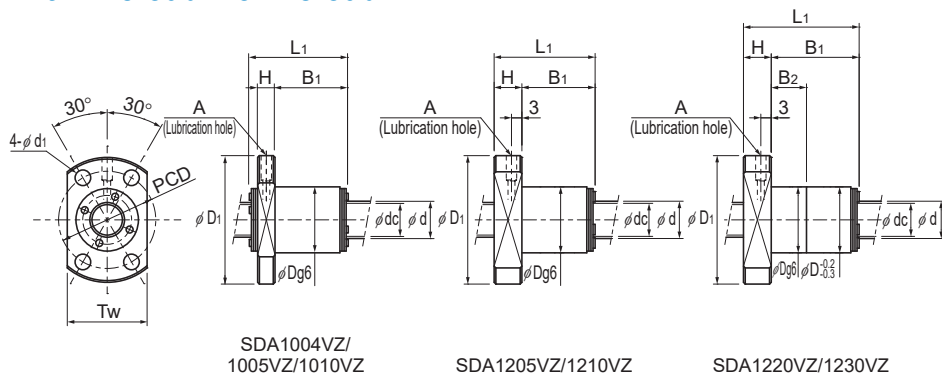


SDA-V/SDA-VZ With Preload/No Preload

DN value	SDA-V (Caged Ball)	160,000
	SDA-VZ (Full-Ball)	100,000



Model No.	Screw shaft outer diameter	Lead	Ball center-to-center diameter	Thread minor diameter	No. of loaded circuits	Basic load rating				Rigidity	
						SDA-V (Caged Ball)		SDA-VZ (Full-Ball)		SDA-V (Caged Ball)	SDA-VZ (Full-Ball)
						Ca	C _{0a}	Ca	C _{0a}	K	K
	d	Ph	dp	dc	Rows X turns	kN	kN	kN	kN	N/μm	N/μm
○ SDA 1004VZ-4	10	4	10.4	8.77	1×4	—	—	3.54	5.42	—	143
○ SDA 1005VZ-4	10	5	10.4	8.77	1×4	—	—	3.53	5.44	—	143
○ SDA 1010VZ-3	10	10	10.4	8.77	1×3	—	—	2.63	3.86	—	108
○ 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

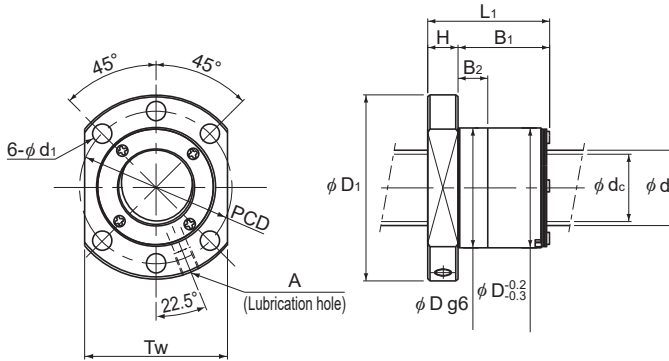
○: Indicates model numbers that are only compatible with Model SDA-VZ (Full-Ball type).

Model number coding

SDA1510V Z -3 TT G0 +600L C5

Model No. | Number of turns | Overall screw shaft length (in mm) | Accuracy symbol³
 Full-ball type code (No code for caged ball type) | Contamination protection accessory symbol¹ | Axial direction clearance code²

¹ See **A15-356**. ² See **A15-19**. ³ See **A15-12**.



SDA14V to 16V

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	Lubrication hole	kg·m ² /mm				kg	kg/m
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	
19	36	24	6	16	—	28	4.5	23	φ 3	7.71 × 10 ⁻⁹	0.047	0.577	—	5,000	
19	36	28	6	20	—	28	4.5	23	φ 3	7.71 × 10 ⁻⁹	0.052	0.585	—	5,000	
19	36	37	6	29	—	28	4.5	23	φ 3	7.71 × 10 ⁻⁹	0.066	0.6	—	5,000	
24	40	25	8	17	—	32	4.5	26	φ 3	1.60 × 10 ⁻⁸	0.073	0.796	—	5,000	
24	40	29	8	21	—	32	4.5	26	φ 3	1.60 × 10 ⁻⁸	0.082	0.841	—	5,000	
24	40	47	8	39	20	32	4.5	26	φ 3	1.60 × 10 ⁻⁸	0.126	0.863	—	5,000	
24	40	65	8	57	20	32	4.5	26	φ 3	1.60 × 10 ⁻⁸	0.172	0.869	—	5,000	
26	48	30	10	20	10	38	5.5	40	M6	2.96 × 10 ⁻⁸	0.14	1.1	5,000	5,000	
28	48	25	10	15	12.5	38	5.5	40	M6	3.90 × 10 ⁻⁸	0.13	1.27	5,000	5,000	
28	48	38	10	28	25.5	38	5.5	40	M6	3.90 × 10 ⁻⁸	0.17	1.33	5,000	5,000	
28	48	46	10	36	20	38	5.5	40	M6	3.90 × 10 ⁻⁸	0.19	1.33	5,000	5,000	
28	48	65	10	55	20	38	5.5	40	M6	3.90 × 10 ⁻⁸	0.25	1.34	5,000	5,000	
28	48	25	10	15	12.5	38	5.5	40	M6	5.05 × 10 ⁻⁸	0.13	1.46	5,000	5,000	
28	48	39	10	29	26.5	38	5.5	40	M6	5.05 × 10 ⁻⁸	0.16	1.52	5,000	5,000	
28	48	56	10	46	20	38	5.5	40	M6	5.05 × 10 ⁻⁸	0.21	1.54	5,000	5,000	

