REACH® 瑞迪智驱
TOP

www.reachgroup.cn

Hotline: 400-090-7210　+86 28 85752912

Add：四川省成都市双流区西航港大道中四段909号

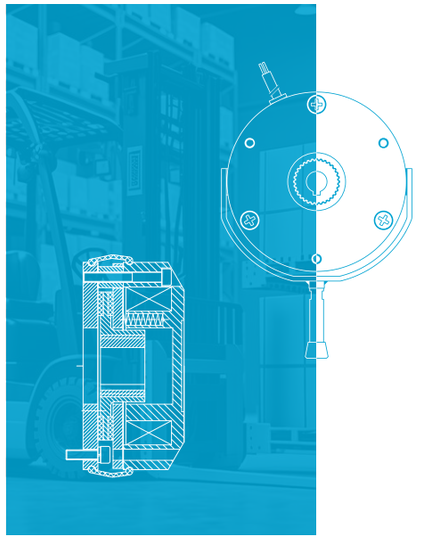
Add.: NO.909 Middle Section 4, West Airport Ave, Southwest Airport Economic Development Zone, Shuangliu District, Chengdu, Sichuan Province, China.

版本号：ZH-20240130

REACH® 瑞迪智驱
TOP

# 稳定的电磁制动器就选瑞迪

***For stable brakes choose REACH***



# 仓储物流电磁制动器

***E/M Brakes for Warehouse and Logistics***

**使命**
MISSION

持续创新，促进世界变得更好！
Keep innovationg for
a better world!

**宗旨**
Objective

聚焦智能制造
实现合作伙伴、员工与企业共赢！
Dedicated to achieving a win-win for
partners, staff and the company!

**愿景**
VISION

成为全球客户首选品牌！
Become the top brand for
global customers!

**核心价值观**
CORE VALUES

开放 品质 价值
Core values
Open Quality Value

# About REACH
# 关于瑞迪

成都瑞迪智驱科技股份有限公司创立于2009年，位于四川省成都市双流区西航港工业园，业务和技术源于1996年创立的瑞迪实业。是一家致力于高端装备核心部件研发、生产与销售的国家级高新技术企业和专精特新“小巨人”企业。

瑞迪深耕制动、减速和传动三大领域，产品包括电磁制动器、谐波减速器、胀套、联轴器、同步轮等，客户主要分布在中国、欧美日等工业发达的国家和地区。

REACH MACHINERY CO., LTD. was founded in 2009, located in Southwest Airport Economic Development Zone, Shuangliu District, Chengdu, Sichuan Province, China. Its business and technology originated from REACH Enterprise since 1996. It is a national high-tech enterprise and a specialized and innovative "Little Giant" enterprise committed to the research, development, production, and sales of core components for high-end equipment.

REACH specializes in braking, reducing, and power transmission fields. Main products are electromagnetic brakes, harmonic reducers, keyless locking devices, couplings, timing belt pulleys, etc. Our customers are distributed in industry developed countries and regions, such as China, Europe, America, and Japan, etc.


# TABLE OF CONTENTS
# 目录


01
**品牌介绍**
INTRODUCTION

瑞迪核心竞争力 P01
Core competitiveness

质量保证 P02
Quality assurance

02
**卓越瑞迪**
EXCELLENT REACH

证书 P03
CERTIFICATES

知识产权 P04
INTELLECTUAL PROPERTY

荣誉 P04
HONORS

03
**技术路线**
TECHNICAL ROUTE

REB05系列制动器 P07
REB05 Series Brake

REB09系列制动器 P09
REB09 Series Brake

REB04系列制动器 P11
REB04 Series Brake

REB18系列制动器 P13
REB18 Series Brake

REB70系列制动器 P14
REB70 Series Brake

REB71系列制动器 P15
REB71 Series Brake

REB03系列得电制动器 P16
REB03 Series Power-on Brake

安装使用说明 P17
Installation Instructions

# 瑞迪核心竞争力
## CORE COMPETITIVENESS

### 新维度的以客户为中心
Customer-centric

- **对市场的研判从而提供更好更多的解决方案，为客户提供了多项选择的可能**
  Market judgement to provide more solutions and multiply choices
- **深入了解行业和客户需求，解决痛点**
  Deep understanding of industry and customer needs to solve problems.
- **保障客户稳定运营的管理和服务**
  Professional management and service to guarantee customer stable operations

### 技术优势
Technology advantages

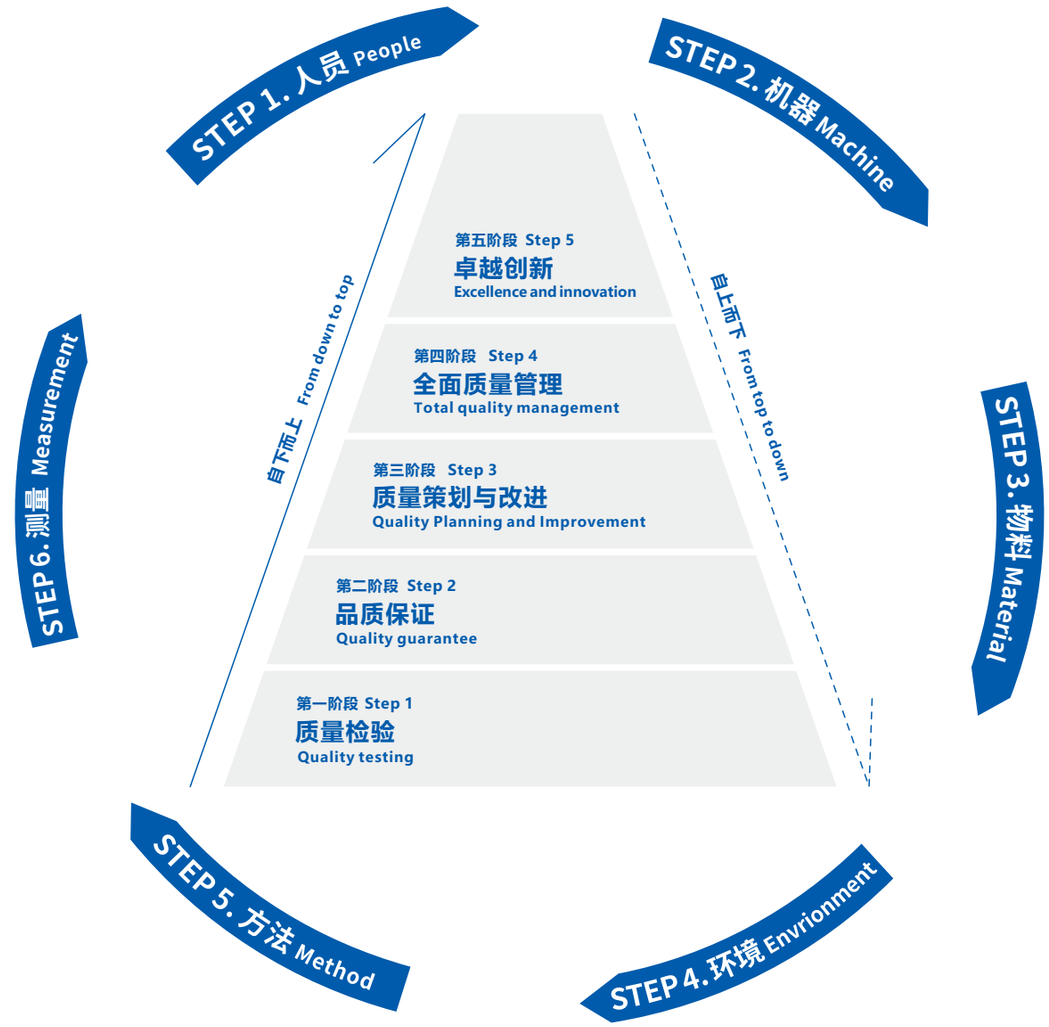
- **电磁方案，谐波齿形设计技术**
  Electromagnetic solution design, Harmonic teeth design technology
- **摩擦片，弹性体自主研发与精密制作**
  Independent-developed and precision processing for friction plate and elastomer
- **性能测试技术**
  Performance testing technology
- **关键材料掌控**
  Key material control

