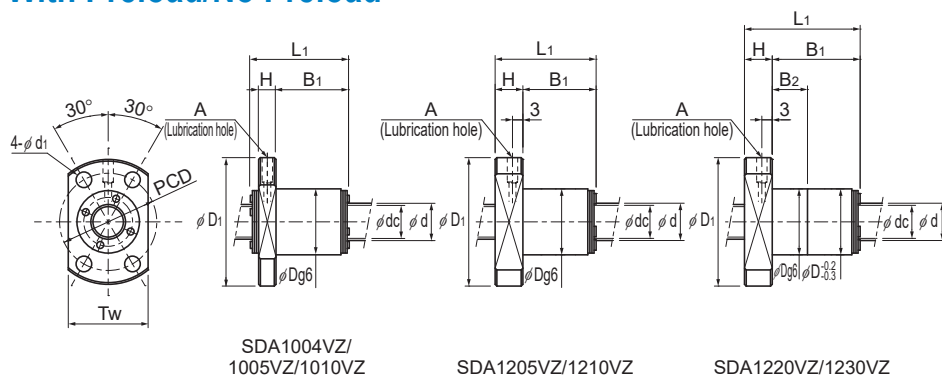


SDA-V/SDA-VZ With Preload/No Preload

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

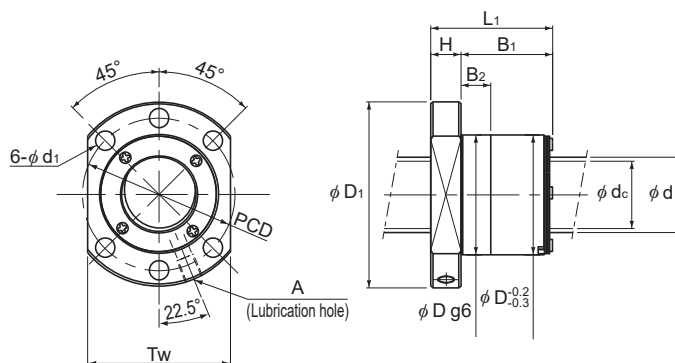
SDA1510V Z -3 TT G0 +600L C5

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**.

Positioning, ISO 3408 compliant



SDA14V to 16V

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	Flange diameter	Overall length							Lubrication hole				SDA-V (Caged Ball)	SDA-VZ (Full-Ball)
	D	D ₁	L ₁	H	B ₁	B ₂	PCD	d ₁	T _w	A				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.

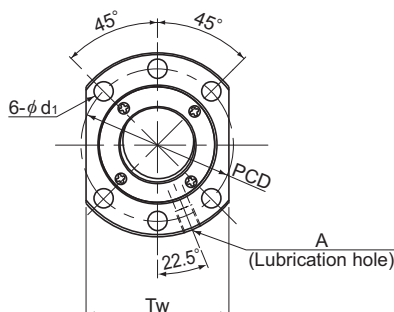
If the axial load (Fa) is not 30% of Ca, the rigidity value (K_a) is obtained from the following equation.

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

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)	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 kN	C _{0a} kN	Ca kN	C _{0a} kN	K N/μm	K N/μm	
d	Ph	dp	dc	Rows X turns								
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	

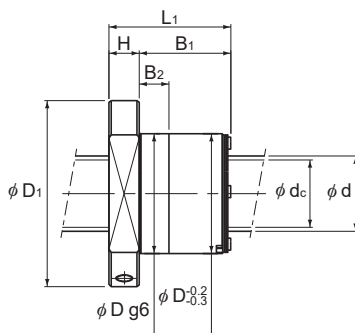
Model number coding

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**.

Positioning, ISO 3408 compliant



Unit: mm

	Nut dimensions										Screw shaft inertial moment/mm	Nut mass	Shaft mass	Permissible rotational speed	
	Outer diameter	Flange diameter	Overall length							Lubrication hole				SDA-V (Caged Ball)	SDA-VZ (Full-Ball)
	D	D ₁	L ₁	H	B ₁	B ₂	PCD	d ₁	T _w	A				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).

