

# 电动分度器 PDW系列 (附带电机)

kamo

关于安全与安装的说明 (安全使用PDW系列的指引)

22.12

**!** 请将此安装说明书交给使用者。  
非常感谢您使用本公司的产品。  
**强制** 使用PDW产品之前, 请认真阅读此说明书并妥善保管。若有不明之处, 请与我公司联系。

## 1. 安全事项

### 1.1 警告标识说明

本说明书中, 为了防止因误安装引起的事故, 都添加了标识, 标识的意思有以下几种。

**警告** 如果无视此标识进行安装, 有可能导致使用者的死亡或重伤。

**注意** 如果无视此标识, 有可能导致使用者的负伤及物品的损坏。

此外, **注意** 记载的事项也可能根据具体情况不同, 引发其他的严重问题, 2种标识都记载着相当重要的信息, 请务必仔细阅读。

### ■记号的说明

记号	说 明	记号	说 明
<b>!</b>	强制执行	<b>⊘</b>	禁止执行

### 1.2 关于搬运

**注意** **!** 在搬运时请务必确保以下事项

- 本产品为精密机械, 请不要撞击或跌落。
  - 可能会导致产品发生故障。
- 跌落时很可能对身体部位造成伤害, 请确认好本产品的型号与重量后再进行搬运。

## 4. 使用注意

### 4.1 使用中に関して(作動中・駆動電源入り時の注意点)

- 警告** **⊘** 严禁拆除橡胶盖
- 请勿在PDW运行中拆卸本体上的橡胶盖。
    - 可能导致身体或衣物卷入。
- ⊘** 严禁触碰分度确认块
- 运行中分度确认块会发生旋转, 严禁触碰。(PDW08以上型号带有盖板)
    - 可能导致身体或衣物卷入。
- ⊘** 禁止超电压使用
- 禁止超过指定电压使用。
    - 可能导致触电、火灾等情况发生。
- ⊘** 禁止在分度过程中急停输入端运转
- 在分度过程中急停输入端可能会导致瞬间超载, 请勿进行。
    - 可能引发人身伤害及二次灾害。
- ⊘** 禁止在运行中或运行刚停止时触摸
- 因电机发热等原因, 运行中或刚停止时, PDW本体温度较高, 请勿触摸。
    - 可能导致烫伤。
- ⊘** 请勿在滴油·滴水环境下使用
- 标准品没有经过防水防尘处理。
    - 可能导致内部损坏。
    - 可能导致触电(附带电机)。
  - ※若有防水·防尘需求, 请与本公司联系。(非全型号可应对)

**注意** **!** 紧急停止后请从输入端进行旋转

- 电机停止后, 不得从负载侧旋转。
  - 强行旋转可能使凸轮沟槽损伤, 无法进行正常运转, 发生故障。

## 5. 维护·检修

### 5.1 异常情况处理方法

**警告** **!** 异常停止时请切断电源

- 停电及有可能发生危险时, 请务必切断电源。
  - 再次通电后可能引发设备失控, 十分危险。
- 再启动设备时请勿过于靠近设备。
  - 设备在启动后可能会产生不可预期的动作, 十分危险。

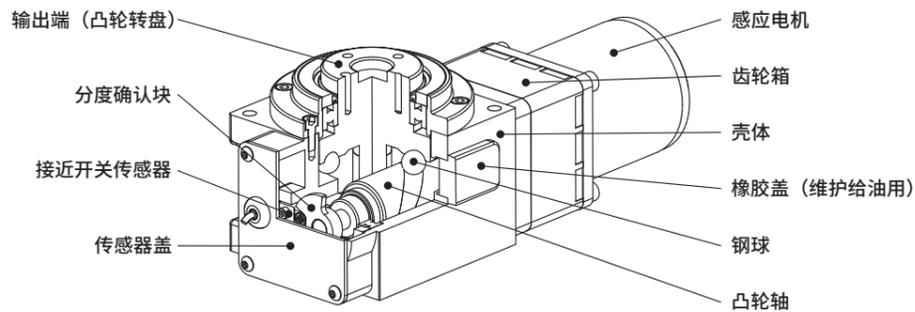
**注意** **!** 若因过载·撞击等造成凸轮沟槽或球面孔发生异常, 请联系本公司。

