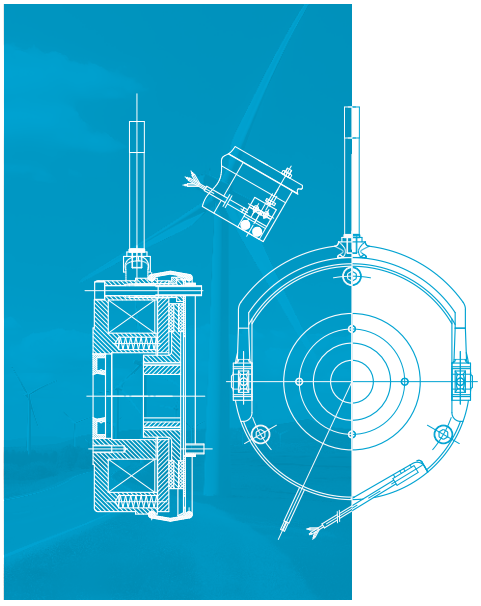
REACH® 瑞迪智驱
TOP

稳定的电磁制动器就选瑞迪

Need stable brakes choose REACH



风电电磁制动器

E/M Brakes for Wind Power

稳定的电磁制动器

就选瑞迪

Need stable brakes choose REACH

TABLE OF **CONTENTS**

目录

CONTENTS

About REACH
关于瑞迪

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

成都瑞迪智驱科技股份有限公司，业务和技术源于1996年的瑞迪实业。我司致力于制动、减速、传动三大系统，产品包括制动器、谐波减速机、胀套、联轴器、同步轮等。

瑞迪集研发、生产、销售于一体，并控股瑞迪佳源、眉山瑞通、荷兰J.M.S.三家子公司。产品面向国内外销售，远销欧、美、日等30多个发达国家和地区，获得了客户广泛认可，与全球多家知名企业建立了战略合作。

REACH MACHINERY CO., LTD. with its business and technology from REACH MACHINERY ENTERPRISE since 1996, is dedicated to the Braking System, Reducing System and Transmission System.Main products are brakes, harmonic reducers, locking devices and couplings, etc.

The company integrates R&D, manufacturing and sales, and holds three subsidiaries: REACH JIAYUAN, REACH RUITONG,and J.M.S. in the Netherlands. Our products are sold both at home and abroad, exported over 30 countries and regions such as Europe, the United States, and Japan, etc. and have gained extensive recognition from our customers. We have established strategic partnerships with many well-known companies around the world.

瑞迪优势
REACH ADVANTAGES

五大核心竞争力
Five core competitiveness

- **材料维度** Materials

确保摩擦材料精准符合制动器的性能需求。
Accurately meet the performance requirements of the brakes.

- **品控维度** Quality Control

标准化作业，超过**100道**质量控制点，**14项**自动检测，确保产品质量稳定。
Standardized operations, with over 100 quality-control points and 14 automatic inspections to guarantee the stable quality.

- **工艺维度** Process

自动化生产和在线检测工艺，保障产品质量稳定。
Automatic production and online inspection processes to guarantee the stable quality.

- **试验维度** Testing

500万次静态寿命测试，**200万次**急停测试，确保产品性能稳定。
10,000,000 times static lifetime test and 1,000 times emergency stop test to guarantee the stable performance.

- **产品维度** Product

每一种产品经过严格的型式实验和设计验证，确保产品的稳定。
Strict type-examination and design verification to guarantee product stability.

七大技术亮点
Seven technical highlights

电磁方案设计技术
Electromagnetic solution design technology

精密机械加工技术
Precision machining technology

性能测试技术
Performance testing technology

信息化管理技术
Information management technology

对市场分析、趋势洞察、研判的技术
Market analysis, trend insight and judgement technology

保障客户稳定运营的管理及服务技术
Professional management and service to guarantee customer stable operations

深入了解市场、客户需求的管理技术
Experienced management for in-depth understanding of market and customer needs

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.

