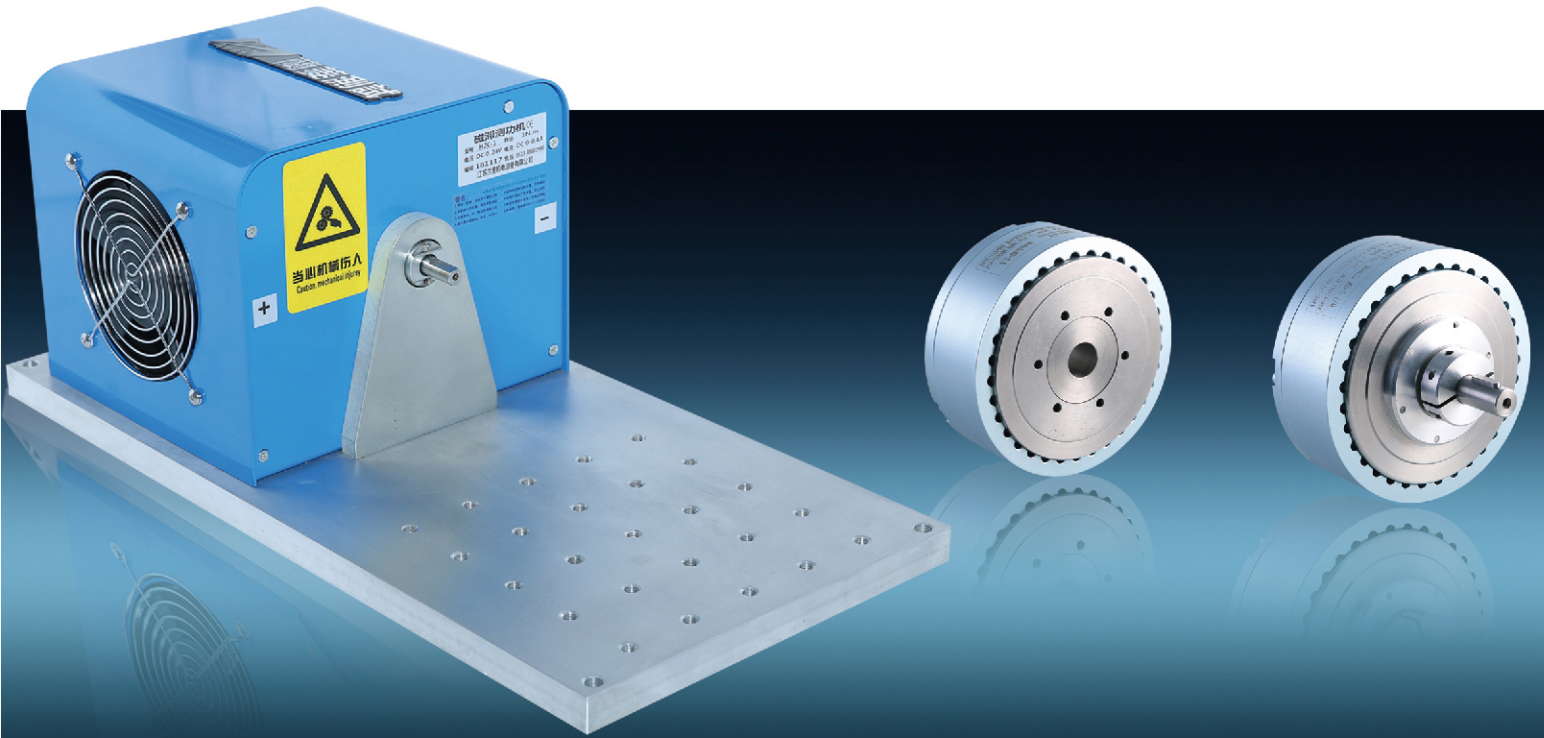


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兰菱科技

磁滞制动器 / 磁滞离合器 / 磁滞测功机

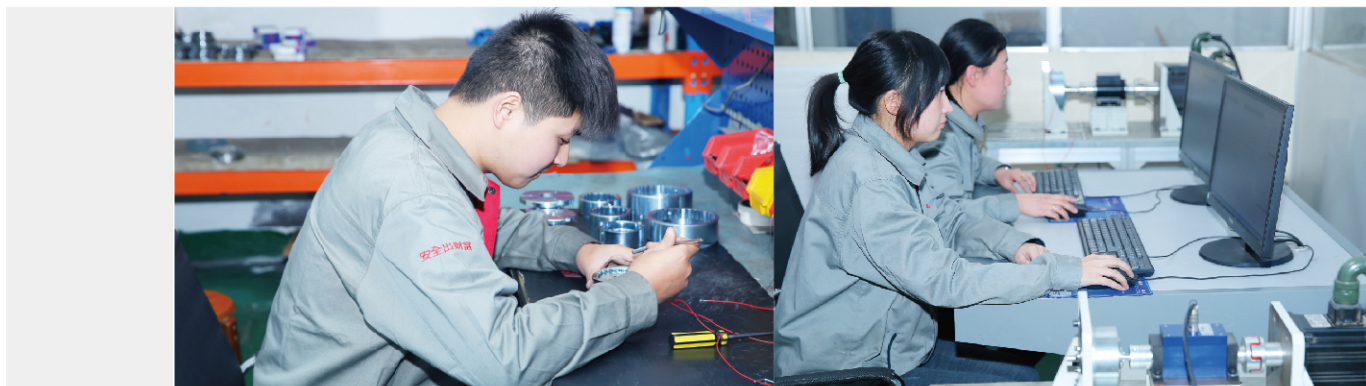
Lanmec Technology

Hysteresis brake

Hysteresis clutch

Hysteresis dynamometer





卓越与生俱来

Excellence is born



Catalogue 目录



磁滞测功机
Hysteresis dynamometer

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磁滞制动器
Hysteresis brake

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Hysteresis clutch

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张力控制器
Tension controller

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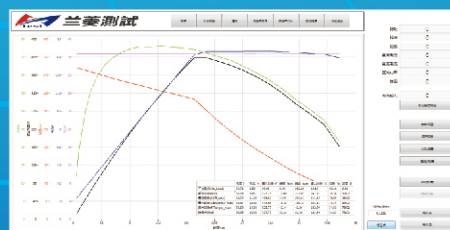
程控加载电源
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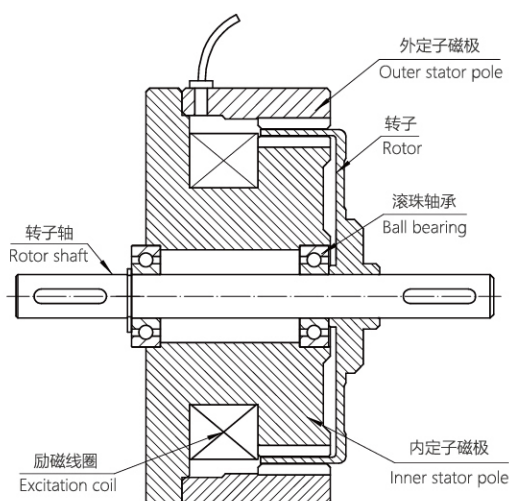
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Motor, reducer test software

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概述 Overview

磁滞制动器是一种优越的扭矩、张力控制部件。它利用磁滞原理，通过控制输入的励磁电流，产生一定的扭矩。控制电流和输出扭矩有较好的线性关系。它能提供光滑、无级可调、与转速无关的扭矩控制。除了轴承以外，系统内无其它摩擦，具有稳定可靠、使用转速高、噪音小、使用寿命长、维护成本低等优点。

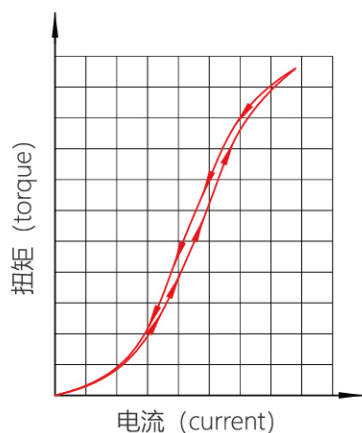
Hysteresis brake is a superior torque and tension control component. It uses hysteresis principle to generate a certain amount of torque by controlling the input excitation current. There is a good linear relationship between control current and output torque. It provides smooth, steplessly adjustable, torque control unrelated with speed. In addition to the bearings, there is no other friction in the system, which has the advantages of stable and reliable, high speed of use, low noise, long service life and low maintenance cost.



结构特征 Structure characteristics

磁滞制动器由转子和定子磁极两大部分组成。转子由特殊的磁滞材料制成，定子磁极中有一定的间隙，转子在间隙中转动。当线圈通电时，间隙中产生磁场，使转子产生磁滞效应。当磁滞转子在外力作用下克服磁滞力转动时，产生扭矩。扭矩仅与励磁电流大小有关，与转速无关，能够实现非接触的扭矩传递。

Hysteresis brake consists of two parts, the rotor and the stator pole. The rotor is made of a special hysteresis material, stator pole has a certain gap, rotor rotates in the gap. When the coil is energized, magnetic field is generated in the gap, causing a hysteresis effect on the rotor. When the hysteresis rotor rotates against the hysteresis force under the action of an external force, torque is generated. Torque is only related to the excitation current, irrelevant with speed, can achieve non-contact torque transfer.



励磁电流对应扭矩的特性曲线
Torque characteristic curve of the
Corresponding excitation current

特点 Features

励磁电流与输出扭矩基本成线性关系，传送扭矩在额定值的5-100%范围内可以精确控制，小电流可以控制输出较大的扭矩。

无论滑转速度的变化如何，其传送的扭矩能基本保持不变。能够在容许的滑差功率下连续运转。

Excitation current is basically linear with the output torque, which can be controlled within 5-100% of the rated value. Large output torque controlled by a relatively low current is possible.

Transmission torque can keep constant, no matter how the slipping speed changes. It can operate continuously under the allowable slip power.

计算方法 Calculation method

在卷线加工的场所，常常需要用到张力控制，此时的线材、带材上的实际张力，由以下公式确定。

$$F=M \div R$$

F—张力N (牛顿)

R—材料卷筒半径m (米)

M—扭矩N.m (牛.米)

磁滞制动器工作过程中，消耗的功率会转化为热量。如果超过额定的滑差功率，则会因过热而损伤器件。

$$\text{滑差功率 } P=M \times n \div 9.55=F \times V$$

P—滑差功率w (瓦)

n—滑差转速rpm (转/分)

M—传递扭矩N.m (牛.米)

F—张力N (牛顿)

V—线速度m/s (米/秒)

In the case of winding processing, tension control is often required. The actual tension on the wire and strip at this time is determined by the following formula.

$$F=M \div R$$

F-tension N (Newton)

R—material roll radius m (m)

M—torque N.m (N.m)

During the operation of hysteresis brake, the power consumed is converted into heat. If the rated slip power is exceeded, the device will be damaged by overheating.

$$\text{Slip power } P=M \times n \div 9.55=F \times V$$

P—slip power w (Watt)

n—slip speed rpm (r/min)

M—transfer torque N.m (N.m)

F-tension N (Newton)

V-line speed m/s (m/s)

如何避免残余扭矩 How to avoid residual torque

使用磁滞制动器时最需注意的问题之一就是残留扭矩波。所谓残留扭矩波，就是当断开励磁电流，内部还残留有N极S极的交变磁极，继续旋转会出现残余波状的扭矩偏差现象。如果在没有旋转的状态下断开励磁电流，则会产生励磁电流断开前扭矩值5~10%的残留扭矩，表现特征为在旋转时产生一跳一跳的抖动现象（脉动状）。重新启动时，如果使用断开前电流值60~70%以上的励磁电流重新启动时，则残留扭矩波不会产生。例如断开前电流为250mA，第二次启动时电流为150mA时，则不产生残余扭矩，而小于150mA的电流如100mA启动时，就会产生残余扭矩。

消除和防止残留扭矩波发生的方法如下：

①通常使用时

转速在50r/min以上时，断开励磁电流几乎不会发生残留扭矩波。但是，有些机型以不同的电流断开速度，有时会残余少许残留扭矩。这时需要进一步增加转速。

②转速较低时(相对转速在50r/min以下时)

10~50r/min (1秒) 5~10r/min (5秒) 5r/min以下 (20秒以上)

若按照上述时间缓慢断开励磁电流，则不会发生残留扭矩。

③施加与励磁电流方向相反的电流

有残留扭矩波时，将励磁线圈的正负极对调，并短时施加断开电流前的30~50%电流。但这时如果输入转子和输出转子相互独立，会由于磁极偏离而没有效果，需预先保持定子和转子无相对旋转。然而，因机型和断开电流值的不同，最佳逆向电流值也不相同，所以虽然可以在一定程度上减少残留扭矩波，但是完全消除仍比较困难。

One of the most important issues to be aware of when using a hysteresis brake is the residual torque wave. The residual torque wave is that when the excitation current is turned off, the alternating magnetic pole of the N pole S pole remains inside, and the residual wave-shaped torque deviation phenomenon occurs when the rotation continues. If the excitation current is disconnected without rotation, a residual torque of 5 to 10% of the torque value before the excitation current is turned off occurs, and the characteristic is a jitter phenomenon (pulsation) that generates one hop and one hop during rotation. When restarting, if the excitation current of 60~70% or more before the disconnection is restarted, the residual torque wave will not occur. For example, if the current is 250 mA before disconnection and 150 mA when restarting, no residual torque will be generated, and when the current is less than 150 mA, such as 100 mA, residual torque will be generated.

