

精密滚珠丝杠型 (MB) Precision Ball Screw type (MB)



魔博 / MoBo

- **特点**
 - 是将5相步进电机直接组装到精密滚珠丝杠 (C3级) 轴端上的产品, 最适合高精度定位。
 - 具有将滚珠丝杠轴心作为电机旋转轴心的理想结构。
 - 直连结构省去了联轴器的使用, 不仅缩短长边方向尺寸, 还能减少空转。
 - 还备有推荐的5相步进电机用驱动器。
 - 螺母块、电机板等附件也很齐全。



- **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.

● 基本规格 / Specifications

Model 型号	Shaft Nominal Dia. 丝杠轴公称外径 (mm)	Lead 导程 (mm)	Travel 行程 (mm)	Travel per pulse 1脉冲移动量 (μm)	Reference Thrust 参考推力 (N)	Mass 重量 (g)
MB04005A	f4	0.5	20	1	10	84
MB0401A	f4	1	30	2	20	84
MB0401	f4	1	30	2	50	100
MB0601	f6	1	75	2	100	170
MB0602	f6	2	75	4	50	180
MB0801	f8	1	150	2	300	310
MB0802	f8	2	150	4	150	320

Repeatability (reference) 重复定位精度 (参考值)	max. $\pm 0.005\text{mm}$
Lost Motion (reference) 空转 (参考值)	max. 0.005mm

※重复定位精度及空转值是安装在本公司标准滑台上时测得的值。实际值请咨询本公司。

※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.

- 注1) 关于详细尺寸, 请参照F107页以后的规格图。
 注2) 1脉冲的移动量为整步时的值。
 注3) 加减速速率的参考值为20ms/kHz以上。
 注4) 参考推力根据不同条件会有很大变化, 请垂询本公司。

- 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.

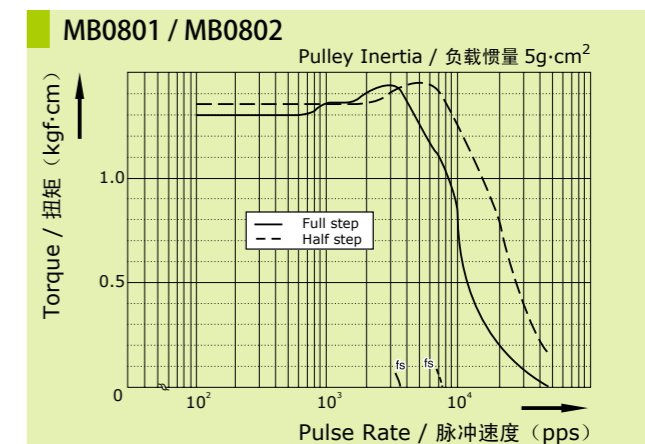
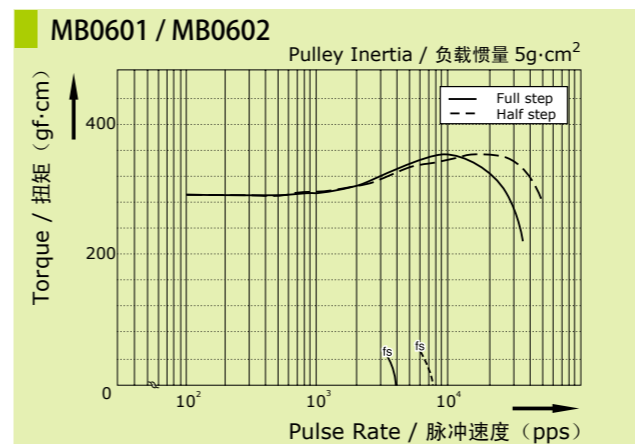
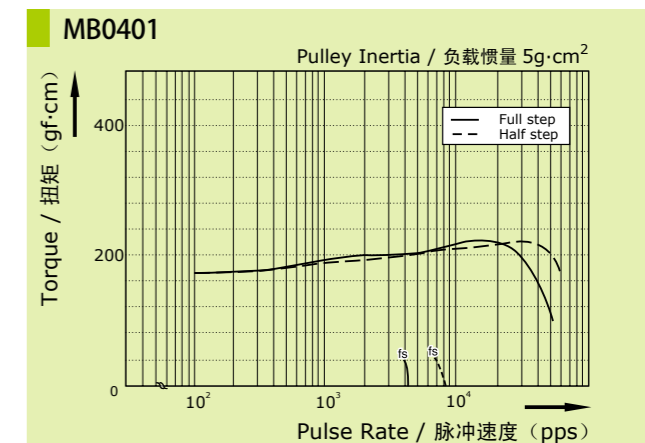
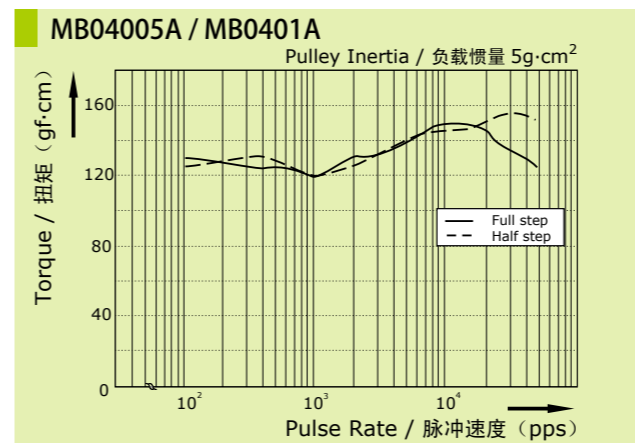
● 电机规格 / Motor Specifications