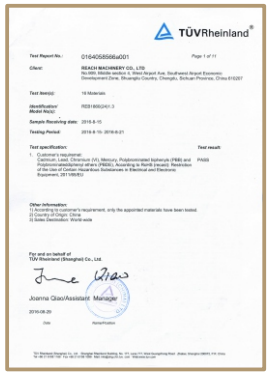
IATF 16949

ISO 9001

ISO 14001

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

风电偏航制动器
Brakes for Wind Power Yaw Drives

- 扭矩稳定性 ±15%、噪音≤60dB、防护等级IP54
  Torque tolerance: ±15%, Noise: ≤60dB, Ip54
- 适用于环境温度：-40℃~60℃
  Ambient Temperature: -40℃~60℃
- 耐压2100VAC -1s（1500VAC-1min），绝缘等级F
  Volt. withstand: 2100VAC -1s（1500VAC-1min）, Insulation grade: F
- 响应时间最短可达40ms
  Shortest response time: 40ms
- 通过200万次负载急停测试，使用寿命长
  Long service life, approved by 20,000,00 times E-stop test (with load)
- 稳定可靠的电气附件，如整流器，微动开关等
  With reliable accessories: rectifiers, micro-switches etc.

风电变桨制动器
Brakes for Wind Power Pitch Drives

- 扭矩稳定性-20%~+40%、噪音≤60dB、防护等级IP66
  Torque tolerance: -20%~+40%, Noise: ≤60dB, IP 66
- 适用于环境温度：-40℃~60℃
  Ambient Temperature: -40℃~60℃
- 耐压 2100VAC -1s (1500VAC-1min)，绝缘等级F
  Volt. withstand: 2100VAC -1s (1500VAC-1min), Insulation grade: F
- 耐磨转子响应时间一致性高
  High consistency in response time and batch stability
- 使用耐磨摩擦转子，通过终端客户的极限重载拖磨测试
  Wear-resistant friction rotor and passed the extreme heavy-duty drag test by end customers
- 可以满足用户不同风场工况下的定制化需求，如更高的防护等级、低温环境等
  Customized designs for different working conditions
- 稳定可靠的电气附件，如整流器，微动开关等
  With reliable accessories: rectifiers, micro-switches etc.

海上风电制动器
Brakes for Offshore Wind Power

- 防护等级可达IP66
  Protection Level: Max. IP66
- 单体防腐等级最高可达C4H
  Anti-corrosion grade of Brake: Max. C4H
- 可配合电机进行整体喷涂防腐处理
  It can be combined with a motor for overall spray painting and corrosion protection treatment.
- 耐磨转子，保证使用寿命和可靠性
  Wear-resistant rotor ensures longevity and reliability

得电偏航制动器
Power-on Brakes for Wind Power

- 使用恒力弹簧
  Constant force springs
- 无石棉摩擦片，扭矩稳定性-5%~+25%
  Asbestos-free friction plates, torque tolerance: -5%~+25%
- 得电制动和保持
  Powered on braking and holding
- 高应答性、连接和切离安全可靠性
  Quick response; Secure and reliable connection and disconnection
- 缓冲起动和停止、过负荷保护
  Buffered start and stop, overload protection
- 低噪声且寿命长、安装简便
  Low noise and long service life, Easy installation

工作原理
WORKING PRINCIPLE

瑞迪弹簧加压电磁安全制动器是单片式制动器，有两个摩擦表面，轴过通平键与花键套联接，花键套通过花键与摩擦盘组件联接。

当定子断电时，弹簧所产生的力作用在衔铁上，将轴带动旋转的摩擦盘组件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。

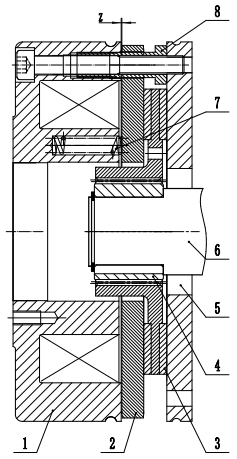
当需要放松制动时，定子接通直流电，所产生的磁场吸引衔铁向定子移动，衔铁移动时压缩弹簧，此时摩擦盘组件被松开，制动解除。

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 friction disk components through spline.

