



# **APEX PRECISION MECHATRONIX PVT.LTD.**

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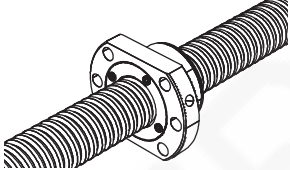
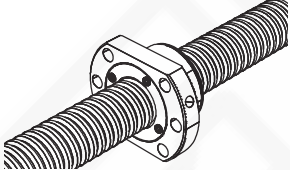
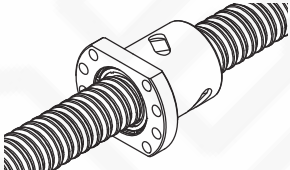
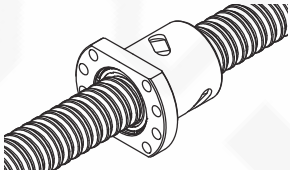
## **PHONE NO.**

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# Positioning, ISO 3408 compliant

Series	Type		Features	
Positioning	SDA-V		Compact Nut, high DN value	
	SDA-VZ		Compact Nut, high DN value	
	EPB-V		Compact nut	
	EBB-V		Compact nut	

	Caged ball	Compact nut	Miniature	High load capacity	Offset Preload	DN Value	Shaft diameter (mm)	Lead (mm)	Page No.
	✓	✓				130000	14 to 50	4 to 50	<b>A15-76</b>
		✓				100000	12 to 50	4 to 50	<b>A15-76</b>
		✓			✓	130000	16 to 63	4 to 12	<b>A15-84</b>
		✓				130000	16 to 80	4 to 20	<b>A15-88</b>

Ball Screw

## Standard combinations of outer diameters and leads of the screw shafts

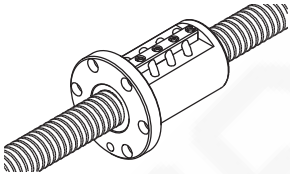
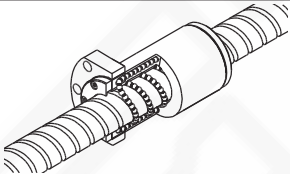
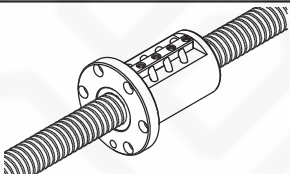
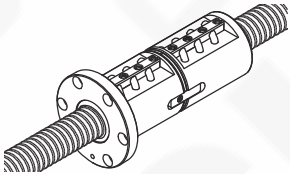
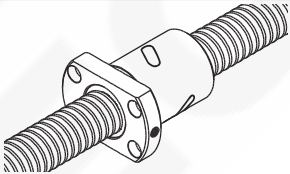
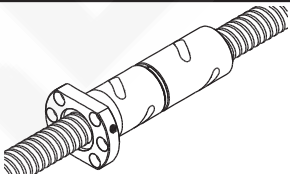
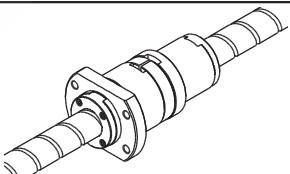
Shaft diameter	Lead							
	4	5	6	8	10	12	16	
12		SDA-VZ			SDA-VZ			
14		SDA-V SDA-VZ						
15		SDA-V SDA-VZ			SDA-V SDA-VZ			
16		SDA-V SDA-VZ EBB-V EPB-V			SDA-V SDA-VZ		SDA-V SDA-VZ	
20	SDA-V SDA-VZ EBB-V EPB-V	SDA-V SDA-VZ EBB-V EPB-V	EBB-V EPB-V	EBB-V EPB-V	SDA-V SDA-VZ EBB-V EPB-V	EBB-V EPB-V		
25	EBB-V EPB-V	SDA-V SDA-VZ EBB-V EPB-V	EBB-V EPB-V	EBB-V EPB-V	SDA-V SDA-VZ EBB-V EPB-V	EBB-V EPB-V		
28			SDA-V SDA-VZ EBB-V EPB-V					
31					SDA-V SDA-VZ	SDA-V SDA-VZ	SDA-V SDA-VZ	
32	EBB-V EPB-V	SDA-V SDA-VZ EBB-V EPB-V	EBB-V EPB-V	EBB-V EPB-V	SDA-V SDA-VZ EBB-V EPB-V			
36	EBB-V EPB-V		EBB-V EPB-V	EBB-V EPB-V	SDA-V SDA-VZ	SDA-V SDA-VZ	SDA-V SDA-VZ	
38					SDA-V SDA-VZ	SDA-V SDA-VZ	SDA-V SDA-VZ	
40	EBB-V EPB-V	EBB-V EPB-V	EBB-V EPB-V	EBB-V EPB-V	EBB-V EPB-V	EBB-V EPB-V		
45					SDA-V SDA-VZ	SDA-V SDA-VZ	SDA-V SDA-VZ	
50		EBB-V EPB-V		EBB-V EPB-V	SDA-V SDA-VZ EBB-V EPB-V	SDA-V SDA-VZ	SDA-V SDA-VZ	
63					EBB-V EPB-V	EBB-V	EBB-V	
80					EBB-V	EBB-V	EBB-V	

Unit: mm

Lead							
	20	25	30	32	36	40	50
	SDA-VZ		SDA-VZ				
	SDA-V SDA-VZ		SDA-V SDA-VZ				
	SDA-V SDA-VZ		SDA-V SDA-VZ			SDA-V SDA-VZ	
	SDA-V SDA-VZ	SDA-V SDA-VZ	SDA-V SDA-VZ				SDA-V SDA-VZ
	SDA-V SDA-VZ			SDA-V SDA-VZ			
	SDA-V SDA-VZ				SDA-V SDA-VZ		
	SDA-V SDA-VZ	SDA-V SDA-VZ	SDA-V SDA-VZ			SDA-V SDA-VZ	
	EBB-V						
	SDA-V SDA-VZ	SDA-V SDA-VZ	SDA-V SDA-VZ			SDA-V SDA-VZ	
	SDA-V SDA-VZ EBB-V	SDA-V SDA-VZ	SDA-V SDA-VZ			SDA-V SDA-VZ	SDA-V SDA-VZ
	EBB-V						
	EBB-V						

Ball Screw

# Positioning Ball Screw

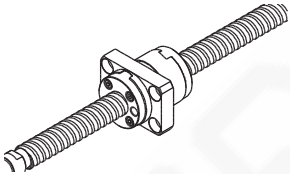
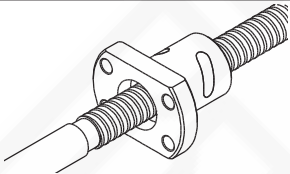
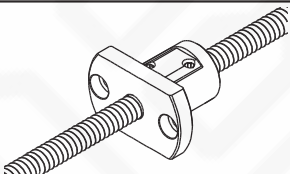
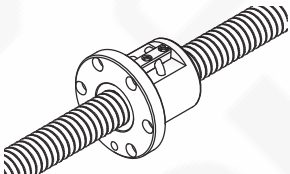
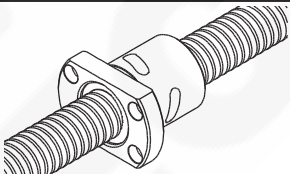
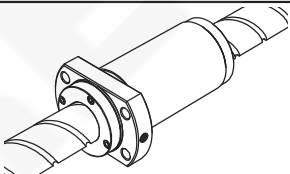
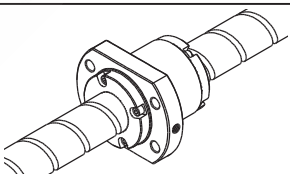
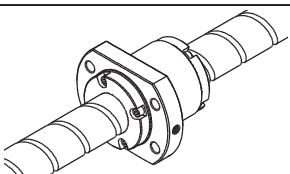
Series	Type		Features	
Positioning	SBN-V		Caged Ball, Single nut, high DN value	
	SBK		High DN value, large lead	
	BIF-V		Single nut, high DN value	
	BNFN-V		Double nut, high DN value	
	BNFN		Double nut, large	
	DIK		Compact nut, preload	
	DKN		Compact nut	
	BLW		Large lead	

