

Multi-purpose products (Miniature Ball Screw with Ball Spline : BSSP)

●Features

- This is a combined product which is possible for linear and rotational movement as well as suction at the same time with one unit.
- Achieved developing very compact product as "Overlap type" using Miniature Ball Screws and Miniature Ball Splines .

Separated type (SP)

It's a combined products, which has Ball Screw and Ball Spline processed on the same Shaft.



Overlap type (OL)

By processing Ball Screw and Ball Spline on one place makes product have longer travel and compact.



Table of Shaft dia. and Lead combination (Model distinction)

Shaft dia. (mm)	Lead (mm)				
	2	4	6	10	12
6	SP		SP OL	SP OL	
8	SP	SP			SP OL

Specifications (Accuracy Grade & Axial/Radial play) Unit:mm

Type	parts	C3 (Max.)	C5 (Max.)
Separated type	Ball Screw (Axial play)	0 or 0.005	0.005
	Ball Spline (Radial play)	0	
Overlap type	Ball Screw (Axial play)	0.005	
	Ball Spline (Radial play)	0.002	

Multi-Functional VZθ Actuator

The brand new products which applied the KSS miniature Ball Screw with Ball Spline (BSSP), and realized three functions, linear motion (Z), rotary motion (θ), and vacuum (V), with one product.

●Types and Features

KSS provides 3-types of multi-functional VZθ Actuator, which are Direct Drive type, Hybrid Drive type, and Belt-Drive type. It is possible to select one of them according to your specifications or application.

[Direct Drive type] (Photo center)

Slim form is realized by driving a Ball Screw and a Ball Spline Nut directly built in a Hollow Motor.



[Hybrid Drive type] (Photo right)

Combination of the Hollow Motor and Normal Motor gives dramatically short length of Actuator Body.

[Belt Drive type] (Photo left)

Wide variety of Motor can be set on this Actuator. This means various options are available based on Motor Specifications.

Model	Shaft dia.	Lead	Travel	Max. Speed (Z) (mm/sec)	Max. speed (θ) (rev/sec)	Thrust Force (N)	Max. Permissible Moment (kg·m ²)
Direct Drive type	φ6	6	50	72	3	7	0.15×10 ⁻⁴
		10		120	3	5	
Direct Drive type	φ8	5	50	100	3	50	0.15×10 ⁻³
		10		200	3	25	
Hybrid Drive type	φ6	10	50	200	3	5	0.15×10 ⁻⁴
Belt-Drive type	φ4	4	50	80	3	5	0.9×10 ⁻⁵
		6	50, 100	200	3	10	0.5×10 ⁻⁴
		8	150	200	3	10	0.5×10 ⁻⁴

Precision Lead Screw

Possible to select small Pitch

It is possible to select small Pitch which Ball Screws do not have.



Wide variety of size

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.

Low torque

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.

Flexibility of Nut configuration

Nut configuration is not restricted and it is possible to manufacture in accordance with customer's design.

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.

***Blank : Can be manufactured, but please inquire KSS.

Original Grease for Miniature Ball Screws

●Features

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

General use

MSG No.1: High positioning usage appropriate for high smoothness requirement.
MSG No.2: General usage appropriate for high speed.

Clean room use

MCG No.1: High positioning usage in clean room focused on less contamination, high smoothness.



Company Outline

Trade Name

KSS CO.,LTD.

Date of incorporation

June, 1964 (Date of establishment : June, 1960)

Capital

120,700,000JPY

Company Address

Head office ; 1-22-14 Yaguchi, Ota-ku, Tokyo 146-0093, Japan Tel. : +81-3-3756-3921 Fax. : +81-3-3756-3232
Ojiya Plant ; Aza Shinbo 4-14, Oaza Yamaya, Ojiya City, Niigata Pref. 947-0043, Japan

Director

President & Representative Director Akihisa Ota

Certification

Ojiya Plant ISO9001 (JQA-QM4131)
ISO14001 (JQA-EM4583)

Advanced Technology of "Miniature"



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Miniature Ball Screws & Actuators

