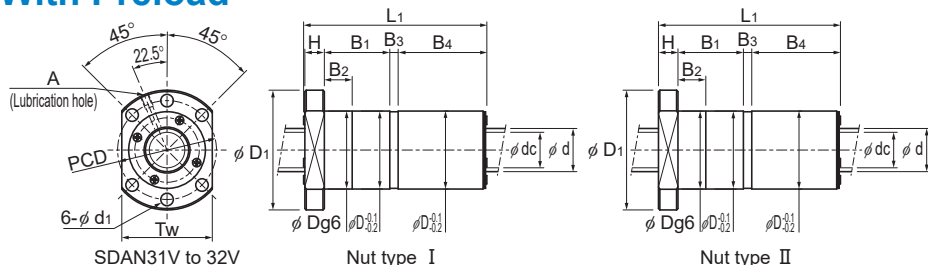


SDAN-V With Preload



SDAN31V to 32V

Nut type I

Nut type II

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	
						SDAN-V (Caged Ball)		SDAN-VX (Full-Ball)		SDAN-V (Caged Ball)	SDAN-VX (Full-Ball)
						Ca kN	C _{0a} kN	Ca kN	C _{0a} kN	K N/μm	K N/μm
SDAN 3110V-5	31	10	32	25.4	1×5	57.1	94.7	54.4	99.7	1,059	1,108
SDAN 3112V-5	31	12	32	25.4	1×5	57	94.7	54.3	99.9	1,058	1,109
SDAN 3116V-5	31	16	32	25.4	1×5	56.8	96	54.1	100.5	1,068	1,112
SDAN 3120V-5	31	20	32	25.4	1×5	56.6	90.3	53.9	95.1	1,065	1,116
SDAN 3205V-4	32	5	32.75	29.5	1×4	18.8	38.5	17.9	41.7	776	832
SDAN 3206V-5	32	6	33	28.9	1×5	31.4	62.4	29.9	66.1	1,027	1,082
SDAN 3208V-5	32	8	33	28.9	1×5	31.4	62.4	29.9	66.2	1,026	1,082
SDAN 3210V-5	32	10	33	28.9	1×5	31.3	62.9	29.8	66.3	1,033	1,083
SDAN 3210VA-5	32	10	33	26.4	1×5	58.1	98.9	55.3	103.1	1,097	1,138
SDAN 3212VA-5	32	12	33	26.4	1×5	58	98.9	55.3	103.3	1,096	1,139
SDAN 3216VA-5	32	16	33	26.4	1×5	57.8	98.9	55.1	103.8	1,094	1,141
SDAN 3220VA-5	32	20	33	26.4	1×5	57.6	94.3	54.9	98.2	1,104	1,145
SDAN 3606V-4	36	6	37	32.9	1×4	26.9	55.6	25.6	58.6	902	945
SDAN 3610V-5	36	10	37	30.4	1×5	61.7	110.6	58.8	116.4	1,196	1,252
SDAN 3612V-5	36	12	37	30.4	1×5	61.7	110.6	58.7	116.6	1,195	1,253
SDAN 3616V-5	36	16	37	30.4	1×5	61.5	111.9	58.6	117.1	1,206	1,255
SDAN 3620V-5	36	20	37	30.4	1×5	61.3	105.2	58.4	110.6	1,203	1,258
SDAN 3810V-5	38	10	39	32.4	1×5	63.4	117.7	60.4	123.1	1,257	1,308
SDAN 3812V-5	38	12	39	32.4	1×5	63.4	117.7	60.3	123.3	1,256	1,309
SDAN 3816V-5	38	16	39	32.4	1×5	63.2	117.7	60.2	123.7	1,254	1,311
SDAN 3820V-5	38	20	39	32.4	1×5	63.0	111.9	60.0	116.9	1,265	1,314
○ SDAN 4008VX-5	40	8	41.25	36.3	1×5	—	—	42.2	99.4	—	1,326
SDAN 4010VA-5	40	10	41.75	35.2	1×5	65.6	126.4	62.5	132.3	1,329	1,384
SDAN 4012VA-5	40	12	41.75	35.2	1×5	65.5	126.4	62.4	132.5	1,328	1,385
SDAN 4016VA-5	40	16	41.75	35.2	1×5	65.4	126.4	62.3	132.9	1,326	1,387
SDAN 4020VA-5	40	20	41.75	35.2	1×5	65.2	127.7	62.1	133.4	1,336	1,389

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

Model number coding

SDAN3110V X -5 TT G0 +830L C5

Model No.