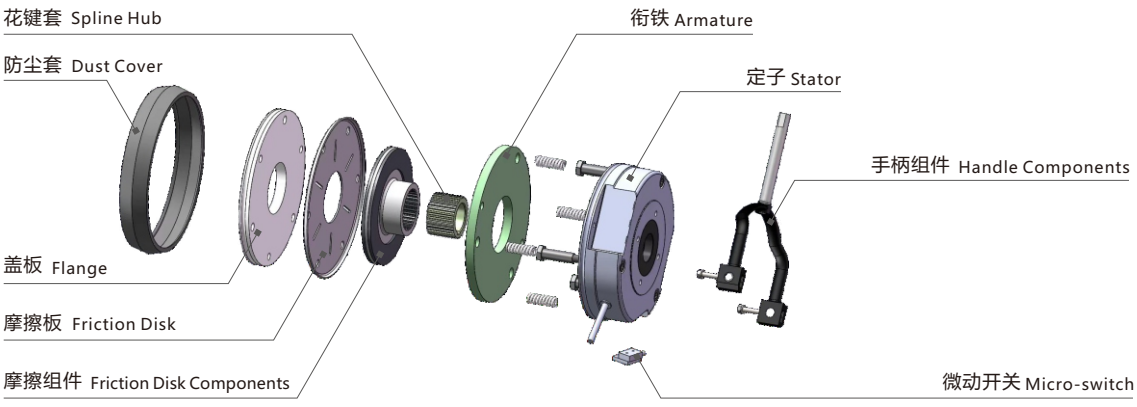
When stator is powered off, the spring generates forces upon armature, then the friction disk components will be clamped between armature and flange to generate braking torque. At that time, a gap Z is created between armature and stator.

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 friction disk components are released to disengage the brake.

1 定子	1 Stator
2 衔铁	2 Armature
3 摩擦组件	3 Friction Disk Components
4 花键套	4 Spline Hub
5 盖板	5 Flange
6 轴	6 Shaft
7 弹簧	7 Spring
8 空心螺钉	8 Hollow Screws
Z 间隙	Z Air Gap

