

!

強制

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。
使用本产品之前，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

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!

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
<div><div>!</div></div>	强制执行	<div><div>⊘</div></div>	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，请勿撞击或跌落。
○可能会导致产品在使用中发生故障。

●

跌落时很可能对身体部位造成损伤，请确认好本产品的型号与重量后再进行搬运。

●

在搬运时请勿握持轴部分，可能导致损坏及故障。

3．使用注意事项

3.1 运作中・接入电源时的注意点

!

警告

⊘

请勿触碰可动部件

●

请勿在产品运作中靠近可动部件，请小心防止衣物卷入。
○可能造成伤害。

⊘

请勿急停运作中的驱动轴

●

在运行中急停可能会产生超出允许范围的负载，请勿急停驱动部。
○可能导致产品损坏、人身伤害、二次伤害等情况出现。

⊘

请勿触碰运行中或刚刚停止的设备

●

因电机发热等原因，运行中或刚停止时，减速机本体温度较高，请勿触摸。
○可能会造成人身伤害或烫伤。

!

注意

!

紧急停止后请由输入端旋转

●

预紧急状况急停后，请务必由输入端手动缓慢旋转减速机之后，再启动。
○请勿使用蛮力旋转输出端。

⊘

请勿在有水、油环境下使用

●

本产品非防水/防滴款式，请勿在有水/油环境下使用。
○可能导致运转不良或损坏。

●

有水/油环境下，请务必使用盖板等保护产品本体。

4．维护・检修

4.1 异常情况处理方法

!

警告

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异常停止时请断电

●

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

●

如发生过载，撞击等异常情况，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．安装

2.1 注意事项

!

警告

!

请在产品规格参数范围内使用

●

使用本系列产品前，请务必进行选型计算。请在规格参数范围内使用本产品。
○可能导致运作不良或损坏。

●

请勿在易燃易爆气体/腐蚀性/沾水/靠近可燃物等环境下使用。
○可能导致漏电/火灾/人身伤害等情况发生。

●

禁止超载。
○可能导致产品内部损坏。

●

标准品的键槽为精密级。嵌合时请勿撞击，轻压进键槽即可。
○可能导致轴或电机损坏。
○请自备键轴。

●

本产品没有自锁装置。如希望维持负载，请在外部加装自锁机构或使用带刹车的电机。此外，电机端刹车及维持负载等情况，请以电机说明书为准。
○可能导致负载物掉落，造成危险。

!

请务必设计紧急停止回路

●

在紧急情况下必须立即停止，请进行紧急断电及安全性功能的设计。

⊘

请勿安装已有破损的产品

○

可能导致设备损坏、人员伤亡及二次灾害。

!

注意

!

确保固定

●

请务必确保产品在使用时已经固定。请确认安装方法与使用条件及本体重量相匹配。
○安装或运行中可能会脱落，引发二次灾害。

●

请确保各部分螺栓已经紧固。

●

负载安装时确认键·轴完好、确保固定螺栓已经紧固。
○可能导致产品掉落造成危险。

●

长期使用的磨损以及扭矩过大造成的损坏，可能导致跳齿的情况发生，请提前做好负重掉落等重大危险处理的预案。
○可能导致产品在运作中错位或脱落，造成人身伤害及二次灾害。

!

请保护本体

●

为确保安装精度，本产品的输入端及安装面未做防锈处理。请在需要进行防锈的部位涂抹防锈剂或润滑油脂等。
○可能因保存状态、环境等导致产品生锈。

●

请根据实际使用环境的差异，选择不同的保护方式（如盖板等）。请务必做好本体保护。
○可能导致运作不良或损坏。

●

本产品在轴部涂抹防锈剂作暂时防锈。组装时请用将防锈膜去除之后再行使用。
○防锈剂品种:油性涂料
【防锈剂的去除方法】取适量的涂料用酒精或煤油，用布擦拭去除。

⊘

请勿强行旋转

●

请勿强行旋转本产品的输出轴侧。
○可能导致产品损坏。

●

安装前请确认回转方向。
○可能导致人身伤害或设备损坏。

●

若使用联轴器，请选择带有吸收偏心误差能力的产品。
○可能导致异响·振动·断轴等情况出现。

⊘

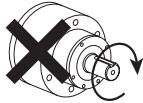
请勿对轴部使用蛮力或撞击轴部

●

安装时请注意不要撞击或施加超出承载范围的负载。
○可能造成损坏。

●

安装滑轮等部件时，请勿对轴造成过大冲击。
○可能导致断轴或内部损坏。



4.2 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，请务必在切断电源，待温度下降，并确保周围环境安全后再进行。

●

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，请与我公司联系并换取新标签。
○无标签可能会导致无法进行正规维保。

5．其他

关于保修（**!** 请确认保修期及保修内容）

●减速机系列的免费保修期为：在样本条件内使用的前提下，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、确是由于减速机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。

维修委托

●问题产品·维修等，请联系本公司销售部或相关代理商。

关于废弃

●请将本产品作为一般工业废弃物处理。

Manual For Handling the Device With Safety

(Handbook for using Reducer Series correctly and safely)

!

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.

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
<div>!</div>	This sign includes content which notifies to force and instruct to do.
<div>⊘</div>	This sign notifies to prohibit to do.

1.2 Transportation

Caution

!

Positively hold in place upon transportation.

- Device is precision instrument. Don't give strong impact on device and don't drop it on the ground.
 - If otherwise, it becomes a main cause of troubles.
- Upon transporting device, confirm type and weight of device so as not to incur physical damage on body, hands and feet when fallen on the ground.
- Upon transporting device, don't hold shaft. If otherwise, it may cause damage or trouble.