Model 型号	Motor size 电机规格 (mm)	Rated voltage 额定电压 (V)	Rated current 额定电流 (A/phase) (A/相)	Winding resistance 绕组电阻 (Ω)	Holding torque 保持扭矩 (Nm)	Rotor Inertia 转子惯量 ($\text{g} \cdot \text{cm}^2$)
MB04005A	□20	DC 1.05	0.75	1.4	0.010	3.9
MB0401A	□20	DC 1.05	0.75	1.4	0.010	3.9
MB0401	□24	DC 0.83	0.75	1.1	0.018	4.2
MB0601	□24	DC 1.28	0.75	1.7	0.028	8.9
MB0602	□24	DC 1.28	0.75	1.7	0.028	8.9
MB0801	□42	DC 1.28	0.75	1.7	0.128	41
MB0802	□42	DC 1.28	0.75	1.7	0.128	41

- 注1) 基本步进角为 0.72° 。
 注2) 转子惯量为包含滚珠丝杠轴的值。

- Note 1) Basic step angle is 0.72° .
 Note 2) Rotor Inertia includes Ball Screw Shaft.

● 电机特性 / Motor Characteristic



■ Test Condition / 测试条件

Driver / 驱动器: Maker Standard / 厂家标准机
 Input Voltage / 电源电压: DC24V
 Phase Current / 设定电流: 0.75A

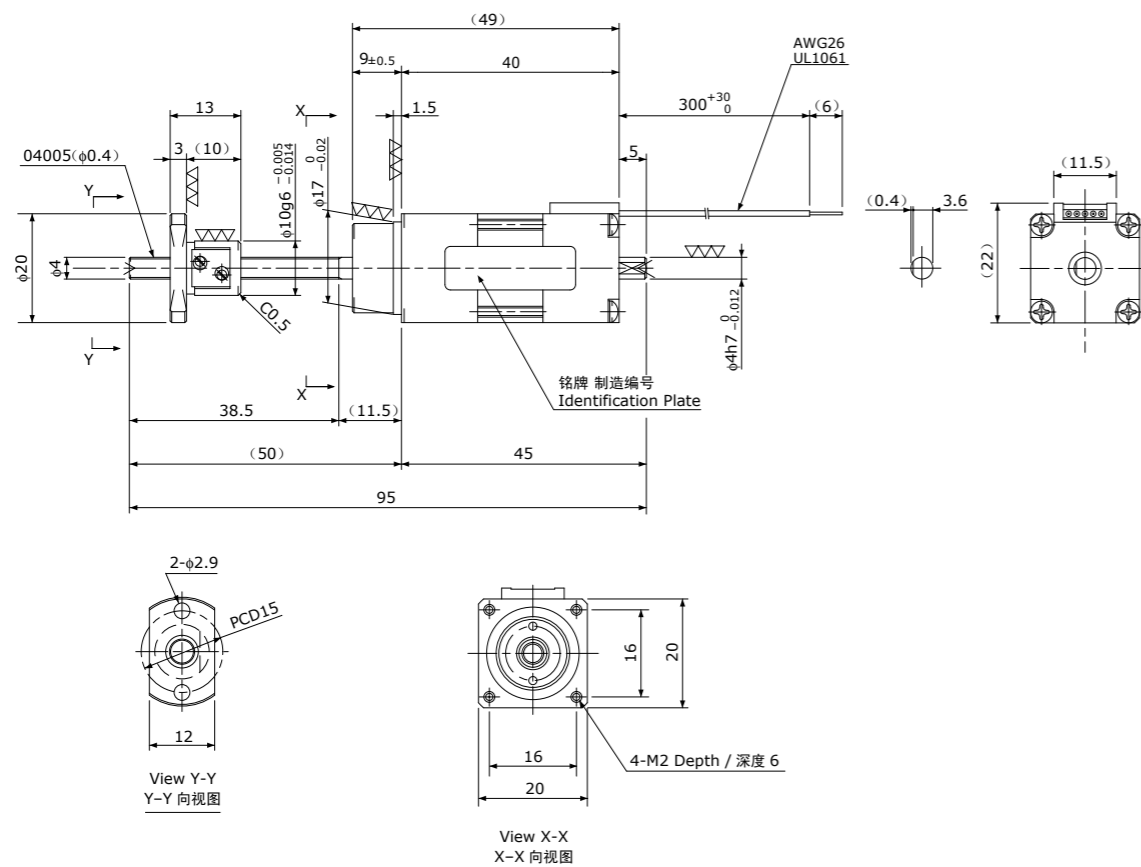
注) 电机特性因驱动器、运行条件而异。
 Note) Motor characteristic will vary depending on Driver type, operating conditions.