- 可能因铁粉或润滑油脂劣化等引发无法预估的二次灾害。

## 2. PDW系列(附带电机)的构造

### 2.1 构造·零件名称

- PDW基本属于筒型凸轮构造。
- 由凸轮、凸轮转盘、钢球组成, 构造简洁。



### 2.2 动作

- 单向或正反向进行分度。
- 输入端连续旋转带动输出端做间歇旋转。

## 3. 安装

### 3.1 注意事项

- 警告** **!** 请务必设计紧急停止回路
- 在紧急情况下必须停气断电, 请进行紧急断电及安全性功能的设计。
    - 紧急时如不能停机是非常危险的。
- !** 请正确配线
- 请正确地为电机配线。
    - 可能导致运行异常或损坏。
  - 请勿损伤配线, 请勿强行拉拽、按压或夹住配线。
    - 可能导致触电、火灾等情况发生。
- 注意** **⊘** 不得强行旋转
- 请勿强行旋转输出端。
    - 可能导致内部损坏。
- ⊘** 请勿撞击或过度施力
- 请勿撞击本体。在进行负载安装时, 请务必小心注意。
    - 可能导致内部损坏。
- ⊘** 禁止超载
- 承载重量不得超过允许值。
    - 可能导致内部损坏。
- !** 确保固定
- 请务必确保PDW在使用时已经固定。安装前, 请确认安装方法与使用条件及本体重量相匹配。
    - 可能在安装过程中/动作中脱落导致二次灾害。
  - 请勿安装已经损坏的PDW产品。
    - 可能引发人身伤害及二次灾害。
- !** 请保护本体
- 本品不是防水防尘式样。如果在滴水、滴油和粉尘较多的环境下使用, 请务必采用防水/防尘罩进行防护。
    - 可能导致运作不良。

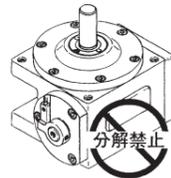
### 5.2 维护·检修

**注意** **!** 安全保管

- 请勿在以下场所存放机械设备及附属品。

**!** 儿童可以轻易接触并带出的场所·温度与湿度变化极大的场所·高湿度场所·阳光直射的场所·放置易挥发物品的场所

- ⊘** 禁止拆解
- 不得拆解、改造本产品。
    - 否则不保证正常的运行。
  - 若要拆卸本产品, 请务必切断电源, 待温度降低后再进行作业。
    - 可能引发人身伤害或机械失控。
  - 使用有机溶剂擦拭本体涂层面或标签, 可能会导致涂层脱落或印刷文字消失, 请注意。
  - 请勿剥离产品本体上的标签。若标签脱落, 请与我公司联系并更换新标签。
    - 无标签可能会导致无法进行正规维保。



## 6. 其他

### 关于保修(请确认保修期及保修内容)

●PDW系列的免费保修期为: 在样本条件下使用的前提下, 出货后1年或实际使用2500小时。(以先达到时间的准)