## Positioning Ball Screw

	Caged ball	Compact nut	Miniature	High load capacity	Offset Preload	DN Value	Shaft diameter (mm)	Lead (mm)	Page No.
	✓				✓	130000	16 to 32	4 to 10	<b>A15-100</b>
						160000	25 to 50	8 to 20	<b>A15-102</b>
	✓				✓	210000	36 to 50	36 to 50	<b>A15-104</b>
						160000	15 to 55	10 to 36	<b>A15-106</b>
					✓	100000	16 to 32	4 to 6	<b>A15-108</b>
						130000	25 to 50	8 to 20	<b>A15-110</b>
				✓	✓	100000	16 to 32	5 to 6	<b>A15-114</b>
						130000	28 to 50	10 to 16	<b>A15-114</b>
					✓	70000	55 to 100	10 to 20	<b>A15-116</b>
		✓			✓	70000	14 to 63	4 to 16	<b>A15-120</b>
		✓		✓	✓	70000	40 to 63	20	<b>A15-126</b>
					✓	70000	15 to 50	10 to 50	<b>A15-127</b>

Ball Screw

# Positioning Ball Screw

Series	Type		Features	
Positioning	BNK Standardized finished shaft end		Standardized finished shaft end	
	MDK		Compact nut, miniature	
	MBF		Miniature	
	BNF-V		Single nut, high DN value	
	BNF		Single nut, large	
	DK		Compact nut, no preload	
	WHF		Super large lead, high DN value	
	BLK		Large lead	
	WGF		Super large lead	



## Positioning Ball Screw

	Caged ball	Compact nut	Miniature	High load capacity	Offset Preload	DN Value	Shaft diameter (mm)	Lead (mm)	Page No.
					✓	70000	4 to 25	1 to 20	<b>A15-128</b>
		✓	✓			70000	4 to 14	1 to 5	<b>A15-170</b>
			✓			70000	4 to 14	1 to 4	<b>A15-176</b>
						100000	16 to 32	4 to 6	<b>A15-178</b>
						130000	25 to 50	8 to 20	<b>A15-180</b>
						70000	55 to 100	10 to 20	<b>A15-184</b>
		✓				70000	14 to 63	4 to 20	<b>A15-188</b>
						120000	15 to 25	20 to 50	<b>A15-196</b>
						70000	15 to 50	10 to 50	<b>A15-198</b>
						70000	8 to 50	12 to 100	<b>A15-200</b>

Ball Screw

## Standard combinations of outer diameters and leads of the screw shafts

Shaft diameter	Lead												
	1	2	4	5	6	8	10	12	15	16	20	24	
4	BNK MBF MDK												
5	BNK												
6	BNK MBF MDK												
8	BNK MDK	BNK MBF MDK					BNK	WGF					
10		BNK MBF MDK	BNK				BNK		WGF				
12		BNK MBF MDK		BNK		BNK							
13											WGF		
14		BNK MBF MDK	BNK DIK MBF MDK DK	MDK		BNK							
15							BNK BLW BLK				SBK BNK WGF		
16			SBN-V BIF-V BNF-V	SBN-V BIF-V BNFN-V DIK BNF-V DK						SBK BNK BLW BLK			
20			SBN-V BIF-V DIK BNF-V DK	SBN-V BIF-V DIK BNF-V DK	DIK DK	DIK DK	SBN-V SBK BIF-V BNK BNF-V				SBK BNK BLW BLK WHF		
25			SBN-V BIF-V DIK BNF-V DK	SBN-V BIF-V DIK BNF-V DK	SBN-V BIF-V DIK BNF-V DK	SBN-V BIF-V DIK BNF-V DK	SBN-V BIF-V DIK BNF-V DK				SBK BNK		
28				SBN-V BIF-V BNFN-V DIK BNF-V DK	BIF-V BNFN-V DIK BNF-V DK		SBN-V BIF-V BNFN-V DIK BNF-V DK						

## Positioning Ball Screw

Unit: mm

Lead													
	25	30	32	36	40	50	55	60	63	70	80	90	100
							BNFN BNF		BNFN BNF	BNFN BNF	BNFN BNF		
							BNFN BNF		BNFN BNF	BNFN BNF			
		WGF WHF			WGF WHF								
							BNFN BNF		BNFN BNF				
	WHF	SBK WHF			WGF WHF		BNFN BNF	WGF	BNFN BNF	BNFN BNF	BNFN BNF		BNFN BNF
	SBK BLW BLK WHF					WGF WHF							

Ball Screw

## Standard combinations of outer diameters and leads of the screw shafts

Shaft diameter	Lead										
	1	2	4	5	6	8	10	12	15	16	
30											
32			DIK DK	SBN-V BIF-V BNFN-V DIK BNF-V DK	SBN-V BIF-V DIK BNF-V DK		SBN-V BIF-V DIK BNF-V DK	SBN-V BIF-V DIK BNF-V DK		SBN-V BIF-V BNF-V	
36							SBN-V BIF-V BNFN-V DIK BNF-V	SBN-V BIF-V BNF-V DK		SBN-V BIF-V BNFN-V BNF-V	
40							SBN-V BIF-V DIK BNF-V DK	SBN-V BIF-V DIK BNF-V DK		SBN-V BIF-V BNFN-V DIK BNF-V DK	
45							SBN-V BIF-V BNFN-V BNF-V	SBN-V BIF-V BNF-V		SBN-V BIF-V	
50							SBN-V BIF-V BNFN-V DIK BNF-V DK	SBN-V BIF-V DIK BNF-V DK		SBN-V BIF-V DIK BNF-V DK	
55							BNFN BNF	BNFN BNF		BNFN BNF	
63							BNFN DIK BNF DK	BNFN DIK BNF DK		BNFN BNF	
70							BNFN BNF	BNFN BNF			
80							BNFN BNF	BNFN BNF			
100											

## Positioning Ball Screw

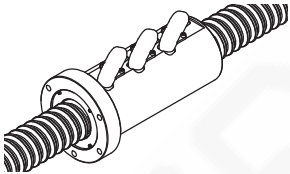
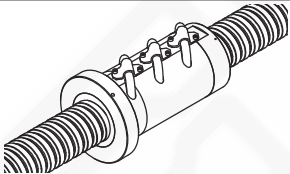
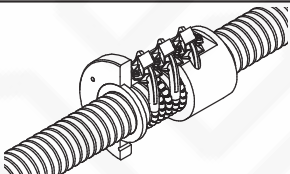
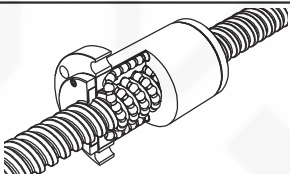
Unit: mm

Lead												
	20	24	25	30	32	36	40	50	60	80	90	100
									WGF		WGF	
SBK					SBK BLW BLK							
SBN-V SBK BIF-V BNF-V BLK	BLK					SBK BLW BLK						
SBN-V SBK BIF-V DKN BNF-V DK				SBK			SBK BLW BLK			WGF		
SBN-V BIF-V BNF-V												
SBN-V SBK BIF-V DKN BNF-V DK				SBK		SBK		SBK BLW BLK				WGF
SBK BNFN BNF				SBK		SBK						
BNFN DKN BNF DK												
BNFN BNF												
BNFN BNF												
BNFN BNF												

Ball Screw



# High thrust Ball Screw

Series	Type		Features	
High thrust	HBN-V		High load	
	HBN-K		High load	
	HBN		High load	
	SBKH		High load, large lead	