### 人才培养
Personnel training

- **信息化管理技术**
  Information management technology
- **人才优化培养技术**
  Talent optimization and training technology
- **目标完成管理技术**
  Goal achievement management technology
- **企业传承管理技术**
  Corporate heritage management technology



# 质量保证
## QUALITY ASSURANCE



# 卓越瑞迪
## EXCELLENT REACH

### 证书
CERTIFICATES

专注于为客户提供安全稳定的制动器，瑞迪智驱搭建了IATF16949、ISO9001、ISO14001体系。产品通过了CE、UL、RoHS 和 REACH 等认证。

Focus on providing customers with safe and stable brakes, REACH MACHINERY CO., LTD. has established IATF16949, ISO9001, and ISO14001 management systems. The products have been certified with CE, UL, RoHS, REACH, etc.


IATF 16949


ISO 9001


ISO 14001


起重机械认证


CE


UL


RoHS


REACH

### 知识产权
INTELLECTUAL PROPERTY

**13**
授权发明专利
Authorized invention patent

**46**
授权实用新型专利
Authorized utility model patent

**2**
外观专利
Design patent

**9**
软件著作权
Software copyright

**3**
科技成果奖
Science and Technology Achievement Award

截至2023年8月25日
As of August 25, 2023

### 荣誉
HONORS

- 专精特新“小巨人”企业
- 国家高新技术企业
- 国家“十二五”科技支撑项目
- 行业标杆大客户复购率达到90%以上

- National Specialized and Innovative “Little Giant” Enterprise
- National High-Tech Enterprise
- National Science & Technology “12th Five-Year Plan” Support Project
- Over 90% repurchase rate by industry benchmark customers

瑞迪智驱始终坚持以技术为驱动力，不断发展壮大。

REACH MACHINERY always adheres to technology as the driving force and continues to grow and expand.

# 技术路线
## TECHNICAL ROUTE

### 仓储物流电磁制动器
E/M Brakes for warehouse and logistics

仓储物流用电磁制动器主要为车辆提供可靠的驻车与减速，广泛用于各类电驱物流车辆。

应用领域：电动叉车、电动搬运车、电动堆高车、货物拣选车、AGV等。

The brake for warehouse and logistics is mainly used for parking and deceleration for the vehicles with Electric driven.

Applications: Electric forklifts, electric trucks, electric stackers, order pickers, AGVs, etc.

**稳定的**电磁制动器
就选瑞迪
*Need **stable brakes** choose REACH*






# 工作原理
## WORKING PRINCIPLE

### 失电系列 Power-off series

瑞迪弹簧加压电磁安全制动器是单片式制动器，有两个摩擦面，轴通过平键与花键套联接，花键套通过花键与转子联接。

当定子断电时，弹簧所产生的力作用在衔铁上，将轴带动旋转的转子紧紧夹在衔铁与盖板之间，从而产生制动力矩。此时，在衔铁与定子之间会产生一个间隙Z。

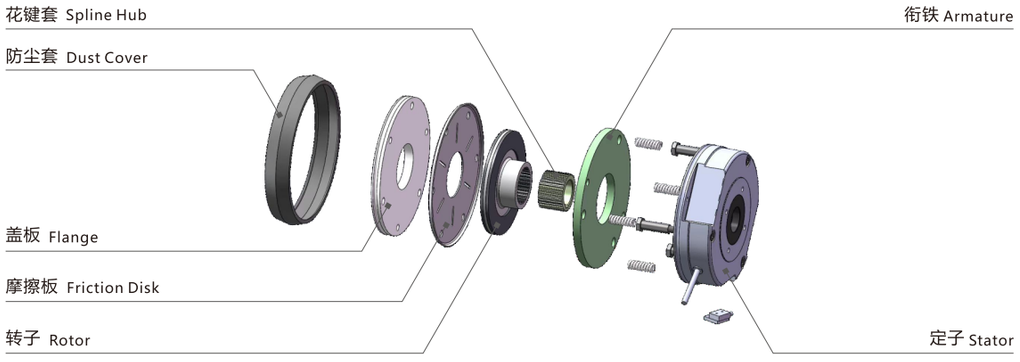
当需要放松制动时，定子接通直流电，所产生的磁场吸引衔铁向定子移动，衔铁移动时压缩弹簧，此时转子被松开，制动解除。

REACH spring-applied electromagnetic brake is a single-disk brake with two friction surfaces. The motor shaft is connected with the spline hub via flat key, and the spline hub is connected with Rotor through spline.

When stator is powered off, the spring generates forces upon armature, then the Rotor will be clamped between armature and flange to generate braking torque. At that time, a gap Z is created between armature and stator.

When brakes need to be released, the stator should be connected DC power, then the armature will move to the stator by electromagnetic force. At that time, the armature presses the spring while moving and the Rotor are released to disengage the brake.

### 失电系列模块说明 Power-off series modulars




### 得电系列 Power-on series

瑞迪得电电磁制动器提供通电制动。当直流电压通过线圈时，会产生磁场，将衔铁吸引到磁体组件上，磁体和衔铁之间的摩擦链接使电机轴减速并停止。

当磁体断电时，衔铁远离磁体，此时产生了间隙，电机轴可以自由旋转，且没有任何残余阻力。

REACH power on series brake provides power-on brake engagement. When a DC voltage is passed through the coil, a magnetic field is created that attracts the armature to the magnet assembly. The friction connection between the magnet and armature causes the rotating shaft to slow and stop.

When power off, the armature goes away from the magnet. With an air gap between the magnet and armarture, the shaft is free to rotate without any residual drag.

# REB05系列制动器
## REB 05 Series Brake

REB05系列电磁制动器是一种弹簧加压的干式摩擦电磁制动器（通电释放，断电制动），为车辆提供可靠的驻车与减速。

REB05 series brake is a type of spring-loaded dry friction electromagnetic brake(Release when power-on, Brake when power-off). It is used for parking and deceleration for the vehicles.

