

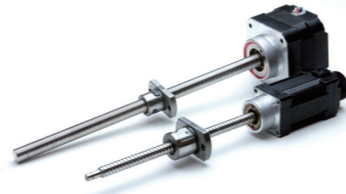
Linear Actuator External type Precision Ball Screw type (MB)



MoBo

● Features

- A 5-phase Stepping Motor is mounted directly onto the shaft end of a C3 grade precision Ball Screw, which is suitable for high accurate positioning system.
- Ball Screw Shaft is ideally constructed to form the Motor Rotor Shaft.
- Since combining the Motor Shaft and Ball Screw Shaft, Coupling-less, saving total length, low lost-motion can be achieved.
- Recommended Driver for 5-phase Stepping Motor is available.
- Accessories are also provided as mounting kit, such as Nut Block and Motor plate.



● Specifications

Model	Shaft Nominal Dia. (mm)	Lead (mm)	Travel (mm)	Travel per pules (μm)	Reference Thrust (N)	Mass (g)
MB04005A	$\phi 4$	0.5	20	1	10	84
MB0401A	$\phi 4$	1	30	2	20	84
MB0401	$\phi 4$	1	30	2	50	100
MB0601	$\phi 6$	1	75	2	100	170
MB0602	$\phi 6$	2	75	4	50	180
MB0801	$\phi 8$	1	150	2	300	310
MB0802	$\phi 8$	2	150	4	150	320

Repeatability(reference)	max. $\pm 0.005\text{mm}$
Lost Motion(reference)	max. 0.005mm

※The reference value about Repeatability and Lost Motion represents when the MoBo built into KSS original actuator. Please make a contact to KSS for actual value.

Note 1) Detail specifications & dimensions are shown in drawings from page F107.

Note 2) Travel per pulse represents the value for full step.

Note 3) Acceleration & Deceleration Rate should be 20ms/kHz or more.

Note 4) Reference Thrust may vary depending on the operating condition, please ask KSS for more detail.

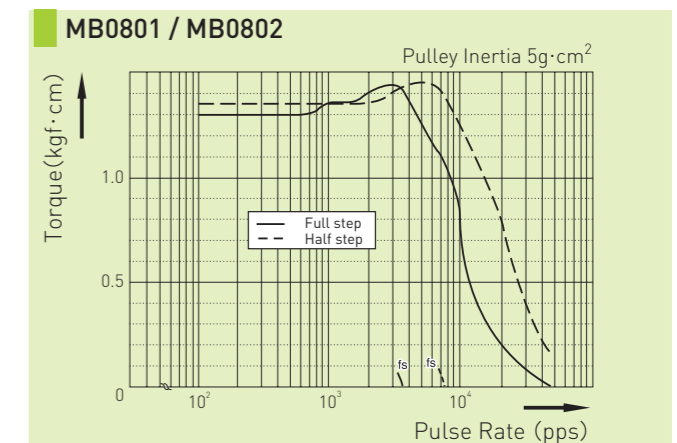
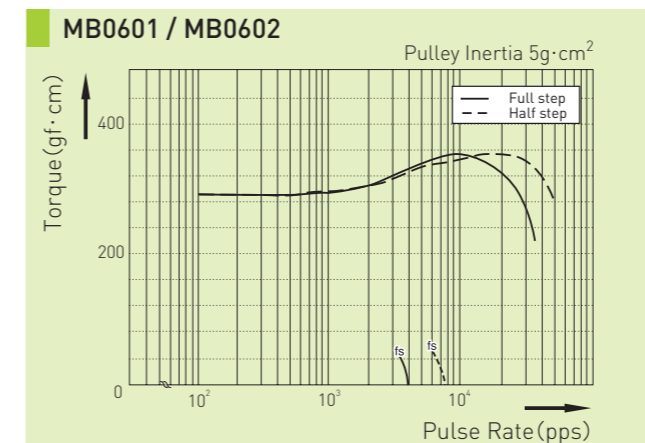
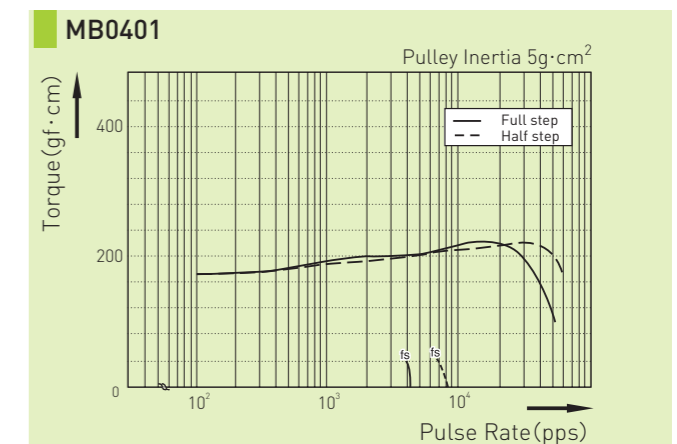
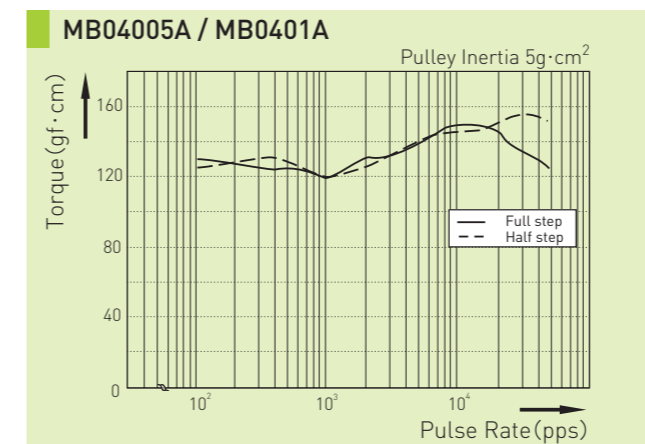
● Motor Specifications