## High thrust Ball Screw

	Caged ball	Compact nut	Miniature	High load capacity	Offset Preload	DN Value	Shaft diameter (mm)	Lead (mm)	Page No.
	✓			✓		160000	50 to 80	10 to 25	<b>A15-206</b>
	✓			✓		120000	63 to 140	16 to 50	<b>A15-208</b>
	✓			✓		130000	32 to 63	10 to 20	<b>A15-212</b>
	✓			✓		130000	63 to 120	32 to 60	<b>A15-214</b>

Ball Screw

## Standard combinations of outer diameters and leads of the screw shafts

Shaft diameter	Lead							
	4	5	6	10	12	16	20	
32				HBN				
36				HBN	HBN			
40				HBN	HBN			
50				HBN-V HBN	HBN-V HBN	HBN-V HBN		
63						HBN-V HBN	HBN-V HBN	
80						HBN-V	HBN-V	
100						HBN-K	HBN-K	
120							HBN-K	
140								



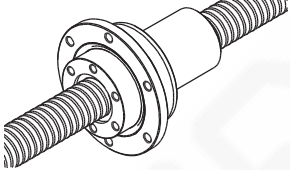
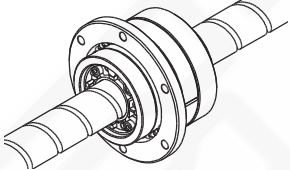
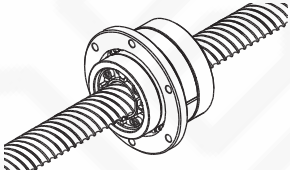
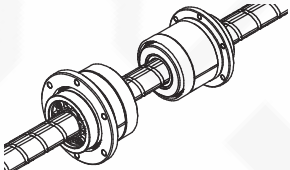
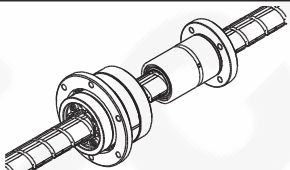
## High thrust Ball Screw

Unit: mm

Lead									
	25	30	32	35	36	40	42	50	60
	HBN-V		SBKH	HBN-K		SBKH	HBN-K	HBN-K	
	HBN-V					HBN-K		HBN-K SBKH	SBKH
	HBN-K							SBKH	SBKH
	HBN-K								SBKH
	HBN-K		HBN-K			HBN-K			

Ball Screw

# Rotary nut Ball Screw

Series	Type		Features	
Rotary nut	DIR		Nut rotation, preload	
	BLR		Nut rotation, no preload	
	BLR (Rolled)		Nut rotation, no preload	
	BNS		Ball screw / spline	
	NS			

# Rotary nut Ball Screw

	Caged ball	Compact nut	Miniature	High load capacity	Offset Preload	DN Value	Shaft diameter (mm)	Lead (mm)	Page No.
						70000	16 to 40	5 to 12	<b>A15-236</b>
						70000	16 to 50	16 to 50	<b>A15-238</b>
						70000	16 to 50	16 to 50	<b>A15-240</b>
						70000	8 to 50	12 to 50	<b>A15-242</b>
									<b>A15-248</b>

Ball Screw

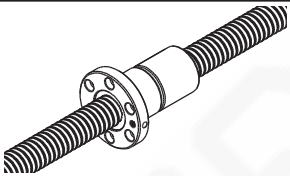
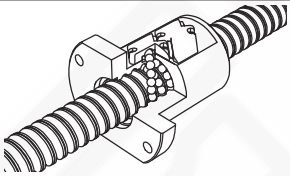
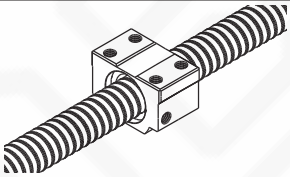
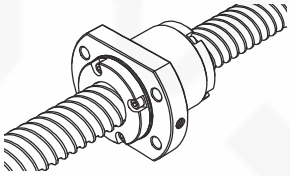
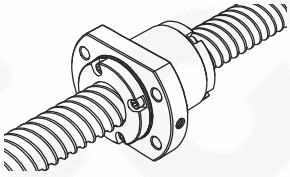
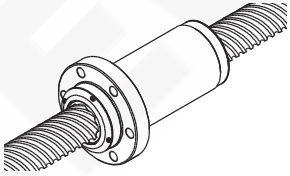
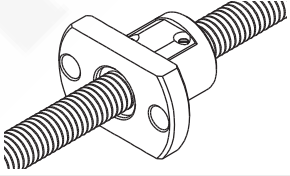
## Standard combinations of outer diameters and leads of the screw shafts

Shaft diameter	Lead							
	4	5	6	10	12	15	16	
8					BNS NS			
10						BNS NS		
14								
16		DIR					BLR BLR(Rolled) BNS NS	
20		DIR						
25		DIR		DIR				
28								
32		DIR	DIR	DIR				
36				DIR				
40				DIR	DIR			
50								

Lead							
	20	25	30	32	36	40	50
	BLR BLR(Rolled) BNS NS						
		BLR BLR(Rolled) BNS NS					
				BLR BLR(Rolled) BNS NS			
					BLR BLR(Rolled)		
						BLR BLR(Rolled) BNS NS	
							BLR BLR(Rolled) BNS NS

## Ball Screw

# Transport Ball Screw

Series	Type		Features	
Transport	JPF		Fixed-point Preloading	
	BTK-V		High DN value	
	BNT		Flat nut	
	BLK		Large lead	
	WTF		Super large lead	
	CNF		Super large lead	
	MTF		Unfinished Shaft End Miniature	

# Transport Ball Screw

	Caged ball	Compact nut	Miniature	High load capacity	Preload	DN Value	Shaft diameter (mm)	Lead (mm)	Page No.
					✓	50000	14 to 40	4 to 10	<b>A15-220</b>
						100000	10 to 50	6 to 16	<b>A15-222</b>
						50000	14 to 45	4 to 12	<b>A15-224</b>
						70000	15 to 50	10 to 50	<b>A15-226</b>
						70000	15 to 50	20 to 100	<b>A15-228</b>
						70000	15 to 30	30 to 60	<b>A15-230</b>
			✓			50000	6 to 12	1 to 2	<b>A15-231</b>

Ball Screw

## Standard combinations of outer diameters and leads of the screw shafts

Shaft diameter	Lead										
	1	2	4	5	6	8	10	12	16	20	
6	MTF										
8		MTF									
10		MTF			BTK-V						
12		MTF				BTK-V					
14			JPF BTK-V BNT	JPF BTK-V BNT							
15							BLK			WTF	
16				JPF BTK-V BNT					BLK		
18						BTK-V BNT					
20				JPF BTK-V BNT			BTK-V BNT			BLK	
25				JPF BTK-V BNT			JPF BTK-V BNT				
28				JPF	JPF BTK-V BNT						
30											
32							JPF BTK-V BNT				
36							JPF BTK-V BNT			BLK	
40							JPF BTK-V				
45								BTK-V BNT			
50									BTK-V		

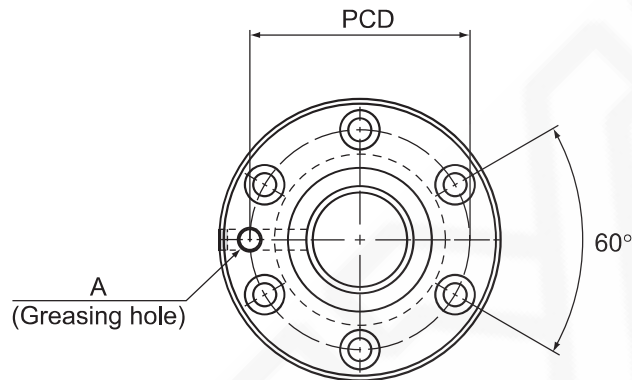


Lead

[illegible]

