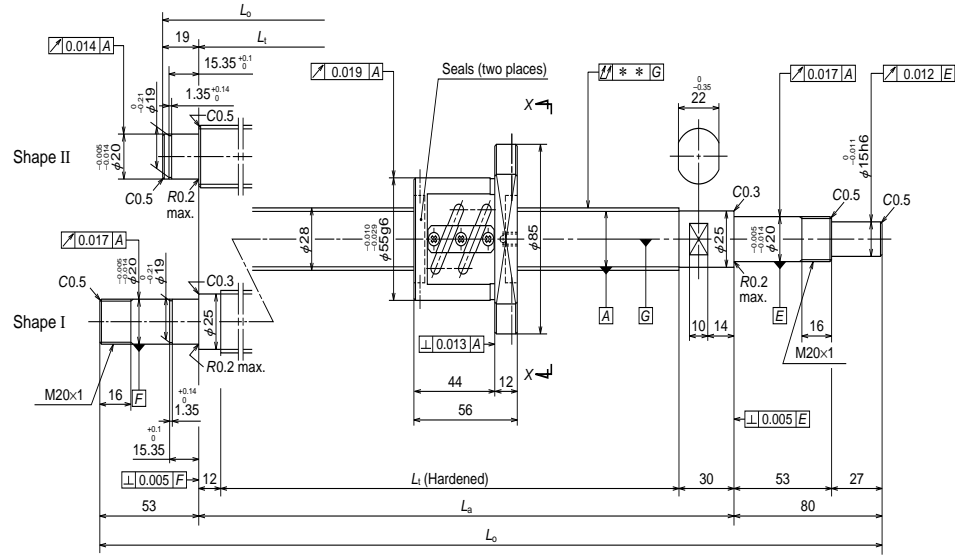
Ball screw No.	Stroke		Screw shaft length		
	Nominal	Maximum (L _t —Nut length)	L _t	L _a	L ₀
W2503SA-4P-C5Z10	250	289	370	400	533
W2505SA-4P-C5Z10	450	489	570	600	733
W2507SA-4P-C5Z10	650	689	770	800	933
W2509SA-2P-C5Z10	850	889	970	1000	1133
W2511SA-3P-C5Z10	1050	1089	1170	1200	1333
W2514SA-1P-C5Z10	1350	1389	1470	1500	1633

Lead accuracy			Shaft run-out **	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
T	e _p	v _u			Supporting condition	
					Fixed - Simple support	Fixed - Fixed
-0.009	0.025	0.020	0.050	3.2	2800	2800
-0.014	0.030	0.023	0.060	3.8	2800	2800
-0.018	0.035	0.025	0.075	4.5	2800	2800
-0.023	0.040	0.027	0.090	5.2	2800	2800
-0.028	0.046	0.030	0.120	5.9	2340	2800
-0.035	0.054	0.035	0.150	6.9	1470	2050

- Remarks
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use. Refer to Page D13 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.

Finished shaft end SA Type

(Fine lead) Dia. 28, Lead 5

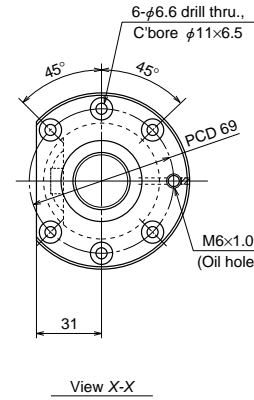


Nut models: PFT

NSK

ø28×5

Unit: mm



Ball screw specifications		
Shaft dia. x Lead / Direction of turn	28x5/Right	
Preload / Ball recirculation	P preload / Return tube	
Ball dia. / Ball circle dia.	3.175/28.5	
Screw shaft root diameter	25.2	
Effective turns of balls	2.5x2	
Accuracy grade / Preload	C5/Z	
Basic load rating (N)	Dynamic C_a	11000
	Static C_{0a}	24400
Preload (N)	540	
Dynamic friction torque, median, (N·cm)	9.8	
Spacer ball	Yes	
Factory packed grease	Refer to Remarks 2.	
Internal spatial volume of nut (cm ³)	6.0	
Standard volume of grease replenishing (cm ³)	3.0	

Recommended support unit	For drive side		For opposite to drive side	
	For drive side	For opposite to drive side	For drive side	For opposite to drive side
WBK20-01 (square)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
WBK20S-01 (square)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
WBK20-11 (round)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Unit: mm

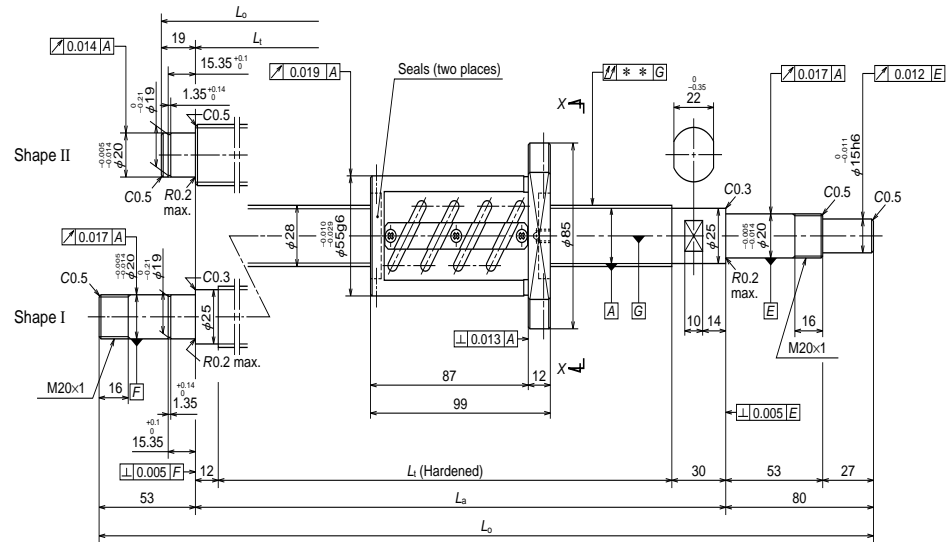
Ball screw No.	Stroke		Screw shaft length		
	Nominal	Maximum (L ₁ —Nut length)	L ₁	L _a	L ₀
W2802SA-1P-C5Z5	200	214	270	300	399
W2803SA-1P-C5Z5	300	314	370	400	499
W2804SA-1P-C5Z5	400	414	470	500	599
W2805SA-1P-C5Z5	450	502	558	600	733
W2807SA-1P-C5Z5	650	702	758	800	933
W2809SA-1P-C5Z5	850	902	958	1000	1133
W2811SA-1P-C5Z5	1050	1102	1158	1200	1333

- Remarks
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. **Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use.** Refer to Page D13 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.

