Precision Lead Screws

●Features

It is possible to select small Pitch which Ball Screws do not have.With knowhow of screw gauge, we make use of grinding technique, and lapping technique, so fine surface roughness and low wobble become reality, which lead low torque and less wear.

Metric Fine Thread and Metric Coarse Thread based on JIS (Japanese Industrial Standard) are standardized but we also manufacture Trapezoidal Thread, Unified Screw Thread, ACME Screw Thread, special Pitch, and multiple start Thread. 0.1mm Pitch is not shown on the table above, but with our machining technique, we have experiences to manufacture 0.1mm Ultra Fine Pitch Lead Screws.

●Combination of Shaft dia. & Pitch

Unit : mm

Shaft dia. \ Pitch	0.25	0.35	0.4	0.45	0.5	0.7	0.75	0.8	1.0	1.25	1.5	2.0
2	◎		○									
2.5		◎		○								
3		◎			○							
4					◎	○						
5					◎			○				
6					◎		◎		○			
7					◎		◎		○			
8					◎		◎		◎	○	□	
9					◎		◎		◎		○	□
10					◎		◎		◎		○	□

◎Recommended model including Metric Fine Pitch Thread.
○Metric Coarse Pitch Thread. □Metric Trapezoidal Thread.

Lead Screws with Plastic Nuts

●Features

Wide range of combination of Shaft dia. and Lead are available. The Shaft is manufactured from SUS304 (or SUS303), which gives excellent corrosion resistance.

Standard products in stock
MRH-A,B series

A Polyamide type Resin with good sliding properties is employed in the standard MRH Nut material.
And because a lubricating agent is incorporated in the material, it can be used without oiling. Additionally, other Nut materials are available as options.

Customized products
MRH-BP2 series

A Polyamide type Resin with good sliding properties is employed.
Backlash free construction made possible with Double Nuts and a Spring in between.

Customized products
R-MSS (Y) series
(NTN Engineering plastics Corp. products)

Corresponding to a wide range of environment and having corrosion resistance, heat resistance.
High lead types (3 times as dia.) are available.

Customized products
Special products

KSS manufactures Ball Screws using several materials such as plastic as shown in picture, because there are special environment which current steel cannot be adapted to.

●Combination of Shaft nominal dia. & Lead

Unit : mm

Shaft dia. \ Lead	1	2	5	6	8	9	10	12	15	18	20	24	30	36
4	◉	◉												
6	◉	○◎◉		○◎		○◎◉				◉				
8	◉	○◎◉	○◎		○◎			○◎◉				◉		
10		○◎◉		○◎			○◎		○◎◉		○◎		◉	
12		○◎◉		○◎			○◎			◉	○◎		○◎	◉
24														

○ MRH-A,B series ◎ MRH-BP2 series ◉ R-MSS (Y) series

Contact us

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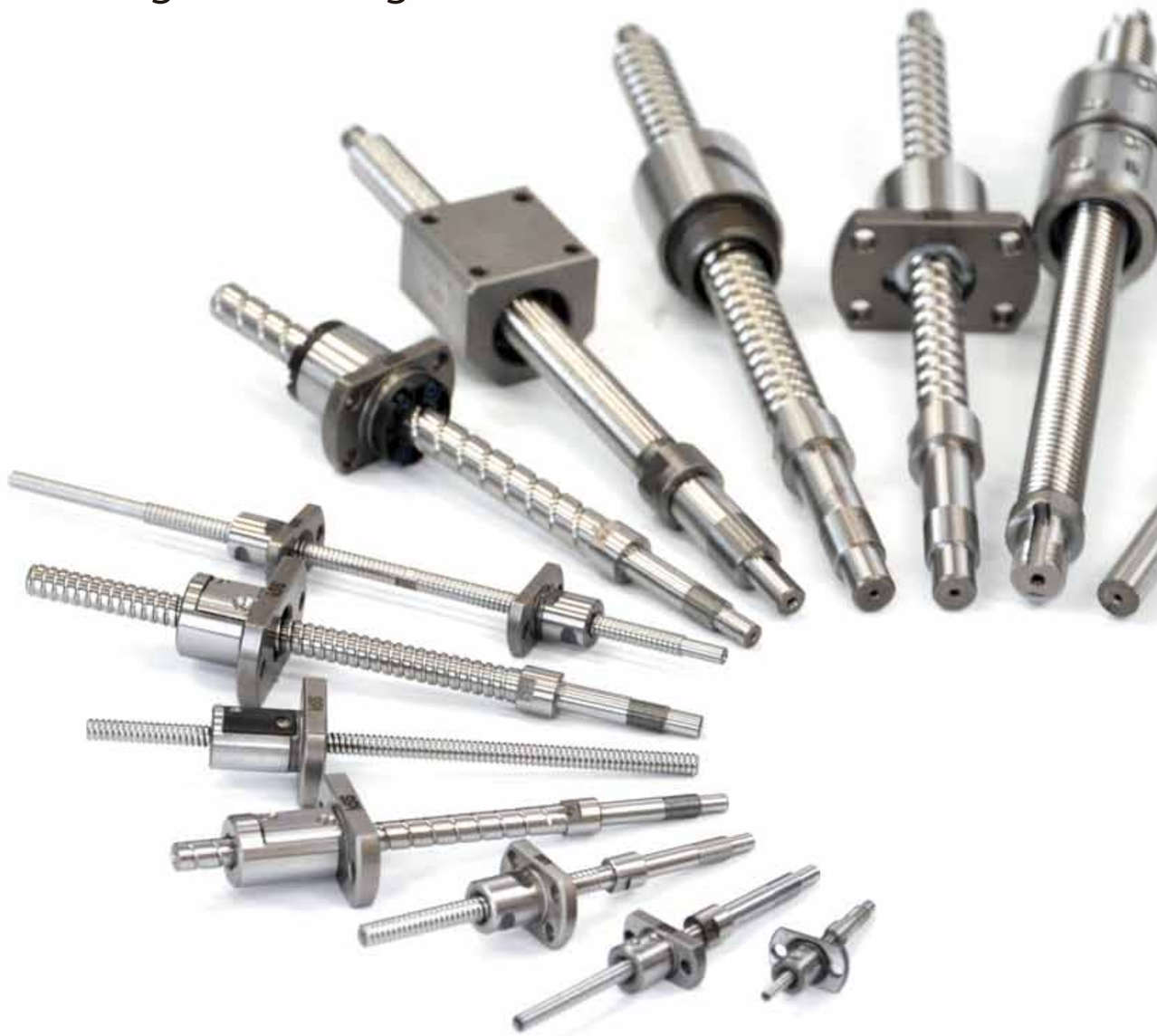

