



雷 *Leili* 利

# LEILI

**Micro-motor Professional  
Solutions**

股票代码 300660

汽车市场

Automotive Industry

# INTRODUCTION

## 公司简介

### 关于我们

雷利电机，是一家具有广泛影响力的微电机产品研发设计、生产制造型中国上市（股票代码：300660）企业，已经形成以微型步进电机、同步电机、直流有刷电机、直流无刷电机、微型水泵等多种电机产品为主导，配套相关精密结构、驱动控制设计和制造方案解决的综合业务能力。目前雷利的产品在家用电器行业已经具有较高的影响力，并持续推进在汽车零部件、工业控制、运动健康等多领域的协调发展。

公司总部位于中国常州，拥有常州新北研发中心和常州新北、常州武进、常州钱家三个制造基地，公司实行集团化管理，总占地面积超过 140000 平方米，共有员工 4000 余人，年电机生产能力约 2 亿台。公司通过持续发展，已经成为一家管理信息化、研发项目化、生产基地化、营销全球化的具有较强综合竞争能力的微电机系统方案提供商。

公司不断利用技术研发和零部件制造上的优势，为客户提供各种品质优良，性价比高的微电机产品和相关解决方案。在与包括近 30 家世界 500 强企业在内的众多优秀客户合作过程中，雷利已经成为值得信赖的战略合作品牌。未来雷利将通过持续的创新投入和资源整合，为客户提供更加丰富和个性化的产品，实现互利双赢。

### About Us

Jiangsu Leili Motor Co., Ltd is a well-known micro-motor supplier (listed company, stock code: 300660) with the high ability of R&D and manufacture. Leili motor specializes in stepping Motors, brushed and brushless DC Motors, synchronous Motors and different kinds of micro-pumps; besides, precision module parts, driving control design and micro-motor solutions are also available in Leili motor. The product are widely used in the industry of automotive, Industrial Industry, Health & Fitness, etc., especially in home appliances.

Leili motor's headquarter locates in Changzhou, and has one R&D center and three manufacturing bases. The company, whose annual production capacity is 200 million units, covers 140 thousand m<sup>2</sup> and has 4000 staff. By continuously developing, Leili motor becomes a competitive micro-motor-solution supplier, which has the features of management informationization, R&D projectization, manufacturing base and marketing globalization.

Relying on the advantage of R&D technology and components manufacturing, Leili motor provides kinds of micro-motors and solutions with higher quality and more competitive prices to different global well-known companies in over 30 countries. In the future, Leili motor will keep innovating, investing and intergrating to provide more types of customized products.

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## ● 乘用车 Passenger Vehicle

|    |         |                    |
|----|---------|--------------------|
| 06 | 步进电机 BY | PM Stepping Motors |
| 10 | 直流电机 DC | DC Motors          |
| 13 | 泵       | Pump               |

## ● 商用车 Commercial Vehicle

|    |             |                        |
|----|-------------|------------------------|
| 14 | 混合式步进电机 BYG | Hybrid Stepping Motors |
| 16 | 直流电机 ZY     | DC Motors              |

## ● 新能源汽车 New Energy Vehicle

|    |   |      |
|----|---|------|
| 17 | 泵 | Pump |
|----|---|------|

## ● 冲压件 Precision Stamping Parts

|    |     |                          |
|----|-----|--------------------------|
| 19 | 冲压件 | Precision Stamping Parts |
|----|-----|--------------------------|

# COMPANY PROFILE

## 子公司概况



江苏雷利电机股份有限公司（总部） ISO9001 ISO14001

地 址 江苏常州武进区遥观镇钱家工业园  
厂房面积 40,000m<sup>2</sup>  
主要产品 步进电机、同步电机、排水电机、无刷电机、  
大功率直流电机、解决方案产品

Jiangsu Leili Motor Co.,Ltd.(Headquarters)

Address Qianjia Industrial Park, Yaoguan Town, Wujin, Changzhou, Jiangsu  
Plant area 40,000m<sup>2</sup>  
Main products Geared Stepping Motors, Synchronous Motors, Drain Actuators  
PM Stepper Motor,Hybrid Stepping Motor, DC Brushless Motors, Turn-key Solutions.



常州市诚利电子有限公司 ISO/TS16949

地 址 常州新北区新四路 18 号电子科技产业园  
厂房面积 12,000m<sup>2</sup>  
主要产品 有刷电机、串激电机、磁滞同步电机、解决方案产品

Changzhou Chengli Electrical Equipment Co., Ltd

Address No.18, Xin 4 Rd, New District, Changzhou, Jiangsu, China  
Plant area 12,000m<sup>2</sup>  
Main products DC Motor, Series Motor, Turn-key Solutions



常州雷利电机科技有限公司 TS16949

地 址 常州新北区新四路 18 号电子科技产业园  
厂房面积 16,000m<sup>2</sup>  
主要产品 排水泵、微型泵

Changzhou Leili Motor Science and Technology Co., Ltd

Address No.18, Xin 4 Rd, New District, Changzhou, Jiangsu, China  
Plant area 16,000m<sup>2</sup>  
Main products Upper Drain Pumps, Micro Pumps



常州工利精机科技有限公司 ISO/TS16949

地 址 常州市武进高新区南区龙踞路 1 号  
厂房面积 26,000m<sup>2</sup>  
主要产品 精密冲压件、汽车小型冲压零部件、组件

Changzhou Gongli Precision Machinery Co., Ltd

Address No.1 Longju Rd, South area of new district, Wujin, Jiangsu  
Plant area 26,000m<sup>2</sup>  
Main products Precision Stamping Parts, Automotive Small Stamping  
Parts & Assy



无锡雷利电子控制技术有限公司

地 址 无锡市高浪东路 999 号  
主要产品 电子控制器、驱动器

Wuxi Leili Controls Co., Ltd.

Address No.999, Gao lang east road, Wuxi City, Jiangsu province, China.  
Main products Electronic Control, Driver

# 定制化研发 一站式服务

8大应用领域电机解决方案专家

The expert of micro-motors and solutions in 8 applications



冰箱市场  
Refrigerator Industry



洗衣机市场  
Washing Machine Industry



空调市场  
Air-conditioner Industry



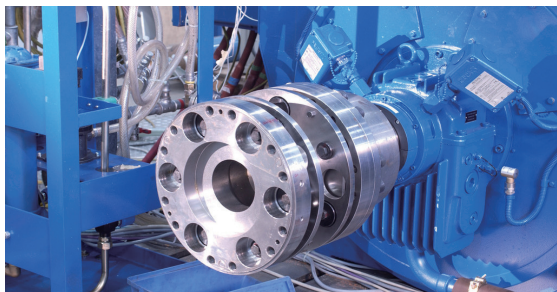
卫浴市场  
Sanitary Wares Industry



小家电市场  
Home Appliance Industry



汽车市场  
Automotive Industry



工业市场  
Industrial Industry



运动健康市场  
Health & Fitness Industry

# MAIN PARTNERS

主要客户



25%

欧美客户 European and American Partners

 **Electrolux**

 **VESTEL**

 **emz**  
smart solutions

 **Logitech**

 **Pentair**

 **Whirlpool**

 **Honeywell®**

 **IBM**

 **ICON**

 **GEBERIT**  
瑞士·吉博力

 **SEAGATE**

 **MAGNA**

 **ARC**  
INTERNATIONAL

 **CASCO**

 **BOSCH**

 **TRW**

 **dyson**



25%

亚太客户 Asia-Pacific Partners

 **Panasonic**

 **FUJITSU**

 **SHARP**

 **MITSUBISHI**

 **DAIKIN**

 **LG**

 **SAMSUNG**

 **TOTO®**

 **HITACHI**

 **DAEWOO**

 **AISIN**



50%

中国国内客户 China Mainland Partners

 **GREE** 格力

 **Midea®**  
美的

 **LittleSwan**

 **TCL**

 **小米**  
xiaomi.com

 **Haier**

 **Hisense**

 **Joyoung** 九阳



 **东风汽车**

# Automotive Industry

汽车领域

车灯转向执行器  
Turn Light Actuator

空调执行器  
Air-condition

发动机冷却系统  
Engine Cooling System



乘用车  
Passenger Vehicle

节气门电机  
Throttle

进气格栅  
Engine Intake Grill

尾气处理（尿素泵）  
Tail Gas Motor

油门控制系统  
Accelerator Control System

减速齿轮箱  
Reduction Gear Box

卡车升降控制  
Truck Lifting Control System



商用车  
Commercial Vehicle



新能源汽车  
New Energy Vehicle

驱动电机冷却  
Driving Motor Cooling

刹车辅助

Brake Assist

电池组热管理

Battery Packs Management

## ★ 汽车产品系列 ★

- 直流有刷电机系列 DC brushed motor series
- 永磁步进电机系列 Stepper motor series
- 无刷直流电机系列 DC brushless motor series