The method to eliminate and prevent residual torque waves is as follows:

1. Usually used

When the rotation speed is 50 r/min or more, the residual torque wave hardly occurs when the excitation current is turned off. However, some models has different current breaking speeds, sometimes leave a little residual torque. At this time, it is necessary to further increase the rotational speed.

2. When the speed is low (when the relative speed is below 50r/min)

10~50r/min (1 second) 5~10r/min (5 seconds) 5r/min or less (20 seconds or more)

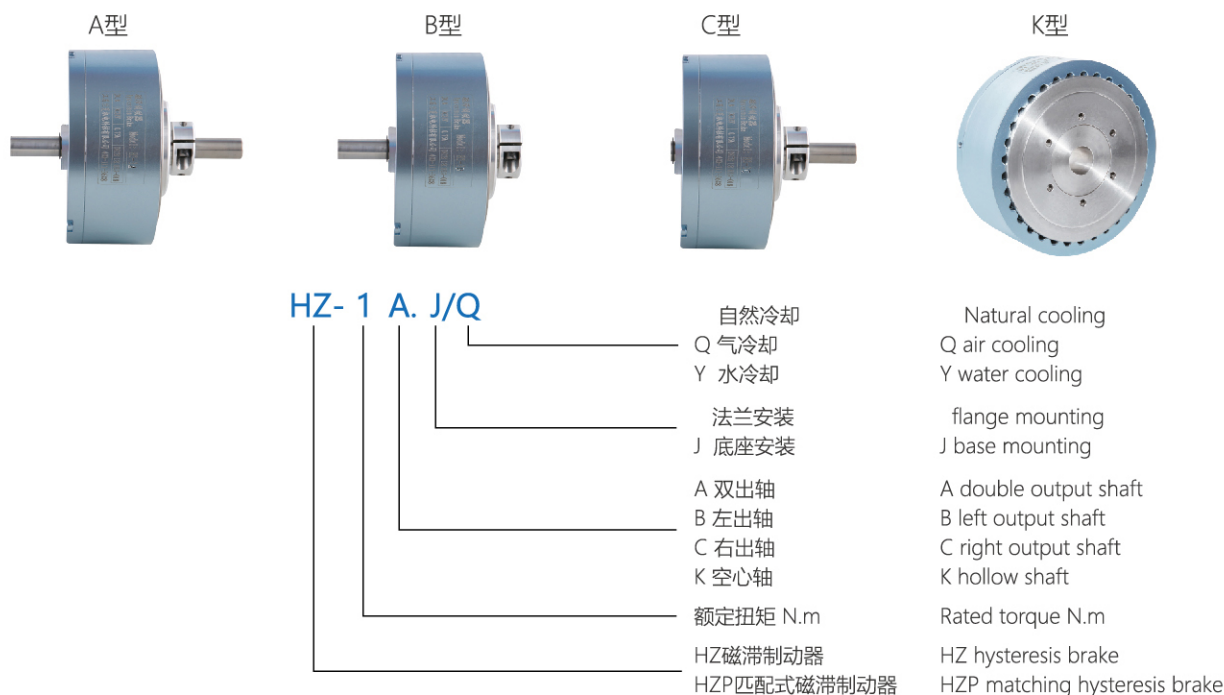
If the excitation current is slowly turned off in accordance with the above time, residual torque does not occur.

3. Apply a current opposite to the direction of the excitation current

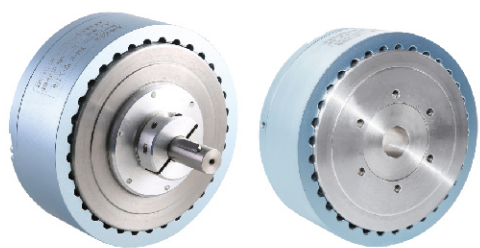
When there is a residual torque wave, reverse the positive and negative poles of the excitation coil, apply 30 to 50% of the current before the current is turned off for a short time. However, if the input rotor and the output rotor are independent of each other, there is no effect due to the deviation of the magnetic poles, and it is necessary to maintain there is no relative rotation of the stator and the rotor in advance. However, the optimum reverse current value is different depending on the model and the disconnected current value, so although the residual torque wave can be reduced to some extent, it is still difficult to completely eliminate it.

磁滞制动器 Hysteresis brake

型号定义 Model definition



HZ系列自冷式磁滞制动器 HZ Series Self Cooling Hysteresis Brake

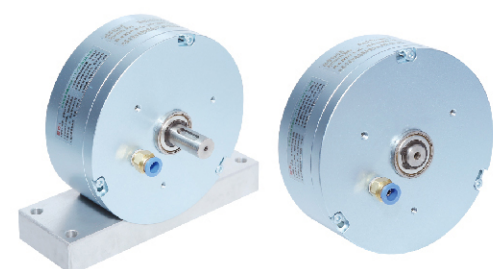


分为单出轴磁滞制动器、双出轴磁滞制动器、空心轴磁滞制动器。
主要应用于高速绕线设备的放卷；电机、小型内燃机、齿轮箱及其它旋转装置的寿命测试的模拟负载；高端运动器材的精确负载。

There are three types of self cooling hysteresis brakes: single output shaft brakes, double output shaft brakes and hollow shaft hysteresis brakes.

It is widely used in the unwinding of high speed winding equipment; motor, small internal combustion engine, gearboxes and the simulated load of the life test of other rotating devices; the precise load of high-end sports equipment.

HZ-Q系列气冷式磁滞制动器 HZ-Q Series Air Cooling Hysteresis Brake

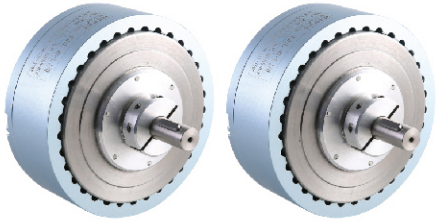


以自冷式磁滞制动器为基础，在定子磁极上加上气冷装置。
当制动器长时间工作时，会使其温度急剧升高，气冷式磁滞制动器可在较高滑差功率下长时间连续运转。

The design is based on the foundation of self cooling hysteresis brake with add an air cooled device to stator pole.

As the brake's temperature rises with the time of operation, this kind of brake is perfect for long time continuous operation under high slipping power.

MHZ系列匹配式磁滞制动器 MHZ Series Matched Hysteresis Brake



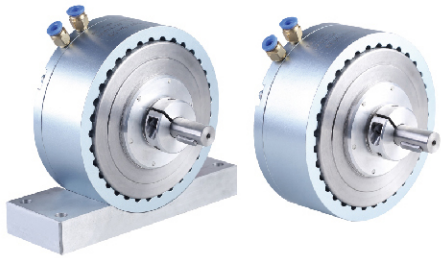
在多个电流特定点其扭矩都非常接近，仅使用一套控制系统即可实现多轴张力控制，其精度高于普通的磁滞制动器。

广泛应用于多卷纱线、玻纤放卷装置及电缆、绳索等加工设备。

The torque is very close at a multiple currents specific point, and multi-shaft tension control can be achieved with only one control system, precision is higher than the normal hysteresis brake.

Widely used in processing equipment such as multi-roll yarns, glass fiber unwinding devices and cables and ropes.

HZ-Y系列水冷式磁滞制动器 HZ-Y Series Water Cooling Hysteresis Brake



以自冷式磁滞制动器为基础，内部加以水冷却通道，通过水冷却来吸收连续滑差产生的热量。具有噪音低、功率大的优点。广泛应用于测试负载和高速大张力放卷场合。

(具体尺寸请来电索取)

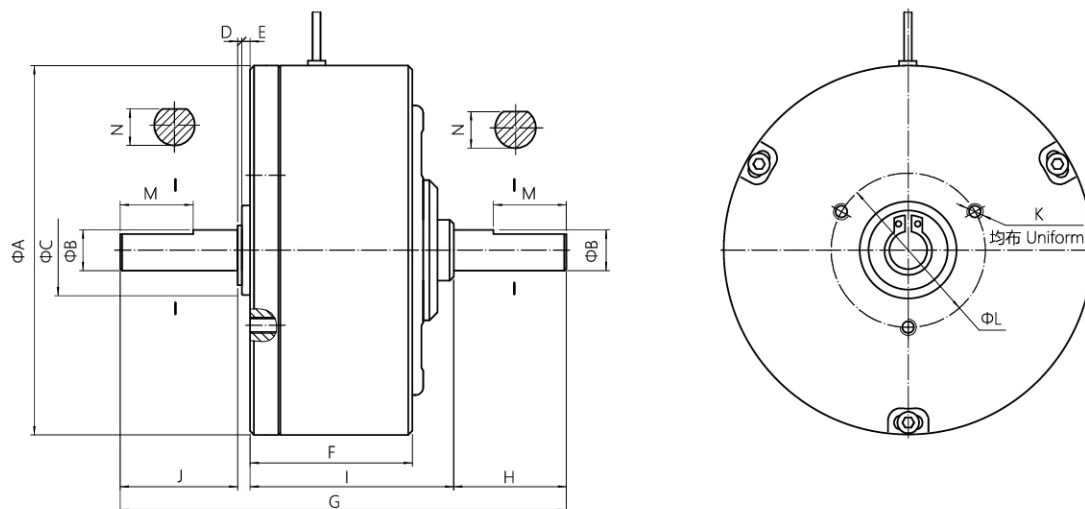
Based on the self cooling hysteresis brake, water cooling channel is internally provided to absorb heat generated by continuous slip by water cooling. It has the advantages of low noise and high power. Widely used in test loads and high speed large tension unwinding applications. (Please call for specific sizes)

