

B-I-3 Ball Screw Series

B-I-3.1 Ball Screw Classification

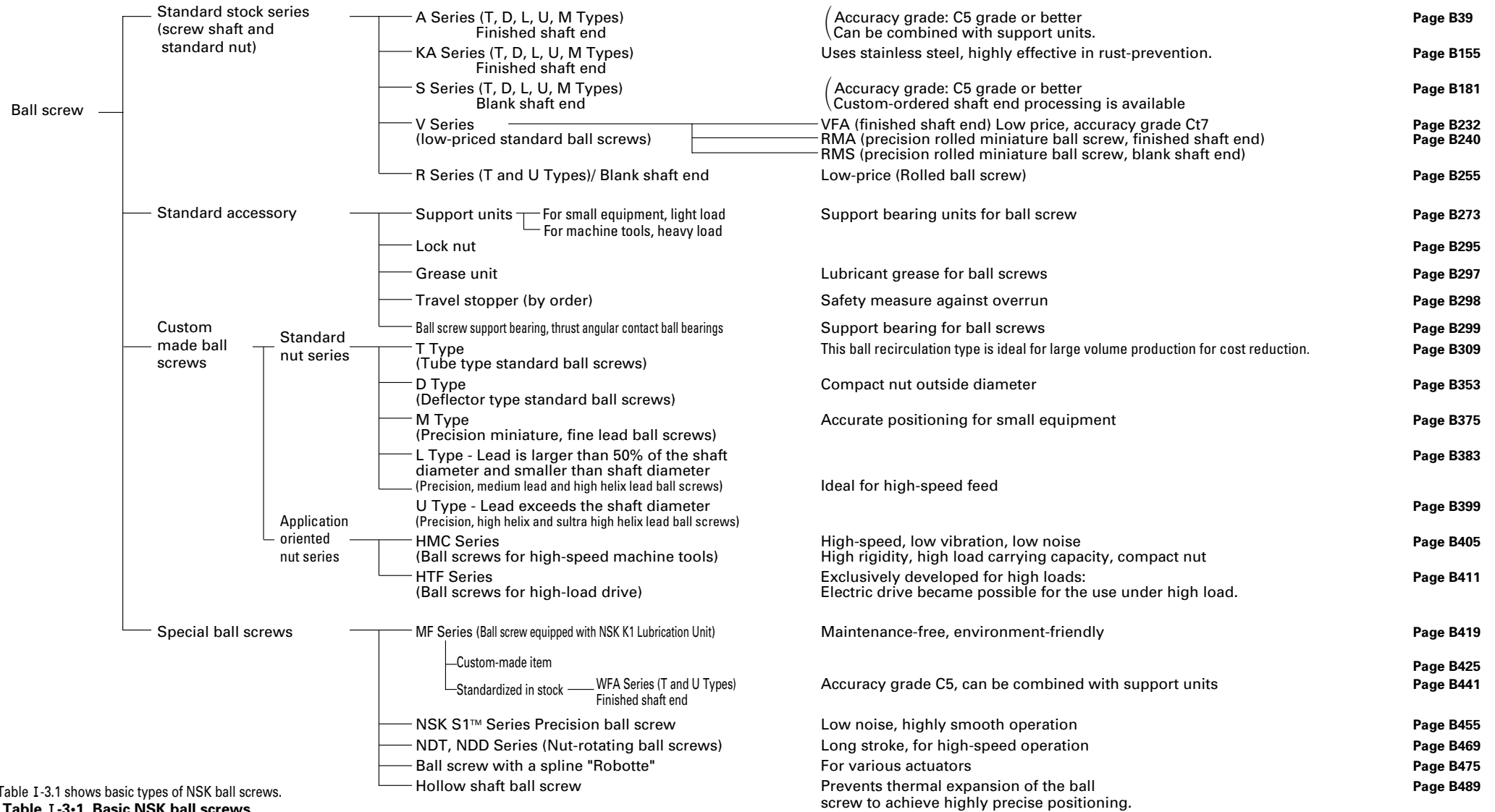


Table I-3.1 shows basic types of NSK ball screws.