- 电子水泵系列 Electronic water pumps
- 真空泵系列 Electronic vacuum pumps

## 35BY46

### ■ 典型应用领域:

- 乘用车
- 车灯调节电机

### Typical Applications:

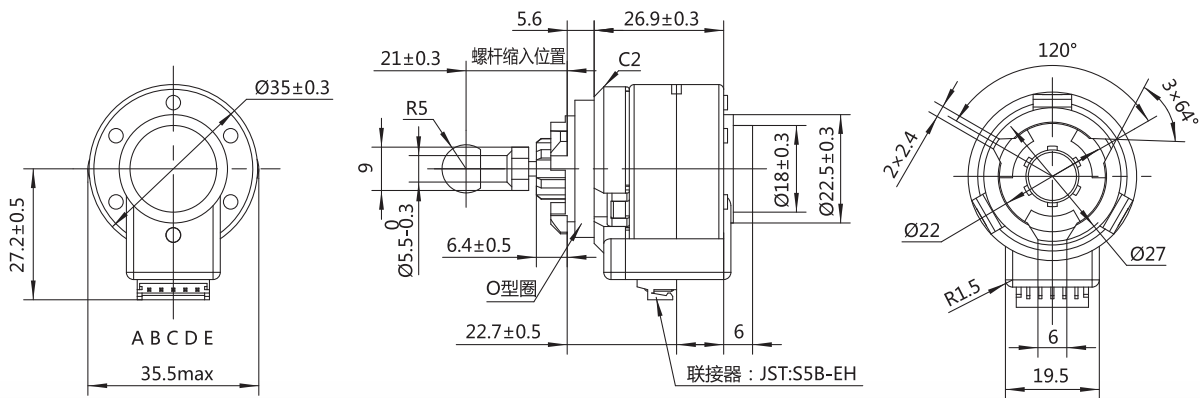
- Passenger Vehicle
- lamp adjustment motor



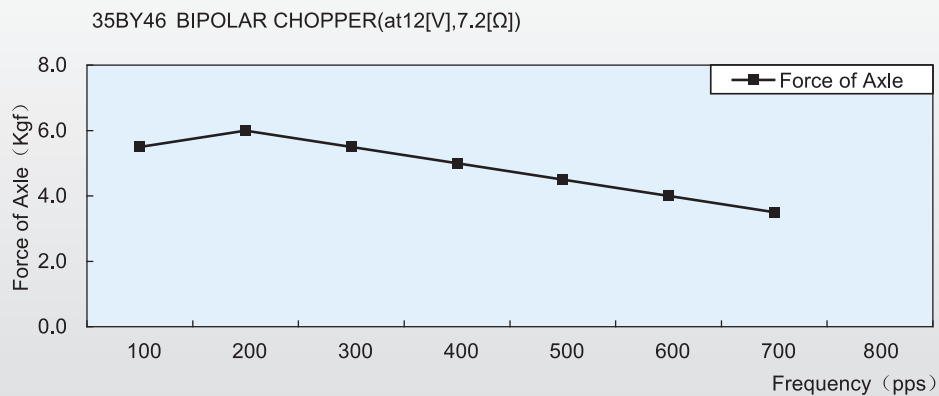
### ■ 性能参数 Performance parameters

| 电机型号<br>Model | 步距角<br>Step Angle | 驱动方式<br>Drive Method<br>(mm) | 驱动电路<br>Drive Circuit | 驱动电压<br>Drive Voltage | 线圈电阻<br>Coil Resistance/<br>phase(V) | 工作频率<br>(PPS) | 最大<br>直线行程<br>( mm ) | 轴向速度<br>(mm/<br>step) | 轴向力<br>Force of Axle<br>(N) | 线圈电阻<br>Coil Resistance/<br>phase(V) | 绝缘耐压<br>Dielectric Strength | 绝缘等级<br>Insulation Class |
|---------------|-------------------|------------------------------|-----------------------|-----------------------|--------------------------------------|---------------|----------------------|-----------------------|-----------------------------|--------------------------------------|-----------------------------|--------------------------|
| 35BY46-323    | 15°               | 2-2 相                        | BIPOLAR               | 12V DC<br>450mA       | 7.5                                  | 300           | 12                   | 0.033                 | 30 min                      | 100 M[Ω]<br>min                      | 500[V] AC<br>1[min]         | E                        |

### ■ 机械尺寸 Mechanical Dimensions: mm



### ■ 矩频曲线图 Torque Characteristics



※ 以上仅列出基本型号，具体要求可定制  
Above only lists the basic types, and the specific requirements can be customized



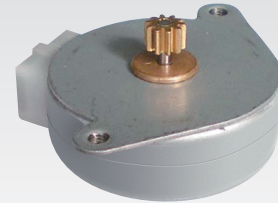
## 35BY412

### ■ 典型应用领域:

- 乘用车
- 气格栅执行器电机

### Typical Applications:

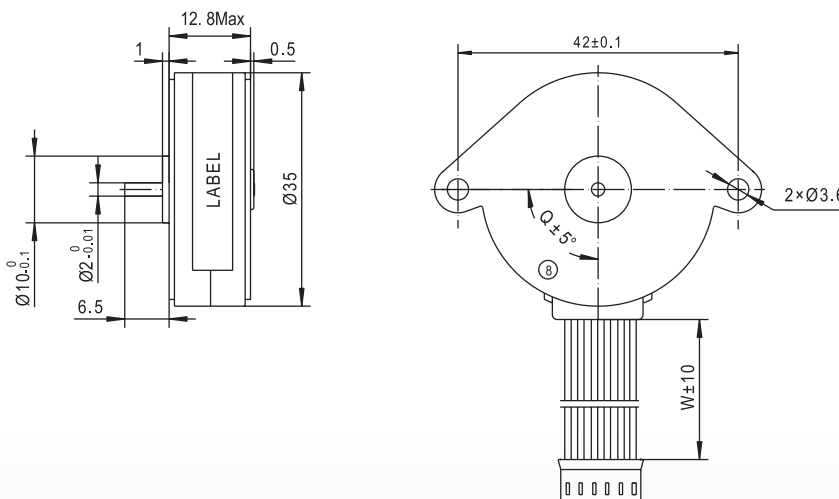
- Passenger Vehicle
- AGS motor



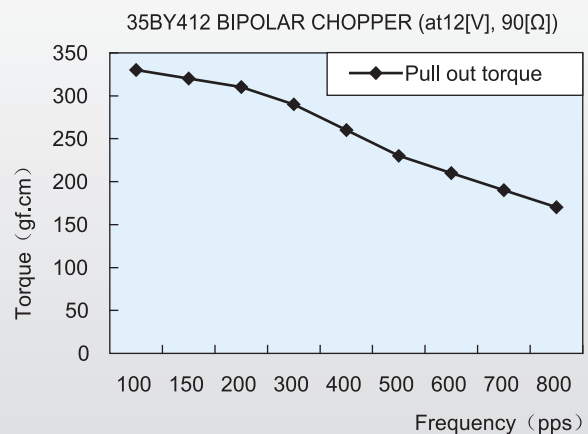
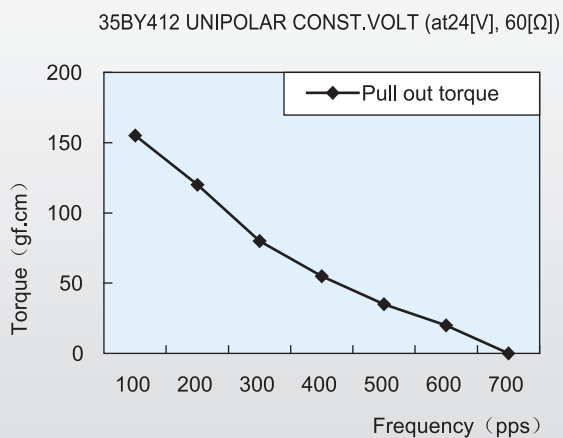
### ■ 性能参数 Performance parameters

| 电机型号<br>Model | 步距角<br>Step Angle | 驱动方式<br>Drive Method | 驱动电路<br>Drive Circuit | 驱动电压<br>Drive Voltage (V) | 线圈电阻<br>Coil Resistance/<br>phase (Ω) | 绝缘电阻<br>Insulation Resistance | 绝缘耐压<br>Dielectric Strength | 绝缘等级<br>Class of Insulation (Class) | 标准厚度<br>Standard Thickness (mm) |
|---------------|-------------------|----------------------|-----------------------|---------------------------|---------------------------------------|-------------------------------|-----------------------------|-------------------------------------|---------------------------------|
| 35BY412-56    | 7.5°              | 2-2 PHASE            | UNIPOLAR              | 24                        | 60                                    | 100M[Ω] MIN                   | 500[V]<br>AC 1[min]         | E                                   | 22.2/15.5/12.5                  |