Left side shaft end	Lead accuracy			Shaft run-out **	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
	T	e _p	v _u			Supporting condition	
	Fixed - Simple support		Fixed - Fixed				
II	-0.006	0.023	0.018	0.035	2.5	2500	—
II	-0.009	0.025	0.020	0.040	2.9	2500	—
II	-0.011	0.027	0.020	0.050	3.3	2500	—
I	-0.014	0.030	0.023	0.060	3.8	2500	2500
I	-0.018	0.035	0.025	0.075	4.7	2500	2500
I	-0.024	0.040	0.027	0.090	5.6	2500	2500
I	-0.028	0.046	0.030	0.120	6.5	2500	2500

Finished shaft end SA Type

(Fine lead) Dia. 28, Lead 6

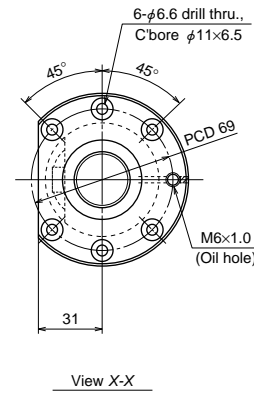


Nut models: ZFT

NSK

ø28×6

Unit: mm



Ball screw specifications		
Shaft dia. x Lead / Direction of turn	28×6/Right	
Preload / Ball recirculation	Z preload / Return tube	
Ball dia. / Ball circle dia.	3.175/28.5	
Screw shaft root diameter	25.2	
Effective turns of balls	2.5×2	
Accuracy grade / Preload	C5/Z	
Basic load rating (N)	Dynamic C_a	17400
	Static C_{0a}	48800
Preload (N)	1220	
Dynamic friction torque, median, (N·cm)	23.5	
Spacer ball	None	
Factory packed grease	Refer to Remarks 2.	
Internal spatial volume of nut (cm ³)	9.5	
Standard volume of grease replenishing (cm ³)	4.8	

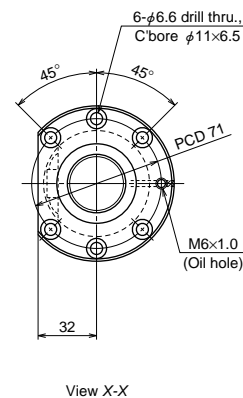
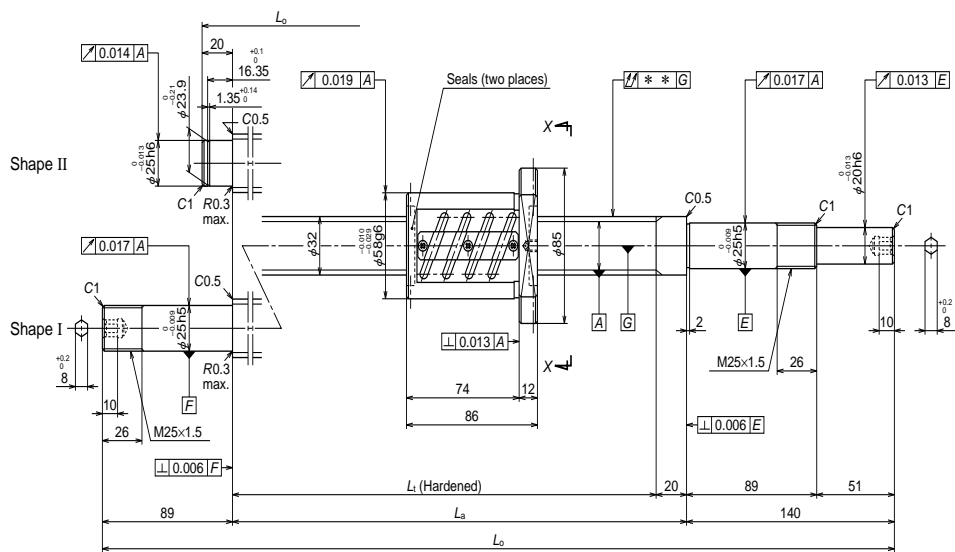
Recommended support unit	For drive side		For opposite to drive side
	For drive side	For opposite to drive side	
WBK20-01 (square)	○	○	○
WBK20S-01 (square)			○
WBK20-11 (round)	○	○	○

Unit: mm

Ball screw No.	Stroke		Screw shaft length		
	Nominal	Maximum (L ₁ —Nut length)	L ₁	L _a	L ₀
W2803SA-4Z-C5Z6	250	271	370	400	499
W2805SA-4Z-C5Z6	450	471	570	600	699
W2807SA-4Z-C5Z6	650	659	758	800	933
W2809SA-4Z-C5Z6	850	859	958	1000	1133
W2811SA-4Z-C5Z6	1050	1059	1158	1200	1333

- Remarks
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use. Refer to Page D13 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.

Left side shaft end	Lead accuracy			Shaft run-out **	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
	T	e _p	v _u			Supporting condition	
						Fixed - Simple support	Fixed - Fixed
II	-0.009	0.025	0.020	0.040	3.4	2500	—
II	-0.014	0.030	0.023	0.060	4.3	2500	—
I	-0.018	0.035	0.025	0.075	5.3	2500	2500
I	-0.023	0.040	0.027	0.090	6.2	2500	2500
I	-0.028	0.046	0.030	0.120	7.1	2500	2500



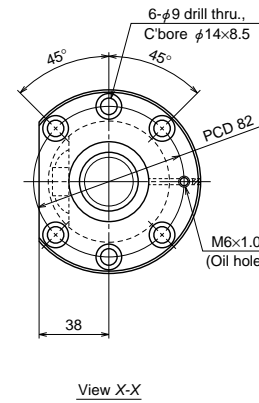
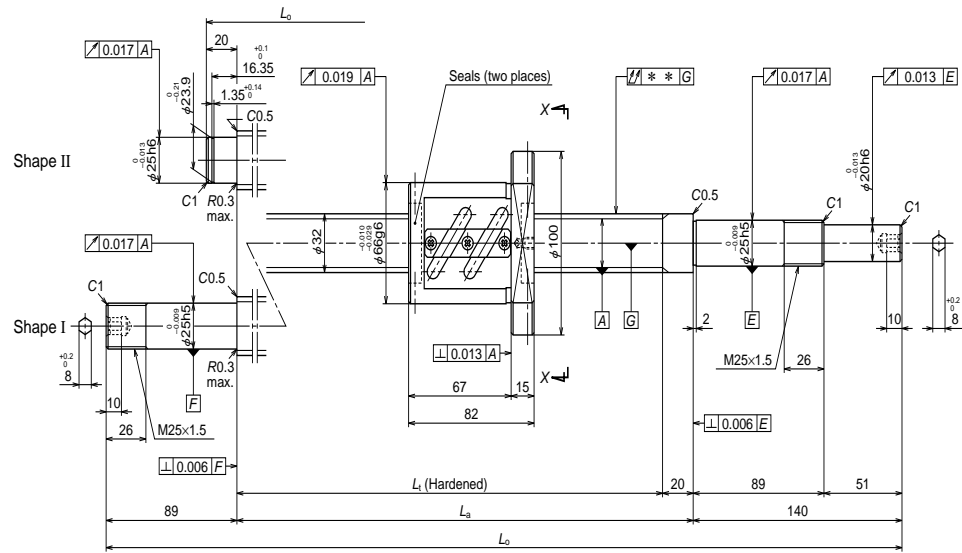
Ball screw specifications		
Shaft dia. x Lead / Direction of turn	32x5/Right	
Preload / Ball recirculation	Z preload / Return tube	
Ball dia. / Ball circle dia.	3.175/32.5	
Screw shaft root diameter	29.2	
Effective turns of balls	2.5x2	
Accuracy grade / Preload	C5/Z	
Basic load rating (N)	Dynamic C_a	18500
	Static C_{0a}	56100
Preload (N)	1270	
Dynamic friction torque, median, (N·cm)	23.5	
Spacer ball	None	
Factory packed grease	Refer to Remarks 2.	
Internal spatial volume of nut (cm ³)	10	
Standard volume of grease replenishing (cm ³)	5	

Recommended support unit	
WBK25DF-31	(round)

Ball screw No.	Stroke		Screw shaft length		
	Nominal	Maximum (L_1 —Nut length)	L_1	L_a	L_o
W3202SA-2Z-C5Z5	150	194	280	300	460
W3203SA-2Z-C5Z5	250	294	380	400	560
W3204SA-2Z-C5Z5	350	394	480	500	660
W3205SA-2Z-C5Z5	450	494	580	600	760
W3206SA-2Z-C5Z5	550	594	680	700	929
W3207SA-2Z-C5Z5	650	694	780	800	1029
W3209SA-2Z-C5Z5	850	894	980	1000	1229
W3211SA-2Z-C5Z5	1050	1094	1180	1200	1429
W3214SA-2Z-C5Z5	1350	1394	1480	1500	1729

Left side shaft end	Lead accuracy			Shaft run-out **	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
	T	e_p	v_u			Supporting condition	
	Fixed - Simple support		Fixed - Fixed				
II	-0.007	0.023	0.018	0.040	3.5	2180	—
II	-0.009	0.025	0.020	0.050	4.1	2180	—
II	-0.012	0.027	0.020	0.060	4.7	2180	—
II	-0.014	0.030	0.023	0.060	5.3	2180	—
I	-0.016	0.035	0.025	0.075	6.1	2180	2180
I	-0.019	0.035	0.025	0.090	6.7	2180	2180
I	-0.024	0.040	0.027	0.090	7.9	2180	2180
I	-0.028	0.046	0.030	0.120	9.0	2180	2180
I	-0.036	0.054	0.035	0.150	10.8	2040	2180

- Remarks
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use. Refer to Page D13 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.



