



领先的研究能力



卓越的品质保障能力



先进的制造能力

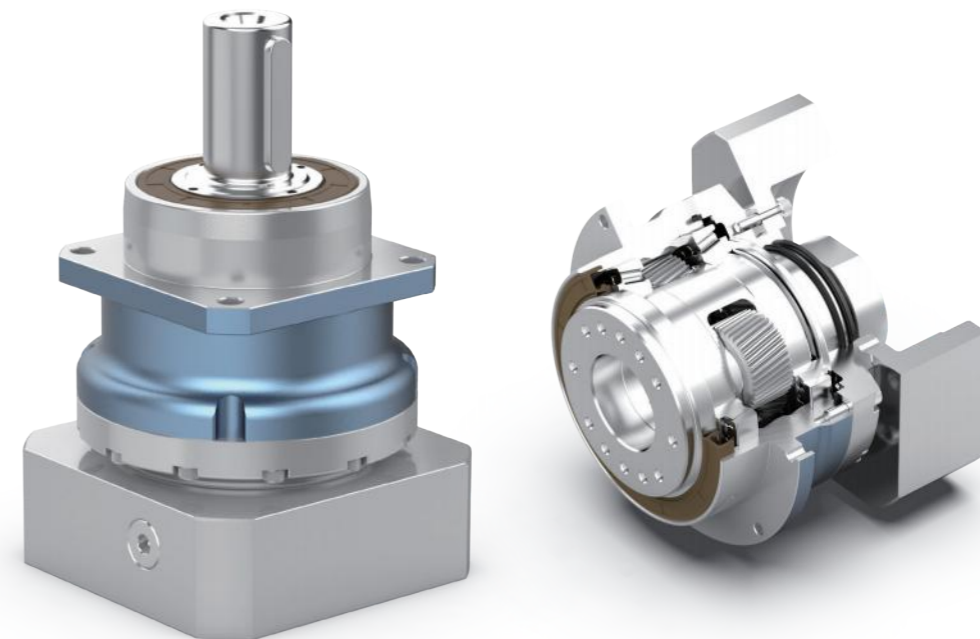


快速的服务能力



行星减速机产品目录

PLANETARY GEARBOX
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WANSHSIN®

万鑫精工（湖南）股份有限公司
WANSHSIN SEIKOU (HUNAN) CO., LTD
企业官网: www.wanshsin.com
生产基地: 湖南省长沙市宁乡高新区万鑫精工产业园



官微二维码



官网二维码

致力于打造恒久高精度精密减速机

Committed To Build Enduring Highly-precision Gearbox

万鑫精工(湖南)股份有限公司

WANSHSIN Seikou(Hunan)Co., Ltd.

专业化减速机 / 减速电机 / 变频器制造商

智能自动化全套方案提供商

SPECIALIZED REDUCER / REDUCTION MOTOR / INVERTER MANUFACTURER
INTELLIGENT AUTOMATION SOLUTION PROVIDER



致力于打造
恒久高精度精密减速机

Committed To Build
Enduring Highly-precision Gearbox

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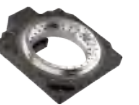
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万鑫精工(湖南)股份有限公司

WANSHSIN Seikou(Hunan)Co., Ltd.



宁乡总部基地

万鑫精工, 万鑫精工, 2009年创始于广东东莞, 2014年总部搬迁至湖南长沙。目前在宁乡高新区、长沙高新区拥有两个生产基地, 创新引领行业高质量发展。

万鑫精工是集研发、生产、销售、服务于一体的专业化减速机、减速电机、控制器制造商及智能化全套方案提供商, 产品覆盖轻工、重工, 已广泛应用于新能源、机器人、自动化、工程机械、智能仓储、物流、食品等行业领域。万鑫精工已逐步成为行业内各大龙头企业的长期合作伙伴。

万鑫精工秉持“致力于打造世界一流的智能机电品牌”的企业愿景, 立志走“精鑫”强企强国之路, 以“专业化、品牌化、国际化”为目标, 笃志躬行为全球客户提供技术前沿、品质卓越、制造前进、服务快速的各类传动产品, 向着推动世界工业化发展不懈奋斗!

WANSHSIN was founded in 2009 in Dongguan, Guangdong province, relocated its headquarters to Changsha, Hunan in 2014. Now WANSHSIN operates two production bases in Ningxiang High-Tech Zone and Changsha High-Tech Zone, driving high-quality development in the industry through innovation.

WANSHSIN is a professional manufacturer of gearboxes, gearmotors, controllers, and intelligent automation solution provider, integrating R&D, production, sales, and service, its products cover light and heavy industry, and has been widely used in industries such as new energy, robotics, automation, construction machinery, smart warehousing, logistics, food processing etc. WANSHSIN has gradually become a long-term partner for major leading enterprises in the industry.

WANSHSIN adheres to the corporate vision of "committed to building a world-class intelligent electromechanical brand", with the goal of "specialization, branding, and internationalization". WANSHSIN provides various transmission products with cutting-edge technology, exceptional quality, advanced manufacturing, and fast service to global customers, and relentlessly advancing the intelligent development of global industry.

核心竞争力

Core Competitiveness



一、研发领先

Leading R&D Capability

先后成立三大研发中心, 以创新引领行业高质量发展。

Three major R&D centers have been established to lead the industry's high-quality development with innovation.

二、品质卓越

Excellent Quality

行业率先启动先进的汽车行业产品质量先期策划; 配置了大量进口国际先进检验/检测设备保证产品品质。

We are the pioneer in introducing and launching the advanced automotive industry quality control standards pre-planning of product quality and have equipped with a large number of imported international advanced inspection/testing equipment to ensure product quality.

三、制造先进

Advanced Manufacturing

拥有上百台总价值过亿元的国内外先进加工设备, 制造能力处于国内领先地位。

We have hundreds of domestic advanced processing equipment with a total value of more than 100 million yuan, and our capacity is in a leading position in China.

四、服务快速

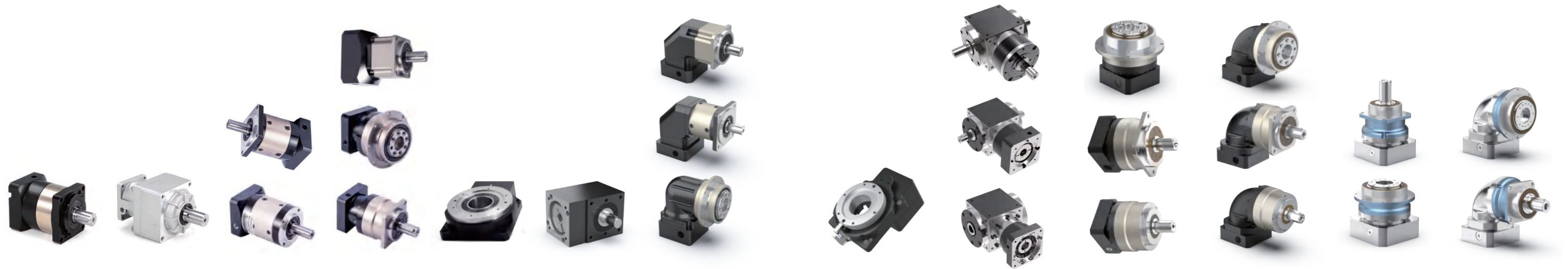
Fast Service

自建仓储系统, 仓储库存足; 交付周期短, 常规产品、非标产品快速交付; 配置国内多家TOP级物流商; 售后响应速度快。

Self built warehouse system with sufficient inventory; Short delivery cycle, fast delivery of conventional and non-standard products; Configure with a number of domestic TOP-level logistics providers; Fast after-sales response.

精密行星发展历程

Development History



2012

WME系列
WME series

2013

WSF系列
WSF series

2014

WPL&WPF系列
WPL&WPF series

2015

WAB&WVRB&
WAE&WAD系列
WAB&WVRB&
WAE&WAD series

2016

WT系列
WT series

2017

WR系列
WR series

2018

R行星转角系列
R Right angle series

2019

WTN系列
WTN series

2020

WAT系列
WAT series

2021

WVRB&WAE&
WAD-B系列
WVRB&WAE&
WAD-B series

2022

WVRBR&WAER&
WADR-B系列
WVRBR&WAER&
WADR-B series

2023

WTH&WSH系列
WTH&WSH series

2024

WTHR&WSHR系列
WTHR&WSHR series

精密行星特性一览

Features

★ 标准Standard / ★★ 加强Enhanced / ★★★ 最优Optimal

| 功率密度 ↑ | 高刚性 High rigidity | 产品 | 产品结构 | 产品特点 | 输出方式 | 最大额定 扭矩(Nm) | 减速比 | 径向力 | 轴向力 | 空载运 行扭矩 | 经济性 |
|--------|----------------------|---|-------------------|---|----------------|--------------------------|-------|-----------------|-------------|--------------------------------|---------|
| | | Product | Structure | Features | Output types | Max rated torque (Nm) | Ratio | Radial force | Axial force | No-load operating torque | Economy |
| ↑ | 高刚性 High rigidity |  | 同轴 Coaxial | <ul style="list-style-type: none"> 最高的精度和性能 最高轴向、径向承载能力 最高的刚性 安静、高速运行 • highest precision and performance • highest radial and axial loading force • highest rigidity • high speed low noise | • 实心轴 • 配齿轮 | 7500 | ≥3 | ★★★ | ★★★ | ★★ | ★★ |
| | |  | 同轴 Coaxial | <ul style="list-style-type: none"> 最高的精度和动态性 最高轴向、径向承载能力 最高的抗倾覆刚度 安静运行、尺寸紧凑 • highest precision and dynamic performance • highest radial and axial loading force • highest overturning rigidity • compact dimension with lower noise | • 法兰盘 • 配齿轮 | 7500 | ≥4 | ★★★ | ★★★ | ★★ | ★ |
| | |  | 转角 Right angle | <ul style="list-style-type: none"> 最高轴向、径向承载能力 轴向尺寸紧凑 • highest radial and axial loading force • compact dimension | • 实心轴 • 配齿轮 | 7500 | ≥3 | ★★★ | ★★★ | ★ | ★ |
| | |  | 转角 Right angle | <ul style="list-style-type: none"> 最高的抗倾覆刚度 轴向尺寸紧凑 • highest overturning rigidity • compact dimension | • 法兰盘 • 配齿轮 | 7500 | ≥4 | ★★★ | ★★★ | ★ | ★ |
| | |  | 同轴 Coaxial | <ul style="list-style-type: none"> 较高的精度和动态性 可承受较大轴向、径向力 尺寸紧凑 • high accuracy and dynamism • enduring high radial and axial loading force • compact dimension | • 法兰盘 | 2000 | ≥4 | ★★ | ★★ | ★★★ | ★★ |
| ↑ | 通用斜齿 Universal |  | 同轴 Coaxial | <ul style="list-style-type: none"> 较高的精度和动态性 可承受较大径向力 安装灵活 • high accuracy and dynamism • enduring high radial loading force • flexible installation | • 实心轴 | 2000 | ≥3 | ★★ | ★ | ★★★ | ★★★ |

★ 标准Standard / ★★ 加强Enhanced / ★★★ 最优Optimal

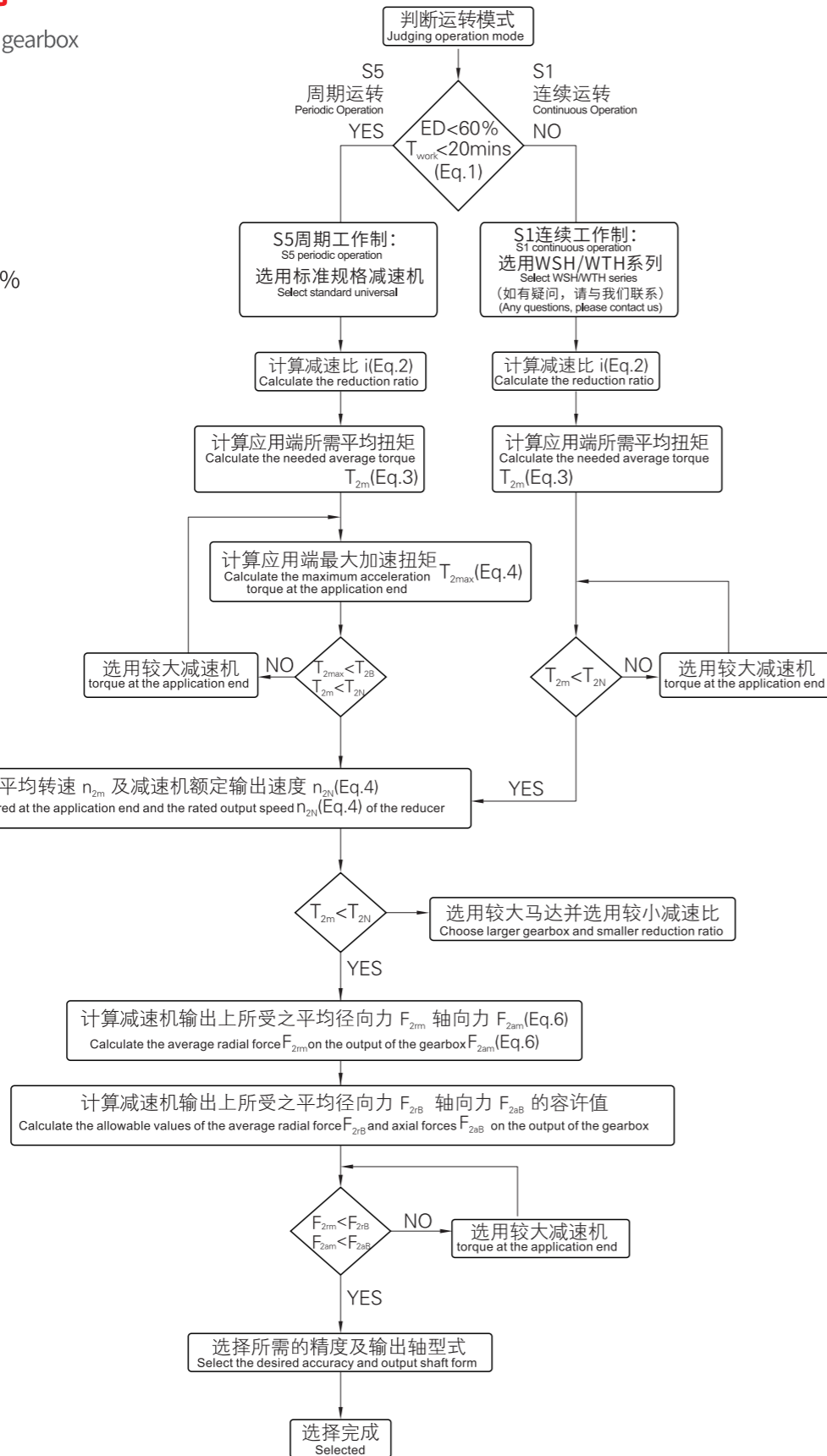
| 功率密度 ↑ | 通用斜齿 Universal | 产品 | 产品结构 | 产品特点 | 输出方式 | 最大额定 扭矩(Nm) | 减速比 | 径向力 | 轴向力 | 空载运 行扭矩 | 经济性 |
|--------|-------------------|---|----------------------|---|-------------------------|--------------------------|-------|-----------------|-------------|--------------------------------|---------|
| | | Product | Structure | Features | Output types | Max rated torque (Nm) | Ratio | Radial force | Axial force | No-load operating torque | Economy |
| ↑ | 通用斜齿 Universal |  | 同轴 Coaxial | <ul style="list-style-type: none"> 较高的精度和动态性 可承受较大径向力 经济、高性价比、通用性好 • high accuracy and dynamism • enduring high radial loading force • economical, high cost-effectiveness with good versatility | • 实心轴 | 2000 | ≥3 | ★★ | ★ | ★★★ | ★★★ |
| | |  | 转角 Right angle | <ul style="list-style-type: none"> 轴向尺寸紧凑 • Compact axial size | • 法兰盘 | 2000 | ≥4 | ★★ | ★★ | ★★ | ★ |
| | |  | 转角 Right angle | <ul style="list-style-type: none"> 轴向尺寸紧凑 • Compact axial size | • 实心轴 | 2000 | ≥3 | ★★ | ★ | ★★ | ★★ |
| | |  | 转角 Right angle | <ul style="list-style-type: none"> 轴向尺寸紧凑 通用性较好 • Compact axial size • Good versatility | • 实心轴 | 2000 | ≥3 | ★★ | ★ | ★★ | ★★ |
| ↑ | 灵活 Flexible |  | 转角 Right angle | <ul style="list-style-type: none"> 较高的刚性 最紧凑的轴向尺寸 安装方式多样化 根据客户需求定制 • high rigidity • The most compact axial dimension • Diverse installation methods • customizable | • 实心轴 • 空心轴 • 缩紧盘 | 14000 | ≥1 | ★★ | ★★ | ★★ | ★★ |
| | |  | 平行轴 parallel-axis | <ul style="list-style-type: none"> 大盘面输出 轴向承载能力强 最高的盘面旋转精度 • large diameter flange output • high axial loading force • Highest surface rotation accuracy | • 大盘面 | 400 | ≥5 | ★★ | ★★★ | ★ | ★★ |

减速机的选用

Selection of planetary gearbox

$$ED = \frac{(t_b+t_c+t_d)}{(t_b+t_c+t_d+t_e)} \cdot 100\%$$

$$ED = t_b+t_c+t_d \text{ [min]}^a$$



S5 周期运转之建议事项
一般的应用惯量须符合以下公式：
 $\frac{J_l}{I} \leq 4 \times J_m$

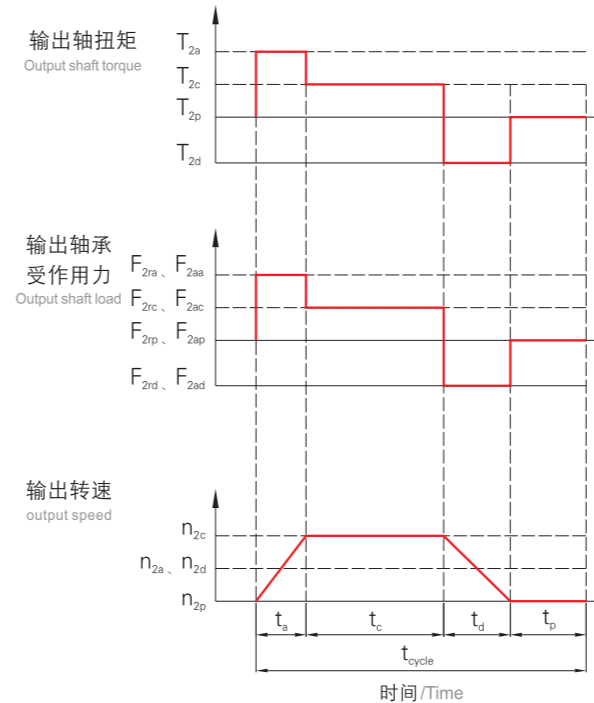
最适当的应用惯量须符合以下公式：
 $\frac{J_l}{I} \cong J_m$