### ■ 机械尺寸 Mechanical Dimensions: mm



### ■ 矩频曲线图 Torque Characteristics



以上仅列出基本型号，具体要求可定制  
Above only lists the basic types, and the specific requirements can be customized

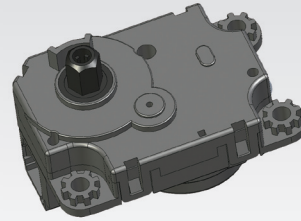
## 30BY46L

### ■ 典型应用领域:

- 乘用车
- 空调执行器

### Typical Applications:

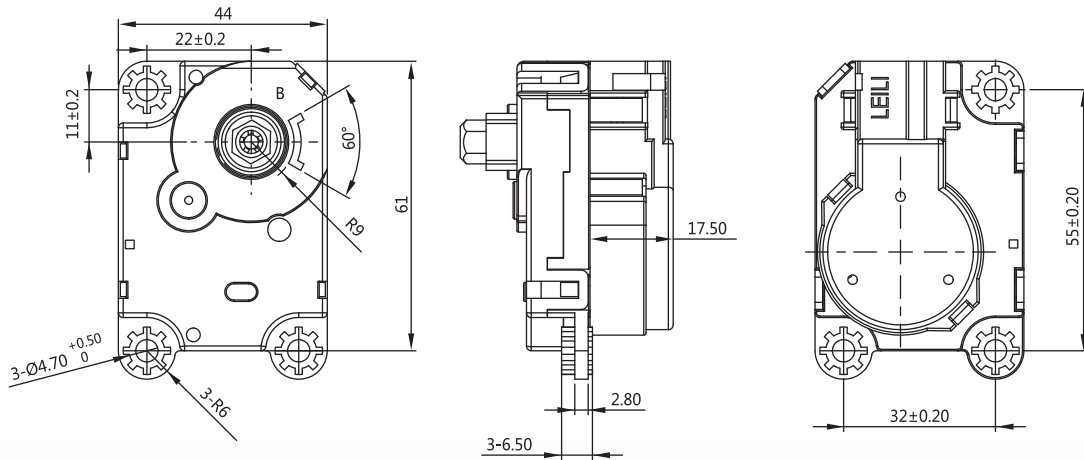
- Passenger Vehicle
- Air Condition Actuator



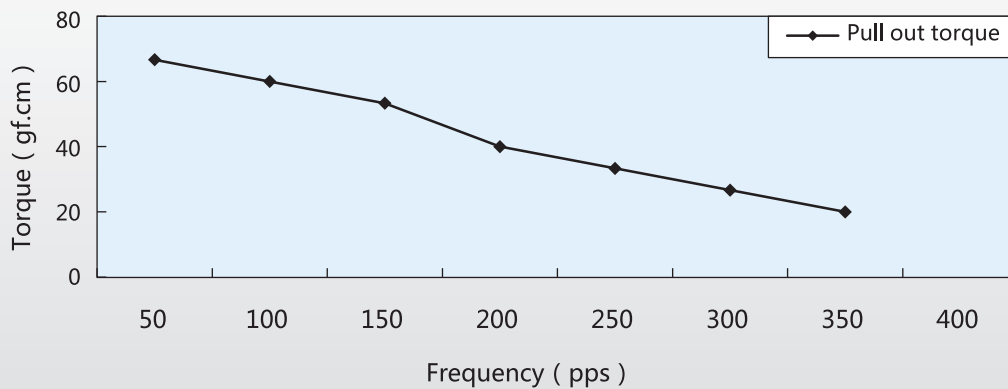
### ■ 性能参数 Parameters

| 电机型号<br>Model | 步距角<br>Step Angle | 驱动方式<br>Drive Method | 驱动电路<br>Drive Circuit | 驱动电压<br>Drive Voltage (V) | 线圈电阻<br>Coil Resistance/<br>phase (Ω) | 绝缘电阻<br>Insulation Resistance | 绝缘耐压<br>Dielectric Strength | 绝缘等级<br>Class of Insulation (Class) |
|---------------|-------------------|----------------------|-----------------------|---------------------------|---------------------------------------|-------------------------------|-----------------------------|-------------------------------------|
| 30BY46L-2     | 15°               | 2-2 PHASE            | UNIPOLAR              | 12                        | 81                                    | 100M[Ω] MIN                   | 500[V]<br>AC 1[min]         | E                                   |

### ■ 机械尺寸 Mechanical Dimensions: mm



### ■ 矩频曲线图 Torque Characteristics



※ 以上仅列出基本型号，具体要求可定制  
Above only lists the basic types, and the specific requirements can be customized

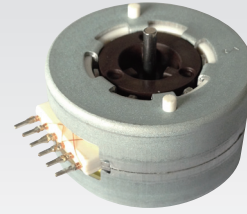
## 32BY46L

### ■ 典型应用领域:

- 乘用车
- 空调执行器

### Typical Applications:

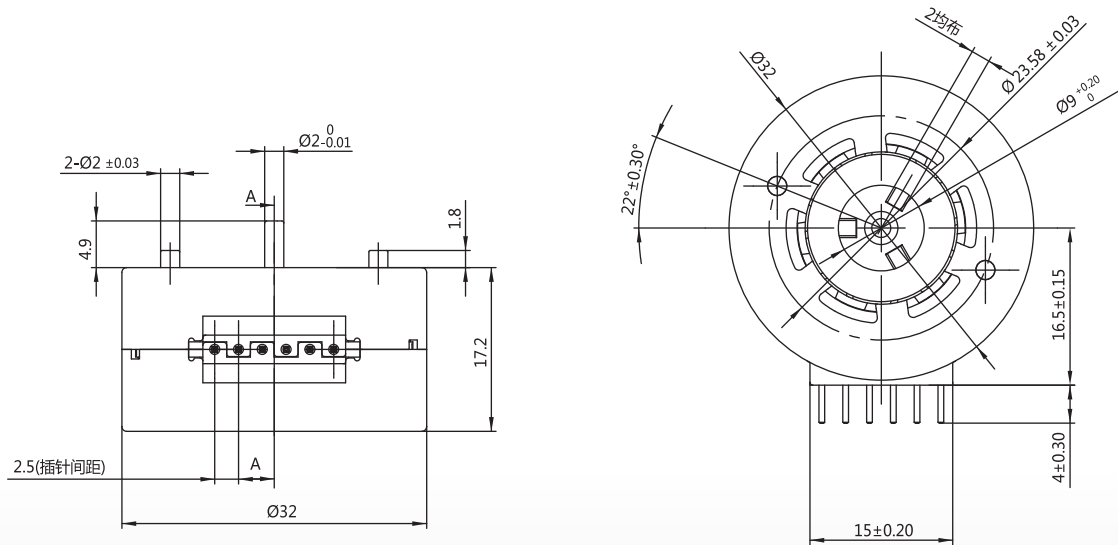
- Passenger Vehicle
- Air Condition Actuator