HZ自冷式磁滞制动器 HZ Self Cooling Hysteresis Brake

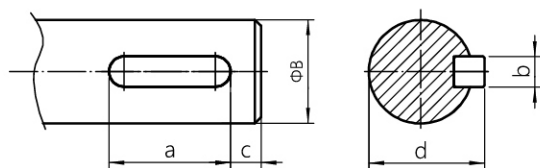
规格参数 Specification

型号 Model	额定扭矩 Rated torque N.m	额定电流 Rated current mA	电压 Voltage VDC	线圈电阻 (于25°±10%) Coil resistance at 25°±10% Ω(Ohm)	额定滑差功率 Rated slip power		惯性矩 Moment of inertia Kg·cm ²	最高转速 Max speed rpm	重量 Weight Kg
					5分钟5min watts	持续Continuous watts			
HZ-0.003	0.003	135	24	180	8	2	3.3×10 ⁻⁴	20000	0.12
HZ-0.02	0.02	192	24	125	25	6	1.5×10 ⁻³	20000	0.15
HZ-0.03	0.03	208	24	115	30	8	6.8×10 ⁻³	20000	0.21
HZ-0.05	0.05	208	24	115	30	8	6.8×10 ⁻³	20000	0.21
HZ-0.07	0.07	200	24	112	40	10	1.2×10 ⁻²	20000	0.26
HZ-0.1	0.1	200	24	120	55	15	4.6×10 ⁻²	20000	0.39
HZ-0.2	0.2	203	24	118	75	20	6.8×10 ⁻²	15000	0.51
HZ-0.3	0.3	390	24	62	120	35	1.8×10 ⁻¹	15000	0.9
HZ-0.5	0.5	390	24	62	120	35	1.8×10 ⁻¹	15000	0.9
HZ-1	1	400	24	60	320	80	1.1×10 ⁰	15000	1.8
HZ-2	2	315	24	76	460	115	3.2×10 ⁰	10000	3.5
HZ-3	3	750	24	32	680	165	6.8×10 ⁰	10000	5.2
HZ-5	5	750	24	32	1000	200	1.3×10 ¹	10000	9.6
HZ-6	6	750	24	32	1000	200	1.4×10 ¹	10000	9.6
HZ-10	10	1200	24	20	1200	350	6.2×10 ¹	10000	21.8
HZ-12	12	1200	24	20	1200	350	6.2×10 ¹	10000	21.8
HZ-15	15	1200	24	20	1200	350	6.2×10 ¹	10000	21.8

HZ-A型 双出轴磁滞制动器 外形尺寸 HZ-A Type Double Output Shaft Hysteresis Brake Dimension

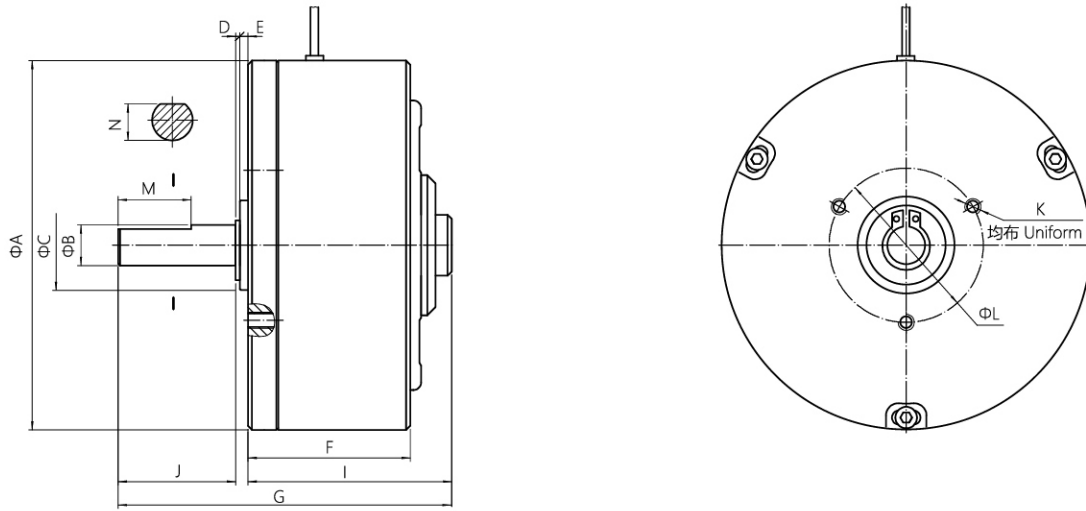


型号 Model	ΦA	ΦB(h6)	ΦC(h6)	D	E	F	G	H	I	J	K	ΦL	M	N
HZ-0.003 A	35	2	6	0.4	-	20	50	13	23.5	13	3-M3↓5	20	-	-
HZ-0.02 A	35	3	8	0.5	-	22	50	10.7	25.8	13	3-M3↓5	20	8	2.7
HZ-0.03 A	42	4	11	0.5	-	23.5	58	14	28.5	15	3-M3↓5	26	10	3.6
HZ-0.05 A	42	4	11	0.5	-	23.5	58	14	28.5	15	3-M3↓5	26	10	3.6
HZ-0.07 A	46	5	13	0.6	1.5	23.2	60	14	28.5	15.4	3-M3↓6	26	10	4.6
HZ-0.1 A	53	6	15	0.8	2	26	75	21	32	20	3-M3↓6	30	12	5.5
HZ-0.2 A	58	6	15	0.8	2	27	75	20	32	20	3-M4↓6	30	12	5.5
HZ-0.3 A	69	8	22	1	3	35	95	25.5	41	25	3-M4↓8	40	15	7.2
HZ-0.5 A	69	8	22	1	3	35	95	25.5	41	25	3-M4↓8	40	15	7.2
HZ-1 A	91	10	22	1	2	40	110	27	51	29	3-M4↓10	38	18	9
HZ-2 A	115	12	28	1	4	51	132	31.4	64.5	31	3-M5↓10	70	键槽 (见下表) Keyway (see table below)	
HZ-3 A	138	15	32	1.2	3.5	53	145	30	79.8	30.7	3-M5↓10	80		
HZ-5 A	157	17	35	1.2	4	73	181.5	38	100.5	38	3-M6↓10	90		
HZ-6 A	157	17	35	1.2	4	73	181.5	38	100.5	38	3-M6↓10	90		
HZ-10 A	226	25	52	1.3	6	76.5	213	48	108.9	48.9	3-M6↓12	100		
HZ-12 A	226	25	52	1.3	6	76.5	213	48	108.9	48.9	3-M6↓12	100		
HZ-15 A	226	25	52	1.3	6	76.5	213	48	108.9	48.9	3-M6↓12	100		

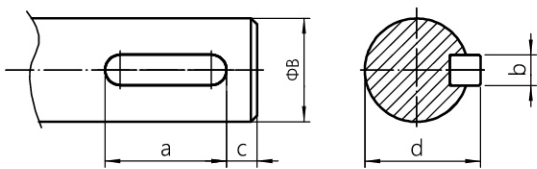


型号 Model	ΦB(h6)	a	b	c	d
HZ-2 A	12	20	4	5	13.5
HZ-3 A	15	20	5	6	17
HZ-5 A	17	20	5	6	20
HZ-10 A	25	25	8	12.5	28
HZ-12 A	25	25	8	12.5	28
HZ-15 A	25	25	8	12.5	28

HZ-B型 左出轴磁滞制动器 外形尺寸 HZ-B Type Left Output Shaft Hysteresis Brake Dimension

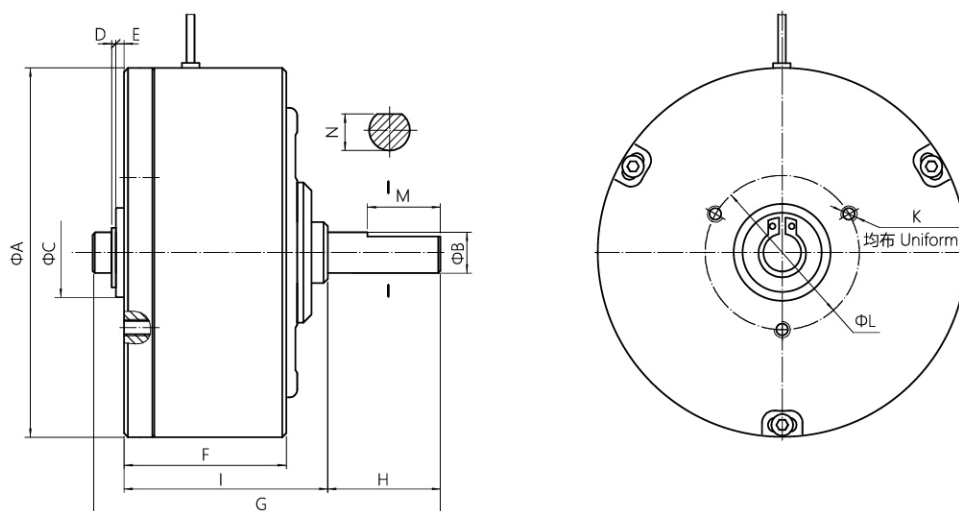


型号 Model	ΦA	ΦB(h6)	ΦC(h6)	D	E	F	G	I	J	K	ΦL	M	N
HZ-0.003 B	35	2	6	0.4	-	20	38	23.5	13	3-M3↓5	20	-	-
HZ-0.02 B	35	3	8	0.5	-	22	38	25.8	13	3-M3↓5	20	8	2.7
HZ-0.03 B	42	4	11	0.5	-	23.5	45	28.5	15	3-M3↓5	26	10	3.6
HZ-0.05 B	42	4	11	0.5	-	23.5	45	28.5	15	3-M3↓5	26	10	3.6
HZ-0.07 B	46	5	13	0.6	1.5	23.2	47	28.5	15.4	3-M3↓6	26	10	4.6
HZ-0.1 B	53	6	15	0.8	2	26	55	32	20	3-M3↓6	30	12	5.5
HZ-0.2 B	58	6	15	0.8	2	27	55	32	20	3-M4↓6	30	12	5.5
HZ-0.3 B	69	8	22	1	3	35	70	41	25	3-M4↓8	40	15	7.2
HZ-0.5 B	69	8	22	1	3	35	70	41	25	3-M4↓8	40	15	7.2
HZ-1 B	91	10	22	1	2	40	84	51	29	3-M4↓10	38	18	9
HZ-2 B	115	12	28	1	4	51	101	64.5	31	3-M5↓10	70	键槽 (见下表) Keyway (see table below)	
HZ-3 B	138	15	32	1.2	3.5	53	117	79.8	30.7	3-M5↓10	80		
HZ-5 B	157	17	35	1.2	4	73	146	100.5	38	3-M6↓10	90		
HZ-6 B	157	17	35	1.2	4	73	146	100.5	38	3-M6↓10	90		
HZ-10 B	226	25	52	1.3	6	76.5	167	108.9	48.9	3-M6↓12	100		
HZ-12 B	226	25	52	1.3	6	76.5	167	108.9	48.9	3-M6↓12	100		
HZ-15 B	226	25	52	1.3	6	76.5	167	108.9	48.9	3-M6↓12	100		

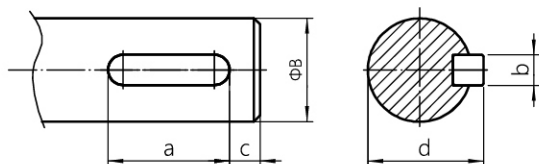


型号 Model	ΦB(h6)	a	b	c	d
HZ-2 B	12	20	4	5	13.5
HZ-3 B	15	20	5	6	17
HZ-5 B	17	20	5	6	20
HZ-10 B	25	25	8	12.5	28
HZ-12 B	25	25	8	12.5	28
HZ-15 B	25	25	8	12.5	28