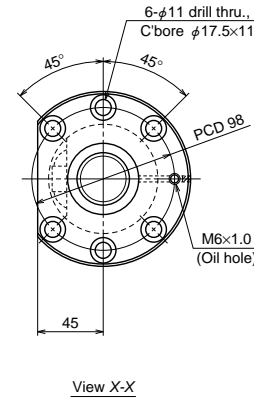
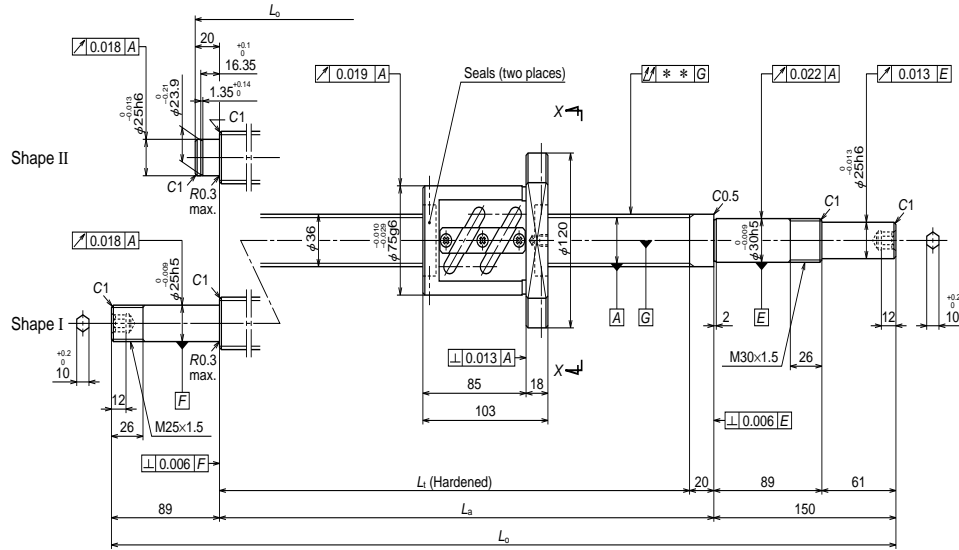
Ball screw specifications		
Shaft dia. x Lead / Direction of turn	32x8/Right	
Preload / Ball recirculation	Z preload / Return tube	
Ball dia. / Ball circle dia.	4.762/32.5	
Screw shaft root diameter	27.5	
Effective turns of balls	2.5x1	
Accuracy grade / Preload	C5/Z	
Basic load rating (N)	Dynamic C_a	17500
	Static C_{0a}	41000
Preload (N)	1320	
Dynamic friction torque, median, (N·cm)	31.0	
Spacer ball	None	
Factory packed grease	Refer to Remarks 2.	
Internal spatial volume of nut (cm ³)	13	
Standard volume of grease replenishing (cm ³)	6.5	

Recommended support unit	
WBK25DF-31	(round)

Ball screw No.	Stroke		Screw shaft length		
	Nominal	Maximum (L_1 —Nut length)	L_1	L_2	L_0
W3203SA-5Z-C5Z8	250	298	380	400	560
W3205SA-5Z-C5Z8	450	498	580	600	760
W3207SA-5Z-C5Z8	650	698	780	800	1029
W3209SA-5Z-C5Z8	850	898	980	1000	1229
W3214SA-5Z-C5Z8	1350	1398	1480	1500	1729

Left side shaft end	Lead accuracy			Shaft run-out ** ∇	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
	T	e_p	v_u			Supporting condition	
						Fixed - Simple support	Fixed - Fixed
II	-0.009	0.025	0.020	0.050	4.7	2180	—
II	-0.014	0.030	0.023	0.060	5.8	2180	—
I	-0.019	0.035	0.025	0.090	7.2	2180	2180
I	-0.024	0.040	0.027	0.090	8.3	2180	2180
I	-0.036	0.054	0.035	0.150	11.1	1920	2180

- Remarks
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use. Refer to Page D13 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.



Ball screw specifications

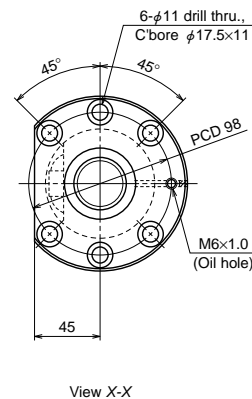
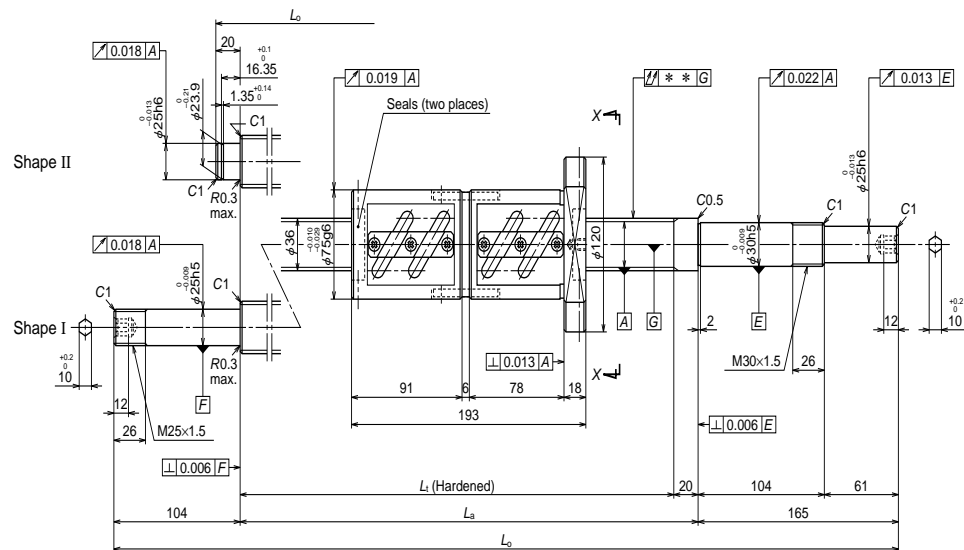
Shaft dia. x Lead / Direction of turn	36×10/Right	
Preload / Ball recirculation	Z preload / Return tube	
Ball dia. / Ball circle dia.	6.35/37	
Screw shaft root diameter	30.4	
Effective turns of balls	2.5×1	
Accuracy grade / Preload	C5/Z	
Basic load rating (N)	Dynamic C_a	27200
	Static C_{0a}	61300
Preload (N)	2060	
Dynamic friction torque, median, (N·cm)	59.0	
Spacer ball	None	
Factory packed grease	Refer to Remarks 2.	
Internal spatial volume of nut (cm ³)	32	
Standard volume of grease replenishing (cm ³)	16	

Recommended support unit	For drive side		For opposite to drive side
	For drive side	For opposite to drive side	
WBK30DF-31 (round)	○		
WBK25DF-31 (round)			○

Ball screw No.	Stroke		Screw shaft length		
	Nominal	Maximum (L_1 —Nut length)	L_1	L_a	L_o
W3604SA-1Z-C5Z10	350	377	480	500	670
W3606SA-1Z-C5Z10	550	577	680	700	870
W3609SA-1Z-C5Z10	850	877	980	1000	1239
W3613SA-1Z-C5Z10	1250	1277	1380	1400	1639
W3617SA-1Z-C5Z10	1650	1677	1780	1800	2039

- Remarks
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use. Refer to Page D13 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.

