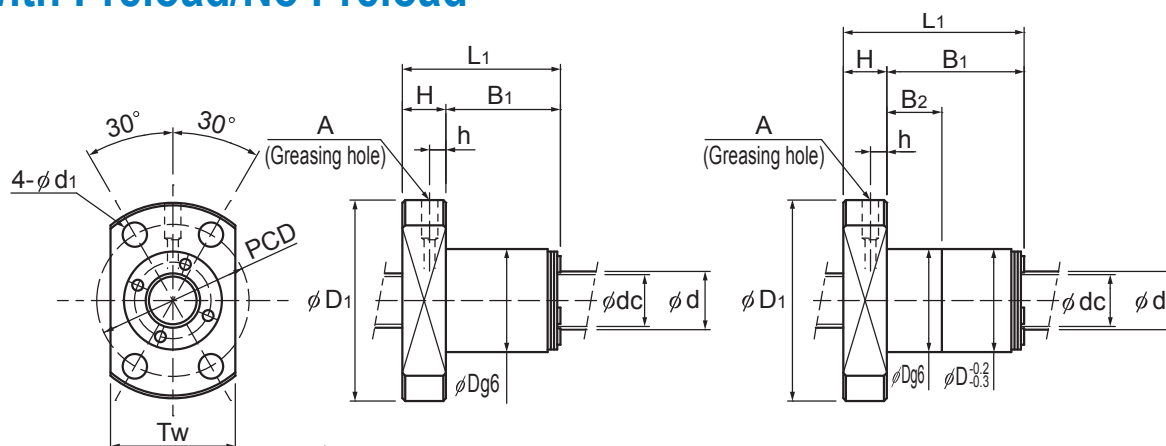


SDA-V/SDA-VZ With Preload/No Preload

DN value	SDA-V (With Retainer)	160000
	SDA-VZ (Full-Ball)	100000



SDA1205VZ/1210VZ

SDA1220VZ/1230VZ

Model No.	Screw shaft outer diameter	Lead	Ball center-to-center diameter	Screw shaft Thread minor diameter	No. of loaded circuits	Basic load rating				Rigidity	
						SDA-V (With Retainer)		SDA-VZ (Full-Ball)		SDA-V (With Retainer)	SDA-VZ (Full-Ball)
						Ca	C _{0a}	Ca	C _{0a}	K	K
	d	Ph	dp	dc	Rows × turns	kN	kN	kN	kN	N/μm	N/μm
* SDA 1205VZ-3	12	5	12.5	10.1	1×3	—	—	4.99	7.02	—	128
* SDA 1210VZ-2	12	10	12.5	10.1	1×2	—	—	3.31	4.25	—	83
* SDA 1220VZ-2	12	20	12.5	10.1	1×2	—	—	3.13	4.63	—	87
* SDA 1230VZ-2	12	30	12.5	10.1	1×2	—	—	2.92	4.14	—	91
SDA 1405V-4	14	5	14.5	12.1	1×4	7.4	10.1	7.1	11.3	178	196
SDA 1505V-3	15	5	15.5	13.1	1×3	5.9	7.9	5.6	8.8	140	153
SDA 1510V-3	15	10	15.5	13.1	1×3	5.8	7.6	5.5	8.4	141	154
SDA 1520V-4	15	20	15.5	13.1	2×2	6.8	10.1	6.5	11.2	181	198
SDA 1530V-4	15	30	15.5	13.1	2×2	6.5	8.8	6.2	9.7	188	205
SDA 1605V-3	16	5	16.5	14.1	1×3	6	8.4	5.8	9.4	147	162
SDA 1610V-3	16	10	16.5	14.1	1×3	6	8.1	5.7	9	148	163
SDA 1616V-3	16	16	16.5	14.1	1×3	5.9	8.4	5.6	9.2	151	165

Note) Models marked with an asterisk (*) in the dimension table are only compatible with Model SDA-VZ (full-ball type).

