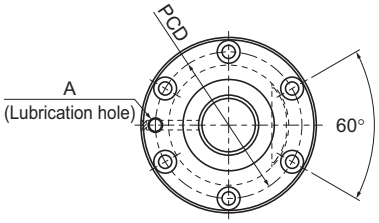
SBN-V Small
With Preload

DN value	130000



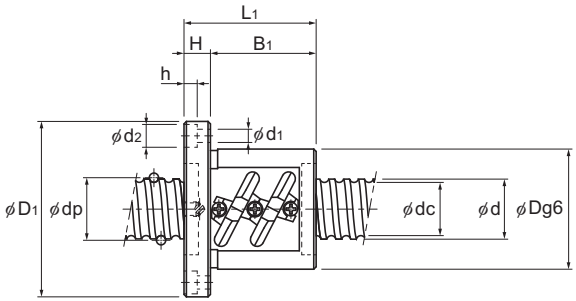
Model No.	Screw shaft outer diameter d	Lead Ph	Ball center-to-center diameter dp	Thread minor diameter dc	No. of loaded circuits Rows × turns	Basic load rating Ca kN	Basic load rating C₀a kN	Rigidity K N/μm
SBN 1604V-5	16	4	16.5	13.8	1×2.5	5.3	8	281
SBN 1605V-5	16	5	16.75	13.2	1×2.5	9.2	12.9	309
SBN 2004V-5	20	4	20.5	17.8	1×2.5	5.9	10.1	335
SBN 2005V-5	20	5	20.75	17.2	1×2.5	10.3	16.2	370
SBN 2010V-5	20	10	20.75	17.2	1×2.5	10.2	16.4	362
SBN 2504V-5	25	4	25.5	22.8	1×2.5	6.4	12.7	400
SBN 2505V-5	25	5	25.75	22.2	1×2.5	11.3	20.3	442
SBN 2506V-5	25	6	26	21.4	1×2.5	15.4	25.4	457
SBN 2805V-5	28	5	28.75	25.2	1×2.5	11.8	22.8	483
SBN 3205V-5	32	5	32.75	29.2	1×2.5	12.6	26.1	536
SBN 3206V-5	32	6	33	28.4	1×2.5	17.2	32.7	555

Model number coding

SBN1604V-5 QZ RR G0 +1200L C5

- SBN1604V-5: Model No.
- QZ: With QZ lubricator (No code without QZ lubricator) — Contamination protection accessory symbol (*1)
- RR
- G0: Symbol for Clearance in the axial direction (G0 for all SBN-V variations)
- +1200L: Overall screw shaft length (in mm)
- C5: Accuracy symbol (*2)

(*1) See A15-326. (*2) See A15-12.



Unit: mm

	Nut dimensions								Screw shaft inertial moment/mm	Nut mass	Shaft mass	Maximum permissible rotation speed
	Outer diameter	Flange diameter	Overall length					Lubrication hole				
	Dg6	D_1	L_1	H	B_1	PCD	$d_1 \times d_2 \times h$	A	$kg \cdot m^2/mm$	kg	kg/m	min^{-1}
	36	59	53	11	42	47	5.5×9.5×5.5		5.05×10^{-8}	0.42	1.42	5000
	40	60	56	10	46	50	4.5×8×4.5		5.05×10^{-8}	0.5	1.37	5000
	40	63	49	11	38	51	5.5×9.5×5.5		1.23×10^{-7}	0.43	2.22	5000
	44	67	56	11	45	55	5.5×9.5×5.5		1.23×10^{-7}	0.61	2.6	5000
	46	74	90	15	75	59	5.5×9.5×5.5		1.23×10^{-7}	1.06	2.33	5000
	46	69	48	11	37	57	5.5×9.5×5.5	M6	3.01×10^{-7}	0.55	3.6	5000
	50	73	55	11	44	61	5.5×9.5×5.5		3.01×10^{-7}	0.72	3.52	5000
	53	76	62	11	51	64	5.5×9.5×5.5		3.01×10^{-7}	0.9	3.43	5000
	55	85	59	12	47	69	6.6×11×6.5		4.74×10^{-7}	0.98	4.45	4520
	58	85	56	12	44	71	6.6×11×6.5		8.08×10^{-7}	0.96	5.88	3960
	62	89	63	12	51	75	6.6×11×6.5		8.08×10^{-7}	1.22	5.89	3930

Axial Clearance

Unit: mm

Clearance symbol	G0
Axial Clearance	0 or less

Note)The overall length of the nut will increase when equipping the QZ lubricating device. See A15-336 for further details.
It is not possible to chamfer both ends of the screw shaft. When designing your system this way, contact THK.