Notes: L₁ and B₁ dimensions in the dimensional table are those when a thin film seal has been installed.

At least one end of the shaft must accommodate the insertion of the nut onto the ball screw threads for assembly. Please contact THK if this impacts your desired system design.

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.

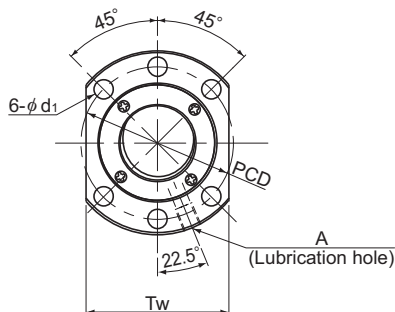
If the axial load (Fa) is not 30% of Ca, the rigidity value (K_N) is obtained from the following equation.

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

K: Rigidity value in the dimensional table

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

DN value	SDA-V (Caged Ball)	160,000
	SDA-VZ (Full-Ball)	100,000



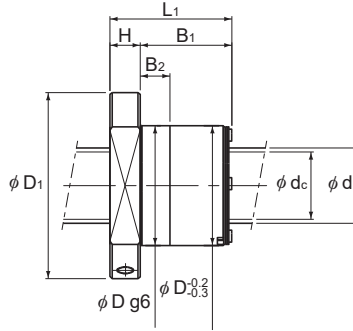
Model No.	Screw shaft outer diameter d	Lead Ph	Ball center-to-center diameter dp	Thread minor diameter dc	No. of loaded circuits Rows X turns	Basic load rating				Rigidity	
						SDA-V (Caged Ball)		SDA-VZ (Full-Ball)		SDA-V (Caged Ball)	SDA-VZ (Full-Ball)
						Ca kN	C _{0a} kN	Ca kN	C _{0a} kN	K N/μm	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 2006V-4	20	6	20.75	17.1	1×4	15.3	24.1	14.5	25.9	269	287
SDA 2010V-3	20	10	20.75	17.1	1×3	11.6	17.7	11	19	200	213
SDA 2010V-6	20	10	20.75	17.1	2×3	21	35.3	20	38.1	386	413
SDA 2020V-3	20	20	20.75	17.1	1×3	11.4	17.2	10.8	18.5	203	217
SDA 2020V-6	20	20	20.75	17.1	2×3	20.6	34.5	19.6	37	394	420
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 2060V-2	20	60	20.75	17.1	2×1	5.5	9.2	5.2	9.9	121	131
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 2530V-4	25	30	25.75	22.1	2×2	15.1	27.8	14.4	29.8	305	325
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. | Number of turns | Overall screw shaft length (in mm) | Accuracy symbol³
 Full-ball type code (No code for caged ball type) | Contamination protection accessory symbol¹ | Axial direction clearance code²

¹ See **A15-356**. ² See **A15-19**. ³ See **A15-12**.