## 产品特点 Product Features

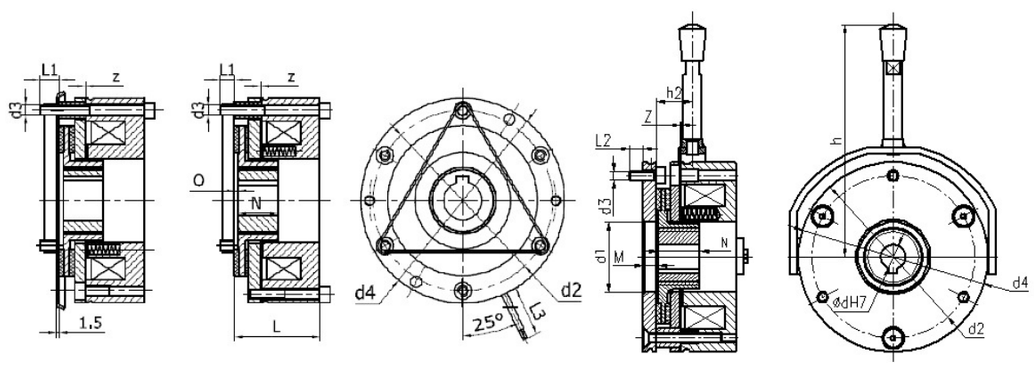
- 常用扭矩：3~150N.m（可定制）
- 电压范围：12~72V(DC)
- 适用温度：-20~+40℃（可定制）
- 绝缘耐热等级：F级（155℃）
- 多种摩擦片方案适用于不同的工况
- Common torque: 3~150N.m (customizable)
- Voltage range: 12-72V(DC)
- Ambient temperature:-20~+40℃ (customizable)
- Insulation heat resistance grade: F(155℃)
- Several friction materials for different working conditions

### 制动器扭矩选择表 Torque Selection　单位(Unit): N.m

| 机座号 Model | 06 | 08 | 10 | 12 | 14 | 16 |
|---|---|---|---|---|---|---|
| 电机机座号 Frame Size | 56,63,71 | 80 | 90 | 100 | 112 | 132 |
| 额定扭矩 Rated Torque (Speed:100r/min) | 3 | 6 | 11 | 23 | 45 | 60 |
| | 3.5 | 7 | 14 | 27 | 55 | 70 |
| | 4 | 8 | 16 | 32 | 60 | 80 |
| | 5 | 10 | 20 | 40 | 65 | 90 |
| | 6 | 12 | 23 | 46 | 75 | 100 |
| | 8 | 16 | 32 | 55 | 110 | 150 |



## 技术参数 Technical Data



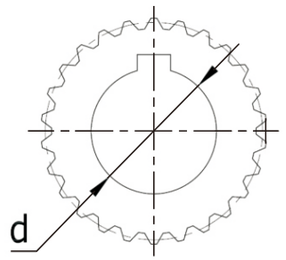

| 机座号 Model | d | d1 | d2 | d3 | d4 | M | N | O | L | L1 | L2 | h | h2 | z | L3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 | 11 | 31 | 72 | 3×M4 | 84 | 7.5 | 18 | 1 | 35.3 | 9.7 | 6 | 102 | 15.8 | 0.2 | 400 |
| 08 | 15 | 42 | 90 | 3×M5 | 102 | 8.5 | 20 | 1.5 | 42.8 | 12.2 | 9 | 114 | 16.3 | 0.2 | 400 |
| 10 | 15 | 44 | 112 | 3×M6 | 130 | 10 | 20 | 2 | 48.4 | 11.2 | 12 | 129 | 27.4 | 0.2 | 400 |
| 12 | 20 | 52 | 132 | 3×M6 | 150 | 10 | 25 | 2 | 54.4 | 11 | 12 | 162 | 30 | 0.3 | 400 |
| 14 | 25 | 60 | 145 | 3×M8 | 165 | 13 | 30 | 2 | 66.3 | 14 | 14 | 201 | 33 | 0.3 | 1000 |
| 16 | 30 | 70 | 170 | 3×M8 | 190 | 13.3 | 30 | 2.25 | 72.5 | 12.5 | 14 | 250 | 37.4 | 0.3 | 1000 |

- 此安装尺寸可按客户需求定制
- 表中L3为导线长度，特殊要求可以定制。
- The mounting size can be ordered by the customers.
- L3 listed in the Table represents the length of the conductor, which could be ordered.

## 花键套内孔可选安装尺寸 Spline hub sizes of the inner bore

安装孔公差为H7，键槽尺寸符合DIN6885/1(GB/T1095-79)JS9，其中加粗的孔径为基本尺寸。

The mounting hole tolerance is H7. The dimension of keyway satisfies DIN6885/1(GB/T1095-79)JS9. The apertures presented in bold letters are basic dimensions.




| 机座号 Model | d |
|---|---|
| 06 | **11**/12/14/15 |
| 08 | **15**/20 |
| 10 | **15**/20 |
| 12 | **20**/25/27 |
| 14 | 20/**25**/30 |
| 16 | 25/**30**/35/38 |

# REB09系列制动器
## REB 09 Series Brake

REB09系列电磁制动器是一种弹簧加压的干式摩擦电磁制动器（通电释放，断电制动），为车辆提供可靠的驻车与减速。

REB09 series brake is a type of spring-loaded dry friction electromagnetic brake(Release when power-on, Brake when power-off). It is used for parking and deceleration for the vehicles.

## 产品特点 Product Features

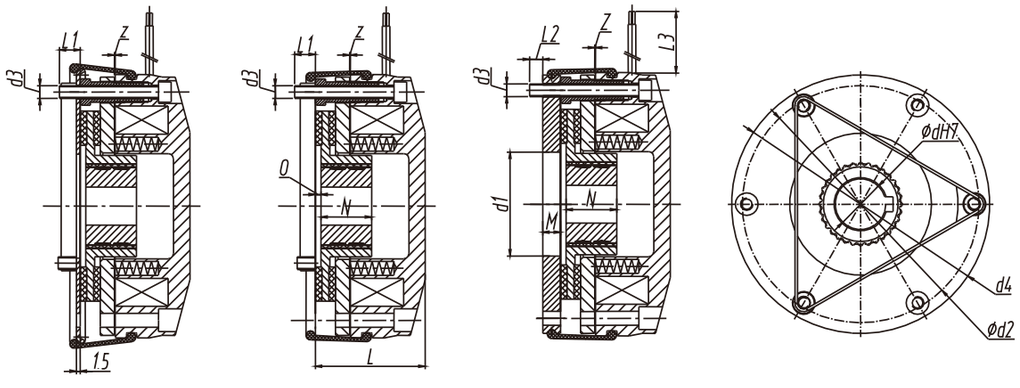
- 常用扭矩：3~150N.m（可定制）
- 电压范围：12~72V(DC)
- 适用温度：-20~+40℃（可定制）
- 绝缘耐热等级：F级（155℃）
- 专有倒角设计，适应车轮回转需要
- 多种摩擦片方案适用于不同的工况

- Common torque: 3~150N.m (customizable)
- Voltage range: 12-72V(DC)
- Ambient temperature:-20~+40℃ (customizable)
- Insulation Heat resistance grade: F(155℃)
- Chamfer removal design to meet wheel rotation requirements
- Several friction materials for different working conditions

### 制动器扭矩选择表 Torque Selection 单位(Unit): N.m

| 机座号 Model | 06 | 08 | 10 | 12 | 14 |
|---|---|---|---|---|---|
| 电机机座号 Frame Size | 56,63,71 | 80 | 90 | 100 | 112 |
| 额定扭矩 Rated Torque (Speed:100r/min) | 3 | 6 | 11 | 23 | 45 |
| | 3.5 | 7 | 14 | 27 | 55 |
| | 4 | 8 | 16 | 32 | 60 |
| | 5 | 10 | 20 | 40 | 65 |
| | 6 | 12 | 23 | 46 | 75 |
| | 8 | 16 | 32 | 55 | 110 |

## 技术参数 Technical Data




| 机座号 Model | d | $d_1$ | $d_2$ | $d_3$ | $d_4$ | M | N | O | L | L1 | L2 | z | L3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 | 11 | 31 | 72 | 3×M4 | 84 | 7.5 | 18 | 1 | 35.3 | 9.7 | 6 | 0.2 | 400 |
| 08 | 15 | 41 | 90 | 3×M5 | 104 | 8.5 | 20 | 1.5 | 43.5 | 12.2 | 9 | 0.2 | 400 |
| 10 | 15 | 44 | 112 | 3×M6 | 130 | 10 | 20 | 2 | 48.4 | 11.2 | 12 | 0.2 | 400 |
| 12 | 20 | 52 | 132 | 3×M6 | 150 | 10 | 25 | 2 | 54.4 | 11 | 12 | 0.3 | 400 |
| 14 | 25 | 60 | 145 | 3×M8 | 165 | 13 | 30 | 2 | 66.3 | 14 | 14 | 0.3 | 1000 |

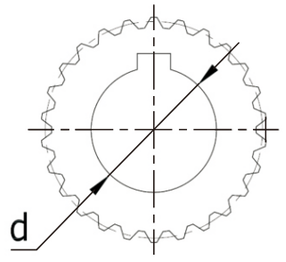
- 此安装尺寸可按客户需求定制
- 表中L3为导线长度，特殊要求可以定制。

- The mounting size can be ordered by the customers.
- L3 listed in the Table represents the length of the conductor, which could be ordered.