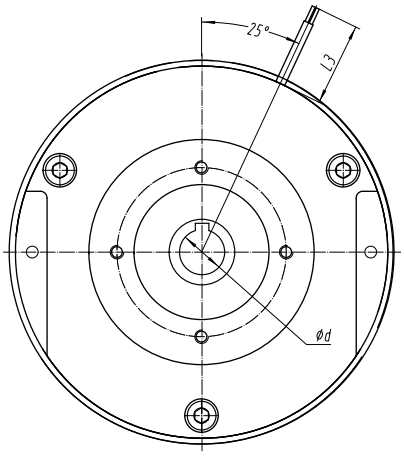


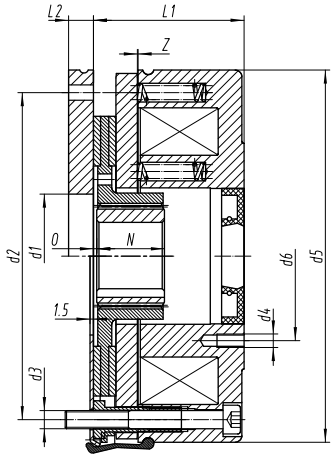
产品模块说明 Product modulars



偏航制动器-REB23

Brakes for Wind Power Yaw Drive-REB23



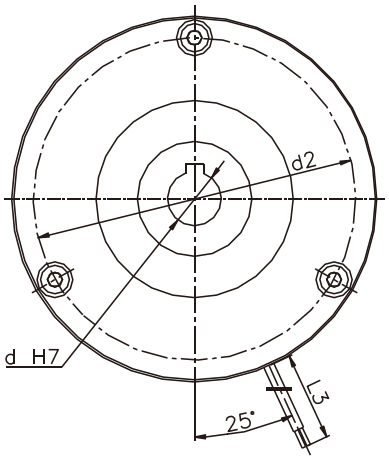


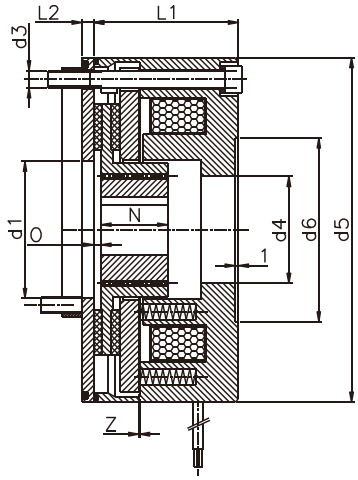
单位为毫米（mm）Unit: mm

电机机座 Frame Size	机座号 Model	制动扭矩 Braking Torque(Nm)	d1	d2	d3	L1	L2	d4	d5	d6	L3	O	Z	N	P(20℃)
90	10	16/**20**/23	44	112	3XM6	48.5	9	4XM5	130	68	400	1.2	0.2	20	30W
100	12	**32**/40/46	52	132	3XM6	55	9	4XM5	150	82	400	2.0	0.3	25	40W
112	14	**60**/80	64	145	3XM8	67.1	11	4XM6	165	92	1000	1.5	0.3	30	50W
132	16	**80**/120/140	70	170	3XM8	72	11	4XM6	190	102	1000	2.0	0.3	30	55W
160	18	**150**/250	95	196	6XM8	83	11	4XM8	217	116	1000	2.0	0.4	35	90W

变桨制动器-REB05C

Brakes for Wind Power Pitch Drive-REB05C





单位为毫米（mm）Unit: mm

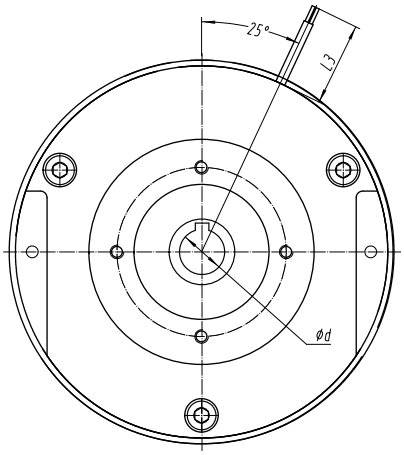
电机机座 Frame Size	机座号 Model	制动扭矩 Braking Torque(Nm)	P(20℃)	d1	d2	d3	d4	L1	L2	d5	d6	O	N	Z	L3
90	10	**16**/20/23	30W	45	112	3XM6	3XΦ6.5	48.4	1.5	130	54	1.2	20	0.2	400
100	12	32/40/**46**	40W	52	132	3XM6	3XΦ6.5	54.9	6	150	64	2.0	25	0.3	400
112	14	60/80/100/**150**	50W	55	145	3XM8	3XΦ9	67.8	6	168	75	1.5	30	0.3	1000
132	16	90/130/150/**180**/200	90W	70	170	3XM8	3XΦ9	74.5	7	200	85	2.0	30	0.3	1000
160	18	200/250/**300**/370	90W	77	196	6XM8	4XΦ9	85.1	6	226	95	2.0	35	0.4	1000
180	20	260/**460**	100W	90	230	6XM10	4XΦ10	99.6	11	258	110	4.0	40	0.4	1000
200	25	400/**620**	110W	120	278	6XM10	6XΦ10	109	17.5	310	140	5.0	50	0.5	1000

