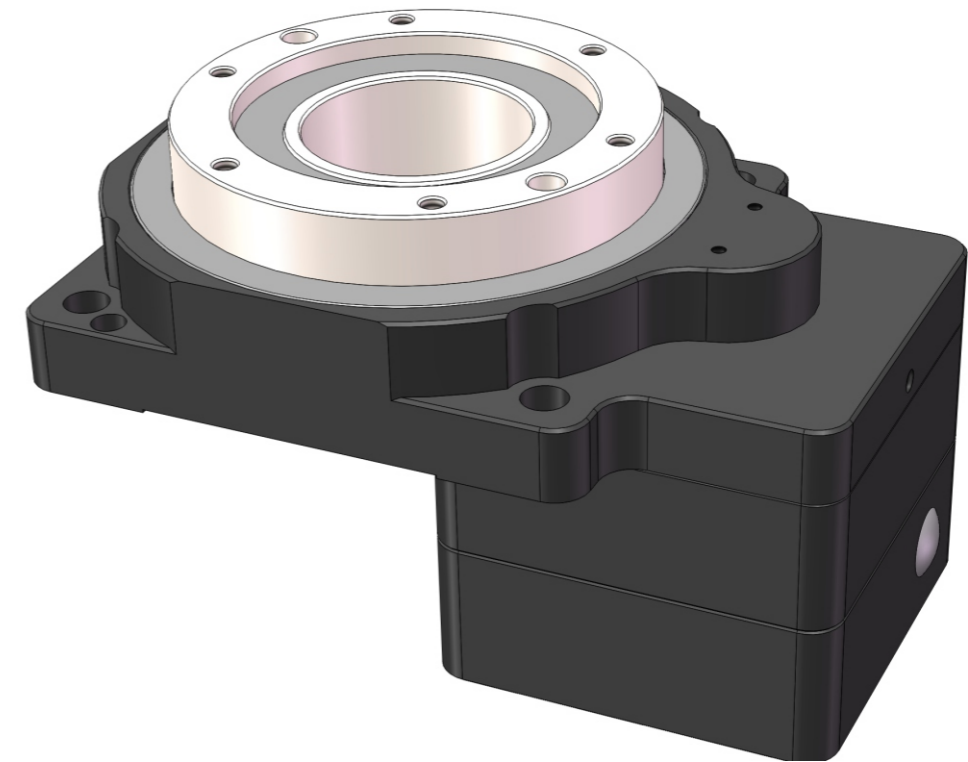


中空旋转平台 Hollow Rotary Platform

FEATURES

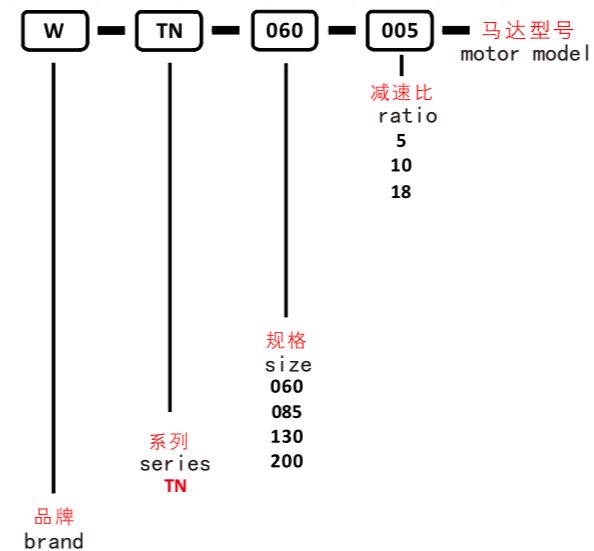
产品特点

- » 旋转面可直接连接工作零件，提升安装的方便性。
The rotary surface can be connected with parts directly which is more convenient for installation.
- » 高精度，重复定位精度可达 ± 15arcsec。
High precision, repeated positioning accuracy can reach to 15 arcsec
- » 中空式的设计，配线配管都方便使用。
Hollow design, very convenient for go through the line
- » 可搭载各种厂家的伺服和步进电机。
Can be equipped with various brands of servo and step motor
- » 大口径中空旋转平台中空径最大Φ100mm
The maximum diameter of the large hollow Rotary Platform is 100mm