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	A				Lubrication hole	kg·m ² /mm	kg	kg/m	SDA-V (Caged Ball)	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				
32	58	27	10	17	14.5	47	6.6	44	M6		1.23×10^{-7}	0.17	2.27	5,000	4,870				
36	58	27	10	17	13.5	47	6.6	44	M6		1.23×10^{-7}	0.18	2.21	5,000	4,810				
36	58	35	10	25	22.2	47	6.6	44	M6		1.23×10^{-7}	0.22	2.23	5,000	4,810				
36	58	40	10	30	27	47	6.6	44	M6		1.23×10^{-7}	0.25	2.34	5,000	4,810				
36	58	40	10	30	27	47	6.6	44	M6		1.23×10^{-7}	0.25	2.18	5,000	4,810				
36	58	67	10	57	20	47	6.6	44	M6		1.23×10^{-7}	0.39	2.4	5,000	4,810				
36	58	67	10	57	20	47	6.6	44	M6		1.23×10^{-7}	0.38	2.31	5,000	4,810				
36	58	66	10	56	20	47	6.6	44	M6		1.23×10^{-7}	0.38	2.42	5,000	4,810				
36	58	84	10	74	20	47	6.6	44	M6		1.23×10^{-7}	0.47	2.43	5,000	4,810				
36	58	63	10	53	20	47	6.6	44	M6		1.23×10^{-7}	0.36	2.39	5,000	4,810				
40	62	27	10	17	13.5	51	6.6	48	M6		3.01×10^{-7}	0.2	3.53	5,000	3,880				
40	62	40	10	30	27	51	6.6	48	M6		3.01×10^{-7}	0.28	3.7	5,000	3,880				
40	62	67	10	57	20	51	6.6	48	M6		3.01×10^{-7}	0.42	3.78	5,000	3,880				
40	62	82	10	72	20	51	6.6	48	M6		3.01×10^{-7}	0.5	3.79	5,000	3,880				
40	62	66	10	56	20	51	6.6	48	M6		3.01×10^{-7}	0.41	3.8	5,000	3,880				
40	62	66	10	56	20	51	6.6	48	M6		3.01×10^{-7}	0.41	3.71	5,000	3,880				
40	62	102	10	92	20	51	6.6	48	M6		3.01×10^{-7}	0.61	3.83	5,000	3,880				

Notes: L₁ and B₁ dimensions in the dimensional table are those when a thin film seal has been installed.

At least one end of the shaft must accommodate the insertion of the nut onto the ball screw threads for assembly. Please contact THK if this impacts your desired system design.

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.

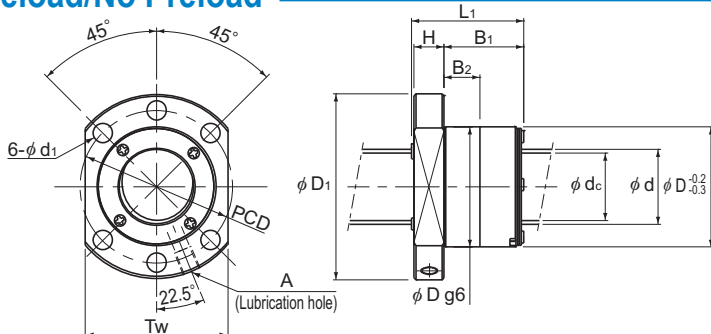
If the axial load (Fa) is not 30% of Ca, the rigidity value (K_N) is obtained from the following equation.

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

K: Rigidity value in the dimensional table

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

DN value	SDA-V (Caged Ball)	160,000
	SDA-VZ (Full-Ball)	130,000



SDA28V to 32VA

Model No.	Screw shaft outer diameter d	Lead Ph	Ball center-to-center diameter dp	Thread minor diameter dc	No. of loaded circuits Rows X turns	Basic load rating				Rigidity	
						SDA-V (Caged Ball)		SDA-VZ (Full-Ball)		SDA-V (Caged Ball)	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 3206V-5	32	6	33	28.9	1×5	31.4	62.4	29.9	66.1	513	541
SDA 3208V-5	32	8	33	28.9	1×5	31.4	62.4	29.9	66.2	513	541
SDA 3210V-5	32	10	33	28.9	1×5	31.3	62.9	29.8	66.3	517	541
SDA 3210VA-5	32	10	33	26.4	1×5	58.1	98.9	55.3	103.1	548	569
SDA 3212VA-5	32	12	33	26.4	1×5	58	98.9	55.3	103.3	548	569
SDA 3216VA-5	32	16	33	26.4	1×5	57.8	98.9	55.1	103.8	547	571
SDA 3220VA-5	32	20	33	26.4	1×5	57.6	94.3	54.9	98.2	552	572
SDA 3232VA-2	32	32	33	26.4	1×2	23.6	35.2	22.5	36.5	213	220
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

Model number coding

SDA3610V Z -5 TT G0 +830L C5

Model No.

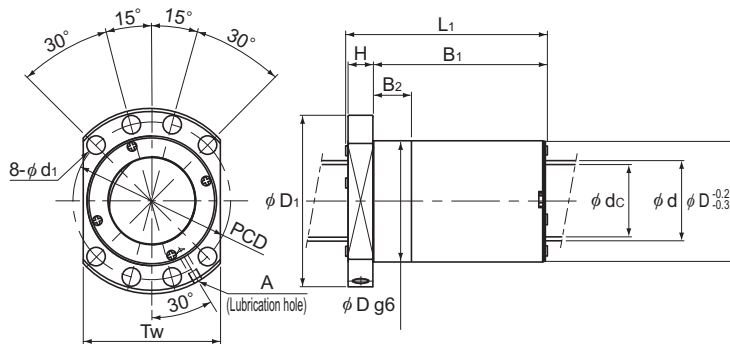
Number of turns

Overall screw shaft length (in mm)

Accuracy symbol³

Full-ball type code (No code for caged ball type)

Contamination protection accessory symbol¹Axial direction clearance code²¹ See **A15-356**. ² See **A15-19**. ³ See **A15-12**.