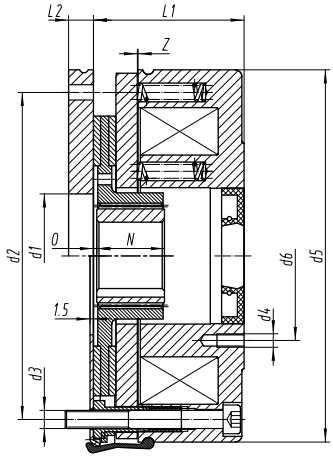
海上风电制动器

Brakes for Offshore Wind Power

海上偏航制动器-REB23

Brakes for Offshore Wind Power Yaw Drive-REB23





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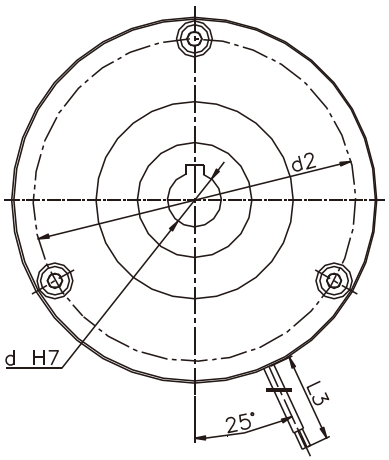
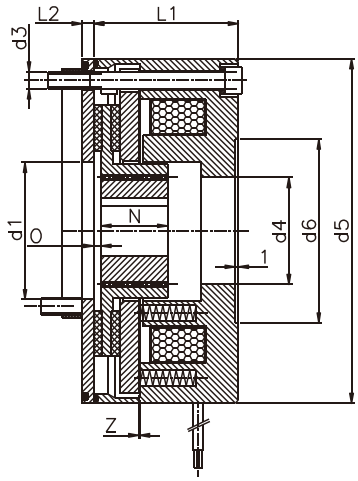
100	12	**32**/40/46	52	132	3XM6	55	9	4XM5	150	82	400	2.0	0.3	25	40W
112	14	**60**/80	64	145	3XM8	67.1	11	4XM6	165	92	1000	1.5	0.3	30	50W
132	16	**80**/120/140	70	170	3XM8	72	11	4XM6	190	102	1000	2.0	0.3	30	55W
160	18	**150**/250	95	196	6XM8	83	11	4XM8	217	116	1000	2.0	0.4	35	90W

海上变桨制动器-REB05C

Brakes for Offshore Wind Power Pitch Drive-REB05C





单位为毫米（mm）Unit: mm

电机机座 Frame Size	机座号 Model	制动扭矩 Braking Torque(Nm)	P(20℃)	d1	d2	d3	d4	L1	L2	d5	d6	O	N	Z	L3
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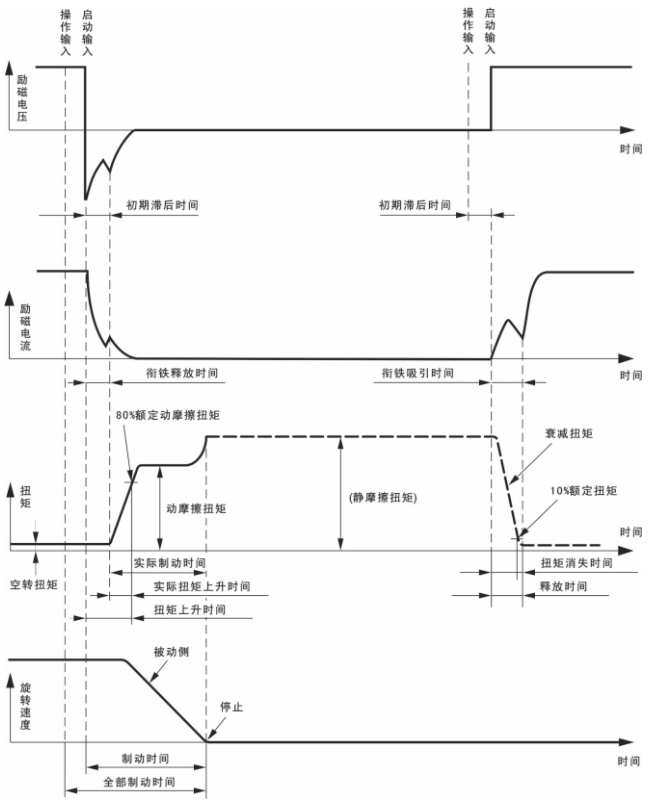
100	12	32/40/**46**	40W	52	132	3XM6	3XΦ6.5	54.9	6	150	64	2.0	25	0.3	400
112	14	60/80/100/**150**	50W	55	145	3XM8	3XΦ9	67.8	6	168	75	1.5	30	0.3	1000
132	16	90/130/150/**180**/200	90W	70	170	3XM8	3XΦ9	74.5	7	200	85	2.0	30	0.3	1000
160	18	200/250/**300**/370	90W	77	196	6XM8	4XΦ9	85.1	6	226	95	2.0	35	0.4	1000
180	20	260/**460**	100W	90	230	6XM10	4XΦ10	99.6	11	258	110	4.0	40	0.4	1000
200	25	400/**620**	110W	120	278	6XM10	6XΦ10	109	17.5	310	140	5.0	50	0.5	1000

