

膜片联轴器 REC系列

Diaphragm Coupling REC Series

REC系列概述 REC series Summarize

· REC膜片主体采用钢件制造，膜片采用弹簧用高强度不锈钢制造。使REC膜片联轴器在实现高扭矩、高刚性，具有低惯性。

· REC标准联轴器分为单膜片的REC-□-0型和装有双膜片的REC-□-T型。

· 应用：数控机床主轴、伺服电机、步进电机以及正反转要求精度高的场合。

The main body of the REC diaphragm is made of steel, and the diaphragm is made of high-strength stainless steel for springs. The REC diaphragm coupling achieves high torque, high rigidity, and low inertia.

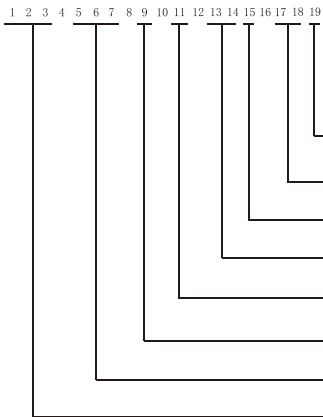
REC standard coupling is divided into REC- □ -0 type with single diaphragm and REC- □ -T type with double diaphragm.

Application: CNC machine tool spindles, servo motors, stepping motors, and occasions where high precision is required for forward and reverse rotation.



型号说明 Model Coding

REC-080-0-A-25Z-30Z



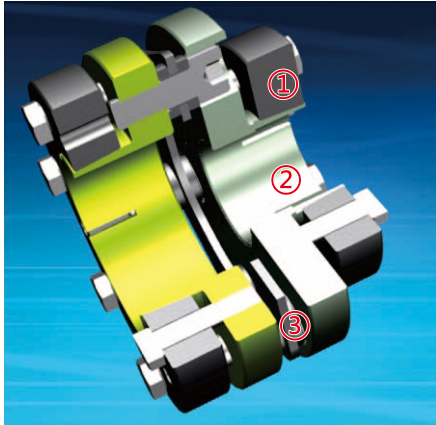
- ① 从动轴连接方式(胀紧)
- ② 孔径尺寸代码(从动轴)
- ③ 主动轴连接方式(胀紧)
- ④ 孔径尺寸代码(主动轴)
- ⑤ 产品结构系列(A小扭矩螺钉/B大扭矩铰制/C主轴型)
- ⑥ 产品结构代码1(0/T)
- ⑦ 规格代码
- ⑧ 种类代码

- ① Driven shaft' s connection type (cinching)
- ② Hole diameter code (bigger shaft)
- ③ Driving shaft' s connection type (cinching)
- ④ Hole diameter code (smaller shaft)
- ⑤ Product Structure code 2 (A/B/C)
- ⑥ Product Structure code 1(0: single diaphragm/T: double diaphragm)
- ⑦ Model code
- ⑧ Category code

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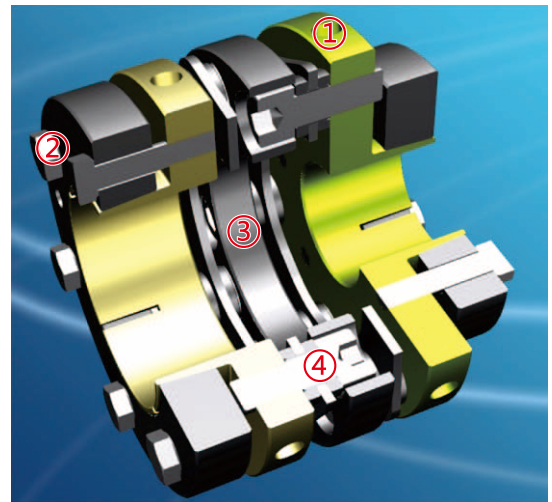
产品概览 Product Overview



REC单膜片联轴器
REC Single Diaphragm Coupling

- ① 压环：采用优质结构钢，表面发黑处理；依据孔径不同，外径相应变化
Compression ring: high-quality structural steel is employed, the surface is blackening treated; based on different aperture, the outer diameter changes accordingly
- ② 半联轴节：采用优质结构钢，表面发黑处理；设计有锥套与压环配合抱紧传动轴
Half-coupling: high-quality structural steel is employed, the surface is blackening treated; taper sleeve and compression ring are designed to jointly hold the transmission shaft tightly
- ③ 膜片组：由若干优质不锈钢片通过垫圈、衬套等叠为一挠性组件，吸收轴安装误差，传递相应扭矩
Diaphragm group : the flexible component is stacked with a few high-quality stainless steel discs through washers and bush, etc., to absorb the shaft's installation error, and transmit corresponding torque