SDA36V

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	Lubrication hole	A				kg·m ² /mm	kg
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	27	65	9	62	M6		4.74×10^{-7}	0.49	4.37	5,000	4,480
56	86	65	14	50	20	71	9	65	M6		7.07×10^{-7}	0.96	5.02	5,000	4,060
56	86	74	14	59	20	71	9	65	M6		7.07×10^{-7}	1.08	5.17	5,000	4,060
56	86	93	14	78	20	71	9	65	M6		7.07×10^{-7}	1.31	5.36	5,000	4,060
56	86	112	14	97	20	71	9	65	M6		7.07×10^{-7}	1.54	5.47	5,000	4,060
56	86	73	14	58	20	71	9	65	M6		7.07×10^{-7}	1.04	5.63	5,000	4,060
50	80	32	12	20	17	65	9	62	M6		8.08×10^{-7}	0.41	5.89	4,880	3,960
50	80	42	12	30	10	65	9	62	M6		8.08×10^{-7}	0.48	5.73	4,840	3,930
50	80	52	12	40	20	65	9	62	M6		8.08×10^{-7}	0.56	5.87	4,840	3,930
50	80	61	12	49	20	65	9	62	M6		8.08×10^{-7}	0.64	6	4,840	3,930
57	87	65	14	50	20	72	9	66	M6		8.08×10^{-7}	0.98	5.38	4,840	3,930
57	87	74	14	59	20	72	9	66	M6		8.08×10^{-7}	1.1	5.54	4,840	3,930
57	87	93	14	78	20	72	9	66	M6		8.08×10^{-7}	1.34	5.73	4,840	3,930
57	87	112	14	97	20	72	9	66	M6		8.08×10^{-7}	1.58	5.85	4,840	3,930
57	87	73	14	58	20	72	9	66	M6		8.08×10^{-7}	1.07	6.01	4,840	3,930
61	91	65	14	50	20	76	9	68	M8×1		1.29×10^{-6}	1.06	6.93	4,320	3,510
61	91	74	14	59	20	76	9	68	M8×1		1.29×10^{-6}	1.19	7.11	4,320	3,510
61	91	93	14	78	20	76	9	68	M8×1		1.29×10^{-6}	1.45	7.34	4,320	3,510
61	91	112	14	97	20	76	9	68	M8×1		1.29×10^{-6}	1.7	7.47	4,320	3,510
61	91	81	14	66	20	76	9	68	M8×1		1.29×10^{-6}	1.24	7.69	4,320	3,510

Notes: L₁ and B₁ dimensions in the dimensional table are those when a thin film seal has been installed.

At least one end of the shaft must accommodate the insertion of the nut onto the ball screw threads for assembly. Please contact THK if this impacts your desired system design.

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.

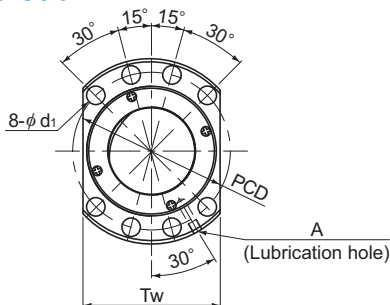
If the axial load (Fa) is not 30% of Ca, the rigidity value (K_a) is obtained from the following equation.

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

K: Rigidity value in the dimensional table

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

DN value	SDA-V (Caged Ball)	160,000
	SDA-VZ (Full-Ball)	130,000



Model No.	Screw shaft outer diameter d	Lead Ph	Ball center-to-center diameter dp	Thread minor diameter dc	No. of loaded circuits Rows X turns	Basic load rating				Rigidity	
						SDA-V (Caged Ball)		SDA-VZ (Full-Ball)		SDA-V (Caged Ball)	SDA-VZ (Full-Ball)
						Ca kN	C _{0a} kN	Ca kN	C _{0a} kN	K N/μm	K N/μm
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 3815V-5	38	15	39	32.4	1×5	63.2	117.7	60.2	123.6	627	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	63.0	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
○ SDA 4008VZ-5	40	8	41.25	36.4	1×5	—	—	42.2	99.4	—	663
SDA 4010VA-5	40	10	41.75	35.2	1×5	65.6	126.4	62.5	132.3	664	692
SDA 4012VA-5	40	12	41.75	35.2	1×5	65.5	126.4	62.4	132.5	664	692
SDA 4015VA-5	40	15	41.75	35.2	1×5	65.4	126.4	62.3	132.8	663	693
SDA 4016VA-5	40	16	41.75	35.2	1×5	65.4	126.4	62.3	132.9	663	693
SDA 4020VA-5	40	20	41.75	35.2	1×5	65.2	127.7	62.1	133.4	668	695
SDA 4020VA-10	40	20	41.75	35.2	2×5	118.4	254.1	112.8	266.9	1,288	1,345
SDA 4025VA-4	40	25	41.75	35.2	1×4	52.9	94.5	50.4	99.4	531	555
SDA 4030VA-3	40	30	41.75	35.2	1×3	40.1	70.3	38.2	73.1	398	412
SDA 4030VA-6	40	30	41.75	35.2	2×3	72.8	139.2	69.4	146.1	764	798
SDA 4040VA-2	40	40	41.75	35.2	1×2	26.6	44.7	25.4	46.9	256	267
SDA 4040VA-4	40	40	41.75	35.2	2×2	48.4	89.4	46.1	93.8	496	518