Model	Motor size (mm)	Rated voltage (V)	Rated current (A/phase)	Winding resistance (Ω)	Holding torque (Nm)	Rotor Inertia ($\text{g}\cdot\text{cm}^2$)
MB04005A	$\square 20$	DC 1.05	0.75	1.4	0.010	3.9
MB0401A	$\square 20$	DC 1.05	0.75	1.4	0.010	3.9
MB0401	$\square 24$	DC 0.83	0.75	1.1	0.018	4.2
MB0601	$\square 24$	DC 1.28	0.75	1.7	0.028	8.9
MB0602	$\square 24$	DC 1.28	0.75	1.7	0.028	8.9
MB0801	$\square 42$	DC 1.28	0.75	1.7	0.128	41
MB0802	$\square 42$	DC 1.28	0.75	1.7	0.128	41

Note 1) Basic step angle is 0.72°

Note 2) Rotor Inertia includes Ball Screw Shaft.

● Motor Characteristic



■ Test Condition

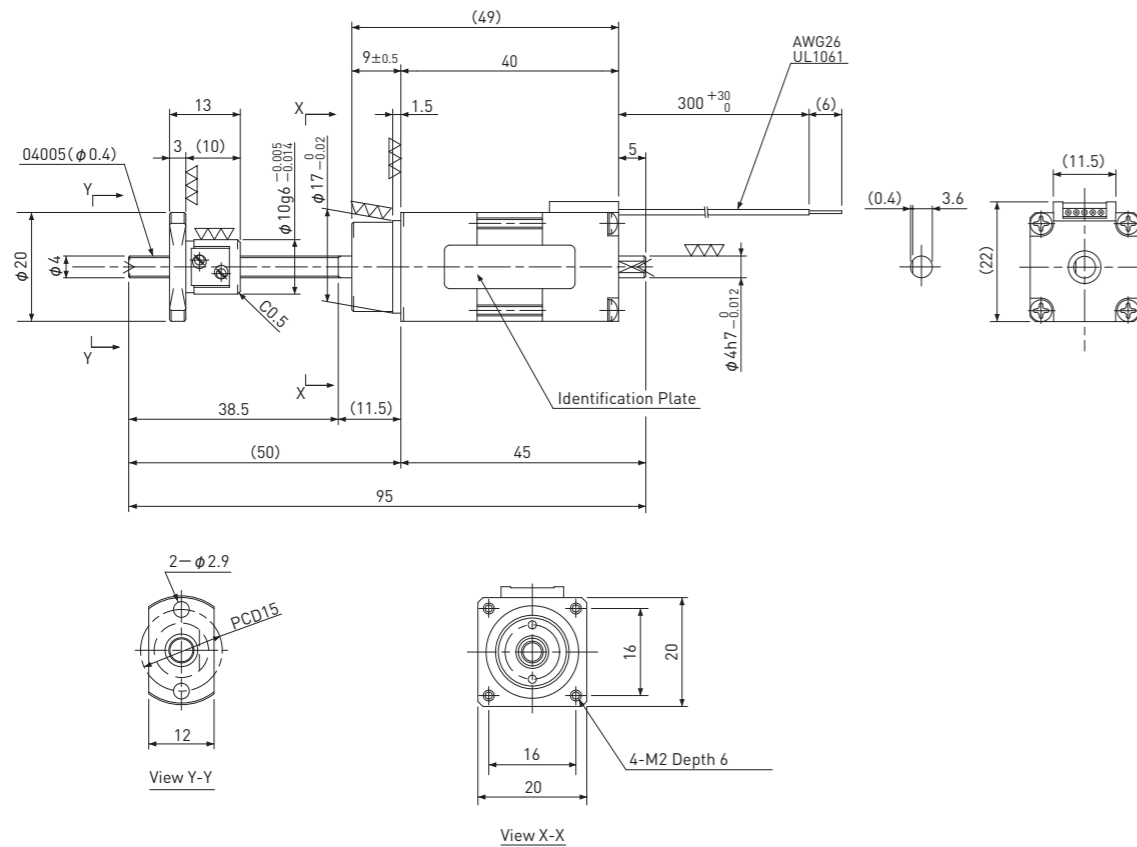
Driver : Maker Standard
Input Voltage : DC24V
Phase Current : 0.75A