# JPF With Preload

DN value	50000
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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		Outer diameter D	Flange diameter D <sub>1</sub>	Outer diameter D <sub>2</sub>
						Ca kN	C <sub>0a</sub> kN			
JPF 1404-4	14	4	14.4	11.5	2 × 1	2.8	5.1	26	46	25.5
JPF 1405-4		5	14.5	11.2	2 × 1	3.9	8.6	26	46	25.5
JPF 1605-4	16	5	16.75	13.5	2 × 1	3.7	8.2	30	49	29.5
JPF 2005-6	20	5	20.5	17.2	3 × 1	6	16	34	57	33.5
JPF 2505-6		5	25.5	22.2	3 × 1	6.9	20.8	40	66	39.5
JPF 2510-4	25	10	26.8	20.2	2 × 1	11.4	24.5	47	72	46.5
JPF 2805-6	28	5	28.75	25.2	3 × 1	7.3	23.9	43	69	42.5
JPF 2806-6		6	28.5	25.2	3 × 1	7.3	23.9	43	69	42.5
JPF 3210-6	32	10	33.75	27.2	3 × 1	19.3	49.9	54	88	53.5
JPF 3610-6	36	10	37	30.5	3 × 1	20.6	56.2	58	98	57.5
JPF 4010-6	40	10	41.75	35.2	3 × 1	22.2	65.3	62	104	61.5

## Model number coding

**JPF1404-4 RR GO +500L C7 T**

Model No.

Seal symbol (\*1)

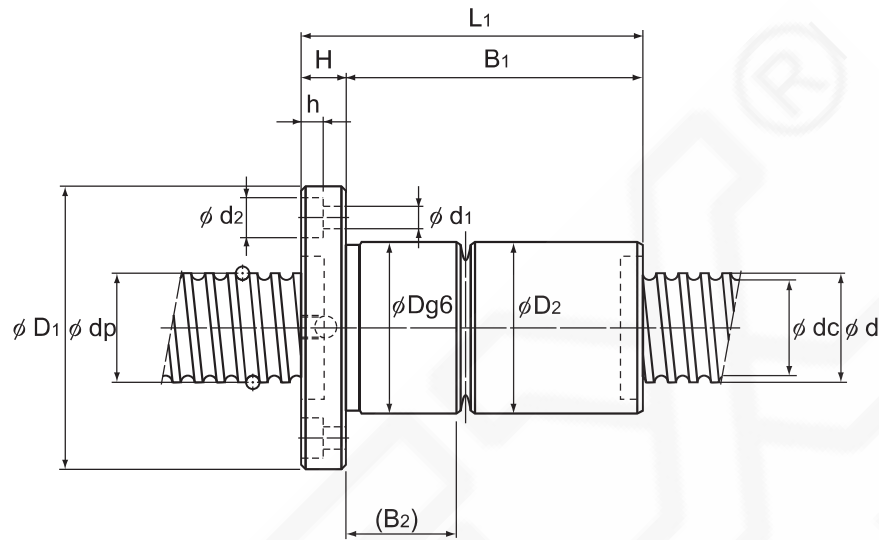
Overall screw shaft length (in mm)

Symbol for rolled shaft

Symbol for clearance in the axial direction

Accuracy symbol (\*2)

(\*1) See **A15-290**. (\*2) See **A15-12**.



Unit: mm

Nut dimensions								Screw shaft inertial moment	Nut mass	Shaft mass
Overall length	H	B <sub>1</sub>	B <sub>2</sub>	PCD	d <sub>1</sub> × d <sub>2</sub> × h	Greasing hole	A			
L <sub>1</sub>								kg·m <sup>2</sup> /mm	kg	kg/m
52	10	42	16.5	36	4.5 × 8 × 4.5	M6		2.96 × 10 <sup>-8</sup>	0.22	1
60	10	50	20	36	4.5 × 8 × 4.5	M6		2.96 × 10 <sup>-8</sup>	0.24	0.99
60	10	50	19.5	39	4.5 × 8 × 4.5	M6		5.05 × 10 <sup>-8</sup>	0.3	1.34
80	11	69	26.5	45	5.5 × 9.5 × 5.5	M6		1.23 × 10 <sup>-7</sup>	0.46	2.15
80	11	69	26	51	5.5 × 9.5 × 5.5	M6		3.01 × 10 <sup>-7</sup>	0.6	3.45
112	12	100	42	58	6.6 × 11 × 6.5	M6		3.01 × 10 <sup>-7</sup>	1.2	3.26
80	12	68	25	55	6.6 × 11 × 6.5	M6		4.74 × 10 <sup>-7</sup>	0.66	4.27
90	12	78	35	55	6.6 × 11 × 6.5	M6		4.74 × 10 <sup>-7</sup>	0.72	4.44
135	15	120	53.5	70	9 × 14 × 8.5	M6		8.08 × 10 <sup>-7</sup>	1.84	5.49
138	18	120	53.5	77	11 × 17.5 × 11	M6		1.29 × 10 <sup>-6</sup>	2.22	6.91
138	18	120	53.5	82	11 × 17.5 × 11	R1/8 (PT1/8)		1.97 × 10 <sup>-6</sup>	2.42	8.81

Note) The ball screw nut and the screw shaft of model JPF are not sold separately.

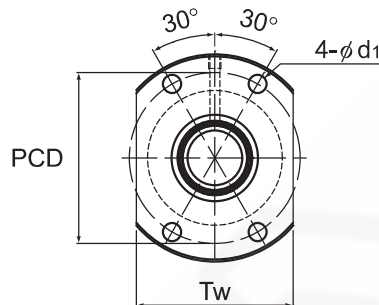
The basic load rating corresponds to the recommended loading direction.

If a load is applied in the opposite direction, the value must be 0.1×Ca or less during use.

# BTK-V

## No Preload

DN value	100000
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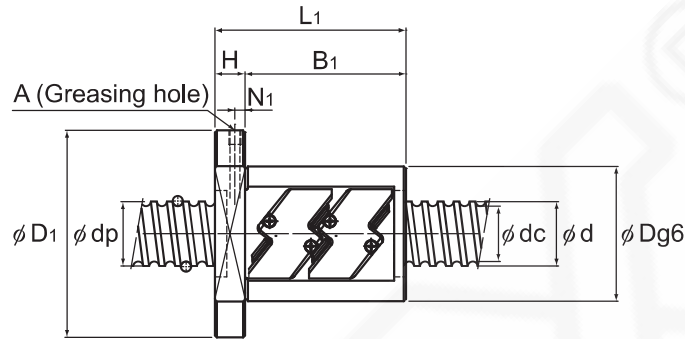
Model No.	Screw shaft outer diameter d	Lead Ph	Ball center- to-center diameter dp	Thread minor diameter dc	No. of loaded circuits Rows X turns	Basic load rating		Rigidity K N/μm				
						Ca kN	C <sub>0a</sub> kN		Outer diameter D	Flange diameter D <sub>1</sub>	Overall length L <sub>1</sub>	H
BTK 1006V-2.6	10	6	10.5	7.8	1×2.65	2.8	4.9	88	26	42	36	8
BTK 1208V-2.6	12	8	12.65	9.7	1×2.65	3.8	6.8	108	29	45	44	8
BTK 1404V-3.6	14	4	14.4	11.5	1×3.65	5.5	11.5	150	31	50	40	10
BTK 1405V-2.6	14	5	14.5	11.2	1×2.65	5	11.4	116	32	50	40	10
BTK 1605V-2.6	16	5	16.75	13.5	1×2.65	5.4	13.3	130	34	54	40	10
BTK 1808V-3.6	18	8	19.3	14.4	1×3.65	13.1	31	210	50	80	61	12
BTK 2005V-2.6	20	5	20.5	17.2	1×2.65	6	16.5	150	40	60	40	10
BTK 2010V-2.6	20	10	21.25	16.4	1×2.65	10.6	25.1	160	52	82	61	12
BTK 2505V-2.6	25	5	25.5	22.2	1×2.65	6.7	20.8	180	43	67	40	10
BTK 2510V-5.3	25	10	26.8	20.2	2×2.65	31.2	83.7	400	60	96	98	15
BTK 2806V-2.6	28	6	28.5	25.2	1×2.65	7	23.4	200	50	80	47	12
BTK 2806V-5.3	28	6	28.5	25.2	2×2.65	12.8	46.8	390	50	80	65	12
BTK 3210V-2.6	32	10	33.75	27.2	1×2.65	19.8	53.8	250	67	103	68	15
BTK 3210V-5.3	32	10	33.75	27.2	2×2.65	36	107.5	490	67	103	98	15
BTK 3610V-2.6	36	10	37	30.5	1×2.65	20.8	59.8	270	70	110	70	17
BTK 3610V-5.3	36	10	37	30.5	2×2.65	37.8	118.7	530	70	110	100	17
BTK 4010V-5.3	40	10	41.75	35.2	2×2.65	40.3	134.9	590	76	116	100	17
BTK 4512V-5.3	45	12	46.5	39.2	2×2.65	49.5	169	650	82	128	118	20
BTK 5016V-5.3	50	16	52.7	42.9	2×2.65	93.8	315.2	930	102	162	145	25

