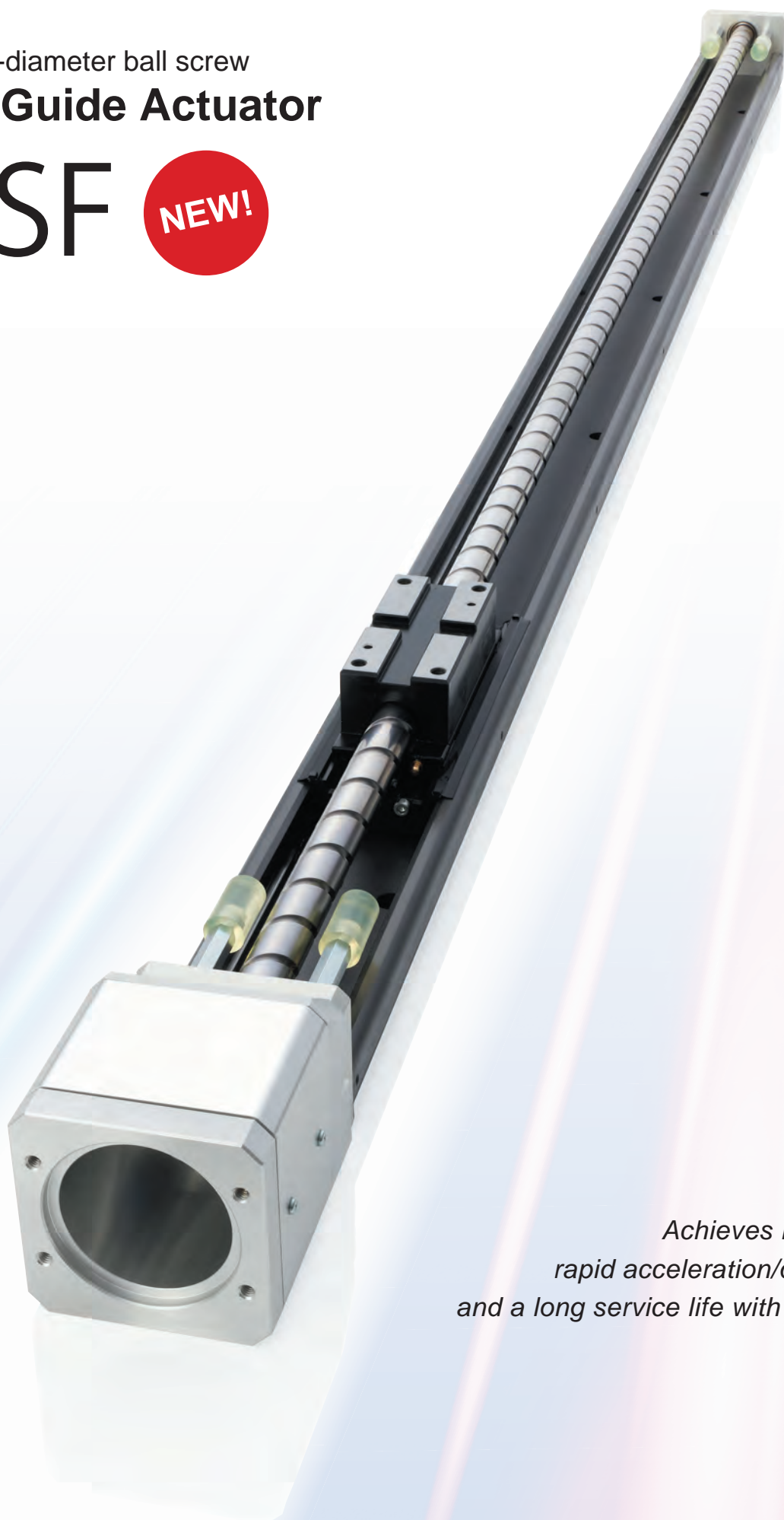




Large-diameter ball screw
LM Guide Actuator

KSF



*Achieves high speeds,
rapid acceleration/deceleration,
and a long service life with long strokes.*