## 花键套内孔可选安装尺寸 Spline hub sizes of the inner bore

安装孔公差为H7，键槽尺寸符合DIN6885/1(GB/T1095-79)JS9，其中加粗的孔径为基本尺寸。

The mounting hole tolerance is H7. The dimension of keyway satisfies DIN6885/1(GB/T1095-79)JS9. The apertures presented in bold letters are basic dimensions.




| 机座号 Model | d |
|---|---|
| 06 | **11**/12/14/15 |
| 08 | **15**/20 |
| 10 | **15**/20 |
| 12 | **20**/25/27 |
| 14 | 20/**25**/30 |

# REB04系列制动器

## REB 04 Series Brake

REB04系列电磁制动器是一种弹簧加压的干式摩擦电磁制动器(通电释放,断电制动),为车辆提供可靠的驻车与减速。

REB04 series brake is a type of spring-loaded dry friction electromagnetic brake(Release when power-on, Brake when power-off). It is used for parking and deceleration for the vehicles.

## 产品特点 Product Features

- 常用扭矩:26~300N.m(可定制)
- 电压范围:12~72V(DC)
- 适用温度:-20~+40℃(可定制)
- 绝缘耐热等级:F级(155℃)
- 多种摩擦片方案适用于不同的工况
- Common torque: 26~300N.m (customizable)
- Voltage range: 12-72V(DC)
- Ambient temperature:-20~+40℃ (customizable)
- Insulation Heat resistance grade: F(155℃)
- Several friction materials for different working conditions

### 制动器扭矩选择表 Torque Selection 单位(Unit): N.m

| 机座号 Model | 12 | 14 | 16 | 18 |
|---|---|---|---|---|
| 电机机座号 Frame Size | 100 | 112 | 132 | 160 |
| 减速制动扭矩 Decelerating Bracke Torque | 26 | 55 | 70 | 130 |
| | 32 | 65 | 85 | 150 |
| | 38 | 75 | 100 | 180 |
| 保持制动扭矩 Holding Bracke Torque | 45 | 85 | 110 | 200 |
| | 55 | 95 | 130 | 250 |

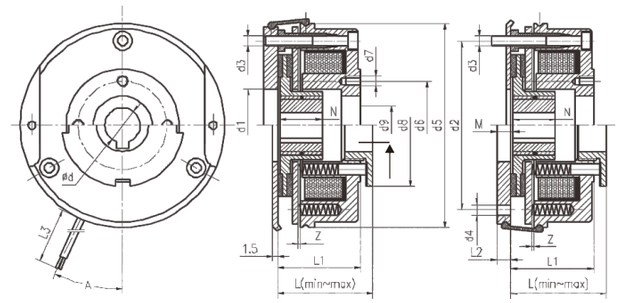
### 制动器使用额定参数 Rated Data

| 机座号 Model | 额定间隙z(+0.1/-0.05) (mm) | Zmax 保持制动 (mm) | Zmax 减速制动 (mm) | 摩擦盘组件厚度(mm) | | 额定功率 20℃ (W) | 安装位置圆 (mm) | 安装螺钉规格 |
|---|---|---|---|---|---|---|---|---|
| | | | | min | Max | | | |
| 12 | 0.3 | 0.45 | 0.75 | 8 | 10 | 40 | 132 | 3×M6 |
| 14 | 0.3 | 0.45 | 0.75 | 7.5 | 10 | 50 | 145 | 3×M8 |
| 16 | 0.3 | 0.45 | 0.75 | 8.5 | 11.5 | 55 | 170 | 3×M8 |
| 18 | 0.4 | 0.6 | 1 | 10 | 13 | 85 | 196 | 6×M8 |





## 技术参数 Technical Data




单位(Unit): mm

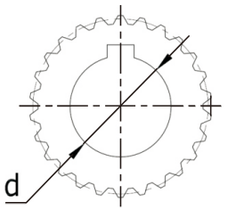
| 机座号 Model | d | d1 | d2 | d3 | d4 | Lmin | Lmax | d5 | d6 | d7 | d8 | M | N | Z | A | L3 | L2 | L1 | d9 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12 | 20 | 52 | 132 | 3×M6 | 3×Φ6.5 | 59.9 | 64.9 | 150 | 64 | 4×M5 | 82 | 11 | 25 | 0.3 | 25° | 400 | 9 | 54.9 | 50 |
| 14 | 25 | 55 | 145 | 3×M8 | 3×Φ9 | 72.5 | 78.5 | 165 | 75 | 4×M6 | 92 | 13 | 30 | 0.3 | 25° | 1000 | 11 | 66.8 | 60 |
| 16 | 30 | 70 | 170 | 3×M8 | 3×Φ9 | 79.3 | 87.3 | 190 | 85 | 4×M6 | 102 | 13.25 | 30 | 0.3 | 25° | 1000 | 11 | 74.5 | 68 |
| 18 | 40 | 77 | 196 | 6×M8 | 4×Φ9 | 91 | 99 | 217 | 95 | 4×M8 | 116 | 13.75 | 35 | 0.4 | 25° | 1000 | 11 | 85.1 | 75 |

- 此安装尺寸可按客户需求定制
- L3为产品的标准导线长度，可以根据客户的不同要求定制。
- The mounting size can be ordered by the customers.
- L3 represents standard lead length of the product and could also be ordered to satisfy customers' requirements.

## 花键套内孔可选安装尺寸 Spline hub sizes of the inner bore

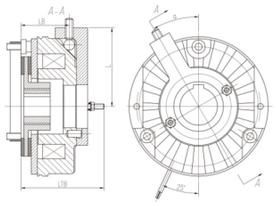
安装孔公差为H7，键槽尺寸符合DIN6885/1(GB/T1095-79)JS9，其中加粗的孔径为基本尺寸。

The mounting hole tolerance is H7. The dimension of keyway satisfies DIN6885/1(GB/T1095-79)JS9. The apertures presented in bold letters are basic dimensions.




| 机座号 Model | d |
|---|---|
| 12 | **20**/25/27 |
| 14 | 20/**25**/30 |
| 16 | 25/**30**/35/38 |
| 18 | 35/**40**/45 |

## 螺钉释放安装尺寸(自锁功能) Mounting dimensions of screw-release (self-locking)



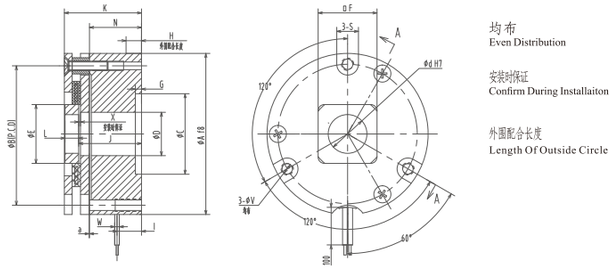

| 机座号 Model | LTB | LB | L | a |
|---|---|---|---|---|
| 12 | 72.6 | 40.7 | 83 | 30° |
| 14 | 89.5 | 50 | 92.75 | 30° |
| 16 | 102.5 | 56.2 | 105 | 30° |
| 18 | 111 | 65.7 | 119.5 | 30° |

# REB18系列制动器
## REB 18 Series Brake

主要应用：AGV舵轮保持制动。
Mainly used in AGVs for parking.