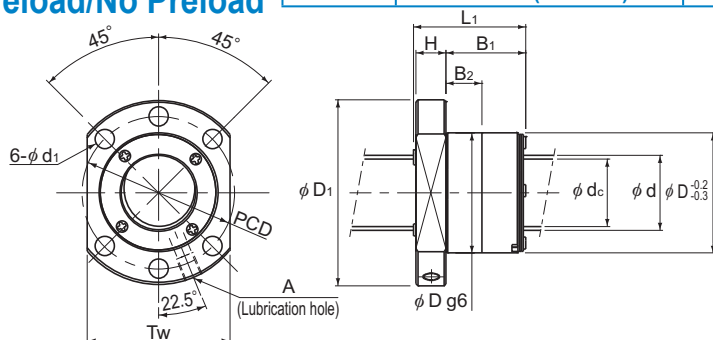
These values do not include the rigidity of the components related to mounting the ball screw nut. Therefore, it is normally appropriate to regard roughly 80% of the rigidity value (K) in the table as the actual value.

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

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

K: Rigidity value in the dimensional table

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



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	Coa kN	Ca kN	Coa 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

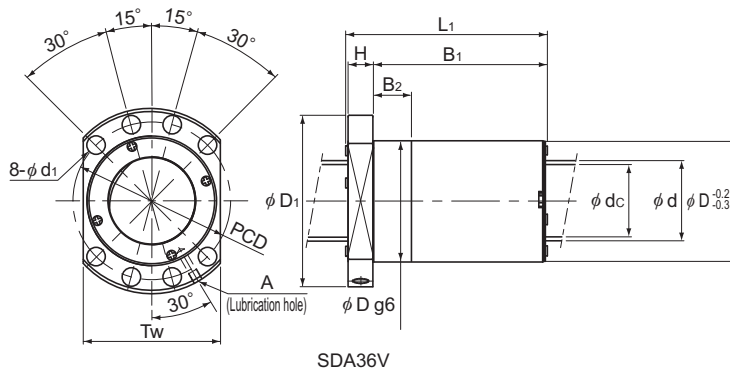
Model number coding

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 symbol¹ | Axial direction clearance code²

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

Positioning, ISO 3408 compliant



Unit: mm

	Nut dimensions										Screw shaft inertial moment/mm	Nut mass	Shaft mass	Permissible rotational speed	
	Outer diameter	Flange diameter	Overall length							Lubrication hole				SDA-V (Caged Ball)	SDA-VZ (Full-Ball)
	D	D ₁	L ₁	H	B ₁	B ₂	PCD	d ₁	T _w	A				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.

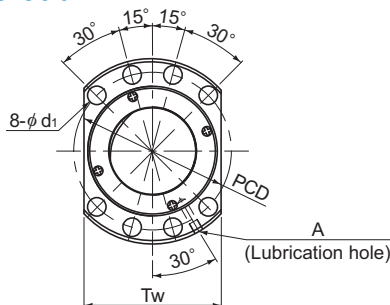
If the axial load (Fa) is not 30% of Ca, the rigidity value (K_a) is obtained from the following equation.

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

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	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 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

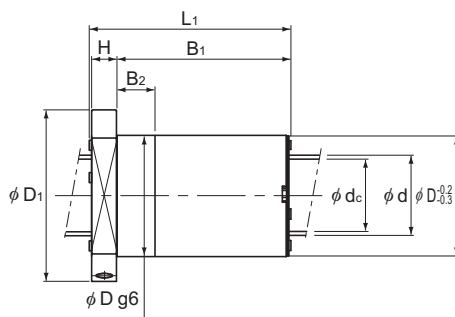
SDA3810V Z -5 TT G0 +830L C5

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**.

Positioning, ISO 3408 compliant



Unit: mm

	Nut dimensions										Screw shaft inertial moment/mm	Nut mass	Shaft mass	Permissible rotational speed	
	Outer diameter	Flange diameter	Overall length							Lubrication hole				SDA-V (Caged Ball)	SDA-VZ (Full-Ball)
	D	D ₁	L ₁	H	B ₁	B ₂	PCD	d ₁	T _w	A				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.