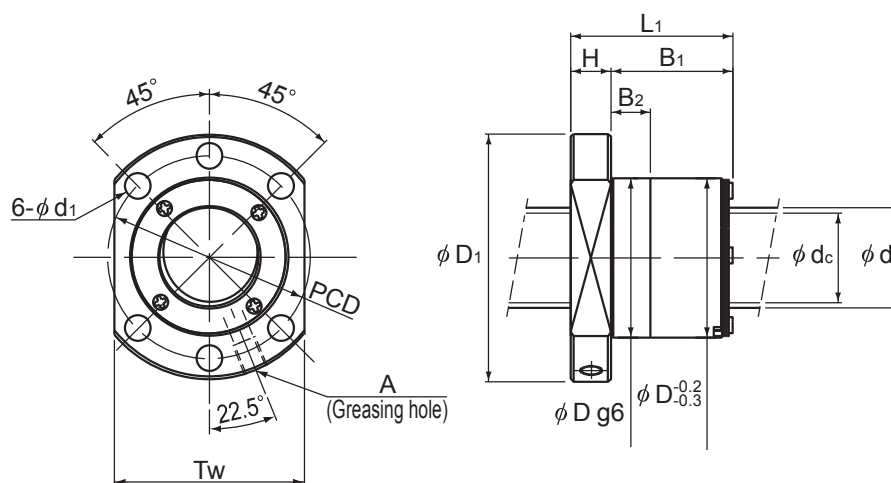
Model number coding

SDA1510V Z -3 TT GO +600L C5

Model No. Number of turns Overall screw shaft length (in mm) Accuracy symbol (*3)
 Full-Ball type code (No code for retainer type) Contamination protection accessory symbol (*1) Axial direction clearance code (*2) (Preloaded products: GO Clearance, Non-preloaded products: GT Clearance)

(*1) See **A15-308**. (*2) See **A15-19**. (*3) See **A15-12**.

Positioning, ISO 3408 compliant



SDA1405V/1505V/1510V/1520V/
1530V/1605V/1610V/1616V

Unit: mm

	Nut dimensions										Screw shaft inertial moment/mm ²	Nut mass	Shaft mass	Permissible Rotational Speed				
	Outer diameter	Flange diameter	Overall length	H	B ₁	B ₂	PCD	d ₁	T _w	Greasing hole				kg·m ² /mm	kg	kg/m	SDA-V (With Retainer)	SDA-VZ (Full-Ball)
																	min ⁻¹	min ⁻¹
D	D ₁	L ₁	H	B ₁	B ₂	PCD	d ₁	T _w	A	kg·m ² /mm	kg	kg/m	min ⁻¹	min ⁻¹				
24	40	25	8	17	—	32	4.5	26	φ 3	1.60 × 10 ⁻⁸	0.07	0.80	—	5000				
24	40	29	8	21	—	32	4.5	26	φ 3	1.60 × 10 ⁻⁸	0.08	0.84	—	5000				
24	40	47	8	39	20	32	4.5	26	φ 3	1.60 × 10 ⁻⁸	0.13	0.86	—	5000				
24	40	65	8	57	20	32	4.5	26	φ 3	1.60 × 10 ⁻⁸	0.17	0.87	—	5000				
26	48	30	10	20	10	38	5.5	40	M6	2.96 × 10 ⁻⁸	0.14	1.10	5000	5000				
28	48	25	10	15	12.5	38	5.5	40	M6	3.90 × 10 ⁻⁸	0.13	1.27	5000	5000				
28	48	38	10	28	25.5	38	5.5	40	M6	3.90 × 10 ⁻⁸	0.17	1.33	5000	5000				
28	48	46	10	36	20	38	5.5	40	M6	3.90 × 10 ⁻⁸	0.19	1.33	5000	5000				
28	48	65	10	55	20	38	5.5	40	M6	3.90 × 10 ⁻⁸	0.25	1.34	5000	5000				
28	48	25	10	15	12.5	38	5.5	40	M6	5.05 × 10 ⁻⁸	0.13	1.46	5000	5000				
28	48	39	10	29	26.5	38	5.5	40	M6	5.05 × 10 ⁻⁸	0.16	1.52	5000	5000				
28	48	56	10	46	20	38	5.5	40	M6	5.05 × 10 ⁻⁸	0.21	1.54	5000	5000				

Axial Clearance

Unit: mm

Clearance symbol	G0	GT
Axial Clearance	0 or less	0 to 0.005

Note) See **A15-19** for the axial direction clearance for models SDA1205VZ to SDA1230VZ.

The overall length of the nut will increase when equipping the QZ lubricating device. See **A15-318** for further details.