○: Indicates model numbers that are only compatible with Model SDA-VZ (Full-Ball type).

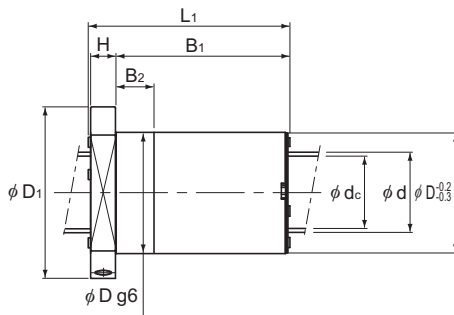
Model number coding

SDA3810V Z -5 TT G0 +830L C5

Model No. | Number of turns | Overall screw shaft length (in mm) | Accuracy symbol³

Full-ball type code (No code for caged ball type) | Contamination protection accessory symbol¹ | Axial direction clearance code²

¹ See **A15-356**. ² See **A15-19**. ³ See **A15-12**.



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	A				Lubrication hole	kg·m ² /mm	kg	kg/m	SDA-V (Caged Ball)	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				
63	93	65	14	50	20	78	9	70	M8×1		1.60×10 ⁻⁶	1.1	7.79	4,100	3,330				
63	93	74	14	59	20	78	9	70	M8×1		1.60×10 ⁻⁶	1.23	7.97	4,100	3,330				
63	93	88	14	73	20	78	9	70	M8×1		1.60×10 ⁻⁶	1.41	8.09	4,100	3,330				
63	93	93	14	78	20	78	9	70	M8×1		1.60×10 ⁻⁶	1.5	8.21	4,100	3,330				
63	93	112	14	97	20	78	9	70	M8×1		1.60×10 ⁻⁶	1.77	8.35	4,100	3,330				
63	93	111	14	96	20	78	9	70	M8×1		1.60×10 ⁻⁶	1.73	8.45	4,100	3,330				
63	93	100	14	85	20	78	9	70	M8×1		1.60×10 ⁻⁶	1.56	8.53	4,100	3,330				
63	93	87	14	72	20	78	9	70	M8×1		1.60×10 ⁻⁶	1.38	8.62	4,100	3,330				
61	91	55	14	41	20	76	9	68	M8×1		1.97×10 ⁻⁶	0.81	9.08	—	3,150				
70	100	65	14	50	20	85	9	75	M8×1		1.97×10 ⁻⁶	1.38	8.9	3,830	3,110				
70	100	74	14	59	20	85	9	75	M8×1		1.97×10 ⁻⁶	1.55	9.06	3,830	3,110				
70	100	88	14	74	20	85	9	75	M8×1		1.97×10 ⁻⁶	1.79	9.14	3,830	3,110				
70	100	93	14	78	20	85	9	75	M8×1		1.97×10 ⁻⁶	1.9	9.27	3,830	3,110				
70	100	112	14	97	20	85	9	75	M8×1		1.97×10 ⁻⁶	2.25	9.39	3,830	3,110				
70	100	112	14	97	20	85	9	75	M8×1		1.97×10 ⁻⁶	2.22	8.81	3,830	3,110				
70	100	112	14	97	20	85	9	75	M8×1		1.97×10 ⁻⁶	2.22	9.49	3,830	3,110				
70	100	101	14	86	20	85	9	75	M8×1		1.97×10 ⁻⁶	2.01	9.55	3,830	3,110				
70	100	101	14	86	20	85	9	75	M8×1		1.97×10 ⁻⁶	1.97	9.13	3,830	3,110				
70	100	88	14	73	20	85	9	75	M8×1		1.97×10 ⁻⁶	1.77	9.63	3,830	3,110				
70	100	88	14	73	20	85	9	75	M8×1		1.97×10 ⁻⁶	1.75	9.29	3,830	3,110				

Notes: L₁ and B₁ dimensions in the dimensional table are those when a thin film seal has been installed.

At least one end of the shaft must accommodate the insertion of the nut onto the ball screw threads for assembly. Please contact THK if this impacts your desired system design.

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.