J_l : 负载惯量 J_m : 马达惯量

S5 suggestions for cycle operation
General application inertia must conform to the following formula
 $\frac{J_l}{I} \leq 4 \times J_m$

The most appropriate application inertia must conform to the following formula
 $\frac{J_l}{I} \cong J_m$

J_l : Load inertia J_m : Motor inertia



1 $ED = \frac{t_a+t_c+t_d}{t_{cycle}} \times 100\%$, $t_{work} = t_a+t_c+t_d$
下标说明 Subscript description:
a. 加速, c. 等速, d. 减速, p. 停止 (Eq.1)
a. accelerate, c. constant, d. decelerate, p. stop

2 $i \cong \frac{n_m}{n_{work}}$
 n_m : 马达输出速度 n_{work} : 实际应用速度 (Eq.2)
 n_m : Motor output speed n_{work} : Actual application speed

3 $T_{2m} = 3 \sqrt{\frac{n_{2a} \times t_a \times T_{2a}^3 + n_{2c} \times t_c \times T_{2c}^3 + n_{2d} \times t_d \times T_{2d}^3}{n_{2a} \times t_a + n_{2c} \times t_c + n_{2d} \times t_d}}$ (Eq.3)

4 $T_{2max} = T_{mB} \times i \times k_s \times \eta$

| | | |
|------------|-----------|-----------|
| Ks 负载系数 | Ks | 周期次数 / 小时 |
| | 1.0 | 0~1000 |
| | 1.1 | 1000~1500 |
| | 1.3 | 1500~2000 |
| | 1.6 | 2000~3000 |
| 1.8 | 3000~5000 | |

TmB 马达最大输出扭矩 Motor maximum output torque
 η 减速机运转效率 Gearbox operating efficiency (Eq.4)

5 $n_{2a} = n_{2d} = \frac{1}{2} \times n_{2c}$
 $n_{2m} = \frac{n_{2a} \times t_a + n_{2c} \times t_c + n_{2d} \times t_d}{T_a+t_c+t_d}$
 $n_{2N} = \frac{n_{1N}}{i}$ (Eq.5)

6 $F_{2m} = 3 \sqrt{\frac{n_{2a} \times t_a \times F_{2ra}^3 + n_{2c} \times t_c \times F_{2rc}^3 + n_{2d} \times t_d \times F_{2rd}^3}{n_{2a} \times t_a + n_{2c} \times t_c + n_{2d} \times t_d}}$
 $F_{2am} = 3 \sqrt{\frac{n_{2a} \times t_a \times F_{2aa}^3 + n_{2c} \times t_c \times F_{2ac}^3 + n_{2d} \times t_d \times F_{2ad}^3}{n_{2a} \times t_a + n_{2c} \times t_c + n_{2d} \times t_d}}$ (Eq.6)

油脂及油封选用

Selection for Grease and Oil Seals

| 工况、环境 Operating Conditions, Environment | 油脂 Grease | 油封材质 Oil Seal Material |
|--|---|-------------------------------|
| 连续工作制S1 ^(d) Continuous Operation S1 ^(d) | 润滑油 Lubricating Oil | 氟橡胶 Fluoroelastomer rubber |
| 间歇工作制S5 Intermittent Operation S5 | 润滑脂 Grease | 氟橡胶 Fluoroelastomer rubber |
| 低温环境(-60°C~-20°C) ^(e) Low-Temperature Environment (-60°C~-20°C) ^(e) | 低温润滑脂 Low-Temperature Grease | 丁腈橡胶 Nitrile Rubber |
| 高温环境(>+40°C) ^(e) High-Temperature Environment (>+40°C) ^(e) | 高温润滑油 High-Temperature Lubricating Oil | 氟橡胶 Fluoroelastomer rubber |

(d) S1工作制工况，请联系我们，提供减速机安装位置，可能要增加透气塞，且安装时将透气塞方向朝上；

(e) 高、低温环境，下单时请备注具体的极限温度；

注意：减速机外壳温度，不得超过Tmax≤+90°C

S1(d): Kindly reach out gearbox installation details. Additional breather plug may be required, oriented upwards during installation.

(e): Please specify exact extreme temperatures for high or low-temperature environments when placing your order.

Caution: Gearbox casing temperature should not exceed Tmax ≤ +90°C.

疲劳工况

Fatigue Conditions

当使用工况中，存在循环疲劳特性时，计算扭矩时需要考虑安全系数。

When operating under conditions involving cyclic fatigue characteristics, it is necessary to consider a safety factor when calculating torque.

| 根据工况选取安全系数 Selection of Safety Factor Based on Operating Conditions | | | | | | |
|--|---|--------------------------------------|-------|--------|---------|---------|
| 加载类型 Load Type | 每小时 启/停次数 Z Start/Stop times per Hour | 总运行时间(h) Total Operating Time (h) | | | | |
| | | ≤5000 | 10000 | 15000 | 25000 | 50000 |
| | | 每天运行时间(h) Operating Time per Day (h) | | | | |
| | | h<4 | 4<h<8 | 8<h<12 | 12<h<16 | 16<h<24 |
| 均匀载荷 Uniform Load | Z<10 | 0.9 | 1 | 1.15 | 1.3 | 1.6 |
| | 10<Z<30 | 0.95 | 1.15 | 1.3 | 1.5 | 1.8 |
| | 30<Z<100 | 1 | 1.25 | 1.45 | 1.6 | 2 |
| 轻微冲击 Slight Impact | Z<10 | 1 | 1.25 | 1.45 | 1.6 | 2 |
| | 10<Z<30 | 1.1 | 1.4 | 1.6 | 1.8 | 2.2 |
| | 30<Z<100 | 1.2 | 1.5 | 1.7 | 2 | 2.4 |
| 强烈冲击 Severe Impact | Z<10 | 1.2 | 1.5 | 1.7 | 2 | 2.4 |
| | 10<Z<30 | 1.3 | 1.6 | 1.8 | 2.1 | 2.6 |
| | 30<Z<100 | 1.4 | 1.75 | 2 | 2.3 | 2.8 |

高刚性需求

High Rigidity Requirements

当使用工况中，存在较大径向力、轴向力要求，且对精度要求较高时，应优先选用高刚性行星WSH/WTH系列，如必须选用标准系列，需要加固输出轴，请联系我们的工程师。

For applications demanding substantial radial and axial forces with high precision, it is advisable to prioritize the use of the high-rigidity WSH/WTH series. If the standard series is necessary, please contact our engineers for necessary output shaft reinforcement options.

低摩擦扭矩需求

Low Friction Torque Requirements

当使用工况中，对减速机启动瞬时扭矩、运行扭矩、温升要求较高，但对减速机精度要求较低，且无明显冲击载荷，请联系我们，做对应定制。

For applications where there is a high demand for instantaneous and running torque, as well as temperature rise, but low precision is acceptable, and there are no significant impact loads, please reach out to us for corresponding custom solutions.

防护要求

Protection Requirements

| 工作环境 Operating Environment | 防护等级 Protection Level | 表面处理 Surface Treatment | 螺丝外观 Screw Appearance |
|---|--------------------------|--------------------------------|--------------------------|
| 一般室内环境 General Indoor Environment | Ip65 | 默认 Default | 镀镍 Nickel Plating |
| 一般室外环境 ^(f) General Outdoor Environment ^(f) | Ip65 | 喷漆 Paint Coating | 达克罗 Dacromet Coating |
| 沿海、化工 ^(g) Coastal, Chemical Industry ^(g) | Ip67 | 强化喷漆 Enhanced Paint Coating | 达克罗 Dacromet Coating |

(f) 一般室外环境，请联系我们，或直接推荐使用WSH/WTH系列；

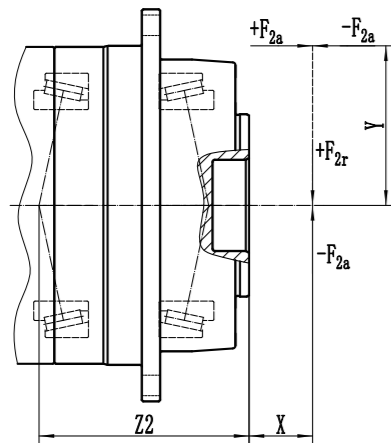
(g) 沿海、化工等腐蚀性环境，请联系我们，如需提高耐腐蚀能力，通过减速机外表面，整个额外增加喷漆工艺。

(f): For general outdoor environments, please contact us, or consider using the WSH/WTH series directly.

(g): In corrosive environments such as coastal or chemical settings, please get in touch with us. If enhanced corrosion resistance is required, an additional paint coating process can be applied to the entire exterior surface of the gearbox.

WTH轴承受力实例

WTH Series Bearing Load Diagram



$$\text{最大侧倾力矩/Max Tilting Moment } M_{2K} = \frac{F_{2a} \cdot Y + F_{2r} \cdot (X+Z2)}{1000}$$

$M_{2K} : (\text{Nm})$
 $F_{2a}, F_{2r} : (\text{N})$
 $X, Y, Z2 : (\text{mm})$

| | | | | | | | | |
|------------|------|------|------|-------|-------|-------|-------|-------|
| WSH & WSHR | 60 | 75 | 100 | 140 | 180 | 210 | 240 | 280 |
| Z2 (mm) | 38.8 | 45.2 | 85.8 | 104.7 | 120.6 | 146.5 | 164.8 | 177.1 |
| WTH & WTHR | 64 | 90 | 110 | 140 | / | 200 | 255 | 285 |
| Z2 (mm) | 46 | 63.3 | 69.4 | 86.2 | / | 129.9 | 143.8 | 155.1 |
| WAD & WADR | 64 | 90 | 110 | 140 | 200 | 255 | / | |
| Z2 (mm) | 47 | 68 | 78 | 96.5 | 121.9 | 162.5 | / | |

注意: 输出转速为100rpm / Applied to the output shaft center at 100rpm

WTH减速机安装位置

WTH Installation Location

- B5-水平
B5-Level
- V1-输出
竖直朝下
V1-Output
vertical down
- V3-输出
竖直朝上
V3-Output
vertical up
- S-任意角度
倾斜安装
S- Any angle
inclined installation

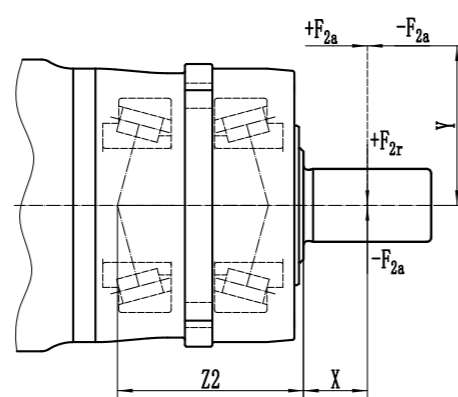


安装位置仅与油量有关, 仅供参考, 不是下单时的必须信息!

The installation position relates to the oil volume only, provided for reference only, not obligatory when ordering!

WSH轴承受力实例

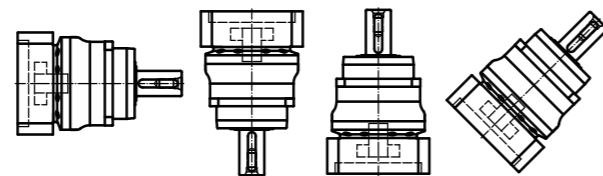
WSH Series Bearing Load Diagram



WSH减速机安装位置

WSH Installation Location

- B5-水平
B5-Level
- V1-输出
竖直朝下
V1-Output
vertical down
- V3-输出
竖直朝上
V3-Output
vertical up
- S-任意角度
倾斜安装
S- Any angle
inclined installation



弧分 (arcmin)

arcmin

1度分为60弧分 (60arcmin=60')。如背隙精度标为1 arcmin时, 减速机转一圈, 输出端的角偏差为1/60°; 在实际应用中, 这个角偏差与轴直径有关: $b=2\pi \cdot r \cdot a^\circ/360^\circ$ 。就是说, 输出端半径为50mm时, 减速机背隙精度为3'时, 减速机转一圈的偏差为**b=0.044mm**。

1 degree equals 60 arcmin (1°=60'). If the backlash of gearbox is marked as 1 arcmin, it means when the reducer completes one revolution, the angular deviation at the output end is 1/60°. In practical applications, this angular deviation is related to the shaft diameter: output $b = 2\pi \cdot r \cdot a^\circ/360^\circ$. That is when the output shaft diameter is 50 mm, and the gearbox backlash is 3', when the reducer completes one revolution, the angular deviation $b=0.044\text{mm}$.

急停扭矩 (T2Not)

Emergency Stop Torque

指减速机输出端所能加载的最大瞬间力矩。这个力矩可在减速机寿命期内加载 1000次。绝对不能超过 1000次! ($T_{2not}=3 \cdot T_{2N}$)

Refers to the maximum instantaneous torque that can be loaded onto the output end of the reducer. This torque can be loaded 1000 times during the reducer's lifespan. Definitely no more than 1000 times! ($T_{2not}=3 \cdot T_{2N}$)

占空比 (ED)

Effective Duty Cycle

由一个工作周期确定。通过加速时间 (t_a)、匀速运转 (如果适用) (t_b) 和减速时间 (t_d), 可以计算出以分钟为单位的占空比。考虑停顿时间 t_e 时, 占空比表示为百分比形式。

Determined by one working cycle. Through acceleration time, constant-speed time (if it is appropriate) and deceleration time, we can figure out its duty cycle in minutes. When considering dwell time, the duty cycle is expressed in percentage.

$$ED[\%] = \left[\frac{(t_b+t_c+t_d)}{(t_b+t_c+t_d+t_e)} \right] \cdot 100$$

运动持续时间
The duration of motion
周期持续时间
The duration of the cycle

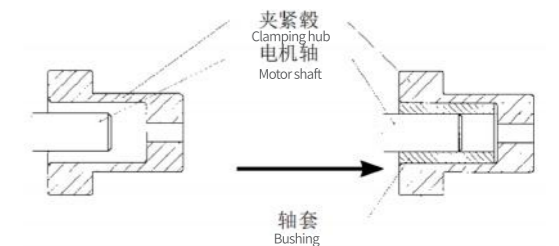
$$ED[\text{min}] = t_b+t_c+t_d$$

轴套

Bushing

如果电机轴直径, 小于夹紧毂内孔, 则可使用轴套, 来抵消直径差距。

If the motor shaft diameter is less than the bore of clamping hub, a bushing can be used to compensate the diameter difference.



工作噪声

Working noise

产品样册中指定的噪音值, 是根据速比 i=10 或 100, 且输入转速 n=2000 或 3000 rpm 的减速机, 在 1m 处测得的最大允许值, 减速机的尺寸、速比与转速, 直接影响噪声等级。通常转速越高, 噪音越大; 速比越大, 噪音越小。

The noise value specified in the product catalog represents the maximum allowable value measured at a distance of 1 meter when the gearbox is operating at the ratio i=10 or 100 while its input speed n=2000 or 3000 rpm. The size, reduction ratio and input speed of the gearbox directly affect the noise level. Typically, higher speeds result in louder noise, while larger reduction ratios lead to smaller noise.

连续工作制 (S1)

Continuous Operation S1

连续工作制由 → 占空比定义。如果占空比 ED > 60% 或长于 20 分钟, 则为连续工作制。→ 工作模式

Continuous operation is defined by → duty cycle. If the duty cycle ED > 60% or longer than 20 minutes, it is continuous operation. → Working mode

周期工作制 (S5)

Periodic Operation S5

周期工作制由占空比定义。如果占空比ED≤60%且短于20分钟,则为周期工作制。→工作模式

Periodic operation is defined by duty cycle. If the duty cycle ED ≤60% and less than 20 minutes, it is periodic operation. → Working mode

空载力矩 (T₀₁₂)

No load running torque (T₀₁₂)

指加载到入力轴上,以克服减速机内的摩擦力的力矩。产品目录中指定的值,是在输入转速 n=2000或3000 rpm, 20°C的环境温度下持续运转2min所测得的。

Refers to the torque loaded on the input shaft to overcome the internal friction of the reducer. The values specified in the product catalog are measured when the product continuously runs for 2 minutes at an input speed n=2000 or 3000rpm, under an ambient temperature of 20°C.

额定力矩 (T2N)

Rated output torque (T2N)

齿轮箱输出端转速100rpm,环境温度20°C,平稳无冲击的工况下,长时间连续工作(S1工作制),可以加载的力矩。

The rated output torque refers to the torque that can be loaded when the output speed of the gearbox is 100 rpm, the ambient temperature is 20°C, and under stable, non-impact conditions, for long-term continuous operation (S1 duty cycle).

最大加速力矩 (T2B)

Maximum Acceleration Torque (T2B)

指工作周期每小时少于1000次时容许短时间加载到输出端的最大扭矩,根据每小时次数选择疲劳系数KA,保证减速机强度满足要求。

When the working cycle involves fewer than 1,000 load cycles per hour, this represents the maximum torque that can be applied to the output shaft for a short period. The fatigue factor KA should be selected according to the number of cycles per hour to ensure that the gearbox strength meets the required standards.

转动惯量 (J)

Rotational inertia

用于表示物体保持自己转动状态(运动或静止)特性参数。

It is used to represent the characteristic parameters of the object maintaining its own rotation state (moving or stationary).