## 技术参数 Technical Data

| 机座号 Base No. | 静扭矩 Static torque (N.m) | 线圈参数(20℃时) Coil parameters (at 20℃) | | | | 耐热等级 Heat Resistance | 最高转速 Maximum rotation speed (r/min) | 转动惯量 Rotational inertia J[kg·m2] | 允许制动做功 Allowable brake power Eba (J) | 总制动做功 Total brake power output $E_T$ (J) | 吸引时间 Engaging time (ms) (DC24V) $t_a$ (s) | 释放时间 Releasing time (ms) (DC7V) $t_{ar}$ (s) | 背隙 [°] Backlash | 质量 Weight [kg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 电压 Voltage (V) | 功率 Power (W) | 电流 Current (A) | 电阻 Resistance (Ω) | | | | | | | | | |
| 40 | 0.32 | 24 | 6.6 | 0.28 | 87.3 | F | 6000 | 1.37×10^-7 | 18 | 3600 | 35 | 20 | 1.5 | 0.11 |
| 60 | 1.3 | 24 | 7.2 | 0.3 | 80 | F | 6000 | 1.17×10^-6 | 104 | 2.1×10^4 | 50 | 20 | 1 | 0.32 |
| | 1.5 | 24 | 7.6 | 0.31 | 76 | F | 6000 | 1.17×10^-6 | 104 | 2.1×10^4 | 50 | 20 | 1 | 0.32 |
| 80 | 3.2 | 24 | 10 | 0.42 | 57.6 | F | 6000 | 3.68×10^-6 | 240 | 4.8×10^4 | 60 | 40 | 1 | 0.5 |
| 100 | 6 | 24 | 23 | 0.96 | 25 | F | 5000 | 2.28×10^-5 | 400 | 8×10^4 | 80 | 40 | 1 | 0.89 |
| 110 | 5.5 | 24 | 24.5 | 1.02 | 23.5 | F | 5000 | 3.45×10^-6 | 500 | 1×10^5 | 100 | 40 | 1 | 0.55 |
| 130 | 6.6 | 24 | 21.5 | 0.9 | 26.8 | F | 5000 | 3.5×10^-5 | 800 | 1.6×10^5 | 110 | 50 | 1 | 1.1 |
| 150 | 10 | 24 | 18 | 0.75 | 32 | F | 5000 | 3.9×10^-5 | 1000 | 2×10^5 | 120 | 50 | 1 | 1.5 |
| 180 | 25 | 24 | 31 | 1.29 | 18.6 | F | 5000 | 3.1×10^-5 | 1500 | 3×10^5 | 120 | 50 | 1 | 2.7 |
| 220 | 40 | 24 | 32 | 1.33 | 18 | F | 4000 | 8.6×10^-4 | 2000 | 3×10^5 | 300 | 100 | 1 | 6 |




均布
Even Distribution

安装时保证
Confirm During Installaiton

外圆配合长度
Length Of Outside Circle

## 安装尺寸表(mm) Dimensions for Installation (mm)

| 径向尺寸/Radial Dimension | | | | | | | | | 轴向尺寸/Axial Dimension | | | | | | | | | 轴径/Axial Radius |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 机座号 Base No. | A | B | C | D | E | S | V | F | G | H | I | J | K | W | N | L | d | dMax |
| 40 | 33 | 26.5 | 16 | 9 | 15 | 7 | 3.2 | 12 | 0.1 | 4 | 19 | 25.7 | 30.1 | AWG26 | 22.8 | 4 | 6 | 8.5 |
| 60 | 48 | 42 | 26 | 14 | 24.5 | 8 | 3.4 | 19 | 0.2 | 4 | 17 | 25.5 | 30 | AWG22 | 22.6 | 5 | 8 | 12.5 |
| | 52 | 45 | 26 | 14 | 24.5 | 7 | 3.4 | 19 | 2 | 4 | 8 | 20.3 | 25 | AWG22 | 16.8 | 5 | 8 | 12.5 |
| 80 | 64 | 56 | 28 | 22 | 31 | 8 | 4.3 | 25 | 0.2 | 4 | 16 | 25.3 | 30 | AWG22 | 21.5 | 4.5 | 10 | 17 |
| | 68 | 60 | 28 | 24 | 31 | 8 | 4.5 | 25 | 0.2 | 4 | 7.5 | 19.7 | 24.5 | AWG22 | 16 | 4.5 | 10 | 17 |
| 100 | 85 | 75 | 48 | 32 | 36 | 9 | 4.5 | 28 | 0.2 | 4 | / | 27 | 35.8 | AWG22 | 21.6 | 8.8 | 12 | 18 |
| 110 | 93.5 | 85 | / | 50.5 | 55 | 10 | 4.5 | 45 | / | 4 | / | 14.3 | 20.5 | AWG20 | 10.5 | 9 | 25 | 28 |
| 130 | 123.5 | 115 | / | 62 | 55 | 9.5 | 4.5 | 45 | 8 | 4 | 28 | 14.6 | 24.3 | AWG20 | 13.7 | 9 | 25 | 28 |
| 150 | 137.5 | 130 | / | 65 | 60 | 12 | 4.5 | 50 | 8 | 4 | 30 | 17.6 | 25 | AWG20 | 12.6 | 9 | 27 | 30 |
| 180 | 167.5 | 158 | / | 80 | 74 | 12 | 5.5 | 60 | 10 | 4 | 34 | 18 | 25 | AWG20 | 13.2 | 9 | 31 | 38 |
| 220 | 185 | 175 | / | 100 | 74 | 12.5 | 6.5 | 60 | 10 | 4 | 34 | 38 | 48 | AWG20 | 31.5 | 9 | 31 | 38 |

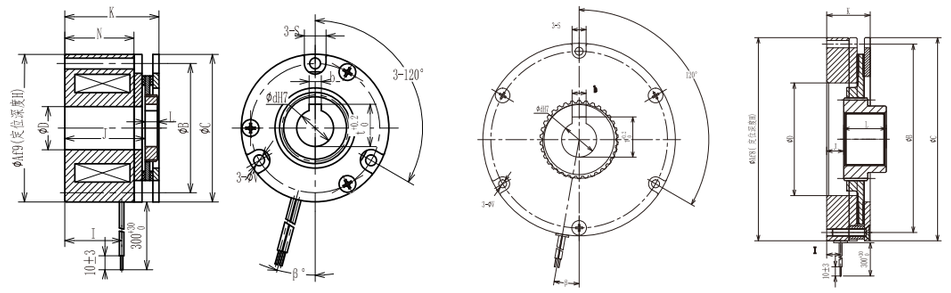


# REB70系列制动器
## REB 70 Series Brake

主要应用：AGV舵轮轴向安装空间紧凑的保持制动。
Mainly used in AGVs for parking in axial installations with compact space.