动作时间 Operation time



机座号 Model	额定扭矩T(Nm) Rated Torque 100rpm	功率 Power	制动时间t_1(ms) Braking time			释放时间 t_2(ms) Release time
			t_{11}	t_{12}	t_1	
10	16	30	25	20	45	69
12	32	40	26	30	56	108
14	60	50	27	30	57	190
16	80	55	30	30	60	200
18	150	90	35	43	78	260
20	260	100	65	100	165	340
25	400	110	110	120	130	390

- T11 衔铁释放时间
- T12 扭矩上升时间
- T1制动时间
- T2 释放时间（衔铁吸合时间）
- 以上所有时间参数均为直流侧控制所得参数

- T11 Armature release time
- T12 Rising Time of Braking Torque
- T1 Braking Time
- T2 Releasing Time(Armat ure Attracting Time)
- All the above time-parameters are obtained through control at the DC side

制动扭矩与转速的关系及最高工作转速
Braking torques at relative speed of rotation

机座号 Model	额定扭矩(100%) Rated torque 100rpm	制动力矩与转速的关系[%] Brake toque x (%)of the rated torque			最高工作转速 (rpm) Maximum Rotation Speed in Working (rpm)
		1500	3000	maximum	
10	100%	82%	76%	73%	4000
12	100%	80%	74%	73%	3600
14	100%	79%	72%	70%	3600
16	100%	78%	71%	67%	3600
18	100%	76%	69%	67%	3600
20	100%	74%	67%	67%	3600
25	100%	72%	67%	67%	3000

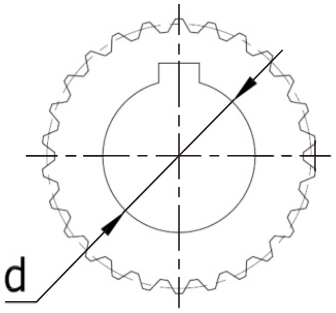
制动器使用额定参数
Rated Data

机座号 Model	额定间隙z(+0.1/-0.05) (mm) Rated Air Gap	Zmax 保持制动 (mm) Holding Brake	Zmax 减速制动 (mm) Operating Brake	摩擦盘组件厚度(mm) Rotor thickness		额定功率 20℃ (W) Rated power	安 装 位置圆 (mm) Pitch hole circle	安装螺钉 规 格 Fastening screws
				min	Max			
10	0.2	0.3	0.5	7.5	9	30	112	3×M6
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
20	0.4	0.6	1	12	16	100	230	6×M10
25	0.5	0.75	1.25	15.5	20	110	278	6×M10

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。

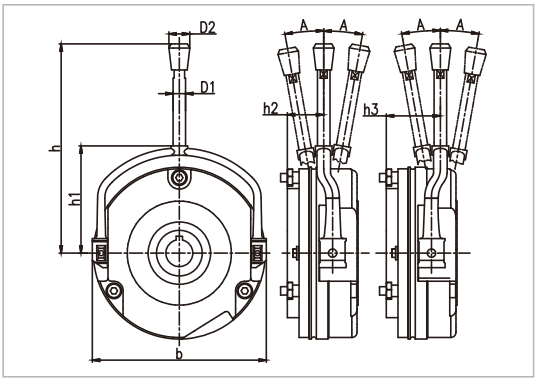
The mounting hole tolerance is H7. The dimension of keyway meets DIN6885/1(GB/T1095-79)JS9. The apertures presented in bold letters are basic dimensions.



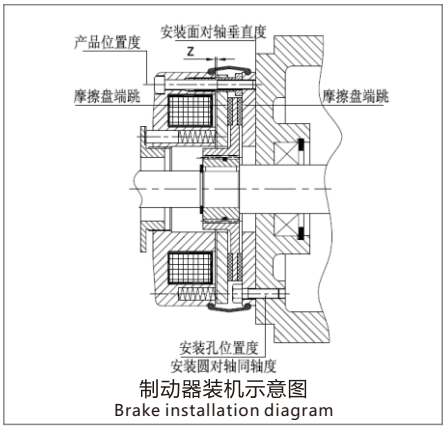
机座号 Model	d
10	11/12/14/**15**/20
12	15/17/**20**/25/27
14	20/**25**/30/31
16	25/**30**/35/38
18	30/35/**40**/45
20	35/**40**/45/50
25	**50**/55/60/65/70