KSF

LM Guide Actuator



Advantages of the LM Guide Actuator **KSF**

Long Stroke

Max stroke of 1500 mm

Capable of long strokes with the same width dimension

High-Speed, Rapid-Acceleration/Deceleration

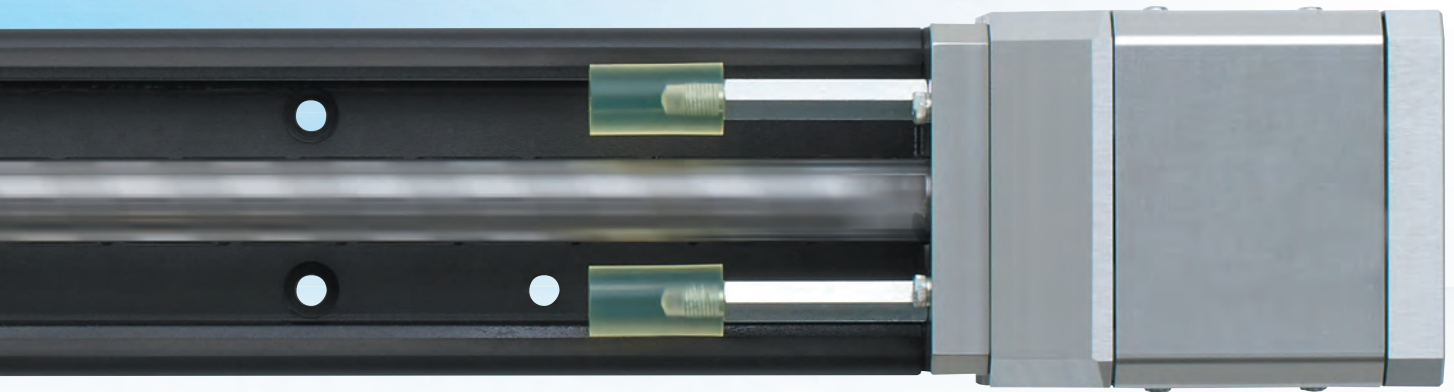
Enables fast cycle times

Ball screw diameter increased to handle high speeds and rapid acceleration/deceleration

Long Service Life

Achieves a service life of 20,000 km

Various specifications improved to extend the service life



The apex of LM Guide technology

Advantages of the LM Guide Actuator

<i>Compact</i>	<i>Thin, sleek housing</i> More freedom when designing interior layouts of devices
<i>High Accuracy</i>	<i>Maintains precision for a long time</i> Adopts a circular arc groove
<i>High Rigidity</i>	<i>High durability against moment loads</i> Improved static permissible moment while remaining compact

Long Stroke

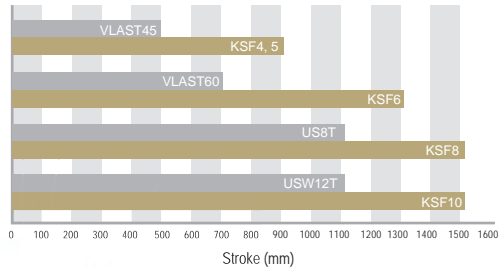
Max stroke of 1500mm

Wider range of possible applications

Capable of long strokes with the same width dimension

Increasing the ball screw shaft diameter drastically boosts the maximum stroke while keeping the size compact. This product can be used in a wide range of fields.

Max Stroke Comparison



Max Stroke by Model



High-Speed, Rapid-Acceleration/Deceleration

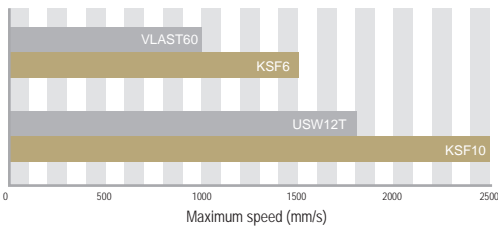
Boosts productivity

Enables fast cycle times

Ball screw diameter increased to handle high speeds and rapid acceleration/deceleration

The drive element's ball screw shaft diameter and the angular ball bearing size have been pushed to the limit. This configuration can handle the maximum peak torque of the motor.