Number of turns

Overall screw shaft
length (in mm)

Accuracy symbol²

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

Contamination protection
accessory symbol¹

Symbol for clearance
in the axial direction (G0 for all SDAN-V variations)

¹ See **A15-356**. ² See **A15-12**.



Ball Screw

Unit: mm

Note: L₁ and B₄ 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.

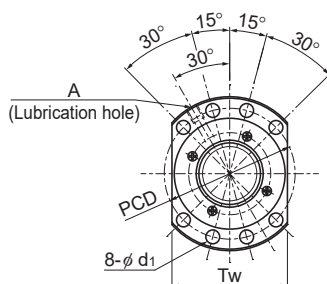
Note: L₁ and B₄ dimensions in the dimensional table are those when a thin film seal has been installed.
At least one end of the shaft must accommodate the insertion of the nut onto the ball screw threads for assembly.
Please contact THK if this impacts your desired system design.

$$K_N = K \left(\frac{Fa_0}{0.1Ca} \right)^{\frac{1}{3}}$$

K: Rigidity value in the dimensional table

SDAN-V With Preload

DN value	SDAN-V (Caged Ball)	160,000
	SDAN-VX (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		
						SDAN-V (Caged Ball)		SDAN-VX (Full-Ball)		SDAN-V (Caged Ball)	SDAN-VX (Full-Ball)	
						Ca kN	Ca kN	Ca kN	Ca kN	K N/μm	K N/μm	
	d	Ph	dp	dc	Rows X turns							
SDAN 4510V-5	45	10	46	39.4	1×5	68.7	139.4	65.4	146.5	1,434	1,499	
SDAN 4510VA-5	45	10	46.75	40.2	1×5	69.2	142.2	65.9	149	1,457	1,519	
SDAN 4512V-5	45	12	46	39.4	1×5	68.6	139.4	65.4	146.7	1,433	1,500	
SDAN 4512VA-5	45	12	46.75	40.2	1×5	69.2	142.2	65.9	149.2	1,457	1,519	
SDAN 4516V-5	45	16	46	39.4	1×5	68.5	140.7	65.3	147	1,444	1,501	
SDAN 4516VA-5	45	16	46.75	40.2	1×5	69	142.2	65.8	149.5	1,455	1,521	
SDAN 4520V-5	45	20	46	39.4	1×5	68.4	140.7	65.1	147.5	1,442	1,504	
SDAN 4520VA-5	45	20	46.75	40.2	1×5	68.9	143.6	65.6	150	1,465	1,524	
SDAN 5010V-5	50	10	51	44.4	1×5	72	155.2	68.6	163.2	1,559	1,630	
SDAN 5010VA-5	50	10	51.75	45.2	1×5	72.5	158.1	69	165.7	1,582	1,650	
SDAN 5012V-5	50	12	51	44.4	1×5	72	155.2	68.5	163.3	1,559	1,631	
SDAN 5012VA-5	50	12	51.75	45.2	1×5	72.4	158.1	69	165.9	1,582	1,651	
SDAN 5016V-5	50	16	51	44.4	1×5	71.9	156.6	68.4	163.7	1,570	1,633	
SDAN 5016VA-5	50	16	51.75	45.2	1×5	72.3	158.1	68.9	166.2	1,580	1,652	
SDAN 5020V-5	50	20	51	44.4	1×5	71.7	156.6	68.3	164.2	1,568	1,635	
SDAN 5020VA-5	50	20	51.75	45.2	1×5	72.2	159.4	68.8	166.7	1,591	1,654	
SDAN 5025V-4	50	25	51	44.4	1×4	58.2	123.6	55.5	129.8	1,249	1,304	
SDAN 5025VA-4	50	25	51.75	45.2	1×4	58.6	125.1	55.8	131.7	1,260	1,319	
SDAN 5030V-4	50	30	51	44.4	1×4	58	117.5	55.3	122.6	1,258	1,307	
SDAN 5030VA-4	50	30	51.75	45.2	1×4	58.4	118.9	55.7	124.5	1,269	1,322	
SDAN 5040V-3	50	40	51	44.4	1×3	43.9	86.5	41.8	90.7	934	974	
SDAN 5040VA-3	50	40	51.75	45.2	1×3	44.2	87.9	42.1	92	946	985	