It is not possible to chamfer both ends of the screw shaft. When designing your system this way, contact THK.

The rigidity values (K) in the table represent spring constants, each obtained from the load and the elastic deformation under an axial load equal to 30% of the basic axial dynamic load rating (Ca).

These values do not include the rigidity of the components related to mounting the ball screw nut. Therefore, it is normally appropriate to regard roughly 80% of the rigidity value (K) in the table as the actual value.

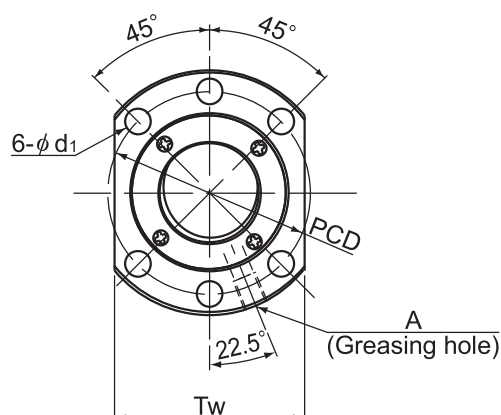
If the axial load (Fa) is not 0.3 Ca, the rigidity value (K_N) is obtained from the following equation.

$$K_N = K \left(\frac{F_a}{0.3C_a} \right)^{\frac{1}{3}}$$

K: Rigidity value in the dimensional table.

SDA-V/SDA-VZ With Preload/No Preload

DN value	SDA-V (With Retainer)	160000
	SDA-VZ (Full-Ball)	100000



Model No.	Screw shaft outer diameter d	Lead Ph	Ball center-to-center diameter dp	Screw shaft Thread minor diameter dc	No. of loaded circuits Rows X turns	Basic load rating				Rigidity	
						SDA-V (With Retainer)		SDA-VZ (Full-Ball)		SDA-V (With Retainer)	SDA-VZ (Full-Ball)
						Ca kN	C _{0a} kN	Ca kN	C _{0a} kN	K N/μm	K N/μm
SDA 2004V-4	20	4	20.5	18.1	1×4	8.8	14.7	8.3	16.2	239	260
SDA 2005V-3	20	5	20.75	17.1	1×3	11.7	17.7	11.1	18.9	200	213
SDA 2010V-3	20	10	20.75	17.1	1×3	11.6	17.7	11	19	200	213
SDA 2020V-3	20	20	20.75	17.1	1×3	11.4	17.2	10.8	18.5	203	217
SDA 2030V-2	20	30	20.75	17.1	1×2	7.4	11.5	7	12.3	135	143
SDA 2040V-2	20	40	20.75	17.1	1×2	7.1	9.7	6.8	10.4	137	147
SDA 2505V-3	25	5	25.75	22.1	1×3	12.9	22	12.3	23.7	237	254
SDA 2510V-3	25	10	25.75	22.1	1×3	12.8	22	12.2	23.8	237	254
SDA 2520V-3	25	20	25.75	22.1	1×3	12.7	21.3	12.1	22.9	241	257
SDA 2525V-3	25	25	25.75	22.1	1×3	12.5	21.6	11.9	23.3	243	259
SDA 2530V-2	25	30	25.75	22.1	1×2	8.3	13.9	7.9	14.9	158	168
SDA 2550V-2	25	50	25.75	22.1	1×2	7.8	12.1	7.5	13.1	163	176

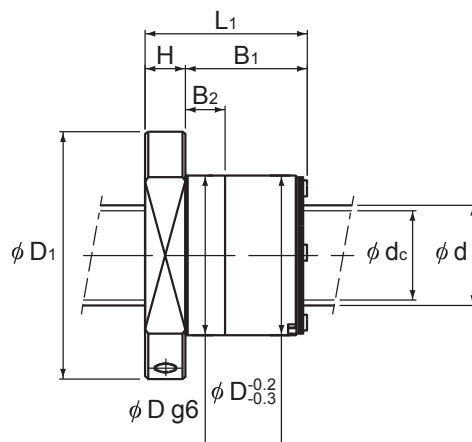
Model number coding

SDA2005V Z -3 TT G0 +830L C5

Model No. Full-Ball type code (No code for retainer type)	Number of turns Contamination protection accessory symbol (*1)	Overall screw shaft length (in mm) Axial direction clearance code (*2) (Preloaded products: GO Clearance, Non-preloaded products: GT Clearance)	Accuracy symbol (*3)
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(*1) See **A15-308**. (*2) See **A15-19**. (*3) See **A15-12**.