惯量比(λ)

Ratio of inertia

指负载惯量与驱动系统惯量(电机+减速机)之间的比值。惯量比决定了系统的可控性,惯量比越大,高动态的动作过程,就越难精确控制,建议控制惯量比λ<5。减速机可将负载惯量降低 1/i², 输出端的外部负载惯量,折算到入力端的计算公式:

Refers to the ratio between the load inertia and the drive system inertia (motor + reducer). The inertia ratio determines the controllability of the system. The larger the inertia ratio, the more difficult it is to precisely control high-dynamic motion processes. It is recommended that the control inertia ratio be <5. The reducer can reduce the load inertia 1/i². The external load inertia at the output converted to the calculation formula of input force:

| | |
|---------------------------------------|--|
| $J = J_{\text{负载}} / i^2$ | $J = J_{\text{load}} / i^2$ |
| $\lambda = (J + J_1) / J_{\text{电机}}$ | $\lambda = (J + J_1) / J_{\text{motor}}$ |
| 一般负载 λ ≤ 10 | General load input ≤ 10 |
| 低动态负载 λ ≤ 5 | Low dynamic load ≤ 5 |
| 高动态负载 λ ≤ 1 | High dynamic load input ≤ 1 |

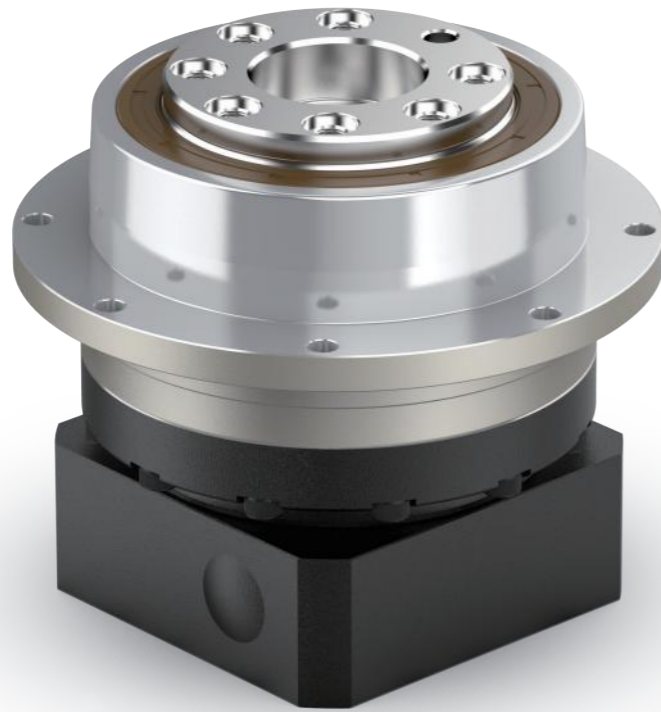
WAD

Series planetary gearbox
系列行星减速机

FEATURES

产品特点

- » 行星臂架与输出轴采用一体式结构设计,确保最大的扭转刚性。
- » 行星轮采用满滚针设计,增加接触面积以提高结构刚性与输出扭矩。
- » 齿轮采用低碳钢表面渗碳淬火到HRC62,以获得最佳的耐磨及冲击韧性。
- » 齿形引用国外进口软件辅助设计,以获得最佳的齿形降低噪音。
- » 输入端与马达轴连接采用特殊抱紧方式,以获取最大的夹紧力和零背隙的动力传递。
- » The planet gear carrier and output end adopt an integrated double-supported structure design to ensure maximum torsional rigidity, toughness, and rotational accuracy.
- » The planet gear adopts a full needle roller design to increase the contact area and improve the structural rigidity and output torque.
- » The gear uses low carbon steel carburized and quenched to achieve a surface hardness of HRC62 to obtain the best wear resistance and impact toughness.
- » The gear profile is designed with assistance from imported software to obtain the best possible design, thereby reducing noise.
- » The connection between the input end and the motor shaft adopts a special clamping method to achieve maximum clamping force and zero backlash power transmission.



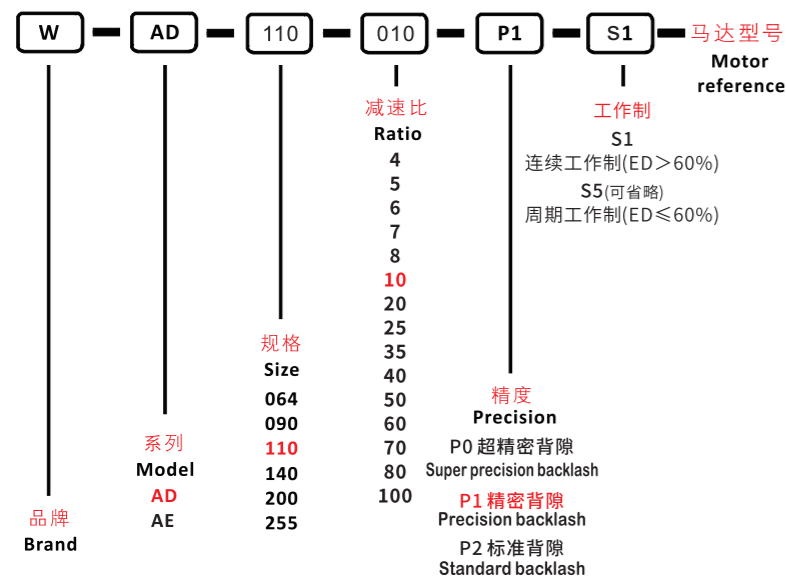
- 标准版行星减速机，适用于高定位精度、高动态周期工作制的應用上
- 要求用于S1连续工作制时，请与我们联系
- 或推荐使用WSH/WTH系列

The standard planetary gearbox is suitable for applications that requires high positioning accuracy and high dynamic periodic operation
 if it needs to be used for S1 continuous operation, please contact us
 Alternatively, we recommend using the WSH/WTH series

INDICATION FOR MODEL

SELECTION

机种型号表示



GENERAL NOTICES

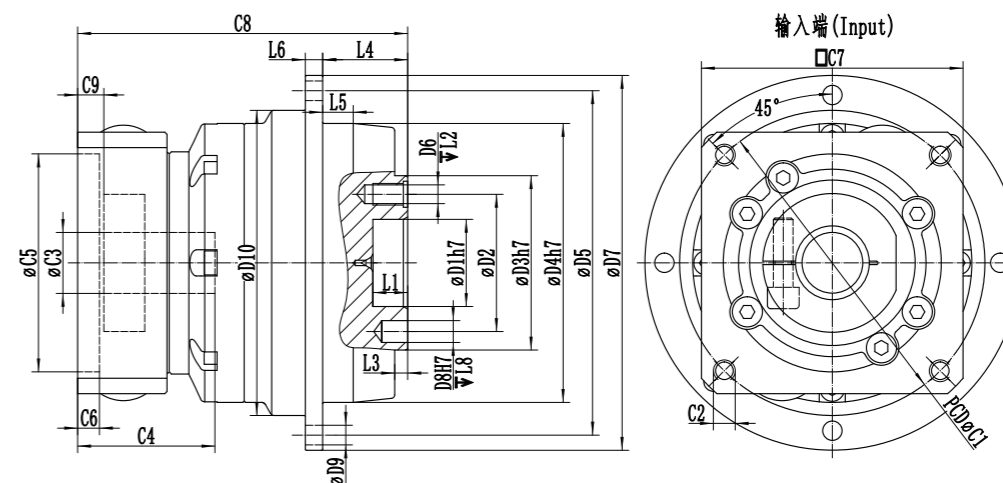
订货须知

- 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
- 入力方式和入力转速
- 马达厂牌型号或法兰及马达轴尺寸
- Type, model and torque
- Ratio or output speed
- Working conditions and connection methods
- Quantity and installed machine name
- Input mode and input speed
- Motor brand model or flange and motor shaft size

PLANETARY GEARBOX

减速机性能资料 / Performance

| 规格 Specification | 单位 Unit | 节数 Stage | 减速比 Ratio | WAD064 | WAD090 | WAD110 | WAD140 | WAD200 | WAD255 | | |
|--|-----------|-----------------------------------|---------------------------------------|--|--------|--------|--------|--------|--------|------|------|
| 额定输出力矩 Rated output torque T_{2N} | Nm | 1 | 4 | 55 | 130 | 270 | 560 | 1100 | 1700 | | |
| | | | 5 | 60 | 160 | 330 | 650 | 1200 | 2000 | | |
| | | | 6 | 50 | 140 | 300 | 550 | 1100 | 1800 | | |
| | | | 7 | 50 | 140 | 300 | 550 | 1000 | 1700 | | |
| | | | 8 | 40 | 100 | 230 | 450 | 850 | 1450 | | |
| | | 10 | 35 | 90 | 200 | 400 | 760 | 1350 | | | |
| | | 2 | 20 | 55 | 130 | 270 | 560 | 1100 | 1700 | | |
| | | 25 | 60 | 160 | 330 | 650 | 1200 | 2000 | | | |
| | | 35 | 50 | 140 | 300 | 550 | 1000 | 1700 | | | |
| | | 40 | 55 | 130 | 270 | 560 | 1100 | 1700 | | | |
| 急停扭矩/Emergency stop torque T_{2NOT} | Nm | 1,2 | 4~100 | 三倍额定输出力矩(允许1000次) / Triple rated output torque | | | | | | | |
| | | | 20~100 | 55 | 130 | 270 | 560 | 1100 | 1700 | | |
| | | | 25 | 60 | 160 | 330 | 650 | 1200 | 2000 | | |
| | | | 35 | 50 | 140 | 300 | 550 | 1000 | 1700 | | |
| | | | 40 | 55 | 130 | 270 | 560 | 1100 | 1700 | | |
| | | 额定输入转速/Rated input speed n_{1N} | rpm | 1,2 | 4~100 | 5000 | 4000 | 4000 | 3000 | 3000 | 2000 |
| | | | | 1,2 | 4~100 | 10000 | 8000 | 8000 | 6000 | 6000 | 4000 |
| | | | | 1 | 4~10 | ≤1.5 | ≤1.5 | ≤1.5 | ≤1.5 | ≤1.5 | ≤1.5 |
| | | | | | 20~100 | ≤3 | ≤3 | ≤3 | ≤3 | ≤3 | ≤3 |
| | | | | | 4~10 | ≤3 | ≤3 | ≤3 | ≤3 | ≤3 | ≤3 |
| 2 | 20~100 | ≤5 | ≤5 | ≤5 | ≤5 | ≤5 | ≤5 | | | | |
| | 4~10 | ≤5 | ≤5 | ≤5 | ≤5 | ≤5 | ≤5 | | | | |
| 2 | 20~100 | ≤8 | ≤8 | ≤8 | ≤8 | ≤8 | ≤8 | | | | |
| | 4~10 | ≤8 | ≤8 | ≤8 | ≤8 | ≤8 | ≤8 | | | | |
| 扭转刚性/Torsional rigidity | Nm/arcmin | 1,2 | 4~100 | 13 | 31 | 82 | 151 | 440 | 1006 | | |
| 最大弯曲力矩 Maximum bending torque M_{2KB} | Nm | 1,2 | 4~100 | 125 | 235 | 430 | 1300 | 3064 | 5900 | | |
| 容许轴向力/Allowable axial force F_{2aB} | N | 1,2 | 4~100 | 1050 | 2850 | 3500 | 10590 | 16660 | 29430 | | |
| 使用寿命/Lifespan | hr | 1,2 | 4~100 | 20000 | | | | | | | |
| 效率/Efficiency | % | 1 | 4~10 | ≥97% | | | | | | | |
| 2 | 20~100 | ≥94% | | | | | | | | | |
| 重量/Weight | kg | 1 | 4~10 | 1.1 | 2.9 | 5.4 | 11.9 | 31.6 | 56.1 | | |
| 2 | 20~100 | 1.7 | 4.2 | 8 | 15.9 | 36.9 | 70.4 | | | | |
| 使用温度/Working temperature | °C | 1,2 | 4~100 | -20°C~+40°C | | | | | | | |
| 润滑/Lubricating | | 1,2 | 合成润滑油脂 / Synthetic lubricating grease | | | | | | | | |
| 防护等级/IP Grade | | 1,2 | 4~100 | IP65 | | | | | | | |
| 安装方向/Installation direction | | 1,2 | 4~100 | 任意方向 / In any direction | | | | | | | |
| 噪音值($n_1=3000$ rpm,无负载) Noise level ($n_1=3000$ rpm,off load) | dB(A) | 1,2 | 4~100 | ≤58 | ≤60 | ≤63 | ≤65 | ≤67 | ≤70 | | |



ROTATIONAL INERTIA OF REDUCER

减速机转动惯量 / Rotational inertia

| 规格 Specification | 单位 Unit | 节数 Stage | 减速比 Ratio | WAD064 | WAD090 | WAD110 | WAD140 | WAD200 | WAD255 |
|----------------------------------|----------------------|-------------|--------------|--------|--------|--------|--------|--------|--------|
| 转动惯量 J1 Rotational inertia J1 | kg · cm ² | 1 | 4 | 0.14 | 0.51 | 2.87 | 7.54 | 25.03 | 58.31 |
| | | | 5 | 0.13 | 0.47 | 2.71 | 7.42 | 23.29 | 53.27 |
| | | | 6 | 0.13 | 0.45 | 2.61 | 7.14 | 22.48 | 50.97 |
| | | | 7 | 0.13 | 0.45 | 2.67 | 7.14 | 22.48 | 50.97 |
| | | | 8 | 0.13 | 0.44 | 2.57 | 7.03 | 22.51 | 50.56 |
| | | | 10 | 0.13 | 0.44 | 2.57 | 7.03 | 22.51 | 50.56 |
| | | | 20 | 0.03 | 0.13 | 0.47 | 2.71 | 7.42 | 23.29 |
| | | | 25 | 0.03 | 0.13 | 0.47 | 2.71 | 7.42 | 23.29 |
| | | 2 | 35 | 0.03 | 0.13 | 0.47 | 2.71 | 7.42 | 23.29 |
| | | | 40 | 0.03 | 0.13 | 0.44 | 2.57 | 7.03 | 22.51 |
| | | | 50 | 0.03 | 0.13 | 0.44 | 2.57 | 7.03 | 22.51 |
| | | | 60 | 0.03 | 0.13 | 0.44 | 2.57 | 7.03 | 22.51 |
| | | | 70 | 0.03 | 0.13 | 0.44 | 2.57 | 7.03 | 22.51 |
| | | | 80 | 0.03 | 0.13 | 0.44 | 2.57 | 7.03 | 22.51 |
| | | | 100 | 0.03 | 0.13 | 0.44 | 2.57 | 7.03 | 22.51 |

1. 减速比 ($i = N_{in}/N_{out}$)
1. Ratio ($i = N_{in}/N_{out}$)

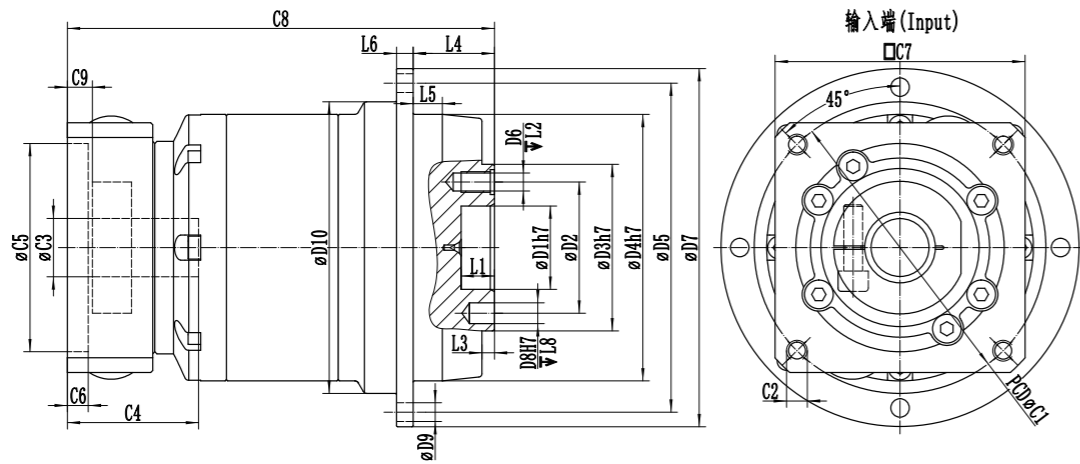
2. 最大加速力矩 $T_{2B} = 60\%$ of T_{2NOT}
2. Maximum acceleration torque $T_{2B} = 60\%$ of T_{2NOT}

3. 输出转速 100rpm, 作用于输出轴中心位置
3. Output speed 100rpm, acting on the center of the output shaft

DIMENSION SINGLE SECTION

尺寸 (单节, 减速比 $i=4 \sim 10$)
Dimension (single stage, Ratio $i=4 \sim 10$)

| 尺寸/Dimension | WAD064 | WAD090 | WAD110 | WAD140 | WAD200 | WAD255 | | | | | | | | |
|--------------|-----------|---------|----------|-------------|-------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|
| D1 H7 | 20 | 31.5 | 40 | 50 | 80 | 100 | | | | | | | | |
| D2 | 31.5 | 50 | 63 | 80 | 125 | 140 | | | | | | | | |
| D3 h7 | 40 | 63 | 80 | 100 | 160 | 180 | | | | | | | | |
| D4 h7 | 64 | 90 | 110 | 140 | 200 | 255 | | | | | | | | |
| D5 | 79 | 109 | 135 | 168 | 233 | 280 | | | | | | | | |
| D6 | 7×M5×0.8P | 7×M6×1P | 11×M6×1P | 11×M8×1.25P | 11×M10×1.5P | 12×M16×2.0P | | | | | | | | |
| D7 | 86 | 118 | 145 | 179 | 247 | 300 | | | | | | | | |
| D8 H7 | 5 | 6 | 6 | 8 | 10 | 12 | | | | | | | | |
| D9 | 8×4.5 | 8×5.5 | 8×5.5 | 12×6.6 | 12×9 | 16×13.5 | | | | | | | | |
| D10 | 70 | 95 | 125 | 152 | 212 | 255 | | | | | | | | |
| L1 | 8 | 12 | 12 | 12 | 16 | 20 | | | | | | | | |
| L2 | 8 | 13.5 | 13.5 | 17 | 22.5 | 30.5 | | | | | | | | |
| L3 | 3 | 6 | 6 | 6 | 8 | 12 | | | | | | | | |
| L4 | 19.5 | 30 | 29 | 38 | 50 | 66 | | | | | | | | |
| L5 | 7 | 10 | 10 | 14.6 | 15 | 20 | | | | | | | | |
| L6 | 4 | 7 | 8 | 10 | 12 | 18 | | | | | | | | |
| L7 | 7.7 | 7.5 | 10 | 12 | 15 | 20 | | | | | | | | |
| L8 | 6 | 7 | 7 | 7 | 10 | 10 | | | | | | | | |
| C1 | 70 | 90 | 90 | 145 | 145 | 200 | 145 | 200 | 200 | 200 | 235 | 200 | 235 | |
| C2 | M4 | M5 | M5 | M8 | M8 | M12 | M8 | M12 | M12 | M12 | M12 | M12 | M12 | |
| C3 | ≤14 | ≤19 | ≤19 | ≤24 | ≤24 | ≤35 | ≤24 | ≤35 | ≤42 | ≤35 | ≤42 | ≤55 | ≤42 | ≤55 |
| C4 | 31.5 | 41 | 41 | 59 | 60 | 81 | 60 | 81 | 114 | 81 | 114 | 117 | 114 | 117 |
| C5 | 50 | 70 | 70 | 110 | 110 | 114.3 | 110 | 114.3 | 114.3 | 114.3 | 114.3 | 200 | 114.3 | 200 |
| C6 | 5 | 5 | 6 | 14 | 14 | 19 | 14 | 19 | 15 | 8 | 10 | 24 | 20 | 20 |
| C7 | 60 | 80 | 80 | 130 | 130 | 180 | 130 | 180 | 180 | 180 | 180 | 220 | 180 | 220 |
| C8 | 76 | 85.5 | 102 | 120 | 127.5 | 153.5 | 152.5 | 173.5 | 206.5 | 192.5 | 225.5 | 228.5 | 265.5 | 268.5 |
| C9 | 6 | 9 | 9.5 | 23.5 | 19.5 | 25 | 20.5 | 21 | 54 | 15 | 46 | 35 | 35.5 | 38.5 |