Table I-3-1 Basic NSK ball screws

Type	Lead size	Recirculation component	Preload method
T Type	Fine, Medium	Tube	D, P, Z
D Type	Fine, Medium	Deflector	D, P, Z
L Type	Medium, High helix	Tube	D, P
U Type	High helix, Ultra high helix	Tube, end cap	P
M Type	Fine	Deflector	P

Remarks **Table I-3-2 Lead classification**

Classification	Lead ratio $K = \text{lead} / \text{shaft diameter}$
Fine	$K < 0.5$
Medium	$0.5 \leq K < 1$
High helix	$1 \leq K < 2$
Ultra high helix	$2 \leq K$

B-I-3.2 Ball Screw Series

(1) Standard stock series (immediate delivery, low-price)

● Ball screws

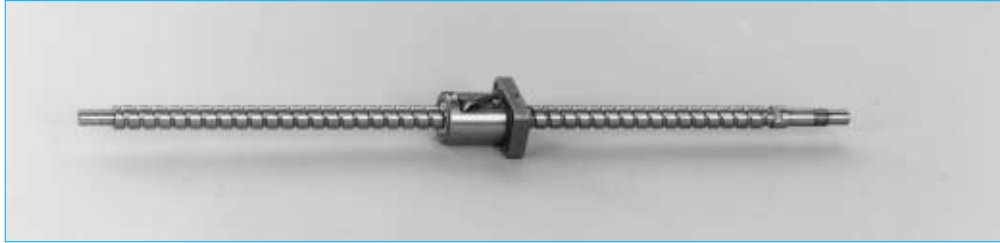


Fig. I-3-1 A Series Finished shaft end

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Fig. I-3-2 KA Series Finished shaft end

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Fig. I-3-3 S Series Blank shaft end

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Fig. I-3-4 V Series VFA finished shaft end

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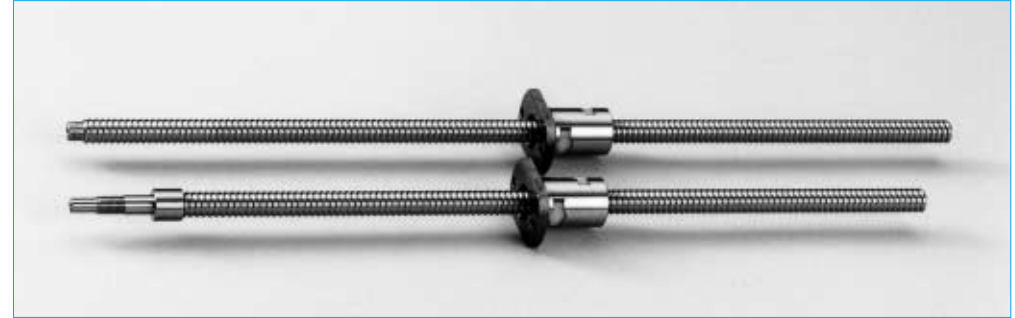


Fig. I-3-5 V Series RMA finished shaft end RMS blank shaft end

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Fig. I-3-6 R Series Blank shaft end

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Fig. I-3-7 R Series Nut assembly