- ① 法兰外圆止动销孔：用于拧紧胀紧螺栓时，插入销轴限制联轴器转动
Stopper pin hole on the flange excircle: when tightening cinch bolt, insert the pin into the hole for restricting the coupling's rotation
- ② 胀紧螺栓：采用高强度经表面处理的螺栓，拧紧时需按规定扭矩交替锁紧（详见相关安装说明）
Cinch bolt: high strength bolts after surface treatment are used, during tightening, alternate locking should be carried out according to prescribed torque (see relevant installation instructions for details)
- ③ 中间体：双膜片联轴器独有部件，采用优质结构钢，表面发黑处理
Middle part: a unique part of double diaphragm coupling, high-quality structural steel is employed, the surface is blackening treated
- ④ 膜片组螺栓：采用高强度经表面处理的螺栓，出厂时已安装妥，请避免自行拆装
Bolt for diaphragm group: high strength bolts after surface treatment are used, installed before delivery, please do not install on your own



REC双膜片联轴器
REC Double Diaphragm Coupling

膜片联轴器 REC系列

Diaphragm Coupling REC Series

产品概览 Product Overview

项目 Item		REC 单膜片联轴器 REC Single Diaphragm Coupling	REC 双膜片联轴器 REC Double Diaphragm Coupling
容许扭矩 Allowable Torque (N · m)		70~300	70~300
孔加工直径范围 Hole Machining Diameter Range (mm)		18~60	18~60
使用温度 Operation Temperature (° C)		-30~+120	-30~+120
最大容许误差 Max. Allowable Error	径向 Radial (mm)	0.02	0.25~0.3
	角向 Angular (°)	1	2
	轴向 Axial (mm)	± 0.5~ ± 0.7	± 1~ ± 1.4

产品特点及应用场合 Product Features And Applications

该类产品非常适合于各类数控车床、加工中心的进给轴丝杆与电机间的联接。产品具有如下特点：

- 1、超高刚性。为用于机床进给轴开发的型号，扭转刚性高，可进行准确的轴旋转和超精密控制。
- 2、支持大直径的摩擦连接。与以往型号的摩擦连接相比，可支持大轴径。
- 3、膜片组螺栓采用合金钢内六角圆柱头螺钉
- 4、与传动轴之间采用胀套式联接方式。轴结构简单，减少了槽孔等应力集中部位；结构对称，可在不经特定动平衡处理下达到较高的平衡要求。
- 5、采用不锈钢材料制作挠性部件（膜片），具有结构紧凑，无背隙的特点，且能吸收两轴角向、轴向、径向（此项仅双膜片具有）误差。
- 6、产品出厂前采用专用治具定心组装，确保了两端孔的原始同轴度。

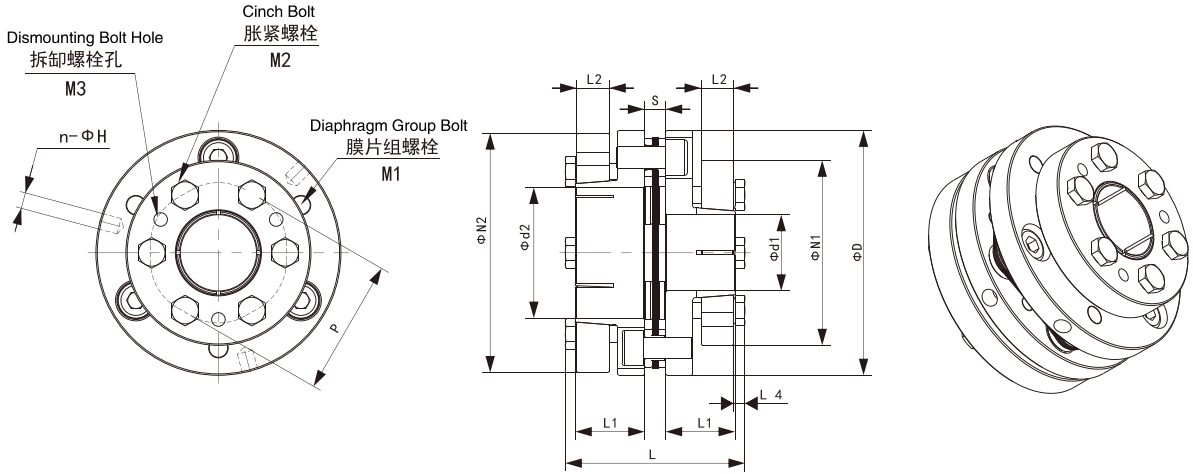
The products are very suitable for the connection between the feed shaft lead screw and the motor for various CNC and machining center. The products have features below:

- 1.Ultrahigh rigidity. This type is developed for machine tool's feed shaft, with high torsional rigidity, accurate shaft rotation and ultra-precision control can be performed.
- 2.Big diameter frictional connection can be supported. Compared to previous types' frictional connection, it can be used for big diameter shaft.
- 3.The diaphragm group's bolts are alloy-steel hexagon cheese head screw bolts.
- 4.It is connected to the shaft with expansion sleeve. The shaft is simple in structure, which is to reduce stress concentration area on the slot; with symmetric structure, higher balance requirement can be met without special dynamic balance treatment.
- 5.The flexible component (diaphragms) are made of stainless steel material, with features such as compact structure, no back clearance, it can also absorb the two shafts' errors in angular, axial and radial (only for double diaphragm) direction.
- 6.Before deliver, centering assembling with special jig machine is carried out, which ensures holes original coaxiality on the two sides.

膜片联轴器 REC系列

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单膜片联轴器尺寸表 Dimension Form for Single Diaphragm Coupling



型号 Model	D	L	d1/d2	N1/N2	L1	L2	L4	S	P	n-ΦH	M1	M1锁紧力矩 Locking Torque	M2	M2锁紧力矩 Locking Torque	M3
REC-070-0-A	70	60.5	18、19	53	23.5	12	4	6.5	31	4-φ5.1	M6	14	4-M6	12	2-M6
			20、22、24、25	58											
			28、30	63											
			32、35	68											
REC-080-0-A	80	66.3	22、24、25	58	25.5	12	4	8.3	37	4-φ5.1	M8	34	4-M6	12	2-M6
			28、30	63											
			32、35	68											
REC-090-0-A	90	66	28	68	25.5	12	4	7.7	50	3-φ6.5	M8	34	6-M6	12	3-M6
			30、32、35	73											
			38、40	78											
			42、45	83											
			48	88											
REC-100-0-A	100	66	32、35	73	25.5	12	4	8	58	3-φ6.5	M8	34	6-M6	12	3-M6
			38、40	78											
			42、45	83											
			48、50、52	88											
			55	93											
			60	98											

注：1、表中各螺栓数量为单侧数量；

2、表中锁紧力矩，依据：M1为12.9级螺钉、M2为10.9级螺栓核定。

Note:

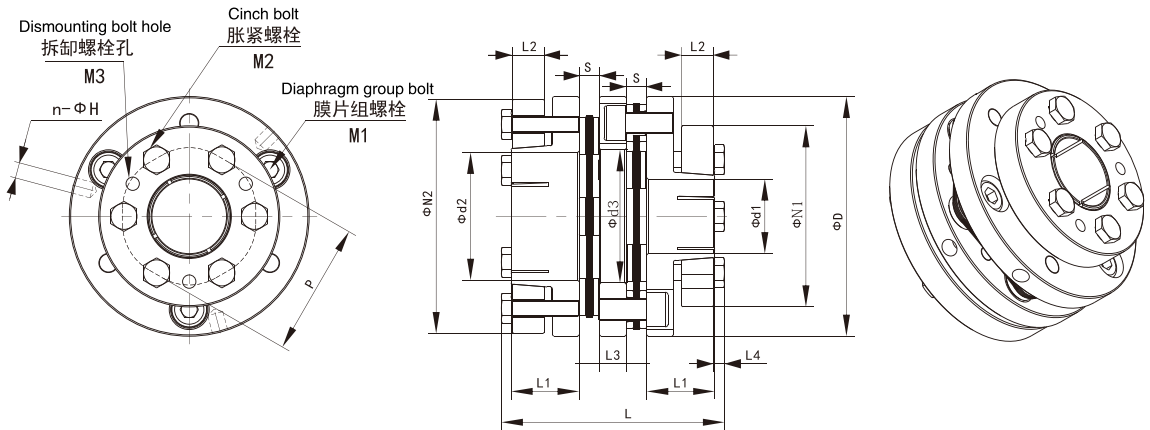
1. The bolts' quantity in the form only refer to the bolts on one side;