●在保修期内、确是由于PDW的品质问题引起的故障、本公司对此进行无偿维修, 但不负担拆卸工时及相关费用。

●对于使用人无端进行改造, 解体等情况, 本公司无法进行无偿服务。

●关于产品的长期保存, 请联系本公司或相关代理商。

●请不要剥离本体上的标签, 如无标签可能无法进行正规的维保。

### 关于售后

●本产品因技术改良, 时常有式样变更的情况, 请您知晓。

●如需产样本录及其他技术资料, 请联系本公司销售部门。

●我们还提供产品选型技术咨询等服务。

### 关于废弃

●请将本产品作为一般工业废弃物处理。

### 关于附属品

●关于电机·传感器·刹车系统等, 请参考各说明书。

### 设计·设置注意事项

●本品使用的油封是内部油脂用简易油封, 根据实际使用条件及安装方向等, 可能有油分渗出的情况发生。请勿将检修用橡胶盖置于下侧。

●标准式样没有做防滴·防尘处理, 若有需要, 请与我公司联系。



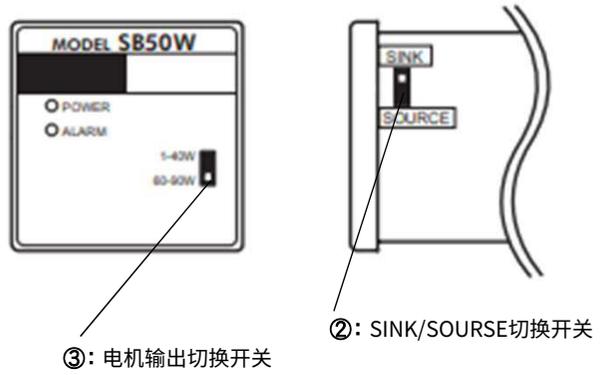
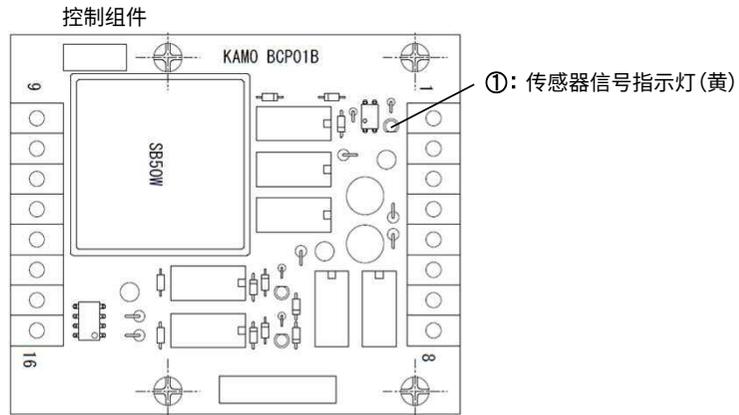
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**PDW 控制不良故障对应表**

现象	原因	对策
超程,不能瞬间停止,一直旋转	传感器异常 (传感器开启时,传感器的动作指示灯不亮。)	传感器故障,需要更换
	传感器异常(传感器开启时,传感器的动作指示灯亮、但控制组件的传感器信号灯(传感器信号指示灯(黄色))不亮)	确认传感器配线
	制动组件的制动解除输入是开启的状态	将其关闭。请查看制动组件的安装说明书
制动组件出现警告	电机的热保护启动	排除电机过热的原因
	电源,电机线的配线不良,接线不良	确认配线
	运行输入开启的状态下,开启AC电源	输出信号,请在AC电源开启之后再开启
	电机在运行中,及停止中切断AC电源	请不要在电机运行及停止状态下切断AC电源
电机不转	电容没有连接	单相电机的情况下,请连接附带的电容
	配线不良,连接不良	确认其配线
	SINK/SOURCE切换开关的设定问题。(下图②)	请正确设置制动组件侧面的切换开关 使用控制组件时设置为SINK。(请不要设置为SOURCE)
	电机输出切换开关的设定问题。(下图③)	请正确设置制动组件的切换开关。
制动组件的警告不能解除	在使用控制组件时不存在警告解除输入。	在使用控住组件的情况下,重启电源可接触警告。切断DC, AC电源之后,全部的信号输入都关闭之后,再重启电源
		只使用制动组件的情况下(不使用控制组件的时) 请将警告重置键开启。详细说明请查看制动组件说明书。



## Manual For Handling the Device With Safety (Handbook for using PDW Series correctly and safely)

**IMPERATIVE** Deliver the manual to those who actually use the device.  
We sincerely appreciate purchase of our products. Read the manual before using the device correctly and keep it carefully for future reference. Contact us if you found something not understandable.

### 1. Note for safety.

#### 1.1 Description of signs

The manual includes notices marked by signs in order to prevent accident from being occurred due to incorrectly using the device.

**Warning** This sign means that there is a possibility of getting damaged or fatally injured if used incorrectly by ignoring the warning.

**Caution** This sign means that there is a possibility of getting injured or doing damage on other material if used incorrectly by ignoring the caution.

\*Note that the sign designated by **Caution** involves a grave consequences. Abide by the rule designated at the signs because they contain important descriptions.