Model number coding

SDAN4510V X -5 TT G0 +830L C5

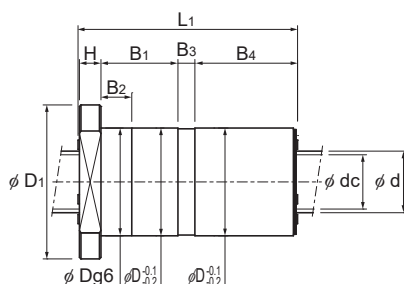
Model No. Number of turns Overall screw shaft length (in mm) Accuracy symbol²

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

Contamination protection accessory symbol¹ Symbol for clearance in the axial direction (G0 for all SDAN-V variations)

¹ See **A15-356**. ² 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				Spacer thickness				Lubrication hole				SDAN-V (Caged Ball)	SDAN-VX (Full-Ball)	
	D	D ₁	L ₁	H	B ₁	B ₂	B ₃	B ₄	PCD	d ₁	T _w	A	kg·m ² /mm	kg	kg/m	min ⁻¹	min ⁻¹
	70	105	135	16	45	20	11	62	88	11	80	M8×1	3.16×10 ⁻⁶	2.47	11.16	3,470	2,820
	75	110	135	16	45	20	11	62	93	11	85	M8×1	3.16×10 ⁻⁶	3.05	11.4	3,420	2,780
	70	105	158	16	54	20	15.6	72	88	11	80	M8×1	3.16×10 ⁻⁶	2.84	11.38	3,470	2,820
	75	110	158	16	54	20	15.6	72	93	11	85	M8×1	3.16×10 ⁻⁶	3.5	11.58	3,420	2,780
	70	105	189	16	73	20	8.8	90	88	11	80	M8×1	3.16×10 ⁻⁶	3.36	11.67	3,470	2,820
	75	110	189	16	73	20	8.8	90	93	11	85	M8×1	3.16×10 ⁻⁶	4.15	11.82	3,420	2,780
	70	105	232	16	92	20	14	109	88	11	80	M8×1	3.16×10 ⁻⁶	4.03	11.84	3,470	2,820
	75	110	232	16	92	20	14	109	93	11	85	M8×1	3.16×10 ⁻⁶	5	11.96	3,420	2,780
	75	110	135	16	45	20	11	62	93	11	85	M8×1	4.82×10 ⁻⁶	2.69	13.93	3,130	2,540
	82	118	135	16	45	20	11	62	100	11	92	M8×1	4.82×10 ⁻⁶	3.58	14.2	3,090	2,510
	75	110	158	16	54	20	15.6	72	93	11	85	M8×1	4.82×10 ⁻⁶	3.08	14.19	3,130	2,540
	82	118	158	16	54	20	15.6	72	100	11	92	M8×1	4.82×10 ⁻⁶	4.12	14.41	3,090	2,510
	75	110	189	16	73	20	8.8	90	93	11	85	M8×1	4.82×10 ⁻⁶	3.65	14.5	3,130	2,540
	82	118	189	16	73	20	8.8	90	100	11	92	M8×1	4.82×10 ⁻⁶	4.89	14.67	3,090	2,510
	75	110	232	16	92	20	14	109	93	11	85	M8×1	4.82×10 ⁻⁶	4.39	14.69	3,130	2,540
	82	118	232	16	92	20	14	109	100	11	92	M8×1	4.82×10 ⁻⁶	5.89	14.83	3,090	2,510
	75	110	235	16	90	20	20.5	108	93	11	85	M8×1	4.82×10 ⁻⁶	4.41	14.82	3,130	2,540
	82	118	235	16	90	20	20.5	108	100	11	92	M8×1	4.82×10 ⁻⁶	5.93	14.95	3,090	2,510
	75	110	265	16	110	20	10.7	128	93	11	85	M8×1	4.82×10 ⁻⁶	4.96	14.92	3,130	2,540
	82	118	265	16	110	20	10.6	128	100	11	92	M8×1	4.82×10 ⁻⁶	6.67	15.03	3,090	2,510
	75	110	268	16	108	20	17.5	126	93	11	85	M8×1	4.82×10 ⁻⁶	4.98	15.06	3,130	2,540
	82	118	269	16	108	20	17.3	126	100	11	92	M8×1	4.82×10 ⁻⁶	6.72	15.13	3,090	2,510