Standard products in stock MB series
标准库存品 MB系列

Dimensions & Specifications
规格及参数

精密滚珠丝杠+5相步进电机 / Precision Ball Screw + 5-phase Stepping Motor

MB04005A Shaft dia. (轴径) f4 Lead (导程) 0.5mm
Travel (行程) 20mm

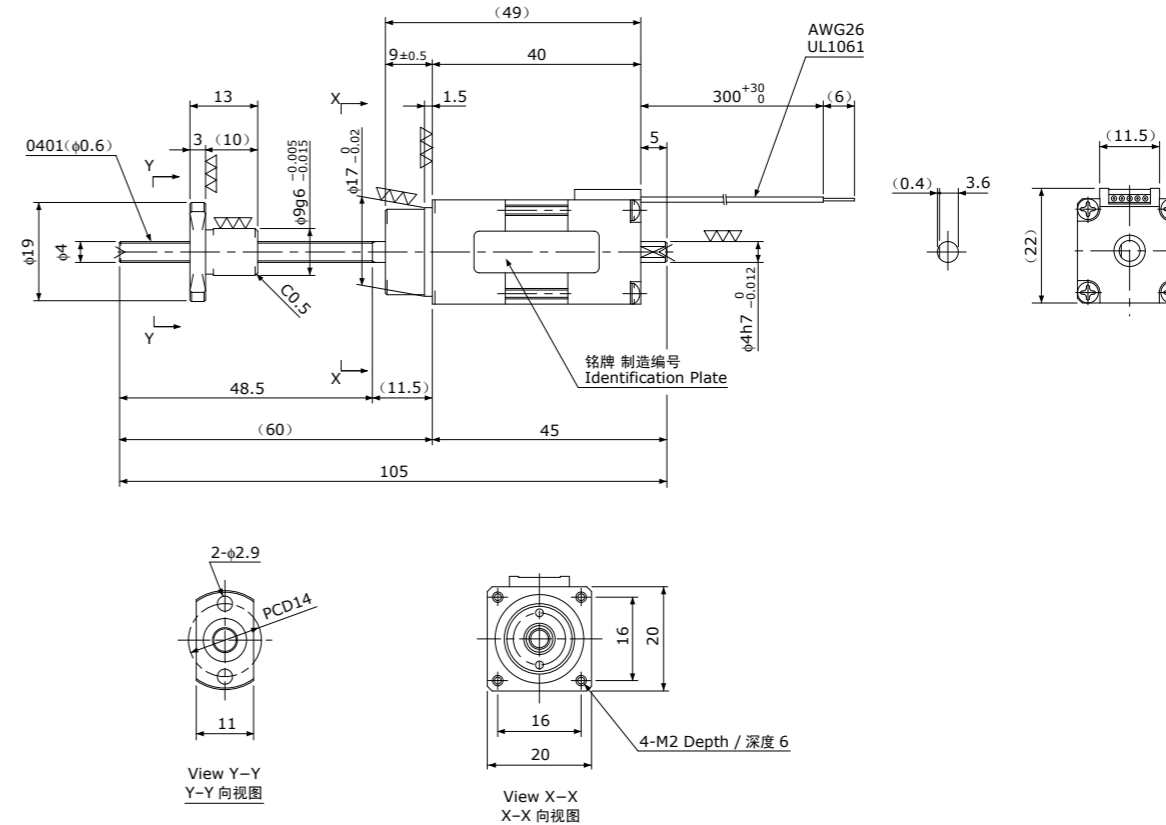


Standard products in stock MB series
标准库存品 MB系列

Dimensions & Specifications
规格及参数

精密滚珠丝杠+5相步进电机 / Precision Ball Screw + 5-phase Stepping Motor

MB0401A Shaft dia. (轴径) f4 Lead (导程) 1mm
Travel (行程) 30mm



Recommended Drivers 推荐的驱动器	KR-A5CC KR-A55MC (Micro step) KR-A535M (Micro step / AC-100~220V)
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注) 有关与推荐驱动器的接线, 请参照F159、F160页。
Note) Refer to page F159, F160 for connection diagram of recommended Drivers.

Recommended accessories 推荐的配件	Motor side Supporting plate / 电机侧支架板	MP-20A or MP-20B
	Supported side Bracket / 支撑侧托架	—
	Nut Block / 螺母块	NB-04005

Ball Screw Specifications 主要技术参数	
Accuracy grade 精度等级	JIS C3
Thread direction 旋向	Right 右
Axial play 轴向间隙	0.005mm or less 0.005mm以下
Reference Thrust 参考推力	10N
Shaft material 丝杠轴材质	Stainless steel 不锈钢
Nut material 螺母材质	Chrome-molybdenum steel 铬钼钢
Surface hardness 螺纹部表面硬度	Min. HRC55 (Thread area)
Lubricant 润滑剂	KSS original grease MSG No.1 KSS原装油脂 MSG No.1

Motor Specifications 电机参数	
Basic step angle 基本步进角	0.72°
Rated Voltage 额定电压	DC 1.05 V
Rated current 额定电流	0.75A/phase 0.75A/相
Winding resistance 绕组电阻	1.4Ω
Holding Torque 保持扭矩	0.010Nm
Rotor inertia 转子惯量	3.9g · cm ²
Operating temperature 使用温度范围	-20° C~50° C

注) 只能裁切轴端。
其他轴端形状为定制产品。
Note) Only shaft end cutting is available.
Other than that, it would be customized order.

Recommended Drivers 推荐的驱动器	KR-A5CC KR-A55MC (Micro step) KR-A535M (Micro step / AC-100~220V)
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注) 有关与推荐驱动器的接线, 请参照F159、F160页。
Note) Refer to page F159, F160 for connection diagram of recommended Drivers.