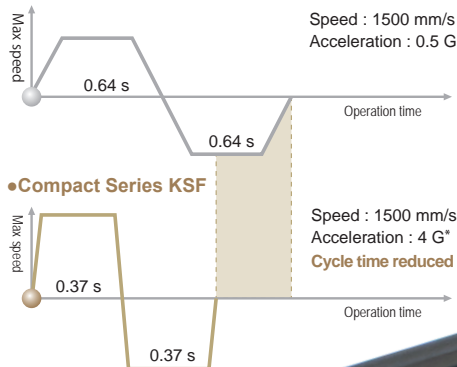
Max Speed Comparison



Rapid acceleration/deceleration reduces cycle time

This product shortens cycle time by 0.54 s (for a 500 mm stroke). This translates to 54 s over 100 cycles, boosting productivity by 40%.

Same-size THK product

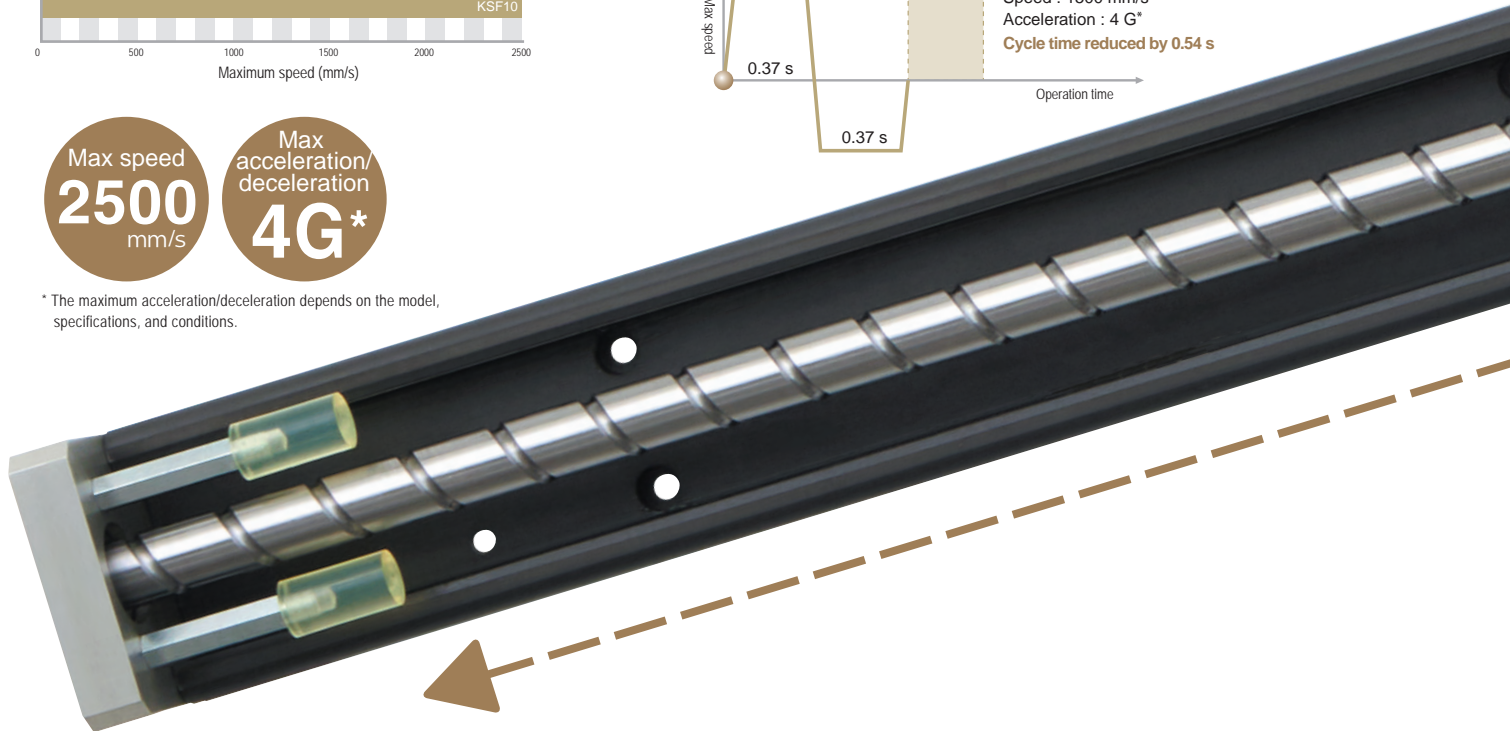


Production efficiency up **40%**

Max speed **2500** mm/s

Max acceleration/deceleration **4G***

* The maximum acceleration/deceleration depends on the model, specifications, and conditions.



Long Service Life

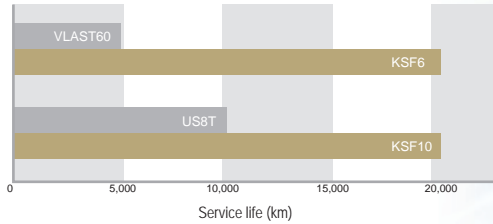
Boosts operating rates
and reduces repair part inventory

Achieves a service life of 20,000 km

Various specifications improved to extend the service life

The service life when carrying the maximum load has been dramatically improved by increasing the basic dynamic load rating of the LM Guide and ball screw. Regular aluminum-base products have a service life of 5,000 km, but the KSF can run for 20,000 km (10,000 km for KSF4 or KSF5 with a 10 mm lead).

Service Life Comparison



Service life
20,000
km

Advantages
of the LM Guide Actuator **KSF**

Improve
Get all the latest LM

Max

production efficiency! Guide technology in one module

stroke of **1500 mm** (for KF8 and 10)