Axial Clearance

Unit: mm

Clearance symbol	G0
Axial clearance	0 or less

Note: L₁ and B₄ 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 in the table represent spring constants, each obtained from the load and the elastic deformation under an axial load equal to 3 times the applied preload, which itself is 10% 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 in the table as the actual value.

If the axial load (Fa) is not 10% of Ca, the rigidity value (K_N) is obtained from the following formula.

$$K_N = K \left(\frac{F_{a0}}{0.1 C_a} \right)^{\frac{1}{3}}$$

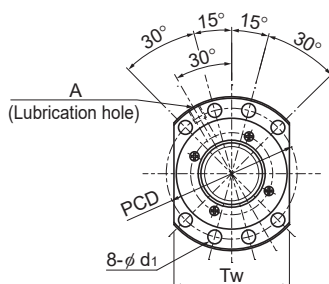
K: Rigidity value in the dimensional table

SDAN-V With Preload

DN value

SDAN-VX (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	
						SDAN-V (Caged Ball)		SDAN-VX (Full-Ball)		SDAN-V (Caged Ball)	SDAN-VX (Full-Ball)
						Ca kN	C _{0a} kN	Ca kN	C _{0a} kN	K N/μm	K N/μm
○ SDAN 5510VX-4	55	10	56	49.4	1×4	—	—	58.2	141.6	—	1,400
○ SDAN 5510VAX-4	55	10	56.75	50.2	1×4	—	—	58.5	143.6	—	1,416
○ SDAN 5512VX-4	55	12	56	49.4	1×4	—	—	58.1	141.7	—	1,401
○ SDAN 5512VAX-4	55	12	56.75	50.2	1×4	—	—	58.5	143.7	—	1,416
○ SDAN 5516VX-4	55	16	56	49.4	1×4	—	—	58.1	142	—	1,402
○ SDAN 5516VAX-4	55	16	56.75	50.2	1×4	—	—	58.4	144	—	1,417
○ SDAN 5520VX-4	55	20	56	49.4	1×4	—	—	58	142.3	—	1,403
○ SDAN 5520VAX-4	55	20	56.75	50.2	1×4	—	—	58.3	144.3	—	1,419
○ SDAN 6310VX-4	63	10	64	57.4	1×4	—	—	61.6	162.7	—	1,560
○ SDAN 6312VX-4	63	12	65	57.6	1×4	—	—	72.9	185.2	—	1,603
○ SDAN 6316VX-4	63	16	65	57.6	1×4	—	—	72.8	185.5	—	1,604
○ SDAN 6320VX-4	63	20	65	57.6	1×4	—	—	72.7	185.8	—	1,606
○ SDAN 6325VX-4	63	25	65	57.6	1×4	—	—	72.6	186.3	—	1,607
○ SDAN 6330VX-4	63	30	65	57.6	1×4	—	—	72.5	186.9	—	1,610
○ SDAN 6340VX-3	63	40	65	57.6	1×3	—	—	55	129.2	—	1,197