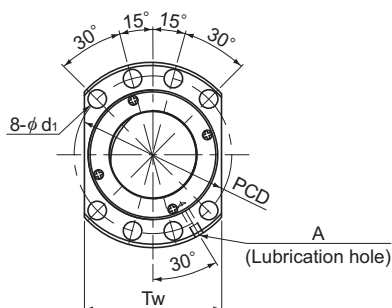
If the axial load (Fa) is not 30% of Ca, the rigidity value (K_a) is obtained from the following equation.

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

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



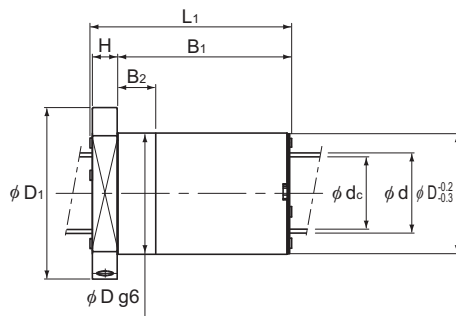
Model No.	Screw shaft outer diameter d	Lead Ph	Ball center-to-center diameter dp	Thread minor diameter dc	No. of loaded circuits Rows X turns	Basic load rating				Rigidity		
						SDA-V (Caged Ball)		SDA-VZ (Full-Ball)		SDA-V (Caged Ball)	SDA-VZ (Full-Ball)	
						Ca kN	C _{0a} kN	Ca kN	C _{0a} kN	K N/μm	K N/μm	
SDA 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**.

Positioning, ISO 3408 compliant



Unit: mm

	Nut dimensions										Screw shaft inertial moment/mm	Nut mass	Shaft mass	Permissible rotational speed	
	Outer diameter	Flange diameter	Overall length							Lubrication hole				SDA-V (Caged Ball)	SDA-VZ (Full-Ball)
	D	D ₁	L ₁	H	B ₁	B ₂	PCD	d _i	T _w	A				min ⁻¹	min ⁻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.

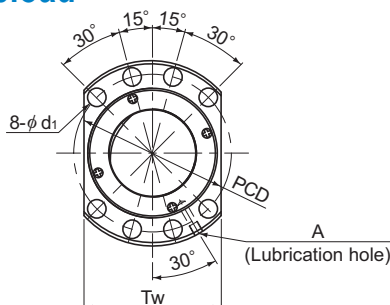
If the axial load (Fa) is not 30% of Ca, the rigidity value (K_a) is obtained from the following equation.

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

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



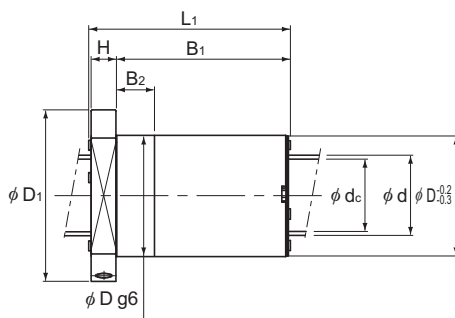
Model No.	Screw shaft outer diameter	Lead	Ball center-to-center diameter	Thread minor diameter	No. of loaded circuits	Basic load rating				Rigidity	
						SDA-V (Caged Ball)		SDA-VZ (Full-Ball)		SDA-V (Caged Ball)	SDA-VZ (Full-Ball)
						Ca	C _{0a}	Ca	C _{0a}	K	K
	d	Ph	dp	dc	Rows X turns	kN	kN	kN	kN	N/μm	N/μm
SDA 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.

Positioning, ISO 3408 compliant



Unit: mm

	Nut dimensions										Screw shaft inertial moment/mm	Nut mass	Shaft mass	Permissible rotational speed	
	Outer diameter	Flange diameter	Overall length							Lubrication hole				SDA-V (Caged Ball)	SDA-VZ (Full-Ball)
	D	D ₁	L ₁	H	B ₁	B ₂	PCD	d ₁	T _w	A				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 (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.

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

K: Rigidity value in the dimensional table