Positioning, ISO 3408 compliant



Unit: mm

	Nut dimensions										Screw shaft inertial moment/mm kg·m ² /mm	Nut mass kg	Shaft mass kg/m	Permissible Rotational Speed	
	Outer diameter D	Flange diameter D ₁	Overall length L ₁	H	B ₁	B ₂	PCD	d ₁	T _w	Greasing hole A				SDA-V (With Retainer) min ⁻¹	SDA-VZ (Full-Ball) min ⁻¹
	32	58	27	10	17	13.8	47	6.6	44	M6	1.23×10 ⁻⁷	0.17	2.27	5000	4870
	36	58	27	10	17	13.5	47	6.6	44	M6	1.23×10 ⁻⁷	0.18	2.21	5000	4810
	36	58	40	10	30	27	47	6.6	44	M6	1.23×10 ⁻⁷	0.25	2.34	5000	4810
	36	58	67	10	57	20	47	6.6	44	M6	1.23×10 ⁻⁷	0.39	2.4	5000	4810
	36	58	66	10	56	20	47	6.6	44	M6	1.23×10 ⁻⁷	0.38	2.42	5000	4810
	36	58	84	10	74	20	47	6.6	44	M6	1.23×10 ⁻⁷	0.47	2.43	5000	4810
	40	62	27	10	17	13.5	51	6.6	48	M6	3.01×10 ⁻⁷	0.2	3.53	5000	3880
	40	62	40	10	30	27	51	6.6	48	M6	3.01×10 ⁻⁷	0.28	3.7	5000	3880
	40	62	67	10	57	20	51	6.6	48	M6	3.01×10 ⁻⁷	0.42	3.78	5000	3880
	40	62	82	10	72	20	51	6.6	48	M6	3.01×10 ⁻⁷	0.5	3.79	5000	3880
	40	62	66	10	56	20	51	6.6	48	M6	3.01×10 ⁻⁷	0.41	3.8	5000	3880
	40	62	102	10	92	20	51	6.6	48	M6	3.01×10 ⁻⁷	0.61	3.83	5000	3880

Axial Clearance

Unit: mm

Clearance symbol	G0	GT
Axial Clearance	0 or less	0 to 0.005

Note) The overall length of the nut will increase when equipping the QZ lubricating device. See **A15-318** for further details.
It is not possible to chamfer both ends of the screw shaft. When designing your system this way, contact THK.

The rigidity values (K) in the table represent spring constants, each obtained from the load and the elastic deformation under an axial load equal to 30% of the basic axial dynamic load rating (Ca).

These values do not include the rigidity of the components related to mounting the ball screw nut. Therefore, it is normally appropriate to regard roughly 80% of the rigidity value (K) in the table as the actual value.

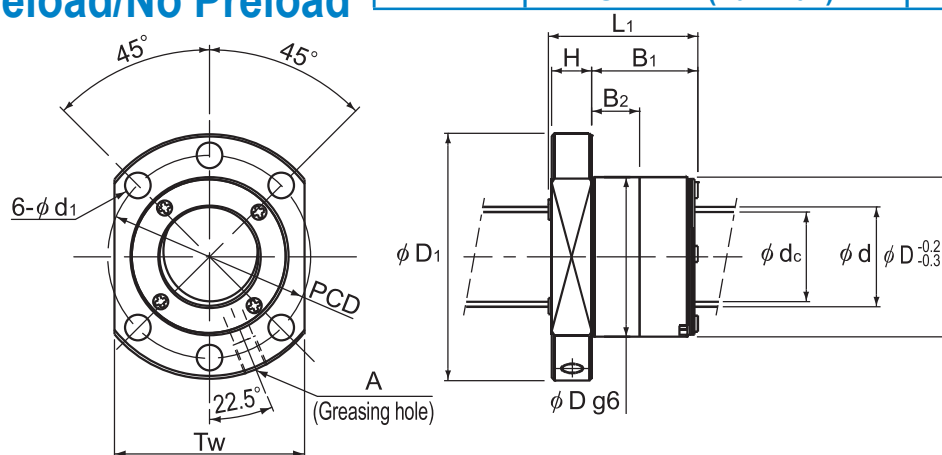
If the axial load (Fa) is not 0.3 Ca, the rigidity value (K_N) is obtained from the following equation.

$$K_N = K \left(\frac{F_a}{0.3C_a} \right)^{\frac{1}{3}}$$

K: Rigidity value in the dimensional table.