3. Caution for Usig Device

3.1 Caution in use — Attention is paid when operating with device connected to power source.

Warning

⊘

Don't touch moving elements.

- Upon operating device, don't approach moving elements. Be careful for clothes not to be caught in.
 - If otherwise, it may cause injury.

⊘

Don't stop input shaft suddenly while operation device.

- Don't stop input shaft suddenly for the fear that it may impose load greater than designed when input shaft stops suddenly upon operating device.
 - If otherwise, it may invite injury or breakage or secondary disaster.

⊘

Don't touch device while operating device or immediately after stopping device.

- Don't touch device because high temperature rise may occur on device due to heat generated by electric motor.
 - If otherwise, it may invite or injury or burn.

Caution

!

Turn input shaft when emergency stoppage occurs.

- When unavoidable emergency stoppage occurs, reenergize device after slowly turning input shaft. Don't turn output shaft forcibly.
 - If otherwise, it may invite malfunction or breakage.

⊘

Don't use device doused with water or oil.

- No measure is taken for device to attach water proof and dust proof equipments. Don't use device under environment that device may be doused with water or oil.
 - If otherwise, it may invite malfunction or breakage.
- Protect device with cover or the like when used under environment that device may be doused with water or oil.

4. Check and Maintenance

4.1 How to cope with abnormal conditions

Warning

!

Disconnect device from power source when emergency stoppage occurs.

- Make sure to cut power source circuit when power failure or dangerous condition is supposed.
 - If otherwise, it may cause intractable situation to invite dangerous situation when reenergized.
- Don't approach device upon reenergizing.
 - If otherwise, it may cause unexpected movement to invite dangerous situation depending on device.

Caution

- Contact us when abnormal condition occurs due to overload or impact on device.
 - Ferrous powder or deteriorated grease may cause unexpected secondary disaster.

2. Setting

2.1 Handling procedures

Warning

!

Use device as stipulated in specification.

- Never fail to calculate selection upon using device. Use device within load and number of rotation stipulated in specification.
 - If otherwise, it may invite malfunction or breakage.
- Do not use the product in the atmosphere of explosive gas or flammable gas, in the corrosive or splashy atmosphere or near a combustible material.
 - Otherwise, a fire, an electric shock or an injury may be caused.
- Do not attach the load over the allowable level.
 - Otherwise, internal breakage may be caused.
- The keyway width of the standard type is of precision class. When fitting the key, be careful not to have an impact on the shaft but grind the key so that it can force-fit in the keyway easily.
 - Otherwise, the shaft or the motor may be broken.
 - Key must be prepared by customer.
- This product has no self-lock function. To lock the load, provide an external locking mechanism or use the motor built in with a brake. To lock the load with the motor-side brake, observe the instructions prescribed in the manual of the motor.
 - Otherwise, the load may drop.

!

Provide emergency stoppage circuit.

- Design with an emphasis placed on safety so that the power supply is instantaneously cut at the time of emergency.

⊘

Don't install broken device.

- Don't install the device when it is broken.
 - If otherwise, it may invite breakage or injury or secondary disaster.

Caution

!

Positively fix device.

- Upon setting device, fix it positively.
Mount device in accordance with requirements in manual and weight of device.
 - If otherwise, device may fall during operation and mounting process resulting into secondary disaster.
- Make sure that bolt and screw are not loosely.
- When attaching a load, confirm no looseness in the key or the shaft and fasten the set bolt firmly.
 - Otherwise, the load may drop unexpectedly.
- If the keyway is worn after long-time use or damaged under excessive torque, ratcheting (tripping) may occur. If load drop or other serious danger is conceivable, take appropriate measures against load drop or such danger.
 - Otherwise, the load may come off during the operation, casing an injury or a secondary disaster.

!

Protect device.

- Rust-preventing surface treatment is not provided with output, input shaft and mounting surface in oder to keep high precision. To those portions that requires rust-preventing treatment, apply rust-preventing oil or grease.
 - Depending on atmosphere and storage conditions, rust may appear
- Make sure to protect device with cover depending on usage environment.
 - If otherwise, it may cause malfunction or breakage.
- Our product is applied with an anticorrosive agent to the shaft portion for the temporary prevention of corrosion. Before installing the product, remove the anticorrosive agent film.
 - ◎Type of anticorrosive agent: Oil-based varnish
[How to remove the anticorrosive agent]
Wipe it off with a cloth soaked with alcohol for paint or white kerosene.

⊘

Don't forcibly turn device.

- Don't forcibly turn with device attached to machine at output shaft.
 - If otherwise, it may cause breakage.
- Before connecting the product to the machine, check to confirm the direction of rotation.
 - Otherwise, an injury or machine breakage may be caused.
- When using a coupling, select one that can accommodate eccentricity.
 - Otherwise, noise, vibration or axis breakage may be caused.

⊘

Don't give impact or force on device.

- Don't give impact or the like. Be careful upon imposing load on device
 - If otherwise, it may cause breakage.

4.2 Check and maintenance

Caution

!

Take safety measure upon storing device.

- Upon keeping unused devices and accesories 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.

⊘

Don't disassemble.

- Don't disassemble and improve the device.
 - If otherwise, we can't guarantee normal operation of the device as stipulated in specification.
- Upon installing and removing device, make sure to cut driver circuit. After confirming that temperature has sufficiently dropped, start working while paying attention around working place.
- 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.

5. Other notice

5.1 Guarantee(Check the terms & contents of guarantee)

- On the understanding that the device (Reducer 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 Reducer 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.

5.2 After-Sales-Service

- If the device is unused long, please contact us before use.
- 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.

5.3 Repair and trouble

In case of trouble or inquiry for repair, contact sales department of our company.

5.4 Disposal

Dispose the device as general industrial wastes.