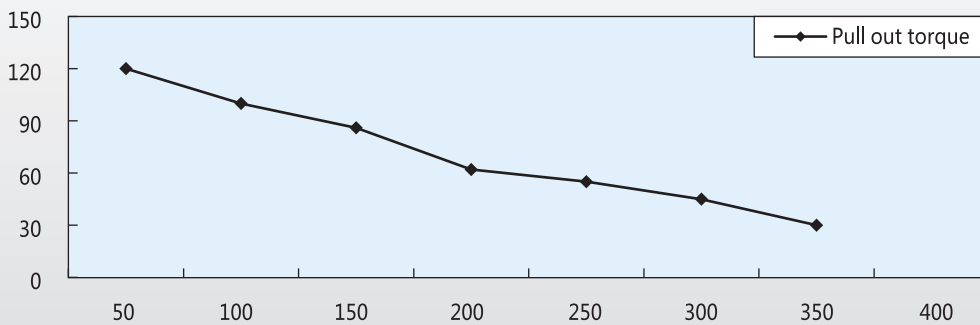
### ■ 性能参数 Parameters

| 电机型号<br>Model | 步距角<br>Step Angle | 驱动方式<br>Drive Method | 驱动电路<br>Drive Circuit | 驱动电压<br>Drive Voltage (V) | 线圈电阻<br>Coil Resistance/phase (Ω) | 绝缘电阻<br>Insulation Resistance | 绝缘耐压<br>Dielectric Strength | 绝缘等级<br>Class of Insulation (Class) |
|---------------|-------------------|----------------------|-----------------------|---------------------------|-----------------------------------|-------------------------------|-----------------------------|-------------------------------------|
| 32BY46L-1     | 15°               | 2-2 PHASE            | UNIPOLAR              | 12                        | 65                                | 100M[Ω] MIN                   | 500[V]<br>AC 1[min]         | E                                   |

### ■ 机械尺寸 Mechanical Dimensions: mm



### ■ 矩频曲线图 Torque Characteristics

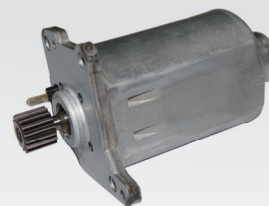


以上仅列出基本型号，具体要求可定制 ✖  
Above only lists the basic types, and the specific requirements can be customized ✖

## FS-5710SH

- **典型应用领域:**  
乘用车  
• 节气门

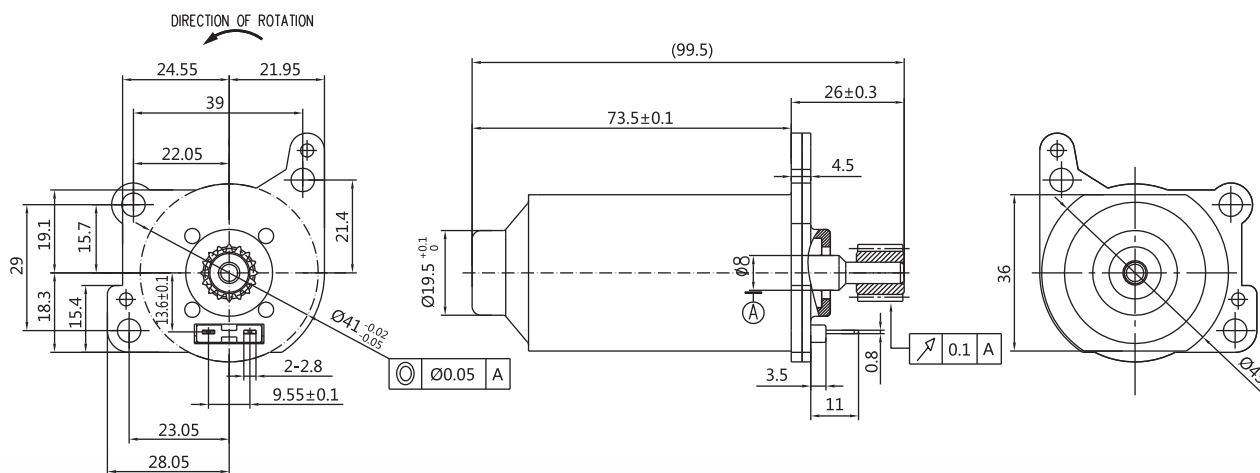
- Typical Applications:**  
Passenger Vehicle  
• Throttle



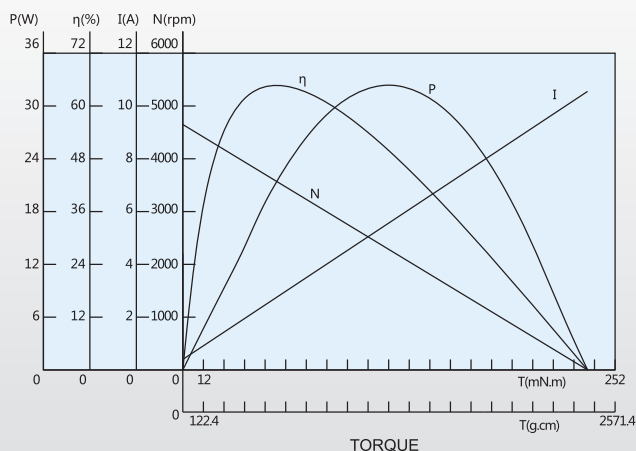
■ **性能参数 Parameters**

| 型号<br>Model | 电压 Voltage              |               | 空载<br>No Load |               | 在最大效率时<br>At Maximum Efficiency |               |              |              | 堵转<br>Stall  |               |        |       |
|-------------|-------------------------|---------------|---------------|---------------|---------------------------------|---------------|--------------|--------------|--------------|---------------|--------|-------|
|             | 工作范围<br>Operating Range | 额定<br>Nominal | 速度<br>Speed   | 电流<br>Current | 速度<br>Speed                     | 电流<br>Current | 扭矩<br>Torque | 输出<br>Output | 扭矩<br>Torque | 电流<br>Current |        |       |
|             | V                       | V             | r/min         | A             | r/min                           | A             | mN.m         | g.cm         | W            | mN.m          | g.cm   | A     |
| FS-5710SH-1 | 8~16.5                  | 12            | 4500          | 2             | 3800                            | 2.50          | 50.00        | 510          | 19           | 234           | 2387.8 | 10.50 |

■ **机械尺寸 Mechanical Dimensions: mm**



■ **矩频曲线图 Torque Characteristics**

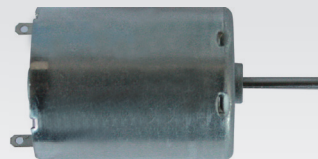


※ 以上仅列出基本型号，具体要求可定制  
Above only lists the basic types, and the specific requirements can be customized

## RF-370CA

- 典型应用领域:**  
乘用车  
• 空调执行器

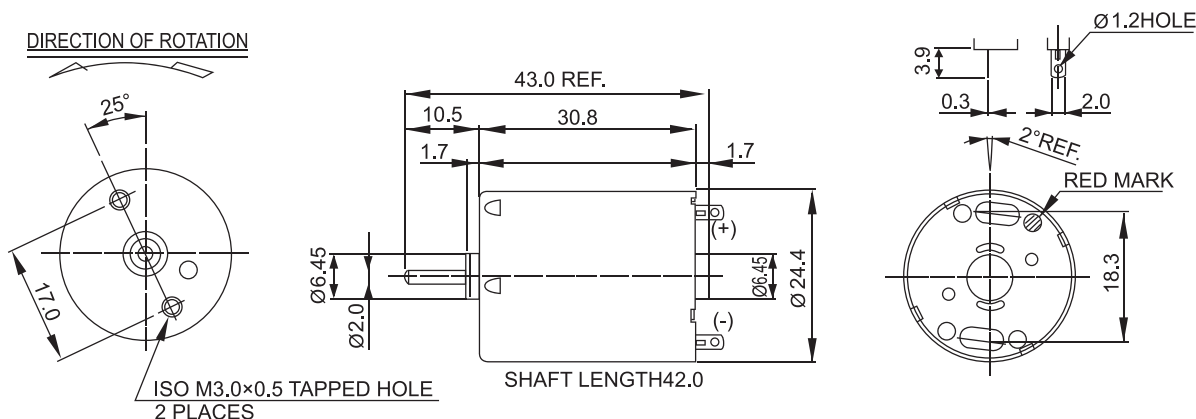
- Typical Applications:**  
Passenger Vehicle  
• Air Condition Actuator