Note) Motor characteristic will vary depending on Driver type, operating conditions.

Precision Ball Screw + 5-phase Stepping Motor

MB04005A

Shaft dia. $\phi 4$ Lead : 0.5mm
Travel : 20mm

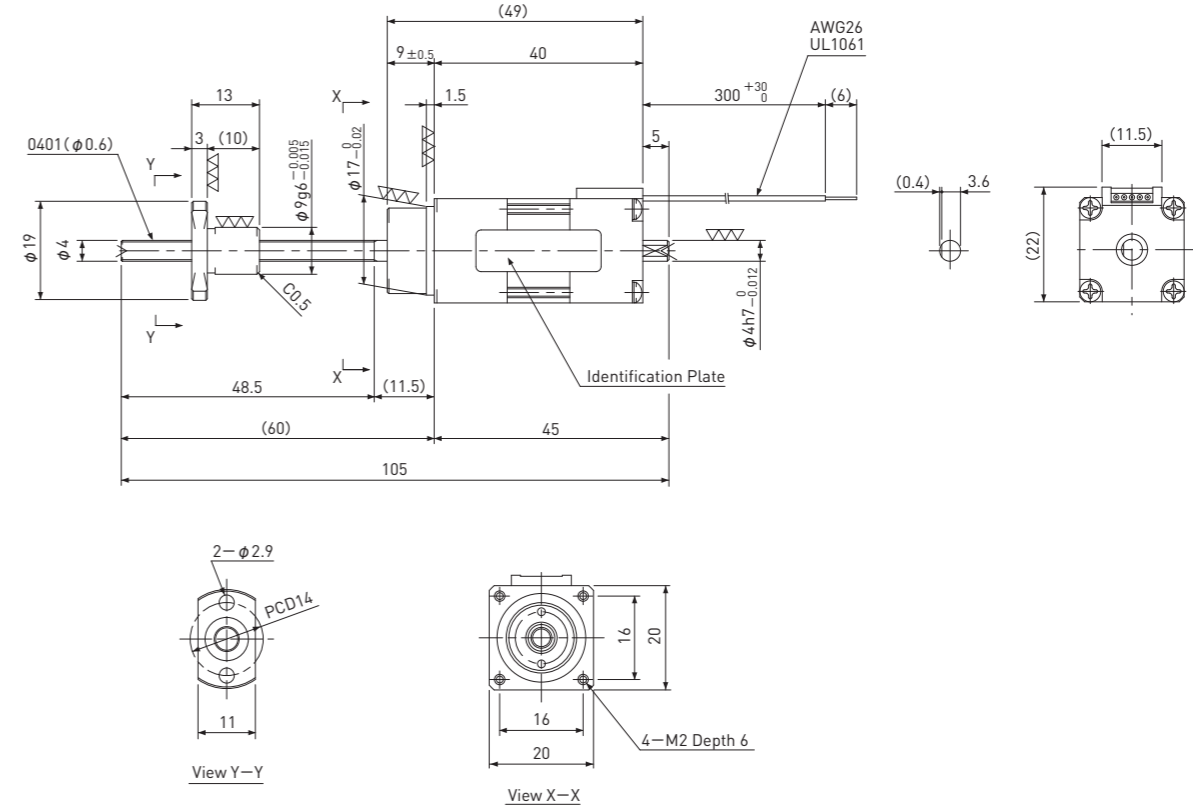


Linear Actuator External type
Precision Ball Screw type

Precision Ball Screw + 5-phase Stepping Motor

MB0401A

Shaft dia. $\phi 4$ Lead : 1mm
Travel : 30mm



Linear Actuator External type
Precision Ball Screw type

Recommended Drivers	KR-A5CC KR-A55MC(Micro step) KR-A535M(Micro step / AC-100~220V)
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Note) Refer to page F159, F160 for connection diagram of recommended Drivers.

Recommended accessories	Motor side Supporting plate	MP-20A or MP-20B
	Supported side Bracket	—
	Nut Block	NB-04005

Ball Screw Specifications	
Accuracy grade	JIS C3
Thread direction	Right
Axial play	0.005mm or less
Reference Thrust	10N
Shaft material	Stainless steel
Nut material	Chrome-molybdenum steel
Surface hardness	Min. HRC55 (Thread area)
Lubricant	KSS original grease MSG No.1

Motor Specifications	
Basic step angle	0.72°
Rated Voltage	DC 1.05 V
Rated current	0.75A/phase
Winding resistance	1.4Ω
Holding Torque	0.010Nm
Rotor inertia	3.9g · cm ²
Operating temperature	-20°C ~ 50°C

Note) Only shaft end cutting is available. Other than that, it would be customized order.

Recommended Drivers	KR-A5CC KR-A55MC(Micro step) KR-A535M(Micro step / AC-100~220V)
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Note) Refer to page F159, F160 for connection diagram of recommended Drivers.

Recommended accessories	Motor side Supporting plate	MP-20A or MP-20B
	Supported side Bracket	—
	Nut Block	NB-0401A

Ball Screw Specifications	
Accuracy grade	JIS C3
Thread direction	Right
Axial play	0mm
Reference Thrust	20N
Shaft material	Stainless steel
Nut material	Chrome-molybdenum steel
Surface hardness	Min. HRC55 (Thread area)
Lubricant	KSS original grease MSG No.1