手柄组件安装尺寸 Mounting Dimensions of hand-release

机座号 Model	h	b	h1	h2	h3	d1	A
10	133	132	77.8	27	41	10	9
12	162	152	88.5	29.1	47.1	10	10
14	197	169	101.5	32	49	12	12
16	242	195	115.0	36.4	55.6	12	12
18	282	222	128.5	41.5	59.5	14	11
20	321	258	149.5	48	69	14	10
25	444	302	182	60	91	16	15



手柄组件安装尺寸 Mounting Dimensions of hand-release



制动器装机示意图
Brake installation diagram

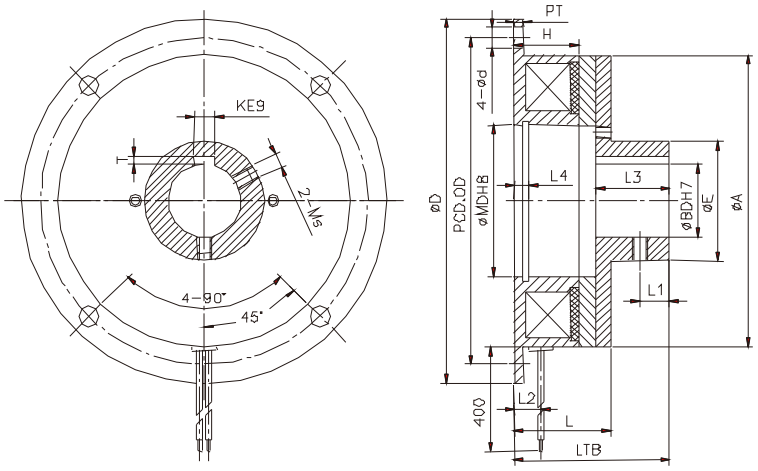
机座号 Model	摩擦盘跳动 (mm) Rotor runout	产品位置度 (mm) Product location	安装孔位置度 (mm) Mounting hole location	安装圆对轴同轴度 (mm) Axis coaxiality	安装面对轴垂直度 (mm) Axis verticality
10	0.04	0.15	0.25	0.4	0.05
12	0.05	0.15	0.25	0.6	0.06
14	0.05	0.15	0.25	0.6	0.06
16	0.05	0.15	0.25	0.6	0.07
18	0.08	0.15	0.25	0.8	0.07
20	0.08	0.15	0.25	0.8	0.08
25	0.1	0.15	0.25	0.8	0.08

风电制动器安装面粗糙度：Ra1.6~ Ra 3.2。
Mounting surface roughness of brake

得电偏航制动器

Powered-on Yaw Drive E/M Brakes

型号 Model	摩擦转矩 Friction Torque (Nm)	励磁电压 Excitation Voltage (DC-V)	功率 Power (W) 20 ℃	最高转速 Maximum Speed (r/min)	重量 Weight (Kg)
REB0306	6	24	11	8000	0.3
REB0308	12	24	15	6000	0.6
REB0310	24	24	20	5000	1
REB0312	45	24	25	4000	1.8
REB0316	90	24	35	3000	3.2
REB0320	180	24	45	2500	6
REB0325	360	24	60	2000	11

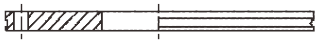


型号 Model	A	BD	D	E	H	K	T	L	L1	L2	L3	L4	LTB	d	MD	Ms	PT	OD
REB0306	63	12	80	26	18	4	1.6	25.5	6	7.3	15	3.5	37	5	35	M4	2.1	72
REB0308	80	15	100	31	20	5	2.2	28.4	8	8.3	20	4.3	45	6	42	M5	2.6	90
REB0310	100	20	125	41	22	6	2.6	33	10	9	25	5	53	7	52	M5	3.1	112
REB0312	125	25	150	49	24	8	3.2	37	12	9.3	30	5.5	61	7	62	M6	3.6	137
REB0316	160	30	190	65	26	8	3.2	42	15	11.7	38	6	73	9.5	80	M8	4.1	175
REB0320	200	40	230	83	30	12	3.7	50.5	18	13.4	45	7	86.5	9.5	100	M8	5.1	215
REB0325	250	50	290	105	35	14	3.7	59	22	16	54	8	102	11.5	125	M10	6.1	270

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.