HZ-C型 右出轴磁滞制动器 外形尺寸 HZ-C Type Right Output Shaft Hysteresis Brake Dimension

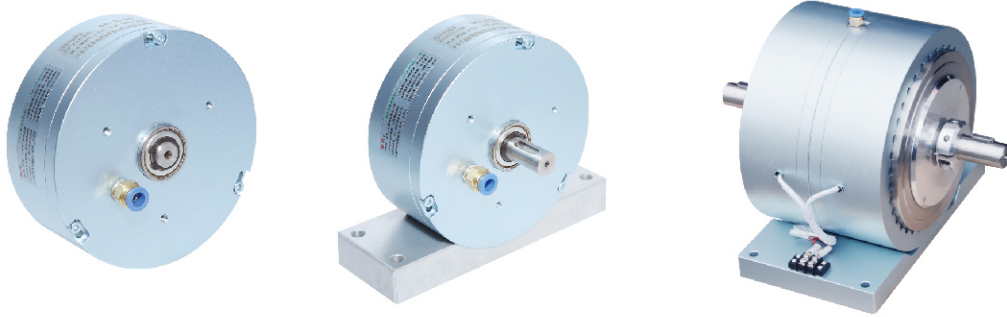


型号 Model	ΦA	ΦB(h6)	ΦC(h6)	D	E	F	G	H	I	K	ΦL	M	N
HZ-0.003C	35	2	6	0.4	-	20	40	13	23.5	3-M3↓5	20	-	-
HZ-0.02C	35	3	8	0.5	-	22	40	10.7	25.8	3-M3↓5	20	8	2.7
HZ-0.03C	42	4	11	0.5	-	23.5	46	14	28.5	3-M3↓5	26	10	3.6
HZ-0.05C	42	4	11	0.5	-	23.5	46	14	28.5	3-M3↓5	26	10	3.6
HZ-0.07C	46	5	13	0.6	1.5	23.2	48	14	28.5	3-M3↓6	26	10	4.6
HZ-0.1C	53	6	15	0.8	2	26	58	21	32	3-M3↓6	30	12	5.5
HZ-0.2C	58	6	15	0.8	2	27	58	20	32	3-M4↓6	30	12	5.5
HZ-0.3C	69	8	22	1	3	35	72	25.5	41	3-M4↓8	40	15	7.2
HZ-0.5C	69	8	22	1	3	35	72	25.5	41	3-M4↓8	40	15	7.2
HZ-1C	91	10	22	1	2	40	84	27	51	3-M4↓10	38	18	9
HZ-2C	115	12	28	1	4	51	104	31.4	64.5	3-M5↓10	70	键槽 (见下表) Keyway (see table below)	
HZ-3C	138	15	32	1.2	3.5	53	118	30	79.8	3-M5↓10	80		
HZ-5C	157	17	35	1.2	4	73	146	38	100.5	3-M6↓10	90		
HZ-6C	157	17	35	1.2	4	73	146	38	100.5	3-M6↓10	90		
HZ-10C	226	25	52	1.3	6	76.5	167	48	108.9	3-M6↓12	100		
HZ-12C	226	25	52	1.3	6	76.5	167	48	108.9	3-M6↓12	100		
HZ-15C	226	25	52	1.3	6	76.5	167	48	108.9	3-M6↓12	100		



型号 Model	ΦB(h6)	a	b	c	d
HZ-2C	12	20	4	5	13.5
HZ-3C	15	20	5	6	17
HZ-5C	17	20	5	6	20
HZ-10C	25	25	8	12.5	28
HZ-12C	25	25	8	12.5	28
HZ-15C	25	25	8	12.5	28

HZ-Q型 气冷却磁滞制动器 HZ-Q Type Air Cooling Hysteresis Brake

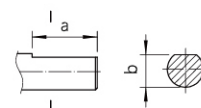
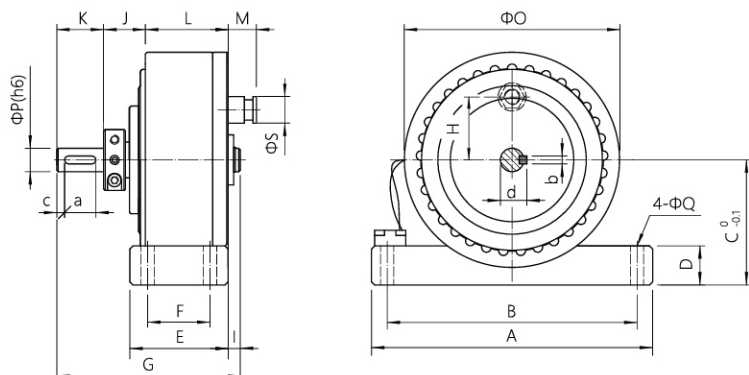


规格参数 Specification

型号 Model	额定扭矩 Rated torque	额定电流 Rated current	电压 Voltage	线圈电阻 (于25°±10%) Coil resistance at 25°±10%	额定滑差功率 Rated slip power				惯性矩 Moment of inertia	最高转速 Max speed	重量 Weight	
					加压缩空气 Add compressed air		不加压缩空气 No compressed air					
					5分钟 5min	持续 Continuous	5分钟 5min	持续 Continuous				
	N.m	mA	VDC	Ω(Ohm)	watts	watts	watts	watts	Kg·cm ²	rpm	Kg	
不带底座 Without base	HZ-0.3/Q	0.3	390	24	62	200	200	75	20	1.8x10 ⁻¹	25000	1.35
	HZ-0.5/Q	0.5	390	24	62	400	400	120	35	1.8x10 ⁻¹	25000	1.35
	HZ-1/Q	1	400	24	60	800	800	320	80	1.1x10 ⁰	25000	1.8
	HZ-2/Q	2	315	24	76	1000	800	460	115	3.2x10 ⁰	25000	3.5
	HZ-3/Q	3	750	24	32	1300	1100	680	165	6.8x10 ⁰	20000	5.2
	HZ-5/Q	5	750	24	32	2300	2000	1000	200	1.3x10 ¹	15000	9.6
	HZ-6/Q	6	750	24	32	2300	2000	1000	200	1.4x10 ¹	15000	9.6
	HZ-10/Q	10	1200	24	20	2800	2500	1200	350	6.2x10 ¹	10000	21.8
	HZ-12/Q	12	1200	24	20	2800	2500	1200	350	6.2x10 ¹	10000	21.8
HZ-15/Q	15	1200	24	20	2800	2500	1200	350	6.2x10 ¹	10000	21.8	
	N.m	mA	VDC	Ω(Ohm)	watts	watts	watts	watts	Kg·cm ²	rpm	Kg	
带底座 With base	HZ-0.3J/Q	0.3	390	24	62	200	200	120	35	1.8x10 ⁻¹	25000	1.65
	HZ-0.5J/Q	0.5	390	24	62	400	400	120	35	1.8x10 ⁻¹	25000	1.65
	HZ-1J/Q	1	400	24	60	800	800	320	80	1.1x10 ⁰	25000	2.1
	HZ-2J/Q	2	315	24	76	1000	800	460	115	3.2x10 ⁰	25000	3.8
	HZ-3J/Q	3	750	24	32	1300	1100	680	165	6.8x10 ⁰	20000	5.7
	HZ-5J/Q	5	750	24	32	2300	2000	1000	200	1.3x10 ¹	15000	11
	HZ-6J/Q	6	750	24	32	2300	2000	1000	200	1.4x10 ¹	15000	11
	HZ-10J/Q	10	1200	24	20	2800	2500	1200	350	6.2x10 ¹	10000	21.8
	HZ-12J/Q	12	1200	24	20	2800	2500	1200	350	6.2x10 ¹	10000	21.8
	HZ-15J/Q	15	1200	24	20	2800	2500	1200	350	6.2x10 ¹	10000	21.8
	HZ-24J/Q	24	1600	24	15	5300	3000	2000	450	1.24x10 ²	10000	44
	HZ-30J/Q	30	1600	24	15	5300	3000	2000	450	1.24x10 ²	10000	44
	HZ-40J/Q	40	1600	24	15	7000	3200	4000	450	7.85x10 ²	4000	65
	HZ-50J/Q	50	1600	24	15	7000	3200	4000	450	7.85x10 ²	4000	65
HZ-100J/Q	100	1600	24	15	8500	3500	4300	500	1.28x10 ³	3000	120	

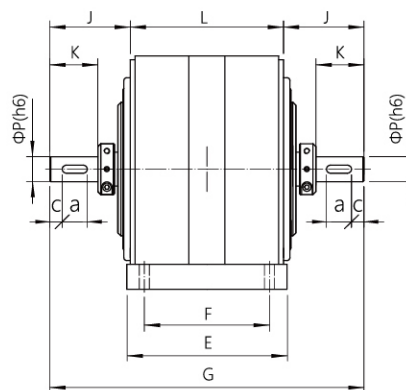
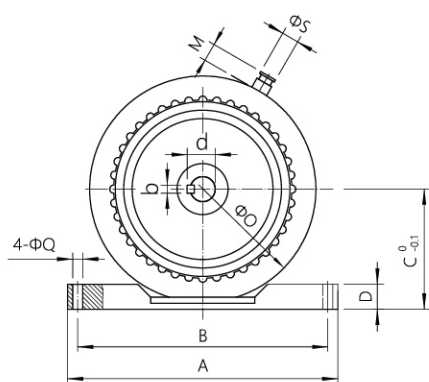
HZ-J/Q型 底座式气冷却磁滞制动器 外形尺寸

HZ-J/Q Base Type Air Cooling Hysteresis Brake Dimension



型号 Model	a	b
HZ-0.3 J/Q	15	7.2
HZ-0.5 J/Q	15	7.2
HZ-1 J/Q	18	9

型号 Model	A	B	C	D	E	F	G	I	J	K	L	M	ΦO	ΦP(h6)	ΦQ	H	ΦS	a	b	c	d
HZ-0.3 J/Q	110	95	42	12	45.5	30	72	3	6.5	25	34.5	16	69	8	7	50	10	铣扁 (见上表) Milling flat (see table above)			
HZ-0.5 J/Q	110	95	42	12	45.5	30	72	3	6.5	25	34.5	16	69	8	7	50	10				
HZ-1 J/Q	140	120	55	15	43	25	84	6	10.2	27.8	40	16	91	10	7	61	10				
HZ-2 J/Q	150	130	70	18	51	30	104	7.9	13.6	31.4	51	16	115	12	7	75	18	20	4	5	13.5
HZ-3 J/Q	180	160	80	25	63	40	118	8.2	26.8	30	53	18	138	15	9	32	20	20	5	5	17
HZ-5 J/Q	220	200	90	25	75	60	146	7.5	27.5	38	73	18	157	17	9	31	20	20	5	5	19
HZ-6 J/Q	220	200	90	25	75	60	146	7.5	27.5	38	73	18	157	17	9	31	20	20	5	5	19
HZ-10 J/Q	270	250	120	25	80	55	167	10	32.4	48	76.5	18	226	25	9	45	20	25	8	12.5	28
HZ-12 J/Q	270	250	120	25	80	55	167	10	32.4	48	76.5	18	226	25	9	45	20	25	8	12.5	28
HZ-15 J/Q	270	250	120	25	80	55	167	10	32.4	48	76.5	18	226	25	9	45	20	25	8	12.5	28

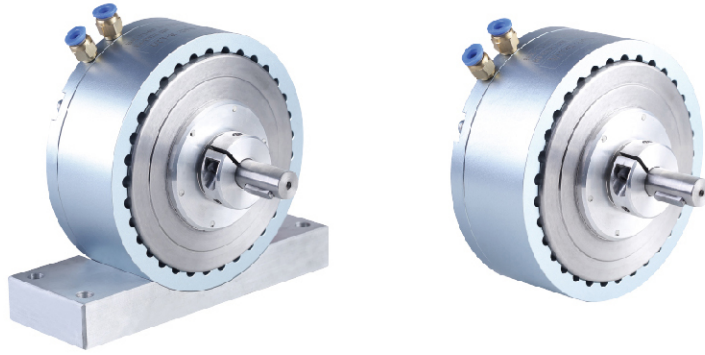


型号 Model	A	B	C	D	E	F	G	J	K	L	M	ΦO	ΦP(h6)	ΦQ	S	a	b	c	d
HZ-24 J/Q	270	250	120	25	160	125	314	80.5	48	153	18	226	25	9	20	25	8	12.5	28
HZ-30 J/Q	270	250	120	25	160	125	314	80.5	48	153	18	226	25	9	20	25	8	12.5	28
HZ-40 J/Q	320	280	180	20	190	150	360	81	48	189	18	316	25	12	20	25	8	10	28
HZ-50 J/Q	320	280	180	20	190	150	360	81	48	189	18	316	25	12	20	25	8	10	28
HZ-100 J/Q	320	280	180	20	280	240	475	93	48	289	18	316	30	12	20	25	8	10	33

加压缩空气—空气冷却设备需要用户自备，必须提供清洁、干燥的压缩空气；粉尘、铁屑、油、水不得进入制动器内部。

Adding compressed air - air cooling equipment need prepared by customers. Required clean and dry compressed air; dust, iron filings, oil, and water must not enter the brakes.

