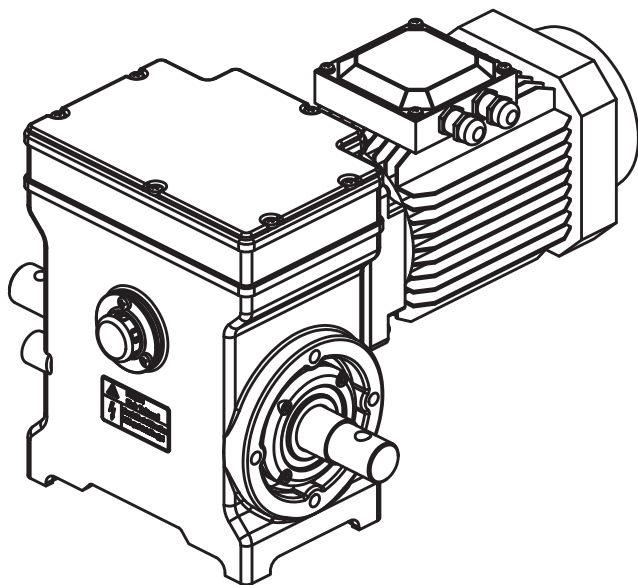


Big Dutchman减速机

使用说明书



经销商：必达（天津）家畜饲养设备有限公司

引 言

- 必达(天津)家畜饲养设备有限公司是集设计、生产、销售于一体的研发型高科技企业。本公司提供现代温室和养殖所需的各类资材及设备，是专业生产设施农业和机电产品的公司。
- 感谢广大用户十多年来的厚爱和支持，感谢各供应商的鼎力协作与帮助。必达（天津）家畜饲养设备有限公司将竭尽全力为用户提供高品质的产品和高效率的全方位服务。

“为客户创造价值，实现梦想”

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为了您更好的使用本产品，请仔细阅读本说明书！

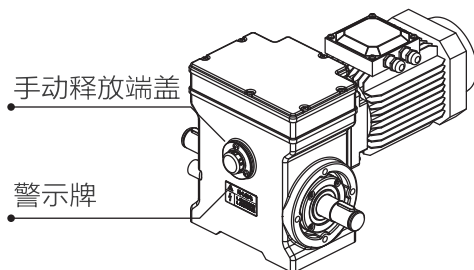
由于产品改进，您所购买的产品可能会与说明书的内容不完全一致，但不会影响产品的正常使用。本说明书内容如有更改，恕不另行通知，请谅解！

一、安全注意事项及警示

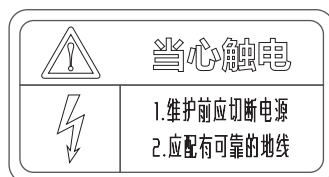
1 注意事项

- 1.1 正确的使用与保养，有助于延长3GG®减速机的使用寿命，请严格按照本说明书操作；
- 1.2 产品使用过程中，必须配有可靠的接地连接线；
- 1.3 3GG®减速机输入电压为三相（380V）。接线作业时，需专业施工人员或电工进行，避免因触电而导致危及人身安全的事故；
- 1.4 如产品无法正常使用，勿拆解机器，请直接联系本公司，告知故障现象，以及机器名称、型号和编号（见侧面铭牌），本公司会有专人帮您解决问题；
- 1.5 3GG®减速机主要用于温室及畜牧开窗、拉幕遮阳，以及其它提升重物的间歇式工作场合；
- 1.6 请勿对产品施加外力冲击，以免造成损伤；
- 1.7 质保期内未经本公司授权，擅自拆解或维修的，本公司不再提供质保。

2 安全警示



警示牌内容：



3 安全警告



请正确使用本产品，避免造成危险和伤害。

- 安装和拆卸前，请先关闭电源，以免触电；
- 行程调整好后，安装开关盒盖，锁紧螺钉，防止渗水漏电；
- 安装后如需拆卸设备，请先卸下负载，避免载荷滑落伤人或损坏设备；
- 如需加长电源线，请将连接处密封完好，防止进水或漏电；
- 本产品不可在水中使用，避免进水短路；
- 打雷时请切断电源，避免雷击；
- 请勿让儿童在工作区域玩耍或碰触产品；
- 保持工作区内整洁，防止异物卷入。