DIMENSION DOUBLE SECTION

尺寸 (双节, 减速比 i=20~100)

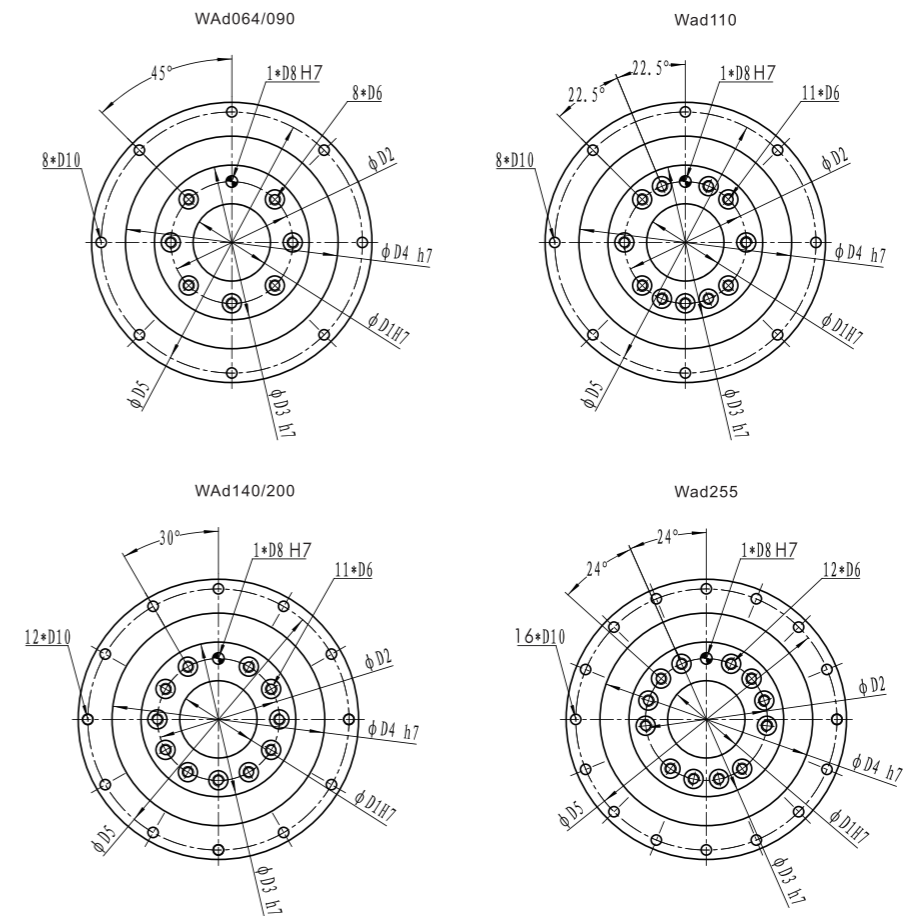
Dimension(double stage,Ratio i=20~100)

| 尺寸/Dimension | WAD064 | | WAD090 | | | WAD110 | | WAD140 | | WAD200 | | WAD255 | |
|--------------|-----------|-----|---------|-------|-------|----------|-------|-------------|-------|-------------|-------|-------------|------|
| D1 H7 | 20 | | 31.5 | | | 40 | | 50 | | 80 | | 100 | |
| D2 | 31.5 | | 50 | | | 63 | | 80 | | 125 | | 140 | |
| D3 h7 | 40 | | 63 | | | 80 | | 100 | | 160 | | 180 | |
| D4 h7 | 64 | | 90 | | | 110 | | 140 | | 200 | | 255 | |
| D5 | 79 | | 109 | | | 135 | | 168 | | 233 | | 280 | |
| D6 | 7×M5×0.8P | | 7×M6×1P | | | 11×M6×1P | | 11×M8×1.25P | | 11×M10×1.5P | | 12×M16×2.0P | |
| D7 | 86 | | 118 | | | 145 | | 179 | | 247 | | 300 | |
| D8 H7 | 5 | | 6 | | | 6 | | 8 | | 10 | | 12 | |
| D9 | 8×4.5 | | 8×5.5 | | | 8×5.5 | | 12×6.6 | | 12×9 | | 16×13.5 | |
| D10 | 70 | | 95 | | | 125 | | 152 | | 212 | | 255 | |
| L1 | 8 | | 12 | | | 12 | | 12 | | 16 | | 20 | |
| L2 | 8 | | 13.5 | | | 13.5 | | 17 | | 22.5 | | 20 | |
| L3 | 3 | | 6 | | | 6 | | 6 | | 8 | | 12 | |
| L4 | 19.5 | | 30 | | | 29 | | 38 | | 50 | | 66 | |
| L5 | 7 | | 10 | | | 10 | | 14.6 | | 15 | | 20 | |
| L6 | 4 | | 7 | | | 8 | | 10 | | 12 | | 18 | |
| L7 | 7.7 | | 7.5 | | | 10 | | 12 | | 15 | | 20 | |
| L8 | 6 | | 7 | | | 7 | | 7 | | 10 | | 10 | |
| C1 | 70 | 90 | 70 | 90 | 145 | 90 | 145 | 145 | 200 | 200 | 200 | 200 | 235 |
| C2 | M4 | M5 | M4 | M5 | M8 | M5 | M8 | M8 | M12 | M12 | M12 | M12 | M12 |
| C3 | ≤14 | ≤19 | ≤14 | ≤19 | ≤24 | ≤19 | ≤24 | ≤24 | ≤35 | ≤35 | ≤42 | ≤42 | ≤55 |
| C4 | 31.5 | 41 | 31.5 | 41 | 59 | 41 | 60 | 60 | 81 | 81 | 114 | 114 | 117 |
| C5 | 50 | 70 | 50 | 70 | 110 | 70 | 110 | 110 | 114.3 | 114.3 | 114.3 | 114.3 | 200 |
| C6 | 5 | 5 | 5 | 6 | 14 | 6 | 14 | 14 | 19 | 19 | 10 | 10 | 20 |
| C7 | 60 | 80 | 60 | 80 | 130 | 80 | 130 | 130 | 180 | 180 | 180 | 180 | 220 |
| C8 | 108 | 121 | 123 | 139.5 | 157.5 | 142 | 172.5 | 194 | 234.5 | 298 | 294 | 332.5 | 364 |
| C9 | 6 | 9 | 6 | 9.5 | 21.5 | 19.5 | 25 | 19.5 | 21 | 21 | 46 | 46 | 38.5 |

DIMENSION

OUTPUT SHAFT DISK SURFACE

出力轴盘面尺寸 / Output Shaft Disk Dimension



| 尺寸/Dimension | WAD064 | WAD090 | WAD110 | WAD140 | WAD200 | WAD255 |
|--------------|---------|---------|---------|----------|----------|----------|
| D1 H7 | 20 | 31.5 | 40 | 50 | 80 | 100 |
| D2 | 31.5 | 50 | 63 | 80 | 125 | 140 |
| D3 h7 | 40 | 63 | 80 | 100 | 160 | 180 |
| D4 h7 | 64 | 90 | 110 | 140 | 200 | 255 |
| D5 | 79 | 109 | 135 | 168 | 233 | 280 |
| D6 | M5*0.8P | M6*1.0P | M6*1.0P | M8*1.25P | M10*1.5P | M16*2.0P |
| D8 H7 | 5 | 6 | 6 | 8 | 10 | 12 |
| D10 | 4.5 | 5.5 | 5.5 | 6.8 | 9 | 13.5 |

WVRB Series planetary gearbox 系列行星减速机

FEATURES

产品特点

- » 行星臂架与输出轴采用一体式结构设计，确保最大的扭转刚性。
 - » 行星轮采用满滚针设计，增加接触面积以提高结构刚性与输出扭矩。
 - » 齿轮采用低碳钢表面渗碳淬火到HRC62，以获得最佳的耐磨及冲击韧性。
 - » 齿形引用国外进口软件辅助设计，以获得最佳的齿形降低噪音。
 - » 输入端与马达轴连接采用特殊抱紧方式，以获取最大的夹紧力和零背隙的动力传递。
-
- » The planet gear carrier and output end adopt an integrated double-supported structure design to ensure maximum torsional rigidity, toughness, and rotational accuracy.
 - » The planet gear adopts a full needle roller design to increase the contact area and improve the structural rigidity and output torque.
 - » The gear uses low carbon steel carburized and quenched to achieve a surface hardness of HRC62 to obtain the best wear resistance and impact toughness.
 - » The gear profile is designed with assistance from imported software to obtain the best possible design, thereby reducing noise.
 - » The connection between the input end and the motor shaft adopts a special clamping method to achieve maximum clamping force and zero backlash power transmission.

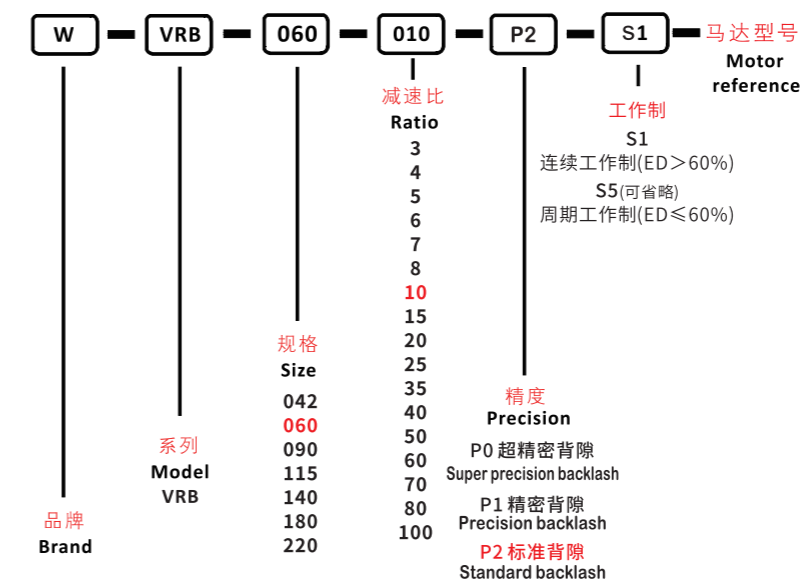


- 标准版行星减速机，适用于高定位精度、高动态周期工作制的应用上
 - 要求用于S1连续工作制时，请与我们联系
 - 或推荐使用WSH/WTH系列
- The standard planetary gearbox is suitable for applications that requires high positioning accuracy and high dynamic periodic operation
-if it needs to be used for S1 continuous operation, please contact us
-Alternatively, we recommend using the WSH/WTH series

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
 - 入力方式和入力转速
 - 马达厂牌型号或法兰及马达轴尺寸
-
- Type, model and torque
 - Ratio or output speed
 - Working conditions and connection methods
 - Quantity and installed machine name
 - Input mode and input speed
 - Motor brand model or flange and motor shaft size

PLANETARY GEARBOX

减速机性能资料 / Performance

| 规格 Specification | 单位 Unit | 节数 Stage | 减速比 Ratio | WVRB060 | WVRB090 | WVRB115 | WVRB140 | WVRB180 | WVRB220 |
|---|------------|-------------|--------------|--|---------|---------|---------|---------|---------|
| 额定输出力矩 Rated output torque T _{2N} | Nm | 1 | 3 | 50 | 130 | 208 | 342 | 588 | 1140 |
| | | | 4 | 55 | 140 | 290 | 542 | 1050 | 1700 |
| | | | 5 | 60 | 160 | 330 | 650 | 1200 | 2000 |
| | | | 6 | 55 | 150 | 310 | 600 | 1100 | 1900 |
| | | | 7 | 50 | 140 | 300 | 550 | 1000 | 1700 |
| | | | 8 | 40 | 100 | 230 | 450 | 850 | 1450 |
| | | | 10 | 35 | 90 | 200 | 400 | 760 | 1350 |
| | | | 15 | 50 | 130 | 208 | 342 | 588 | 1140 |
| | | | 20 | 55 | 140 | 290 | 542 | 1050 | 1700 |
| | | | 25 | 60 | 160 | 330 | 650 | 1200 | 2000 |
| | | 30 | 55 | 150 | 310 | 600 | 1100 | 1900 | |
| | | 35 | 50 | 140 | 300 | 550 | 1000 | 1700 | |
| | | 2 | 40 | 55 | 140 | 290 | 542 | 1050 | 1700 |
| | | | 50 | 60 | 160 | 330 | 650 | 1200 | 2000 |
| | | | 60 | 55 | 150 | 310 | 600 | 1100 | 1900 |
| 70 | 50 | | 140 | 300 | 550 | 1000 | 1700 | | |
| 80 | 40 | | 100 | 230 | 450 | 850 | 1450 | | |
| 100 | 35 | 90 | 200 | 400 | 760 | 1350 | | | |
| 急停扭矩 /Emergency stop torque T _{2NOT} | Nm | 1,2 | 3~100 | 三倍额定输出力矩(允许1000次) / Triple rated output torque | | | | | |
| 额定输入转速 /Rated input speed n _{1N} | rpm | 1,2 | 3~100 | 5000 | 4000 | 4000 | 3000 | 3000 | 2000 |
| 最大输入转速 /Maximum input speed n _{1B} | rpm | 1,2 | 3~100 | 10000 | 8000 | 8000 | 6000 | 6000 | 4000 |
| 超精密背隙 /Super precision backlash P0 | arcmin | 1 | 3~10 | ≤1.5 | ≤1.5 | ≤1.5 | ≤1.5 | ≤1.5 | ≤1.5 |
| | | 2 | 15~100 | ≤3 | ≤3 | ≤3 | ≤3 | ≤3 | ≤3 |
| 精密背隙 /Precision backlash P1 | arcmin | 1 | 3~10 | ≤3 | ≤3 | ≤3 | ≤3 | ≤3 | ≤3 |
| | | 2 | 15~100 | ≤5 | ≤5 | ≤5 | ≤5 | ≤5 | ≤5 |
| 标准背隙 /Standard backlash P2 | arcmin | 1 | 3~10 | ≤5 | ≤5 | ≤5 | ≤5 | ≤5 | ≤5 |
| | | 2 | 15~100 | ≤8 | ≤8 | ≤8 | ≤8 | ≤8 | ≤8 |
| 扭转刚性 /Torsional rigidity | Nm/arcmin | 1,2 | 3~100 | 7 | 14 | 25 | 50 | 145 | 225 |
| 容许径向力 /Allowable radial force F _{2aB} | N | 1,2 | 3~100 | 1530 | 3250 | 6700 | 9400 | 14500 | 20000 |
| 容许轴向力 /Allowable axial force F _{2aB} | N | 1,2 | 3~100 | 765 | 1625 | 3350 | 4700 | 7250 | 10000 |
| 使用寿命 /Lifespan | hr | 1,2 | 3~100 | 20000 | | | | | |
| 效率 /Efficiency | % | 1 | 3~10 | ≥97% | | | | | |
| | | 2 | 15~100 | ≥94% | | | | | |
| 重量 /Weight | kg | 1 | 3~10 | 1.5 | 3.7 | 7.8 | 16 | 36 | 53 |
| | | 2 | 15~100 | 1.6 | 4.2 | 11 | 17 | 37 | 54 |
| 使用温度 /Working temperature | °C | 1,2 | 3~100 | -20°C - +40°C | | | | | |
| 润滑 /Lubricating | | 1,2 | | 合成润滑油 /Synthetic lubricating grease | | | | | |
| 防护等级 /IP Grade | | 1,2 | 3~100 | IP65 | | | | | |
| 安装方向 /Installation direction | | 1,2 | 3~100 | 任意方向 /In any direction | | | | | |
| 噪音值 (n1=3000rpm,无负载) Noise level (n1=3000rpm,off load) | dB(A) | 1,2 | 3~100 | ≤58 | ≤60 | ≤63 | ≤65 | ≤67 | ≤70 |

ROTATIONAL INERTIA OF REDUCER

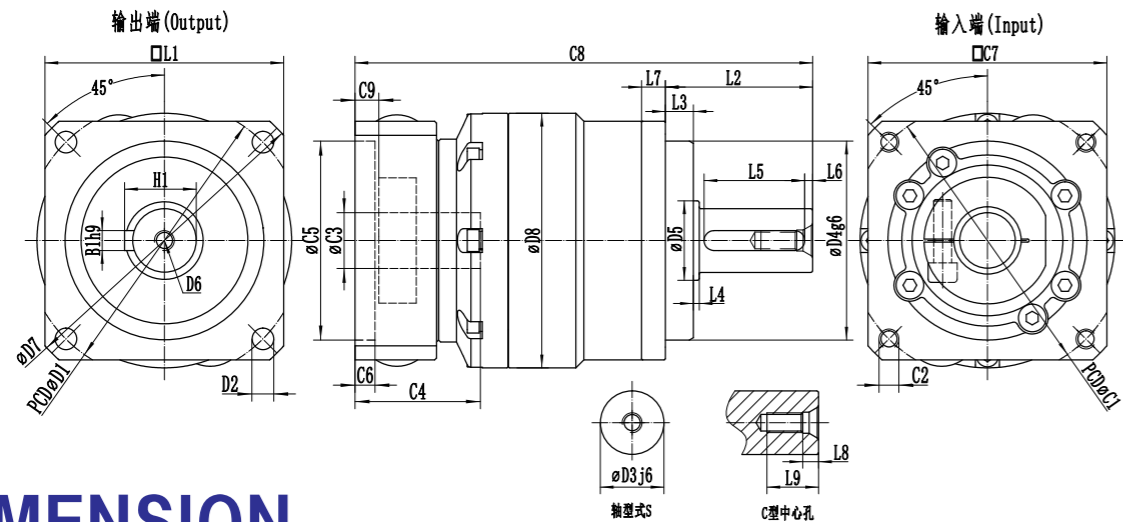
减速机转动惯量 /Rotational inertia

| 规格 Specification | 单位 Unit | 节数 Stage | 减速比 Ratio | WVRB060 | WVRB090 | WVRB115 | WVRB140 | WVRB180 | WVRB220 |
|----------------------------------|----------------------|-------------|--------------|---------|---------|---------|---------|---------|---------|
| 转动惯量 J1 Rotational inertia J1 | kg · cm ² | 1 | 3 | 0.22 | 1.2 | 5.3 | 20 | 44 | 90 |
| | | | 4 | 0.17 | 0.95 | 4.1 | 15 | 28 | 62 |
| | | | 5 | 0.16 | 0.86 | 3.6 | 14 | 22 | 52 |
| | | | 6 | 0.15 | 0.82 | 3.3 | 13 | 18 | 47 |
| | | | 7 | 0.14 | 0.79 | 3.2 | 12 | 16 | 42 |
| | | | 8 | 0.14 | 0.77 | 3.1 | 12 | 15 | 40 |
| | | | 10 | 0.14 | 0.75 | 3 | 11 | 14 | 38 |
| | | | 15 | 0.14 | 0.72 | 2.8 | 11 | 12 | 36 |
| | | | 20 | 0.13 | 0.72 | 2.8 | 11 | 12 | 35 |
| | | | 25 | 0.13 | 0.71 | 2.8 | 11 | 12 | 35 |
| | | 30 | 0.13 | 0.7 | 2.7 | 10 | 11 | 34 | |
| | | 35 | 0.13 | 0.71 | 2.7 | 11 | 12 | 35 | |
| | | 2 | 40 | 0.13 | 0.7 | 2.7 | 10 | 11 | 33 |
| | | | 50 | 0.13 | 0.69 | 2.7 | 10 | 11 | 33 |
| | | | 60 | 0.13 | 0.69 | 2.7 | 10 | 11 | 33 |
| | | | 70 | 0.13 | 0.69 | 2.7 | 10 | 11 | 33 |
| | | | 80 | 0.13 | 0.69 | 2.7 | 10 | 11 | 33 |
| | | | 100 | 0.13 | 0.69 | 2.7 | 10 | 11 | 33 |