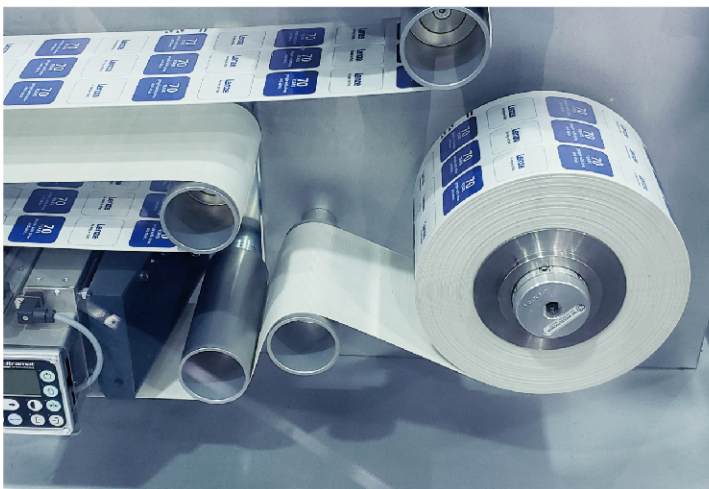
HZ-Y型 水冷却磁滞制动器 HZ-Y Type Water Cooling Hysteresis Brake



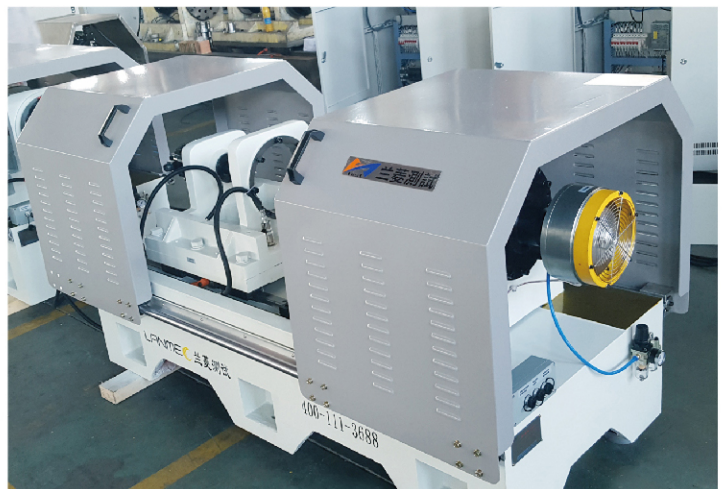
型号 Model	额定扭矩 Rated torque N.m	额定电流 Rated current mA	电压 Voltage VDC	线圈电阻 (于25°±10%) Coil resistance at 25°±10% Ω(Ohm)	额定滑差功率 Rated slip power		最高转速 Max speed rpm
					5分钟5min watts	持续Continuous watts	
HZ-1/Y	1	400	24	60	900	450	25000
HZ-2/Y	2	315	24	76	1000	500	25000
HZ-3/Y	3	750	24	32	1200	600	20000
HZ-5/Y	5	750	24	32	2000	1000	15000
HZ-6/Y	6	750	24	32	2000	1000	15000
HZ-10/Y	10	1200	24	20	3000	1500	10000
HZ-12/Y	12	1200	24	20	3000	1500	10000
HZ-15/Y	15	1200	24	20	3000	1500	10000
HZ-24/Y	24	1600	24	15	4000	2000	10000
HZ-30/Y	30	1600	24	15	4000	2000	10000
HZ-40/Y	40	1600	24	15	5000	2500	4000
HZ-50/Y	50	1600	24	15	5000	2500	4000
HZ-100/Y	100	1600	24	15	6000	3000	3000

具体尺寸请来电索取 Please call us for the specific sizes

应用场合 Application



应用于张力控制
Applied to tension control



应用于测功作为负载
Applied to dynamometer as load

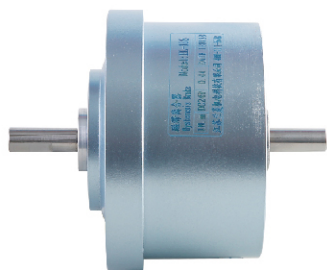
磁滞离合器 Hysteresis Clutch



HL- 1 A. J/Q

- 自然冷却 Natural cooling
- Q 气冷却 Q air cooling
- Y 水冷却 Y water cooling
- 法兰安装 flange mounting
- J 底座安装 J base mounting
- A 大小两边出轴 A double output shaft
- B 单轴，法兰输出 B single shaft, flange output
- C 大轴套小轴 C large shaft sleeve small shaft
- K 空心轴 K hollow shaft
- 额定扭矩 N.m Rated torque N.m
- HL磁滞离合器 HL hysteresis clutch
- HLP匹配式磁滞离合器 HLP matching hysteresis clutch

概述 Overview



磁滞离合器是根据磁滞原理，利用磁滞传送扭矩，励磁电流和传递扭矩基本成线性关系。在与滑差转速无关的情况下，能传递一定的扭矩，具有响应速度快、结构简单、无污染、无噪音、无冲击振动、节约能源等优点。是一种多用途、性能优越的自动控制元件。可广泛用于缓冲起动、过载保护、调速、卷绕系统中收卷的张力控制领域。

Hysteresis clutch is based on the hysteresis principle, and uses hysteresis to transmit torque. The excitation current and the transmitted torque are basically linear. In the case of no slip speed, it can transmit a certain torque, and has the advantages of fast response, simple structure, no pollution, no noise, no impact vibration, and energy conservation. It is a multi-purpose, superior performance automatic control component. It can be widely used in the field of tension control for buffer starting, overload protection, speed regulation, and winding in winding systems.

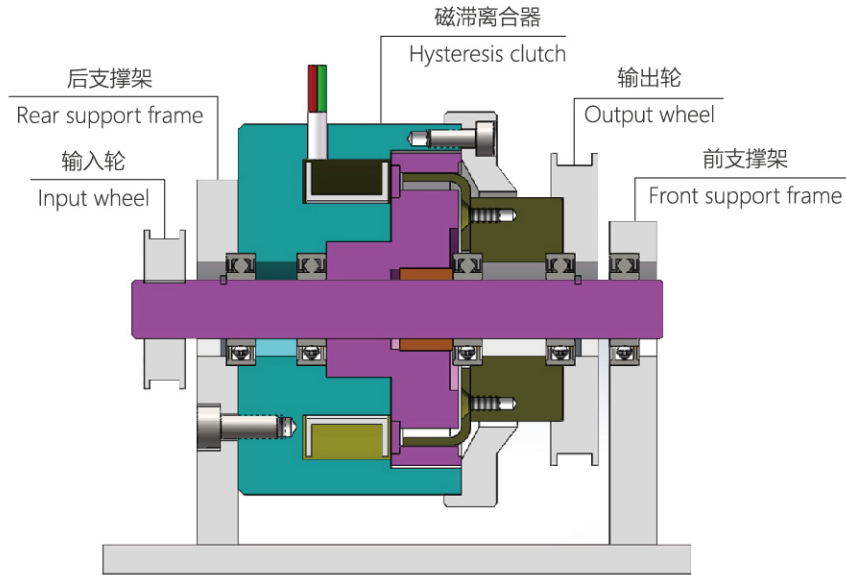
规格参数 Specification

型号 Model	额定扭矩 Rated torque	额定电流 Rated current	电压 Voltage	线圈电阻 (于25±10%) Coil resistance at 25±10%	额定滑差功率 Rated slip power		最高转速 Max speed
					5分钟5min	持续Continuous	
	N.m	mA	VDC	Ω(Ohm)	watts	watts	rpm
HL-0.03	0.03	210	24	115	45	10	3600
HL-0.1	0.1	300	24	75	70	20	3600
HL-0.3	0.3	480	24	50	120	38	3600
HL-0.5	0.5	480	24	50	120	38	3600
HL-1	1	342	24	70	300	70	3600
HL-2	2	530	24	45	460	115	3600
HL-3	3	750	24	32	800	165	3000
HL-5	5	750	24	32	1000	200	3000
HL-6	6	1200	24	20	1000	200	3000
HL-10	10	1200	24	20	1200	350	3000
HL-12	12	1200	24	20	1200	350	3000
HL-15	15	1200	24	20	1200	350	3000

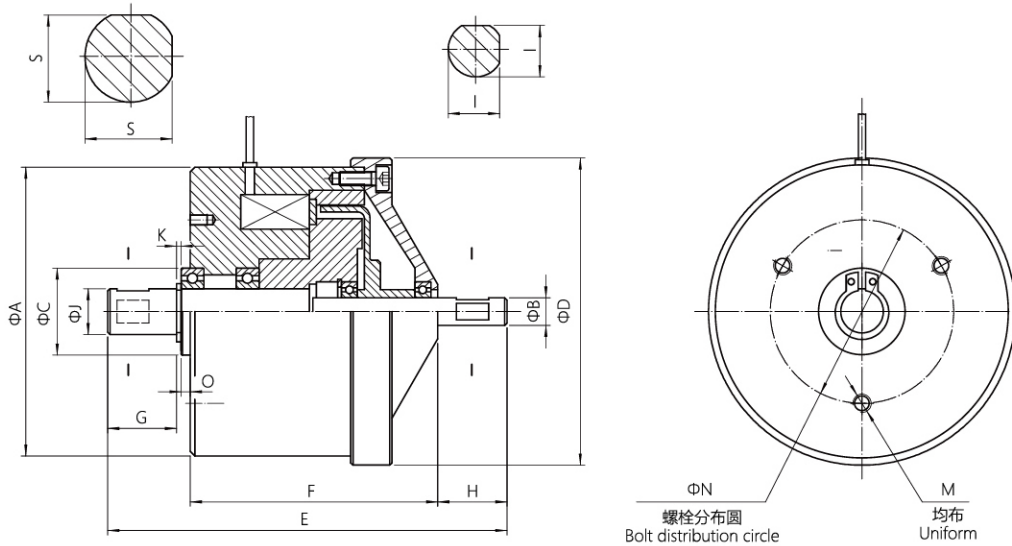
备注：以上列表为我公司自冷式磁滞离合器，如需其它规格，我公司可提供定制服务和技术支持。

Remarks: The products above are self cooling hysteresis clutches of our company. If you need other specifications, we can provide customized service and technology support.