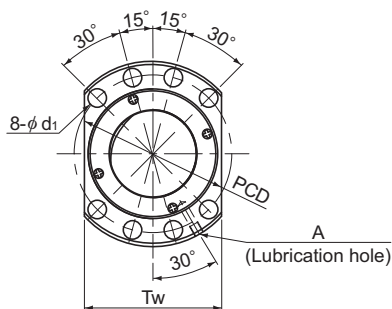
If the axial load (Fa) is not 30% of Ca, the rigidity value (K_a) is obtained from the following equation.

$$K_a = K \left(\frac{Fa}{0.3Ca} \right)^3$$

K: Rigidity value in the dimensional table

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

DN value	SDA-V (Caged Ball)	160,000
	SDA-VZ (Full-Ball)	130,000

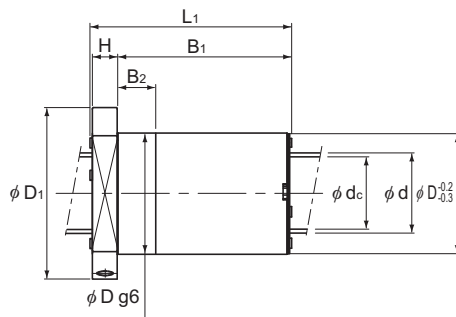


Model No.	Screw shaft outer diameter d	Lead Ph	Ball center-to-center diameter dp	Thread minor diameter dc	No. of loaded circuits Rows X turns	Basic load rating				Rigidity	
						SDA-V (Caged Ball)		SDA-VZ (Full-Ball)		SDA-V (Caged Ball)	SDA-VZ (Full-Ball)
						Ca	C _{0a}	Ca	C _{0a}	K	K
						kN	kN	kN	kN	N/μm	N/μm
SDA 4510V-5	45	10	46	39.4	1×5	68.7	139.4	65.4	146.5	717	749
SDA 4510VA-5	45	10	46.75	40.2	1×5	69.2	142.2	65.9	149	729	759
SDA 4512V-5	45	12	46	39.4	1×5	68.6	139.4	65.4	146.7	717	750
SDA 4512VA-5	45	12	46.75	40.2	1×5	69.2	142.2	65.9	149.2	728	760
SDA 4516V-5	45	16	46	39.4	1×5	68.5	140.7	65.3	147	722	751
SDA 4516VA-5	45	16	46.75	40.2	1×5	69	142.2	65.8	149.5	727	761
SDA 4520V-5	45	20	46	39.4	1×5	68.4	140.7	65.1	147.5	721	752
SDA 4520VA-5	45	20	46.75	40.2	1×5	68.9	143.6	65.6	150	733	762
SDA 4520VA-10	45	20	46.75	40.2	2×5	125.1	285.8	119.1	300.1	1,413	1,475
SDA 4525V-4	45	25	46	39.4	1×4	55.5	104	52.8	109.8	572	600
SDA 4525VA-4	45	25	46.75	40.2	1×4	55.9	106.7	53.2	111.6	584	608
SDA 4530V-4	45	30	46	39.4	1×4	55.2	105.3	52.6	110.5	577	602
SDA 4530VA-4	45	30	46.75	40.2	1×4	55.7	106.7	53	112.3	583	610
SDA 4540V-3	45	40	46	39.4	1×3	41.7	78.3	39.7	81.9	431	449
SDA 4540VA-3	45	40	46.75	40.2	1×3	42.1	79.7	40.1	83.2	438	455

Model number coding

SDA4510V	Z	-5	TT	G0	+830L	C5
Model No.		Number of turns		Overall screw shaft length (in mm)		Accuracy symbol ³
Full-ball type code (No code for caged ball type)		Contamination protection accessory symbol ¹		Axial direction clearance code ²		

¹ See **A15-356**. ² See **A15-19**. ³ See **A15-12**.