Advantages of the LM Guide Actuator

Compact

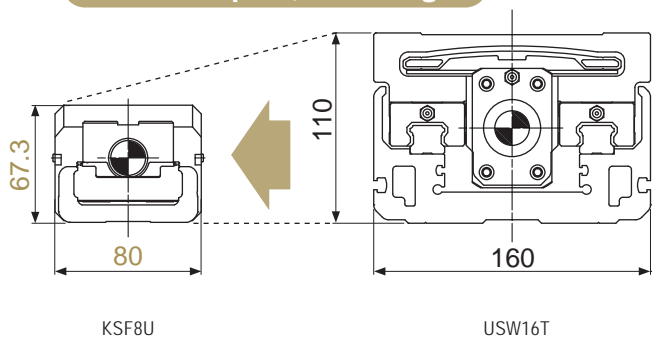
Thin, sleek housing

Lightweight and compact design

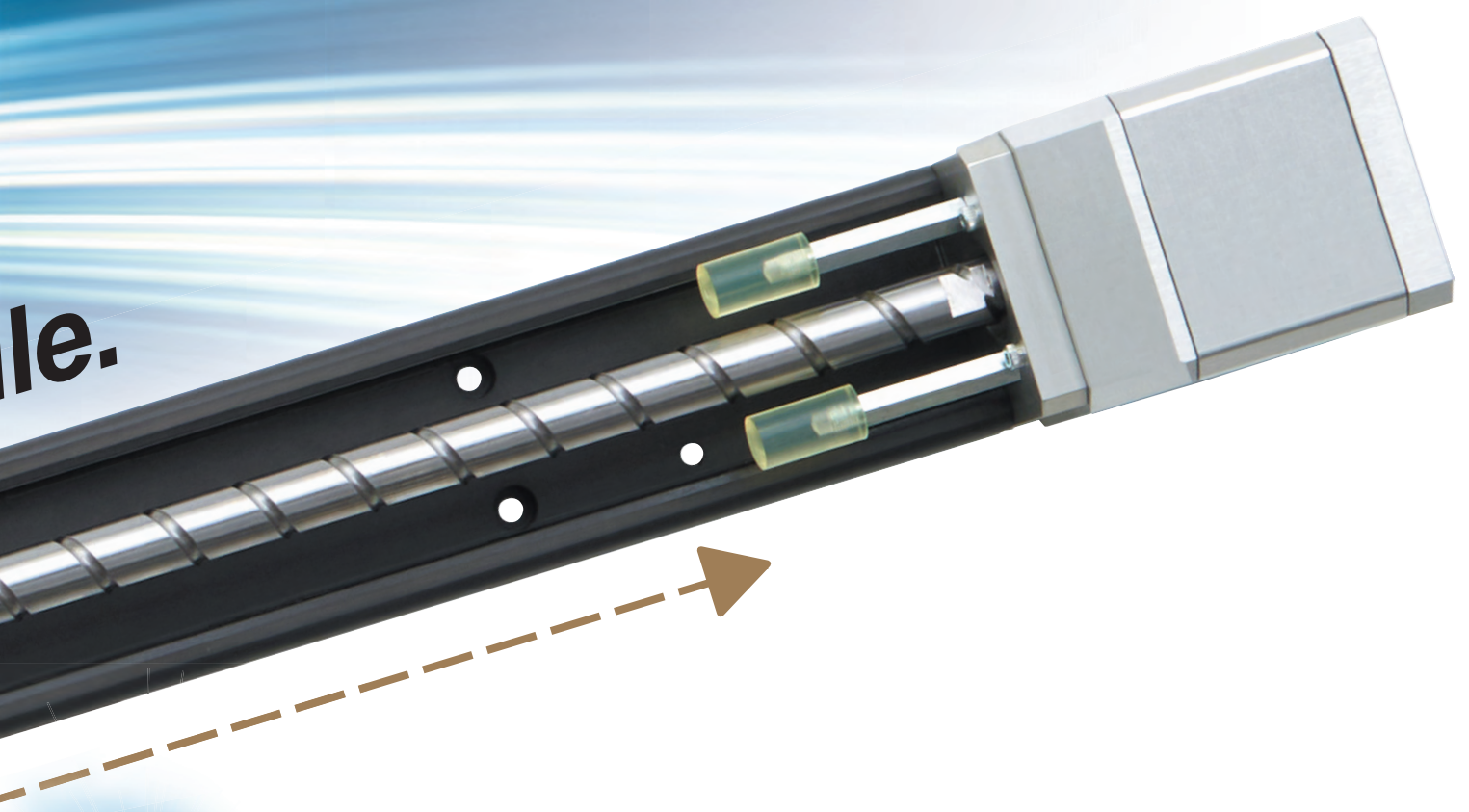
More freedom when designing interior layouts of devices

The housing is thin, sleek, and lightweight, with a dramatically reduced height and width. This product is about 67% more compact and about 37% lighter than the USW16T, which has the same rated output. This greatly improves the amount of freedom designers have for interior layouts of devices.

More compact, less weight



le.



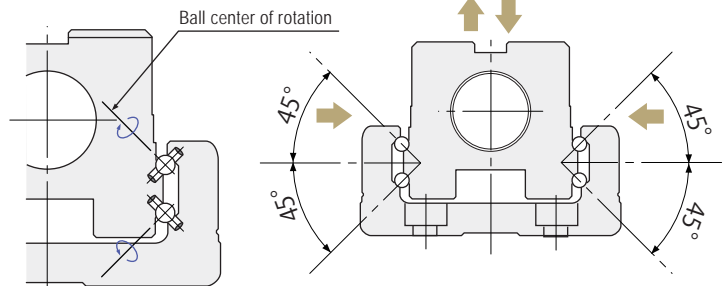
High Accuracy

Maintains precision for a long time

Reduces maintenance time

Adopts a circular arc groove

The linear guide portion adopts a circular arc groove that provides smooth movement with no clearance and few sliding elements. It can easily keep up with a high-precision feed and maintain precision for a long time. Each row of balls is arranged at a contact angle of 45° so that the rated load on the inner block is uniform under loads applied in four directions (radial, reverse radial, and horizontal). It can be used in any direction and orientation.