1. 减速比 ($i=N_{in}/N_{out}$)
1. Ratio ($i=N_{in}/N_{out}$)

2. 最大加速力矩 T_{2B} =60% of T_{2NOT}
2. Maximum acceleration torque T_{2B} =60% of T_{2NOT}

3. 输出转速 100rpm, 作用于输出轴中心位置
3. Output speed 100rpm, acting on the center of the output shaft



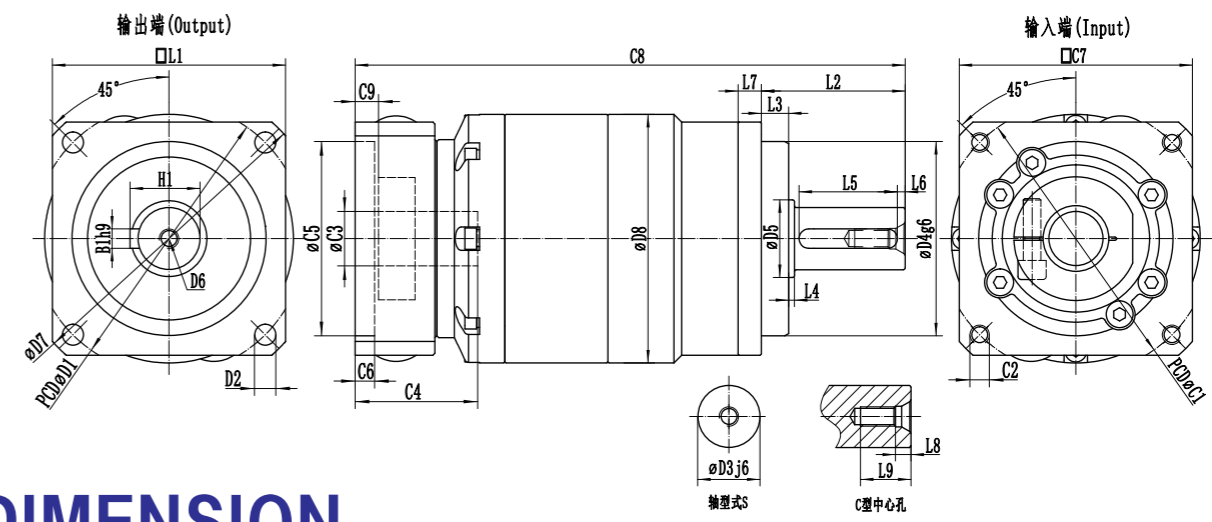
DIMENSION

SINGLE SECTION

尺寸 (单节, 减速比 i=3~10)

Dimension (single stage, Ratio i=3~10)

| 尺寸 / Dimension | WVRB060 | WVRB090 | WVRB115 | WVRB140 | WVRB180 | WVRB220 | | | | | | | | |
|----------------|---------|----------|-----------|----------|----------|----------|------|-------|-------|-------|-------|-----|-------|------|
| D1 | 70 | 100 | 130 | 165 | 215 | 250 | | | | | | | | |
| D2 | 5.5 | 6.6 | 9 | 11 | 13.5 | 17 | | | | | | | | |
| D3 j6 | 16 | 22 | 32 | 40 | 55 | 75 | | | | | | | | |
| D4 g6 | 50 | 80 | 110 | 130 | 160 | 180 | | | | | | | | |
| D5 | 18 | 30 | 40 | 50 | 70 | 85 | | | | | | | | |
| D6 | M5*0.8P | M8*1.25P | M12*1.75P | M16*2.0P | M20*2.5P | M20*2.5P | | | | | | | | |
| D7 | 80 | 116 | 152 | 185 | 240 | 290 | | | | | | | | |
| D8 | 64 | 94 | 125 | 150 | 200 | 225 | | | | | | | | |
| L1 | 60 | 90 | 115 | 140 | 180 | 220 | | | | | | | | |
| L2 | 37 | 48 | 60 | 95 | 105 | 138 | | | | | | | | |
| L3 | 7 | 10 | 7 | 13 | 20 | 30 | | | | | | | | |
| L4 | 1.5 | 1.5 | 2 | 3 | 3 | 3 | | | | | | | | |
| L5 | 25 | 30 | 40 | 63 | 70 | 90 | | | | | | | | |
| L6 | 1 | 2 | 5 | 5 | 6 | 7 | | | | | | | | |
| L7 | 6 | 8 | 10 | 12 | 15 | 20 | | | | | | | | |
| L8 | 4.8 | 7.2 | 10 | 12 | 15 | 15 | | | | | | | | |
| L9 | 12.5 | 19 | 28 | 36 | 42 | 42 | | | | | | | | |
| C1 | 70 | 90 | 90 | 145 | 145 | 200 | 145 | 200 | 200 | 200 | 235 | 200 | 235 | |
| C2 | M4 | M5 | M5 | M8 | M8 | M12 | M8 | M12 | M12 | M12 | M12 | M12 | M12 | |
| C3 | ≤14 | ≤19 | ≤19 | ≤24 | ≤24 | ≤35 | ≤24 | ≤35 | ≤42 | ≤35 | ≤42 | ≤55 | ≤42 | ≤55 |
| C4 | 31.5 | 41 | 41 | 59 | 60 | 81 | 60 | 81 | 114 | 81 | 114 | 117 | 114 | 117 |
| C5 | 50 | 70 | 70 | 110 | 110 | 114.3 | 110 | 114.3 | 114.3 | 114.3 | 114.3 | 200 | 114.3 | 200 |
| C6 | 5 | 5 | 6 | 14 | 14 | 19 | 14 | 19 | 15 | 8 | 10 | 24 | 20 | 20 |
| C7 | 60 | 80 | 80 | 130 | 130 | 180 | 130 | 180 | 180 | 180 | 180 | 220 | 180 | 220 |
| C8 | 115 | 124.5 | 147 | 165 | 199.5 | 225.5 | 258 | 279 | 312 | 285 | 318 | 321 | 374 | 377 |
| C9 | 6 | 9 | 9.5 | 21.5 | 19.5 | 23.5 | 20.5 | 21 | 54 | 15 | 46 | 35 | 35.5 | 38.5 |
| B1 h9 | 5 | 6 | 10 | 12 | 16 | 20 | | | | | | | | |
| H1 | 18 | 24.5 | 35 | 43 | 59 | 79.5 | | | | | | | | |



DIMENSION

SINGLE SECTION

尺寸 (双节, 减速比 i=15~100)

Dimension (double stage, Ratio i=15~100)

| 尺寸 / Dimension | WVRB060 | WVRB090 | WVRB115 | WVRB140 | WVRB180 | WVRB220 | | | | | | | |
|----------------|---------|----------|-----------|----------|----------|----------|-------|-------|-------|-------|-------|-------|-------|
| D1 | 70 | 100 | 130 | 165 | 215 | 250 | | | | | | | |
| D2 | 5.5 | 6.6 | 9 | 11 | 13.5 | 17 | | | | | | | |
| D3 j6 | 16 | 22 | 32 | 40 | 55 | 75 | | | | | | | |
| D4 g6 | 50 | 80 | 110 | 130 | 160 | 180 | | | | | | | |
| D5 | 18 | 30 | 40 | 50 | 70 | 85 | | | | | | | |
| D6 | M5*0.8P | M8*1.25P | M12*1.75P | M16*2.0P | M20*2.5P | M20*2.5P | | | | | | | |
| D7 | 80 | 116 | 152 | 185 | 240 | 290 | | | | | | | |
| D8 | 64 | 94 | 125 | 150 | 200 | 225 | | | | | | | |
| L1 | 60 | 90 | 115 | 140 | 180 | 220 | | | | | | | |
| L2 | 37 | 48 | 60 | 95 | 105 | 138 | | | | | | | |
| L3 | 7 | 10 | 7 | 13 | 20 | 30 | | | | | | | |
| L4 | 1.5 | 1.5 | 2 | 3 | 3 | 3 | | | | | | | |
| L5 | 25 | 30 | 40 | 63 | 70 | 90 | | | | | | | |
| L6 | 1 | 2 | 5 | 5 | 6 | 7 | | | | | | | |
| L7 | 7 | 8 | 10 | 12 | 15 | 20 | | | | | | | |
| L8 | 4.8 | 7.2 | 10 | 12 | 15 | 15 | | | | | | | |
| L9 | 12.5 | 19 | 28 | 36 | 42 | 42 | | | | | | | |
| C1 | 70 | 90 | 70 | 90 | 145 | 90 | 145 | 145 | 200 | 200 | 200 | 200 | |
| C2 | M4 | M5 | M4 | M5 | M8 | M5 | M8 | M8 | M12 | M12 | M12 | M12 | M12 |
| C3 | ≤14 | ≤19 | ≤14 | ≤19 | ≤24 | ≤19 | ≤24 | ≤24 | ≤35 | ≤35 | ≤42 | ≤42 | |
| C4 | 31.5 | 41 | 31.5 | 41 | 59 | 41 | 60 | 60 | 80 | 81 | 114 | 114 | 117 |
| C5 | 50 | 70 | 50 | 70 | 110 | 70 | 110 | 110 | 114.3 | 114.3 | 114.3 | 114.3 | |
| C6 | 5 | 5 | 5 | 6 | 14 | 6 | 14 | 14 | 19 | 19 | 10 | 10 | 20 |
| C7 | 60 | 80 | 60 | 80 | 130 | 80 | 130 | 130 | 180 | 180 | 180 | 180 | |
| C8 | 147 | 160 | 168 | 184.5 | 202.5 | 214 | 244.5 | 299.5 | 340 | 344.5 | 386.5 | 441.5 | 444.5 |
| C9 | 6 | 9 | 6 | 9.5 | 21.5 | 19.5 | 25 | 19.5 | 21 | 21 | 46 | 46 | 38.5 |
| B1 h9 | 5 | 6 | 10 | 12 | 16 | 20 | | | | | | | |
| H1 | 18 | 24.5 | 35 | 43 | 59 | 79.5 | | | | | | | |

WAE

Series planetary gearbox
系列行星减速机

FEATURES

产品特点

- » 行星臂架与输出轴采用一体式结构设计，确保最大的扭转刚性。
 - » 行星轮采用满滚针设计，增加接触面积以提高结构刚性与输出扭矩。
 - » 齿轮采用低碳钢表面渗碳淬火到HRC62，以获得最佳的耐磨及冲击韧性。
 - » 齿形引用国外进口软件辅助设计，以获得最佳的齿形降低噪音。
 - » 输入端与马达轴连接采用特殊抱紧方式，以获取最大的夹紧力和零背隙的动力传递。
-
- » The planet gear carrier and output end adopt an integrated double-supported structure design to ensure maximum torsional rigidity, toughness, and rotational accuracy.
 - » The planet gear adopts a full needle roller design to increase the contact area and improve the structural rigidity and output torque.
 - » The gear uses low carbon steel carburized and quenched to achieve a surface hardness of HRC62 to obtain the best wear resistance and impact toughness.
 - » The gear profile is designed with assistance from imported software to obtain the best possible design, thereby reducing noise.
 - » The connection between the input end and the motor shaft adopts a special clamping method to achieve maximum clamping force and zero backlash power transmission.

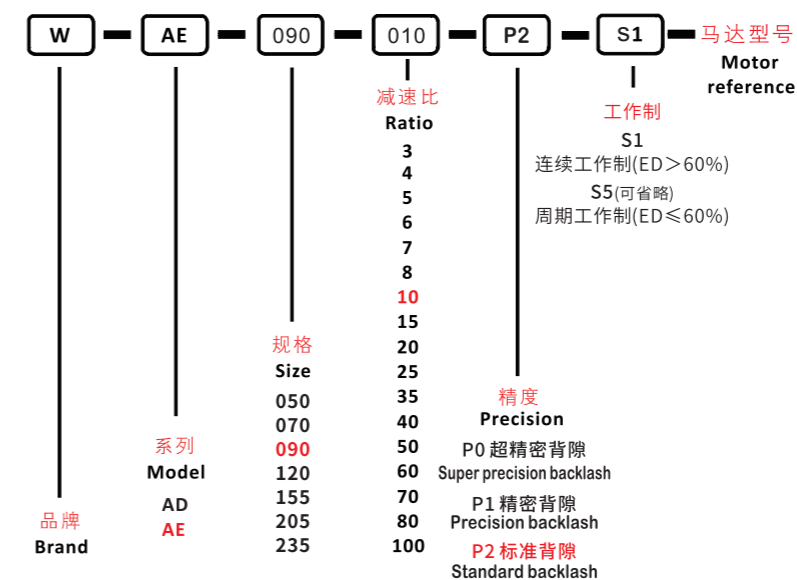


- 标准版行星减速机，适用于高定位精度、高动态周期工作制的应用上
 - 要求用于S1连续工作制时，请与我们联系
 - 或推荐使用WSH/WTH系列
- The standard planetary gearbox is suitable for applications that requires high positioning accuracy and high dynamic periodic operation
· if it needs to be used for S1 continuous operation, please contact us
· Alternatively, we recommend using the WSH/WTH series

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
- 入力方式和入力转速
- 马达厂牌型号或法兰及马达轴尺寸
- Type, model and torque
- Ratio or output speed
- Working conditions and connection methods
- Quantity and installed machine name
- Input mode and input speed
- Motor brand model or flange and motor shaft size

PLANETARY GEARBOX

减速机性能资料/Performance

| 规格 Specification | 单位 Unit | 节数 Stage | 减速比 Ratio | WAE050 | WAE070 | WAE090 | WAE120 | WAE155 | WAE205 | WAE235 | |
|--|------------|-------------|--------------------------------------|--|--------|--------|--------|--------|--------|--------|--|
| 额定输出力矩 Rated output torque T _{2N} | Nm | 1 | 3 | 20 | 55 | 130 | 208 | 342 | 588 | 1140 | |
| | | | 4 | 19 | 50 | 140 | 290 | 542 | 1050 | 1700 | |
| | | | 5 | 22 | 60 | 160 | 330 | 650 | 1200 | 2000 | |
| | | | 6 | 20 | 55 | 150 | 310 | 600 | 1100 | 1900 | |
| | | | 7 | 15 | 50 | 140 | 300 | 550 | 1000 | 1700 | |
| | | | 8 | 12 | 40 | 100 | 230 | 450 | 850 | 1450 | |
| | | 2 | 10 | 10 | 35 | 90 | 200 | 400 | 760 | 1350 | |
| | | | 15 | 20 | 55 | 130 | 208 | 342 | 588 | 1140 | |
| | | | 20 | 19 | 50 | 140 | 290 | 542 | 1050 | 1700 | |
| | | | 25 | 22 | 60 | 160 | 330 | 650 | 1200 | 2000 | |
| | | | 30 | 20 | 55 | 150 | 310 | 600 | 1100 | 1900 | |
| | | | 35 | 15 | 50 | 140 | 300 | 550 | 1000 | 1700 | |
| | | 3 | 40 | 19 | 50 | 140 | 290 | 542 | 1050 | 1700 | |
| | | | 50 | 22 | 60 | 160 | 330 | 650 | 1200 | 2000 | |
| | | | 60 | 20 | 55 | 150 | 310 | 600 | 1100 | 1900 | |
| | | | 70 | 15 | 50 | 140 | 300 | 550 | 1000 | 1700 | |
| | | | 80 | 12 | 40 | 100 | 230 | 450 | 850 | 1450 | |
| | | 100 | 10 | 35 | 90 | 200 | 400 | 760 | 1350 | | |
| 急停扭矩/Emergency stop torque T _{2NOT} | Nm | 1,2 | 3~100 | 三倍额定输出力矩(允许1000次) / Triple rated output torque | | | | | | | |
| 额定输入转速/Rated input speed n _{1N} | rpm | 1,2 | 3~100 | 5000 | 5000 | 4000 | 4000 | 3000 | 3000 | 2000 | |
| 最大输入转速/Maximum input speed n _{1B} | rpm | 1,2 | 3~100 | 10000 | 10000 | 8000 | 8000 | 6000 | 6000 | 4000 | |
| 超精密背隙/Super precision backlash P0 | arcmin | 1 | 3~10 | - | ≤1.5 | ≤1.5 | ≤1.5 | ≤1.5 | ≤1.5 | ≤1.5 | |
| | | 2 | 15~100 | - | ≤3 | ≤3 | ≤3 | ≤3 | ≤3 | ≤3 | |
| 精密背隙/Precision backlash P1 | arcmin | 1 | 3~10 | - | ≤3 | ≤3 | ≤3 | ≤3 | ≤3 | ≤3 | |
| | | 2 | 15~100 | - | ≤5 | ≤5 | ≤5 | ≤5 | ≤5 | ≤5 | |
| 标准背隙/Standard backlash P2 | arcmin | 1 | 3~10 | ≤12 | ≤5 | ≤5 | ≤5 | ≤5 | ≤5 | ≤5 | |
| | | 2 | 15~100 | ≤16 | ≤8 | ≤8 | ≤8 | ≤8 | ≤8 | ≤8 | |
| 扭转刚性/Torsional rigidity | Nm/arcmin | 1,2 | 3~100 | 3 | 7 | 14 | 25 | 50 | 145 | 225 | |
| 容许径向力/Allowable radial force F _{2aB} | N | 1,2 | 3~100 | 780 | 1530 | 3250 | 6700 | 9400 | 14500 | 20000 | |
| 容许轴向力/Allowable axial force F _{2aB} | N | 1,2 | 3~100 | 390 | 765 | 1625 | 3350 | 4700 | 7250 | 10000 | |
| 使用寿命/Lifespan | hr | 1,2 | 3~100 | 20000 | | | | | | | |
| 效率/Efficiency | % | 1 | 3~10 | ≥97% | | | | | | | |
| | | 2 | 15~100 | ≥94% | | | | | | | |
| 重量/Weight | kg | 1 | 3~10 | 0.6 | 1.2 | 3.7 | 7.5 | 16 | 36 | 53 | |
| | | 2 | 15~100 | 0.7 | 1.6 | 4.2 | 10.7 | 17 | 37 | 54 | |
| 使用温度/Working temperature | °C | 1,2 | 3~100 | -20°C - +40°C | | | | | | | |
| 润滑/Lubricating | | 1,2 | 合成润滑油脂 /Synthetic lubricating grease | | | | | | | | |
| 防护等级/IP Grade | | 1,2 | 3~100 | IP65 | | | | | | | |
| 安装方向/Installation direction | | 1,2 | 3~100 | 任意方向 /In any direction | | | | | | | |
| 噪音值(n1=3000rpm,无负载) Noise level (n1=3000rpm,off load) | dB(A) | 1,2 | 3~100 | ≤56 | ≤58 | ≤60 | ≤63 | ≤65 | ≤67 | ≤70 | |