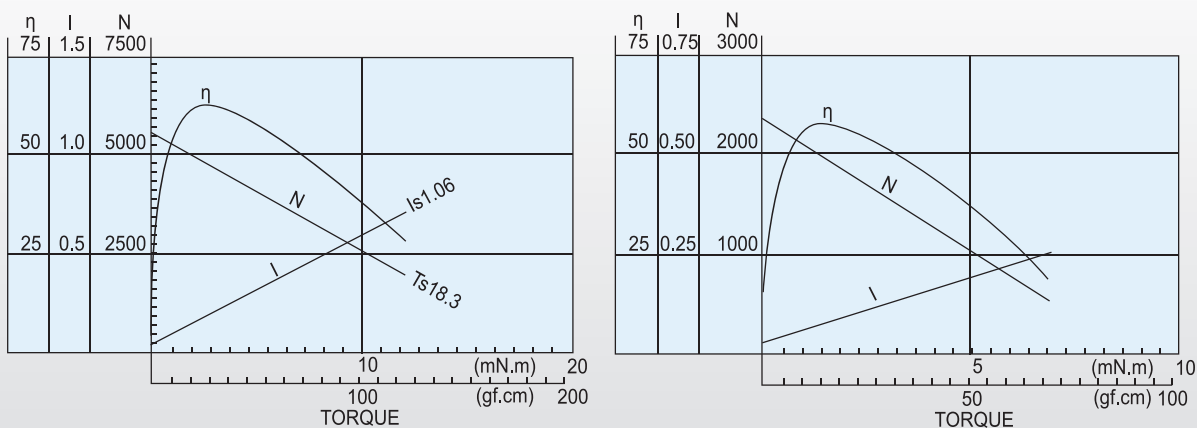
### 性能参数 Parameters

| 型号<br>Model | 电压 Voltage              |               | 空载<br>No Load |               | 在最大效率时<br>At Maximum Efficiency |               |              |              | 堵转<br>Stall  |                 |      |
|-------------|-------------------------|---------------|---------------|---------------|---------------------------------|---------------|--------------|--------------|--------------|-----------------|------|
|             | 工作范围<br>Operating Range | 额定<br>Nominal | 速度<br>Speed   | 电流<br>Current | 速度<br>Speed                     | 电流<br>Current | 扭矩<br>Torque | 输出<br>Output | 扭矩<br>Torque | 电流<br>Current   |      |
|             | V                       | V             | r/min         | A             | r/min                           | A             | mN.m<br>g.cm | W            | mN.m<br>g.cm | A               |      |
| RF-370CA    | 14350                   | 9~15          | 12            | 5500          | 0.06                            | 4389          | 0.164        | 2.94<br>30   | 1.351        | 14.35<br>146.43 | 0.75 |
| RF-370CA    | 11650                   | 9~15          | 12            | 3200          | 0.018                           | 2561          | 0.059        | 1.96<br>20   | 0.526        | 11.27<br>115    | 0.3  |
| RF-370CA    | 08980                   | 12~30         | 24            | 4400          | 0.013                           | 3500          | 0.06         | 1.96<br>20   | 1.129        | 9.8<br>100      | 0.28 |

### 机械尺寸 Mechanical Dimensions: mm



### 矩频曲线图 Torque Characteristics



以上仅列出基本型号，具体要求可定制  
Above only lists the basic types, and the specific requirements can be customized

## RS-548SH

### ■ 典型应用领域:

- 乘用车
- 汽车节气门

### Typical Applications:

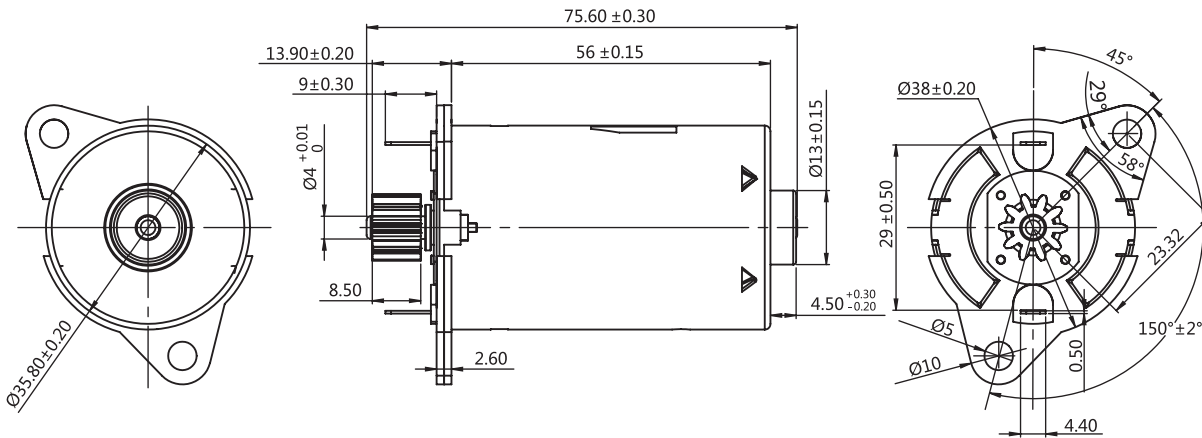
- Passenger Vehicle
- Auto Throttle Control



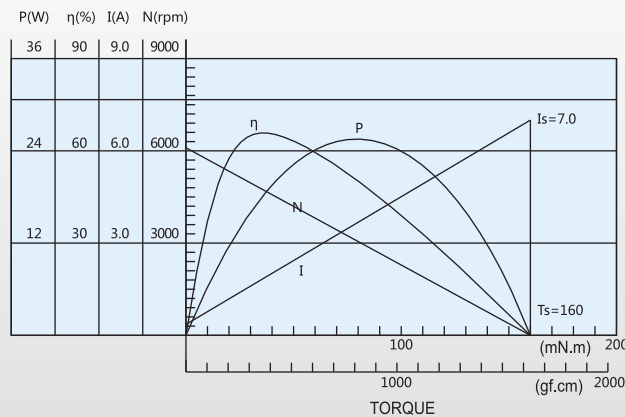
### ■ 性能参数 Parameters

| 型号<br>Model | 电压 Voltage                 |               | 空载<br>No Load |               | 在最大效率时<br>At Maximum Efficiency |               |              |              |              | 堵转<br>Stall   |      |         |      |
|-------------|----------------------------|---------------|---------------|---------------|---------------------------------|---------------|--------------|--------------|--------------|---------------|------|---------|------|
|             | 工作范围<br>Operating<br>Range | 额定<br>Nominal | 速度<br>Speed   | 电流<br>Current | 速度<br>Speed                     | 电流<br>Current | 扭矩<br>Torque | 输出<br>Output | 扭矩<br>Torque | 电流<br>Current |      |         |      |
|             | V                          | V             | r/min         | A             | r/min                           | A             | mN.m         | g.cm         | W            | mN.m          | g.cm | A       |      |
| RS-548SH    | 4050                       | 6.5-16.0      | 13.5          | 6100          | 0.55                            | 4764          | 1.96         | 35.0         | 357.143      | 17.476        | 160  | 1632.65 | 7.00 |

### ■ 机械尺寸 Mechanical Dimensions: mm



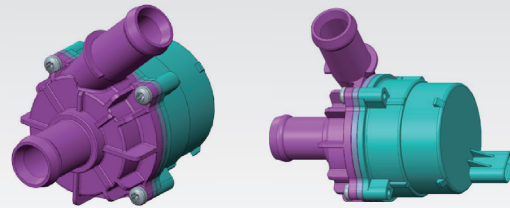
### ■ 矩频曲线图 Torque Characteristics



※ 以上仅列出基本型号，具体要求可定制  
Above only lists the basic types, and the specific requirements can be customized

## 电子水泵 Electronic water pump

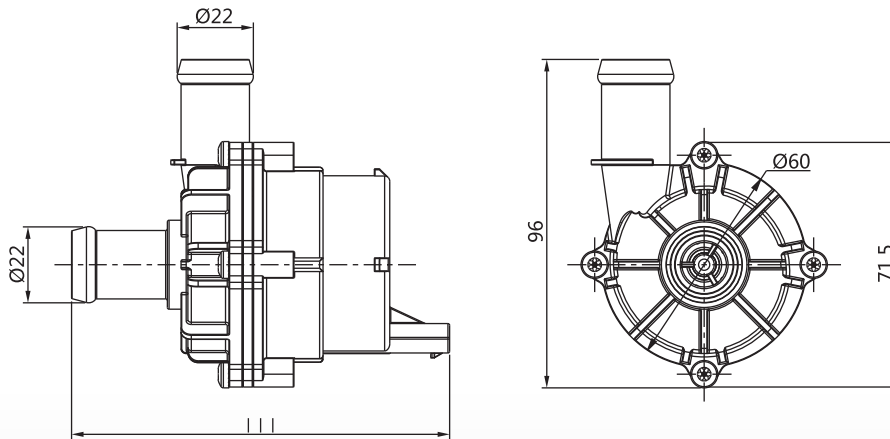
- **典型应用领域: Typical Applications:**
  - 乘用车 Commercial Vehicle
  - 涡轮增压器冷却 Turbo Charger Cooling System