Left side shaft end	Lead accuracy			Shaft run-out **	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
	T	e_p	v_u			Supporting condition	
						Fixed - Simple support	Fixed - Fixed
II	-0.012	0.027	0.020	0.040	7.4	1940	—
II	-0.016	0.035	0.025	0.050	8.8	1940	—
I	-0.024	0.040	0.027	0.065	11.1	1940	1940
I	-0.033	0.054	0.035	0.100	13.9	1940	1940
I	-0.043	0.065	0.040	0.130	16.6	1480	1940



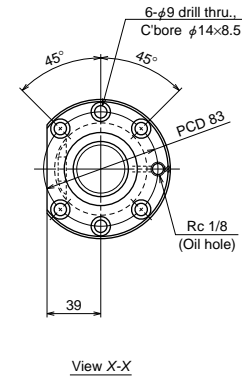
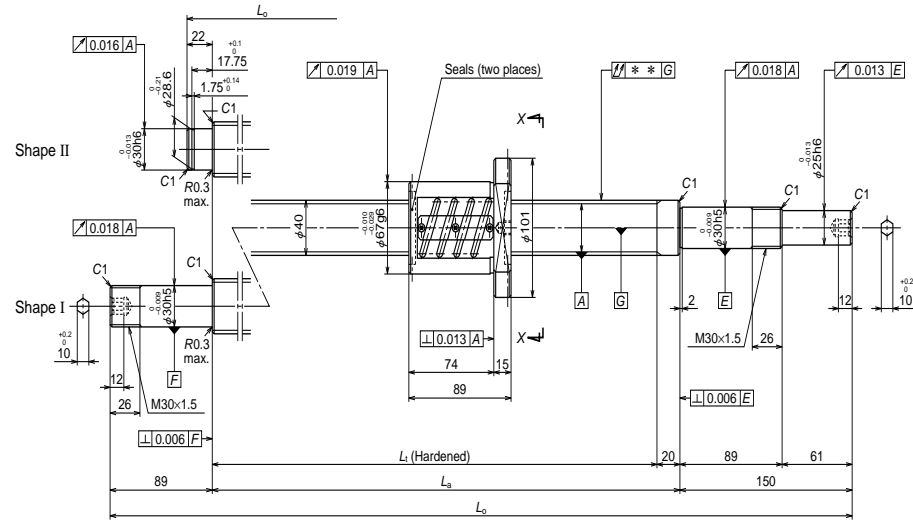
Ball screw specifications		
Shaft dia. x Lead / Direction of turn	36×10/Right	
Preload / Ball recirculation	D preload / Return tube	
Ball dia. / Ball circle dia.	6.35/37	
Screw shaft root diameter	30.4	
Effective turns of balls	2.5×2	
Accuracy grade / Preload	C5/Z	
Basic load rating (N)	Dynamic C _a	49300
	Static C _{0a}	123000
Preload (N)	3430	
Dynamic friction torque, median, (N·cm)	93.0	
Spacer ball	None	
Factory packed grease	Refer to Remarks 2.	
Internal spatial volume of nut (cm ³)	64	
Standard volume of grease replenishing (cm ³)	27	

Recommended support unit	For drive side	For opposite to drive side
	WBK30DFD-31 (round)	○
WBK25DFD-31 (round)	○	○

Ball screw No.	Stroke		Screw shaft length		
	Nominal	Maximum (L ₁ —Nut length)	L ₁	L _a	L _o
W3604SA-2D-C5Z10	250	287	480	500	685
W3606SA-2D-C5Z10	450	487	680	700	885
W3609SA-2D-C5Z10	750	787	980	1000	1269
W3613SA-2D-C5Z10	1150	1187	1380	1400	1669
W3617SA-2D-C5Z10	1550	1587	1780	1800	2069

- Remarks
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use. Refer to Page D13 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.

Left side shaft end	Lead accuracy			Shaft run-out **	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
	T	e _p	v _u			Supporting condition	
	Fixed - Simple support		Fixed - Fixed				
II	-0.012	0.027	0.020	0.040	9.3	1940	—
II	-0.016	0.035	0.025	0.050	10.7	1940	—
I	-0.024	0.040	0.027	0.080	13.1	1940	1940
I	-0.033	0.054	0.035	0.100	15.9	1940	1940
I	-0.043	0.065	0.040	0.130	18.6	1540	1940



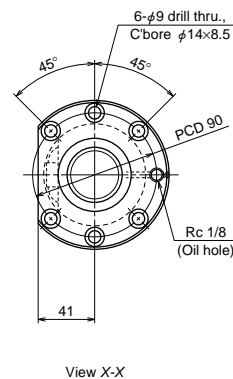
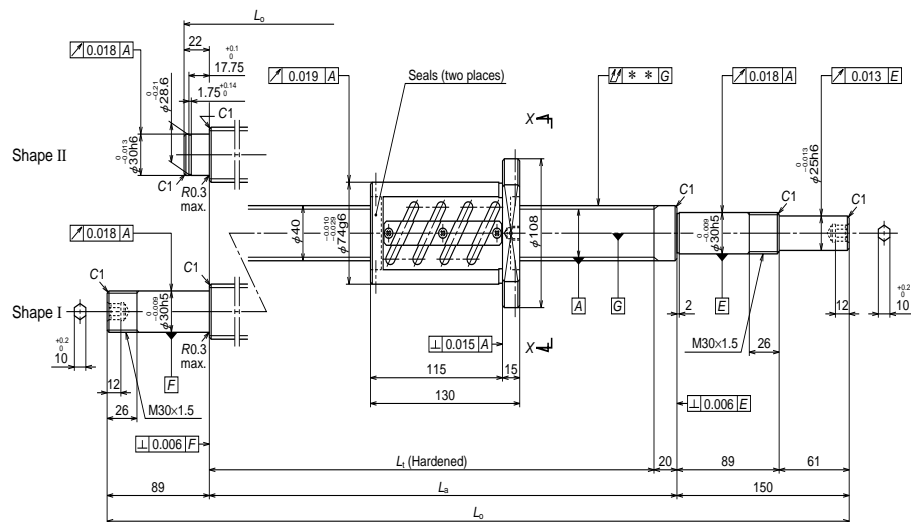
Ball screw specifications		
Shaft dia. x Lead / Direction of turn	40x5/Right	
Preload / Ball recirculation	Z preload / Return tube	
Ball dia. / Ball circle dia.	3.175/40.5	
Screw shaft root diameter	37.2	
Effective turns of balls	2.5x2	
Accuracy grade / Preload	C5/Z	
Basic load rating (N)	Dynamic C_a	20200
	Static C_{0a}	70600
Preload (N)	1420	
Dynamic friction torque, median, (N·cm)	29.5	
Spacer ball	None	
Factory packed grease	Refer to Remarks 2.	
Internal spatial volume of nut (cm ³)	14	
Standard volume of grease replenishing (cm ³)	7	

Recommended support unit	
WBK30DF-31	(round)

Ball screw No.	Stroke		Screw shaft length		
	Nominal	Maximum (L_1 —Nut length)	L_1	L_2	L_3
W4003SA-1Z-C5Z5	250	291	380	400	572
W4005SA-1Z-C5Z5	450	491	580	600	772
W4007SA-1Z-C5Z5	650	691	780	800	1039
W4009SA-1Z-C5Z5	850	891	980	1000	1239
W4011SA-1Z-C5Z5	1050	1091	1180	1200	1439
W4015SA-1Z-C5Z5	1450	1491	1580	1600	1839

- Remarks
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use. Refer to Page D13 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.