Recommended accessories 推荐的配件	Motor side Supporting plate / 电机侧支架板	MP-20A or MP-20B
	Supported side Bracket / 支撑侧托架	—
	Nut Block / 螺母块	NB-0401A

Ball Screw Specifications 主要技术参数	
Accuracy grade 精度等级	JIS C3
Thread direction 旋向	Right 右
Axial play 轴向间隙	0mm
Reference Thrust 参考推力	20N
Shaft material 丝杠轴材质	Stainless steel 不锈钢
Nut material 螺母材质	Chrome-molybdenum steel 铬钼钢
Surface hardness 螺纹部表面硬度	Min. HRC55 (Thread area)
Lubricant 润滑剂	KSS original grease MSG No.1 KSS原装油脂 MSG No.1

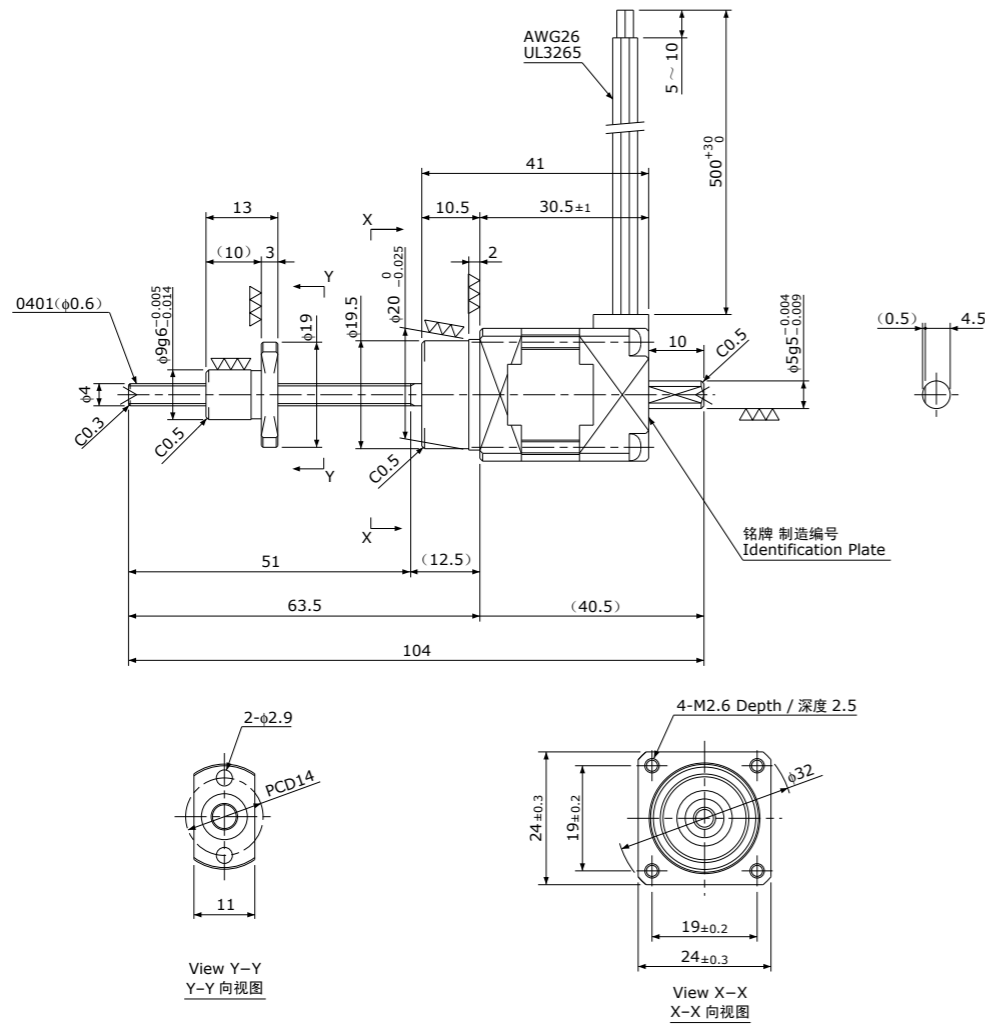
Motor Specifications 电机参数	
Basic step angle 基本步进角	0.72°
Rated Voltage 额定电压	DC 1.05 V
Rated current 额定电流	0.75A/phase 0.75A/相
Winding resistance 绕组电阻	1.4Ω
Holding Torque 保持扭矩	0.010Nm
Rotor inertia 转子惯量	3.9g · cm ²
Operating temperature 使用温度范围	-20° C~50° C

注) 只能裁切轴端。
其他轴端形状为定制产品。
Note) Only shaft end cutting is available.
Other than that, it would be customized order.

精密滚珠丝杠+5相步进电机 / Precision Ball Screw + 5-phase Stepping Motor

MB0401

Shaft dia. (轴径) f4 Lead (导程) 1mm
Travel (行程) 30mm



Recommended Drivers 推荐的驱动器	KR-A5CC KR-A55MC (Micro step) KR-A535M (Micro step / AC-100~220V)
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注) 有关与推荐驱动器的接线, 请参照F159、F160页。
Note) Refer to page F159, F160 for connection diagram of recommended Drivers.

Recommended accessories 推荐的配件	Motor side Supporting plate / 电机侧支架板	MP-24A or MP-24B
	Supported side Bracket / 支撑侧托架	—
	Nut Block / 螺母块	NB-0401

Ball Screw Specifications 主要技术参数	
Accuracy grade 精度等级	JIS C3
Thread direction 旋向	Right 右
Axial play 轴向间隙	0mm
Reference Thrust 参考推力	50N
Shaft material 丝杠轴材质	Stainless steel 不锈钢
Nut material 螺母材质	Chrome-molybdenum steel 铬钼钢
Surface hardness 螺纹部表面硬度	Min. HRC55 (Thread area)
Lubricant 润滑剂	KSS original grease MSG No.1 KSS原装油脂 MSG No.1