## 技术参数 Technical Data

| 机座号 Base No. | 静扭矩 Static Torque (N.m) | 线圈参数(20℃时)Coil(20℃) | | | | 耐热等级 Heat Resistance | 最高转速 Maximum rotation speed (r/min) | 转动惯量 Rotational inertia J(kg.m²) | 允许制动做功 Allowable brake power Eba (J) | 总制动做功 Total brake power output $E_T$ (J) | 吸引时间 Engaging time (ms) (DC24V) $t_a$ (s) | 释放时间 Releasing time (ms) (DC7V) $t_{ar}$ (s) | 背隙 [°] Backlash | 质量 Weight [kg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 电压 Voltage (V) | 功率 Power (W) | 电流 Current (A) | 电阻 Resistance (Ω) | | | | | | | | | |
| 40 | 0.32 | 24 | 6.9 | 0.29 | 83.5 | F | 8000 | 2.85×10^-7 | 18 | 3600 | 40 | 20 | 0.5 | 0.14 |
| 60 | 1.3 | 24 | 7.6 | 0.32 | 75.3 | F | 8000 | 2.7×10^-6 | 115 | 2.3×10^4 | 50 | 20 | 0.5 | 0.3 |
| 80 | 3.2 | 24 | 11.5 | 0.48 | 50.1 | F | 8000 | 1.2×10^-5 | 366 | 7.32×10^4 | 60 | 25 | 0.5 | 0.5 |
| 100 | 10 | 24 | 17.6 | 0.73 | 32.7 | F | 5000 | 3.7×10^-5 | 500 | 1×10^5 | 100 | 40 | 1 | 1 |
| 130 | 16.5 | 24 | 24 | 1 | 24 | F | 5000 | 2.18×10^-4 | 1500 | 3×10^5 | 120 | 60 | 1 | 1.5 |
| 150 | 35 | 24 | 27 | 1.125 | 21.3 | F | 3600 | 4.22×10^-4 | 1500 | 3×10^5 | 180 | 80 | 1 | 4.66 |
| 180 | 44 | 24 | 36 | 1.5 | 16 | F | 3600 | 4.5×10^-4 | 1800 | 3.6×10^6 | 200 | 80 | 1 | 3.6 |




## 安装尺寸表(mm) Dimensions for Installation (mm)

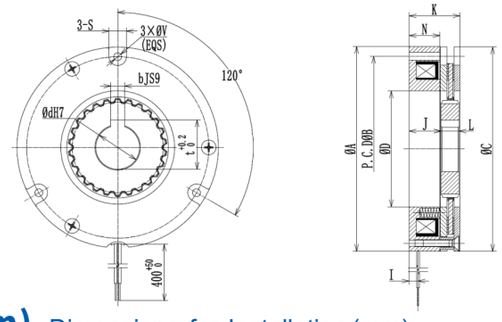
| 径向尺寸/Radial Dimension [mm] | | | | | | | | | 轴向尺寸/Axial Dimension [mm] | | | | | | | 轴径/Axial Radius [mm] | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 机座号 Base No. | A | B | C | D | S | V | H | I | J | K | W | N | β | L | d | b | t | d Max |
| 40 | 35 | 29 | 35 | 9.5 | 6.5 | 3.4 | 4 | 13 | 20 | 24.3 | AWG26 | 17 | −30 | 4 | 8 | / | / | 8.5 |
| 60 | 52 | 45 | 52 | 14 | 7 | 3.4 | 4 | 8 | 20 | 25.1 | AWG22 | 16.8 | 0 | 5 | 12 | / | / | 12.5 |
| 80 | 68 | 60 | 68 | 24 | 8 | 4.5 | 4 | 7.5 | 19.7 | 24.5 | AWG22 | 16 | 0 | 8 | 16 | / | / | 17 |
| 100 | 84 | 76 | 84 | 32 | 9 | 4.5 | 4 | 9.5 | 27.5 | 35 | AWG20 | 22 | 15 | 7.5 | 20 | 7 | 23 | 25 |
| 130 | 115 | 104 | 115 | 65 | 10 | 4.5 | 4 | 5 | 18 | 28.5 | AWG20 | 17.3 | 0 | 10 | 25 | 8 | 28.3 | 30 |
| 150 | 145 | 130 | 145 | 49 | 14 | 6.6 | 4 | 14 | 18 | 49 | AWG24 | 27.7 | −15 | 25 | 25 | 8 | 28.3 | 30 |
| 180 | 150 | 140 | 150 | 62 | 12 | 6.6 | 4 | 14 | 31 | 42 | AWG20 | 27.2 | 47.5 | 9 | 38 | 10 | 41.3 | 45 |

# REB71系列制动器
## REB 71 Series Brake

主要应用:AGV舵轮轴向安装空间紧凑的保持制动。
Mainly used in AGVs for parking in axial installations with compact space.

## 技术参数 Technical Data

| 机座号 Base No. | 静扭矩 Static Torque (N.m) | 线圈参数(20℃时)Coil(20℃) | | | | 耐热等级 Heat Resistance | 最高转速 Maximum rotation speed (r/min) | 转动惯量 Rotational inertia J(kg.m²) | 允许制动做功 Allowable brake power Eba (J) | 总制动做功 Total brake power output $E_T$ (J) | 吸引时间 Engaging time (ms) (DC24V) $t_a$ [s] | 释放时间 Releasing time (ms) (DC7V) $t_{ar}$ [s] | 背隙 [°] Backlash | 质量 Weight [kg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 电压 Voltage (V) | 功率 Power (W) | 电流 Current (A) | 电阻 Resistance(Ω) | | | | | | | | | |
| 40 | 0.32 | 24 | 6.9 | 0.29 | 83.5 | F | 8000 | 2.85×10⁻⁷ | 18 | 3600 | 40 | 20 | 0.5 | 0.14 |
| 60 | 1.3 | 24 | 7.6 | 0.32 | 75.8 | F | 8000 | 2.7×10⁻⁶ | 115 | 2.3×10^4 | 50 | 20 | 0.5 | 0.3 |
| 80 | 3.2 | 24 | 11.5 | 0.48 | 50.1 | F | 8000 | 1.2×10⁻⁵ | 366 | 7.32×10^4 | 60 | 25 | 0.5 | 0.5 |
| 100 | 5 | 24 | 17.6 | 0.73 | 32.7 | F | 5000 | 3.43×10⁻⁵ | 500 | 2×10^5 | 50 | 20 | 1 | 1 |
| 110 | 12 | 24 | 19.4 | 0.81 | 29.7 | F | 5000 | 6.75×10⁻⁵ | 800 | 2×10^5 | 80 | 20 | 1 | 1.3 |
| 130 | 16 | 24 | 21.5 | 0.9 | 26.8 | F | 5000 | 2.32×10⁻⁴ | 1500 | 2.2×10^6 | 110 | 50 | 1 | 1.5 |
| 150 | 30 | 24 | 23.7 | 0.99 | 24.3 | F | 5000 | 3.02×10⁻⁴ | 1500 | 2.5×10^6 | 120 | 30 | 1 | 2.5 |
| 180 | 38 | 24 | 31 | 1.29 | 18.6 | F | 3600 | 9.41×10⁻⁴ | 1800 | 3×10^6 | 120 | 30 | 0.8 | 3.4 |
| 220 | 55 | 24 | 19 | 0.79 | 30.3 | F | 3600 | 15.2×10⁻⁴ | 2000 | 3×10^6 | 220 | 100 | 0.8 | 4 |