### Model number coding

**BTK1405V-2.6 ZZ +500L C7 T H1K**

Model No.

Contamination  
protection  
accessory  
symbol (\*1)Overall screw  
shaft length  
(in mm)Accuracy symbol  
(\*2)Symbol for  
rolled shaftRecommended shaft  
ends shape code(\*1) See **A15-290**. (\*2) See **A15-12**.



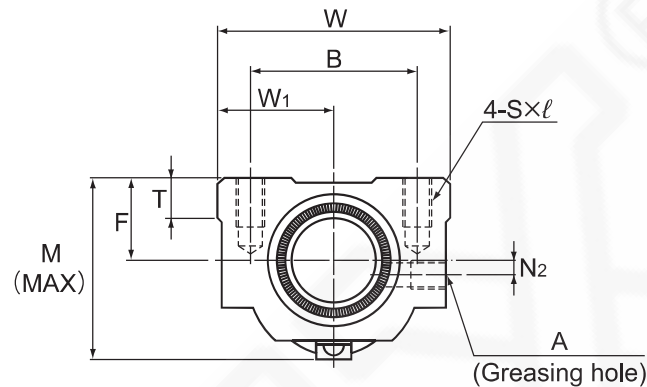
Unit: mm

Nut dimensions						Axial clearance	Standard shaft length	Screw shaft inertial moment kg-m <sup>2</sup> /mm	Nut mass kg	Shaft mass kg/m	Maximum permissible rotation speed min <sup>-1</sup>
	B <sub>1</sub>	PCD	d <sub>1</sub>	Tw	Greasing hole N <sub>1</sub> A						
	28	34	4.5	29	— 3	0.05	200, 300, 500, 1000	$7.71 \times 10^{-9}$	0.12	0.48	5000
	36	37	4.5	32	— 3	0.05	200, 300, 500, 1000	$1.60 \times 10^{-8}$	0.18	0.72	5000
	30	40	4.5	37	5 M6	0.1	500, 1000	$2.96 \times 10^{-8}$	0.23	1	5000
	30	40	4.5	38	5 M6	0.1	500, 1000	$2.96 \times 10^{-8}$	0.22	0.99	5000
	30	44	4.5	40	5 M6	0.1	500, 1000, 1500	$5.05 \times 10^{-8}$	0.24	1.34	5000
	49	65	6.6	60	5 M6	0.1	500, 1000, 1500	$8.09 \times 10^{-8}$	0.84	1.71	5000
	30	50	4.5	46	5 M6	0.1	500, 1000, 1500, 2000	$1.23 \times 10^{-7}$	0.32	2.15	4878
	49	67	6.6	64	5 M6	0.1	500, 1000, 1500, 2000	$1.23 \times 10^{-7}$	0.93	2.16	4651
	30	55	5.5	50	5 M6	0.1	500, 1000, 1500, 2000	$3.01 \times 10^{-7}$	0.34	3.45	3921
	83	78	9	72	5 M6	0.1	500, 1000, 1500, 2000	$3.01 \times 10^{-7}$	1.83	3.26	3731
	35	65	6.6	60	6 M6	0.1	500, 1000, 2000, 2500	$4.74 \times 10^{-7}$	0.59	4.44	3508
	53	65	6.6	60	6 M6	0.1	500, 1000, 2000, 2500	$4.74 \times 10^{-7}$	0.75	4.44	3508
	53	85	9	78	5 M6	0.14	500, 1000, 1500, 2000, 2500, 3000	$8.08 \times 10^{-7}$	1.56	5.49	2962
	83	85	9	78	5 M6	0.14	500, 1000, 1500, 2000, 2500, 3000	$8.08 \times 10^{-7}$	2.1	5.49	2962
	53	90	11	82	7 M6	0.17	500, 1000, 2000, 2500, 3000	$1.29 \times 10^{-6}$	1.78	6.91	2702
	83	90	11	82	7 M6	0.17	500, 1000, 2000, 2500, 3000	$1.29 \times 10^{-6}$	2.35	6.91	2702
	83	96	11	88	7 M6	0.17	1000, 1500, 2000, 2500, 3000, 3500	$1.97 \times 10^{-6}$	2.6	8.81	2395
	98	104	14	94	8 M6	0.17	1000, 1500, 2000, 3000, 3500, 4000	$3.16 \times 10^{-6}$	3.48	11.08	2150
	120	132	18	104	12.5 R1/8 (PT1/8)	0.2	1000, 1500, 2000, 3000, 3500, 4000	$4.82 \times 10^{-6}$	6.52	13.66	1897

Note) The overall length of the nut will increase when equipping the QZ lubricating device. See **A15-300** for further details.

# BNT (Rolled Ball Screw) No Preload

DN value	50000
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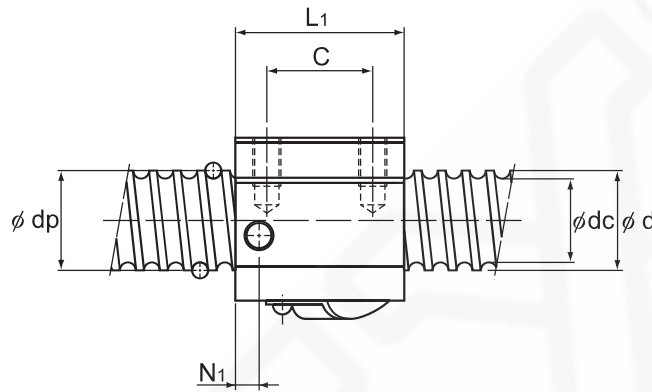
Model No.	Screw shaft outer diameter d	Lead Ph	Ball center-to-center diameter dp	Thread minor diameter dc	No. of loaded circuits Rows X turns	Basic load rating		Rigidity K N/μm	Width		
						Ca kN	C <sub>0a</sub> kN		W	F	Overall length L <sub>1</sub>
BNT 1404-3.6	14	4	14.4	11.5	1×3.65	5.5	11.5	150	34	13	35
BNT 1405-2.6		5	14.5	11.2	1×2.65	5	11.4	110	34	13	35
BNT 1605-2.6	16	5	16.75	13.5	1×2.65	5.4	13.3	130	42	16	36
BNT 1808-3.6	18	8	19.3	14.4	1×3.65	13.1	31	210	48	17	56
BNT 2005-2.6	20	5	20.5	17.2	1×2.65	6	16.5	150	48	17	35
BNT 2010-2.6		10	21.25	16.4	1×2.65	10.6	25.1	160	48	18	58
BNT 2505-2.6	25	5	25.5	22.2	1×2.65	6.7	20.8	180	60	20	35
BNT 2510-5.3		10	26.8	20.2	2×2.65	31.2	83.7	400	60	23	94
BNT 2806-2.6	28	6	28.5	25.2	1×2.65	7	23.4	200	60	22	42
BNT 2806-5.3			28.5	25.2	2×2.65	12.8	46.8	390	60	22	67
BNT 3210-2.6	32	10	33.75	27.2	1×2.65	19.8	53.8	250	70	26	64
BNT 3210-5.3			33.75	27.2	2×2.65	36	107.5	490	70	26	94
BNT 3610-2.6	36	10	37	30.5	1×2.65	20.8	59.3	270	86	29	64
BNT 3610-5.3			37	30.5	2×2.65	37.8	118.7	530	86	29	96
BNT 4512-5.3	45	12	46.5	39.2	2×2.65	49.5	169	650	100	36	115