INDICATION FOR MODEL SELECTION

机种型号表示



GENERAL NOTICES

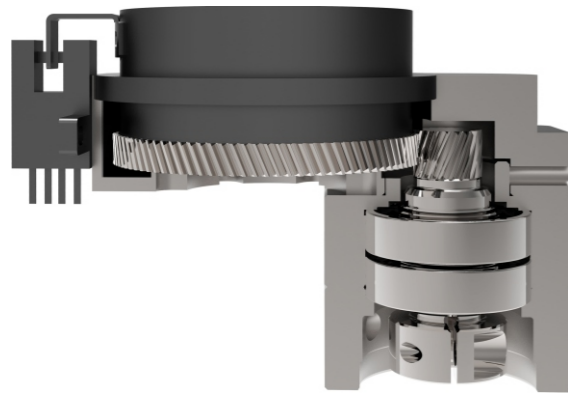
订货须知

- 机种、型号、扭矩
- 减速比或出力轴转速
- 工况及连接方式
- 数量及安装的机械名称
- 输入方式和输入转速
- 马达厂牌型号或法兰及马达轴尺寸
- Series, model, torque
- Ratio, output shaft speed
- Working condition, connection mode
- Quantity, installation equipment name
- Input mode, input speed
- Motor brand, flange, output shaft size

中空旋转式传动装置的特征/Features

一体入力轴/Integrated Input Shaft

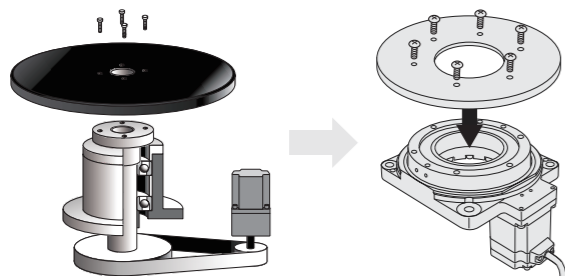
一体式入力轴，高承载刚性，无打滑风险
Integrated input shaft, high bearing rigidity, no risk of slipping



削减设计工时/Simplified Design

可直接将装置的工作台及机械手臂安装在旋转平台上。与使用皮带轮等机构零件时相比，可减少机构设计、零件调配、皮带状态调节等的工时与费用。

Tables and arms can be installed directly onto the output table. This saves the hassle and cost of designing an installation mechanism, arranging necessary mechanism parts, adjusting the belt tension, etc., when mechanical components such as a belt Motor + and pulley are used for installation.



电动机+ 机构部件
(单独设计·采购)
Motor + Mechanical Components
(Designed separately, Purchase)

DG II 系列
(一体化产品)
DG II Series
(Integrated product)

大口径中空旋转平台可简洁地配线、配管

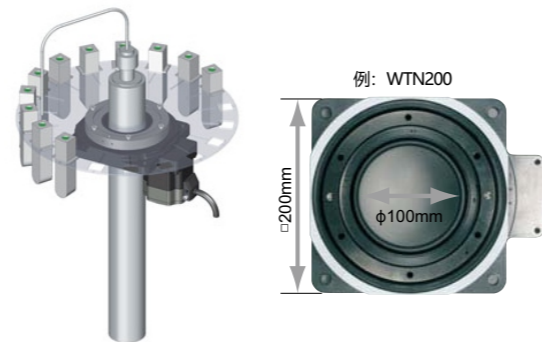
The large diameter hollow Rotary Actuator could simplify wiring and piping

大口径中空孔（贯穿）可用于布线复杂的配线与配管等场合，使装置设计更为简洁。

- 时输液管贯穿机构的装置

The large diameter hollow hole (through-hole) helps reduce the complexity of wiring and piping, thus simplifying equipment design.

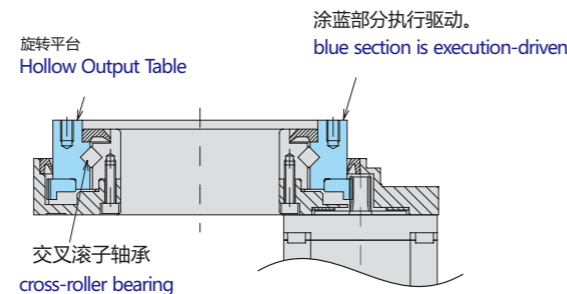
- Filling equipment with piped-in liquid



大口径中空旋转平台/ The large diameter hollow Rotary Actuator

型号 Model	安装尺寸 Frame Size(mm)	中空径 Hollow Diameter (mm)
WTN60	60	φ28
WTN85	85	φ33
WTN130	130	φ62
WTN200	200	φ100

标准型的构造 /Standard Structure



高负载·高刚性/High Load and High Rigidity

重载型的旋转平台的轴承采用交叉滚子轴承，实现了高负载、高刚性。

- 最大容许轴向负载 4000N
- 最大容许惯性力矩 100N·m

The heavy load rotary actuator uses a cross-roller bearing which allows for both high load and high rigidity.