## 安装尺寸表(mm) Dimensions for Installation (mm)

| 机座号 Base No. | A | B | C | D | S | V | I | J | K | N | L | d | b | t | d Max |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 40 | 35 | 30.5 | 35 | 9 | 7 | 3.2 | 11.5 | 16.1-16.3 | 20 | 13.5 | 3.5 | 8.5 | / | / | 9 |
| 60 | 53 | 46 | 52 | 15 | 7 | M3 | 7 | 13.5-13.7 | 18.3 | 10.6 | 5 | 12.5 | / | / | 14 |
| 80 | 70 | 62 | 69 | 19 | 9 | M4 | 6 | 25.2-25.4 | 22.4 | 13.8 | 5 | 17 | / | / | 18 |
| 100 | 83.5 | 76 | 82 | 47 | 9 | 4.5 | 9.5 | 17 | 25 | 14.7 | 7 | 20 | 6 | 22.8 | 30 |
| 110 | 93.5 | 85 | 92 | 49 | 10 | 4.5 | 8 | 19 | 27 | 15.7 | 7 | 20 | 6 | 22.8 | 30 |
| 130 | 123.5 | 115 | 122 | 62 | 9.5 | 4.5 | 5 | 14.6 | 24.3 | 13.7 | 9 | 24 | 8 | 27.3 | 38 |
| 150 | 137.5 | 130 | 136 | 65 | 12 | 4.5 | / | 15.4 | 25 | 12.5 | 9 | 24 | 8 | 27.3 | 38 |
| 180 | 167.5 | 158 | 166 | 80 | 12 | 5.5 | 9.5 | 16 | 25 | 12 | 9 | 28 | 8 | 31.3 | 50 |
| 220 | 185 | 175 | 184 | 100 | 12.5 | 5.5 | 10 | 21.3 | 32.8 | 19.4 | 11.5 | 28 | 8 | 31.3 | 50 |





# REB03系列得电制动器
## REB 03 Series Power-on Brake

REB03系列得电制动器提供通电制动。当直流电压通过线圈时，会产生磁场，将衔铁吸引到磁体组件上，磁体和衔铁之间的摩擦链接使电机轴减慢并停止。多种尺寸可选适用于不同的电机安装需求。

适用于停车和减速。

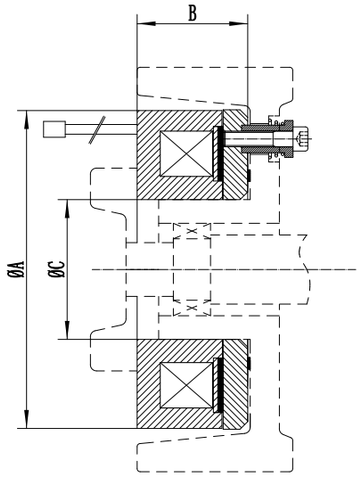
The REB03 series brake provides power-on brake engagement. When a DC voltage is passed through the coil, a magnetic field is created that attracts the armature to the magnet assembly. The friction connection between the magnet and armature causes the rotating shaft to slow and stop. Various sizes are availale for different installation.

Suitable for parking and deceleration.

## 产品特点 Product Features

- 零齿隙单面摩擦
- 多扭矩可选
- 小尺寸，大扭矩
- 紧凑设计，适用于安装在车轮内部

- Single-face brake with zero backlash
- Multi-torque available
- Small size with high torque
- Compact design fits inside load wheel




| 机座号 Model | 扭矩 Torque(N.m) | 电压 Voltage(VDC) | 功率 Power(W) | A (mm) | B (mm) | C (mm) |
|---|---|---|---|---|---|---|
| REB0314 | 80 | 12-72 | * | 140 | * | * |
| REB0316 | 50-150 | | * | 160 | * | * |
| REB0318 | 350-500 | | * | 207 | * | 88/91 |
| REB0318A | 450-600 | | * | 219 | * | 93 |
| REB0320 | 550-700 | | * | 246/260 | * | 105/146 |
| REB0320A | 800 | | * | 246 | * | * |

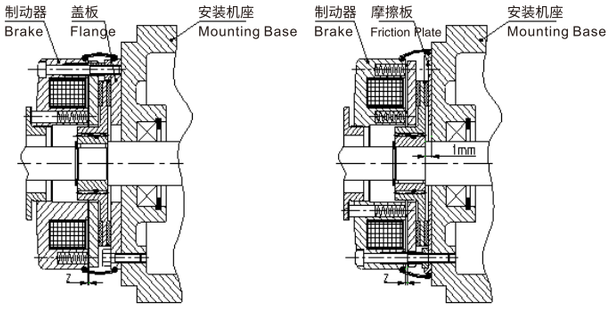
# 安装使用说明
# Installation Instructions

## 安装事项 Installation Notes

- 制动器的安装平面的粗糙度不超过Ra3.2，材料为铸铁或钢，安装端面对轴的垂直度不大于0.05mm
- 摩擦面不能有锐利的尖角；若无合适的摩擦面时，可选用盖板或摩擦板。
- 仓储物流用制动器的工作环境温度为-20°C~40°C，应避免在极高的温度或湿度下存放与使用。海拔高度不超过2000m。防止润滑脂和润滑油沾染在摩擦面上。(如工作环境温度不在此范围，请与我司联系)。
- 在湿气、雾气很重的情况下，请选用防尘套和防尘盖来密封制动器；防尘罩和防尘盖还可以防止铁屑、粉尘等可能进入间隙。
- 在轴上用C形弹簧挡圈与轴肩固定花键套，花键套与安装面之间必须有大于1.0mm的间隙，避免花键套与制动器安装面接触（见制动器安装简图）。
- 请勿强力敲击花键套或倾斜安装；固定花键套的键的长度尽量与花键套键槽的总长相同。

- The roughness of brake mounting surface should not excess Ra3.2. The materials are cast steel or steel. The verticality of the mounting surface to the shaft is less than 0.05mm
- There should be no sharp angle upon friction surface. The flange or friction board is applicable if there isn't any appropriate friction surface.
- The working temperature of Brakes for warehouse anaogistics is -20°C~40°C. Please do not store or use the product underpretty high temperature or humid.Further, the altitudeshould not excess 2000m. Don't stain the grease orlubricant upon the friction surface.
- Use anti-dust wrapper or cap to seal the brakes if the environment is very humid or foggy; plus, these two parts can be applied to protect the air gap from iron chips and dust.
- Fix the splined hub upon the shaft by C-shape spring collar and shoulder. To avoid contacting between splined hub and mounting surface, the air gap between these two should be larger than 1.0.mm(Please see the Brake Installation Sketch).
- Please do not knock the splincd hub heavily or mount the products slantingly. The length of the key used to fix the splined hub and the total length of keyway of splinde hub are as same as possible.

## 制动器安装简图 Brake Installation drawing




## 花键套的安装 Spline hub installation

花键套与安装面的距离通常为1mm以上，避免花键套与制动器安装面的摩擦干涉轴的正常转动。

The distance between the splined hub and mounting surface usually excesses 1mm to avoid the interference gencrated by the friction between splined and mounting surface of the brake.

## 间隙的调节 Adjust the Gap

- 在制动器断电的情况下，通过调整空心螺钉，借助塞尺将间隙调节到额定值“z”，注意保证各个方向的间隙相同。

- While the brake is power-off, adjust the hollow screw and use feeler gauge to adjust the air gap to nominal calue Z. Please pay attention to guarantee the air gaps at every direction are same.