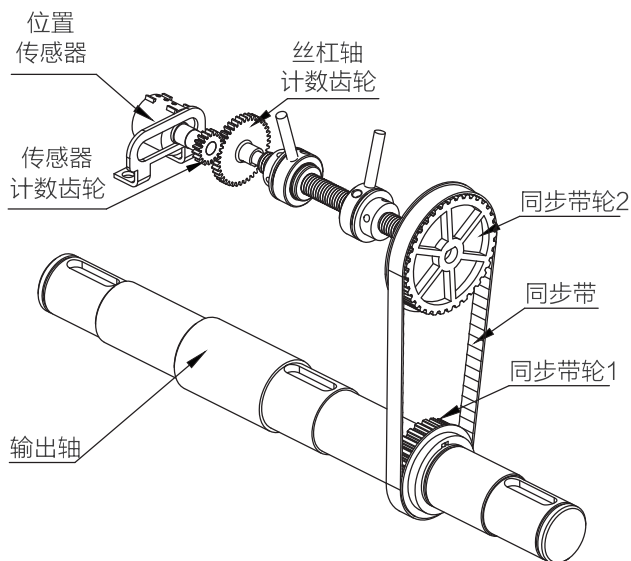
特别注意：

- 三相线连接并调试完毕后,不得变换接线顺序（相序），否则会引起行程控制失效，减速机不能正常停止，导致设施损坏。三相线顺序不能变换，既包括电机接线柱处的接线，又包括三相进线以及控制柜内三相接线等各处；
- 调节行程时，应自动走完两个往复行程（拉幕、开窗）以确认行程控制接线正确，否则不能断定行程控制接线正确，可能会导致减速机在某个方向不能正常工作。

二、主要技术要求及配套要求

1 产品特点

- 1.1 本产品具有反向极佳的自锁及行程控制装置，可实现自动控制，特别适合自锁要求高的开窗场合；
- 1.2 本产品具有快速手动释放功能，当发生停电或产品故障不能运转时，卸下减速机释放盖，可使用扳手手动旋转释放轴，人工控制减速机运转；
- 1.3 本产品标配电位计式位置传感器套件（注：使用说明详见P17页），用套件中不同齿数的配对齿轮，来调整传动比，可满足不同场合的各种要求。



▲ 位置传感器配对齿轮示意图

2 性能数据

参 数 \ 型 号	G400-550-2.6	G400-550-5.2
额定输出转速	2.6rpm	5.2rpm
额定电流	1.9A	
电机额定功率	550W	
额定输出扭矩	400N · m	
电源额定电压	AC 380V (三相)	
电源额定频率	50Hz	
使用环境温度	-10℃ ~ 50℃	
防护等级	IP55	
行程范围 (按输出轴圈数计)	(0 ~ 90) 圈	