Maximum Permissible Axial Load 4000 N
Maximum Permissible Inertia Moment 100 N·m

[运行示例]

品名：WTN200010
Example Operation
Actuators Name: WTN200010

搬运质量 91kg(工作物6个+工作台)
: 工作物10kg/个×6个
: 工作台31kg(直径500mm、厚20mm、铁制)

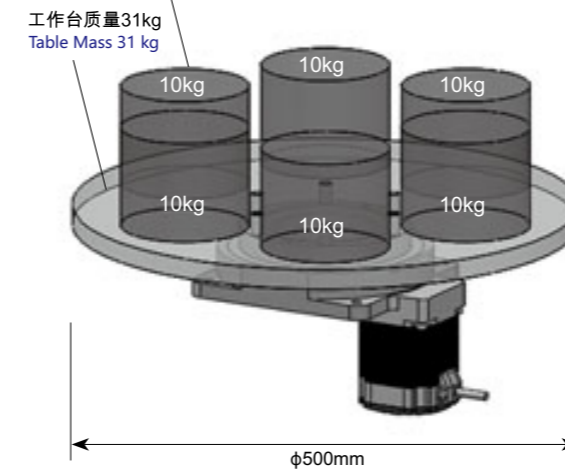
伸出的距离：160mm
安装方向：水平

Load : 91 kg (load 6pcs + working table)
Load 10 kg/piece × 6 pieces
Table 31 kg
(Diameter 500 mm (19.7 in.), thickness 20 mm (0.79 in.), iron)

Overhang Distance : 160 mm (6.3 in.)
Installation Direction : Horizontal

工作物10kg×6个
Load 10 kg × 6 pieces

总质量91kg
Total Mass 91 kg



• 高负载
High Load

总质量91kg的轴向负载为893N。
(10kg×6个+31kg) × gm/s²=893N

DG200R的容许轴向负载为4000N，在容许值内。

The axial load for a total mass of 91 kg is 893 N.
The permissible axial load of the WTN200 is 4000 N, so this is within the permissible value.

可高负载驱动/High Load Driving

• 高刚性

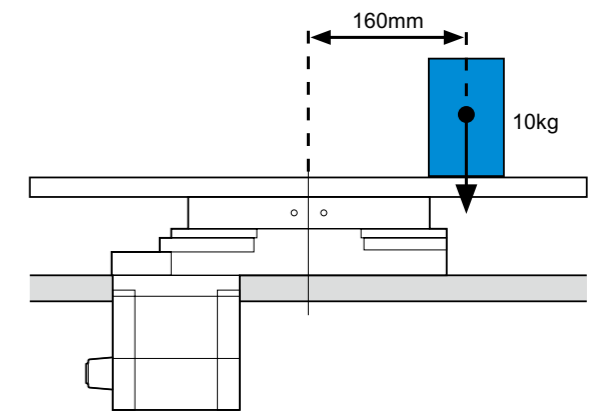
距工作台中央部160mm的位置有10kg的工作物时，惯性力矩为15.7N·m。10kg×gm/s²×0.16m=15.7N·m

WTN200的容许惯性力矩为100N·m，在容许值内。

• High Rigidity

When a working load of 10kg is placed at a distance of 160 mm (6.3 in.) from the center of the table, the Inertia Moment is 10kg×gm/s²×0.16m=15.7N·m

The permissible moment of the WTN200 is 100 N·m, within the permissible value.



高刚性旋转式传动装置

将高负载加载到非工作台中央部的位置时能够顺畅驱动

A high-rigidity rotary actuator allows a large load that is far away from the table center to be driven

无齿隙的高精度定位/High Positioning Accuracy with Non-Backlash

- 无齿隙
- 重复定位精度 ±15arcsec (±0.004°)

【请注意】精度是在一定负载、一定温度（常温）下的数值。

- Non-Backlash
- Repeated positioning Accuracy ±15 arc seconds (±0.004°)

Note

The repetitive positioning accuracy is measured at a constant temperature (normal temperature) under a constant load.