Left side shaft end	Lead accuracy			Shaft run-out **	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
	T	e_p	v_u			Supporting condition	
	Fixed - Simple support		Fixed - Fixed				
II	-0.009	0.025	0.020	0.035	6.3	1750	—
II	-0.014	0.030	0.023	0.040	8.1	1750	—
I	-0.019	0.035	0.025	0.065	10.3	1750	1750
I	-0.024	0.040	0.027	0.065	12.2	1750	1750
I	-0.028	0.046	0.030	0.080	14.0	1750	1750
I	-0.038	0.054	0.035	0.100	17.7	1750	1750



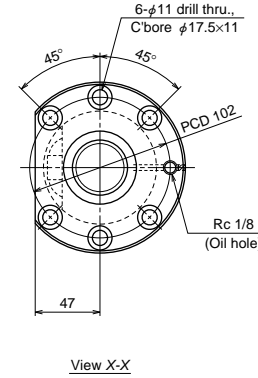
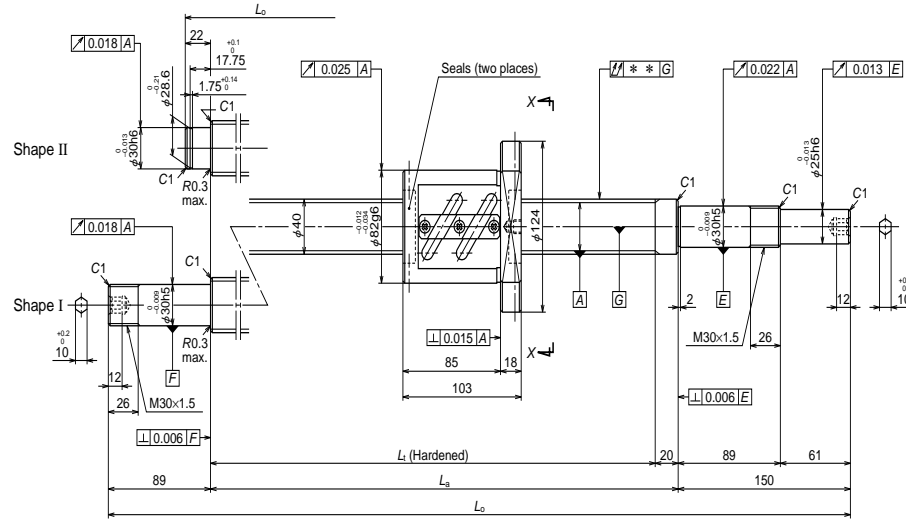
Ball screw specifications		
Shaft dia. x Lead / Direction of turn	40x8/Right	
Preload / Ball recirculation	Z preload / Return tube	
Ball dia. / Ball circle dia.	4.762/40.5	
Screw shaft root diameter	35.5	
Effective turns of balls	2.5x2	
Accuracy grade / Preload	C5/Z	
Basic load rating (N)	Dynamic C_a	34900
	Static C_{0a}	103000
Preload (N)	2450	
Dynamic friction torque, median, (N·cm)	64.0	
Spacer ball	None	
Factory packed grease	Refer to Remarks 2.	
Internal spatial volume of nut (cm ³)	27	
Standard volume of grease replenishing (cm ³)	14	

Recommended support unit	
WBK30DF-31	(round)

Ball screw No.	Stroke		Screw shaft length		
	Nominal	Maximum (L_1 —Nut length)	L_1	L_a	L_0
W4003SA-2Z-C5Z8	200	250	380	400	572
W4005SA-2Z-C5Z8	400	450	580	600	772
W4007SA-2Z-C5Z8	600	650	780	800	1039
W4009SA-2Z-C5Z8	800	850	980	1000	1239
W4011SA-2Z-C5Z8	1000	1050	1180	1200	1439
W4015SA-2Z-C5Z8	1400	1450	1580	1600	1839

Left side shaft end	Lead accuracy			Shaft run-out **	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
	T	e_p	v_u			Supporting condition	
	Fixed - Simple support		Fixed - Fixed				
II	-0.009	0.025	0.020	0.035	7.4	1750	—
II	-0.014	0.030	0.023	0.040	9.2	1750	—
I	-0.019	0.035	0.025	0.065	11.3	1750	1750
I	-0.024	0.040	0.027	0.065	13.1	1750	1750
I	-0.028	0.046	0.030	0.080	14.9	1750	1750
I	-0.038	0.054	0.035	0.100	18.5	1750	1750

- Remarks
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use. Refer to Page D13 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.



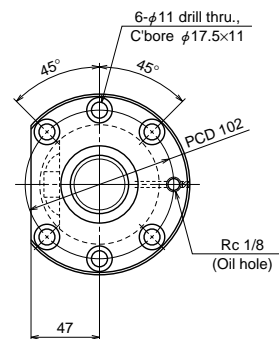
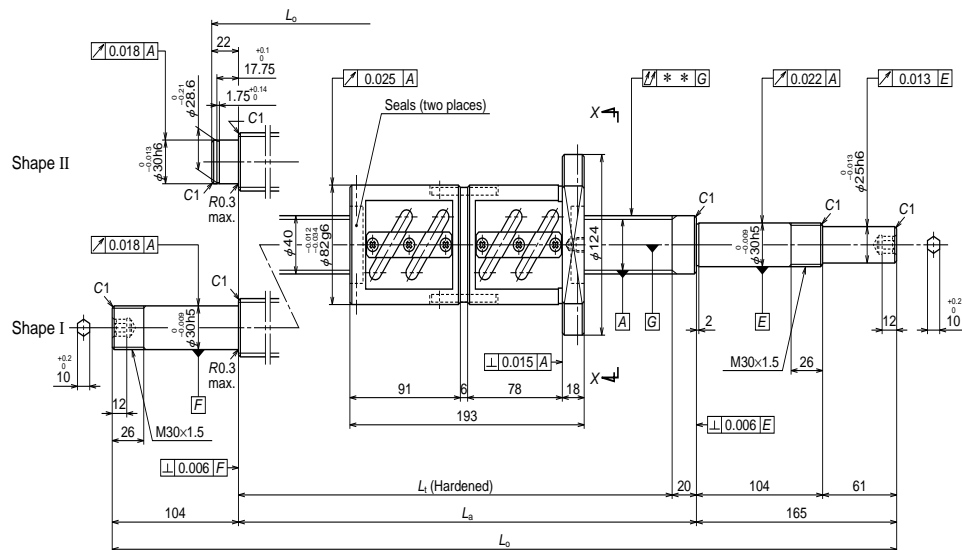
Ball screw specifications		
Shaft dia. x Lead / Direction of turn	40×10/Right	
Preload / Ball recirculation	Z preload / Return tube	
Ball dia. / Ball circle dia.	6.35/41	
Screw shaft root diameter	34.4	
Effective turns of balls	2.5×1	
Accuracy grade / Preload	C5/Z	
Basic load rating (N)	Dynamic C _a	28600
	Static C _{0a}	68600
Preload (N)	2160	
Dynamic friction torque, median, (N·cm)	64.0	
Spacer ball	None	
Factory packed grease	Refer to Remarks 2.	
Internal spatial volume of nut (cm ³)	30	
Standard volume of grease replenishing (cm ³)	15	

Recommended support unit	
WBK30DF-31	(round)

Ball screw No.	Stroke		Screw shaft length		
	Nominal	Maximum (L ₁ —Nut length)	L ₁	L ₂	L ₃
W4004SA-1Z-C5Z10	350	377	480	500	672
W4005SA-3Z-C5Z10	450	477	580	600	772
W4006SA-1Z-C5Z10	550	577	680	700	872
W4007SA-3Z-C5Z10	650	677	780	800	1039
W4009SA-3Z-C5Z10	850	877	980	1000	1239
W4011SA-3Z-C5Z10	1050	1077	1180	1200	1439
W4013SA-1Z-C5Z10	1250	1277	1380	1400	1639
W4015SA-3Z-C5Z10	1450	1477	1580	1600	1839
W4017SA-1Z-C5Z10	1650	1677	1780	1800	2039
W4023SA-1Z-C5Z10	2250	2277	2380	2400	2639