Ball Screws ／ Ball Screw related products

●Features Standard products for lead time and price advantages and customized (made to order) products according to customer's requirement.

Standard products in stock

Varieties of standard products (SG SD SR SSR SRT SSRT) for lead time and price advantages.
Compact nut design for saving space.

Precision Ball Screws (SG series)

Configuration of fixed side end-journal is standardized, supported side end-journal is free type and standard travel is set up. Since supported side end-journal is unfinished, it is possible to do additional end machining with your requested thread length.

Bi-directional Ball Screws (SD series)

These are economical Ball Screws because a shaft has bi-directional thread.
Since fixed and supported side end-journal are unfinished, design flexibility is enlarged.

Rolled Ball Screws (SR/SSR series)

Standard and reasonable price products by Rolling formed process.Since fixed and supported side end-journal are unfinished, design flexibility is enlarged.There are also Rolled Ball Screws made of stainless steel (SSR series) in stock.

Integrated Rolled Ball Screws (SRT/SSRT series)

Fixed side end-journal is set up bigger than Shaft nominal diameter and unfinished.More design flexibility compared to current Rolled Ball screws.
It is possible to design end-journal configuration compatible with SG series.
There are also Integrated Rolled Ball Screws made of stainless steel (SSRT series) in stock.

Customized products

In order to meet the needs of customer's requested design, we offer customized products.
To reduce design process at customer, each Nut type is standardized.
KSS will provide with required Ball Nut as a special order.

Precision & Rolled Ball Screws

Single Nut with Flange

It is most simple Single Nut type.
There are varieties of choices for shaft diameter and lead pitch combination.
FBS (Return-plate) , FKB (Internal-deflector) , FDB (End-deflector) , FEB (End-cap) circulation system can be distinguished.
Please refer to dimension table .

Precision & Rolled Ball Screws

Sleeve type Single Nut

It is Cylindrical Single Nut which is compact.
The Nut should be mounted by clamping on the key way on the Nut outer and Nut end surface.

Precision & Rolled Ball Screws

Single Nut with M-thread

The Cylindrical type with M-thread at the Nut end. The Nut should be mounted using M-thread.
It is suitable for mounting with cylinder.

Precision Ball Screws only

Square type Single Nut

The Square Nut is finished with a large mounting face parallel to the Nut center. Nut itself has Housing function.
This allows for a more compact design compared to Flange type.

Presicion Ball Screws only

Double Nut with Flange

A Spacer is inserted between the two Nuts to eliminate Axial play.
Preloading can also be applied to increase Nut Rigidity.
The Nut should be mounted using bolt hole in Flange.

Precision Ball Screws only

Sleeve type Double Nut

This uses two Cylindrical Nuts with a Spacer inserted between them to apply Preload.
The Nut should be mounted by clamping on the key way on the Nut outer and Nut end surface.

Precision Ball Screws only

Bi-directional Nut with Flange

Since there are both Right-handed thread and Left-handed thread on a Shaft, it has Bi-directional function.
Single Nut with Flange type is standardized, but it is also possible to manufacture Sleeve type Nut. In addtion, absolute positon control for both Nut is available.

Ball screw related products

Original Grease for Miniature Ball Screws

This grease has high lubrication performance without deteriorating Ball Screw function.
The original Grease for Clean room usage is also available.