安装示意图
 Installation Instruction

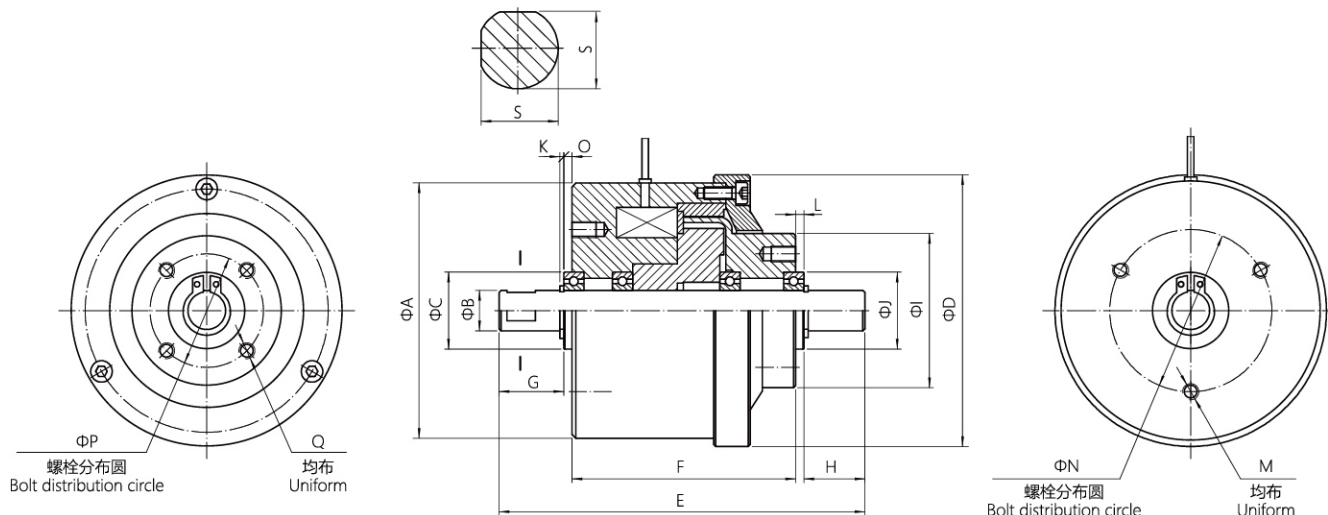


HL-A型 磁滞离合器 外形尺寸
 HL-A Type Hysteresis Clutch Dimension



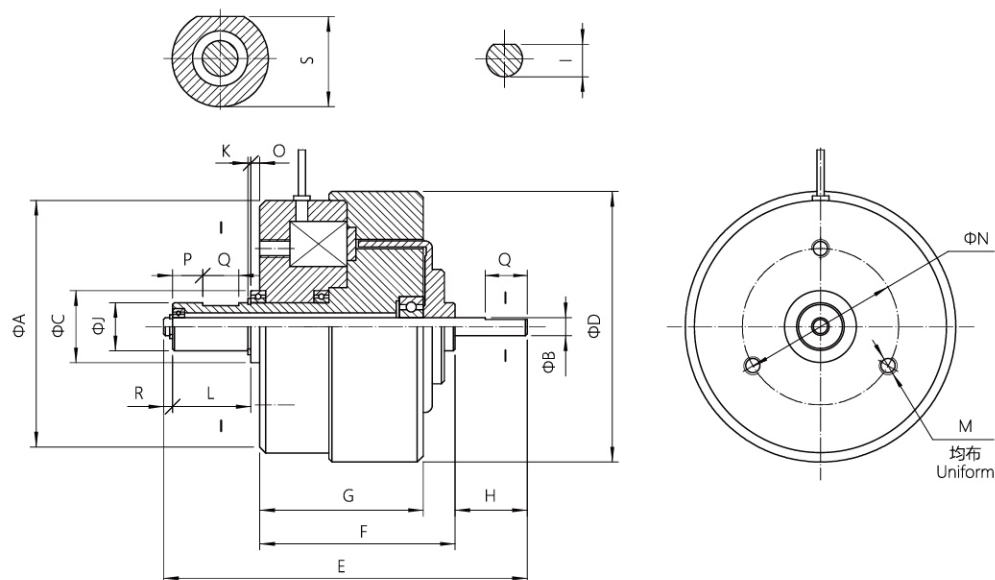
型号 Model	ΦA	ΦB(h6)	ΦC	ΦD	E	F	G	H	O	K	ΦJ(h6)	ΦN	M	S	I
HL-0.1A	63	6	19	67	87.1	54	15	15	2	1.1	10	40	3-M4 ↓ 6	9.5	5.6
HL-1A	98	10	32	102	137	77.8	30	24.2	4	1.1	15	50	3-M5 ↓ 10	14.2	9.4
HL-2A	127	12	42	133	121	94	27	27	6	1	20	60	3-M5 ↓ 12	19	11.5

HL-B型 磁滞离合器 外形尺寸 HL-B Type Hysteresis Clutch Dimension



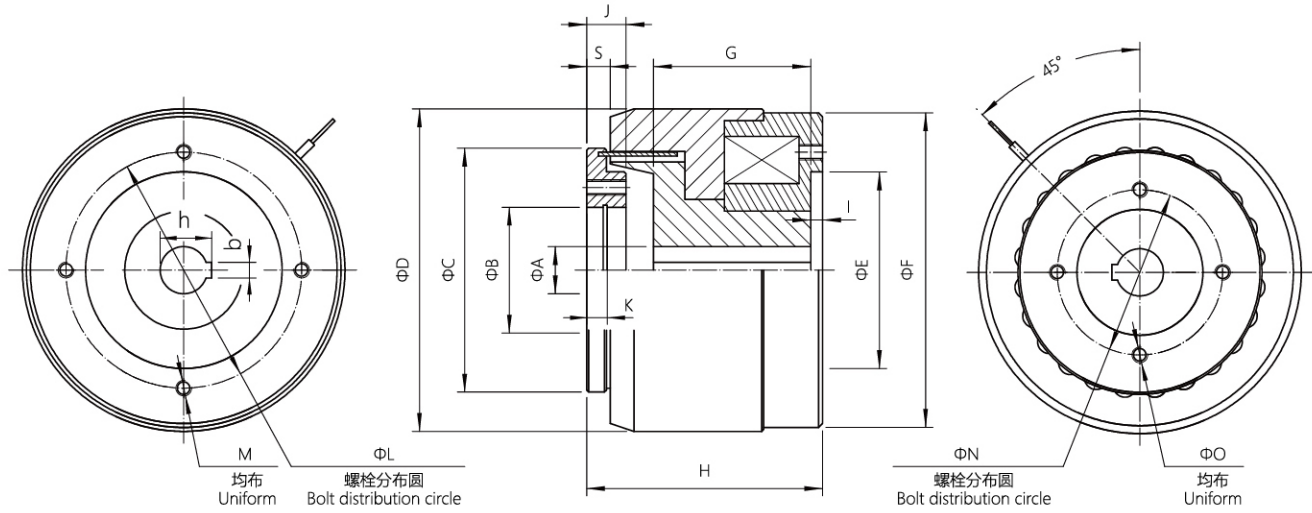
型号 Model	ΦA	$\Phi B(h6)$	$\Phi C(h6)$	ΦD	E	F	G	H	ΦI	$\Phi J(h6)$	K	L	M	ΦN	O	P	Q	S
HL-0.1B	63	10	19	67	90.3	54.2	15	15	37	19	1.1	2	4-M4 \downarrow 6	40	2	28	4-M4 \downarrow 6	9.5
HL-1B	98	15	32	102	160.5	75.5	30	46	58	28	1.1	3	4-M5 \downarrow 10	50	4	50	4-M5 \downarrow 6	14.2

HL-C型 磁滞离合器 外形尺寸 HL-C Type Hysteresis Clutch Dimension



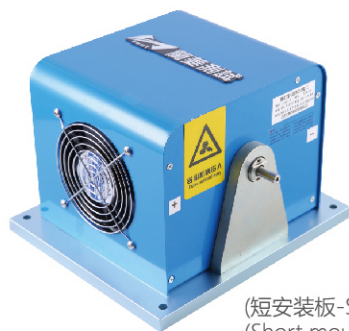
型号 Model	ΦA	$\Phi B(h6)$	$\Phi C(h6)$	ΦD	E	F	G	H	I	$\Phi J(h6)$	K	L	M	ΦN	O	P	Q	R	S
HL-0.03 C	42	3	12	45	60.5	32	27.2	12	2.7	8	0.5	13	3-M3 \downarrow 5	26	1.5	5	6	1.5	7.5
HL-0.3 C	69	8	28	-	97.5	43.6	37.6	25	7.5	15	1	25.3	3-M4 \downarrow 6	50	1	12	8	2.5	14.5
HL-0.5 C	69	8	28	-	97.5	43.6	37.6	25	7.5	15	1	25.3	3-M4 \downarrow 6	50	1	12	8	2.5	14.5

HL-K型 磁滞离合器 外形尺寸 HL-K Type Hysteresis Clutch Dimension



型号 Model	$\Phi A(H7)$	$b \times h$	ΦB	$\Phi C(h7)$	ΦD	$\Phi E(H7)$	ΦF	G	H	I	J	K	ΦL	M	ΦN	O
HL-0.3 K	12	-														
	12	4×13.8	32K7	62	82	50	80	40	60	3	10	5.2	60	4-M4↓6	42	3-M4↓10
HL-1 K	15	5×17.3														
	20	6×22.8														
HL-1 K	25	8×28.3	42K7	91	110	80	107	38	59	3	15	10.7	90	4-M5↓6	50	4-M5↓15
	30	8×33.3														
HL-3 K	20	6×22.8														
	30	8×33.3	52K7	116	148	100	140	50	79	3	16.5	12	116	4-M6↓10	80	4-M5↓16.5
HL-5 K	30	8×33.3														
	40	12×43.3	52K7	110	163	105	155	58	96	3	23	13	120	4-M6↓10	90	4-M6↓17.5
HL-5 K	50	14×53.8														
	30	8×33.3														
HL-6 K	40	12×43.3	52K7	110	163	105	155	58	96	3	23	13	120	4-M6↓10	90	4-M6↓17.5
	50	14×53.8														
HL-10 K	30	8×33.3														
	40	12×43.3	90H7	174	225	150	205	80	118	4	10	-	174	4-M8↓12	105	4-M8↓10
HL-10 K	50	14×53.8														
	30	8×33.3														
HL-12 K	40	12×43.3	90H7	174	225	150	205	80	118	4	10	-	174	4-M8↓12	105	4-M8↓10
	50	14×53.8														
HL-15 K	30	8×33.3														
	40	12×43.3	90H7	174	225	150	205	80	118	4	10	-	174	4-M8↓12	105	4-M8↓10
HL-15 K	50	14×53.8														

磁滞测功机 Hysteresis Dynamometer



(短安装板-S型)
(Short mounting plate - S type)



(长安装板-L型)
(Long mounting plate - L type)

概述 Overview

磁滞测功机适用于中小功率的电机测试，扭矩变化不受转速的影响，可以进行从空载到堵转的全过程测试。

根据冷却方式的不同，磁滞测功机分为四种类型：HZC型，分为风扇冷却和自然冷却两种冷却方式；HZC-Q型为压缩空气冷却；HZC-G型为鼓风机冷却；HZC-Y型为水冷却。

可选配专用的加载控制器来调节加载扭矩的大小，并通过TS-2000型转矩转速功率采集仪来采集电机的转矩、转速、功率。磁滞测功机的测量精度可达到满量程的 $\pm 0.2\%$ 。

本测功机性价比高，体积小，操作简易方便，同时可以根据客户的要求定做工装夹具。

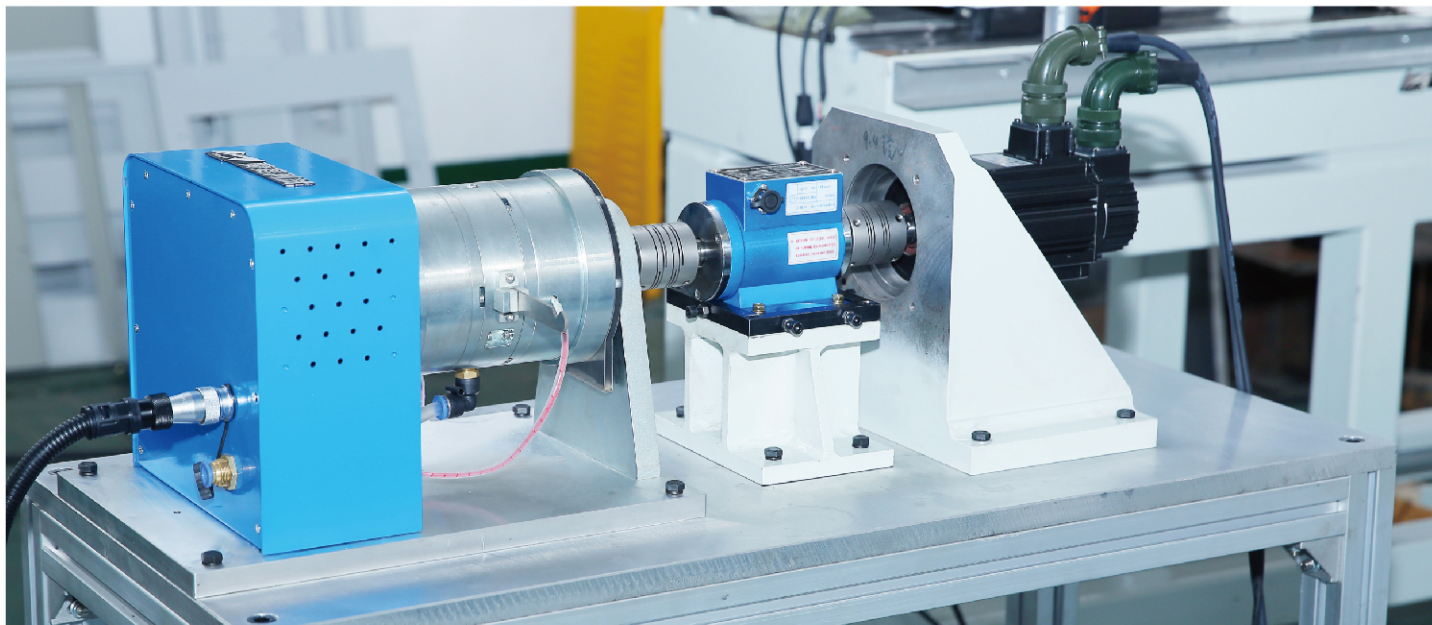
The hysteresis dynamometer is suitable for medium and small power motor testing. The torque changes is not affected by the speed. It can do full test from no load to the blockage.