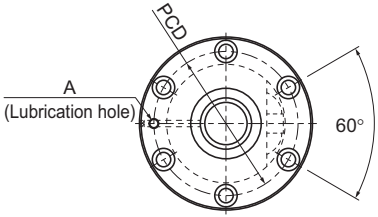
The rigidity values in the table represent spring constants, each obtained from the load and the elastic deformation when providing a preload equal to 10% of the basic axial dynamic load rating (Ca) and applying an axial load three times greater than the pre-load. These values do not include the rigidity of the components related to mounting the ball screw nut. Therefore, it is normally appropriate to regard roughly 80% of the value in the table as the actual value.
If the applied preload (Fa_0) is not 0.1 Ca, the rigidity value (K_N) is obtained from the following equation.

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

K: Rigidity value in the dimensional table

SBN-V Medium With Preload

DN value	160000



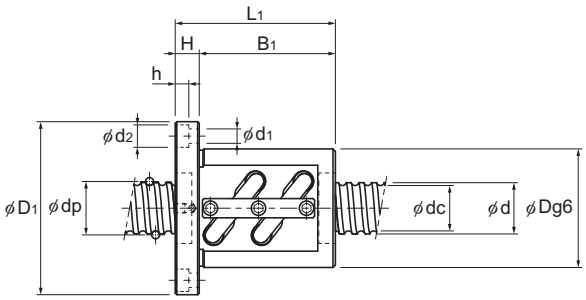
Model No.	Screw shaft outer diameter	Lead	Ball center-to-center diameter	Thread minor diameter	No. of loaded circuits	Basic load rating		Rigidity
						Ca	C₀a	K
	d	Ph	dp	dc	Rows × turns	kN	kN	N/μm
SBN 2508V-7	25	8	26.25	20.5	1×3.5	26.2	43	650
SBN 2510V-5	25	10	26.25	21.5	1×2.5	19.6	30.9	474
SBN 2810V-3	28	10	29.75	22.4	1×1.5	19.5	27.8	332
SBN 3210V-7	32	10	33.75	26.4	1×3.5	43	73.1	836.7
SBN 3212V-5	32	12	34	26.1	1×2.5	37.4	58.7	612.2
SBN 3216V-5	32	16	33.75	26.4	1×2.5	31.9	52.2	592
SBN 3610V-7	36	10	37.75	30.4	1×3.5	45.6	82.3	900
SBN 3612V-7	36	12	38	30.1	1×3.5	53.2	92.6	920
SBN 3616V-5	36	16	38	30.1	1×2.5	39.7	66.4	662
SBN 3620V-3	36	20	37.75	30.5	1×1.5	21.6	32.9	398
SBN 4010V-5	40	10	41.75	34.4	1×2.5	35.8	65.2	708
SBN 4012V-5	40	12	42	34.1	1×2.5	42	73.6	735.4
SBN 4016V-5	40	16	42	34.1	1×2.5	41.9	73.8	736.6
SBN 4020V-5	40	20	41.75	34.4	1×2.5	35.4	65.2	706
SBN 4510V-5	45	10	46.75	39.5	1×2.5	37.9	73.8	780
SBN 4512V-5	45	12	47	39.2	1×2.5	44.4	82.9	809.1
SBN 4516V-5	45	16	47	39.2	1×2.5	44.3	83.1	810.1
SBN 4520V-5	45	20	47	39.2	1×2.5	43.9	82.5	788
SBN 5010V-5	50	10	51.75	44.4	1×2.5	39.4	81	838
SBN 5012V-5	50	12	52.25	43.3	1×2.5	53.6	101.9	936
SBN 5016V-5	50	16	52.7	42.9	1×2.5	89	167.7	1228
SBN 5020V-5	50	20	52.7	42.9	1×2.5	88.7	167.7	1228