## 间隙的重调 RE-adjust the Air Gap

额定间隙z会因磨损而变大。为确保制动器有足够的制动扭矩，必须在间隙达到最大间隙值前重调间隙。间隙可以多次调节，当摩擦制动片的厚度达到允许的最小厚度时，必须更换摩擦制动盘。制动器的噪音与间隙值大小有关，在要求噪音最低的应用中，建议您在间隙达最大值范围内重调间隙。（最大间隙值见制动器使用额定参数调整方法见使用说明书）
间隙超过最大间隙值，可能导致制动器无法释放、摩擦制动片烧坏、制动力或保持力减小，甚至导致重大事故。所以必须定期检查并重调间隙，注意必须断开设备的总电源。

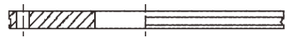
The nominal air gap z will be larger because of wear,therefore,the air gap should be Re-adjusted before reaching its maximum value to guarantee sufficient braking torque.The air gap is able to be adjusted several times,with friction disk of minimum thickness,the braking plate Should be replaced.Further,the noise generated by brake is related to the air gap .please re-adjust the air gap within its maximum range while using in areas requiring pretty low noise （for the maximum air gap,please see the nominal parameters using in brakes in page7 and instruction for adjustment.）
Please check and readjust the air gap regularly after cutting off the general power.Otherwise,the brakes might not be released,the friction disk might be burnt out,the braking or holding might be decreased and,even occurring worse serious accident.

# 配件说明
# Accessories

## 盖板 Flange

- 若安装机体上无合适的摩擦面可利用，可选盖板为摩擦面，盖板通过特殊表面处理，具有高防腐和高耐磨性

- If no suitable friction surface available, the flange can be selected as the friction surface, which is treated with a special surface and has high corrosion and wear resistance.



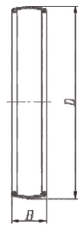
## 摩擦板 Friction Plate

- 若安装机体有平面度较好的平面，但因材质原因不能作为摩擦面，如：铝合金外壳的电机等，可以选用摩擦板为摩擦面，如右图所示，用于机座号为16及以下的产品。

- If the installation surface has good flatness but can't be used as friction surface due to the material constraints, such as in the case of a motor with an aluminum alloy housing, a friction plate can be chosen as the friction surface. As shown in the diagram on the right, this is applicable for model size below 16.

## 防尘套 Anti-dust Wrapper

- 防尘套可以有效地防止外部灰尘。水滴、湿气、污垢等其它异物进入制动器内部；使用防尘套时，应配用带环形凹槽的定子和盖板，防尘罩通过凹槽安装在制动器表面。
- The dust cover can effectively prevent the dust, water, moisture, dirt,etc., from entering the inside of the brake. When using the dust cover, a stator and flange with a ring groove should be fitted, and the dust cover should be mounted on brake surface through the ring groove.




| 机座号 Motor No. | D | B |
|---|---|---|
| 06 | 90 | 17.6 |
| 08 | 110 | 21.4 |
| 10 | 136 | 25 |
| 12 | 158 | 30 |
| 14 | 174 | 33 |
| 16 | 198 | 34.5 |
| 18 | 225 | 38 |
| 20 | 253 | 42.4 |
| 25 | 304 | 48.5 |
| 30 | 372 | 69 |

# 产品选型
# Model Selection

## 保持负载所需的转矩分析 Analysis Of The Required Torque For Keeping The Load

$$T = T\ell max \times K\ [N\cdot m]$$

- Tℓmax: 最大负载转矩 [N·m]
- K: 安全系数（参阅下表）
- Tℓmax: Max load torque [N·m]
- K: Security coefficient (see table below)

## 刹车距离计算 Braking distance

考虑速度 $v$ (km/h)的制动距离 $s_0$(m) Braking distance $s_0$(m) considering the speed

| 组别 Group | 车辆形式 Vehicle type | 制动距离 $s_0$/m Braking distance | | |
|---|---|---|---|---|
| 车辆速度 $v$ / (km/h) | Speed $v$ / (km/h) | $v<5$ | $5<v<13.4$ | $v>13.4$ |
| A1 | 除A2B1 B2、C和 D组外的所有车辆，额定起重量/载重量<16 000 kg或满载质量<35 000 kg，两者取较大值 All vehicles except A2, B1, B2, C and D, rated loading capacity<16000kg or full loading quality <35000kg. Choose the maximun value. | $s_0<0.15v+\frac{v^2}{23.6}$ | $s_0<0.15v+\frac{v}{4.7}$ | $s_0<0.15v+\frac{v^2}{63.6}$ |
| A2 | 除B1 B2、C和 D组外的所有车辆额定起重量/载重量≥16 000 kg或满载质量≥35 000 kg All vehicles except B1, B2, C and D, rated loading capacity≥16000kg or full loading quality≥35000kg. | $s_0<0.15v+\frac{v^2}{19.1}$ | $s_0<0.15v+\frac{v}{3.8}$ | $s_0<0.15v+\frac{v^2}{50.9}$ |
| B1 | 单轮制动或双轮制动的牵引车 Tractor with single or double wheel braking | $s_0<0.15v+\frac{v^2}{33.1}$ | $s_0<0.15v+\frac{v}{6.6}$ | $s_0<0.15v+\frac{v^2}{89.0}$ |
| B2 | 三轮制动或四轮制动的牵引车 Tractor with three or four wheel braking | $s_0<0.15v+\frac{v^2}{47.3}$ | $s_0<0.15v+\frac{v}{9.5}$ | $s_0<0.15v+\frac{v^2}{127.1}$ |

## 特殊尺寸 Special Size

- 需要选择能使由上述算式计算出的转矩 T 满足以下算式的制动器尺寸。

$$TS > T\ [N\cdot m]$$

- Ts: 制动器静摩擦转矩 [N·m]
- Use the Torque T which is calculated baseda on above equation to meet the brake measurement in below equation.
- Ts: the brake's static friction torque [N·m]





## 做功分析 Power Output Analysis

- 考虑以保持为目的的制动器时，制动仅限于紧急情况下。
- 通过以下算式计算紧急制动 1次的制动做功 Eb，并确认该计算结果充分小。
- 于所选制动器的允许制动做功 Ebaℓ。
- When considering brakes for holding, braking should be limited to emergency situations.
- Calculate the brake work Eb for one emergency braking operation using the following formula, and confirm that the calculation result is sufficiently small
- The allowable brake power output for the selected brake Ebaℓ.

$$E_b = \frac{J\times n^2}{182}\times\frac{T_b}{T_b \pm T\ell max}\ [J]$$

- J: 负载侧的转动惯量合计 [kg·m2]
- n: 转速 [min - 1]
- Tb: 制动器转矩 [N·m]
- Tℓmax: 最大负载转矩 [N·m]
- 最大负载转矩 Tℓmax 的符号在负载朝帮助制动的方向动作时为 + (正)，朝妨碍的方向动作时为 - (负)。
- J: Rotation inertia sum on the load side [kg·m2]
- n: Rotation speed [min - 1]
- Tb: Brake torque [N·m]
- Tℓmax: Max. load torque [N·m]
- The symbol of the max. load torque Tℓmax is + when the load is aiding the brake, - when the load is hindering the brake.

$$E_b \ll T_{ba\ell}\ [J]$$

## 动作次数分析 Brake Frequency Analysis

- 进行紧急制动时的总制动次数（寿命）L 通过以下算式计算，需要确认是否满足要求的规格。
- The total brake times(life) L can be calculated using below equation, need to check if the item can meet requirements.

$$L = \frac{E_T}{E_b}\ [次]$$

- ET: 总制动做功 [J]
- 虽然根据使用环境会有所不同，但紧急制动频率请控制在 1分钟 1次左右。1 次制动做功 Eb 超过允许制动做功 Ebaℓ 的70% 以上时，紧急制动后，请等待制动器充分冷却再使用。
- ET: Total brake power output [J]
- Though operation conditions may vary, the emergency brake should be less than about once per minute. if the one time brake power output Eb is bigger than 70% of Ebaℓ, then after emergency brake, the brake has to be fully cooling down before operation again.