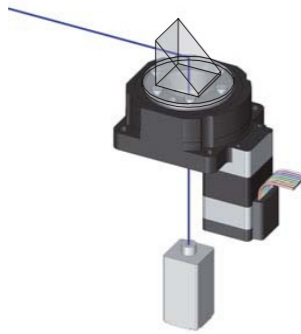
用途范例/Applications

利用中空孔的用途 Applications that require hollow shaft

- 输液管贯穿机构的装置
Filling equipment with piped-in liquid



- 光学用途 Optical Application



需要高刚性的用途 Applications that Require High Rigidity

- 施加惯性力矩负荷的用途(倒挂安装)
Applications in which a Moment Load is Applied (Ceiling installation)



需要高性能电动机的用途 Applications that Require High Performance Motors

- 高精度定位用途(图像检查装置)
High Positioning Accuracy (Image inspection equipment)



- 负载惯性发生变化的用途(磁盘制造装置)
Applications with Load Fluctuations (Disc manufacturing equipment)



安装方向自由 Install in Any Direction

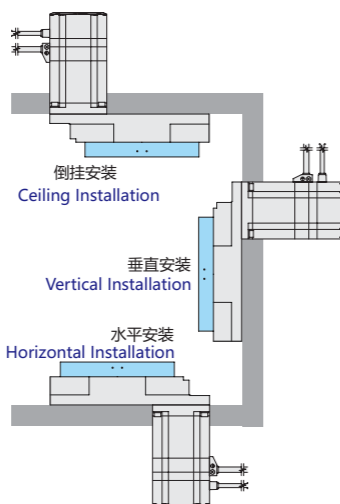
DG II 系列除水平安装外, 还可垂直安装或倒挂安装, 装置设计的范围较广。

The DG Series can not only be installed horizontally, but can also be ceiling mounted or wall mounted. More options for equipment design.

请注意

中空旋转式传动装置偶尔会有少量润滑油渗出。如果润滑油渗出导致周围环境污染, 请在定期检查时进行确认或安装接油盘等装置。

Note
A small amount of grease will occasionally seep out of the hollow rotary actuator. If a grease leak would cause a contamination issue near the machine, either perform routine inspections, or install protective equipment such as an oil sump.