ROTATIONAL INERTIA OF REDUCER

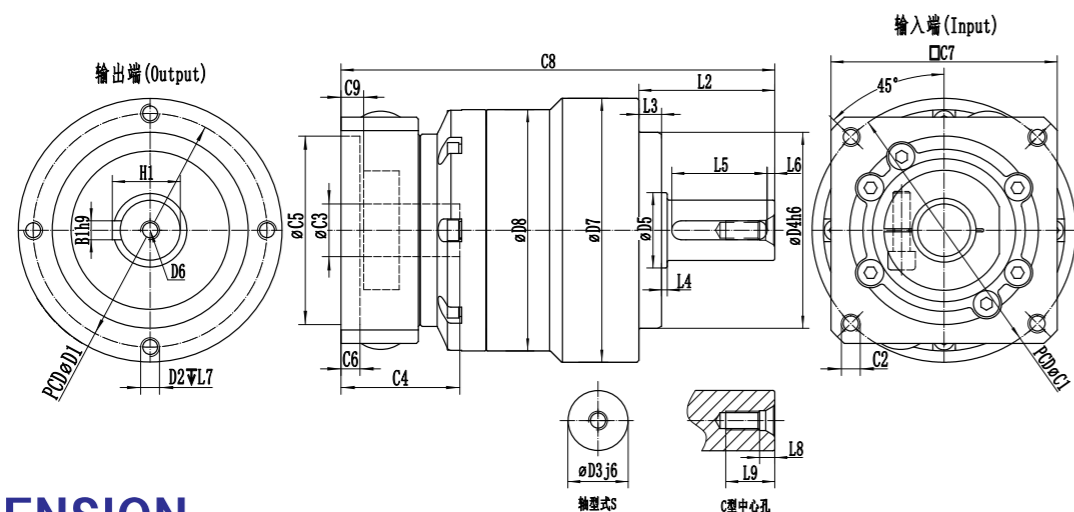
减速机转动惯量/Rotational inertia

| 规格 Specification | 单位 Unit | 节数 Stage | 减速比 Ratio | WAE050 | WAE070 | WAE090 | WAE120 | WAE155 | WAE205 | WAE235 |
|---------------------------------|--------------------|-------------|--------------|--------|--------|--------|--------|--------|--------|--------|
| 转动惯量J1 Rotational inertia J1 | kg·cm ² | 1 | 3 | 0.03 | 0.16 | 0.61 | 3.25 | 9.21 | 28.98 | 69.61 |
| | | | 4 | 0.03 | 0.14 | 0.48 | 2.74 | 7.54 | 23.67 | 54.37 |
| | | | 5 | 0.03 | 0.13 | 0.47 | 2.71 | 7.42 | 23.29 | 53.27 |
| | | | 6 | 0.03 | 0.13 | 0.45 | 2.65 | 7.25 | 22.75 | 51.72 |
| | | | 7 | 0.03 | 0.13 | 0.45 | 2.62 | 7.14 | 22.48 | 50.97 |
| | | | 8 | 0.03 | 0.13 | 0.44 | 2.58 | 7.07 | 22.59 | 50.84 |
| | | 2 | 10 | 0.03 | 0.13 | 0.44 | 2.57 | 7.03 | 22.51 | 50.56 |
| | | | 15 | 0.03 | 0.03 | 0.13 | 0.47 | 2.71 | 7.42 | 23.29 |
| | | | 20 | 0.03 | 0.03 | 0.13 | 0.47 | 2.71 | 7.42 | 23.29 |
| | | | 25 | 0.03 | 0.03 | 0.13 | 0.47 | 2.71 | 7.42 | 23.29 |
| | | | 30 | 0.03 | 0.03 | 0.13 | 0.47 | 2.71 | 7.42 | 23.29 |
| | | | 35 | 0.03 | 0.03 | 0.13 | 0.47 | 2.71 | 7.42 | 23.29 |
| | | 3 | 40 | 0.03 | 0.03 | 0.13 | 0.47 | 2.71 | 7.42 | 23.29 |
| | | | 50 | 0.03 | 0.03 | 0.13 | 0.44 | 2.57 | 7.03 | 22.51 |
| | | | 60 | 0.03 | 0.03 | 0.13 | 0.44 | 2.57 | 7.03 | 22.51 |
| | | | 70 | 0.03 | 0.03 | 0.13 | 0.44 | 2.57 | 7.03 | 22.51 |
| | | | 80 | 0.03 | 0.03 | 0.13 | 0.44 | 2.57 | 7.03 | 22.51 |
| | | 100 | 0.03 | 0.03 | 0.13 | 0.44 | 2.57 | 7.03 | 22.51 | |

1. 减速比 ($i=N_{in}/N_{out}$)
1. Ratio ($i=N_{in}/N_{out}$)

2. 最大加速力矩 T_{2B} =60% of T_{2NOT}
2. Maximum acceleration torque T_{2B} =60% of T_{2NOT}

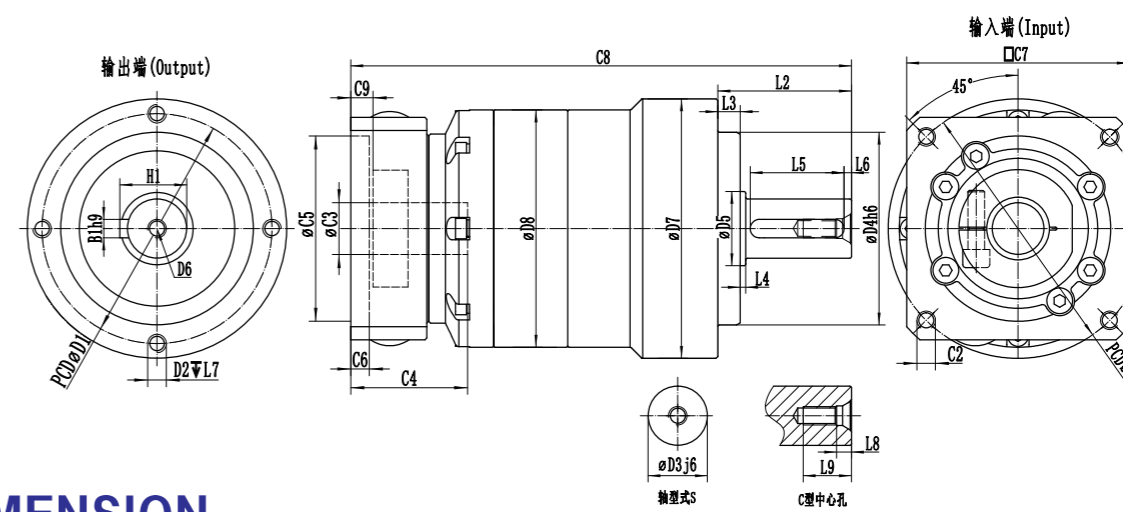
3. 输出转速 100rpm, 作用于输出轴中心位置
3. Output speed 100rpm, acting on the center of the output shaft



DIMENSION SINGLE SECTION

尺寸 (单节, 减速比 i=3~10)
Dimension(single stage, Ratio i=3~10)

| 尺寸 / Dimension | WAE050 | WAE070 | WAE090 | WAE120 | WAE155 | WAE205 | WAE235 | | | | | | | | |
|----------------|---------|---------|----------|-----------|----------|-----------|----------|------|-------|-------|-------|-------|-----|-------|------|
| D1 | 44 | 62 | 80 | 108 | 140 | 184 | 210 | | | | | | | | |
| D2 | M4*0.7P | M5*0.8P | M6*1.0P | M8*1.25P | M10*1.5P | M12*1.75P | M16*2.0P | | | | | | | | |
| D3 j6 | 12 | 16 | 22 | 32 | 40 | 55 | 75 | | | | | | | | |
| D4 g6 | 35 | 52 | 68 | 90 | 120 | 160 | 180 | | | | | | | | |
| D5 | 15 | 18 | 30 | 40 | 50 | 70 | 85 | | | | | | | | |
| D6 | M4*0.7P | M5*0.8P | M8*1.25P | M12*1.75P | M16*2.0P | M20*2.5P | M20*2.5P | | | | | | | | |
| D7 | 50 | 70 | 90 | 120 | 155 | 205 | 235 | | | | | | | | |
| D8 | 53 | 64 | 94 | 125 | 150 | 200 | 225 | | | | | | | | |
| L1 | - | - | - | - | - | - | - | | | | | | | | |
| L2 | 24.5 | 36 | 46 | 70 | 97 | 100 | 126 | | | | | | | | |
| L3 | 4 | 6.5 | | 17 | 15 | 15 | 18 | | | | | | | | |
| L4 | 1 | 1 | 1 | 1.5 | 3 | 3 | 3 | | | | | | | | |
| L5 | 14 | 25 | 30 | 40 | 63 | 70 | 90 | | | | | | | | |
| L6 | 2 | 1 | 2 | 5 | 5 | 6 | 7 | | | | | | | | |
| L7 | 10 | 10 | 12 | 16 | 20 | 22 | 28 | | | | | | | | |
| L8 | 3.2 | 4.8 | 7.2 | 10 | 12 | 15 | 15 | | | | | | | | |
| L9 | 10 | 12.5 | 19 | 28 | 36 | 42 | 42 | | | | | | | | |
| C1 | 46 | 70 | 90 | 90 | 145 | 145 | 200 | 145 | 200 | 200 | 200 | 235 | 200 | 235 | |
| C2 | M4*0.7P | M4 | M5 | M5 | M8 | M8 | M12 | M8 | M8 | M12 | M12 | M12 | M12 | M12 | |
| C3 | ≤8 | ≤14 | ≤19 | ≤19 | ≤24 | ≤24 | ≤35 | ≤24 | ≤35 | ≤42 | ≤35 | ≤42 | ≤55 | ≤42 | ≤55 |
| C4 | 26 | 31.5 | 41 | 41 | 59 | 60 | 81 | 60 | 81 | 114 | 81 | 114 | 117 | 114 | 117 |
| C5 | 30 | 50 | 70 | 70 | 110 | 110 | 114.3 | 110 | 114.3 | 114.3 | 114.3 | 114.3 | 200 | 114.3 | 200 |
| C6 | 5 | 5 | 5 | 6 | 14 | 14 | 19 | 14 | 19 | 15 | 8 | 10 | 24 | 20 | 20 |
| C7 | 42 | 60 | 80 | 80 | 130 | 130 | 180 | 130 | 180 | 180 | 180 | 180 | 220 | 180 | 220 |
| C8 | 86 | 115 | 124.5 | 147 | 165 | 199.5 | 225.5 | 258 | 279 | 312 | 285 | 318 | 321 | 374 | 377 |
| C9 | 6 | 6 | 9 | 9.5 | 21.5 | 19.5 | 23.5 | 20.5 | 21 | 54 | 15 | 46 | 35 | 35.5 | 38.5 |
| B1 h9 | 4 | 5 | 6 | 10 | 12 | 16 | 20 | | | | | | | | |
| H1 | 13.5 | 18 | 24.5 | 35 | 43 | 59 | 79.5 | | | | | | | | |



DIMENSION DOUBLE SECTION

尺寸 (双节, 减速比 i=15~100)
Dimension(double stage, Ratio i=15~100)

| 尺寸 / Dimension | WAE050 | WAE070 | WAE090 | WAE120 | WAE155 | WAE205 | WAE235 | | | | | | | | | | |
|----------------|---------|---------|----------|-----------|----------|-----------|----------|-------|-------|-------|-------|-------|-------|-------|-------|-----|-----|
| D1 | 44 | 62 | 80 | 108 | 140 | 184 | 210 | | | | | | | | | | |
| D2 | M4*0.7P | M5*0.8P | M6*1.0P | M8*1.25P | M10*1.5P | M12*1.75P | M16*2.0P | | | | | | | | | | |
| D3 j6 | 12 | 16 | 22 | 32 | 40 | 55 | 75 | | | | | | | | | | |
| D4 g6 | 35 | 52 | 68 | 90 | 120 | 160 | 180 | | | | | | | | | | |
| D5 | 15 | 18 | 30 | 40 | 50 | 70 | 85 | | | | | | | | | | |
| D6 | M4*0.7P | M5*0.8P | M8*1.25P | M12*1.75P | M16*2.0P | M20*2.5P | M20*2.5P | | | | | | | | | | |
| D7 | 50 | 70 | 90 | 120 | 155 | 205 | 235 | | | | | | | | | | |
| D8 | 53 | 64 | 94 | 125 | 150 | 200 | 225 | | | | | | | | | | |
| L1 | - | - | - | - | - | - | - | | | | | | | | | | |
| L2 | 24.5 | 36 | 46 | 70 | 97 | 100 | 126 | | | | | | | | | | |
| L3 | 4 | 6.5 | 8 | 17 | 15 | 15 | 18 | | | | | | | | | | |
| L4 | 1 | 1 | 1 | 1.5 | 3 | 3 | 3 | | | | | | | | | | |
| L5 | 14 | 25 | 30 | 40 | 63 | 70 | 90 | | | | | | | | | | |
| L6 | 2 | 1 | 2 | 5 | 5 | 6 | 7 | | | | | | | | | | |
| L7 | 10 | 10 | 12 | 16 | 20 | 22 | 28 | | | | | | | | | | |
| L8 | 3.2 | 4.8 | 7.2 | 10 | 12 | 15 | 15 | | | | | | | | | | |
| L9 | 10 | 12.5 | 19 | 28 | 36 | 42 | 42 | | | | | | | | | | |
| C1 | 46 | 70 | 90 | 90 | 145 | 145 | 200 | 145 | 200 | 145 | 200 | 200 | 200 | 235 | 200 | 235 | |
| C2 | M4*0.7P | M4 | M5 | M4 | M5 | M8 | M5 | M8 | M8 | M12 | M12 | M12 | M12 | M12 | M12 | M12 | |
| C3 | ≤8 | ≤14 | ≤19 | ≤14 | ≤19 | ≤24 | ≤19 | ≤24 | ≤24 | ≤35 | ≤35 | ≤42 | ≤35 | ≤42 | ≤55 | ≤42 | ≤55 |
| C4 | 26 | 31.5 | 41 | 31.5 | 41 | 59 | 41 | 60 | 60 | 81 | 81 | 114 | 81 | 114 | 114 | 117 | |
| C5 | 30 | 50 | 70 | 50 | 70 | 110 | 70 | 110 | 110 | 114.3 | 114.3 | 114.3 | 114.3 | 114.3 | 114.3 | 200 | |
| C6 | 5 | 5 | 5 | 5 | 6 | 14 | 6 | 14 | 14 | 19 | 19 | 10 | 10 | 10 | 20 | 20 | |
| C7 | 42 | 60 | 80 | 60 | 80 | 130 | 80 | 130 | 130 | 180 | 180 | 180 | 180 | 180 | 180 | 220 | |
| C8 | 107 | 147 | 160 | 168 | 184.5 | 202.5 | 214 | 244.5 | 299.5 | 340 | 344.5 | 386.5 | 470 | 473 | | | |
| C9 | 6 | 6 | 9 | 6 | 9.5 | 21.5 | 19.5 | 25 | 19.5 | 21 | 21 | 46 | 46 | 38.5 | | | |
| B1 h9 | 4 | 5 | 6 | 10 | 12 | 16 | 20 | | | | | | | | | | |
| H1 | 13.5 | 18 | 24.5 | 35 | 43 | 59 | 79.5 | | | | | | | | | | |

WADR

Series planetary gearbox
系列行星减速机

FEATURES

产品特点

- » 行星臂架与输出轴采用一体式结构设计，确保最大的扭转刚性。
- » 行星轮采用满滚针设计，增加接触面积以提高结构刚性与输出扭矩。
- » 齿轮采用低碳钢表面渗碳淬火到HRC62，以获得最佳的耐磨及冲击韧性。
- » 齿形引用国外进口软件辅助设计，以获得最佳的齿形降低噪音。
- » 采用蜗线伞齿轮设计，容许输出扭矩高、比直伞齿轮高30%以上。
- » 高容许输入转速，比直伞齿轮输入高8倍以上。
- » 蜗线伞齿轮的啮合齿印，经最佳优化设计，接触齿面负载均一，运转寿命长。
- » 蜗线伞齿轮啮合，经最佳运动误差分析与严格的制程控制，以确保高精度的运转背隙。
- » Planetary boom and output shaft are intergrated structure designed to ensure maximum torsional rigidity.
- » Planetary wheel with full needle design, increase the contact area to improve the rigidity and output torque.
- » The gears are carburized and quenched to the HRC62 with low carbon steel surface for optimum wear and impact toughness.
- » Gears refer to foreign imported software-assisted design to obtain the best tooth shape to reduce noise.
- » Adopt spiral bevel gear design, allow high output torque, more than 30% higher than straight bevel gear.
- » High tolerance input speed, more than 8 times higher than straight bevel gear input.
- » The meshing tooth imprint of spiral bevel gear has been optimized by optimum design, and the contact tooth surface load is uniform, and long running life.
- » Cochlear bevel gears are meshed by optimum motion error analysis and strict process control to ensure high precision running back clearance.