3 配套要求

- 3.1 用户提供三相380V交流电输入装置及配线；
- 3.2 固定位置及尺寸请按照本说明书要求进行安装；
- 3.3 安装所需工具，请用户自行准备。

三、安装方式

1 本产品的安装固定方式分为两种：底部安装和侧部安装

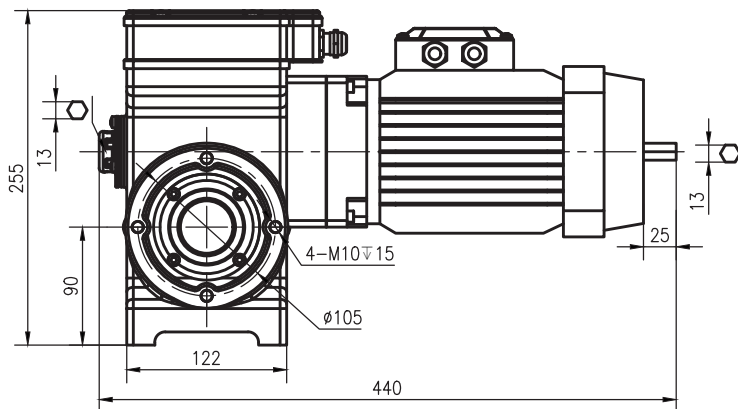
1.1 底部安装：

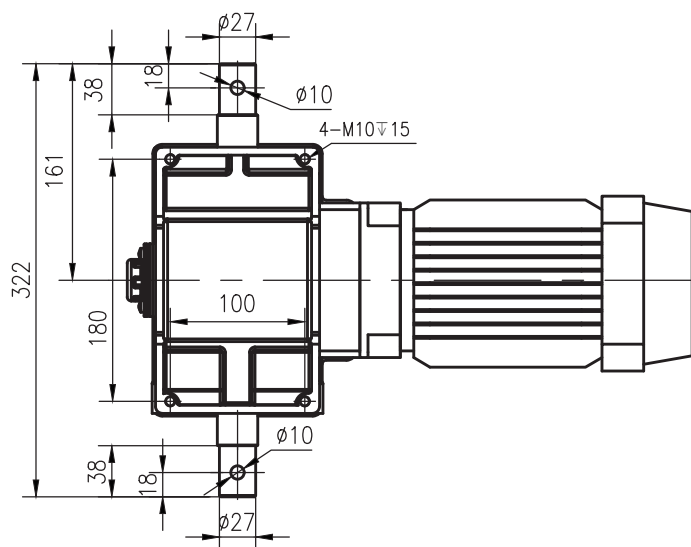
安装位置在产品底部，有4个固定螺纹孔，通过4个对应型号的螺栓连接固定；

1.2 侧部安装：

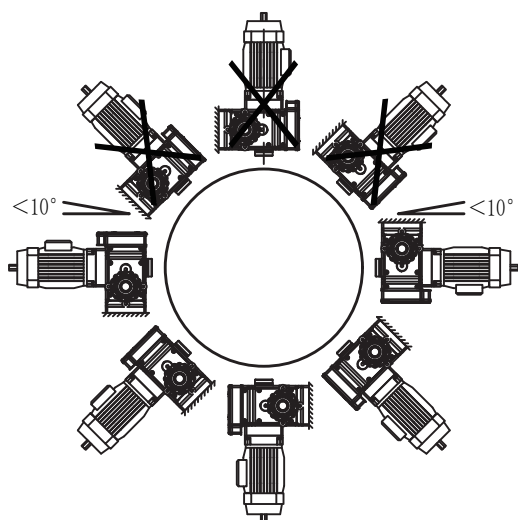
输出轴两侧均可安装，两侧各有4个螺纹孔，通过4个对应型号的螺栓连接固定。

2 安装尺寸图





3 安装角度图



四、行程限位调整方法及示意图

1 限位开关装置工作原理

当系统运行至极限位置（全开或全闭）时，滚花螺母与锁固块接触挤压锁死后随丝杠一起转动，这时其上拨杆挤压弹簧片，打开工作限位开关S11/S12，切断电路。

2 极限位置确定

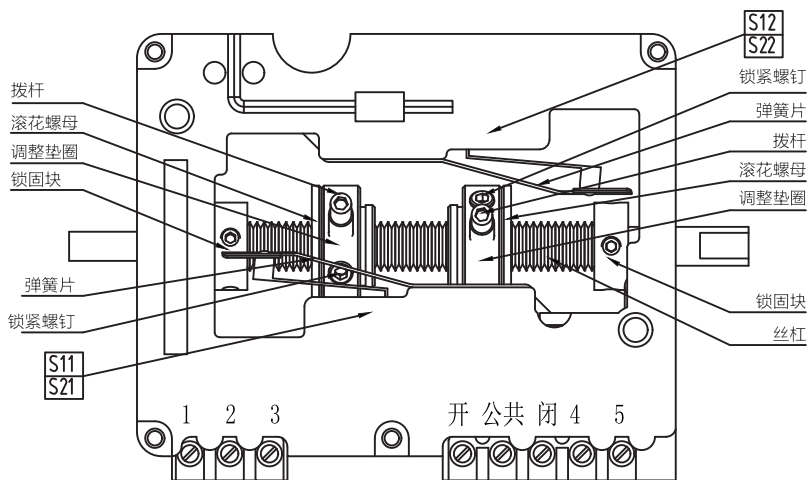
根据现场实际使用情况确定系统全开极限位置和全闭极限位置，并做出相应标志，避免混淆。