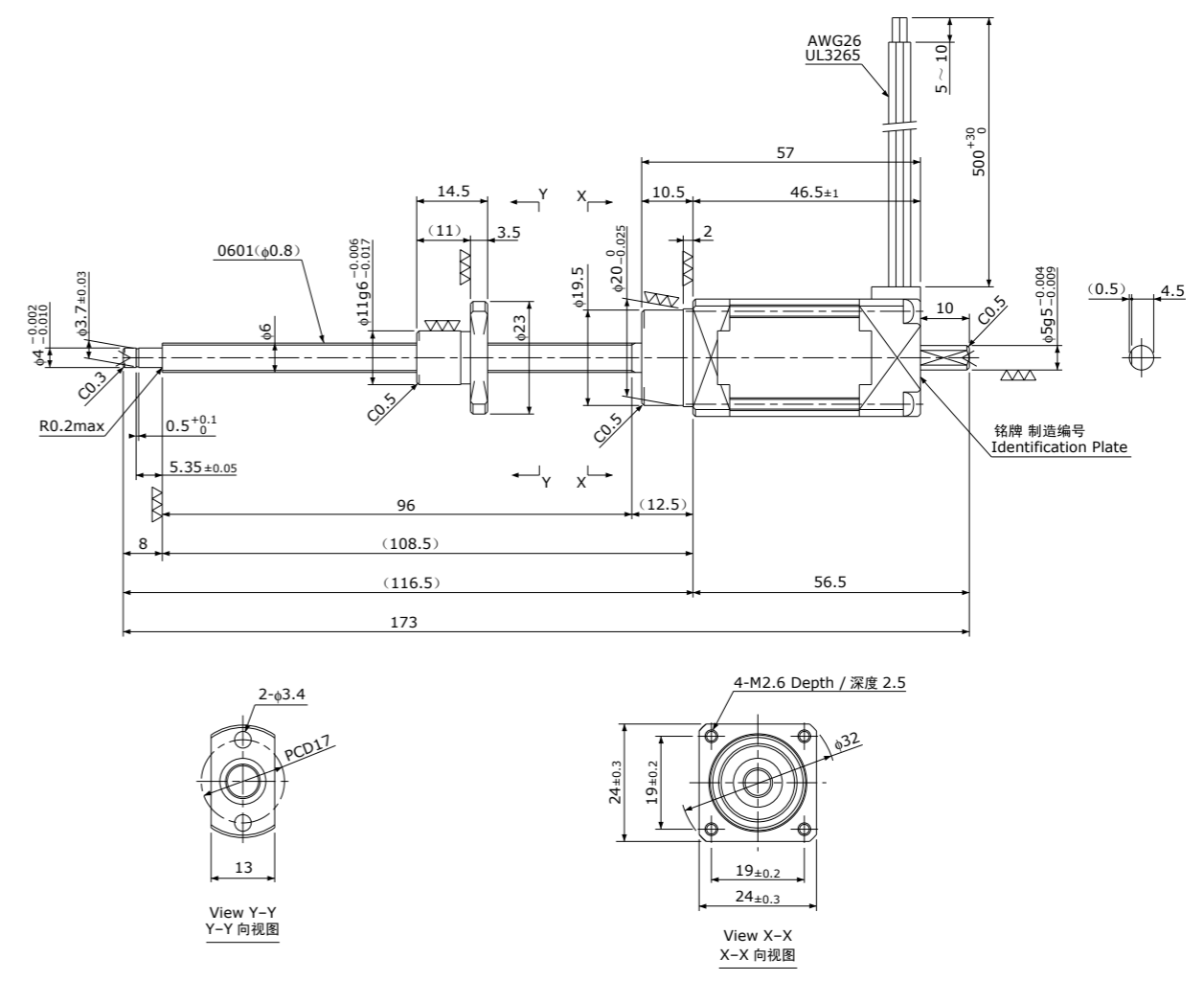
Motor Specifications 电机参数	
Basic step angle 基本步进角	0.72°
Rated Voltage 额定电压	DC 0.83 V
Rated current 额定电流	0.75A/phase 0.75A/相
Winding resistance 绕组电阻	1.1Ω
Holding Torque 保持扭矩	0.018Nm
Rotor inertia 转子惯量	4.2g · cm ²
Operating temperature 使用温度范围	-20° C~50° C

注) 只能裁切轴端。
其他轴端形状为定制产品。
Note) Only shaft end cutting is available.
Other than that, it would be customized order.

精密滚珠丝杠+5相步进电机 / Precision Ball Screw + 5-phase Stepping Motor

MB0601

Shaft dia. (轴径) f6 Lead (导程) 1mm
Travel (行程) 75mm



Recommended Drivers 推荐的驱动器	KR-A5CC KR-A55MC (Micro step) KR-A535M (Micro step / AC-100~220V)
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注) 有关与推荐驱动器的接线, 请参照F159、F160页。
Note) Refer to page F159, F160 for connection diagram of recommended Drivers.