### 性能参数 Parameters

| 型号<br>Model | 额定电压<br>Rated Voltage | 输入功率<br>Input power | 电流<br>Current/phase | 流量 (L/H)<br>Flow Rate |       |       | 工作时间<br>Working Hours | 外形尺寸<br>Size (mm) |      |    | 转速<br>The Load Speed (Rpm) | 接头尺寸<br>Connector Size | 重量<br>Weight |
|-------------|-----------------------|---------------------|---------------------|-----------------------|-------|-------|-----------------------|-------------------|------|----|----------------------------|------------------------|--------------|
|             | Vdc                   | W                   | A                   | 10Kpa                 | 14Kpa | 20Kpa | H                     | L                 | W    | H  | Rpm                        | Mm                     | G            |
| Blp83-X     | 13                    | 20                  | 1.4                 | 1100                  | 900   | 600   | 1200                  | 11                | 71.5 | 96 | 3200                       | Ø22                    | 280          |

### 机械尺寸 Mechanical Dimensions: mm



#### 主要功能 Applications

汽车涡轮增压器的循环冷却  
Turbo Charger Cooling System

#### 主要性能参数 Parameters

电压使用范围: 8Vdc~16Vdc  
工作介质: -40℃~135℃汽车冷却液  
工作环境: -40℃~135℃、相对湿度≤95%  
Voltage: 18Vdc-16Vdc  
Working Medium: -40℃-135℃ Cooling Fluid  
Working Environment: -40℃-135℃  
Humidity ≤ 95%

#### 技术特点 Features

水泵采用低噪音屏蔽式无刷电机, 寿命长功耗低, 体积小运行稳定;

离心式叶片、屏蔽式内转子湿式结构, 电机、控制器一体式、F级绝缘;

自动检测堵转状态; 有位置传感器方波控制、速度可调, 整机抗震能力达4G以上。

Use Brushless Motor, Which Is Low Power Consumption, Small Size And Stable.

Vane Type, Inner Rotor, Level F Insulation, Combine Motor And Controller In One, Stall Inspection, Position Control, Speed Control, Efficient

以上仅列出基本型号, 具体要求可定制 ✘  
Above only lists the basic types, and the specific requirements can be customized ✘

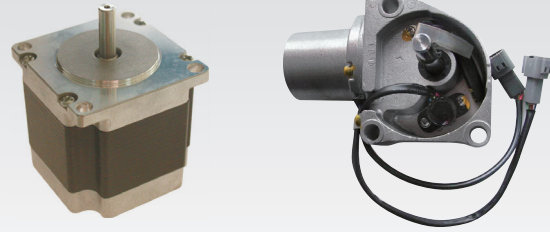
## 57BYG

### 典型应用领域:

- 商用车
- 油门控制系统

### Typical Applications:

- Commercial Vehicle
- Accelerator Control System



### 性能参数 Parameters

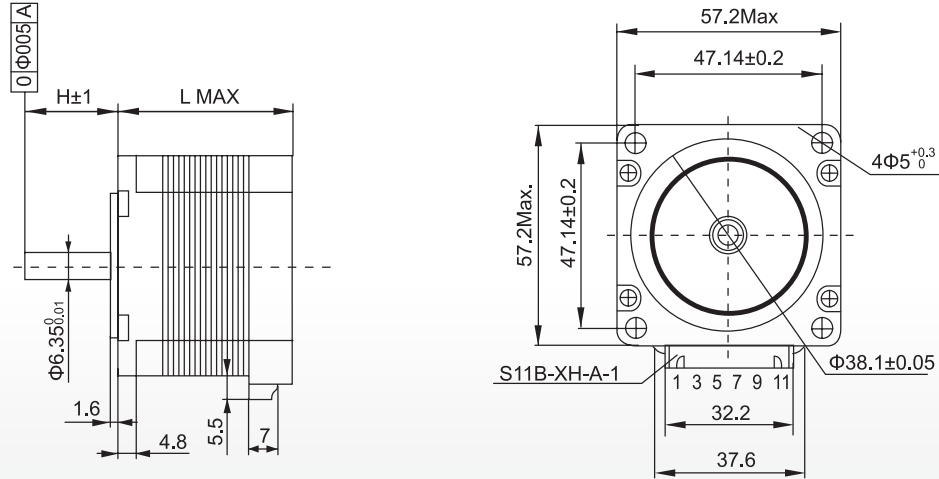
单极性驱动 UNI-POLAR DRIVE

| 型号<br>Model | 步矩角<br>Step Angle | 额定电压<br>Rated Voltage (V) | 电流<br>Drive Current (A) | 电阻<br>Phase Resistance (Ω) | 电感<br>Inductance (mH) | 保持转矩<br>Holding Torque (mN.m ↑) | 运行转矩<br>Pull-out Torque (mN.m ↑)<br>(1000pps) | 启动频率<br>MAX.starting pulse rate (PPS) | 运动频率<br>MAX.slewing pulse rate (PPS) | 重量<br>Motors weight (kg) | 总高<br>Motors length (mm) |
|-------------|-------------------|---------------------------|-------------------------|----------------------------|-----------------------|---------------------------------|-----------------------------------------------|---------------------------------------|--------------------------------------|--------------------------|--------------------------|
| 57BYGH19-1  | 1.8               | 24                        | 1.5                     | 2.5                        | 4                     | 550                             | 460                                           | 1700                                  | 3500                                 | 0.46                     | 41                       |

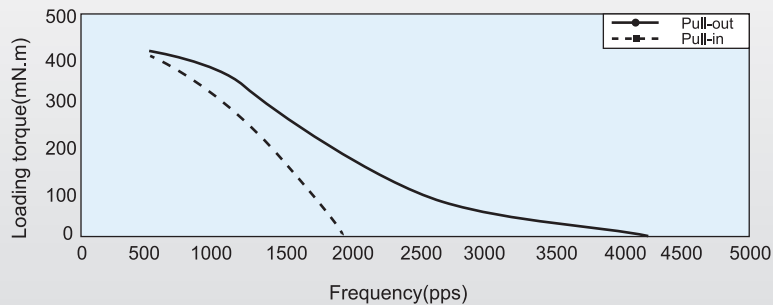
双极性驱动 BI-POLAR DRIVE

| 型号<br>Model | 步矩角<br>Step Angle | 额定电压<br>Rated Voltage (V) | 电流<br>Drive Current (A) | 电阻<br>Phase Resistance (Ω) | 电感<br>Inductance (mH) | 保持转矩<br>Holding Torque (mN.m ↑) | 运行转矩<br>Pull-out Torque (mN.m ↑)<br>(1000pps) | 启动频率<br>MAX.starting pulse rate (PPS) | 运动频率<br>MAX.slewing pulse rate (PPS) | 重量<br>Motors weight (kg) | 总高<br>Motors length (mm) |
|-------------|-------------------|---------------------------|-------------------------|----------------------------|-----------------------|---------------------------------|-----------------------------------------------|---------------------------------------|--------------------------------------|--------------------------|--------------------------|
| 57BYGH19-2  | 1.8               | 8.4                       | 0.7                     | 12                         | 25                    | 490                             | 360                                           | 1700                                  | 4500                                 | 0.46                     | 41                       |
| 57BYGH30-1  | 1.8               | 8.4                       | 0.8                     | 10.5                       | 30                    | 960                             | 40                                            | 1500                                  | 2700                                 | 0.6                      | 52                       |
| 57BYGH32-1  | 1.8               | 6.7                       | 0.88                    | 7.5                        | 25                    | 980                             | 45                                            | 1700                                  | 3500                                 | 0.6                      | 56                       |

### 机械尺寸 Mechanical Dimensions: mm



### 矩频曲线图 Torque Characteristics



※ 以上仅列出基本型号，具体要求可定制  
Above only lists the basic types, and the specific requirements can be customized