3 全闭极限位置限位开关调节

- 3.1 调整驱动轴至全闭极限位置（如窗户闭合位置），确定相应的工作限位开关（S11或S12）；
- 3.2 将滚花螺母转动至相应锁固块，使二者接触；
- 3.3 根据此时滚花螺母的位置，旋转调整垫圈，使调整垫圈上的拨杆恰好压住弹簧片，触发限位开关S11或S12。

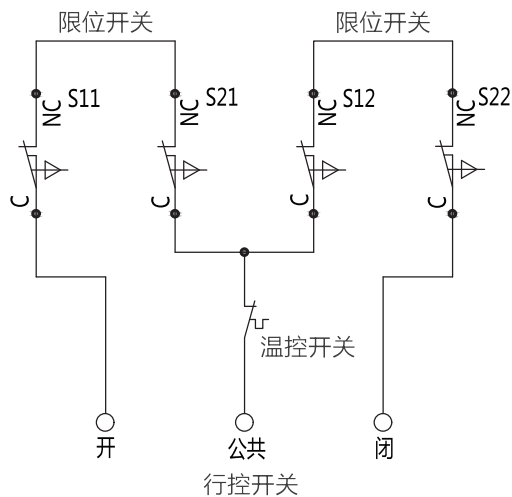
4 全开极限位置限位开关调节

与3全闭位置调节3.2、3.3步相同，只不过此时以全开极限位置（如窗户处于全开极限位置时）为调节基准。



▲ 行程限位调节示意图

5 限位开关装置电器接线



▲ 行程控制电气原理图

五、操作说明

1. 按本说明书第三节“安装方式”进行本产品的安装固定；
2. 按本说明书第四节“行程限位调整方法”连接限位引线；
3. 按本说明书第四节“行程控制电气原理图”接入动力电源，通过调整接线相序，切换控制产品运转方向；
4. 固定及接线完毕后，在设备启动之前，应由专业人员核实检查；
5. 如发生故障，并且按本说明书第七节“典型故障及排除方法”提供的方法排除后仍不能确定故障原因时，请不要采取强制使用的方法，更不能擅自对产品拆卸，而应及时与本公司销售人员联系。

六、产品的维护与保养

1. 应在有安装经验的人员指导下进行，保证安装轴线的直线度和各连接件的正确安装，使其各转动件转动灵活，无卡阻现象；
2. 对于本产品的保养，用户应做到防潮，防锈，防卡死。

七、典型故障及排除方法

序 号	故 障	原 因	处理方法
1	有异常 噪音	1. 润滑油不足或不符合要求; 2. 蜗轮或齿轮损坏; 3. 轴承磨损或损坏。	1. 加足量的润滑油; 2. 保修; 3. 保修。
2	限位不准	1. 限位没有调整完好; 2. 限位失效。	1. 重新调整; 2. 保修。
3	卡死或传 动不灵活	1. 与减速机连接的各传动 件安装不到位; 2. 有传动件不符合要求。	请立即断电, 严禁继续使用: 1. 调整安装; 2. 调整或更换零部件。

合格证

产品经检验合格，准予出厂。

检 验 员:

检验日期:



必达（天津）家畜饲养设备有限公司

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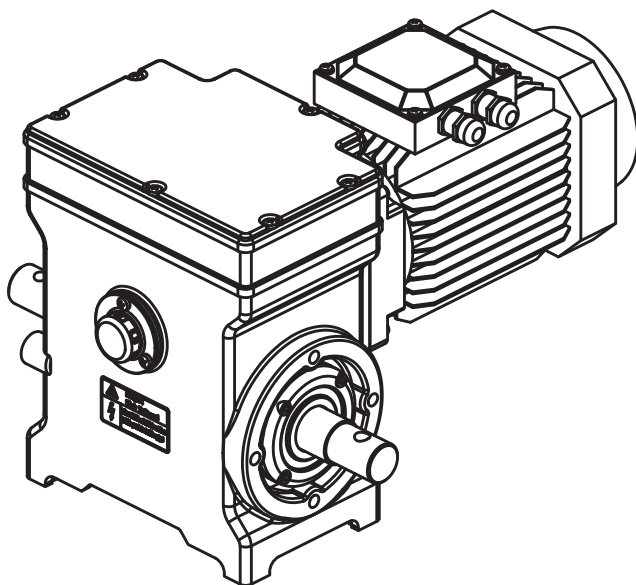
电子邮箱：bdchina@bigdutchman.com