Recommended accessories 推荐的配件	Motor side Supporting plate / 电机侧支架板	MP-24A or MP-24B
	Supported side Bracket / 支撑侧托架	SP-24
	Nut Block / 螺母块	NB-0601

Ball Screw Specifications 主要技术参数	
Accuracy grade 精度等级	JIS C3
Thread direction 旋向	Right 右
Axial play 轴向间隙	0mm
Reference Thrust 参考推力	100N
Shaft material 丝杠轴材质	Stainless steel 不锈钢
Nut material 螺母材质	Chrome-molybdenum steel 铬钼钢
Surface hardness 螺纹部表面硬度	Min. HRC55 (Thread area)
Lubricant 润滑剂	KSS original grease MSG No.1 KSS原装油脂 MSG No.1

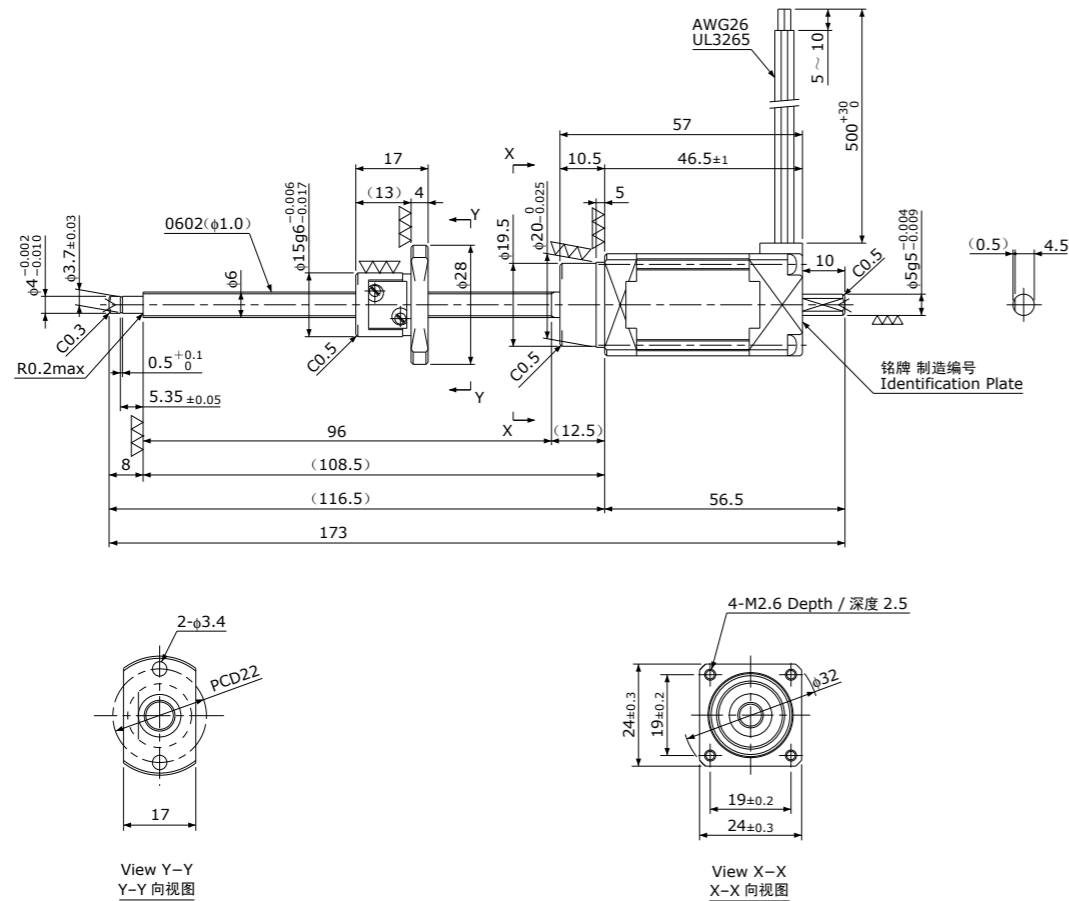
Motor Specifications 电机参数	
Basic step angle 基本步进角	0.72°
Rated Voltage 额定电压	DC 1.28 V
Rated current 额定电流	0.75A/phase 0.75A/相
Winding resistance 绕组电阻	1.7Ω
Holding Torque 保持扭矩	0.028Nm
Rotor inertia 转子惯量	8.9g · cm ²
Operating temperature 使用温度范围	-20° C~50° C

注) 只能裁切轴端。
其他轴端形状为定制产品。
Note) Only shaft end cutting is available.
Other than that, it would be customized order.