2. The locking torque, determination basis: M1 is Grade 12.9 bolt, M2 is Grade 10.9 bolt

膜片联轴器 REC系列

Diaphragm Coupling REC Series

双膜片联轴器尺寸表 Dimension Form for Double Diaphragm Coupling



型号 Model	D	L	d1/d2	N1/N2	L1	L2	L3	d3	L4	S	P	n-ΦH	M1	M1锁紧力矩 Locking Torque	M2锁紧力矩 Locking Torque	M3	
REC-070-T-A	70	75	18、19	53	23.5	12	8	35	4	6.5	31	4-φ5.1	M6	14	4-M6	12	2-M6
			20、22、24、25	58													
			28、30	63													
			32、35	68													
REC-080-T-A	80	84.6	22、24、25	58	25.5	12	10	40	4	8.3	37	4-φ5.1	M8	34	4-M6	12	2-M6
			28、30	63													
			32、35	68													
REC-090-T-A	90	83.4	28	68	25.5	12	10	50	4	7.7	50	3-φ6.5	M8	34	6-M6	12	3-M6
			30、32、35	73													
			38、40	78													
			42、45	83													
			48	88													
REC-100-T-A	100	84	32、35	73	25.5	12	10	60	4	8	58	3-φ6.5	M8	34	6-M6	12	3-M6
			38、40	78													
			42、45	83													
			48、50、52	88													
			55	93													
			60	98													

注：1、表中各螺栓数量为单侧数量；

2、表中锁紧力矩，依据：M1为12.9级螺钉、M2为10.9级螺栓核定。

Note:

1. The bolts' quantity in the form only refer to the bolts on one side;

2. The locking torque, determination basis: M1 is Grade 12.9 bolt, M2 is Grade 10.9 bolt

膜片联轴器 REC系列

Diaphragm Coupling REC Series

单膜片联轴器技术参数表 Technical Specification Form for Single Diaphragm Coupling

型号 Model	容许扭矩 Allowable Torque Tkmax (N · m)	最高转速 Max. Rotating Speed (rpm)	扭转刚度 Torsional Rigidity (N · m/rad)	轴向刚度 Axial Rigidi- ty (N/mm)	最大允许误差 Max. Allowable Error			转动惯量 Rotating Inertia (kg · m ²)	质量 Mass (kg)
					径向 (mm)	角向 (°)	轴向 (mm)		
REC-070-0-A	70	18000	60000	105	0.02	1	±0.5	0.55 × 10 ⁻³	0.88
REC-080-0-A	130	17000	64000	96	0.02	1	±0.5	0.93 × 10 ⁻³	1.20
REC-090-0-A	200	15000	140000	320	0.02	1	±0.6	1.73 × 10 ⁻³	1.57
REC-100-0-A	300	13000	160000	360	0.02	1	±0.7	2.52 × 10 ⁻³	1.78

注:

- 表中转动惯量和质量是在一端孔径为最大值，一端孔径为最小值时的值。
- 表中扭转刚度为膜片组扭转刚度的理论值。
- 最高转速为离心力、强度等因素校核所得，未考虑动平衡。
- 表中各向允许误差是相互关联的，不能同时达到最大值。如：角向误差和轴向误差同时存在，当角向误差达到最大允许值的70%时，则轴向误差值不能超过最大允许值的30%

Note:

- In the table, the values of rotational inertia and mass are measured when the hole diameter at one side is at its maximum, and the other side at its minimum.
- In the table, the torsional rigidity is the diaphragm group's theoretical value for torsional rigidity.
- The maximum rotating speed has taken into consideration the factors such as centrifugal force, rigidity, etc., the dynamic balance is not considered.
- In the table, the allowable errors in each direction are mutually relevant, they can not reach the maximum value at the same time. Example: the angular error and axial error can exist at the same time, when the angular value reaches 70% of the maximum allowable value, then the axial error is not allowed to go above 30% of the maximum allowable value.