●Standard accessory



Fig. I-3-8 Support unit, for small equipment (light load) Page B281

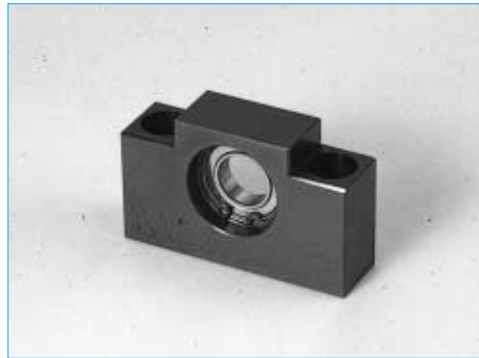


Fig. I-3-9 Support unit for VFA (simple support side) Page B288



Fig. I-3-14 Grease unit Page D20



Fig. I-3-15 NSK grease Page B297, D20



Fig. I-3-10 Support bearing kit for RMA Page B287



Fig. I-3-11 Support unit, for machine tools (heavy load) Page B293

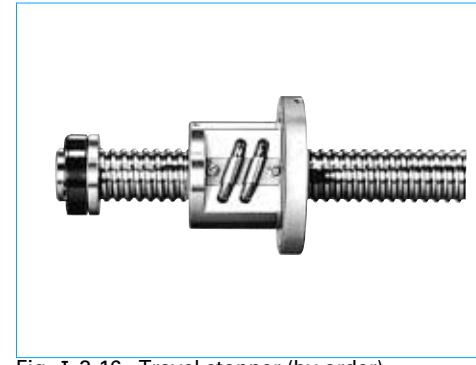


Fig. I-3-16 Travel stopper (by order) Page B298

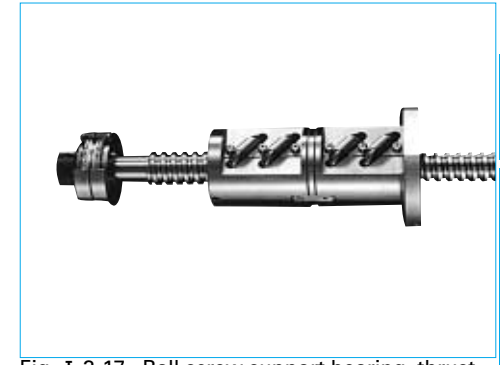


Fig. I-3-17 Ball screw support bearing, thrust angular contact ball bearings Page B299

Components for ball screw support bearing are available.



Fig. I-3-12 Lock nuts A Type Page B295



Fig. I-3-13 Lock nuts S Type Page B296

(2) Custom made ball screws: Standard ball nut series

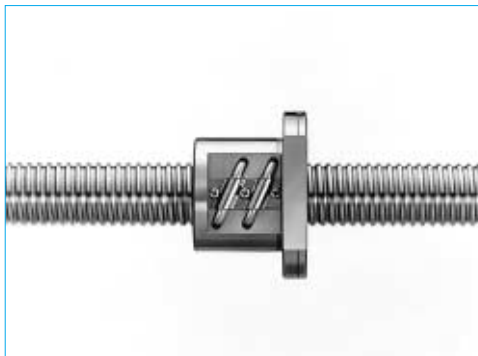


Fig. I-3•18 T Type
(Tube type, standard ball screw) Page B309

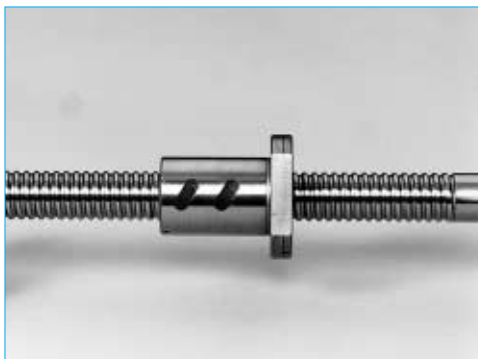


Fig. I-3•19 D Type
(Deflector type, standard ball screw) Page B353

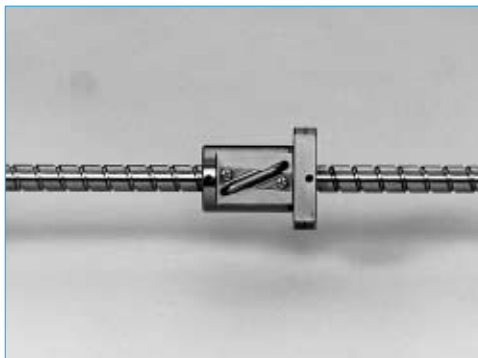


Fig. I-3•20 L Type (Precision, medium and high helix lead ball screws) Page B383

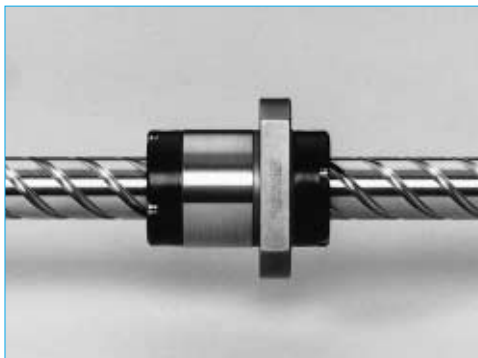


Fig. I-3•21 U Type (Precision, high helix and ultra high helix lead ball screws) Page B399