版 本 号：G400-5.2-BD01A

Big Dutchman

Gear Motor For Ventilation

User Manual



Big Dutchman(Tianjin) Livestock Equipment Co.Ltd

Introduction

We are grateful for our customers' continuous support and trust over the years. We will continue with our service and good quality in the years to come.

Big Dutchman is a high-tech company integrated with design production and sales, supplying equipments ranging from modern greenhouses to livestock houses. Big Dutchman has been leading the trends of mecho-electro products in Chinese facility agriculture.

Big Dutchman established and executes strict quality control and follow-up systems. Big Dutchman obtains ISO9001, ISO14001 and OHSAS18001 certificates, ensuring all the products are qualified with possibility to track down.

“To create value for customer, to fulfill their dream”

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Due to product improvements, the products you purchase may not exactly match the contents of the manual.

But this will not affect the normal use of the product. The contents of this manual are subject to change without notice.

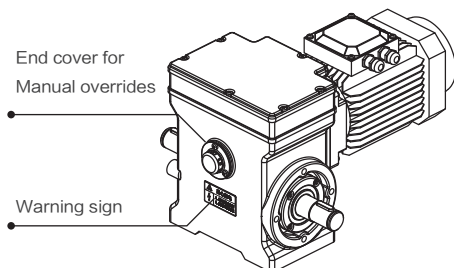
Hope you will understand it! For your better use of this product, please read this manual carefully, thank you.

1. Safety instructions and precautions

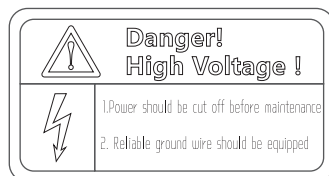
1.1 Precautions for use

- (1) Please read and follow the user manual to maintain and operate the 3GG gear motor, which will extend the service life of the gear motor ;
- (2) Make sure the ground wire is connected reliably when operate the motor ;
- (3) The input voltage of 3GG Gear motor is 3 phase(380V). For the wiring job, it should be performed by the professionals or electrician to avoid accidents that endanger personal safety due to electric shock ;
- (4) Contact the supplier or distributor in case product failure, inform with details like product name, series number and specifications, don't disassemble gear motor, remove or replace of the parts in the motor ;
- (5) The main applications for the motor are greenhouse ventilation and screening system, livestock shed curtaining, ventilation, hoisting system ;
- (6) Cut off the power when install or tear down the product to prevent electricity shock ;
- (7) Do not do dangerous actions such as external impact to the product to prevent the product from being damaged ;
- (8) The product is not allowed to be disassembled or repaired without the authority of Beijing Shengsi during product warranty time.


1.2 Safety Warning



Warning sign content



1.3 Warning and precautions:

 Please operate this motor in the right way to avoid human injury or property loss.

- a. Please keep the kids away from this motor in operation to avoid any danger.
- b. Do not install or uninstall the product with power on.
- c. When uninstall the product, take off the loading to avoid any damages to human being or the product.
- d. Please cut off the power when thundering to avoid lightning strikes.
- e. Do not put in water or use in water. If there is water, there will be a malfunction.
- f. Set up limit switch then tighten the bolt to prevent water leakage or electricity leakage.
- g. When the power cable needs to be lengthened, please make sure the connection is sealed well and no leakage is allowed to prevent fire and electricity shock.
- h. Please don't toss or throw this product to avoid outside shock, otherwise its function may be damaged.
- i. Please keep working area neat and clean to avoid other materials falling involved in the motor.