双膜片联轴器技术参数表 Technical Specification Form for Double Diaphragm Coupling

型号 Model	容许扭矩 Allowable Torque Tkmax (N · m)	最高转速 Max. Rotating Speed (rpm)	扭转刚度 Torsional Rigidity (N · m/rad)	轴向刚度 Axial Rigidi- ty (N/mm)	最大允许误差 Max. Allowable Error			转动惯量 Rotating Inertia (kg · m ²)	质量 Mass (kg)
					径向 (mm)	角向 (°)	轴向 (mm)		
REC-070-T-A	70	14000	30000	55	0.25	2	±1	0.70 × 10 ⁻³	1.08
REC-080-T-A	130	13000	32000	50	0.3	2	±1	1.26 × 10 ⁻³	1.54
REC-090-T-A	200	12000	70000	160	0.3	2	±1.2	2.26 × 10 ⁻³	1.98
REC-100-T-A	300	10000	80000	180	0.3	2	±1.4	3.28 × 10 ⁻³	2.26

注:

- 表中转动惯量和质量是在一端孔径为最大值，一端孔径为最小值时的值。
- 表中扭转刚度为膜片组扭转刚度的理论值。
- 最高转速为离心力、强度等因素校核所得，未考虑动平衡。
- 表中各向允许误差是相互关联的，不能同时达到最大值。如：角向误差和轴向误差同时存在，当角向误差达到最大允许值的70%时，则轴向误差值不能超过最大允许值的30%

Note:

- In the table, the values of rotational inertia and mass are measured when the hole diameter at one side is at its maximum, and the other side at its minimum.
- In the table, the torsional rigidity is the diaphragm group's theoretical value for torsional rigidity.
- The maximum rotating speed has taken into consideration the factors such as centrifugal force, rigidity, etc., the dynamic balance is not considered.
- In the table, the allowable errors in each direction are mutually relevant, they can not reach the maximum value at the same time. Example: the angular error and axial error can exist at the same time, when the angular value reaches 70% of the maximum allowable value, then the axial error is not allowed to go above 30% of the maximum allowable value.

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选型步骤 Model Selection Steps

1、伺服、步进、变频电机用REC联轴器扭矩校核

- ①、确定伺服、步进、变频电机的最大扭矩 T_m ：
 T_m 一般为伺服、步进、变频电机额定扭矩的3倍

- ②、计算联轴器所需容许扭矩 (T_n)

$$T_n = T_m \cdot 1.5$$

T_n —联轴器所需容许扭矩, $N \cdot m$

T_m —伺服、步进、变频电机标称最大扭矩, $N \cdot m$

- ③、依据 T_n 值初步确定联轴器基本规格, 确保所选联轴器容许扭矩 $T_{kmax} \geq T_n$

2、普通电机或驱动设备用REC联轴器扭矩校核

- ①、计算联轴器所需传递的扭矩 (T)

$$T = 9550 \cdot PW/n$$

T —联轴器需传递扭矩, $N \cdot m$

PW —电机 (或其他驱动机) 额定功率, kW

n —电机 (或其他驱动机) 实际使用转速, r/min(rpm)

- ②、计算联轴器所需容许扭矩 (T_n)

$$T_n = T \cdot K$$

T_n —联轴器所需容许扭矩, $N \cdot m$

T —联轴器需传递扭矩, $N \cdot m$

K —工况系数, ①恒定载荷: $K=1$ 、②小变动载荷: $K=1.25$ 、③中等变动载荷: $K=1.75$ 、④大变动载荷: $K=2.25$

- ③、依据 T_n 值初步确定联轴器基本规格, 确保所选联轴器容许扭矩 $T_{kmax} \geq T_n$

- 3、对于有高的交变扭矩存在的场合 (如存在: 柴油发动机、活塞式压缩机、柱塞泵、发电机等), 请联系瑞迪工程师协助计算、选型。

- 4、确定安装、使用时联轴器的径向、角向、轴向偏差不得超过《技术参数表》中的各项限定值, 多种偏差同时存在时, 允差应按比例减少。理论上单膜片联轴器不能承受径向偏差, 如使用中有不可避免的径向偏差存在, 请选择双膜片联轴器。

注:

上述 T_{kmax} 值请在《技术参数表》中查阅、获取。

1. Use REC coupling to carry out torque checking for servo motor, stepping motor and variable frequency motor.

- ①. Determine the maximum torque T_m for servo motor, stepping motor and variable frequency motor:
 T_m is usually 3 times of the rated torque of servo motor, stepping motor and variable frequency motor

- ②. Calculate the needed allowable torque for the coupling (T_n)

$$T_n = T_m \cdot 1.5$$

T_n —the needed allowable torque for the coupling, $N \cdot m$

T_m —nominal maximum torque for servo motor, stepping motor and variable frequency motor

- ③. Based on T_n , the coupling's basic specification is primarily determined, which is to ensure the selected coupling's allowable torque $T_{kmax} \geq T_n$

2. Use REC coupling to carry out torque checking for common motors and driving devices. ①. Calculate the needed transmitted torque for the coupling (T)

$$T = 9550 \cdot PW/n$$

T —the needed transmitted torque for the coupling, $N \cdot m$

PW —the rated torque for motor (or other driving devices), kW

n —actual rotating speed for motor (or other driving devices), r/min (rpm)

- ②. Calculate the needed transmitted torque for the coupling (T_n)

$$T_n = T \cdot K$$

T_n —the needed allowable torque for the coupling, $N \cdot m$

T —the needed transmitted torque for the coupling, $N \cdot m$

K —working condition coefficient, ① constant load: $K=1$, ② small fluctuating load: $K=1.25$, ③ moderate fluctuating load: $K=1.75$, ④ big fluctuating load: $K=2.25$

- ③. Based on T_n , the coupling's basic specification is primarily determined, which is to ensure the selected coupling's allowable torque $T_{kmax} \geq T_n$

3. For the occasions with high alternate torque (for example: diesel fuel engine, piston compressor, plunger pump, generator, etc.), please contact the engineers of REACH for calculation and model selection.

4. During installation and operation of the coupling, ensure the errors in radial, angular, and axial directions not go above every limiting value specified in the Technical Specification Form, when the errors exist at the same time, the allowable errors shall be reduced proportionally. In theory, the single diaphragm coupling can not sustain radial error, during operation, if there is unavoidable radial error, please select the double diaphragm coupling.

Note:

please refer to the Technical Specification Form for checking and obtaining the aforesaid T_{kmax} value.

安装维护说明 Installation and Maintenance Instructions

1、安装使用前，请确认以下内容：

- ①该产品是否与所订购产品一致；
- ②该产品有无在运输过程中存在损伤

2、安全注意事项：

①、环境及相关装置

a、危险事项：

- 旋转的联轴器可能会对人体造成伤害，请为其设置安全罩，并在安全罩上设置打开急停保护装置
- 请勿将RIC产品应用于有易燃、易爆液体或气体存在或泄漏的地方
- 建议电机或其他驱动装置配置安全刹车装置

b、注意事项

- 请勿该类联轴器产品用于存在化学泄漏、高湿度、冷热温度变化大的场合

②、装配作业

a、危险事项：

- 螺钉的拧紧力矩对产品的使用性能和安全非常重要，请务必按《安装尺寸》表中规定力矩拧紧螺钉
- 安装、拆卸联轴器产品时，必须确保机器已经停转，并已确实切断相关电源

b、注意事项

- 安装联轴器前，请调整两端轴的同轴度，使同轴度误差小于0.02mm（使用RIC单膜片联轴器时）或小于0.05mm（使用RIC双膜片联轴器时）；同轴度误差过大，可能导致装置故障或损坏。
- 请使用本公司提供或与之性能等级相同的螺钉，以免造成产品损坏。
- 请配戴手套等必要的防护装备，以免在拆、装产品时造成人身伤害
- 在搬运、提升重物时，请使用必要的起重设备

③、使用

a、危险事项

- 请勿超出《技术参数表》中规定的最高转速使用联轴器产品，否则可能造成极大振动并损坏产品
- 请勿接触外露的旋转部件，以免造成人身伤害
- 请勿使联轴器两端轴的对中误差过大或超出产品《技术参数表》中允许值，以免使联轴器承受过大附加载荷并对联轴器及相关装置造成损害

b、注意事项

- 请勿使扭矩超过产品的允许值
- 当有异常的噪音或振动产生时，应检查、确认安装是否正确无误；长期的振动可能造成螺钉松动或失效，从而导致整个装置故障。
- 在异常狭窄的场合，应考虑因散热不良引起的温升对产品性能的影响

④、其他

a、危险事项

- 请确保产品不被小孩碰到或玩耍

b、注意事项

- 禁止私自拆解我公司产品，废弃物交专门机构回收

1. Before installation and operation, please confirm the following:

- ①. If the product is as same as the product ordered;
- ②. If there is any damage occurred to the product during transportation.