Ball Screw Support Units

Support Units which fit standardized end-journal configuration.
New size of supported unit for 3mm and 4mm diameter end journal have been released.

●Combination of Shaft nominal dia. & Lead

Shaft dia. (mm)	Lead (mm) 0.5	1	1.5	2	2.5	3	4	5	6	8	10	12	15	20	25	30
1.8	P															
3	P	P														
4	P	PR		PR		P	P									
5	P	P					PR									
6	P	PR	P	PR	P				PR		PR	P				
8	P	PR	P	PR	PR	P	P	PR		PR	PR	PR				
10		P	P	PR	P	P	PR	PR	R		PR	PR	PR	PR	P	P
12		P		PR	P	P	P	P			PR					
13												PR	PR	PR		
14		P		PR	P	P	PR	P								
15							P	PR			PR			PR		P
16		P		P	P	P	P	P								
20								P			P					

*P = Precision Ball Screws R = Rolled Ball Screws

Unit Products

Direct Motor Drive Ball Screws(MoBo) series

MoBo

High-performance, compact precision positioning drive unit combines Stepping Motor with Ball Screw to eliminate the Coupling.

A 5-phase Stepping Motor is mounted directly onto the end of a Ball Screw and the Ball Screw Shaft is ideally constructed to form the Motor Rotor Shaft.
For combining the Motor Shaft and Ball Screw Shaft, it minimizes lost motion.

MoBo

*The picture above and table right only show ground screw type.
Rolled screw type and lead screw type are also available.
We have another leaflet with more details, please request us for the leaflet.

Model number	Shaft nominal diameter mm	Lead mm	Travel mm	Travel per pulse① μm	Accuracy grade Axial play μm	Reference thrust N	Motor size mm
MB 04005A	4	0.5	20	1	C3-05	10	20
MB 0401A		1	30	2	C3-0	20	20
MB 0401		1	30	2		50	24
MB 0601	6	1	75	2	C3-0	100	24
MB 0602		2	75	4		50	
MB 0801	8	1	150	2	C3-0	300	42
MB 0802		2	150	4		150	
MB 1002	10	2	200	4	C3-0	300	42
MB 1004		4	200	8		150	

Note 1) ① represents the values for full step.
Note 2) The reference thrust may be lower in some cases,depending on operating conditions.

Si-MoBo

Installed hybrid motor to current MoBo system,
"precision positioning", "vibration free operations" and "never step out" are possible.

Model number	Shaft nominal diameter mm	Lead mm	Travel mm	Accuracy grade Axial play μm	Resolution mm	Reference thrust N	Motor size mm
SiMB 0401	4	1	30	C3-0	1/25600	30	20
SiMB 0801	8	1	100	C3-0	1/25600	300	42
SiMB 0802		2	160		2/25600	150	
SiMB 0805		5	150		5/25600	80	
SiMB 0812		12	300	C5-05	12/25600	30	

MoBo-Cylinder / MoBo-Slider

Application example of Direct Motor Drive Ball Screws, what we call MoBo application.
All of MoBo applications are produced as customized products based on Customer's specifications.
Development & Design at KSS are also available.

MoBo-Cylinder Specifications

Repeatability	: ±0.01mm
Max axial thrust	: 19N (2kgf)
Max speed	: 10mm/sec
Sensor	: Photo micro sensor
Travel	: 10mm
Overall dimension	: W=29mm,D=126mm,H=28mm

MoBo-Slider Reference Specifications

Travel	: 15mm,30mm
Overall diamension	: W=30mm,D=96mm,H=30mm (In case of 15mm travel)

Note) Please ask KSS representative about further information for Slider type.

Ultra Miniature Actuator KUMI series

- The Unit with Lead Screw, a 5-phase Stepping Motor and Linear Guides.
- We make full use of features of Miniature Ball Screw manufacturer and a super compact design Actuator can be achieved.
- This is the Unit series so that there is no need to assemble parts and design process, assembly process can be reduced.
- Actuators which fit to clean room environment are also available.
- None standardized size can be manufactured.Please inquire KSS.

Model	Travel mm	Repeated positioning accuracy μm	Max Lost motion mm	Maximum load capacity N Horizontal	Maximum load capacity N Vertical	Resolution μm	Maximum speed mm/s
KUMI	10,30,60	±30	0.1	9.8	4.9	12	50-100
KUMIKO	40,60,120	±10	0.010	39.2	19.6	8	120
KUMIKO—FSCR	20～200	±10	0.010	39.2	19.6	8	120
KUMINA	20,30,60	±5	0.005	29.4	9.8	2	20
KUMINA—FSCR	5～60	±5	0.005	29.4	10.2	2	20
KUMIRI-5SP	10	±2	0.005	Axial thrust 29.4N		1	10

Note 1) When using the Unit as Z axis, the number of specification might differ.
Note 2) The figure of the resolution is valid for full-step.
Note 3) When using the Units as maximum specification, we need to consider if the Units run properly or not based on usage condition. Therefore please inquire KSS.
Note 4) KUMIRI-5SP is cylinder type.