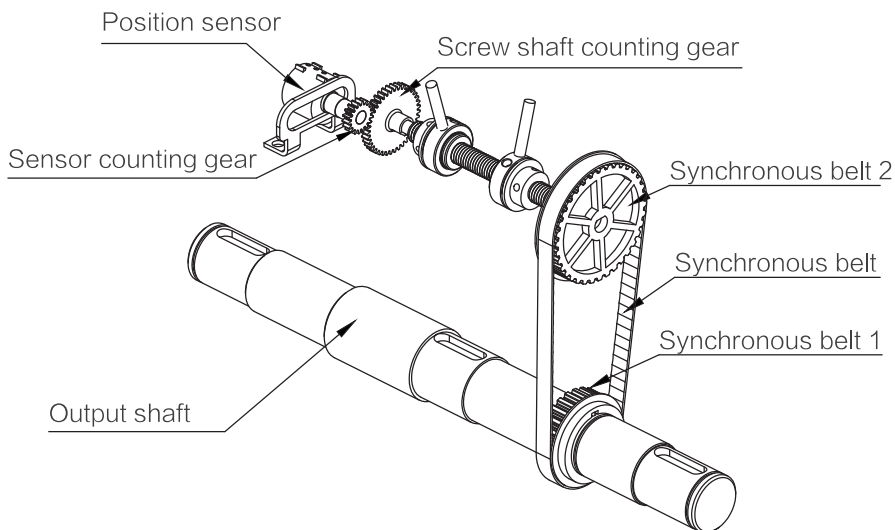
Special attention

1. After the three-phase line is connected and tested, the wiring sequence (position) can not be changed. If the wiring sequence is changed, the limit control will be invalid, and the Gear motor will not stop normally, causing damage to the facility. The order of the three-phase lines cannot be changed, not only the wiring at the motor terminals, but also the three-phase into line and the three-phase wiring in the control cabinet.
2. Adjusting the limit, two reciprocating travel (Curtain, Ventilation) should be automatically completed to confirm that the limit control wiring is correct. Otherwise, it cannot be concluded that the line control wiring is correct, which may cause the Gear motor not to work properly in one direction during application.

2. Technical and supporting requirements

2.1 Product features

- (1) This product has a self-locking and limit control device with excellent reverse direction, which can realize automatic control, especially suitable for window opening occasions with high self-locking requirements;
- (2) This product has a manual overrides function. When there is a power failure or product failure occurs, remove the end cap of the Gear motor, and rotate the release lever manually by a wrench to normally rotate the worm;
- (3) This product is available with potentiometer position sensor kits. You can choose to buy. The kits includes a bracket, wrench, locking rings and other spare parts. They include different ratio gears to adjust the transmission shaft of different proportions of gear ratio.



▲ Potentiometer Position Sensor Transmission, Diagram 1

2.2 Parameters

Model Parameters	G400-550-2.6	G400-550-5.2
Speed	2.6rpm	5.2rpm
Rated Current	1.9A	
Rated Power	0.55Kw	
Torque	400N · m	
Voltage	AC 380V (3 Phase)	
Frequency	50Hz	
Working Temperature	-10° ~50°	
IP	IP55	
Limit Range (Counted by output rotation)	(0.1-90) rotation	

2.3 Accessory Requirements

- (1) User need to have 3 phase AC power source and relevant electric cable;
- (2) Take reference from this user manual for the installation position and size;
- (3) Prepare the relevant tools for motor installation.

3. Installation methods

3.1 There are two ways to install the product, namely bottom mounting and side mounting.

(1) Mounting threaded hole type :

G400-550-2.6-L and G400-550-5.2-L Gear motor Mounting threaded hole is M10.