## 86BYG

### ■ 典型应用领域: Typical Applications:

商用车

- 油门控制系统

Commercial Vehicle

- Accelerator Control System

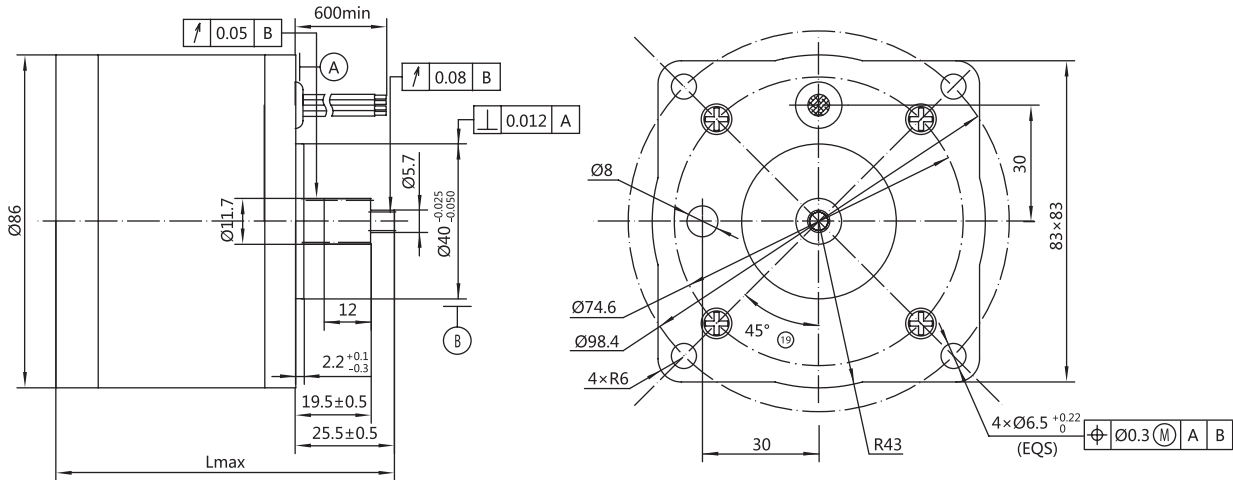


### ■ 性能参数 Parameters

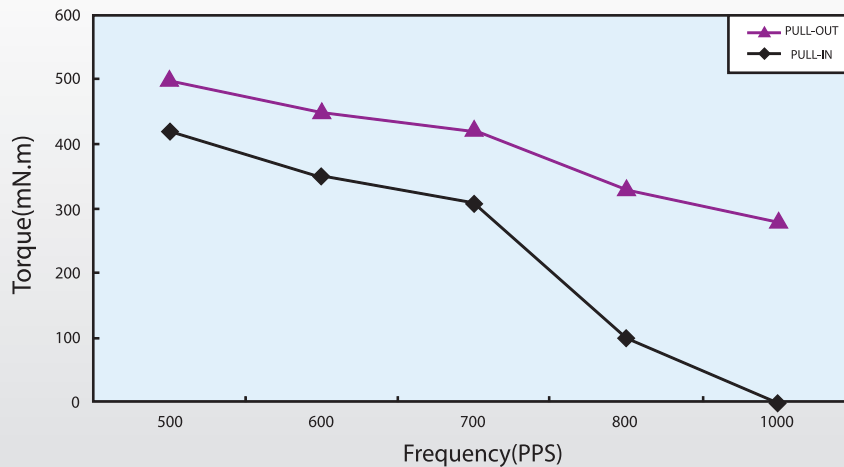
双极性驱动 BI-POLAR DRIVE

| 型号<br>Model | 步距角<br>Step<br>Angle | 额定电压<br>Rated<br>Voltage<br>(V) | 电流<br>Drive<br>Current<br>(A) | 电阻<br>Phase<br>Resistance<br>(Ω) | 电感<br>Inductance<br>(mH) | 保持转矩<br>Holding<br>Torque<br>(mN.m ↑) | 输出转矩<br>Pull-out<br>Torque (mN.m)<br>(1000pps) | 定位转矩<br>Detent<br>Torque<br>(mN.m) | 启动频率<br>MAX.starting<br>pulse rate<br>(PPS) | 运动频率<br>MAX.slewing<br>pulse rate<br>(PPS) | 重量<br>Motors<br>weight<br>(kg) | 引线<br>Lead<br>wire<br>Number | 总高<br>Motors<br>length<br>(mm) |
|-------------|----------------------|---------------------------------|-------------------------------|----------------------------------|--------------------------|---------------------------------------|------------------------------------------------|------------------------------------|---------------------------------------------|--------------------------------------------|--------------------------------|------------------------------|--------------------------------|
| 86BYG26     | 1.8                  | 2.5                             | 0.7                           | 3.6                              | 38                       | 1400                                  | 300                                            | 30                                 | 800                                         | 1500                                       | 0.5                            | 4                            | 66                             |

### ■ 机械尺寸 Mechanical Dimensions: mm



### ■ 矩频曲线图 Torque Characteristics



以上仅列出基本型号，具体要求可定制 ✘  
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## 80ZY1-1

- 典型应用领域:**  
商用车  
• 卡车升降控制

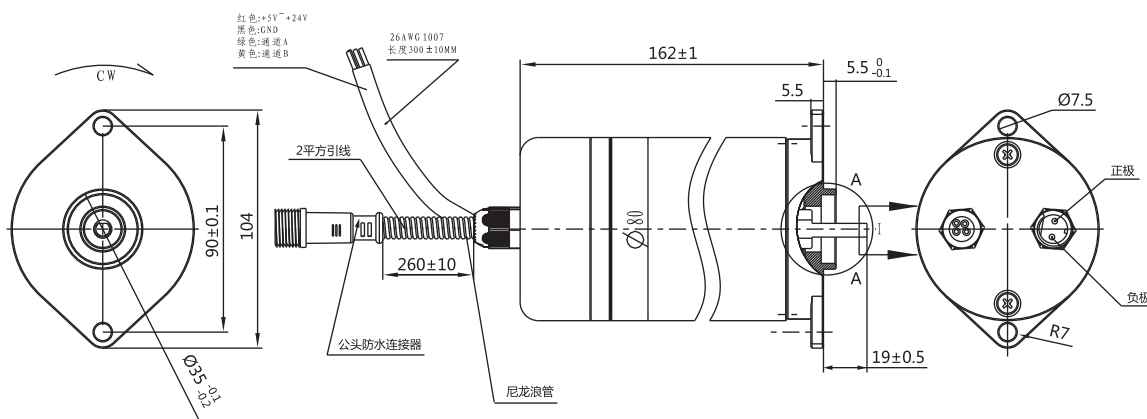
- Typical Applications:**  
Commercial Vehicle  
• Truck Lifting Control System



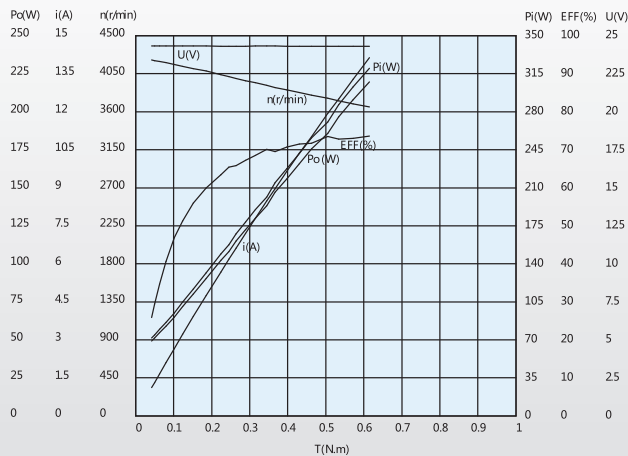
**性能参数 Parameters**

| 型号 Model | 电压 V/Dc | 旋向 Lcoded Forgue | 空载转速 No-Load Speed | 负载转速 The Load Speed | 负载力矩 Load Torque | 空载电流 No-Load Current | 负载电流 Load Current (A) | 负载功率 Load Power |
|----------|---------|------------------|--------------------|---------------------|------------------|----------------------|-----------------------|-----------------|
| 80Zy1-1  | 24      | Cw 顺时针           | 4150±10%           | 3600±10%            | 0.6              | <3.0                 | <15                   | 226             |

**机械尺寸 Mechanical Dimensions: mm**



**矩频曲线图 Torque Characteristics**



※ 以上仅列出基本型号，具体要求可定制  
Above only lists the basic types, and the specific requirements can be customized

## 汽车电子水泵 Automobile electronic pump

### ■ 典型应用领域:

新能源汽车 - 电动巴士

- 驱动电机
  - 电池组
  - 电子控制器冷却
- 混动乘用车
- 发动机冷却

### Typical Applications:

New Energy Vehicles - Electric Buses

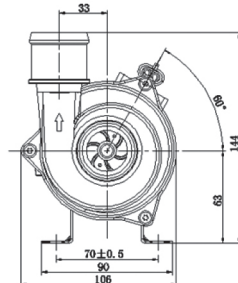
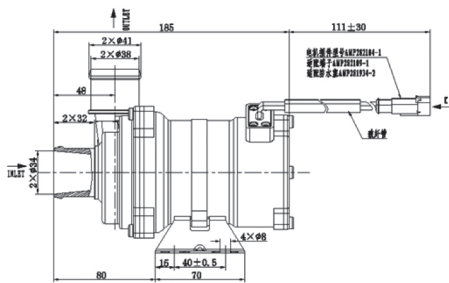
- Drive Motor
  - The Battery Pack,
  - Cooling Electronic Controller
- Hybrid Passenger Car
- Transmitter Cooling