Left side shaft end	Lead accuracy			Shaft run-out **	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
	T	e _p	v _u			Supporting condition	
	Fixed - Simple support		Fixed - Fixed				
II	-0.012	0.027	0.020	0.040	8.7	1750	—
II	-0.014	0.030	0.023	0.040	9.6	1750	—
II	-0.016	0.035	0.025	0.050	10.4	1750	—
I	-0.019	0.035	0.025	0.065	11.7	1750	1750
I	-0.024	0.040	0.027	0.065	13.4	1750	1750
I	-0.028	0.046	0.030	0.080	15.1	1750	1750
I	-0.033	0.054	0.035	0.100	16.9	1750	1750
I	-0.038	0.054	0.035	0.100	18.6	1750	1750
I	-0.043	0.065	0.040	0.130	20.3	1670	1750
I	-0.057	0.077	0.046	0.170	25.5	930	1320

Remarks 1. We recommend NSK support unit. Refer to Page B433 for details.
 2. Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use. Refer to Page D13 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.



View X-X

Ball screw specifications

Shaft dia. x Lead / Direction of turn	40×10/Right	
Preload / Ball recirculation	D preload / Return tube	
Ball dia. / Ball circle dia.	6.35/41	
Screw shaft root diameter	34.4	
Effective turns of balls	2.5×2	
Accuracy grade / Preload	C5/Z	
Basic load rating (N)	Dynamic C _a	52000
	Static C _{0a}	137000
Preload (N)	3630	
Dynamic friction torque, median, (N·cm)	108	
Spacer ball	None	
Factory packed grease	Refer to Remarks 2.	
Internal spatial volume of nut (cm ³)	59	
Standard volume of grease replenishing (cm ³)	30	

Recommended support unit

WBK30DFD-31	(round)
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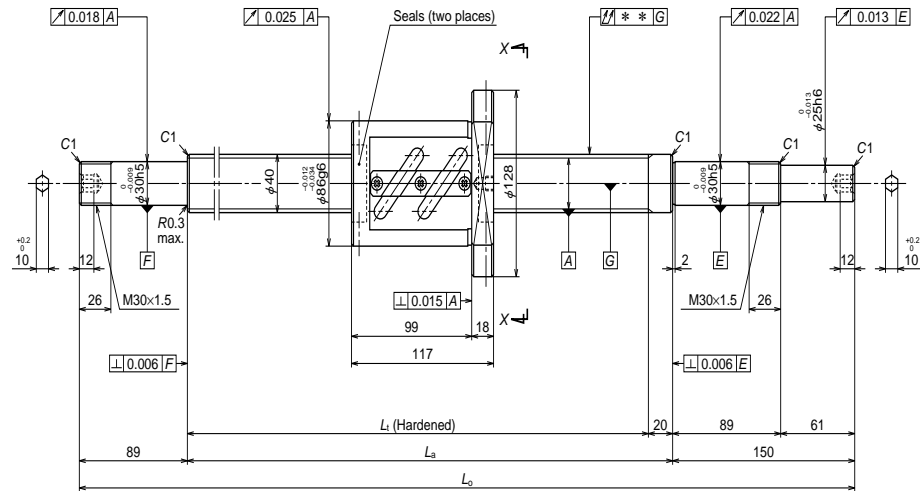
Ball screw No.	Stroke		Screw shaft length		
	Nominal	Maximum (L ₁ —Nut length)	L ₁	L ₂	L ₀
W4004SA-2D-C5Z10	250	287	480	500	687
W4005SA-4D-C5Z10	350	387	580	600	787
W4006SA-2D-C5Z10	450	487	680	700	887
W4007SA-4D-C5Z10	550	587	780	800	1069
W4009SA-4D-C5Z10	750	787	980	1000	1269
W4011SA-4D-C5Z10	950	987	1180	1200	1469
W4013SA-2D-C5Z10	1150	1187	1380	1400	1669
W4015SA-4D-C5Z10	1350	1387	1580	1600	1869
W4017SA-2D-C5Z10	1550	1587	1780	1800	2069
W4023SA-2D-C5Z10	2150	2187	2380	2400	2669

- Remarks
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use. Refer to Page D13 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.

Left side shaft end	Lead accuracy			Shaft run-out **	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
	T	e _p	v _u			Supporting condition	
						Fixed - Simple support	Fixed - Fixed
II	-0.012	0.027	0.020	0.040	11.0	1750	—
II	-0.014	0.030	0.023	0.040	11.9	1750	—
II	-0.016	0.035	0.025	0.050	12.7	1750	—
I	-0.019	0.035	0.025	0.065	14.1	1750	1750
I	-0.024	0.040	0.027	0.080	15.8	1750	1750
I	-0.028	0.046	0.030	0.080	17.5	1750	1750
I	-0.033	0.054	0.035	0.100	19.3	1750	1750
I	-0.038	0.054	0.035	0.100	21.0	1750	1750
I	-0.043	0.065	0.040	0.130	22.7	1750	1750
I	-0.057	0.077	0.046	0.170	27.9	960	1370

Finished shaft end SA Type

(Fine lead) Dia. 40, Lead 12

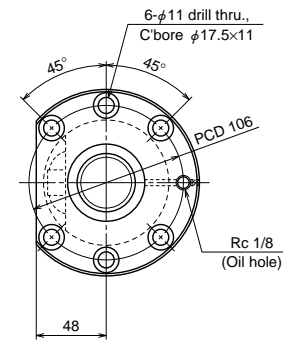


Nut models: ZFT

NSK

ø40×12

Unit: mm



View X-X

Ball screw specifications

Shaft dia. x Lead / Direction of turn	40×12/Right	
Preload / Ball recirculation	Z preload / Return tube	
Ball dia. / Ball circle dia.	7.144/41.5	
Screw shaft root diameter	34.1	
Effective turns of balls	2.5×1	
Accuracy grade / Preload	C5/Z	
Basic load rating (N)	Dynamic C_a	33600
	Static C_{0a}	77500
Preload (N)	2550	
Dynamic friction torque, median, (N·cm)	83.0	
Spacer ball	None	
Factory packed grease	Refer to Remarks 2.	
Internal spatial volume of nut (cm ³)	33	
Standard volume of grease replenishing (cm ³)	17	

Recommended support unit

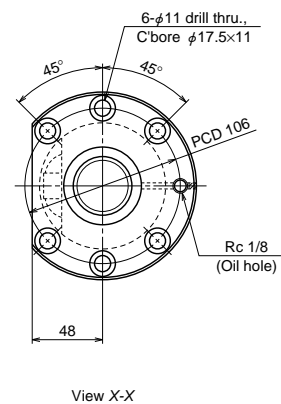
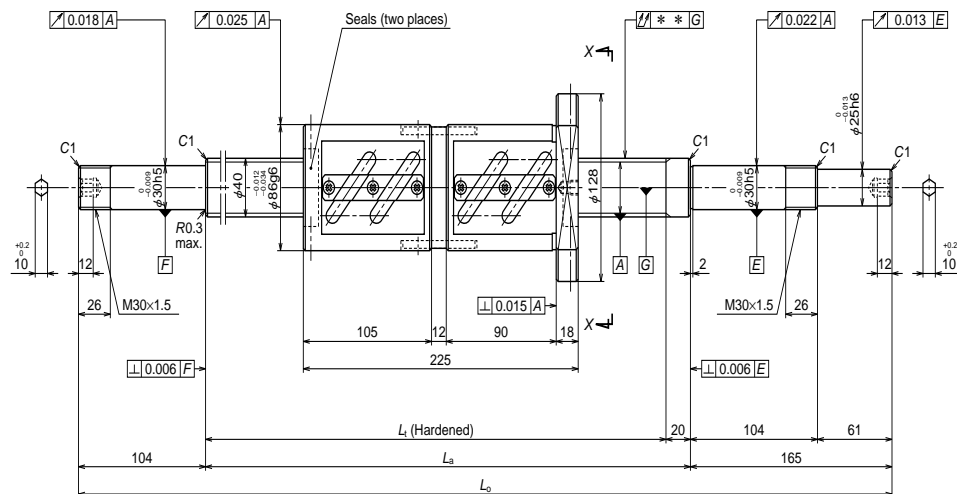
WBK30DF-31	(round)
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Unit: mm