SDA-V/SDA-VZ With Preload/No Preload

DN value	SDA-V (With Retainer)	160000
	SDA-VZ (Full-Ball)	130000

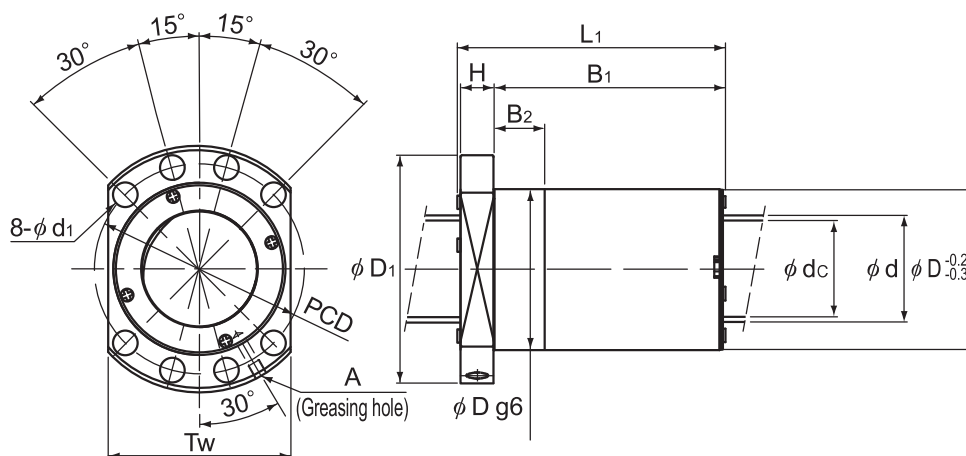


SDA2806V/3110V/3112V/3116V/3120V/3132V/3205V/3210V

Model No.	Screw shaft outer diameter d	Lead Ph	Ball center-to-center diameter dp	Screw shaft Thread minor diameter dc	No. of loaded circuits Rows X turns	Basic load rating				Rigidity	
						SDA-V (With Retainer)		SDA-VZ (Full-Ball)		SDA-V (With Retainer)	SDA-VZ (Full-Ball)
						Ca kN	C _{0a} kN	Ca kN	C _{0a} kN	K N/μm	K N/μm
SDA 2806V-5	28	6	29	24.9	1×5	29.6	54.5	28.2	57.7	462	487
SDA 3110V-5	31	10	32	25.4	1×5	57.1	94.7	54.4	99.7	529	554
SDA 3112V-5	31	12	32	25.4	1×5	57	94.7	54.3	99.9	529	555
SDA 3116V-5	31	16	32	25.4	1×5	56.8	96	54.1	100.5	534	556
SDA 3120V-5	31	20	32	25.4	1×5	56.6	90.3	53.9	95.1	533	558
SDA 3132V-2	31	32	32	25.4	1×2	23.2	33.8	22.1	35.4	206	214
SDA 3205V-4	32	5	32.75	29.1	1×4	18.8	38.5	17.9	41.7	388	416
SDA 3210V-5	32	10	33	28.9	1×5	31.3	62.9	29.8	66.3	517	541
SDA 3610V-5	36	10	37	30.4	1×5	61.7	110.6	58.8	116.4	598	626
SDA 3612V-5	36	12	37	30.4	1×5	61.7	110.6	58.7	116.6	598	627
SDA 3616V-5	36	16	37	30.4	1×5	61.5	111.9	58.6	117.1	603	628
SDA 3620V-5	36	20	37	30.4	1×5	61.3	105.2	58.4	110.6	602	629
SDA 3636V-2	36	36	37	30.4	1×2	25.1	39.3	23.9	41.3	232	242
SDA 3810V-5	38	10	39	32.4	1×5	63.4	117.7	60.4	123.1	629	654
SDA 3812V-5	38	12	39	32.4	1×5	63.4	117.7	60.3	123.3	628	655
SDA 3816V-5	38	16	39	32.4	1×5	63.2	117.7	60.2	123.7	627	656
SDA 3820V-5	38	20	39	32.4	1×5	63	111.9	60	116.9	632	657
SDA 3825V-4	38	25	39	32.4	1×4	51.1	87.8	48.6	92.7	500	525
SDA 3830V-3	38	30	39	32.4	1×3	38.7	64.9	36.9	68.2	373	390
SDA 3840V-2	38	40	39	32.4	1×2	25.7	42	24.4	43.9	244	253