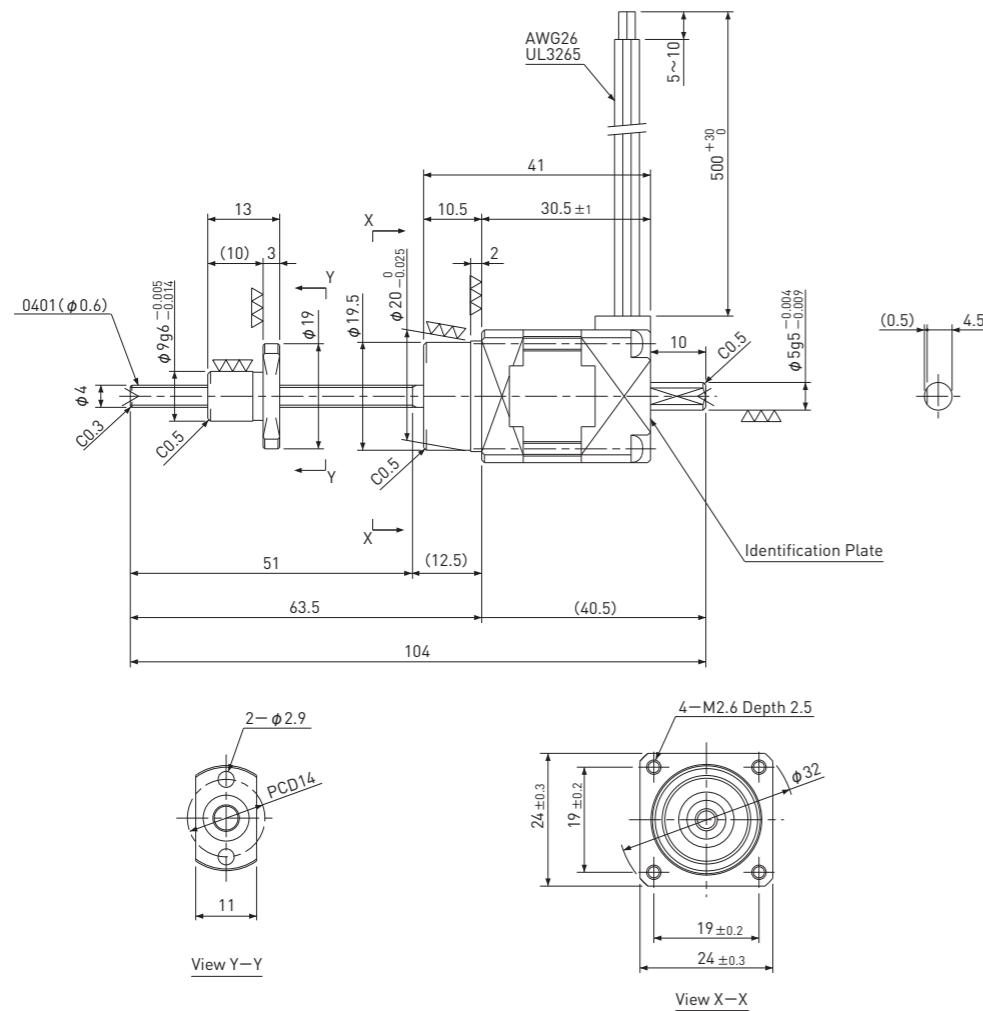
Motor Specifications	
Basic step angle	0.72°
Rated Voltage	DC 1.05 V
Rated current	0.75A/phase
Winding resistance	1.4Ω
Holding Torque	0.010Nm
Rotor inertia	3.9g · cm ²
Operating temperature	-20°C ~ 50°C

Note) Only shaft end cutting is available. Other than that, it would be customized order.

Precision Ball Screw + 5-phase Stepping Motor

MB0401

Shaft dia. $\phi 4$ Lead : 1mm
Travel : 30mm



Recommended Drivers	KR-A5CC KR-A55MC (Micro step) KR-A535M (Micro step / AC-100~220V)
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Note) Refer to page F159, F160 for connection diagram of recommended Drivers.

Recommended accessories	Motor side Supporting plate	MP-24A or MP-24B
	Supported side Bracket	—
	Nut Block	NB-0401

Ball Screw Specifications	
Accuracy grade	JIS C3
Thread direction	Right
Axial play	0mm
Reference Thrust	50N
Shaft material	Stainless steel
Nut material	Chrome-molybdenum steel
Surface hardness	Min. HRC55 (Thread area)
Lubricant	KSS original grease MSG No.1