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 _i	T _w	Lubrication hole				kg·m ² /mm	kg	kg/m	SDA-V (Caged Ball)	SDA-VZ (Full-Ball)
																	D	D ₁
70	105	65	16	48	20	88	11	80	M8×1	3.16×10 ⁻⁶	1.35	11.16	3,470	2,820				
75	110	65	16	48	20	93	11	85	M8×1	3.16×10 ⁻⁶	1.62	11.4	3,420	2,780				
70	105	74	16	57	20	88	11	80	M8×1	3.16×10 ⁻⁶	1.5	11.38	3,470	2,820				
75	110	74	16	57	20	93	11	85	M8×1	3.16×10 ⁻⁶	1.81	11.58	3,420	2,780				
70	105	93	16	76	20	88	11	80	M8×1	3.16×10 ⁻⁶	1.81	11.67	3,470	2,820				
75	110	93	16	76	20	93	11	85	M8×1	3.16×10 ⁻⁶	2.19	11.82	3,420	2,780				
70	105	112	16	95	20	88	11	80	M8×1	3.16×10 ⁻⁶	2.11	11.84	3,470	2,820				
75	110	112	16	95	20	93	11	85	M8×1	3.16×10 ⁻⁶	2.57	11.96	3,420	2,780				
75	110	112	16	95	20	93	11	85	M8×1	3.16×10 ⁻⁶	2.56	11.28	3,420	2,780				
70	105	110	16	93	20	88	11	80	M8×1	3.16×10 ⁻⁶	2.04	11.95	3,470	2,820				
75	110	110	16	93	20	93	11	85	M8×1	3.16×10 ⁻⁶	2.51	12.06	3,420	2,780				
70	105	130	16	113	20	88	11	80	M8×1	3.16×10 ⁻⁶	2.36	12.04	3,470	2,820				
75	110	131	16	114	20	93	11	85	M8×1	3.16×10 ⁻⁶	2.91	12.14	3,420	2,780				
70	105	129	16	112	20	88	11	80	M8×1	3.16×10 ⁻⁶	2.33	12.16	3,470	2,820				
75	110	129	16	112	20	93	11	85	M8×1	3.16×10 ⁻⁶	2.86	12.23	3,420	2,780				

Notes: L₁ and B₁ dimensions in the dimensional table are those when a thin film seal has been installed.

At least one end of the shaft must accommodate the insertion of the nut onto the ball screw threads for assembly. Please contact THK if this impacts your desired system design.

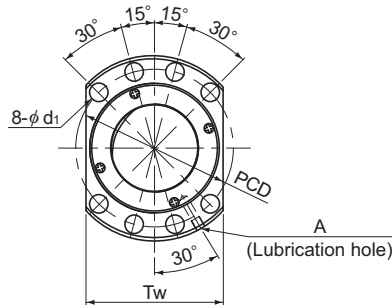
The rigidity values (K) in the table represent spring constants, each obtained from the load and the elastic deformation under an axial load equal to 30% of the basic axial dynamic load rating (Ca). These values do not include the rigidity of the components related to mounting the ball screw nut. Therefore, 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 30% of 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 (Caged Ball)	160,000
	SDA-VZ (Full-Ball)	130,000

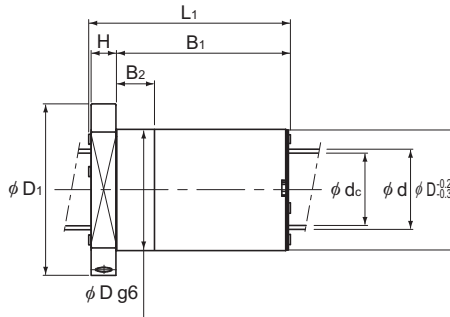


Model No.	Screw shaft outer diameter d	Lead Ph	Ball center-to-center diameter dp	Thread minor diameter dc	No. of loaded circuits Rows X turns	Basic load rating				Rigidity	
						SDA-V (Caged Ball)		SDA-VZ (Full-Ball)		SDA-V (Caged Ball)	SDA-VZ (Full-Ball)
						Ca kN	C _{0a} kN	Ca kN	C _{0a} kN	K N/μm	K N/μm
SDA 5010V-5	50	10	51	44.4	1×5	72	155.2	68.6	163.2	780	815
SDA 5010VA-5	50	10	51.75	45.2	1×5	72.5	158.1	69	165.7	791	825
SDA 5012V-5	50	12	51	44.4	1×5	72	155.2	68.5	163.3	779	816
SDA 5012VA-5	50	12	51.75	45.2	1×5	72.4	158.1	69	165.9	791	825
SDA 5016V-5	50	16	51	44.4	1×5	71.9	156.6	68.4	163.7	785	816
SDA 5016VA-5	50	16	51.75	45.2	1×5	72.3	158.1	68.9	166.2	790	826
SDA 5020V-5	50	20	51	44.4	1×5	71.7	156.6	68.3	164.2	784	817
SDA 5020V-10	50	20	51	44.4	2×5	130.2	313.2	124	328.3	1,518	1,583
SDA 5020VA-5	50	20	51.75	45.2	1×5	72.2	159.4	68.8	166.7	795	827
SDA 5020VA-10	50	20	51.75	45.2	2×5	131.1	317.5	124.8	333.3	1,534	1,602
SDA 5025V-4	50	25	51	44.4	1×4	58.2	123.6	55.5	129.8	624	652
SDA 5025VA-4	50	25	51.75	45.2	1×4	58.6	125.1	55.8	131.7	630	660
SDA 5025VA-8	50	25	51.75	45.2	2×4	106.4	251.5	101.3	263.5	1,226	1,277
SDA 5030V-4	50	30	51	44.4	1×4	58	117.5	55.3	122.6	629	654
SDA 5030VA-4	50	30	51.75	45.2	1×4	58.4	118.9	55.7	124.5	635	661
SDA 5030VA-8	50	30	51.75	45.2	2×4	106.1	237.7	101	248.9	1,229	1,280
SDA 5040V-3	50	40	51	44.4	1×3	43.9	86.5	41.8	90.7	467	487
SDA 5040VA-3	50	40	51.75	45.2	1×3	44.2	87.9	42.1	92	473	492
SDA 5040VA-6	50	40	51.75	45.2	2×3	80.3	175.7	76.4	184	916	954
SDA 5050V-2	50	50	51	44.4	1×2	29.2	55.5	27.8	58	303	316
SDA 5050VA-2	50	50	51.75	45.2	1×2	29.4	55.6	28	58.8	303	319