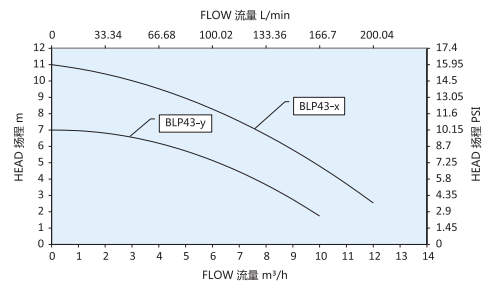
### ■ 性能参数 Parameters

| 型号<br>Model | 最大流量<br>Qmax<br>(L/min) | 最大扬程<br>Hmax<br>(m) | 额定电压<br>Rated Voltage<br>(VDC) | 输入功率<br>Input power |      | 电流<br>Current/<br>phase<br>(A) | 外形尺寸<br>(mm)Size |     |     | 转速<br>(Rpm) | 接头尺寸<br>Connector<br>Size<br>(mm) | 重量<br>Weight<br>(Kg) |
|-------------|-------------------------|---------------------|--------------------------------|---------------------|------|--------------------------------|------------------|-----|-----|-------------|-----------------------------------|----------------------|
|             |                         |                     |                                | W                   | HP   |                                | L                | W   | H   |             |                                   |                      |
| BLP43-x     | 200                     | 11                  | 24                             | 200                 | 0.28 | 8.5                            | 188              | 108 | 132 | 5700        | Ø39                               | 1.6                  |
| BLP43-y     | 166                     | 7                   | 24                             | 100                 | 0.14 | 4.2                            | 188              | 108 | 132 | 5700        | Ø39                               | 1.2                  |

### ■ 机械尺寸 Mechanical Dimensions: mm



### ■ 矩频曲线图 Torque Characteristics



### 技术特点

水泵采用低噪音屏蔽式无刷电机，寿命长功耗低，体积小运行平稳

离心式叶片、屏蔽式内转子湿式结构，内置式控制器、IP67 防护等级、F 级绝缘

智能自检空载 / 半载状态并保护性自停、智能自检堵转状态并保护性自停、智能自检超载并保护性减速运行、智能自检电源极性接反保护功能

正弦波无霍尔控制、整机抗震能力达 4G 以上、满足 EMC 要求

### Technical feature

Low noise & shielded BLDC, long life time & low power consumption, small size & running smoothly.

Centrifugal impeller, the rotor is wet-type structure, internal controller, IP67, Class F.

Self-inspection the no-loading/half-loading & self-stop running for protection, self-inspection the blockage & self-stop running for protection,

self-inspection the over-loading & deceleration running, self-inspection the power & deceleration running, self-inspection the wrong power pole connection & protect itself.

Sine-wave & sensorless control, the whole motor can pass 4G vibration, meet EMC.

以上仅列出基本型号，具体要求可定制 ✘  
Above only lists the basic types, and the specific requirements can be customized ✘

## 电子真空泵 Electronic vacuum pump

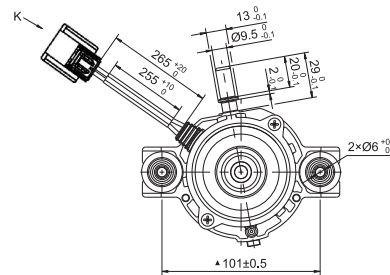
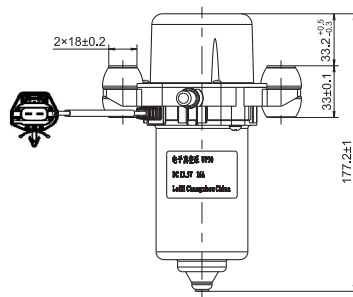
- |                                                         |                                                                                                         |
|---------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| <p><b>■ 典型应用领域:</b></p> <p>新能源汽车<br/>商用车<br/>• 刹车辅助</p> | <p><b>Typical Applications:</b></p> <p>New Energy Vehicle<br/>Commercial Vehicle<br/>• Brake Assist</p> |
|---------------------------------------------------------|---------------------------------------------------------------------------------------------------------|



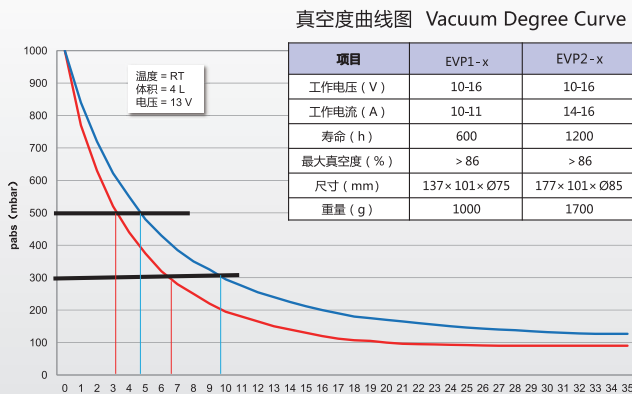
### ■ 性能参数 Parameters

| 型号<br>Model | 最大真空度<br>Vacuum degree | 真空罐容器<br>Vacuum degree | 额定电压<br>Rated voltage | 输入功率<br>Input power | 电流<br>Current | 达到标准<br>大气压时间 (S)<br>Time to reach<br>standard<br>atmosphere<br>pressure |     | 外形尺寸<br>(mm)<br>Size |     |    | 转速<br>Rotate speed | 重量<br>Weight |
|-------------|------------------------|------------------------|-----------------------|---------------------|---------------|--------------------------------------------------------------------------|-----|----------------------|-----|----|--------------------|--------------|
|             | %                      | L                      | VDC                   | W                   | A             | 50%                                                                      | 30% | L                    | W   | H  | rpm                | Kg           |
| EVP1-x      | 86                     | 3.2                    | 13                    | 130                 | 10            | 6                                                                        | 12  | 137                  | 122 | 76 | 4000±10%           | 1            |
| EVP2-x      | 86                     | 4                      | 13                    | 195                 | 15            | 3.5                                                                      | 7   | 177                  | 126 | 85 | 4800±10%           | 1.7          |

### ■ 机械尺寸 Mechanical Dimensions: mm



### ■ 性能曲线 Performance Curves



#### 主要功能 Applications

为汽车刹车助力器提供真空源  
Provide Vacuum Environment For Brake System

#### 技术特点 Features

叶片式离心泵, 排真空响应速度快, 效率高;  
可用于独立发动机外的真空源提供;  
灵活的安装结构设计, 无需发动机接口配合;  
整机免维护安全使用, 无需润滑保养。

Vane Type Centrifugal Pump, Efficient, Simple Structure,  
Easy Maintenance, No Lubricating Maintenance.

#### 主要性能参数 Parameters

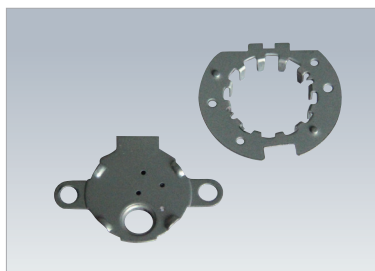
电压使用范围: 10Vdc~16Vdc  
工作介质: 空气  
工作环境: -40℃~120℃、相对湿度 ≤ 95%  
Voltage: 10Vdc-16Vdc  
Working Medium: air  
Working Environment: -40℃ - 120℃  
Humidity ≤ 95%

※ 以上仅列出基本型号, 具体要求可定制  
Above only lists the basic types, and the specific requirements can be customized

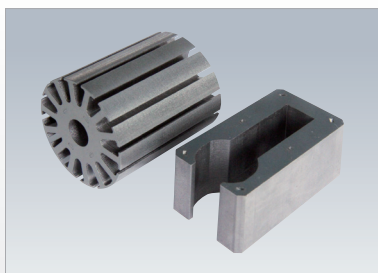
## 汽车类冲压件 Stamping Parts for Automotive



## 电机类冲压件 Stamping Parts for Motors



## 铁芯类冲压件 Lamination Core Parts



以上仅列出基本型号，具体要求可定制 ✕  
Above only lists the basic types, and the specific requirements can be customized ✕







[www.leili-motor.com](http://www.leili-motor.com)



雷 Leili 利

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