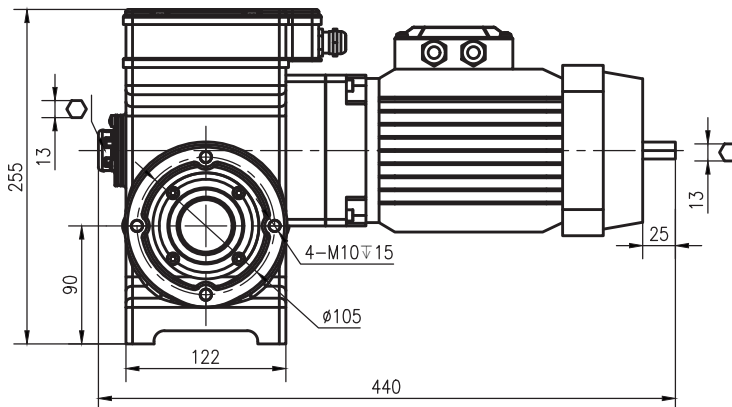
(2) Bottom mounting :

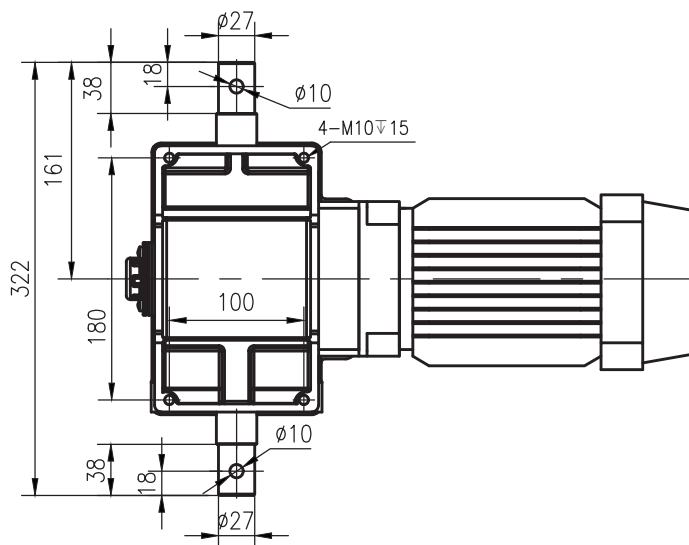
The mounting position is at the bottom of the product and there are 4 fixed threaded holes. Fixed by 4 corresponding models bolts.

(3) Side Mounting :

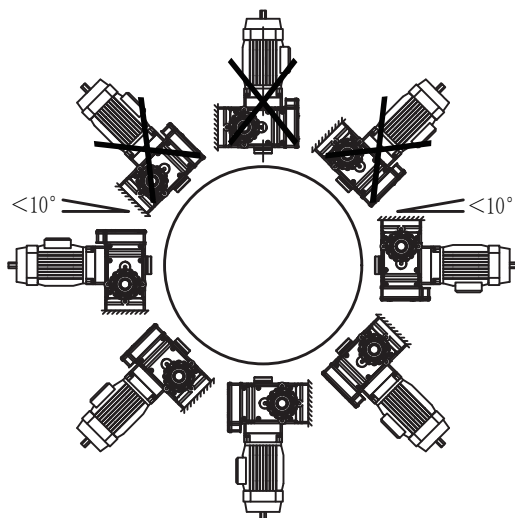
Both side of the output shaft can be installed, with 4 threaded holes on each side. It can be fixed by 4 corresponding model bolts.

3.2 Installation sketch map





3.3 Installation diagram



4. Adjustment of limit switch

4.1 Introduction of limit switch

Limit switch mechanism includes Thread Shaft, Adjusting washer, Knurled Nut, Lock block, Spring plate, Deflector Rod, Lock screw, Working Limit Switch S11/S12 and Safety Limit Switch S21/S22, etc. The adjusting washer and knurled nut are connected (loose the screwing nut, then can adjust the Knurled nut position on the thread shaft) . When threaded shaft is rotated, while knurled nut doesn't rotate, Knurled nut can move forwards and backwards through the thread shaft.

4.2 Working theory of limit switch

When the system is running to the extreme position (fully open or fully closed), the knurled nut is moved on the lead screw to the locking block, and when the two are in contact, they are locked to each other and rotate with the lead screw, then the upper positioning bolt hits the spring plate, opens the working limit switch S11/S12, and cuts off the circuit in time.