## Model number coding

**BNT2010-2.6 ZZ +1000L C7 T H1K**

Model No.	Contamination protection accessory symbol (*1)	Overall screw shaft length (in mm)	Accuracy symbol (*2)	Symbol for rolled shaft	Recommended shaft ends shape code
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(\*1) See **A15-290**. (\*2) See **A15-12**.



Unit: mm

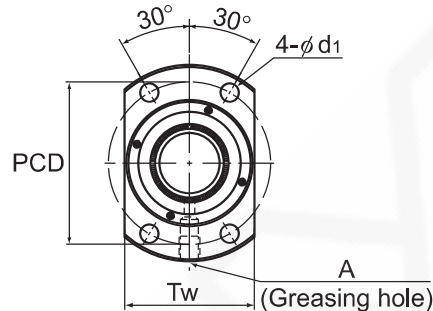
Nut dimensions										Axial clearance	Screw shaft inertial moment	Nut mass	Shaft mass
	Mounting hole			W <sub>1</sub>	T	M	N <sub>1</sub>	N <sub>2</sub>	A				
	B	C	S×ℓ										
	26	22	M4×7	17	6	30	6	2	M6	0.1	2.96×10 <sup>-8</sup>	0.15	1
	26	22	M4×7	17	6	31	6	2	M6	0.1	2.96×10 <sup>-8</sup>	0.15	0.99
	32	22	M5×8	21	21.5	32.5	6	2	M6	0.1	5.05×10 <sup>-8</sup>	0.3	1.34
	35	35	M6×10	24	10	44	8	3	M6	0.1	8.09×10 <sup>-8</sup>	0.47	1.71
	35	22	M6×10	24	9	39	5	3	M6	0.1	1.23×10 <sup>-7</sup>	0.28	2.15
	35	35	M6×10	24	9	46	10	2	M6	0.1	1.23×10 <sup>-7</sup>	0.5	2.16
	40	22	M8×12	30	9.5	45	7	5	M6	0.1	3.01×10 <sup>-7</sup>	0.41	3.45
	40	60	M8×12	30	10	55	10	—	M6	0.1	3.01×10 <sup>-7</sup>	1.18	3.26
	40	18	M8×12	30	10	50	8	—	M6	0.1	4.74×10 <sup>-7</sup>	0.81	4.44
	40	40	M8×12	30	10	50	8	—	M6	0.1	4.74×10 <sup>-7</sup>	0.78	4.44
	50	45	M8×12	35	12	62	10	—	M6	0.14	8.08×10 <sup>-7</sup>	1.3	5.49
	50	60	M8×12	35	12	62	10	—	M6	0.14	8.08×10 <sup>-7</sup>	2	5.49
	60	45	M10×16	43	17	67	11	—	M6	0.17	1.29×10 <sup>-6</sup>	1.8	6.91
	60	60	M10×16	43	17	67	11	—	M6	0.17	1.29×10 <sup>-6</sup>	2.4	6.91
	75	75	M12×20	50	20.5	80	13	—	M6	0.2	3.16×10 <sup>-6</sup>	4.1	11.08

Note) The overall length of the nut will increase when equipping the QZ lubricating device. See **A15-300** for further details.



# BLK (Rolled Ball Screw) No Preload

DN value	70000
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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 K N/μm				
						Ca kN	C <sub>0a</sub> kN		Outer diameter D	Flange diameter D <sub>1</sub>	Overall length L <sub>1</sub>	H
BLK 1510-5.6	15	10	15.75	12.5	2×2.8	9.8	25.2	260	34	57	44	10
BLK 1616-3.6	16	16	16.65	13.7	2×1.8	5.8	12.9	170	32	53	38	10
BLK 1616-7.2	16	16	16.65	13.7	4×1.8	10.5	25.9	340	32	53	38	10
BLK 2020-3.6	20	20	20.75	17.5	2×1.8	7.7	22.3	210	39	62	45	10
BLK 2020-7.2	20	20	20.75	17.5	4×1.8	13.9	44.6	410	39	62	45	10
BLK 2525-3.6	25	25	26	21.9	2×1.8	12.1	35	270	47	74	55	12
BLK 2525-7.2	25	25	26	21.9	4×1.8	21.9	69.9	520	47	74	55	12
BLK 3232-3.6	32	32	33.25	28.3	2×1.8	17.3	53.9	330	58	92	70	15
BLK 3232-7.2	32	32	33.25	28.3	4×1.8	31.3	107.8	650	58	92	70	15
BLK 3620-5.6	36	20	37.75	31.2	2×2.8	39.8	121.7	570	70	110	78	17
BLK 3624-5.6	36	24	38	30.7	2×2.8	46.2	137.4	590	75	115	94	18
BLK 3636-3.6	36	36	37.4	31.7	2×1.8	22.4	70.5	370	66	106	77	17
BLK 3636-7.2	36	36	37.4	31.7	4×1.8	40.6	141.1	730	66	106	77	17
BLK 4040-3.6	40	40	41.75	35.2	2×1.8	28.1	89.8	420	73	114	85	17
BLK 4040-7.2	40	40	41.75	35.2	4×1.8	51.1	179.6	810	73	114	85	17
BLK 5050-3.6	50	50	52.2	44.1	2×1.8	42.1	140.4	510	90	135	106	20
BLK 5050-7.2	50	50	52.2	44.1	4×1.8	76.3	280.7	1000	90	135	106	20

## Model number coding

**BLK3232-3.6 ZZ +1500L C7 T H1K**

Model No.

Contamination protection accessory symbol (\*1)

Overall screw shaft length (in mm)

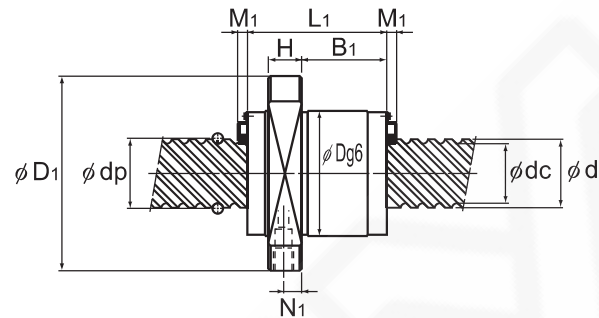
Accuracy symbol (\*2)

Symbol for rolled shaft

Recommended shaft ends shape code

(\*1) See **A15-290**. (\*2) See **A15-12**.