2. Safety precautions:

①. Ambient conditions and relevant devices

i. Hazard notes:

- Rotating couplings may cause harm to human being, please set up safety guard for the coupling, and set up starter on the safety guard for emergency stop protection
- Please avoid operating RIC products close to places with inflammable, explosive liquid or gas or leakage of such
- It is recommended that the motor or other driving devices are equipped with safety brake device

ii. matters needing attention

- This type of couplings are not allowed to operate under the conditions with chemical leakage, high humidity, or big temperature variation

②. Assembling work

i. Hazard notes:

- The bolt's tightening torque is very important to the product's performance and safety, please be sure the bolts are tightened according to the specified torques in the Mounting Dimensions
- When install or dismount the couplings, ensure the machine is already stopped, and relevant power sources are cut off

ii. Matters needing attention

- Before installing the coupling, please ensure the coaxiality error of the shafts on the two sides is less than 0.02mm(for RIC single diaphragm coupling) or less than 0.05mm(for RIC double diaphragm coupling); high coaxiality error can cause failure or damage to the devices.
- Please use bolts provided by REACH or of the same performance and grade, so as to avoid damage to the products.

- Please wear necessary protection devices such as gloves etc, so as to avoid any personal injury during dismounting and installation

- When haul or lift heavy objects, please use necessary hoisting equipment

③. Operation

i. Hazard notes:

- The couplings are not allowed to operate above the maximum rotating speed specified in the Technical Specification Form, so as to avoid over vibration and damage to the products
- Please touch exposed rotating parts, so as to avoid personal injury

- Please prevent the centring error of the shafts on the two sides from being too big or going beyond the allowable value specified in the Technical Specification Form, so as to avoid too much additional load applied on the coupling and causing damage to relevant devices

ii. Matters needing attention

- Please do not make the torque go beyond the product's allowable value
- when abnormal noise or vibration occurs, check and confirm if the installation is right; long time vibration may cause the bolts' loosening or failures, which leads to the whole equipment's failure.

- When operate in narrow space, is shall be considered that poor heat dissipation may cause the temperature to go up and influence the product's performance

④. Other matters

i. Hazard notes:

- Please ensure the products are not touched or played by children

ii. Matters needing attention

- Disassembling our company's products without permission is forbidden, rejected materials shall be sent to special agency for recycling

安装维护说明 Installation and Maintenance Instructions

3、安装使用：

- (1) 先旋松联轴器的胀紧螺栓，并清除干净轴及联轴器孔内的锈迹、灰尘和油渍等。
- (2) 将联轴器套入动力输入轴（数控机床为伺服电机轴）。套入时，请勿在联轴器上施加过大的拉、压力。
- (3) 联轴器套入电机轴的长度为半联轴节的全长（L1尺寸），且不得与膜片组及另一边的轴干涉。
- (4) 保持联轴器位置不动，轻轻拧紧各胀紧螺栓（建议直接用手拧紧）。
- (5) 将千分表表座固定在基础上，千分表表针与电机轴一侧的联轴器法兰外圆或端面接触，在用手缓慢旋转电机轴的同时，通过锤击等方法调整使千分表跳动尽可能接近零。
- (6) 锤击调整的同时按顺序拧紧胀紧螺栓，最后使用经过校准的扭矩扳手交替拧紧胀紧螺栓至《尺寸表》中M2锁紧力矩的规定值。拧紧时可利用法兰外圆的孔限制联轴器的转动。
- (7) 再次确认联轴器电动机轴端的胀紧螺栓已按规定的扭矩拧紧，且跳动值接近0。
- (8) 将联轴器另一端孔套入动力输出轴，套入长度为L1，且不得与膜片组及另一边的轴干涉。再将千分表表座固定在电机轴上，千分表表针与输出轴接触，调整电机轴或输出轴相对位置，同时缓慢转动电机轴，使表针跳动接近0，之后固定电机座和输出轴。
- (9) 移动输出轴侧半联轴节，调整《尺寸表》中S尺寸，使实际值与S值的偏差在《技术参数表》允许的轴向误差范围内。（当有偏心、偏角误差存在时，此轴向误差允许值应按比例减少。通常应将此轴向误差尽量调小。）
- (10) 按电动机轴一侧胀紧螺栓锁紧的方法（第（4）~（7）），同样的将输出轴侧的胀紧螺栓锁紧。
- (11) 为防止胀紧螺栓在使用过程中产生松动，建议运行一段时间后，再次按规定扭矩、正确的顺序拧紧各胀紧螺栓。