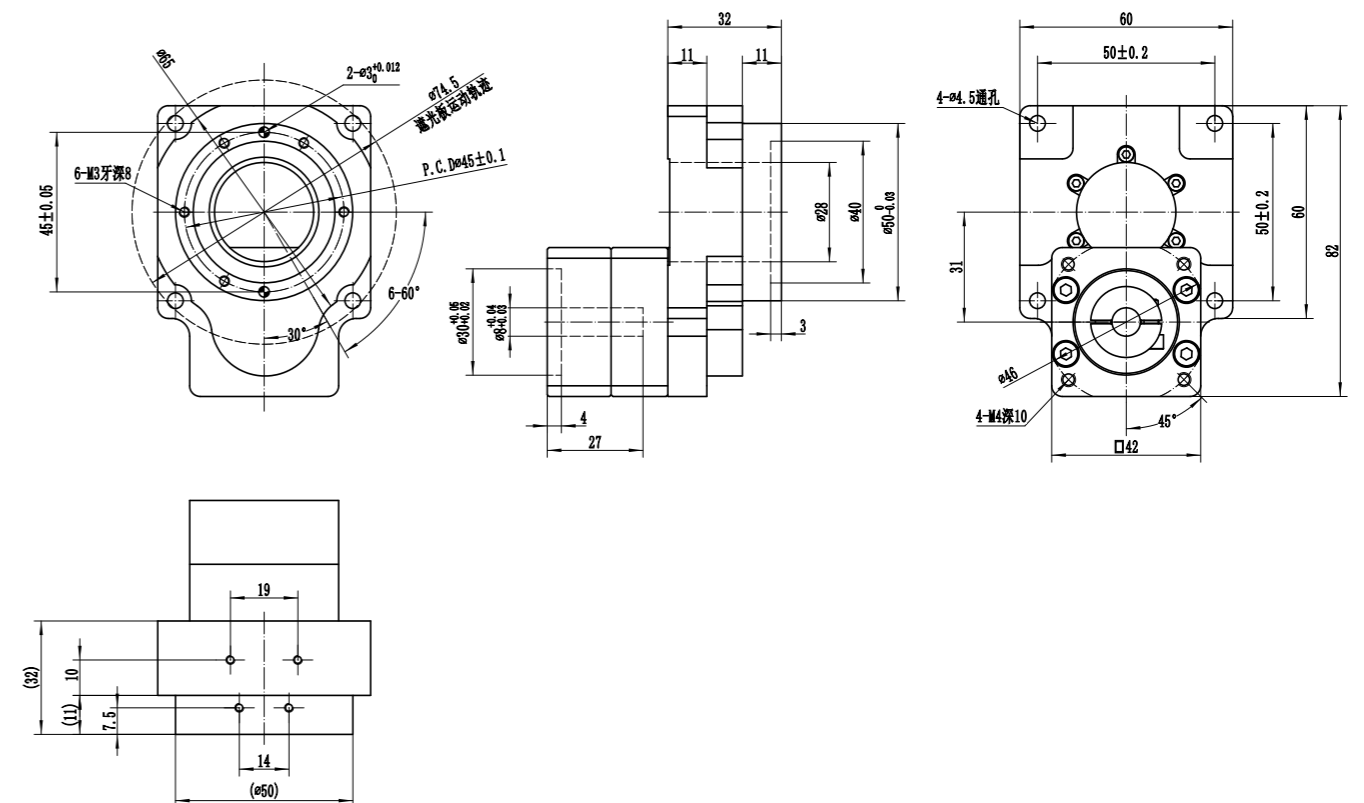


重载型/Overloading type

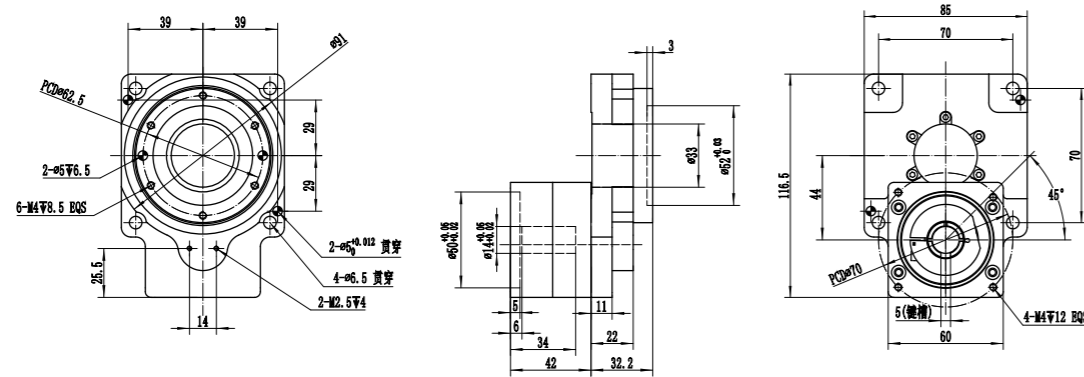
WTN系列性能表/WTN series Performance data sheet

品名	WTN060	WTN085	WTN130	WTN200				
搭载马达型号 Equipped motor type	42型步进马达 Stepper motor 50w~100w伺服电机 Servo motor		57型步进马达 Stepper motor 200W~400W伺服电机 Servo motor	86型步进马达 Stepper motor 750W伺服电机 Servo motor				
支撑旋转平台轴承 Bearing type	交叉滚子轴承 Crossed roller bearing							
减速比 Ratio	5	18	5	10	18	10	18	
转动惯量 Rotational inertia	3507×10 ⁻⁷	4324×10 ⁻⁷	12593×10 ⁻⁷	12593×10 ⁻⁷	81556×10 ⁻⁷	81556×10 ⁻⁷	361220×10 ⁻⁷	361220×10 ⁻⁷
允许输出转矩 Allowable output torque	5.2N.m	1.2N.m	12N.m	10N.m	32N.m	20N.m	70N.m	70N.m
额定输出转速 Rated output speed	200r/min							
角度传动精度 Angle transmission precision	3arcmin							
反复定位精度 Reset positioning precision	±15arcsec							
齿隙 Backlash	无齿隙(可调节结构) No backlash(Adjustable structure)							
允许轴向负载 Allowable axial load	250N	500N	2000N	4000N				
允许惯性力矩 Allowable moment of inertia	5N.m	10N.m	50N.m	100N.m				
旋转平台平行度 Parallelism of rotating platform	<0.015		<0.02					
旋转平台同心度 Concentricity of rotating platform			<0.015					
噪音 Noise			65dB				67dB	
防护等级 Protection level	IP40							
重量 Weight	0.6kg	1.2kg	2.8kg	9.6kg				