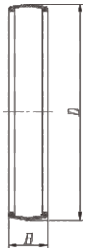
摩擦板 Friction Plate

- 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
10	136	25
12	158	30
14	174	33
16	198	34.5
18	225	38
20	253	42.4
25	304	48.5

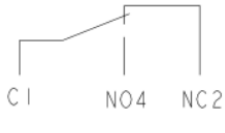
释放手柄 Hand release

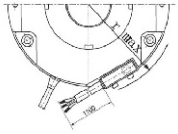
- 释放手柄用于安装调试制动器或设备出现故障时靠人工手动释放，拉动释放手柄可方便的解除制动；当开放释放手柄后，释放手柄可以自动回复到原来的位置，制动器恢复制动状态。

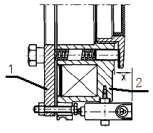
- The hand release is used to mannually release the brake during installation and debugging or when the equipement fails. Pulling the hand-release can easily release the brake. When hand-release is released, it can automatically return to the original position, and the brake returns to braking state.

微动开关 Micro Swith

- 微动开关用于需要对间隙进行监控的场合，两种控制逻辑，寿命超过百万次。
- Micro-switch is used when the gap monitoring is required, with two control logics and over one million times lifespan.







- 当衔接1被定子2吸合时，制动器释放，微动开关感应到衔铁吸合，电机才由微动开关控制下启动；当间隙超过极限时，微动开关感应不到衔铁吸合，则电机不能启动。
- When armature 1 is engaged by stator 2, the brake is released, and the micro-switch detects the armature's engagement, allowing the motor to start under the control of the switch. When the gap exceeds the limit, the micro-switch can't detect the armature's engagement, the motor can't start.

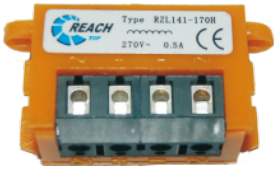
整流器 Rectifier

- 制动器工作电源为直流电源，若外接交流电源可选用如下规格整流器
  Electrical accessories are optional to meet the specific conditions. Please refer to the instructions.
- 塑料外壳设计紧凑
  Designed in a compact structure
- 交流侧控制简单接线，直流侧控制快速制动
  Simple switch at AC side, Fast braking at DC side.
- 环境温度：-40°C~70°C
  Ambient Temperature: -40°C~70°C

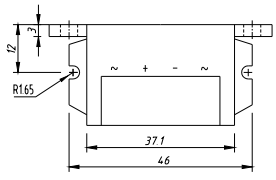
半波整流器
Half-Wave Rectifier

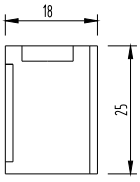
RZL241-170

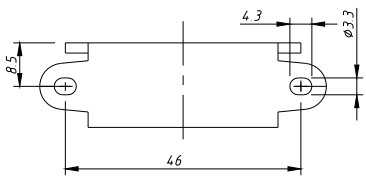
全波整流器
Full-Wave Rectifier



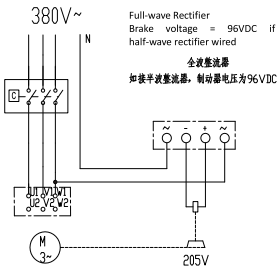
RZL141-170H



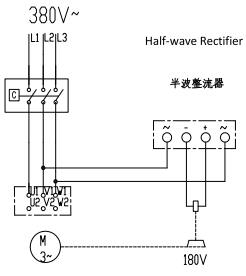




接线示意图 Wiring diagrams



电机供电
慢速制动
Powered by Motor
Braking Slowly



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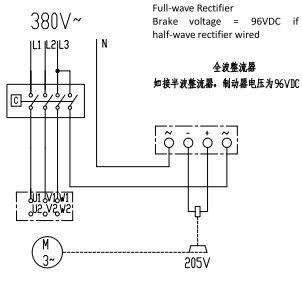

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