Model number coding

SDA3810V	Z	-5	TT	G0	+830L	C5
Model No.	Full-Ball type code (No code for retainer type)	Number of turns	Contamination protection accessory symbol (*1)	Axial direction clearance code (*2) (Preloaded products: G0 Clearance, Non-preloaded products: GT Clearance)	Overall screw shaft length (in mm)	Accuracy symbol (*3)
(*1) See A15-308 . (*2) See A15-19 . (*3) See A15-12 .						



SDA3610V/3612V/3616V/3620V/3636V/3810V/
3812V/3816V/3820V/3825V/3830V/3840V

Unit: mm

	Nut dimensions										Screw shaft inertial moment/mm	Nut mass	Shaft mass	Permissible Rotational Speed				
	Outer diameter	Flange diameter	Overall length	H	B ₁	B ₂	PCD	d ₁	T _w	Greasing hole				kg·m ² /mm	kg	kg/m	SDA-V (With Retainer)	SDA-VZ (Full-Ball)
																	min ⁻¹	min ⁻¹
D	D ₁	L ₁	H	B ₁	B ₂	PCD	d ₁	T _w	A	kg·m ² /mm	kg	kg/m	min ⁻¹	min ⁻¹				
46	80	42	12	30	10	65	9	62	M6	4.74×10^{-7}	0.49	4.37	5000	4480				
56	86	65	14	50	20	71	9	65	M6	7.07×10^{-7}	0.96	5.02	5000	4060				
56	86	74	14	59	20	71	9	65	M6	7.07×10^{-7}	1.08	5.17	5000	4060				
56	86	93	14	78	20	71	9	65	M6	7.07×10^{-7}	1.31	5.36	5000	4060				
56	86	112	14	97	20	71	9	65	M6	7.07×10^{-7}	1.54	5.47	5000	4060				
56	86	73	14	58	20	71	9	65	M6	7.07×10^{-7}	1.04	5.63	5000	4060				
50	80	32	12	20	16.5	65	9	62	M6	8.08×10^{-3}	0.41	5.89	4880	3960				
50	80	61	12	49	10	65	9	62	M6	8.08×10^{-7}	0.64	6.00	4840	3960				
61	91	65	14	50	20	76	9	68	M8	1.29×10^{-6}	1.06	6.93	4320	3510				
61	91	74	14	59	20	76	9	68	M8	1.29×10^{-6}	1.19	7.11	4320	3510				
61	91	93	14	78	20	76	9	68	M8	1.29×10^{-6}	1.45	7.34	4320	3510				
61	91	112	14	97	20	76	9	68	M8	1.29×10^{-6}	1.7	7.47	4320	3510				
61	91	81	14	66	20	76	9	68	M8	1.29×10^{-6}	1.24	7.69	4320	3510				
63	93	65	14	50	20	78	9	70	M8	1.60×10^{-6}	1.1	7.79	4100	3330				
63	93	74	14	59	20	78	9	70	M8	1.60×10^{-6}	1.23	7.97	4100	3330				
63	93	93	14	78	20	78	9	70	M8	1.60×10^{-6}	1.5	8.21	4100	3330				
63	93	112	14	97	20	78	9	70	M8	1.60×10^{-6}	1.77	8.35	4100	3330				
63	93	111	14	96	20	78	9	70	M8	1.60×10^{-6}	1.73	8.45	4100	3330				
63	93	100	14	85	20	78	9	70	M8	1.60×10^{-6}	1.56	8.53	4100	3330				
63	93	87	14	72	20	78	9	70	M8	1.60×10^{-6}	1.38	8.62	4100	3330				

Axial Clearance

Unit: mm

Clearance symbol	G0	GT
Axial Clearance	0 or less	0 to 0.005

Note) The overall length of the nut will increase when equipping the QZ lubricating device. See **A15-318** for further details.
It is not possible to chamfer both ends of the screw shaft. When designing your system this way, contact THK.