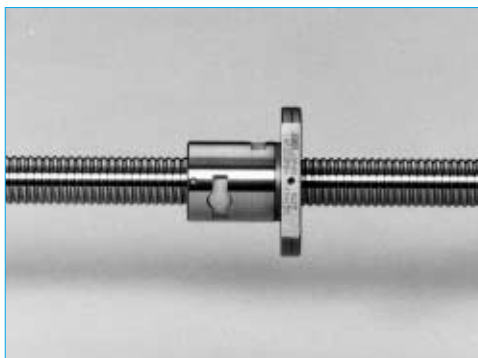


Fig. I-3•22 M Type
(Precision miniature, fine lead ball screws) Page B375

(3) Custom made ball screws: Application oriented nut series

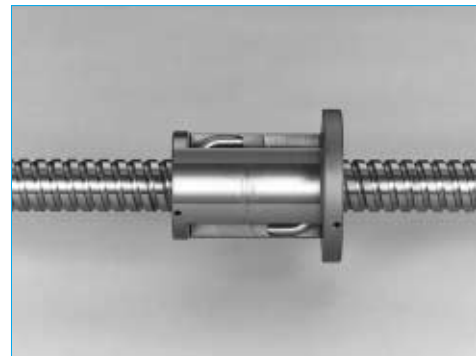


Fig. I-3•23 Ball screw for high-speed machine tools (HMC Series) Page B405

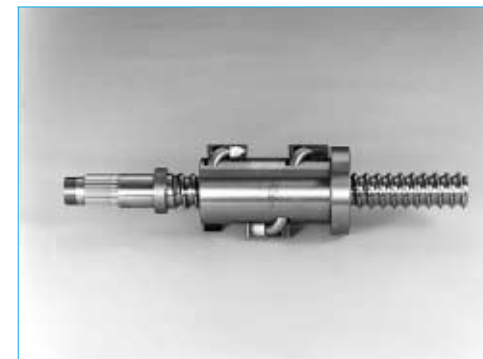


Fig. I-3•24 Ball screw for high load drive tools (HTF Series) Page B411

(4) Special ball screws

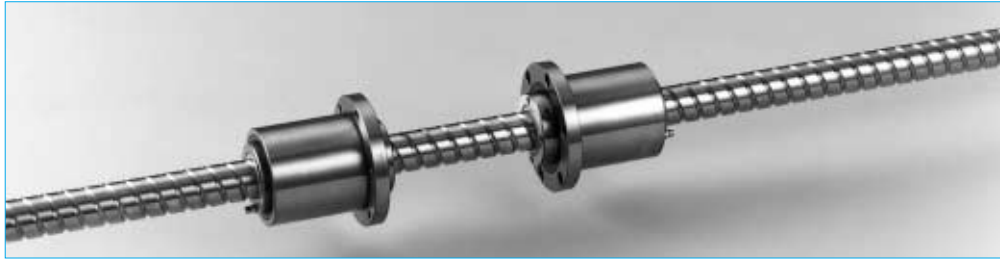


Fig. I-3•25 NDT, NDD Series (Rotatable nut ball screws)

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Fig. I-3•26 Ball screw with spline "Robotte"

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Fig. I-3•27 Hollow shaft ball screw

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B-I-4 Procedures to Select Ball Screw

B-I-4.1 Flow Chart for Selection

There are several methods to select a ball screw which is most suitable both in type and size for a specific use. The chart below is one of the selection methods. To take advantage of prompt delivery and reasonable prices, this method focuses on the

standardized series that are available in stock. NSK offers a ball screw selection program, and also has a service to select appropriate items using data file compiled by our knowledge and experience.