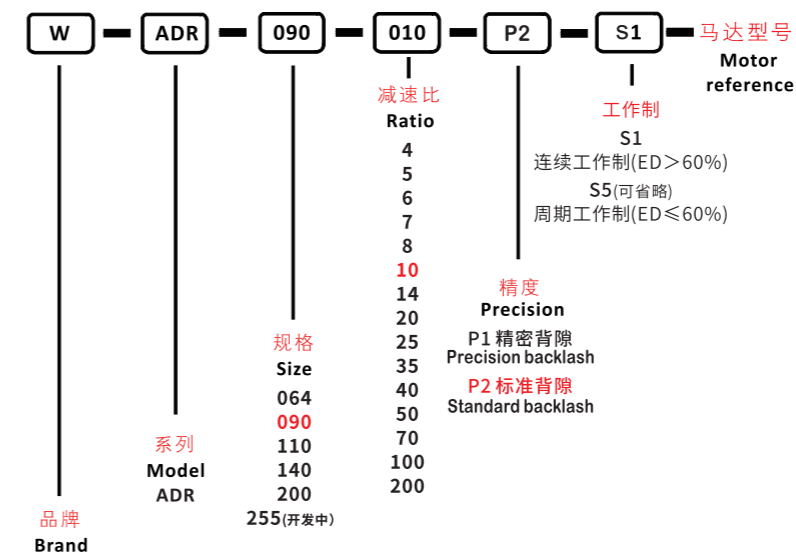


- 标准版行星减速机，适用于高定位精度、高动态周期工作制的应用上
- 要求用于S1连续工作制时，请与我们联系
- 或推荐使用WSHR/WTHR系列
- The standard planetary gearbox is suitable for applications that requires high positioning accuracy and high dynamic periodic operation
- if it needs to be used for S1 continuous operation, please contact us
- Alternatively, we recommend using the WSH/WTH series

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
- 入力方式和入力转速
- 马达厂牌型号或法兰及马达轴尺寸
- Type, model and torque
- Ratio or output speed
- Working conditions and connection methods
- Quantity and installed machine name
- Input mode and input speed
- Motor brand model or flange and motor shaft size

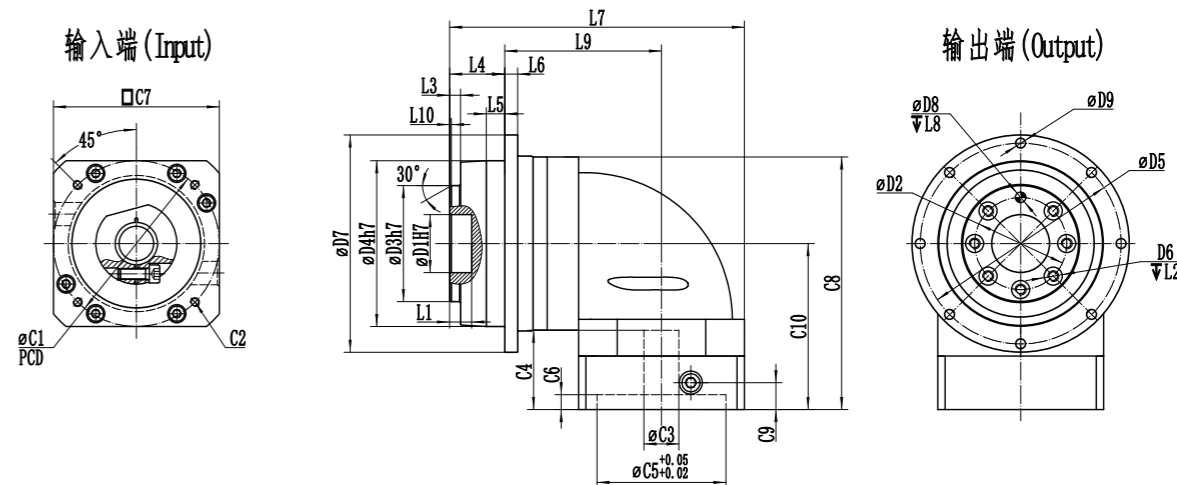
PLANETARY GEARBOX

减速机性能资料/Performance

| 规格 Specification | 单位 Unit | 节数 Stage | 减速比 Ratio | WADR064 | WADR090 | WADR110 | WADR140 | WADR200 | WADR255 |
|--|------------|-------------|--------------|--|---------|---------|---------|---------|---------|
| 额定输出力矩 Rated output torque T _{2N} | Nm | 1 | 4 | 55 | 130 | 270 | 560 | 1100 | - |
| | | | 5 | 60 | 160 | 330 | 650 | 1200 | - |
| | | | 6 | 50 | 140 | 300 | 550 | 1100 | - |
| | | | 7 | 50 | 140 | 300 | 550 | 1000 | - |
| | | | 8 | 55 | 130 | 270 | 560 | 1100 | - |
| | | | 10 | 60 | 160 | 330 | 650 | 1200 | - |
| | | | 14 | 50 | 140 | 300 | 550 | 1000 | - |
| | | 2 | 20 | 35 | 90 | 200 | 400 | 760 | - |
| | | | 25 | 60 | 160 | 330 | 650 | 1200 | - |
| | | | 35 | 50 | 140 | 300 | 550 | 1000 | - |
| | | | 40 | 55 | 130 | 270 | 560 | 1100 | - |
| | | | 50 | 60 | 160 | 330 | 650 | 1200 | - |
| | | | 70 | 50 | 140 | 300 | 550 | 1000 | - |
| | | | 100 | 60 | 160 | 330 | 650 | 1200 | - |
| 急停扭矩/Emergency stop torque T _{2NOT} | Nm | 1,2 | 4~200 | 三倍额定输出力矩(允许1000次) / Triple rated output torque | | | | | - |
| | | 1,2 | 4~200 | 5000 | 4000 | 4000 | 3000 | 3000 | - |
| 额定输入转速/Rated input speed n _{1IN} | rpm | 1,2 | 4~200 | 5000 | 4000 | 4000 | 3000 | 3000 | - |
| 最大输入转速/Maximum input speed n _{1B} | rpm | 1,2 | 4~200 | 10000 | 8000 | 8000 | 6000 | 6000 | - |
| 精密背隙/Precision backlash P1 | arcmin | 1 | 4~20 | ≤5 | ≤5 | ≤5 | ≤5 | ≤5 | - |
| | | 2 | 25~200 | ≤7 | ≤7 | ≤7 | ≤7 | ≤7 | - |
| 标准背隙/Standard backlash P2 | arcmin | 1 | 4~20 | ≤7 | ≤7 | ≤7 | ≤7 | ≤7 | - |
| | | 2 | 25~200 | ≤10 | ≤10 | ≤10 | ≤10 | ≤10 | - |
| 扭转刚性/Torsional rigidity | Nm/arcmin | 1,2 | 4~200 | 13 | 31 | 82 | 151 | 440 | - |
| 最大弯曲力矩 Maximum bending torque M2KB | Nm | 1,2 | 4~200 | 125 | 235 | 430 | 1300 | 3064 | - |
| 容许轴向力/Allowable axial force F _{2aB} | N | 1,2 | 4~200 | 1050 | 2850 | 3500 | 10590 | 16660 | - |
| 使用寿命/Lifespan | hr | 1,2 | 4~200 | 20000 | | | | | - |
| 效率/Efficiency | % | 1 | | ≥95% | | | | | - |
| | | 2 | | ≥92% | | | | | - |
| 重量/Weight | kg | 1 | 4~20 | 1.9 | 4.5 | 9.8 | 20.1 | 46.6 | - |
| | | 2 | 25~200 | 2.1 | 5.9 | 10.5 | 21.9 | 53.9 | - |
| 使用温度/Working temperature | °C | 1,2 | 4~200 | -20°C - +40°C | | | | | - |
| 润滑/Lubricating | | | | 合成润滑脂/Synthetic lubricating grease | | | | | - |
| 防护等级/IP Grade | | 1,2 | 4~200 | IP65 | | | | | - |
| 安装方向/Installation direction | | 1,2 | 4~200 | 任意方向/In any direction | | | | | - |
| 噪音值(n1=3000rpm,无负载) Noise level (n1=3000rpm,off load) | dB(A) | 1,2 | 4~200 | ≤63 | ≤65 | ≤68 | ≤70 | ≤72 | - |

减速机转动惯量/Rotational inertia

| 规格 Specification | 单位 Unit | 节数 Stage | 减速比 Ratio | WADR064 | WADR090 | WADR110 | WADR140 | WADR200 | WADR255 |
|---------------------------------|--------------------|-------------|--------------|---------|---------|---------|---------|---------|---------|
| 转动惯量J1 Rotational inertia J1 | kg.cm ² | 1 | 4~10 | 0.35 | 2.25 | 6.84 | 23.4 | - | - |
| | | | 14 | 0.07 | 1.87 | 6.25 | 21.8 | - | - |
| | | 2 | 20 | 0.07 | 1.87 | 6.25 | 21.8 | - | - |
| | | | 25~100 | 0.09 | 0.35 | 2.25 | 6.84 | - | - |
| | | | 140~200 | - | 0.31 | 1.87 | 6.25 | - | - |



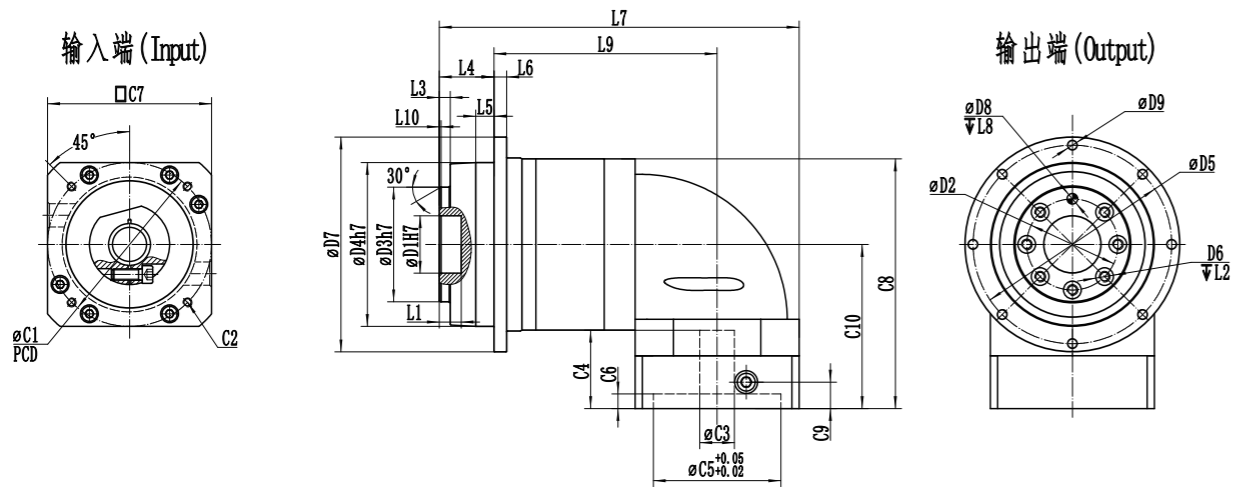
DIMENSION

SINGLE SECTION

尺寸 (单节, 减速比 i=4~20)

/Dimension (single stage, Ratio i=4~20)

| 尺寸/Dimension | WADR064 | WADR090 | WADR110 | WADR140 | WADR200 | WADR255 |
|--------------|---------|---------|---------|---------|---------|---------|
| D1H7 | 20 | 31.5 | 40 | 50 | 80 | - |
| D2 | 31.5 | 50 | 63 | 80 | 125 | - |
| D3h7 | 40 | 63 | 80 | 100 | 160 | - |
| D4h7 | 64 | 90 | 110 | 140 | 200 | - |
| D5 | 79 | 109 | 135 | 168 | 233 | - |
| D6 | 7-M5 | 7-M6 | 11-M6 | 11-M8 | 11-M10 | - |
| D7 | 86 | 118 | 145 | 179 | 247 | - |
| D8H7 | 5 | 6 | 6 | 8 | 10 | - |
| D9 | 8-4.5 | 8-5.5 | 8-5.5 | 12-6.6 | 12-9 | - |
| L1 | 8 | 12 | 12 | 12 | 16 | - |
| L2 | 9 | 12 | 12 | 17 | 23 | - |
| L3 | 3 | 6 | 6 | 6 | 8 | - |
| L4 | 19.5 | 30 | 29 | 38 | 50 | - |
| L5 | 7 | 10 | 10 | 14.6 | 15 | - |
| L6 | 4 | 7 | 8 | 10 | 12 | - |
| L7 | 113.2 | 160 | 187 | 241.5 | 301.5 | - |
| L8 | 6 | 7 | 7 | 7 | 10 | - |
| L9 | 63.7 | 85 | 100.5 | 132.5 | 161.5 | - |
| L10 | 0.5 | 1 | 1 | 1 | 1.5 | - |
| C1 | 70 | 90 | 145 | 200 | 200 | - |
| C2 | 4-M4 | 4-M5 | 4-M8 | 4-M12 | 4-M12 | - |
| C3 | ≤14 | ≤19/≤24 | ≤24/≤35 | ≤35/≤42 | ≤42 | - |
| C4 | 35 | 43 | 71 | 86 | 119 | - |
| C5 | 50 | 70 | 110 | 114.3 | 114.3 | - |
| C6 | 5 | 8 | 14 | 19 | 15 | - |
| C7 | 60 | 90 | 130 | 180 | 180 | - |
| C8 | 103.9 | 137.1 | 189 | 237.5 | 300.5 | - |
| C9 | 11.5 | 14.5 | 27 | 32 | 65 | - |
| C10 | 71.9 | 90.1 | 126.5 | 162.5 | 162.5 | - |



DIMENSION

SINGLE SECTION

尺寸 (双节, 减速比 i=25~200)

/Dimension(double stage, Ratio i=25~200)

| 尺寸/Dimension | WADR064 | WADR090 | WADR110 | WADR140 | WADR200 | WADR255 |
|--------------|---------|---------|---------|---------|---------|---------|
| D1H7 | 20 | 31.5 | 40 | 50 | 80 | - |
| D2 | 31.5 | 50 | 63 | 80 | 125 | - |
| D3h7 | 40 | 63 | 80 | 100 | 160 | - |
| D4h7 | 64 | 90 | 110 | 140 | 200 | - |
| D5 | 79 | 109 | 135 | 168 | 233 | - |
| D6 | 7-M5 | 7-M6 | 11-M6 | 11-M8 | 11-M10 | - |
| D7 | 86 | 118 | 145 | 179 | 247 | - |
| D8H7 | 5 | 6 | 6 | 8 | 10 | - |
| D9 | 8-4.5 | 8-5.5 | 8-5.5 | 12-6.6 | 12-9 | - |
| L1 | 8 | 12 | 12 | 12 | 16 | - |
| L2 | 9 | 12 | 12 | 17 | 23 | - |
| L3 | 3 | 6 | 6 | 6 | 8 | - |
| L4 | 19.5 | 30 | 29 | 38 | 50 | - |
| L5 | 7 | 10 | 10 | 14.6 | 15 | - |
| L6 | 4 | 7 | 8 | 10 | 12 | - |
| L7 | 145.2 | 197.5 | 232 | 302.5 | 339 | - |
| L8 | 6 | 7 | 7 | 7 | 10 | - |
| L9 | 95.7 | 122.5 | 145.5 | 193.5 | 199 | - |
| L10 | 0.5 | 1 | 1 | 1 | 1.5 | - |
| C1 | 70 | 90 | 145 | 200 | 200 | - |
| C2 | 4-M4 | 4-M5 | 4-M8 | 4-M12 | 4-M12 | - |
| C3 | ≤14 | ≤14/≤19 | ≤19/≤24 | ≤24/≤35 | ≤35/≤42 | - |
| C4 | 35 | 43 | 71 | 86 | 119 | - |
| C5 | 50 | 70 | 110 | 114.3 | 114.3 | - |
| C6 | 5 | 8 | 14 | 19 | 15 | - |
| C7 | 60 | 90 | 130 | 180 | 180 | - |
| C8 | 103.9 | 137.1 | 189 | 237.5 | 300.5 | - |
| C9 | 11.5 | 14.5 | 27 | 32 | 65 | - |
| C10 | 71.9 | 90.1 | 126.5 | 162.5 | 162.5 | - |

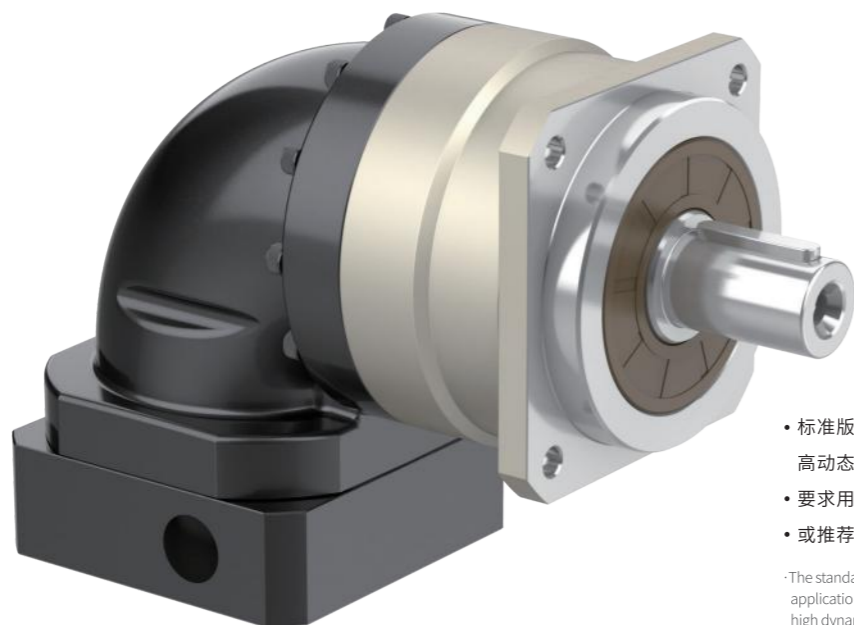
WVRBR

Series planetary gearbox
系列行星减速机

FEATURES

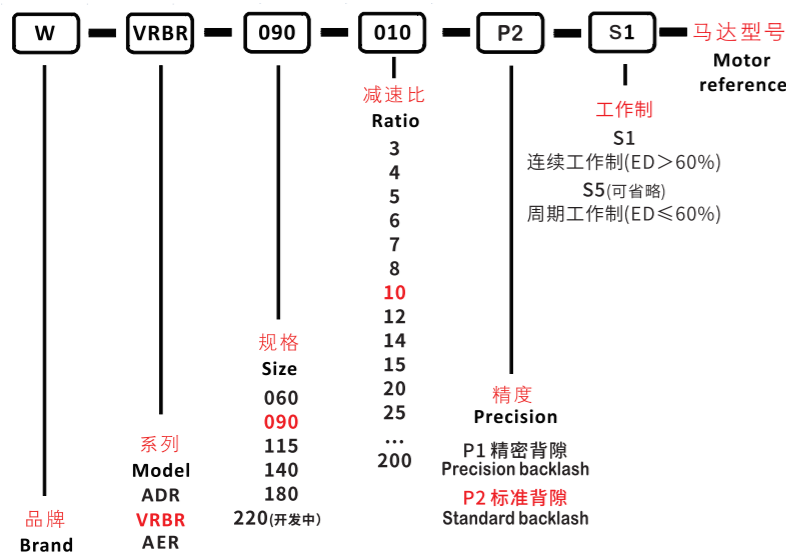
产品特点

- » 行星臂架与输出轴采用一体式结构设计，确保最大的扭转刚性。
- » 行星轮采用满滚针设计，增加接触面积以提高结构刚性与输出扭矩。
- » 齿轮采用低碳钢表面渗碳淬火到HRC62，以获得最佳的耐磨及冲击韧性。
- » 齿形引用国外进口软件辅助设计，以获得最佳的齿形降低噪音。
- » 采用蜗线伞齿轮设计，容许输出扭矩高、比直伞齿轮高30%以上。
- » 高容许输入转速，比直伞齿轮输入高8倍以上。
- » 蜗线伞齿轮的啮合齿印，经最佳优化设计，接触齿面负载均一，运转寿命长。
- » 蜗线伞齿轮啮合，经最佳运动误差分析与严格的制程控制，以确保高精度的运转背隙。
- » Planetary boom and output shaft are intergrated structure designed to ensure maximum torsional rigidity.
- » Planetary wheel with full needle design, increase the contact area to improve the rigidity and output torque.
- » The gears are carburized and quenched to the HRC62 with low carbon steel surface for optimum wear and impact toughness.
- » Gears refer to foreign imported software-assisted design to obtain the best tooth shape to reduce noise.
- » Adopt spiral bevel gear design, allow high output torque, more than 30% higher than straight bevel gear.
- » High tolerance input speed, more than 8 times higher than straight bevel gear input.
- » The meshing tooth imprint of spiral bevel gear has been optimized by optimum design, and the contact tooth surface load is uniform, and long running life.
- » Cochlear bevel gears are meshed by optimum motion error analysis and strict process control to ensure high precision running back clearance.