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

Model number coding

SDAN5510V X -4 TT G0 +830L C5

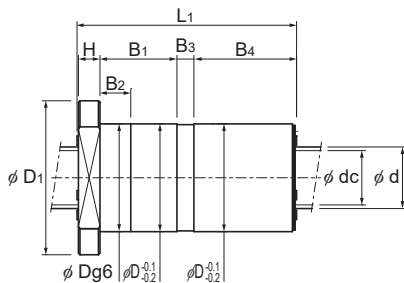
Model No.

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

Number of turns

Contamination protection
accessory symbol¹Overall screw shaft
length (in mm)Symbol for clearance
in the axial direction (G0 for all SDAN-V variations)Accuracy symbol²

¹ See **A15-356**. ² 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				Spacer thickness					Lubrication hole				SDAN-V (Caged Ball)	SDAN-VX (Full-Ball)
	D	D ₁	L ₁	H	B ₁	B ₂	B ₃	B ₄	PCD	d ₁	T _w	A	kg·m ² /mm	kg	kg/m	min ⁻¹	min ⁻¹
	80	118	115	18	33	20	11	52	100	11	92	M8×1	7.05×10 ⁻⁶	2.54	17.02	—	2,320
	82	120	115	18	33	20	11	52	102	11	94	M8×1	7.05×10 ⁻⁶	2.73	17.32	—	2,290
	80	118	134	18	40	20	15.6	60	100	11	92	M8×1	7.05×10 ⁻⁶	2.89	17.3	—	2,320
	82	120	134	18	40	20	15.6	60	102	11	94	M8×1	7.05×10 ⁻⁶	3.11	17.55	—	2,290
	80	118	157	18	55	20	8.8	74	100	11	92	M8×1	7.05×10 ⁻⁶	3.35	17.65	—	2,320
	82	120	157	18	55	20	8.8	74	102	11	94	M8×1	7.05×10 ⁻⁶	3.6	17.84	—	2,290
	80	118	192	18	70	20	14	89	100	11	92	M8×1	7.05×10 ⁻⁶	4	17.86	—	2,320
	82	120	192	18	70	20	14	89	102	11	94	M8×1	7.05×10 ⁻⁶	4.3	18.01	—	2,290
	90	125	115	18	33	20	11	52	108	11	95	M8×1	1.21×10 ⁻⁵	2.97	22.61	—	2,030
	95	135	135	20	39	25	14.6	61	115	13.5	100	M8×1	1.21×10 ⁻⁵	4.18	22.89	—	2,000
	95	135	158	20	54	25	7.8	75	115	13.5	100	M8×1	1.21×10 ⁻⁵	4.84	23.3	—	2,000
	95	135	193	20	69	25	13	90	115	13.5	100	M8×1	1.21×10 ⁻⁵	5.8	23.55	—	2,000
	95	135	237	20	88	25	19.3	109	115	13.5	100	M8×1	1.21×10 ⁻⁵	7.02	23.74	—	2,000
	95	135	266	20	107	25	10.2	128	115	13.5	100	M8×1	1.21×10 ⁻⁵	7.84	23.87	—	2,000
	95	135	269	20	105	25	17.2	126	115	13.5	100	M8×1	1.21×10 ⁻⁵	7.87	24.04	—	2,000

Axial Clearance

Unit: mm

Clearance symbol	G0
Axial clearance	0 or less

Note: L₁ and B₄ 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 in the table represent spring constants, each obtained from the load and the elastic deformation under an axial load equal to 3 times the applied preload, which itself is 10% 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 in the table as the actual value.

If the axial load (Fa) is not 10% of Ca, the rigidity value (K_a) is obtained from the following formula.

$$K_a = K \left(\frac{F_{a0}}{0.1C_a} \right)^{\frac{1}{3}}$$

K: Rigidity value in the dimensional table