Ball screw No.	Stroke		Screw shaft length		
	Nominal	Maximum (L_i —Nut length)	L_1	L_a	L_o
W4006SA-3Z-C5Z12	500	563	680	700	939
W4009SA-5Z-C5Z12	800	863	980	1000	1239
W4013SA-3Z-C5Z12	1200	1263	1380	1400	1639
W4017SA-3Z-C5Z12	1600	1663	1780	1800	2039
W4024SA-1Z-C5Z12	2300	2363	2480	2500	2739

- Remarks
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. **Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use.** Refer to Page D13 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.

Lead accuracy			Shaft run-out **	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
T	e_p	v_u			Supporting condition	
					Fixed - Simple support	Fixed - Fixed
-0.016	0.035	0.025	0.050	11.6	1750	1750
-0.024	0.040	0.027	0.065	14.2	1750	1750
-0.033	0.054	0.035	0.100	17.7	1750	1750
-0.043	0.065	0.040	0.130	21.2	1670	1750
-0.060	0.077	0.046	0.170	27.2	850	1220



Ball screw specifications		
Shaft dia. x Lead / Direction of turn	40×12/Right	
Preload / Ball recirculation	D preload / Return tube	
Ball dia. / Ball circle dia.	7.144/41.5	
Screw shaft root diameter	34.1	
Effective turns of balls	2.5×2	
Accuracy grade / Preload	C5/Z	
Basic load rating (N)	Dynamic C_a	61000
	Static C_{0a}	155000
Preload (N)	4310	
Dynamic friction torque, median, (N·cm)	137	
Spacer ball	None	
Factory packed grease	Refer to Remarks 2.	
Internal spatial volume of nut (cm ³)	76	
Standard volume of grease replenishing (cm ³)	38	

Recommended support unit	
WBK30DFD-31	(round)

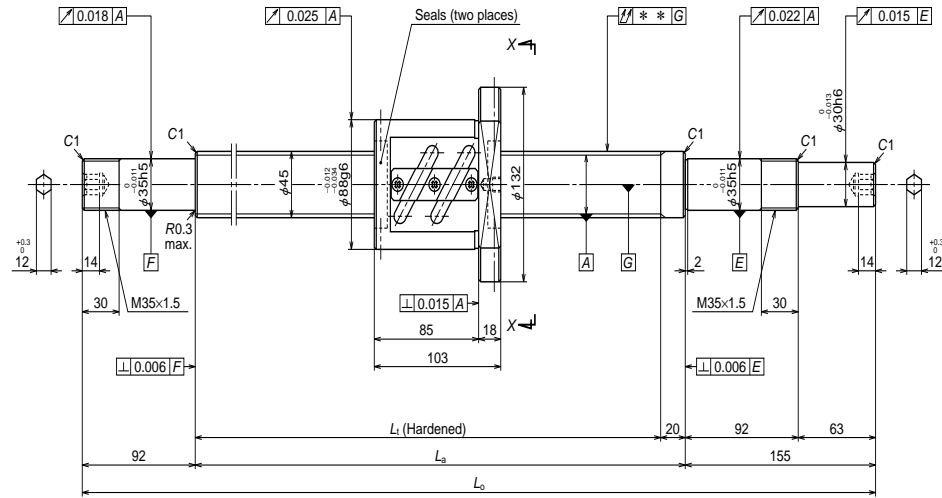
Ball screw No.	Stroke		Screw shaft length		
	Nominal	Maximum (L_1 —Nut length)	L_1	L_a	L_o
W4006SA-4D-C5Z12	400	455	680	700	969
W4009SA-6D-C5Z12	700	755	980	1000	1269
W4013SA-4D-C5Z12	1100	1155	1380	1400	1669
W4017SA-4D-C5Z12	1500	1555	1780	1800	2069
W4024SA-2D-C5Z12	2200	2255	2480	2500	2769

Lead accuracy			Shaft run-out **	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
T	e_p	v_u			Supporting condition	
					Fixed - Simple support	Fixed - Fixed
-0.016	0.035	0.025	0.050	14.8	1750	1750
-0.024	0.040	0.027	0.080	17.4	1750	1750
-0.033	0.054	0.035	0.100	20.9	1750	1750
-0.043	0.065	0.040	0.130	24.3	1750	1750
-0.060	0.077	0.046	0.170	30.4	880	1260

- Remarks
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use. Refer to Page D13 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.

Finished shaft end SA Type

(Fine lead) Dia. 45, Lead 10

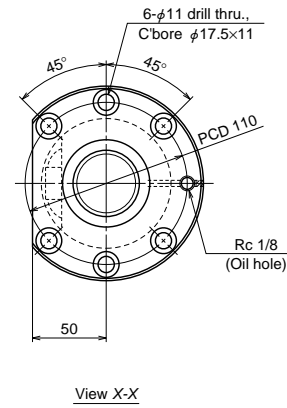


Nut models: ZFT

NSK

ø45×10

Unit: mm



Ball screw specifications

Shaft dia. x Lead / Direction of turn	45×10/Right	
Preload / Ball recirculation	Z preload / Return tube	
Ball dia. / Ball circle dia.	6.35/46	
Screw shaft root diameter	39.4	
Effective turns of balls	2.5×1	
Accuracy grade / Preload	C5/Z	
Basic load rating (N)	Dynamic C _a	29900
	Static C _{0a}	77300
Preload (N)	2260	
Dynamic friction torque, median, (N·cm)	69.0	
Spacer ball	None	
Factory packed grease	Refer to Remarks 2.	
Internal spatial volume of nut (cm ³)	33	
Standard volume of grease replenishing (cm ³)	17	

Recommended support unit

WBK35DF-31	(round)
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Unit: mm

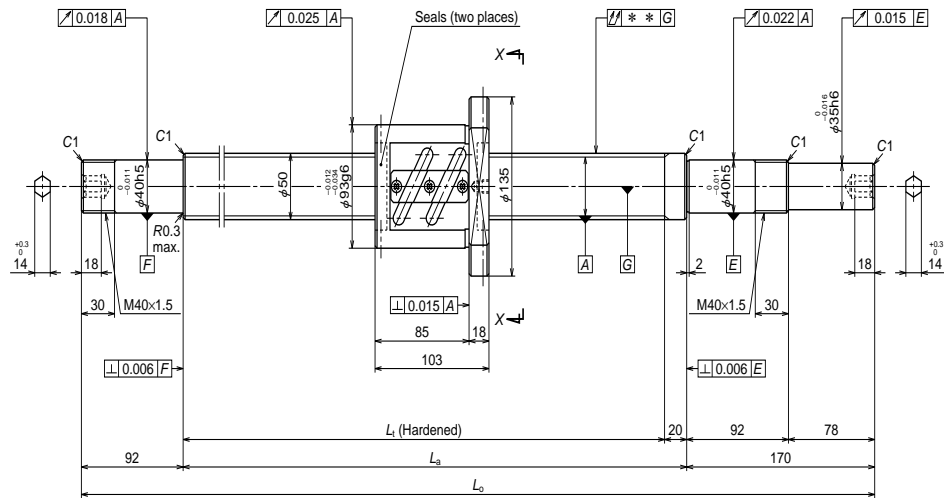
Ball screw No.	Stroke		Screw shaft length		
	Nominal	Maximum (L ₁ —Nut length)	L ₁	L ₂	L ₀
W4506SA-1Z-C5Z10	550	577	680	700	947
W4509SA-1Z-C5Z10	850	877	980	1000	1247
W4513SA-1Z-C5Z10	1250	1277	1380	1400	1647
W4517SA-1Z-C5Z10	1650	1677	1780	1800	2047
W4524SA-1Z-C5Z10	2350	2377	2480	2500	2747

Lead accuracy			Shaft run-out **	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
T	e _p	v _u			Supporting condition	
			μ			
				Fixed - Simple support	Fixed - Fixed	
-0.016	0.035	0.025	0.050	13.4	1550	1550
-0.024	0.040	0.027	0.065	16.7	1550	1550
-0.033	0.054	0.035	0.100	21.2	1550	1550
-0.043	0.065	0.040	0.130	25.6	1550	1550
-0.060	0.077	0.046	0.170	33.4	980	1400

- Remarks
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. **Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use.** Refer to Page D13 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.