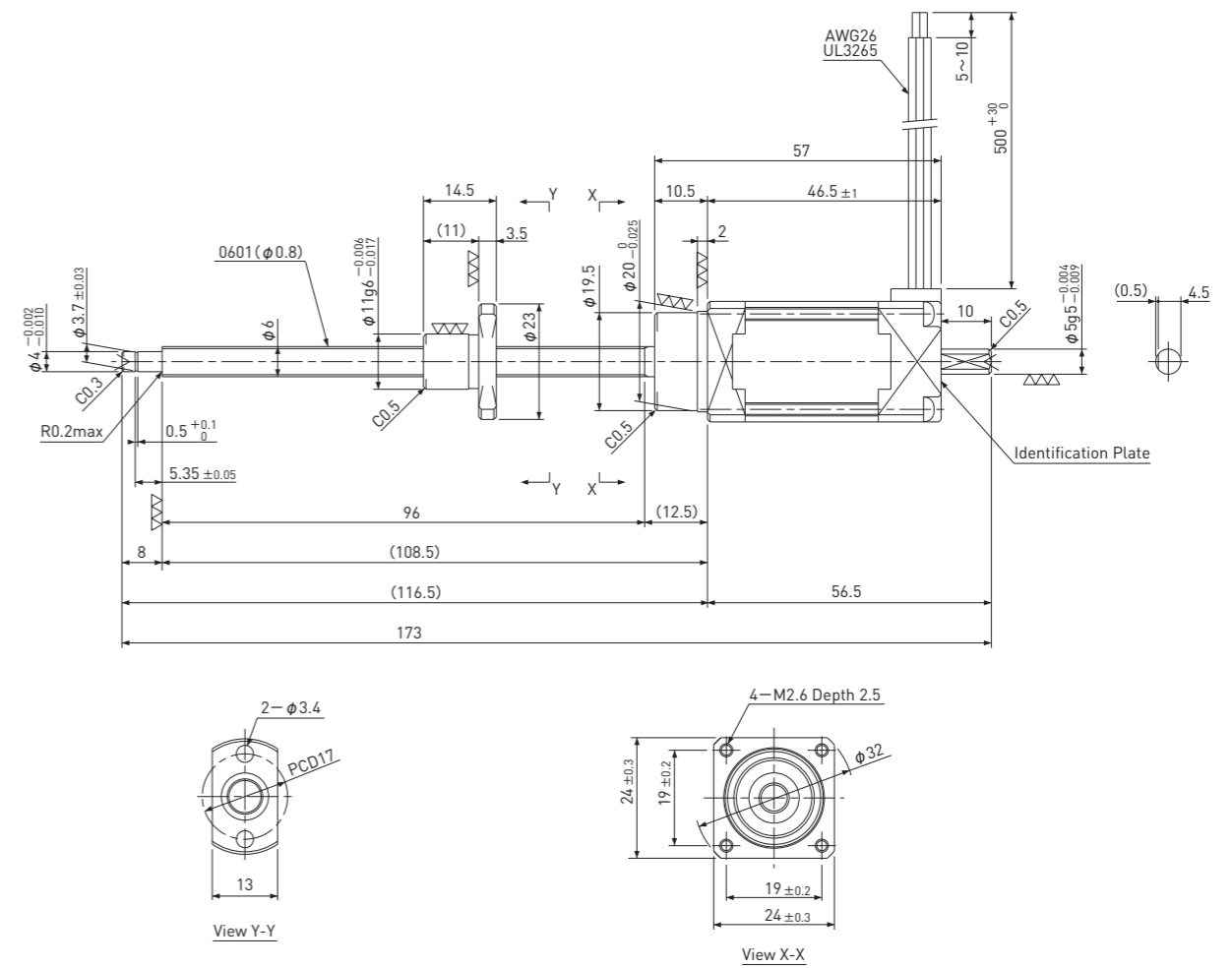
Motor Specifications	
Basic step angle	0.72°
Rated Voltage	DC 0.83 V
Rated current	0.75A/phase
Winding resistance	1.1 Ω
Holding Torque	0.018Nm
Rotor inertia	4.2g · cm ²
Operating temperature	-20°C ~ 50°C

Note) Only shaft end cutting is available. Other than that, it would be customized order.

Precision Ball Screw + 5-phase Stepping Motor

MB0601

Shaft dia. $\phi 6$ Lead : 1mm
Travel : 75mm



Recommended Drivers	KR-A5CC KR-A55MC (Micro step) KR-A535M (Micro step / AC-100~220V)
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Note) Refer to page F159, F160 for connection diagram of recommended Drivers.

Recommended accessories	Motor side Supporting plate	MP-24A or MP-24B
	Supported side Bracket	SP-24
	Nut Block	NB-0601

Ball Screw Specifications	
Accuracy grade	JIS C3
Thread direction	Right
Axial play	0mm
Reference Thrust	100N
Shaft material	Stainless steel
Nut material	Chrome-molybdenum steel
Surface hardness	Min. HRC55 (Thread area)
Lubricant	KSS original grease MSG No.1