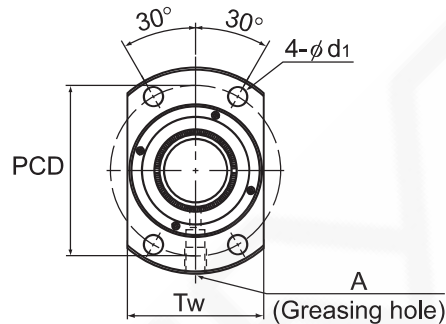
Unit: mm

Nut dimensions								Axial clearance	Standard shaft length	Screw shaft inertial moment	Nut mass	Shaft mass
	B <sub>1</sub>	PCD	d <sub>1</sub>	Tw	Greasing hole		Seal					
					N <sub>1</sub>	A	M <sub>1</sub>					
	24	45	5.5	40	5	M6	3.5	0.1	500, 1000	3.90×10 <sup>-8</sup>	0.26	1.16
	21.5	42	4.5	38	5	M6	3.5	0.1	500, 1000, 1500	5.05×10 <sup>-8</sup>	0.21	1.35
	21.5	42	4.5	38	5	M6	3.5	0.1	500, 1000, 1500	5.05×10 <sup>-8</sup>	0.25	1.35
	27.5	50	5.5	46	5	M6	3.5	0.1	500, 1000, 1500	1.23×10 <sup>-7</sup>	0.35	2.18
	27.5	50	5.5	46	5	M6	3.5	0.1	500, 1000, 1500	1.23×10 <sup>-7</sup>	0.35	2.18
	35	60	6.6	56	6	M6	3.5	0.1	500, 1000, 1500, 2000, 2500	3.01×10 <sup>-7</sup>	0.64	3.41
	35	60	6.6	56	6	M6	3.5	0.1	500, 1000, 1500, 2000, 2500	3.01×10 <sup>-7</sup>	0.64	3.41
	45	74	9	68	7.5	M6	3.8	0.14	1000, 1500, 2000, 2500, 3000	8.08×10 <sup>-7</sup>	1.14	5.69
	45	74	9	68	7.5	M6	3.8	0.14	1000, 1500, 2000, 2500, 3000	8.08×10 <sup>-7</sup>	1.14	5.69
	45	90	11	80	8.5	M6	5	0.17	1000, 1500, 2000, 2500, 3000	1.29×10 <sup>-6</sup>	1.74	7.09
	59	94	11	86	9	M6	5	0.17	1000, 1500, 2000, 2500, 3000	1.29×10 <sup>-6</sup>	2.42	7.02
	50	85	11	76	8.5	M6	5	0.17	1000, 1500, 2000, 2500, 3000	1.29×10 <sup>-6</sup>	1.74	7.12
	50	85	11	76	8.5	M6	5	0.17	1000, 1500, 2000, 2500, 3000	1.29×10 <sup>-6</sup>	1.74	7.12
	56.5	93	11	84	8.5	M6	5.4	0.17	1000, 1500, 2000, 2500, 3000, 4000	1.97×10 <sup>-6</sup>	2.16	8.76
	56.5	93	11	84	8.5	M6	5.4	0.17	1000, 1500, 2000, 2500, 3000, 4000	1.97×10 <sup>-6</sup>	2.16	8.76
	72	112	14	104	10	M6	5.4	0.2	1000, 1500, 2000, 3000, 4000	4.82×10 <sup>-6</sup>	3.89	13.79
	72	112	14	104	10	M6	5.4	0.2	1000, 1500, 2000, 3000, 4000	4.82×10 <sup>-6</sup>	3.86	13.79

Note) The overall length of the nut will increase when equipping the QZ lubricating device. See **A15-300** for further details.

# WTF No Preload

DN value	70000
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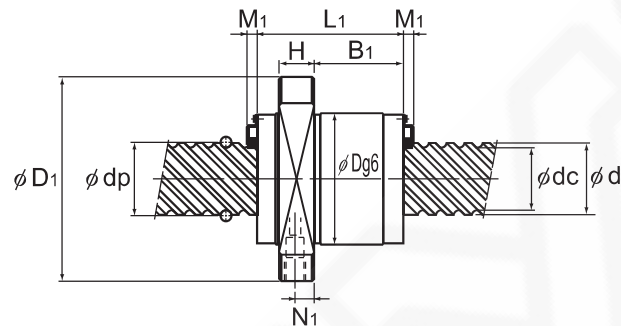
Model No.	Screw shaft outer diameter d	Lead Ph	Ball center-to-center diameter dp	Thread minor diameter dc	No. of loaded circuits Rows X turns	Basic load rating		Rigidity K N/μm				
						Ca kN	C <sub>0a</sub> kN		Outer diameter D	Flange diameter D <sub>1</sub>	Overall length L <sub>1</sub>	H
WTF 1520-3	15	20	15.75	12.5	2×1.5	5.5	14.2	140	32	53	45	10
WTF 1520-6	15	20	15.75	12.5	4×1.5	10.1	28.5	280	32	53	45	10
WTF 1530-2	15	30	15.75	12.5	4×0.6	4.3	9.3	120	32	53	33	10
WTF 1530-3	15	30	15.75	12.5	2×1.6	5.6	12.4	160	32	53	63	10
WTF 2040-2	20	40	20.75	17.5	4×0.65	5.4	13.6	160	37	57	41.5	10
WTF 2040-3	20	40	20.75	17.5	2×1.65	6.6	17.2	200	37	57	81.5	10
WTF 2550-2	25	50	26	21.9	4×0.65	8.5	21.2	200	45	69	52	12
WTF 2550-3	25	50	26	21.9	2×1.65	10.4	26.9	260	45	69	102	12
WTF 3060-2	30	60	31.25	26.4	4×0.65	11.8	30.6	240	55	89	62.5	15
WTF 3060-3	30	60	31.25	26.4	2×1.65	14.5	38.9	310	55	89	122.5	15
WTF 4080-2	40	80	41.75	35.2	4×0.65	19.8	54.5	320	73	114	79	17
WTF 4080-3	40	80	41.75	35.2	2×1.65	24.3	69.2	400	73	114	159	17
WTF 50100-2	50	100	52.2	44.1	4×0.65	29.6	85.2	390	90	135	98	20
WTF 50100-3	50	100	52.2	44.1	2×1.65	36.3	108.1	500	90	135	198	20

## Model number coding

**WTF3060-3 ZZ +1500L C7 T H1K**

Model No.	Contamination protection accessory symbol (*1)	Overall screw shaft length (in mm)	Accuracy symbol (*2)	Symbol for rolled shaft	Recommended shaft ends shape code
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(\*1) See **A15-290**. (\*2) See **A15-12**.