The rigidity values (K) in the table represent spring constants, each obtained from the load and the elastic deformation under an axial load equal to 30% of the basic axial dynamic load rating (Ca).

These values do not include the rigidity of the components related to mounting the ball screw nut. Therefore, it is normally appropriate to regard roughly 80% of the rigidity value (K) in the table as the actual value.

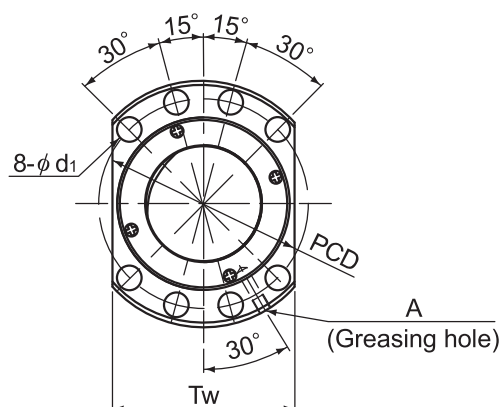
If the axial load (Fa) is not 0.3 Ca, the rigidity value (K_N) is obtained from the following equation.

$$K_N = K \left(\frac{F_a}{0.3C_a} \right)^{\frac{1}{3}}$$

K: Rigidity value in the dimensional table.

SDA-V/SDA-VZ With Preload/No Preload

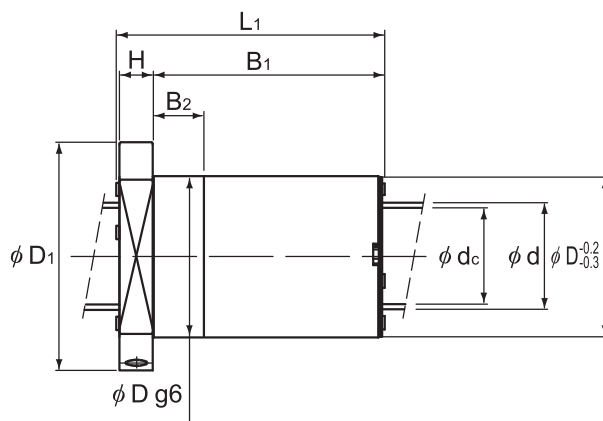
DN value	SDA-V (With Retainer)	160000
	SDA-VZ (Full-Ball)	130000



Model No.	Screw shaft outer diameter d	Lead Ph	Ball center-to-center diameter dp	Screw shaft Thread minor diameter dc	No. of loaded circuits Rows × turns	Basic load rating				Rigidity	
						SDA-V (With Retainer)		SDA-VZ (Full-Ball)		SDA-V (With Retainer)	SDA-VZ (Full-Ball)
						Ca kN	C _{0a} kN	Ca kN	C _{0a} kN	K N/μm	K N/μm
SDA 4510V-5	45	10	46	39.4	1×5	68.7	139.4	65.4	146.5	717	749
SDA 4512V-5	45	12	46	39.4	1×5	68.6	139.4	65.4	146.7	717	750
SDA 4516V-5	45	16	46	39.4	1×5	68.5	140.7	65.3	147	722	751
SDA 4520V-5	45	20	46	39.4	1×5	68.4	140.7	65.1	147.5	721	752
SDA 4525V-4	45	25	46	39.4	1×4	55.5	104	52.8	109.8	572	600
SDA 4530V-4	45	30	46	39.4	1×4	55.3	105.3	52.6	110.5	577	602
SDA 4540V-3	45	40	46	39.4	1×3	41.7	78.3	39.7	81.9	431	449
SDA 5010V-5	50	10	51	44.4	1×5	72	155.2	68.6	163.2	780	815
SDA 5012V-5	50	12	51	44.4	1×5	72	155.2	68.5	163.3	779	816
SDA 5016V-5	50	16	51	44.4	1×5	71.9	156.6	68.4	163.7	785	816
SDA 5020V-5	50	20	51	44.4	1×5	71.7	156.6	68.3	164.2	784	817
SDA 5025V-4	50	25	51	44.4	1×4	58.2	123.6	55.5	129.8	624	652
SDA 5030V-4	50	30	51	44.4	1×4	58	117.5	55.3	122.6	629	654
SDA 5040V-3	50	40	51	44.4	1×3	43.9	86.5	41.8	90.7	467	487
SDA 5050V-2	50	50	51	44.4	1×2	29.2	55.5	27.8	58	303	316