精密滚珠丝杠+5相步进电机 / Precision Ball Screw + 5-phase Stepping Motor

MB0602

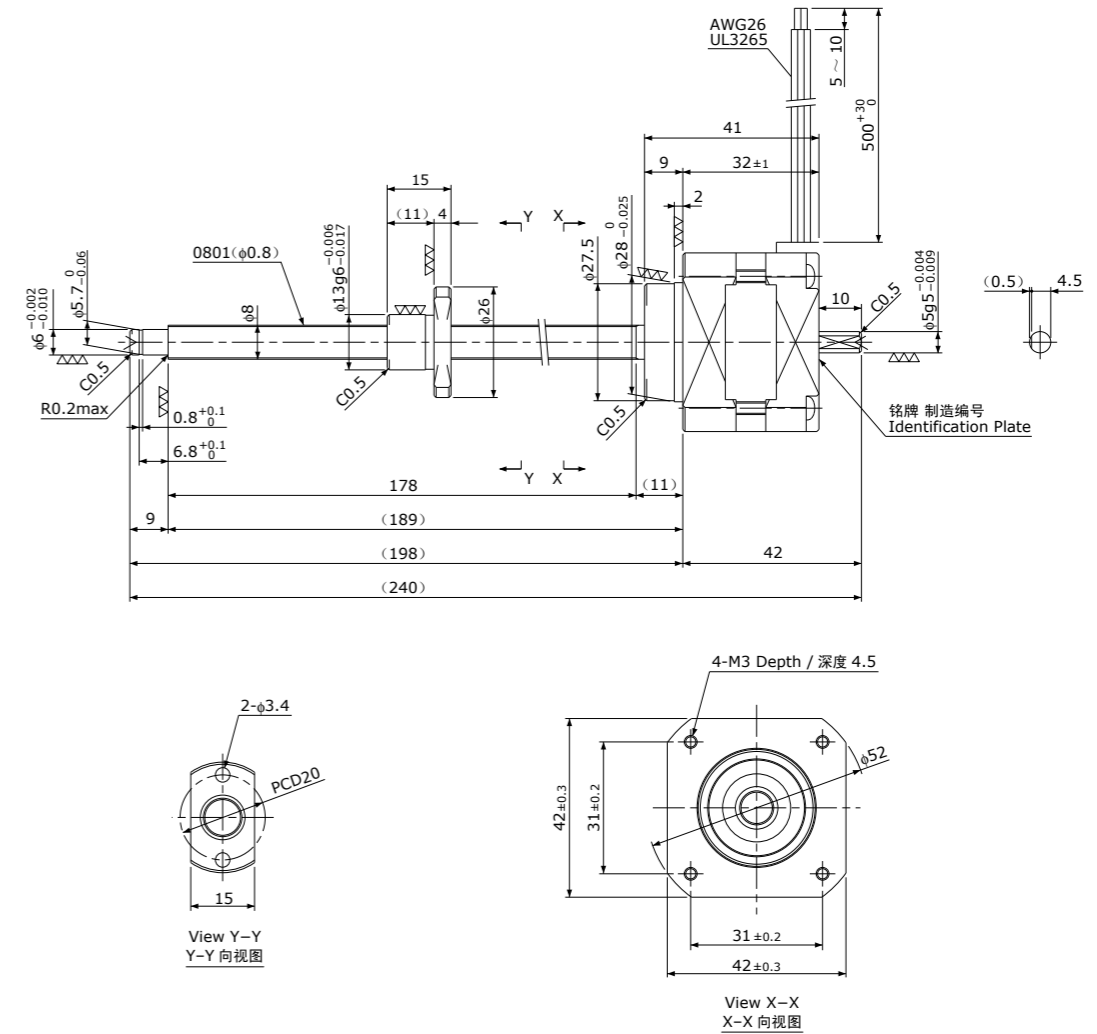
Shaft dia. (轴径) f6 Lead (导程) 2mm
Travel (行程) 75mm



精密滚珠丝杠+5相步进电机 / Precision Ball Screw + 5-phase Stepping Motor

MB0801

Shaft dia. (轴径) f8 Lead (导程) 1mm
Travel (行程) 150mm



Recommended Drivers 推荐的驱动器	KR-A5CC
	KR-A55MC (Micro step)
	KR-A535M (Micro step / AC-100~220V)

注) 有关与推荐驱动器的接线, 请参照F159、F160页。
Note) Refer to page F159, F160 for connection diagram of recommended Drivers.

Recommended accessories 推荐的配件	Motor side Supporting plate / 电机侧支架板	MP-20A or MP-20B
	Supported side Bracket / 支撑侧托架	SP-24
	Nut Block / 螺母块	NB-0602

Ball Screw Specifications 主要技术参数	
Accuracy grade 精度等级	JIS C3
Thread direction 旋向	Right 右
Axial play 轴向间隙	0mm
Reference Thrust 参考推力	50N
Shaft material 丝杠轴材质	Stainless steel 不锈钢
Nut material 螺母材质	Chrome-molybdenum steel 铬钼钢
Surface hardness 螺纹部表面硬度	Min. HRC55 (Thread area)
Lubricant 润滑剂	KSS original grease MSG No.1 KSS原装油脂 MSG No.1

Motor Specifications 电机参数	
Basic step angle 基本步进角	0.72°
Rated Voltage 额定电压	DC 1.28 V
Rated current 额定电流	0.75A/phase 0.75A/相
Winding resistance 绕组电阻	1.7Ω
Holding Torque 保持扭矩	0.028Nm
Rotor inertia 转子惯量	8.9g · cm ²
Operating temperature 使用温度范围	-20° C~50° C

注) 只能裁切轴端。
其他轴端形状为定制产品。
Note) Only shaft end cutting is available.
Other than that, it would be customized order.

Recommended Drivers 推荐的驱动器	KR-A5CC
	KR-A55MC (Micro step)
	KR-A535M (Micro step / AC-100~220V)

注) 有关与推荐驱动器的接线, 请参照F159、F160页。
Note) Refer to page F159, F160 for connection diagram of recommended Drivers.

Recommended accessories 推荐的配件	Motor side Supporting plate / 电机侧支架板	MP-42A or MP-42B
	Supported side Bracket / 支撑侧托架	SP-42
	Nut Block / 螺母块	NB-0801

Ball Screw Specifications 主要技术参数	
Accuracy grade 精度等级	JIS C3
Thread direction 旋向	Right 右
Axial play 轴向间隙	0mm
Reference Thrust 参考推力	300N
Shaft material 丝杠轴材质	Stainless steel 不锈钢
Nut material 螺母材质	Chrome-molybdenum steel 铬钼钢
Surface hardness 螺纹部表面硬度	Min. HRC55 (Thread area)
Lubricant 润滑剂	KSS original grease MSG No.1 KSS原装油脂 MSG No.1