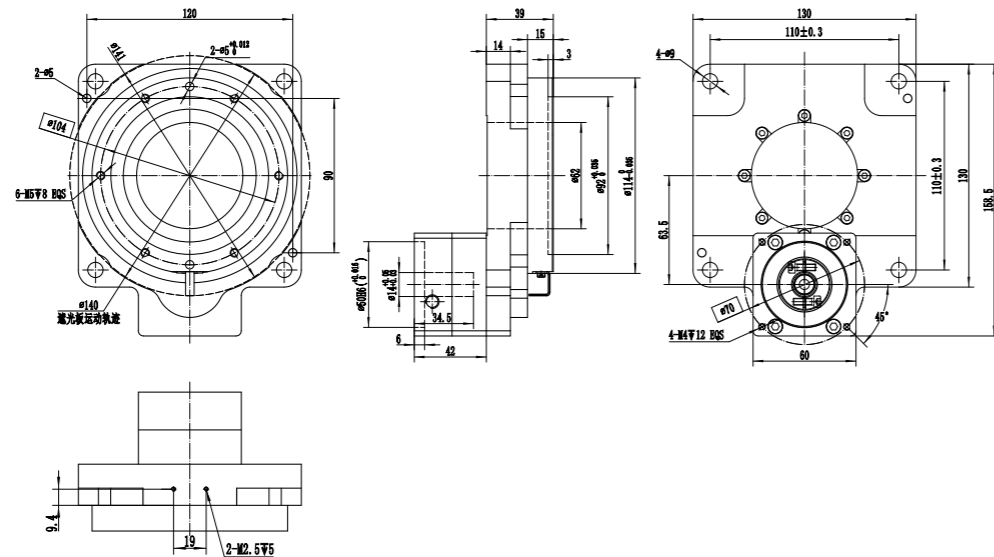
WTN060



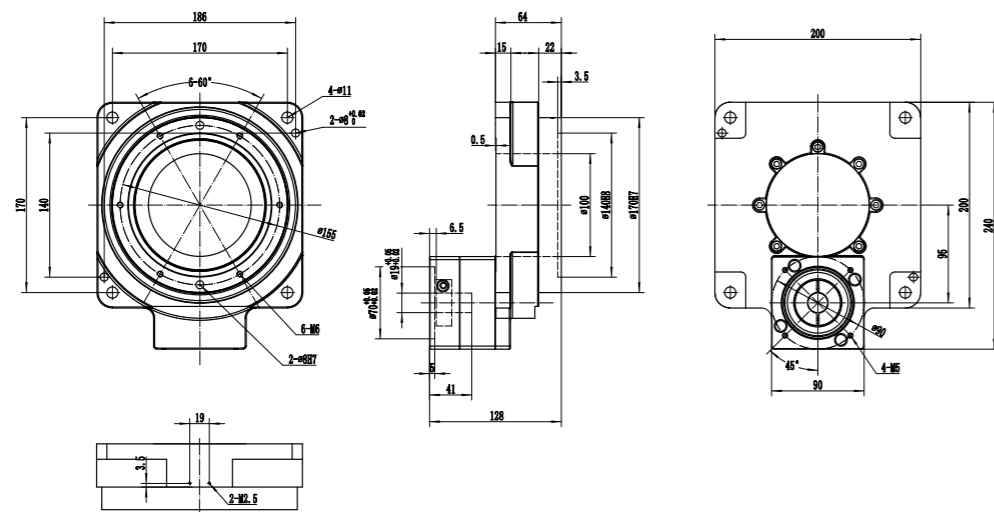
WTN085



WTN130



WTN200



INSTALLATION OF PLANETARY REDUCERS

减速机安装方法

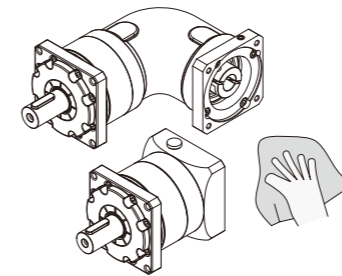
减速机如由贵司安装，请遵守以下要求。

行星减速机马达安装法兰部的尺寸因伺服马达而异，有可能无法安装指定的伺服马达。（请务必安装订购时所指定的伺服马达。）
伺服马达的输出轴可能涂有防锈剂等。

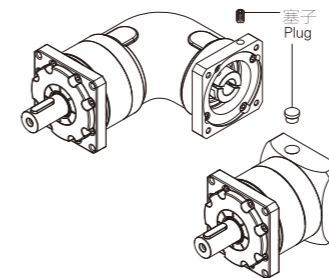
If your company install the planetary reducers by yourself, please comply with the following requirements:
The size of the motor mounting flange of the planetary reducer differs according to the servo motor, the designated servo motor maybe not able to be installed. (Please be sure to install the designated servo motor when purchased)
There may be rust inhibitor on the output shaft of the servo motor.