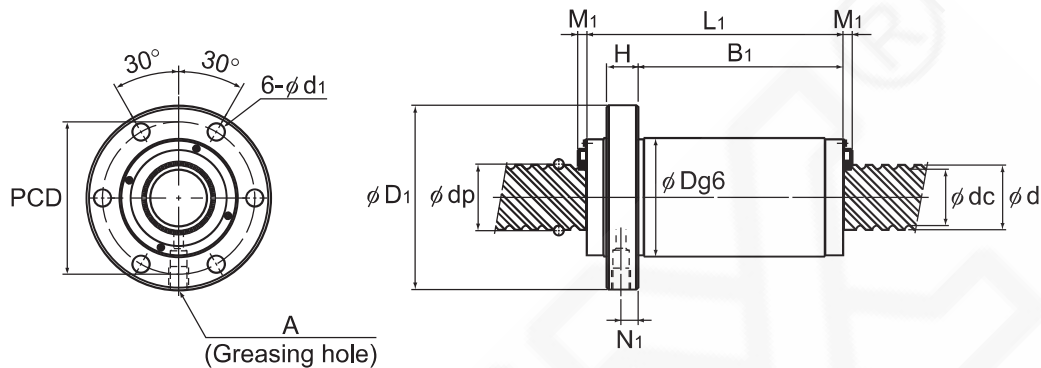
Unit: mm

Nut dimensions								Axial clearance	Standard shaft length	Screw shaft inertial moment	Nut mass	Shaft mass
	B <sub>1</sub>	PCD	d <sub>i</sub>	Tw	Greasing hole		Seal					
					N <sub>1</sub>	A						
	28	43	5.5	33	5	M6	3.5	0.1	500, 1000	3.90×10 <sup>-8</sup>	0.2	1.17
	28	43	5.5	33	5	M6	3.5	0.1	500, 1000	3.90×10 <sup>-8</sup>	0.2	1.17
	17	43	5.5	33	5	M6	3.5	0.1	500, 1000, 1500	3.90×10 <sup>-8</sup>	0.22	1.19
	47	43	5.5	33	5	M6	3.5	0.1	500, 1000, 1500	3.90×10 <sup>-8</sup>	0.4	1.19
	25.5	47	5.5	38	5.5	M6	3.5	0.1	500, 1000, 1500, 2000	1.23×10 <sup>-7</sup>	0.25	2.12
	65.5	47	5.5	38	5.5	M6	3.5	0.1	500, 1000, 1500, 2000	1.23×10 <sup>-7</sup>	0.5	2.12
	31.5	57	6.6	46	7	M6	3.5	0.1	1000, 1500, 2000, 3000	3.01×10 <sup>-7</sup>	0.45	3.34
	81.5	57	6.6	46	7	M6	3.5	0.1	1000, 1500, 2000, 3000	3.01×10 <sup>-7</sup>	0.85	3.34
	37.5	71	9	56	9	M6	3.8	0.14	1000, 2000, 3000, 4000	6.24×10 <sup>-7</sup>	0.8	4.84
	97.5	71	9	56	9	M6	3.8	0.14	1000, 2000, 3000, 4000	6.24×10 <sup>-7</sup>	1.7	4.84
	50.5	93	11	74	9	M6	5.4	0.17	1000, 1500, 2000, 3000	1.97×10 <sup>-6</sup>	2.1	8.66
	130.5	93	11	74	9	M6	5.4	0.17	1000, 1500, 2000, 3000	1.97×10 <sup>-6</sup>	3.67	8.66
	64	112	14	92	10	M6	5.4	0.2	1500, 3000	4.82×10 <sup>-6</sup>	3.5	13.86
	164	112	14	92	10	M6	5.4	0.2	1500, 3000	4.82×10 <sup>-6</sup>	6.4	13.86

Note) The overall length of the nut will increase when equipping the QZ lubricating device. See **A15-300** for further details.

# CNF No Preload

DN value	70000
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Unit: mm

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 K N/μm	Nut dimensions				
						Ca	C <sub>0a</sub>		Outer diameter D	Flange diameter D <sub>1</sub>	Overall length L <sub>1</sub>	H	B <sub>1</sub>
						kN	kN						
CNF 1530-6	15	30	15.75	12.5	4×1.6	10.1	24.7	310	32	53	63	10	47
CNF 2040-6	20	40	20.75	17.5	4×1.65	12	34.4	400	37	57	81	10	65
CNF 2550-6	25	50	26	21.9	4×1.65	18.9	53.9	460	45	69	102	12	81.5
CNF 3060-6	30	60	31.25	26.4	4×1.65	26.2	77.7	600	55	89	122	15	97

Model No.	Nut dimensions					Axial clearance	Standard shaft length	Screw shaft inertial moment kg·m <sup>2</sup> /mm	Nut mass kg	Shaft mass kg/m
	PCD	d <sub>1</sub>	Greasing hole		Seal M <sub>1</sub>					
			N <sub>1</sub>	A						
CNF 1530-6	43	5.5	5	M6	3.5	0.1	500, 1000, 1500	3.90×10 <sup>-8</sup>	0.42	1.19
CNF 2040-6	47	5.5	5.5	M6	3.5	0.1	500, 1000, 1500, 2000	1.23×10 <sup>-8</sup>	0.5	2.12
CNF 2550-6	57	6.6	7	M6	3.5	0.1	1000, 1500, 2000, 3000	3.01×10 <sup>-7</sup>	0.85	3.34
CNF 3060-6	71	9	9	M6	3.8	0.14	1000, 2000, 3000, 4000	6.24×10 <sup>-7</sup>	1.7	4.84

Note) The overall length of the nut will increase when equipping the QZ lubricating device. See **A15-300** for further details.

## Model number coding

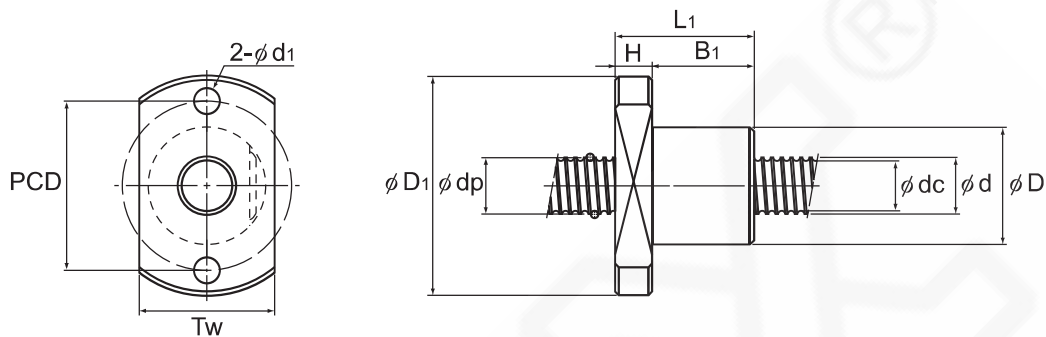
**CNF2040-6 ZZ +1500L C7 T H1K**

Model No.	Contamination protection accessory symbol (*1)	Overall screw shaft length (in mm)	Accuracy symbol (*2)	Symbol for rolled shaft	Recommended shaft ends shape code
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(\*1) See **A15-290**. (\*2) See **A15-12**.

# MTF No Preload

DN value	50000
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Unit: mm

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 K N/μm	Nut dimensions		
						Ca kN	C <sub>0a</sub> kN		Outer diameter D	Flange diameter D <sub>1</sub>	Overall length L <sub>1</sub>
MTF 0601-3.7	6	1	6.15	5.3	1×3.7	0.7	1.2	70	13	30	21
MTF 0802-3.7	8	2	8.3	6.6	1×3.7	2.1	3.8	90	20	40	28
MTF 1002-3.7	10	2	10.3	8.6	1×3.7	2.3	4.8	110	23	43	28
MTF 1202-3.7	12	2	12.3	10.6	1×3.7	2.5	5.8	130	25	47	30

Model No.	Nut dimensions					Axial clearance	Standard shaft length	Screw shaft inertial moment kg-m <sup>2</sup> /mm	Nut mass kg	Shaft mass kg/m
	H	B <sub>1</sub>	PCD	d <sub>1</sub>	Tw					
MTF 0601-3.7	5	16	21.5	3.4	17	0.05	150, 250	9.99×10 <sup>-10</sup>	0.03	0.19
MTF 0802-3.7	6	22	30	4.5	24	0.05	150, 250	3.16×10 <sup>-9</sup>	0.08	0.31
MTF 1002-3.7	6	22	33	4.5	27	0.05	200, 300	7.71×10 <sup>-9</sup>	0.1	0.52
MTF 1202-3.7	8	22	36	5.5	29	0.05	200, 300	1.60×10 <sup>-8</sup>	0.13	0.77

Note) Model MTF cannot be attached with seal.  
 Model MTF is only sold as sets (ball screw nut and screw shaft).  
 Model MTF is applied only with anti-rust oil.

## Model number coding

**MTF 0802-3.7 +250L C7 T**

Model No.      Overall screw shaft length (in mm)      Symbol for rolled shaft

Accuracy code: (No code for Normal Grade)