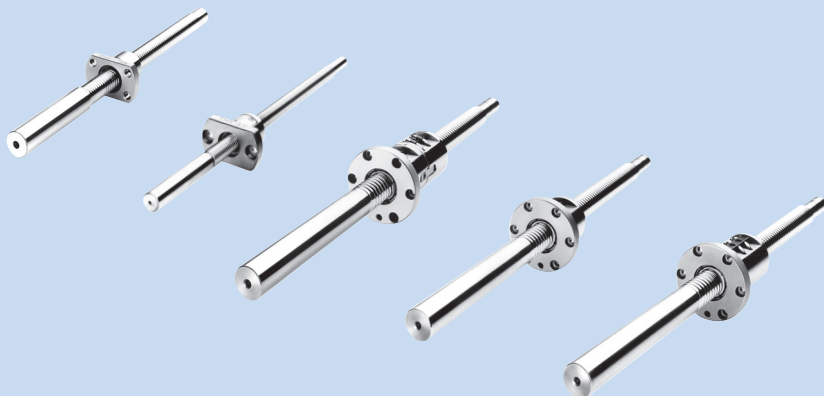


Standard-Stock Precision Ball Screw

Unfinished Shaft Ends
Models BIF, BNFN, MDK, MBF and BNF



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Dimensional Drawing, Dimensional Table, Example of Model Number Coding	▶▶▶ B-584

Structure and Features

This type of Ball Screw is mass manufactured by cutting the standardized screw shafts of Precision Ball Screws to regular lengths. Additional machining of the shaft ends can easily be performed.

To meet various intended purposes, THK offers several Ball Screw models with different types of nuts: the double-nut type (model BNFN), the single-nut type (model BNF), the offset preload-nut type (model BIF) and the miniature Ball Screw (models MDK and MBF).

[Contamination Protection]

Nuts of the following model numbers are attached with a labyrinth seal.

- All variations of models BNFN, BNF and BIF
- Model MDK0802/1002/1202/1402/1404/1405

When dust or other foreign materials may enter the Ball Screw, it is necessary to use a contamination protection device (e.g., bellows) to completely protect the screw shaft.

[Lubrication]

The ball screw nuts are supplied with lithium soap-group grease with shipments.

(Models MDK and MBF are applied only with an anti-rust oil.)

[Additional Machining of the Shaft End]

Since only the effective thread of the screw shaft is surface treated with induction-hardening (all variations of models BNFN, BNF and BIF; model MDK 1405) or carburizing (all variations of model MBF; model MDK0401 to 1404), the shaft ends can additionally be machined easily either by grinding or milling.

In addition, since both ends of the screw shaft have a center hole, they can be cylindrically ground.

Surface hardness of the effect thread : HRC58 to 64

Hardness of the screw shaft ends

All variation of models BNFN, BNF and BIF; model MDK 1405 : HRC22 to 27

All variations of model MBF; model MDK0401 to 1404 : HRC35 or below

THK has standardized the shapes of the screw shaft ends in order to allow speedy estimation and manufacturing of the Ball Screws.

The shapes of shaft ends are divided into those allowing the standard support units to be used (symbols H, K and J) and those compliant with JIS B 1192-1997 (symbols A, B and C). See A-810 for details.

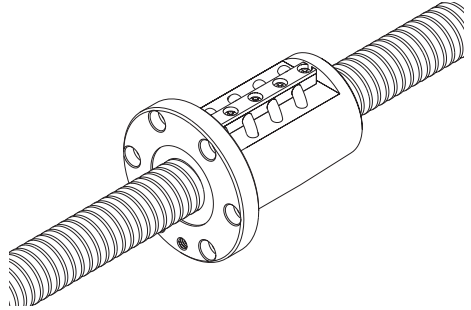
Types and Features

[Preload Type]

Model BIF

The right and left screws are provided with a phase in the middle of the ball screw nut, and an axial clearance is set at a below-zero value (under a preload). This compact model is capable of a smooth motion.

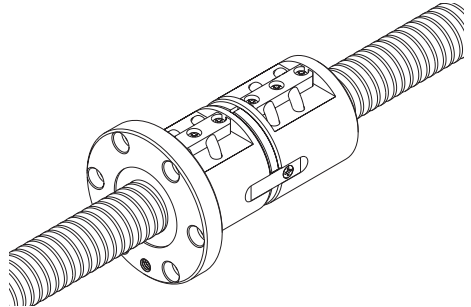
Specification Table⇒B-594



Model BNFN

The most common type with a preload provided via a spacer between the two combined ball screw nuts to eliminate backlash. It can be mounted using the bolt holes drilled on the flange.

Specification Table⇒B-594



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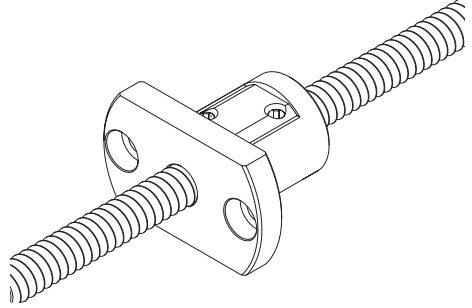
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[No Preload Type]

Models MDK and MBF

Specification Table⇒B-584

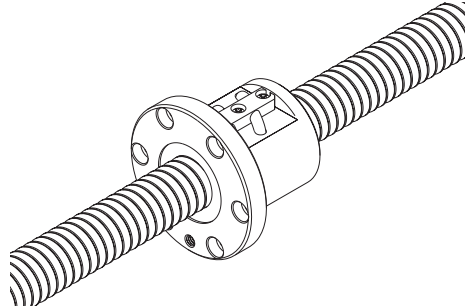
A miniature type with a screw shaft diameter of $\phi 4$ to $\phi 14$ mm and a lead of 1 to 5mm.



Model BNF

Specification Table⇒B-594



The simplest type with a single ball screw nut. It is designed to be mounted using the bolt holes drilled on the flange.






Service Life

For details, see A-704.

Nut Types and Axial Clearance

Screw shaft outer diameter (mm)	ϕ 4 to 14			
Nut type	Model MDK		Model MBF	
	 No preload type		 No preload type	
Accuracy grades	C3, C5	C7	C3, C5	C7
Axial clearance (mm)	0.005 or less (GT)	0.02 or less (G2)	0.005 or less (GT)	0.02 or less (G2)
Preload	—		—	

Note) The symbols in the parentheses indicate axial clearance symbols.

Screw shaft out diameter (mm)	ϕ 16 to 50					
Nut type	Model BIF		Model BNFN		Model BNF	
	 Preload Type		 Preload Type		 No preload type	
Accuracy grades	C5	C7	C5	C7	C5	C7
Axial clearance (mm)	0 or less (G0)	0 or less (G0)	0 or less (G0)	0 or less (G0)	0.01 or less (G1)	0.02 or less (G2)
Preload	0.05Ca	0.05Ca	0.05Ca	0.05Ca	—	—

Note1) The symbols in the parentheses indicate axial clearance symbols.

Note2) Symbol "Ca" for preload indicates the basic dynamic load rating.