Model number coding

SBN4012V-5 QZ RR G0 +1200L C5

- SBN4012V-5: Model No.
- QZ: Contamination protection accessory symbol (*1) — With QZ lubricator (No code without QZ lubricator)
- RR: Symbol for Clearance in the axial direction (G0 for all SBN-V variations)
- G0: Overall screw shaft length (in mm)
- +1200L: Accuracy symbol (*2)
- C5: Accuracy symbol (*2)

(*1) See A15-326. (*2) See A15-12.



Unit: mm

	Nut dimensions								Screw shaft inertial moment/mm	Nut mass	Shaft mass	Maximum permissible rotation speed
	Outer diameter Dg6	Flange diameter D_1	Overall length L_1	H	B_1	PCD	$d_1 \times d_2 \times h$	Lubrication hole A	$kg \cdot m^2/mm$	kg	kg/m	min^{-1}
	58	85	98	15	83	71	6.6×11×6.5	M6	3.01×10^{-7}	1.5	3.51	5000
	58	85	100	18	82	71	6.6×11×6.5		3.01×10^{-7}	1.31	3.5	5000
	65	106	88	18	70	85	11×17.5×11		4.74×10^{-7}	2.41	4.15	5000
	74	108	120	15	105	90	9×14×8.5		8.08×10^{-7}	3.1	5.53	4740
	76	121	117	18	99	98	11×17.5×11		8.08×10^{-7}	3.7	5.7	4700
	74	108	139	18	121	90	9×14×8.5		8.08×10^{-7}	3.81	5.82	4740
	75	120	123	18	105	98	11×17.5×11		1.29×10^{-6}	3.82	7.1	4230
	78	123	140	18	122	100	11×17.5×11		1.29×10^{-6}	4.34	7.99	4210
	78	123	140	18	122	100	11×17.5×11		1.29×10^{-6}	4.31	7.99	4210
	75	114	122	18	104	93	11×17.5×11		1.29×10^{-6}	3.4	7.54	4230
	82	124	103	18	85	102	11×17.5×11		1.97×10^{-6}	3.61	8.87	3830
	84	126	119	18	101	104	11×17.5×11		1.97×10^{-6}	4.2	8.83	3800
	84	126	144	18	126	104	11×17.5×11		1.97×10^{-6}	4.9	9.09	3800
	82	126	162	18	144	104	11×17.5×11		1.97×10^{-6}	5.17	9.37	3830
	88	132	111	18	93	110	11×17.5×11	Rc1/8 (PT1/8)	3.16×10^{-6}	4.29	11.36	3420
	90	130	119	18	101	110	11×17.5×11		3.16×10^{-6}	4.6	11.32	3400
	90	130	140	18	122	110	11×17.5×11		3.16×10^{-6}	5.3	11.61	3400
	90	130	162	18	144	110	11×17.5×11		3.16×10^{-6}	5.96	11.1	3400
	93	135	103	18	85	113	11×17.5×11		4.82×10^{-6}	4.28	14.16	3090
	100	146	123	22	101	122	14×20×13		4.82×10^{-6}	6.12	13.82	3060
	105	152	164	25	139	128	14×20×13		4.82×10^{-6}	8.82	13.71	3030
	105	152	201	28	173	128	14×20×13		4.82×10^{-6}	10.63	14.05	3030

Axial Clearance

Unit: mm

Clearance symbol	G0
Axial Clearance	0 or less

Note)The overall length of the nut will increase when equipping the QZ lubricating device. See **A15-336** 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 in the table represent spring constants, each obtained from the load and the elastic deformation when providing a preload equal to 10% of the basic axial dynamic load rating (Ca) and applying an axial load three times greater than the pre-load.
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 value in the table as the actual value.
If the applied preload (Fa_0) is not 0.1 Ca, the rigidity value (K_N) is obtained from the following equation.

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

K: Rigidity value in the dimensional table

Options⇒A15-325