4.3 Limit switch position setup

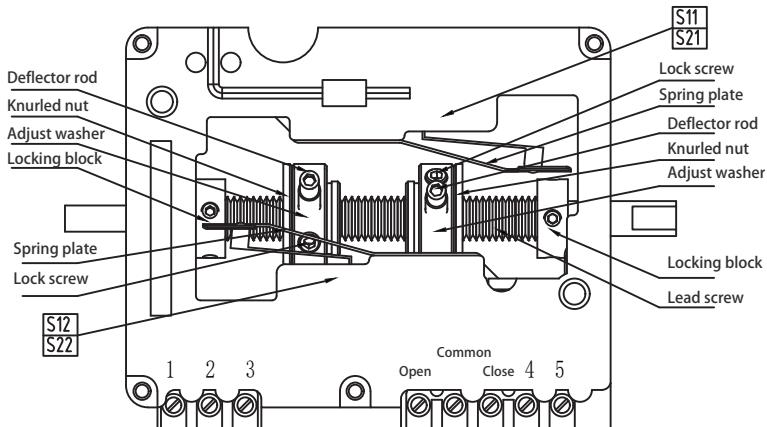
Please mark the fully open position and fully close position so it is easy for further operation.

4.4 Fully close position limit switch setup

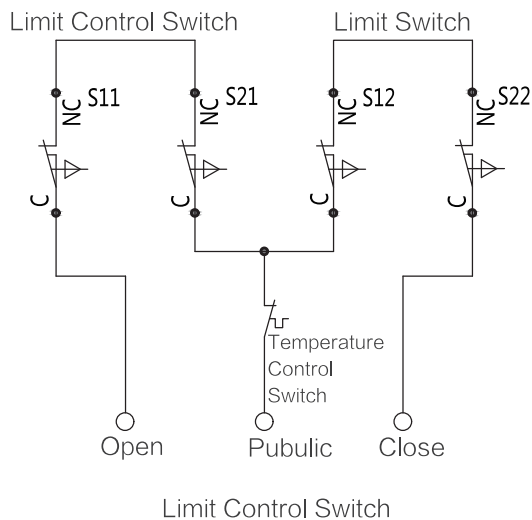
- (1) Adjust the drive shaft to the fully closed limit position to determine which working limit switch is active at this time (S11 or S12) ;
- (2) Move the knurled nut to the corresponding locking block to make the two contact;
- (3) According to the Knurled nut's position, rotate the adjusting washer, Make the deflector rod on the adjusting washer just press the spring plate, trigger the limit switch S11/S12.

4.5 Fully open position limit switch setup

Same like set up of the fully close position limit switch from step 1 to step 3, just based on fully open position as set up objective.



4.6 Diagram for limit switch wiring



5. Operation instructions

5.1 Install the product under the guidance of installation method.

5.2 Connect the wire as per instructions for limit switch adjustment.

5.3 Connect wire to the power supply according to electric motor wiring indication, switching wire to change direction of the motor rotation.

5.4 Before starting motor, the electrician should check carefully.

5.5 In case of product failure, don't disassemble the product, check the product according solutions listed as below, if still can not operate normally, please contact our sales directly.

6. Repair and maintenance

6.1 Installation should be guided under experienced professionals, to make sure that the output axle alignment is in straight line, and all parts are running smoothly.

6.2 For daily maintenance of the motor, user have to make sure the motor moisture protection, rust-protection and anti-blocked.

7. Common failures and solutions

Item	Faults	Reasons	Solutions
1	Abnormal noise	A: Worm gear or gear broken; B: Bearings abrasion or broken; C: Insufficient grease oil.	A: Contact for repair ; B: Contact for repair ; C: Add more grease oil.
2	Limit Position incorrect	A: Didn' t adjust limit switch accurately; B: Limit switch failed.	A: Readjust limit switch; B: Contact for repair.
3	Stop or movement is not smooth	A: Inspect the connection of the motor and other parts; B: Inspect if transmission parts meet the requirement.	Cut off power, and stop operation; A: Adjust installation; B: Adjust and replace the transmission parts.

Certificate of Quality

This product has been tested and proved to be qualified for delivery.

Inspected by:

Inspection date:



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Version No.:G400-5.2-BD01A