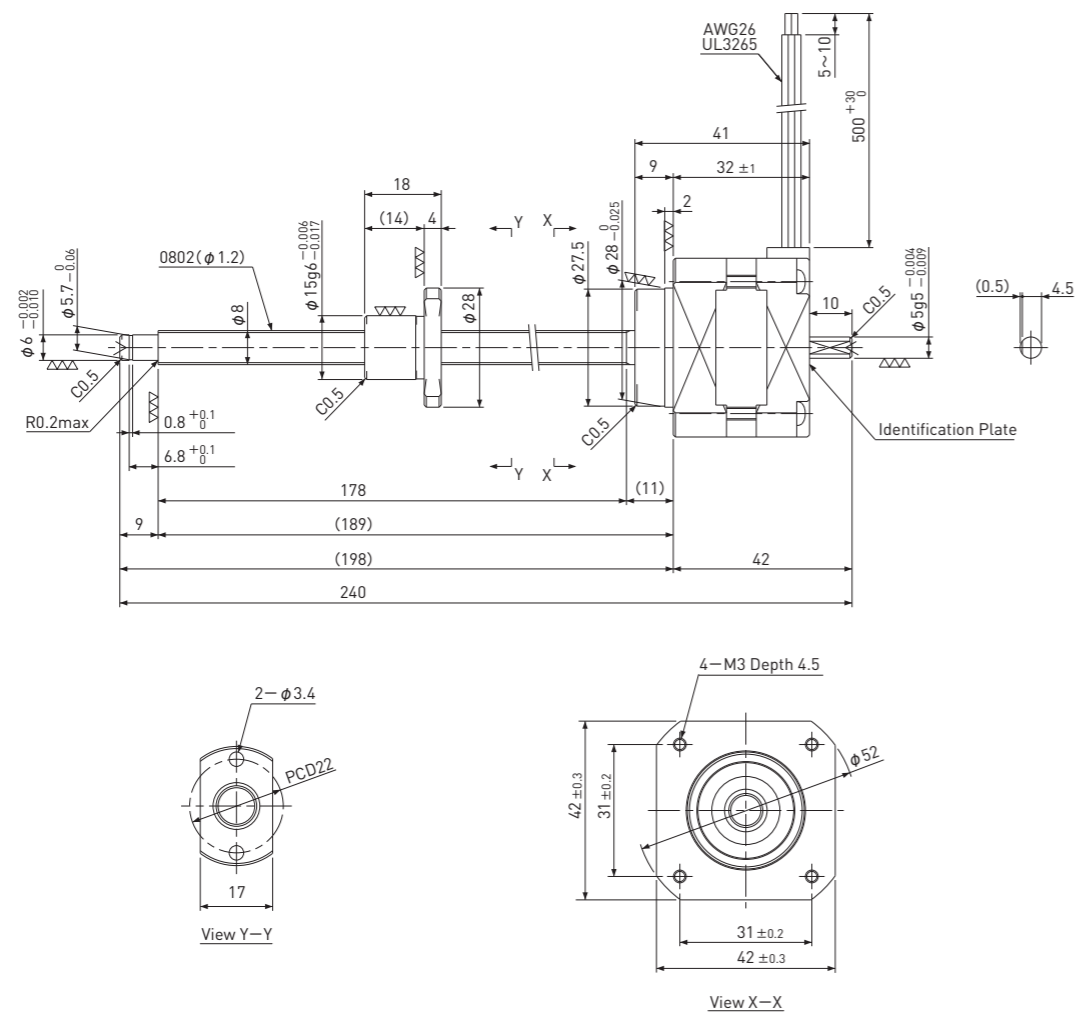
Motor Specifications	
Basic step angle	0.72°
Rated Voltage	DC 1.28 V
Rated current	0.75A/phase
Winding resistance	1.7 Ω
Holding Torque	0.028Nm
Rotor inertia	8.9g · cm ²
Operating temperature	-20°C ~ 50°C

Note) Only shaft end cutting is available. Other than that, it would be customized order.

Precision Ball Screw + 5-phase Stepping Motor

MB0802

Shaft dia. $\phi 8$ Lead : 2mm
Travel : 150mm



Recommended Drivers	KR-A5CC
	KR-A55MC(Micro step)
	KR-A535M(Micro step / AC-100~220V)

Note) Refer to page F159, F160 for connection diagram of recommended Drivers.

Recommended accessories	Motor side Supporting plate	MP-42A or MP-42B
	Supported side Bracket	SP-42
	Nut Block	NB-0802

Ball Screw Specifications	
Accuracy grade	JIS C3
Thread direction	Right
Axial play	0mm
Reference Thrust	150N
Shaft material	Stainless steel
Nut material	Chrome-molybdenum steel
Surface hardness	Min. HRC55 (Thread area)
Lubricant	KSS original grease MSG No.1

Motor Specifications	
Basic step angle	0.72°
Rated Voltage	DC 1.28 V
Rated current	0.75A/phase
Winding resistance	1.7Ω
Holding Torque	0.128Nm
Rotor inertia	41g · cm ²
Operating temperature	-20°C ~ 50°C

Note) Only shaft end cutting is available.
Other than that, it would be customized order.