Model number coding

SDA4510V	Z	-5	TT	G0	+830L	C5
Model No.	Full-Ball type code (No code for retainer type)	Number of turns	Contamination protection accessory symbol (*1)	Axial direction clearance code (*2) (Preloaded products: GO Clearance, Non-preloaded products: GT Clearance)	Overall screw shaft length (in mm)	Accuracy symbol (*3)
(*1) See A15-308 . (*2) See A15-19 . (*3) See A15-12 .						



Unit: mm

	Nut dimensions										Screw shaft inertial moment/mm kg·m ² /mm	Nut mass kg	Shaft mass kg/m	Permissible Rotational Speed	
	Outer diameter D	Flange diameter D ₁	Overall length L ₁	H	B ₁	B ₂	PCD	d _i	T _w	Greasing hole A				SDA-V (With Retainer)	SDA-VZ (Full-Ball)
														min ⁻¹	min ⁻¹
	70	105	65	16	48	20	88	11	80	M8	3.16 × 10 ⁻⁶	1.35	11.16	3470	2820
	70	105	74	16	57	20	88	11	80	M8	3.16 × 10 ⁻⁶	1.5	11.38	3470	2820
	70	105	93	16	76	20	88	11	80	M8	3.16 × 10 ⁻⁶	1.81	11.67	3470	2820
	70	105	112	16	95	20	88	11	80	M8	3.16 × 10 ⁻⁶	2.11	11.84	3470	2820
	70	105	110	16	93	20	88	11	80	M8	3.16 × 10 ⁻⁶	2.04	11.95	3470	2820
	70	105	130	16	113	20	88	11	80	M8	3.16 × 10 ⁻⁶	2.36	12.04	3470	2820
	70	105	129	16	112	20	88	11	80	M8	3.16 × 10 ⁻⁶	2.33	12.16	3470	2820
	75	110	65	16	48	20	93	11	85	M8	4.82 × 10 ⁻⁶	1.46	13.93	3130	2540
	75	110	74	16	57	20	93	11	85	M8	4.82 × 10 ⁻⁶	1.63	14.19	3130	2540
	75	110	93	16	76	20	93	11	85	M8	4.82 × 10 ⁻⁶	1.96	14.5	3130	2540
	75	110	112	16	95	20	93	11	85	M8	4.82 × 10 ⁻⁶	2.29	14.69	3130	2540
	75	110	110	16	93	20	93	11	85	M8	4.82 × 10 ⁻⁶	2.22	14.82	3130	2540
	75	110	130	16	113	20	93	11	85	M8	4.82 × 10 ⁻⁶	2.57	14.92	3130	2540
	75	110	128	16	111	20	93	11	85	M8	4.82 × 10 ⁻⁶	2.52	15.06	3130	2540
	75	110	107	16	90	20	93	11	85	M8	4.82 × 10 ⁻⁶	2.13	15.13	3130	2540

Axial Clearance

Unit: mm

Clearance symbol	G0	GT
Axial Clearance	0 or less	0 to 0.005

Note) The overall length of the nut will increase when equipping the QZ lubricating device. See **A15-318** for further details.
It is not possible to chamfer both ends of the screw shaft. When designing your system this way, contact THK.

The rigidity values (K) in the table represent spring constants, each obtained from the load and the elastic deformation under an axial load equal to 30% of the basic axial dynamic load rating (Ca).

These values do not include the rigidity of the components related to mounting the ball screw nut. Therefore, it is normally appropriate to regard roughly 80% of the rigidity value (K) in the table as the actual value.
If the axial load (Fa) is not 0.3 Ca, the rigidity value (K_N) is obtained from the following equation.

$$K_N = K \left(\frac{F_a}{0.3C_a} \right)^{\frac{1}{3}}$$

K: Rigidity value in the dimensional table.