Model number coding

SDA5010V	Z	-5	TT	G0	+830L	C5
Model No.		Number of turns		Overall screw shaft length (in mm)		Accuracy symbol ³
Full-ball type code (No code for caged ball type)		Contamination protection accessory symbol ¹		Axial direction clearance code ²		

¹ See **A15-356**. ² See **A15-19**. ³ See **A15-12**.



Unit: mm

	Nut dimensions										Screw shaft inertial moment/mm ²	Nut mass	Shaft mass	Permissible rotational speed				
	Outer diameter	Flange diameter	Overall length				PCD	d _i	T _w	Lubrication hole				kg·m ² /mm	kg	kg/m	SDA-V (Caged Ball)	SDA-VZ (Full-Ball)
																	min ⁻¹	min ⁻¹
D	D ₁	L ₁	H	B ₁	B ₂	PCD	d _i	T _w	A	kg·m ² /mm	kg	kg/m	min ⁻¹	min ⁻¹				
75	110	65	16	48	20	93	11	85	M8×1	4.82×10 ⁻⁶	1.46	13.93	3,130	2,540				
82	118	65	16	48	20	100	11	92	M8×1	4.82×10 ⁻⁶	1.89	14.2	3,090	2,510				
75	110	74	16	57	20	93	11	85	M8×1	4.82×10 ⁻⁶	1.63	14.19	3,130	2,540				
82	118	74	16	57	20	100	11	92	M8×1	4.82×10 ⁻⁶	2.12	14.41	3,090	2,510				
75	110	93	16	76	20	93	11	85	M8×1	4.82×10 ⁻⁶	1.96	14.5	3,130	2,540				
82	118	93	16	76	20	100	11	92	M8×1	4.82×10 ⁻⁶	2.57	14.67	3,090	2,510				
75	110	112	16	95	20	93	11	85	M8×1	4.82×10 ⁻⁶	2.29	14.69	3,130	2,540				
75	110	112	16	95	20	93	11	85	M8×1	4.82×10 ⁻⁶	2.25	13.79	3,130	2,540				
82	118	112	16	95	20	100	11	92	M8×1	4.82×10 ⁻⁶	3.02	14.83	3,090	2,510				
82	118	112	16	95	20	100	11	92	M8×1	4.82×10 ⁻⁶	2.98	14.06	3,090	2,510				
75	110	110	16	93	20	93	11	85	M8×1	4.82×10 ⁻⁶	2.22	14.82	3,130	2,540				
82	118	110	16	93	20	100	11	92	M8×1	4.82×10 ⁻⁶	2.95	14.95	3,090	2,510				
82	118	110	16	93	20	100	11	92	M8×1	4.82×10 ⁻⁶	2.92	14.31	3,090	2,510				
75	110	130	16	113	20	93	11	85	M8×1	4.82×10 ⁻⁶	2.57	14.92	3,130	2,540				
82	118	130	16	113	20	100	11	92	M8×1	4.82×10 ⁻⁶	3.42	15.03	3,090	2,510				
82	118	130	16	113	20	100	11	92	M8×1	4.82×10 ⁻⁶	3.39	14.47	3,090	2,510				
75	110	128	16	111	20	93	11	85	M8×1	4.82×10 ⁻⁶	2.52	15.06	3,130	2,540				
82	118	129	16	112	20	100	11	92	M8×1	4.82×10 ⁻⁶	3.37	15.13	3,090	2,510				
82	118	129	16	112	20	100	11	92	M8×1	4.82×10 ⁻⁶	3.32	14.68	3,090	2,510				
75	110	107	16	90	20	93	11	85	M8×1	4.82×10 ⁻⁶	2.13	15.13	3,130	2,540				
82	118	107	16	90	20	100	11	92	M8×1	4.82×10 ⁻⁶	2.84	15.2	3,090	2,510				

Notes: L₁ and B₁ dimensions in the dimensional table are those when a thin film seal has been installed.

At least one end of the shaft must accommodate the insertion of the nut onto the ball screw threads for assembly. Please contact THK if this impacts your desired system design.

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 (C_a).

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 (F_a) is not 30% of C_a, the rigidity value (K_n) is obtained from the following equation.

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

K: Rigidity value in the dimensional table