1 将马达轴安装面的防锈剂、油等擦拭干净。

Clean up the rust inhibitor and grease on the installing side of the motor shaft

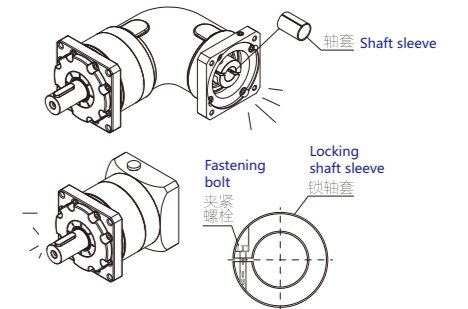


2 取下塞子。
Take off the plug



3 转动输入轴，使加紧螺栓等头部对准塞孔。此时请确认加紧螺栓处于松弛状态。将减速机垂直放置在平整场所，使减速机的马达安装面朝上。（如有轴套，请按图示进行安装。）

Rotate the input shaft, and align the top of the fastening bolt at the plug hole. Make sure that the fastening bolt is loose at the time. Lay the reducer vertically on he flat place, and face up the installing side of the motor.(If there is a shaft sleeve, please install it as the picture shows below)



4 请将马达轴缓缓地插入输入轴中以免造成撞击，确认马达法兰面与减速机法兰面紧贴。按规定的紧固扭矩紧固马达安装螺栓。（参见表3）

Please insert the motor shaft into the input shaft slowly to avoid impact, and make sure the surfaces of the motor flange and the reducer flange are stick together. Fasten the motor mounting bolt according to the specified fastening torque. (Refer to the Table 3)

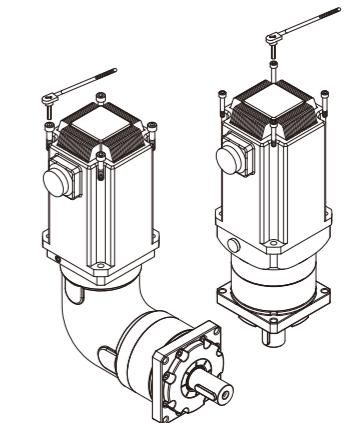
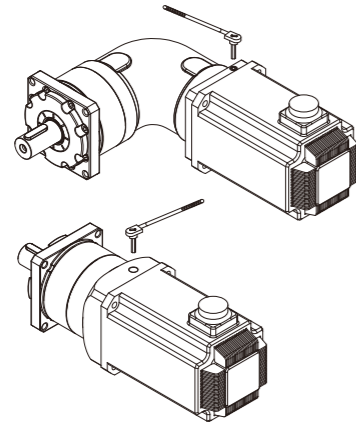


表3 螺栓紧固扭矩 Diagram 3 Bolt fastening torque

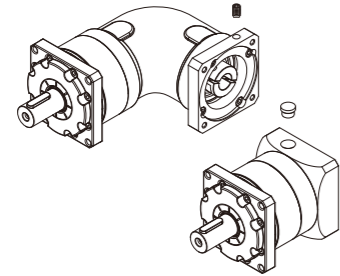
螺栓大小 Bolt size	M3	M4	M5	M6	M8	M10	M12	M16
马达安装螺栓 Motor mounting bolt	N·m 1.0	2.5	5.1	8.7	21	42	72	134
	kgf·m 0.11	0.26	0.52	0.89	2.1	4.3	7.3	14
夹紧螺栓 Fastening bolt	N·m 1.9	4.3	8.7	15	36	71	125	-
	kgf·m 0.18	0.44	0.89	1.5	3.7	7.2	13	-

- 5** 使用扭矩扳手等工具，按规定的紧固扭矩紧固输入轴的夹紧螺栓。（参见表3）

Follow the specified fastening torque, and fasten the fastening bolt of the input shaft with the tools such as torque spanner.(Refer to the table 3)



- 6** 安装塞子，至此作业完成。
Install the plug, and the install inn complete.



安装到输出法兰部（限法兰型）

Install it to the output flange(limited to the flange model)

- 将装置部件等安装到输出法兰部时，请使用扭矩扳手等工具按规定的紧固扭矩进行紧固。

When installing the device component to the output flange, please follow the specified fastening torque and use the tools such as torque wrench.