#### What symbols mean

pictograph	meaning
	This sign includes content which notifies to force and instruct to do.
	This sign notifies to prohibit to do.

#### 1.2 Carriage

##### **Caution** When carrying the product, hold on to it firmly.

- The product is precision equipment. Do not strongly impact or drop the product.
  - Otherwise, failure could be caused to the product.
- If the product is dropped, an injury could be caused to you on the hand or foot. When carrying the product, confirm its model and weight.

## 4. Precautions for Use

### 4.1 Precautions for use (during operation and when drive power is ON)

- Warning** **Do not detach the rubber cap.**
  - Do not detach the rubber cap from the main body side during operation.
    - Otherwise, you could be caught by the body or the clothes.
- Do not touch the dog.**
  - The dog is rotating during the operation. Never touch the dog. Also, be very careful not to be caught by the clothes or the like. (Models of PDW08 and above have a protective cover over the dog.)
    - Otherwise, you could be caught by the body or the clothes.
- Do not use the product at any voltage above the specified voltage.**
  - Do not use the product at any voltage above the specified voltage.
    - Otherwise, an electric shock or a fire could be caused.
- Do not stop the input shaft suddenly during the indexing operation.**
  - Do not stop the input shaft suddenly during the operation of the output shaft. If the input shaft is stopped suddenly, a load over the designed magnitude could be imposed on the product.
    - Otherwise, damage, an injury or a secondary disaster could be caused.
- Do not touch the product during or immediately after operation.**
  - Do not touch the product during or immediately after operation because the main body is extremely hot due to heat generation of the motor or the like.
    - Otherwise, a burn could be caused.
- Do not use the product in such an environment that the product is exposed to oil, water or the like.**
  - The product of the standard specifications is not drip-proof or dust-proof.
    - Otherwise, internal damage could be caused.
    - Otherwise, an electric shock could be caused (for motorized model).
  - ※If measures have to be taken to counter drips and dust, contact us. (However, note that such measures cannot be taken for some models.)

##### **Caution** In case of emergency stop, start rotation from the input shaft side.

- If the motor stops, do not start rotation from the load side.
  - If the product is rotated forcedly, the cam groove could be so damaged as to disable normal operation, causing failure.

## 5. Maintenance and Inspection

### 5.1 Troubleshooting

**Warning** **In case of abnormal stop, shut OFF the power.**

- If power failure or hazardous state is assumable, be sure to shut OFF the circuit power.
  - Otherwise, when the power supply is resumed, runaway or the like could be caused, posing extreme danger.
- When restarting the product, keep away from the machine.
  - Some machines could move suddenly and unexpectedly, posing extreme danger.

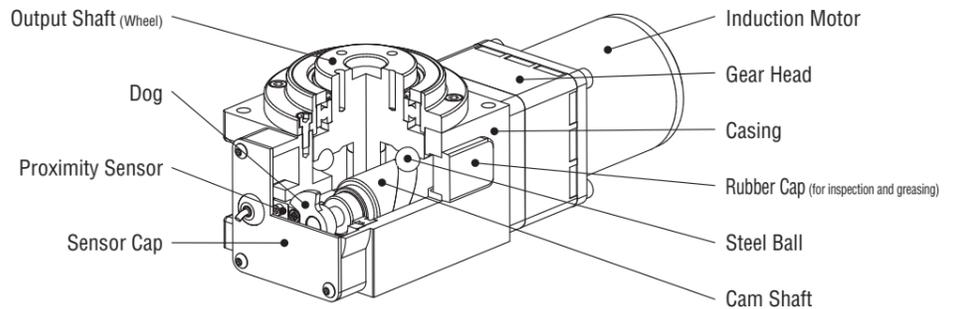
**Caution**

- If abnormality is found in the cam groove or spherical surface hole due to overload or impact, contact us for inquiry.
  - Otherwise, iron power generation, grease deterioration or the like could be caused, incurring an unexpected secondary disaster.

## 2. Structure of PDW Series (Motorized Type)

### 2.1 Structure, name of each part

- Pearldex is basically categorized as the barrel cam mechanism.
- Pearldex is of very simple structure made up of a cam, a wheel and balls.