KSF contact structure

KSF load capacity and contact angle

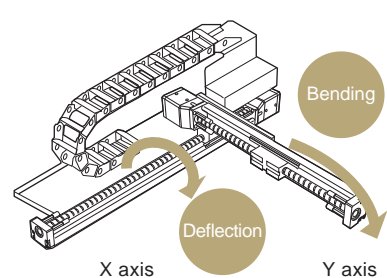
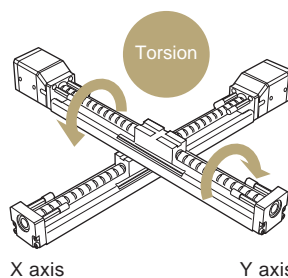
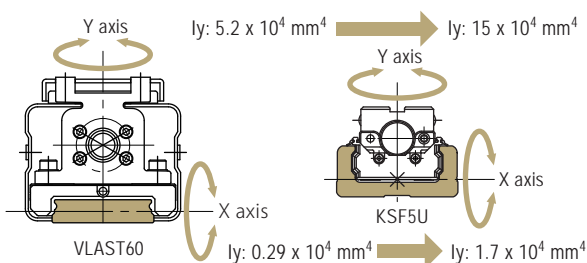
High Rigidity

High durability against moment loads

Optimal for multi-axis combinations

Improved static permissible moment while remaining compact

This product features an outer rail with a U-shaped cross-section, so it is resistant to torsion, bending, and deflection. Even when a large moment is applied, it demonstrates superior rigidity. It is even suited for applications where there is a large overhang on the upper shaft of the X/Y axis.



Cover Types

Three types of covers are available to suit the application.

KSF□U

Open cover type



KSF□T

Top cover type



KSF

Full cover type



Lineup/Specifications

Model	Ball screw lead (mm)	Stroke (mm)	Rated speed ¹ (mm/s)	Estimated motor capacity (W)	Maximum load capacity ^{2,3,4} (kg)		
					Horizontal	Wall-mounted	Vertical
KSF4/KSF4R KSF4U/KSF4RU	10	50 to 900	500	100	19	10.5	8.5
	16		14		8.5	7	
KSF5/KSF5R KSF5T/KSF5RT KSF5U/KSF5RU	10	50 to 900	500	100	26	19	12.5 (11.5)
	20		7.5		7.5	6 (5)	
KSF6/KSF6R KSF6T/KSF6RT KSF6U/KSF6RU	20	50 to 1300	1000	200	42 (41)	20	12 (10.5)
	30		20.5 (19)		18	7.5 (6.5)	
KSF8/KSF8R KSF8T/KSF8RT KSF8U/KSF8RU	20	100 to 1500	1000	400	83.5 (79.5)	45	23.5 (20.5)
	40		19 (18)		19 (18)	10.5 (9)	
KSF10/KSF10R KSF10T/KSF10RT KSF10U/KSF10RU	25	100 to 1500	1250	750	118.5 (92.5)	76	33.5 (28)
	50		40 (37.5)		40 (37.5)	14.5 (12.5)	

¹ Rated speed refers to the speed at the rated rotational speed of the motor (3000 min⁻¹).

² Maximum load capacity refers to the weight at the rated speed and an acceleration/deceleration of 0.5 G (0.3 G when the lead is less than 20 mm).

³ Values are for the full cover type.

⁴ Values in parentheses are for motor wrapping specifications.

Note) Specifications vary by model. Please visit our website for detailed information about each model.

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