According to different cooling methods, hysteresis dynamometers are divided into four types: HZC type is divided into fan cooling and natural cooling; HZC-Q type is compressed air cooling; HZC-G type is blower cooling, HZC-Y type is water cooling.

Dedicated load controller can be selected to adjust loading torque, and the torque, speed and power of the motor can be collected by TS-2000 torque speed power acquisition instrument. The hysteresis dynamometer's measurement accuracy can reach $\pm 0.2\%$ of full scale.

This kind of dynamometer is cost-effective, small size, easy to operate, and can be customized according to customer's requirements.

应用场合 Application



应用于电机、减速机的转矩、转速、功率及性能测试
Torque, speed, power and performance testing for motors and reducers

规格参数 Specification

型号 Model	额定扭矩 N.m Rated torque	5分钟内额定功率 (W) Rated power within 5 minutes(W)			连续额定功率 (W) Rated power(Continuous)			最高转速 Maximum speed	冷却方式 Cooling method
		风扇/自然冷却 Fan / natural cooling	加压缩空气 Add compressed air	加鼓风机 Add blower	风扇/自然冷却 Fan / natural cooling	加压缩空气 Add compressed air	加鼓风机 Add blower		
HZC风扇/自然冷却型磁滞测功机 HZC fan / natural cooling type hysteresis dynamometer									
HZC-0.01	0.01	35	—	—	8	—	—	30000	风扇冷却 Fan cooling
HZC-0.02	0.02	35	—	—	8	—	—	30000	
HZC-0.03	0.03	50	—	—	12	—	—	30000	
HZC-0.05	0.05	50	—	—	12	—	—	30000	
HZC-0.1	0.1	90	—	—	25	—	—	25000	
HZC-0.2	0.2	90	—	—	25	—	—	25000	
HZC-0.3	0.3	250	—	—	65	—	—	25000	
HZC-0.5	0.5	250	—	—	65	—	—	25000	
HZC-1	1	400	—	—	80	—	—	25000	
HZC-2	2	580	—	—	120	—	—	25000	
HZC-3	3	700	—	—	150	—	—	25000	
HZC-5	5	1000	—	—	200	—	—	25000	
HZC-6	6	1000	—	—	200	—	—	25000	
HZC-Q压缩空气冷却型磁滞测功机 HZC-Q compressed air cooling hysteresis dynamometer									
HZC-0.1/Q	0.1	90	200	—	25	80	—	25000	压缩空气冷却 Compressed air cooling
HZC-0.2 /Q	0.2	90	200	—	25	80	—	25000	
HZC-0.3 /Q	0.3	250	400	—	65	120	—	25000	
HZC-0.5 /Q	0.5	250	400	—	65	120	—	25000	
HZC-1/Q	1	400	800	—	80	350	—	25000	
HZC-2 /Q	2	580	1000	—	120	500	—	25000	
HZC-3 /Q	3	700	1300	—	150	800	—	25000	
HZC-5 /Q	5	1000	1500	—	200	1200	—	20000	
HZC-6 /Q	6	1100	1700	—	200	1200	—	20000	
HZC-10 /Q	10	1200	2000	—	200	1200	—	12000	
HZC-12 /Q	12	1300	2100	—	200	1300	—	11000	
HZC-15 /Q	15	1400	2200	—	200	1400	—	10000	
HZC-24 /Q	24	1600	2400	—	200	1600	—	8000	
HZC-30 /Q	30	1600	2400	—	200	1600	—	8000	
HZC-40 /Q	40	1900	3000	—	200	1200	—	4000	
HZC-50 /Q	50	1900	3000	—	200	1200	—	4000	
HZC-100 /Q	100	2200	3500	—	250	1200	—	3000	
HZC-G鼓风机冷却型磁滞测功机 HZC-G blower cooling type hysteresis dynamometer									
HZC-3 /G	3	700	—	1500	150	—	900	25000	鼓风机冷却 Blower cooling
HZC-5 /G	5	1000	—	2000	200	—	1800	25000	
HZC-6 /G	6	1400	—	3200	300	—	2800	25000	
HZC-10 /G	10	1700	—	3500	700	—	3000	12000	
HZC-15 /G	15	2000	—	3800	900	—	3500	10000	
HZC-30 /G	30	3800	—	7000	1300	—	5500	7000	

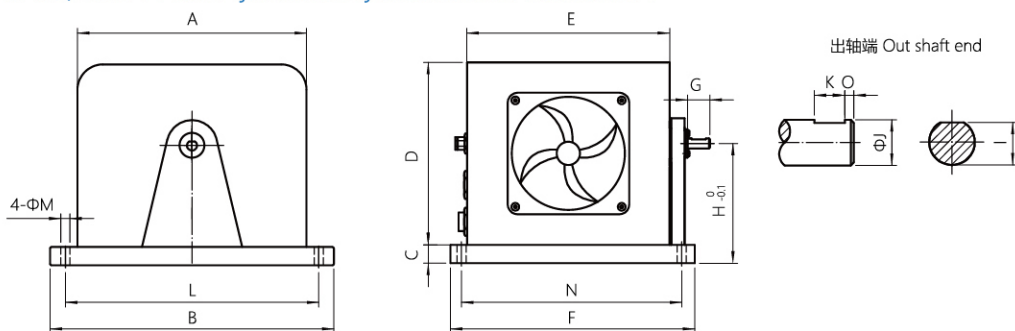
备注：HZC-Q型压缩空气冷却的测功机必须使用干燥、清洁的压缩空气；粉尘、铁屑、油、水不得进入测功机内部。

Remarks: HZC-Q type dynamometer with compressed air cooling must use dry and clean compressed air; dust, iron filings, oil and water should not enter inside of the dynamometer.

HZC型风扇/自然冷却磁滞测功机 HZC Fan / Natural Cooling Hysteresis Dynamometer

HZC-S型(0.03-2N.m) 短板磁滞测功机 外形尺寸

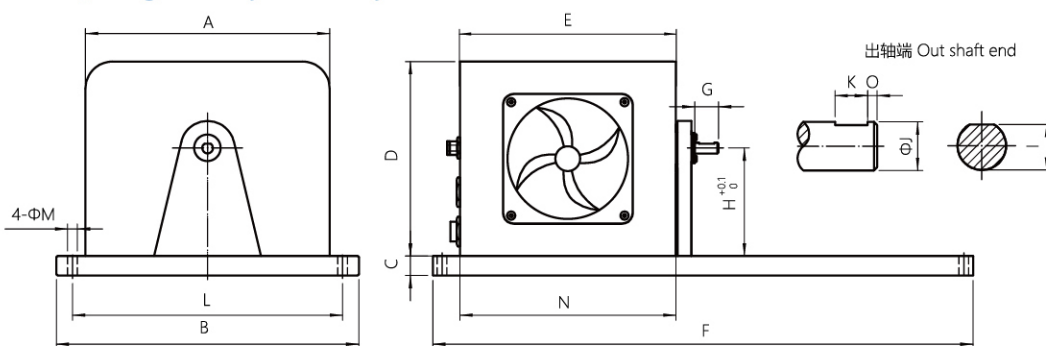
HZC-S Type (0.03-2N.m) Short Plate Hysteresis Dynamometer Dimension



型号 Model	A	B	C	D	E	F	G	H	I	ΦJ(h6)	K	L	ΦM	N	O
HZC-0.03 S	216	280	15	160	180	220	17	95	3.7	4	6	250	9	200	1.5
HZC-0.05 S	216	280	15	160	180	220	17	95	4.5	5	8	250	9	200	2
HZC-0.1 S	216	280	15	160	180	220	17	95	5.2	6	8	250	9	200	2
HZC-0.2 S	216	280	15	160	180	220	17	95	5.2	6	8	250	9	200	2
HZC-0.3 S	216	280	15	160	180	220	17	95	7.2	8	10	250	9	200	2
HZC-0.5 S	216	280	15	160	180	220	17	95	7.2	8	10	250	9	200	2
HZC-1 S	226	280	15	180	200	241	22	115	9	10	10	250	9	216	2
HZC-2 S	226	280	15	180	200	241	22	115	11	12	12	250	9	216	3

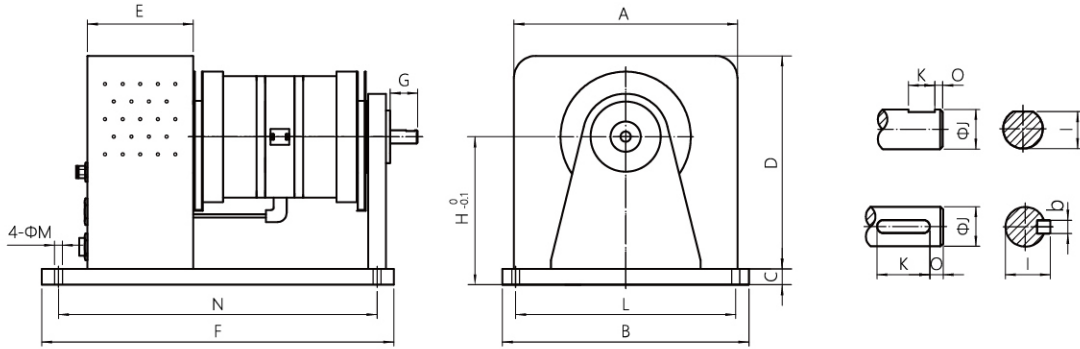
HZC-L型(0.01-2N.m) 长板磁滞测功机 外形尺寸

HZC-L Type (0.01-2N.m) Long Plate Hysteresis Dynamometer Dimension



型号 Model	A	B	C	D	E	F	G	H	I	ΦJ(h6)	K	L	ΦM	N	O
HZC-0.01 L	216	249	15	160	180	432	14.5	80	2.7	3	3	200	9	400	1.5
HZC-0.02 L	216	249	15	160	180	432	14.5	80	2.7	3	3	200	9	400	1.5
HZC-0.03 L	216	249	15	160	180	432	17	80	3.7	4	6	200	9	400	1.5
HZC-0.05 L	216	249	15	160	180	432	17	80	4.5	5	8	200	9	400	2
HZC-0.1 L	216	249	15	160	180	432	17	80	5.2	6	8	200	9	400	2
HZC-0.2 L	216	249	15	160	180	432	17	80	5.2	6	8	200	9	400	2
HZC-0.3 L	216	249	15	160	180	432	17	80	7.2	6	8	200	9	400	2
HZC-0.5 L	216	249	15	160	180	432	17	80	7.2	6	8	200	9	400	2
HZC-1 L	226	249	15	180	200	500	22	100	9	10	10	225	9	483	2
HZC-2 L	226	280	15	180	200	550	22	100	11	12	12	250	9	483	3