螺栓大小 Bolt size	M3	M4	M5	M6	M8	M10	M12	M16	M20
夹紧螺栓 Fastening bolt	N·m	1.9	4.3	8.7	15	36	71	125	603
	kgf·m	0.18	0.44	0.89	1.5	3.7	7.2	13	62

※ 推荐螺栓强度分类12.9级以上

Recommended strength level of the bolt is above 12.9

安装与设置

Installation and setting up

- 避免在直接接触雨水的场所使用。（如需在户外或接触粉尘、水滴的场所使用，请事先向我公司咨询。）
- 请设置在0~40℃的环境中。
- 请安装在牢固无振动的台面，用螺栓等切实固定。安装时，应保证便于保养和检查。
- Please avoid using in places that are exposed to rain directly. (Please consult to WANSHSIN or our distributors first when using it outside or in places exposed to dust and water.)
- Please fit it in the temperature under 0-40°C.
- Please install it on the stable and firm surface, and fasten it tightly with bolt. During installation, it is necessary to ensure easy maintenance and inspection.

输出轴侧连接

Output shaft connecting

- 在输出法兰型上安装齿轮、皮带轮、链轮等时，请采用带凸缘的安装设计，嵌入输出法兰凸缘部。安装时请注意避免施加过大推力载荷。
- 在输出轴型上安装联轴器、链轮等时，请注意避免向输出轴施加过大推力载荷。嵌入时不得大力敲击输出轴，否则会导致轴承与减速机内部受损。
- 联轴器部位的轴与键间隙过大会导致烧结，因此安装时请注意。
- 连接时请准确定心。
- When installing gear wheels, belt pulley and chain wheels on the output flange model, please use the installing design with bulged edges, and implant them into it. Avoid applying too much strength when installing.
- When installing coupling, chain wheels on the output shaft, please do not apply too much strength onto it. Do not knock too hard on the output shaft when implanting, or it may cause damages to the axletree and the interior part of the reducer.
- Too much gap between shaft and key in the coupling may cause firing so please be careful when installing.
- Please accurate centering when connect.

开机前的注意事项

Notes before starting

- 出厂时已按规定量加入润滑油，因此到货后可直接使用。
- 首次运转时，请先确认输出轴的转向，然后逐渐增加负荷。
- The specified amount of lubricant has been added before delivery, so the reducers can be used directly when arrived.
- Please confirm the rolling direction of the output shaft and increase the load gradually at the first time operating.

运转中的注意事项

Notes need attention during operating

- 请注意不得过载。
- 输出轴的转速不得大于规定转速。
- 出现以下情况时，请停机检查。
 - 温度突然开始升高。
 - 突然发出很大异响。
 - 转速突然开始不稳定。
- 可能的原因如下，请及时处理。
 - 是否处于过载状态？
 - 轴承、齿轮、传动面有无损伤？
 - 机器连接条件有无异常？
- Do not overloaded.
- The rolling speed of the output shaft should not be faster than the specified one.
- Please shut the machine down when following situation shows.
 - The temperature rise suddenly.
 - Strange noise are emerged.
 - The rolling speed becomes unstable.
- The possible reasons are as follows, please make sure to deal with it in time.
 - Whether it is overloaded or not?
 - Are the axletrees, gear wheels and the rolling side damaged?
 - Is the connecting condition abnormal?

润滑油管理

The lubricant managing

- 油脂不能更换。
- The grease can not be replace.

每日检查

Daily check

- 运转中减速机外壳温度有无异常上升？（最高不大于90℃）
- 轴承、齿轮等部位有无异响？
- 减速机有无异常振动？（出现此类异常时，请立即停机并联系我公司。）
- 有无润滑油漏油？（出现油脂泄漏时，请联系我公司。）
- Whether the temperature of the reducer shell rise abnormally?(Maximum 90 °C)
- Are there any abnormal noise on axletrees or chain wheels.
- Is the reducer vibrating abnormally?(If it happens, please shut down the machine and contact WANSHSIN or our distributors)
- Is the lubricant leaking?(If it happens, please contact WANSHSIN or our distributors.)

定期检查

Regular check

- 有无过载状态，有无异常旋转？
- 皮带轮、链轮、减速机安装螺栓等有无松动？
- 主要部件的检查与维护。（出现异常现象时，请立即停机并联系我公司。）
- Whether it is overloaded or rolling abnormally?
- Is the belt pulley, chain wheel, the installation bolt of the reducer loose?
- The check and maintenance of main components. (When there is an abnormal phenomenon, please shut down the machine and contact WANSHSIN or our distributors.)