Finished shaft end SA Type

(Fine lead) Dia. 50, Lead 10

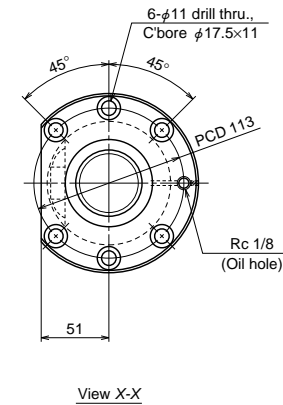


Nut models: ZFT

NSK

ø50×10

Unit: mm



Ball screw specifications

Shaft dia. x Lead / Direction of turn	50×10/Right	
Preload / Ball recirculation	Z preload / Return tube	
Ball dia. / Ball circle dia.	6.35/51	
Screw shaft root diameter	44.4	
Effective turns of balls	2.5×1	
Accuracy grade / Preload	C5/Z	
Basic load rating (N)	Dynamic C _a	31800
	Static C _{0a}	87400
Preload (N)	2450	
Dynamic friction torque, median, (N·cm)	79.0	
Spacer ball	None	
Factory packed grease	Refer to Remarks 2.	
Internal spatial volume of nut (cm ³)	37	
Standard volume of grease replenishing (cm ³)	19	

Recommended support unit

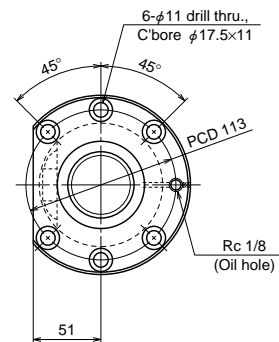
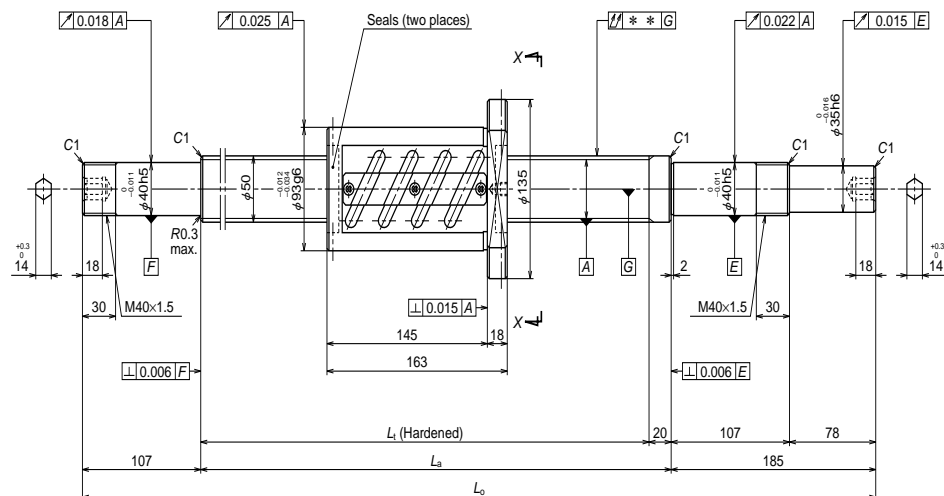
WBK40DF-31	(round)
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Unit: mm

Ball screw No.	Stroke		Screw shaft length		
	Nominal	Maximum (L ₁ —Nut length)	L ₁	L ₂	L ₀
W5005SA-1Z-C5Z10	450	477	580	600	862
W5007SA-1Z-C5Z10	650	677	780	800	1062
W5009SA-1Z-C5Z10	850	877	980	1000	1262
W5011SA-1Z-C5Z10	1050	1077	1180	1200	1462
W5014SA-1Z-C5Z10	1350	1377	1480	1500	1762
W5019SA-1Z-C5Z10	1850	1877	1980	2000	2262
W5025SA-1Z-C5Z10	2450	2477	2580	2600	2862

- Remarks
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. **Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use.** Refer to Page D13 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.

Lead accuracy			Shaft run-out **	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
T	e _p	v _u			Supporting condition	
					Fixed - Simple support	Fixed - Fixed
-0.014	0.030	0.023	0.050	14.8	1400	1400
-0.019	0.035	0.025	0.065	17.6	1400	1400
-0.024	0.040	0.027	0.080	20.3	1400	1400
-0.028	0.046	0.030	0.080	23.1	1400	1400
-0.036	0.054	0.035	0.100	27.3	1400	1400
-0.048	0.065	0.040	0.130	34.2	1400	1400
-0.062	0.093	0.054	0.170	42.5	1020	1400



View X-X

Ball screw specifications

Shaft dia. x Lead / Direction of turn	50×10/Right	
Preload / Ball recirculation	Z preload / Return tube	
Ball dia. / Ball circle dia.	6.35/51	
Screw shaft root diameter	44.4	
Effective turns of balls	2.5×2	
Accuracy grade / Preload	C5/Z	
Basic load rating (N)	Dynamic C _a	57700
	Static C _{0a}	175000
Preload (N)	4020	
Dynamic friction torque, median, (N·cm)	137	
Spacer ball	None	
Factory packed grease	Refer to Remarks 2.	
Internal spatial volume of nut (cm ³)	59	
Standard volume of grease replenishing (cm ³)	30	

Recommended support unit

WBK40DFD-31	(round)
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Ball screw No.	Stroke		Screw shaft length		
	Nominal	Maximum (L _t —Nut length)	L _t	L _a	L _o
W5005SA-2Z-C5Z10	350	417	580	600	892
W5007SA-2Z-C5Z10	550	617	780	800	1092
W5009SA-2Z-C5Z10	750	817	980	1000	1292
W5011SA-2Z-C5Z10	950	1017	1180	1200	1492
W5014SA-2Z-C5Z10	1250	1317	1480	1500	1792
W5019SA-2Z-C5Z10	1750	1817	1980	2000	2292
W5025SA-2Z-C5Z10	2350	2417	2580	2600	2892

Lead accuracy			Shaft run-out **	Mass (kg)	Permissible rotational speed N (min ⁻¹)	
T	e _p	v _i			Supporting condition	
			μm		Fixed - Simple support	Fixed - Fixed
-0.014	0.030	0.023			0.050	16.8
-0.019	0.035	0.025	0.065	19.6	1400	1400
-0.024	0.040	0.027	0.080	22.3	1400	1400
-0.028	0.046	0.030	0.080	25.1	1400	1400
-0.036	0.054	0.035	0.100	29.3	1400	1400
-0.048	0.065	0.040	0.130	36.2	1400	1400
-0.062	0.093	0.054	0.170	44.6	1040	1400

- Remarks
1. We recommend NSK support unit. Refer to Page B433 for details.
 2. Only rust preventive agent is applied at time of delivery. Please apply lubricant (oil or grease) before use. Refer to Page D13 for details.
 3. Contact NSK if permissible rotational speed is to be exceeded.