4、拆卸

- (1) 联轴器只有在未承受转矩以及轴向负载的情况下进行拆卸。使用安全离合器或制动器时，请确认这些装置未处于工作状态，以确保联轴器未承受转矩。
- (2) 将所有的胀紧螺栓拧松，直至螺栓头与压环间的间隙约为2mm左右。
- (3) 取下(2)中松开的胀紧螺栓中的2~3根，拧入压环上的拆卸螺栓孔内，按顺序慢慢地拧紧直至胀紧连接解除。（轴向没有螺栓插入空间时，可用一字螺丝刀的前端等扁平状工具插入压环与法兰之间，轴向敲击或利用杠杆原理解除胀紧连接。）

3. Installation and operation:

- (1) First loose the coupling's cinch bolts, and remove the rust, dust or oil stains etc. on the shafts or inside the holes of the coupling.
 - (2) Sleeve the coupling on the power input shaft(servo motor shaft for CNC). During sleeving, do not pull or push the coupling too hard.
 - (3) The length of coupling sleeved on the motor shaft is the whole length of the half-coupling(L1 dimension), and it shall not interfere with the diaphragm group and the shaft on the other side.
 - (4) Keep the coupling still, gently tighten every cinch bolt(direct hand tightening is recommended).
 - (5) Fix the dial indicator's stand on the base, the dial indicator's hand touches the flange's excircle or end face of the coupling on the side of the motor shaft, rotate slowly the motor shaft with hands, in the mean time, use methods such as hammer striking to make the dial indicator's beating close to 0 as much as possible.
 - (6) During adjustment by hammer striking, tighten the cinch bolts in order, finally use calibrated torque wrench to alternately tighten the cinch bolts to the specified values of M2 locking torque in the Dimension Form. During tightening, the hole on the flange's excircle can be used to restrict the coupling's rotation.
 - (7) Confirm again that the coupling's cinch bolts on the motor shaft side have been tightened according to specified torques, and the jumping value is close to 0.
 - (8) Sleeve the coupling's other side on the power output shaft, the sleeving length is L1, and it shall not interfere with the diaphragm group and the shaft on the other side. Then fix the dial indicator's stand on the motor shaft, the dial indicator's hand touches the output shaft, adjust the motor shaft or output shaft's opposite position, in the mean time, slowly rotate the motor shaft, make the dial indicator hand's jumping close to 0, then fix the motor base and the output shaft.
 - (9) Move the half-coupling on the output shaft side, adjust S dimension in Dimension Form, make the difference of the actual value and the S value in the axial error scope provided in the Technical Specification Form. (when eccentricity or deflection exists, the axial error shall be reduced proportionally. Usually the axial error shall be adjusted as small as possible.)
 - (10) In the same way as the cinch bolts on the motor shaft side are tightened(from (4) to (7)), tighten the cinch bolts on the output shaft side.
 - (11) To avoid the cinch bolts' loosening during operation, it is recommended that, after operation for some time, re-tighten the cinch bolts according to specified torques and in right order.
- #### 4. Dismounting
- (1) The coupling can only be dismantled without sustaining torque or axial load. When using safety clutch or brake, please make sure the devices are not in working status, so as to make sure the coupling is not bearing any torque.
 - (2) Loosen all the cinch bolts, until the gap between the bolt head and the compression ring is about 2mm.
 - (3) Take down 2 to 3 pieces of cinch bolts already loosened, screw into the dismantling bolt holes on the compression ring, slowly tighten the bolts in order until the connection is disengaged. (if not space for screwing in the bolt in axial direction, the front end of the slot type screwdriver or other similar tools can be inserted in between the compression ring and the flange, strike in axial direction or disengage the connection in lever principle.)