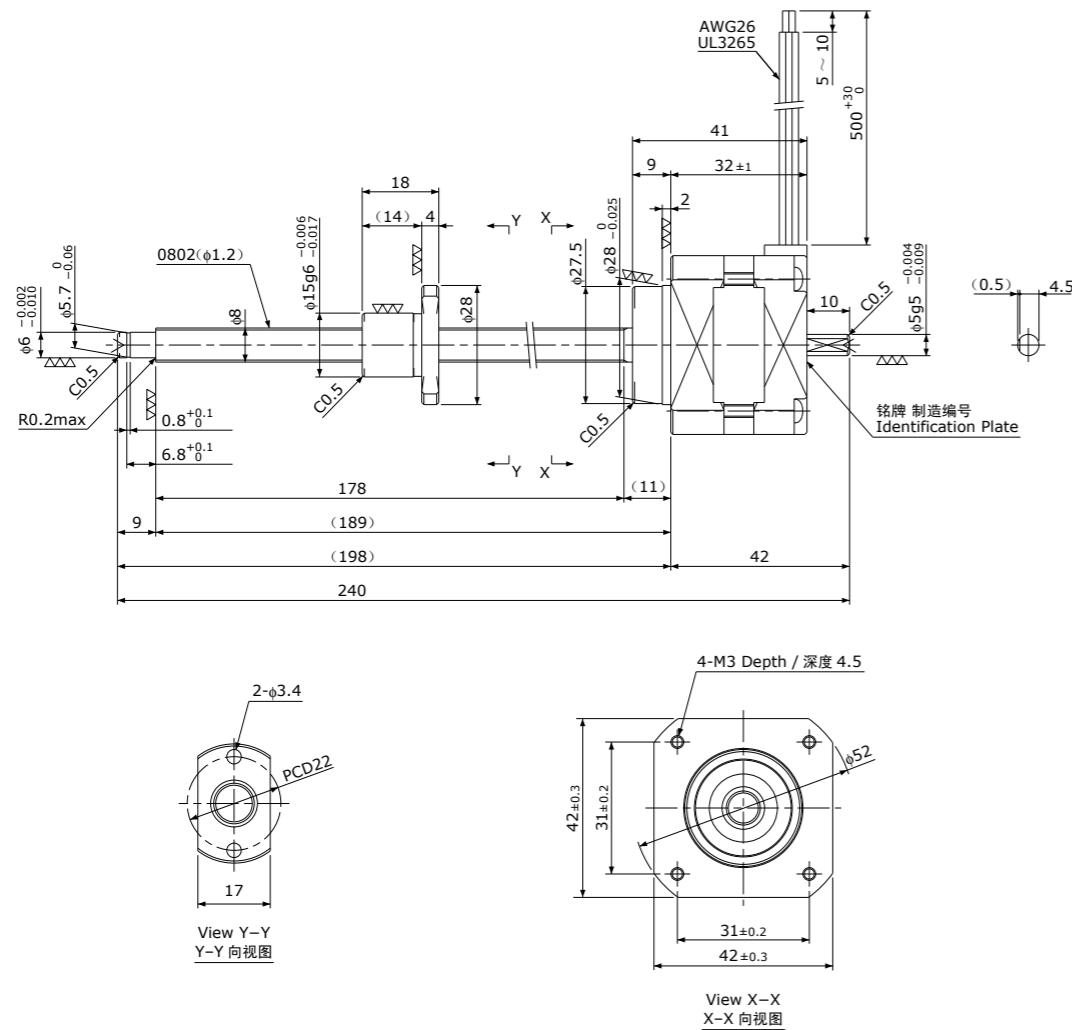
Motor Specifications 电机参数	
Basic step angle 基本步进角	0.72°
Rated Voltage 额定电压	DC 1.28 V
Rated current 额定电流	0.75A/phase 0.75A/相
Winding resistance 绕组电阻	1.7Ω
Holding Torque 保持扭矩	0.128Nm
Rotor inertia 转子惯量	41g · cm ²
Operating temperature 使用温度范围	-20° C~50° C

注) 只能裁切轴端。
其他轴端形状为定制产品。
Note) Only shaft end cutting is available.
Other than that, it would be customized order.

精密滚珠丝杠+5相步进电机 / Precision Ball Screw + 5-phase Stepping Motor

MB0802

Shaft dia. (轴径) f8 Lead (导程) 2mm
Travel (行程) 150mm



Recommended Drivers 推荐的驱动器	KR-A5CC
	KR-A55MC (Micro step)
	KR-A535M (Micro step / AC-100~220V)

注) 有关与推荐驱动器的接线, 请参照F159、F160页。
Note) Refer to page F159, F160 for connection diagram of recommended Drivers.

Recommended accessories 推荐的配件	Motor side Supporting plate / 电机侧支架板	MP-42A or MP-42B
	Supported side Bracket / 支撑侧托架	SP-42
	Nut Block / 螺母块	NB-0802

Ball Screw Specifications 主要技术参数	
Accuracy grade 精度等级	JIS C3
Thread direction 旋向	Right 右
Axial play 轴向间隙	0mm
Reference Thrust 参考推力	150N
Shaft material 丝杠轴材质	Stainless steel 不锈钢
Nut material 螺母材质	Chrome-molybdenum steel 铬钼钢
Surface hardness 螺纹部表面硬度	Min. HRC55 (Thread area)
Lubricant 润滑剂	KSS original grease MSG No.1 KSS原装油脂 MSG No.1

Motor Specifications 电机参数	
Basic step angle 基本步进角	0.72°
Rated Voltage 额定电压	DC 1.28 V
Rated current 额定电流	0.75A/phase 0.75A/相
Winding resistance 绕组电阻	1.7Ω
Holding Torque 保持扭矩	0.128Nm
Rotor inertia 转子惯量	41g · cm ²
Operating temperature 使用温度范围	-20° C~50° C

注) 只能裁切轴端。
其他轴端形状为定制产品。
Note) Only shaft end cutting is available.
Other than that, it would be customized order.