### 2.2 Operation

- Indexing in one direction or in the forward/reverse directions.
- The continuous rotation for input turns to the intermittent rotation for output.

## 3. Setting

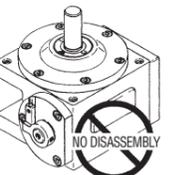
### 3.1 Handling

- Warning** **Provide an emergency stop circuit.**
  - Design an emergency stop circuit with emphasis on safety to enable instantaneous stopping and power shutoff in case of emergency.
    - Otherwise, the product would fail to stop in case of emergency, posing a high risk.
- Install wiring correctly.**
  - Install the motor wiring correctly and firmly.
    - Otherwise, abnormal rotation, breakage or damage could be caused.
  - Do not damage the wiring, apply excessive stress to the wiring or pinch the wiring.
    - Otherwise, an electric shock or a fire could be caused.
- Caution** **Do not try a forced turn.**
  - Do not try a forced turn from the output shaft side.
    - Otherwise, internal breakage could be caused.
- Do not impact the shaft or apply excessive force to the shaft.**
  - Do not impact the product. When mounting a load or doing the like, be very careful.
    - Otherwise, internal breakage could be caused.
- Do not mount a load beyond the acceptable magnitude.**
  - Do not mount a load beyond the acceptable magnitude.
    - Otherwise, internal breakage could be caused.
- Fix the product firmly.**
  - Fix the product firmly according to the use conditions and the main body weight.
    - Otherwise, the product could drop during operation, causing a secondary disaster.
  - Do not mount the product, if it is broken.
    - Otherwise, an injury or a secondary disaster could be caused.
- Protect the main body.**
  - The product is not water-proof or dust-proof. Depending on the use environment, be sure to protect the main body with a cover or the like.
    - Otherwise, malfunction could be caused to the product.

### 5.2 Check and maintenance

- Caution** **Take safety measure upon storing device.**
  - Upon keeping unused devices and accessories in a place, don't keep them in the following places.
 

Where is accessed by child, where they are easily taken out, where temperature and humidity change abruptly, where is in high humidity environment, where admits direct sunshine, and where volatile liquid substance is deposited.
- Do not disassemble.**
  - Don't disassemble and improve the device.
    - If otherwise, we can't guarantee normal operation of the device as stipulated in specification.
  - When detaching the product or the motor, be sure to turn OFF the drive power and wait until their temperatures drop sufficiently.
    - Otherwise, a burn or runaway could be caused.
  - When wiped by organic solvent, label and seal may come off or their legend may disappear.
  - Don't remove label and seal. When label and seal are likely to peel off, contact us and replace them with new ones.
    - If otherwise, we may fail to insure normal guarantee.



## 6. Other notice

### Guarantee (Check the terms & contents of guarantee)

- On the understanding that the device (PDW Series) is used in accordance with our specification, we guarantee the period to repair the device free of charge until a time which earlier relapses after operating 2500 hours or within one year after delivery.
- If trouble or defect appears within the guaranteed period of time obviously due to deteriorated quality of PDW Series device, we guarantee to repair the device free of charge.
  - Note that we charge device-related expenditures and expenses arisen from steps of detaching parts from and attach parts to the device.
- If the device is repaired, disassembled or improved at customers' side, repair free of charge should be outside our guaranteed requirements.
- We don't have oversea maintenance and technological support in connection with the device.
- If the device is unused long, please contact us before use.

### After-Sales-Service

- For the sake of quality improvement, the specification may be subject to change without notice.
- As for our catalogue and other technological documents, contact sales department of our company.
- We are always ready to arrange technological inquiry and meeting. Contact us by telephone without hesitation.

### Disposal

Dispose the device as general industrial wastes.

### Accessories

For the handling of the motor, the sensor and the brake pack, refer to their instruction manuals.

### Precautions for design and installation

- The oil seal on the main body is a simple seal intended for internal grease. Depending on the use conditions and the mounting posture, grease may ooze out to the outside. For this reason, do not use the product with the access rubber cap positioned downward.
- The product of the standard specifications is not drip-proof or dust-proof. If you need to take measures to counter drips or dust, contact us for consultation.



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