HZC型 (3-100N.m) 磁滞测功机 外形尺寸 HZC Type (3-100N.m) Hysteresis Dynamometer Dimension



型号 Model	A	B	C	D	E	F	G	H	I	ΦJ(h6)	K	L	ΦM	N	O	b
HZC-3	254	280	20	242	120	318	31	170	14	15	10	160	9	288	3	
HZC-5	284	310	20	282	130	380	30	200	16	17	10	250	9	350	3	
HZC-6	254	280	20	242	120	400	31	170	14	15	10	250	9	362	3	
HZC-10	356	432	30	370	120	457	53	260	28	25	330	400	10.5	358	5	8
HZC-12	356	432	30	370	120	457	53	260	28	25	30	400	10.5	358	5	8
HZC-24	356	432	35	370	132	584	53	265	28	25	30	400	10.5	485	5	8
HZC-30	356	432	35	370	132	584	53	265	28	25	30	400	10.5	485	5	8
HZC-40	465	550	45	480	150	720	53	305	28	25	30	500	13	660	5	8
HZC-50	465	550	45	480	150	720	53	305	28	25	30	500	13	660	5	8
HZC-100	545	700	45	480	150	850	53	305	33	30	30	640	13	750	5	8

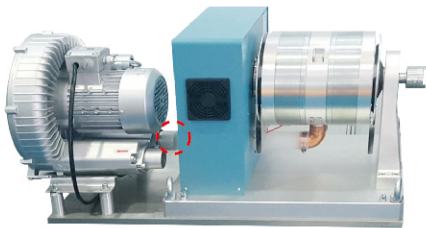


HZC-Q型 压缩空气冷却磁滞测功机

HZC-Q Type Compressed Air Cooling Hysteresis Dynamometer

HZC-Q系列的所有型号与对应的HZC系列外形尺寸完全相同，唯一的区别在于多了一个连接压缩空气的空气输入端口（见左图红色虚线所示部分）。

All models of the HZC-Q series are identical in size to the corresponding HZC series. The only difference is that there is an additional air input port for connecting compressed air (see the red dotted line on the left).

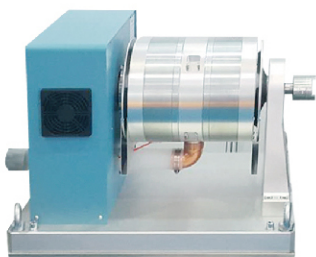


HZC-G型 鼓风机冷却磁滞测功机

HZC-G Type Blower Cooling Hysteresis Dynamometer

HZC-G系列的所有型号与对应的HZC系列外形尺寸完全相同，唯一的区别在于多了一个连接鼓风机的空气输入端口（见左图红色虚线所示部分）。

All models of the HZC-G series are identical in size to the corresponding HZC series, the only difference is that there is an additional air input port for connecting the blower (see the red dotted line on the left).



HZC-Y型 水冷却磁滞测功机

HZC-Y Type Water Cooling Hysteresis Dynamometer

HZC-Y型水冷却磁滞测功机的所有型号与对应的HZC系列外形尺寸完全相同，唯一的区别在于多了两个冷却水的输入、输出接口。优点：无噪音、功率大（具体参数见P12水冷却磁滞制动器的规格参数）。

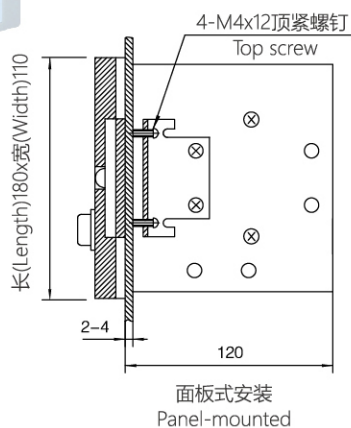
All models of the HZC-Y water cooling hysteresis dynamometer are identical in size to the corresponding HZC series. The only difference is the addition of two cooling water input and output interfaces. Advantages: no noise, high power (see P12 water cooling hysteresis brake specifications).

SC-1G型 手动张力控制器 SC-1G Manual Tension Controller

- 1、供电AC220V，输出DC24V/0~1A/0~2A/0~3A
 - 2、具有过流、过热、短路保护功能
 - 3、采用多圈精密微调
 - 4、具有面板、外接PLC(0~10V)控制模式
1. Power supply AC220V, output DC24V/0~1A/2A/3A
 2. With overcurrent, overheat, short circuit protection
 3. Use multi-turn precision fine-tuning
 4. Panel, external PLC (0~10V) control mode

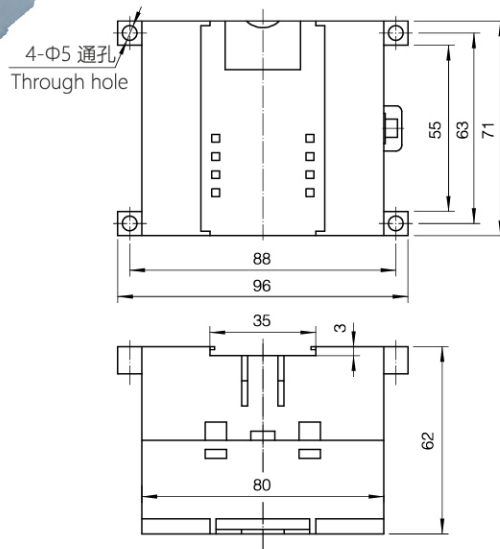
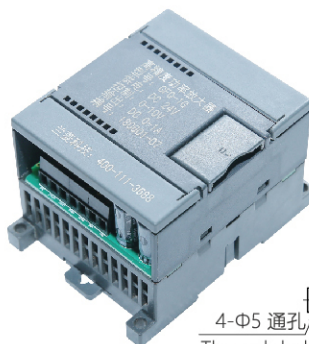


面板开孔尺寸: 120mmx162mm
Panel hole size: 120mmx162mm



GFQ-1G型 功率放大器 GFQ-1G Power Amplifier

- 1、供电DC24V，输出DC24V/0~1A/0~2A/0~3A
 - 2、外控模拟量：0~10V(出厂默认), 0~20mA, 0~5V
1. Power supply DC24V, output DC24V/0~1A/0~2A/0~3A
 2. External control analog: 0~10V (factory default), 0~20mA, 0~5V



SC-1WB-36-3型 程控加载电源 SC-1WB-36-3 Programmable Load Power

- 1、供电AC220A，输出DC36V/0~3A
 - 2、高精度、高分辨率、低温漂、高稳定性（整机温漂小于50ppm，精度0.1%，分辨率V=10mV、I=1mA）
 - 3、可编程（MODBUS协议，RS485通讯）
 - 4、设定值存储功能（能保存上次关机时设定的电压、电流值）
 - 5、外形尺寸：185x85x120mm，重量：1250克
1. Power supply: AC220A, output DC36V/0~3A
 2. High precision, high resolution, low temperature drift, high stability (the whole machine temperature drift is less than 50ppm, accuracy 0.1%, resolution V = 10mV, I = 1mA)
 3. Programmable (MODBUS agreement, RS485 communication)
 4. Set value storage function (can save the voltage and current value set at the last shutdown)
 5. Dimension: 185x85x120mm, weight: 1250g



TS-2000型转矩转速功率采集仪

TS-2000 Torque Speed Power Acquisition Instrument



外形尺寸 Overall dimension(mm):
280x145x110(LxWxH)
开孔尺寸 Hole size(mm): 271x93

TS-2000型转矩转速功率采集仪以磁滞制动器或磁粉制动器作阻尼负载，以拉压传感器、光电（或磁电）转速传感器作检测元件，可以采集动力机械的转矩、转速、功率。该仪器自带显示屏显示测量结果，备有RS485（或RJ45网络接口）标准串行接口，实现与计算机通信。

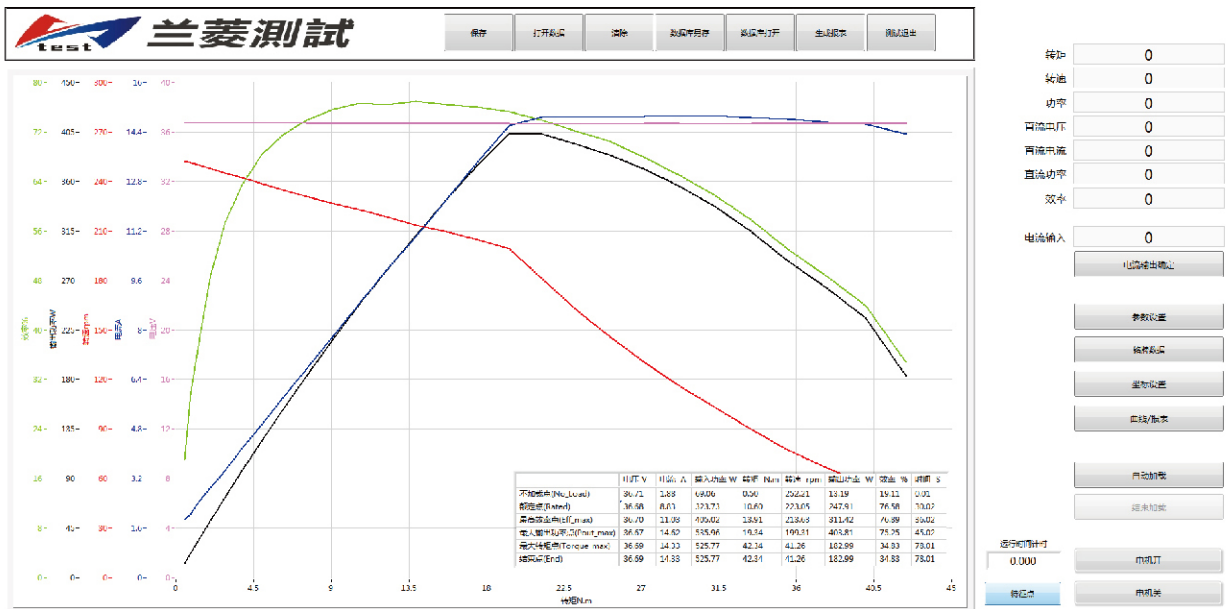
TS-2000 torque speed power acquisition instrument uses hysteresis brake or a magnetic powder brake as a damping load, and use a tension and pressure sensor, photoelectric (or magnetoelectric) rotational speed sensor as a detection component, can collect torque, speed and power of the power machine. The instrument comes with a display screen to display the measurement results, and is equipped with a standard serial interface of RS485 (or RJ45 network interface) to communicate with the computer.

技术指标 Technical indicators

测量精度	±0.05% F.S	Accuracy of measurement	±0.05% F.S
采集周期	≥ 10ms	Acquisition cycle	≥ 10 ms
输入信号	±20mV	Input signal	±20mV
输出信号	RS485通讯 转矩、转速两路继电器输出	Output signal	RS485 communication Torque, speed two relay output
网络接口	以太网- RJ45 接口	Net interface	Ethernet RJ45 interface
仪表供电	AC220VAC±10%	Instrument power supply	AC220VAC±10%

TS-2000 测试软件

TS-2000 Test Software



功能: 显示TS-2000转矩转速功率采集仪的实时转矩、转速、功率的数据、波形，并生成曲线及报表予以保存和打印。

Function: Display the real-time torque, speed and power data and waveform of TS-2000 torque speed power acquisition instrument, and generate curves and reports for saving and printing.

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