- 标准版行星减速机, 适用于高定位精度、高动态周期工作制的应用上
 - 要求用于S1连续工作制时, 请与我们联系
 - 或推荐使用WSHR/WTHR系列
- The standard planetary gearbox is suitable for applications that requires high positioning accuracy and high dynamic periodic operation
 if it needs to be used for S1 continuous operation, please contact us
 Alternatively, we recommend using the WSH/WTH series

INDICATION FOR MODEL SELECTION
机种型号表示



GENERAL NOTICES 订货须知

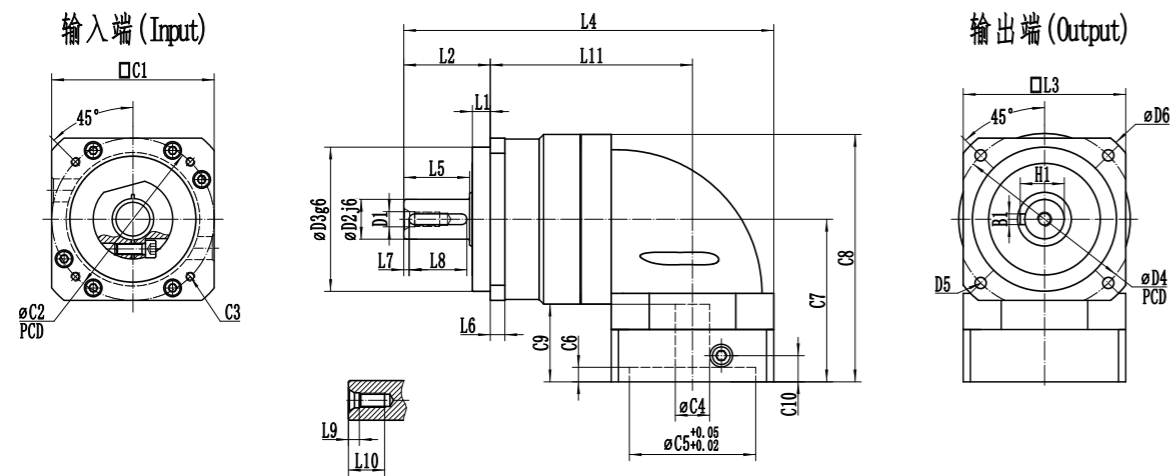
- 机种、型号、扭矩
- 减速比或出力轴转速
- 工况及连接方式
- 数量及安装的机械名称
- 入力方式和入力转速
- 马达厂牌型号或法兰及马达轴尺寸
- Type, model and torque
- Ratio or output speed
- Working conditions and connection methods
- Quantity and installed machine name
- Input mode and input speed
- Motor brand model or flange and motor shaft size

减速机性能资料/Performance

| 规格 Specification | 单位 Unit | 节数 Stage | 减速比 Ratio | WVRBR060 | WVRBR090 | WVRBR115 | WVRBR140 | WVRBR180 | WVRBR220 | |
|--|-----------|--------------------------------------|-----------|--|----------|----------|----------|----------|----------|--|
| 额定输出力矩 Rated output torque T _{2N} | Nm | 1 | 3 | 55 | 130 | 208 | 342 | 588 | 1140 | |
| | | | 4 | 50 | 140 | 290 | 540 | 1050 | 1700 | |
| | | | 5 | 60 | 160 | 330 | 650 | 1200 | 2000 | |
| | | | 6 | 55 | 150 | 310 | 600 | 1100 | 1900 | |
| | | | 7 | 50 | 140 | 300 | 550 | 1000 | 1700 | |
| | | | 8 | 50 | 140 | 290 | 542 | 1050 | 1450 | |
| | | | 10 | 60 | 160 | 330 | 650 | 1200 | 2000 | |
| | | | 12 | 55 | 150 | 310 | 600 | 1100 | 1900 | |
| | | | 14 | 50 | 140 | 300 | 550 | 1000 | 1700 | |
| | | | 20 | 35 | 90 | 200 | 400 | 760 | 1350 | |
| | | 2 | 15 | 55 | 130 | 208 | 342 | 588 | 1140 | |
| | | | 25 | 60 | 160 | 330 | 650 | 1200 | 2000 | |
| | | | 30 | 55 | 130 | 208 | 342 | 588 | 1140 | |
| | | | 35 | 50 | 140 | 300 | 550 | 1000 | 1700 | |
| | | | 40 | 50 | 140 | 290 | 542 | 1050 | 1700 | |
| | | | 50 | 60 | 160 | 330 | 650 | 1200 | 2000 | |
| | | | 60 | 55 | 150 | 310 | 600 | 1100 | 1900 | |
| | | | 70 | 50 | 140 | 300 | 550 | 1000 | 1700 | |
| | | | 80 | 50 | 140 | 290 | 542 | 1050 | 1700 | |
| | | | 100 | 60 | 160 | 330 | 650 | 1200 | 2000 | |
| 三倍额定输出力矩(允许1000次) / Triple rated output torque | Nm | 1,2 | 3~200 | 1530 | 3250 | 6700 | 9400 | 14500 | 20000 | |
| | | | 3~200 | 765 | 1625 | 3350 | 4700 | 7250 | 10000 | |
| | | | 3~200 | 7 | 14 | 25 | 50 | 145 | 225 | |
| | | | 3~200 | 1530 | 3250 | 6700 | 9400 | 14500 | 20000 | |
| | | | 3~200 | 765 | 1625 | 3350 | 4700 | 7250 | 10000 | |
| | | | 3~200 | 7 | 14 | 25 | 50 | 145 | 225 | |
| | | | 3~200 | 1530 | 3250 | 6700 | 9400 | 14500 | 20000 | |
| | | | 3~200 | 765 | 1625 | 3350 | 4700 | 7250 | 10000 | |
| | | | 3~200 | 7 | 14 | 25 | 50 | 145 | 225 | |
| | | | 3~200 | 1530 | 3250 | 6700 | 9400 | 14500 | 20000 | |
| 急停扭矩 / Emergency stop torque T _{2NOT} | Nm | 1,2 | 3~200 | 三倍额定输出力矩(允许1000次) / Triple rated output torque | | | | | | |
| 额定输入转速 / Rated input speed n _{1N} | rpm | 1,2 | 3~200 | 5000 | 4000 | 4000 | 3000 | 3000 | 2000 | |
| 最大输入转速 / Maximum input speed n _{1B} | rpm | 1,2 | 3~200 | 10000 | 8000 | 8000 | 6000 | 6000 | 3500 | |
| 精密背隙 / Precision backlash P1 | arcmin | 1 | 3~20 | ≤5 | ≤5 | ≤5 | ≤5 | ≤5 | ≤5 | |
| | | 2 | 15~200 | ≤7 | ≤7 | ≤7 | ≤7 | ≤7 | ≤7 | |
| 标准背隙 / Standard backlash P2 | arcmin | 1 | 3~20 | ≤7 | ≤7 | ≤7 | ≤7 | ≤7 | ≤7 | |
| | | 2 | 15~200 | ≤10 | ≤10 | ≤10 | ≤10 | ≤10 | ≤10 | |
| 扭转刚性 / Torsional rigidity | Nm/arcmin | 1,2 | 3~200 | 7 | 14 | 25 | 50 | 145 | 225 | |
| 容许径向力 / Allowable radial force F _{2aB} | N | 1,2 | 3~200 | 1530 | 3250 | 6700 | 9400 | 14500 | 20000 | |
| 容许轴向力 / Allowable axial force F _{2aB} | N | 1,2 | 3~200 | 765 | 1625 | 3350 | 4700 | 7250 | 10000 | |
| 使用寿命 / Lifespan | hr | 1,2 | 3~200 | 20000 | | | | | | |
| | | 1 | 3~20 | 95% | | | | | | |
| 效率 / Efficiency | % | 1 | 3~20 | 95% | | | | | | |
| | | 2 | 25~200 | 92% | | | | | | |
| 重量 / Weight | kg | 1 | 3~20 | 2.1 | 6.4 | 13 | 24.5 | 51 | 68 | |
| | | 2 | 25~200 | 1.5 | 7.8 | 14.2 | 27.5 | 54 | 72 | |
| 使用温度 / Working temperature | °C | 1,2 | 3~200 | -20°C - +40°C | | | | | | |
| 润滑 / Lubricating | | 合成润滑脂 / Synthetic lubricating grease | | | | | | | | |
| 防护等级 / IP Grade | | 1,2 | 3~200 | IP65 | | | | | | |
| | | | 3~200 | 任意方向 / In any direction | | | | | | |
| 安装方向 / Installation direction | | 任意方向 / In any direction | | | | | | | | |
| 噪音值 (n ₁ =3000, 无负载) / Noise level (n ₁ =3000, off load) | dB(A) | 1,2 | 3~200 | ≤63 | ≤65 | ≤68 | ≤70 | ≤72 | ≤74 | |

减速机转动惯量 / Rotational inertia

| 规格 Specification | 单位 Unit | 节数 Stage | 减速比 Ratio | WVRBR060 | WVRBR090 | WVRBR115 | WVRBR140 | WVRBR180 | WVRBR220 |
|----------------------------------|--------------------|----------|-----------|----------|----------|----------|----------|----------|----------|
| 转动惯量 J1 Rotational inertia J1 | kg.cm ² | 1 | 3~10 | 0.35 | 2.25 | 6.84 | 23.4 | 68.9 | 105 |
| | | | 12~14 | 0.07 | 1.87 | 6.25 | 21.8 | 65.6 | 85 |
| | | | 20 | 0.07 | 1.87 | 6.25 | 21.8 | 65.6 | 82 |
| | | 2 | 15 | 0.35 | 2.25 | 6.84 | 23.4 | 68.9 | 75 |
| | | | 25~100 | 0.09 | 0.35 | 2.25 | 6.84 | 23.4 | 67 |
| | | | 120~200 | 0.01 | 0.31 | 1.87 | 6.25 | 21.8 | 65 |

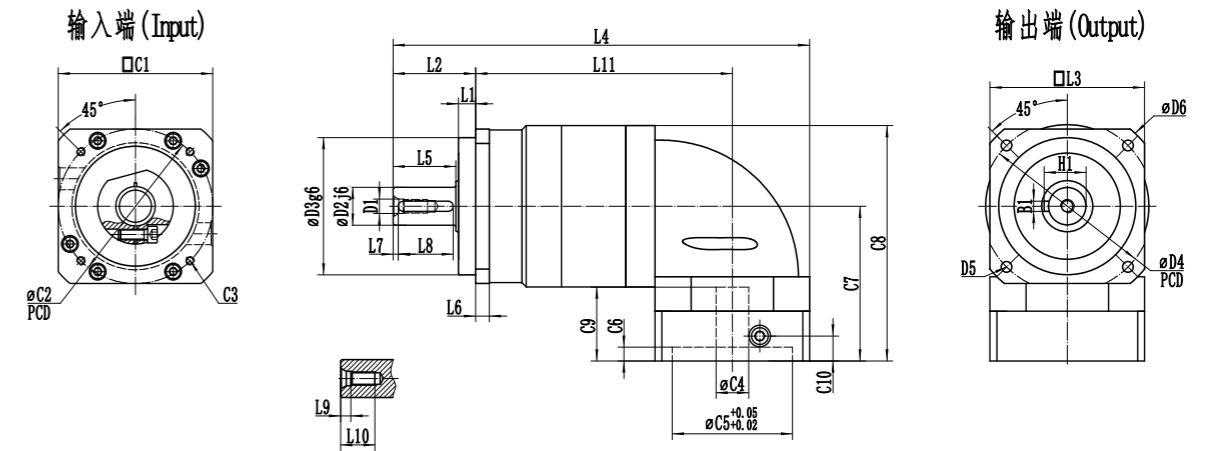


DIMENSION

DOUBLE SECTION

尺寸 (单节, 减速比 $i=3\sim 20$)
Dimension(single stage, Ratio $i=3\sim 20$)

| 尺寸/Dimension | WVRBR060 | WVRBR090 | WVRBR115 | WVRBR140 | WVRBR180 | WVRBR220 |
|--------------|-----------|-------------------|-------------------|-------------------|-----------|----------|
| D1 | M5 | M8 | M12 | M16 | M20 | - |
| D2j6 | 16 | 22 | 32 | 40 | 55 | - |
| D3g6 | 50 | 80 | 110 | 130 | 160 | - |
| D4 | 70 | 100 | 130 | 165 | 215 | - |
| D5 | 4-5.5 | 4-6.6 | 4-9 | 4-11 | 4-13.5 | - |
| D6 | 80 | 116 | 152 | 185 | 240 | - |
| L1 | 7 | 10 | 7 | 13 | 20 | - |
| L2 | 37 | 48 | 60 | 95 | 105 | - |
| L3 | 60 | 90 | 115 | 140 | 180 | - |
| L4 | 52.2 | 205 | 259 | 347 | 394 | - |
| L5 | 28.5 | 36.5 | 51 | 79 | 82 | - |
| L6 | 6 | 8 | 10 | 12 | 15 | - |
| L7 | 1 | 2 | 5 | 5 | 6 | - |
| L8 | 25 | 30 | 40 | 63 | 70 | - |
| L9 | 4 | 6 | 10 | 12 | 11.5 | - |
| L10 | 13 | 20 | 28 | 36 | 42 | - |
| L11 | 85.2 | 112 | 141.5 | 181 | 199 | - |
| C1 | 60 | 90 | 130 | 180 | 180 | - |
| C2 | 70 | 90 | 145 | 200 | 200 | - |
| C3 | 4-M4 | 4-M5 | 4-M8 | 4-M12 | 4-M12 | - |
| C4 | ≤ 14 | $\leq 19/\leq 24$ | $\leq 24/\leq 35$ | $\leq 35/\leq 42$ | ≤ 42 | - |
| C5 | 50 | 70 | 110 | 114.3 | 114.3 | - |
| C6 | 5 | 8 | 14 | 19 | 15 | - |
| C7 | 71.9 | 90.1 | 126.5 | 162.5 | 195.5 | - |
| C8 | 103.9 | 137.1 | 189 | 237.5 | 295.5 | - |
| C9 | 35 | 43 | 71 | 86 | 119 | - |
| C10 | 11.5 | 14.5 | 27 | 32 | 65 | - |
| B1 | 5 | 6 | 10 | 12 | 16 | - |
| H1 | 18 | 24.5 | 35 | 43 | 59 | - |



DIMENSION

DOUBLE SECTION

尺寸 (双节, 减速比 $i=15\sim 200$)
Dimension(double stage, Ratio $i=15\sim 200$)

| 尺寸/Dimension | WVRBR060 | WVRBR090 | WVRBR115 | WVRBR140 | WVRBR180 | WVRBR220 |
|--------------|-----------|-------------------|-------------------|-------------------|-------------------|----------|
| D1 | M5 | M8 | M12 | M16 | M20 | - |
| D2j6 | 16 | 22 | 32 | 40 | 55 | - |
| D3g6 | 50 | 80 | 110 | 130 | 160 | - |
| D4 | 70 | 100 | 130 | 165 | 215 | - |
| D5 | 4-5.5 | 4-6.6 | 4-9 | 4-11 | 4-13.5 | - |
| D6 | 80 | 116 | 152 | 185 | 240 | - |
| L1 | 7 | 10 | 7 | 13 | 20 | - |
| L2 | 37 | 48 | 60 | 95 | 105 | - |
| L3 | 60 | 90 | 115 | 140 | 180 | - |
| L4 | 184.2 | 242.5 | 304 | 408 | 431.5 | - |
| L5 | 28.5 | 36.5 | 51 | 79 | 82 | - |
| L6 | 6 | 8 | 10 | 12 | 15 | - |
| L7 | 1 | 2 | 5 | 5 | 6 | - |
| L8 | 25 | 30 | 40 | 63 | 70 | - |
| L9 | 4 | 6 | 10 | 12 | 11.5 | - |
| L10 | 13 | 20 | 28 | 36 | 42 | - |
| L11 | 117.2 | 149.5 | 186.5 | 242 | 236.5 | - |
| C1 | 60 | 90 | 130 | 180 | 180 | - |
| C2 | 70 | 90 | 145 | 200 | 200 | - |
| C3 | 4-M4 | 4-M5 | 4-M8 | 4-M12 | 4-M12 | - |
| C4 | ≤ 14 | $\leq 14/\leq 19$ | $\leq 19/\leq 24$ | $\leq 24/\leq 35$ | $\leq 35/\leq 42$ | - |
| C5 | 50 | 70 | 110 | 114.3 | 114.3 | - |
| C6 | 5 | 8 | 14 | 19 | 15 | - |
| C7 | 71.9 | 90.1 | 126.5 | 162.5 | 195.5 | - |
| C8 | 103.9 | 137.1 | 189 | 237.5 | 295.5 | - |
| C9 | 35 | 43 | 71 | 86 | 119 | - |
| C10 | 11.6 | 14.5 | 27 | 32 | 65 | - |
| B1 | 5 | 6 | 10 | 12 | 16 | - |
| H1 | 18 | 24.5 | 35 | 43 | 59 | - |

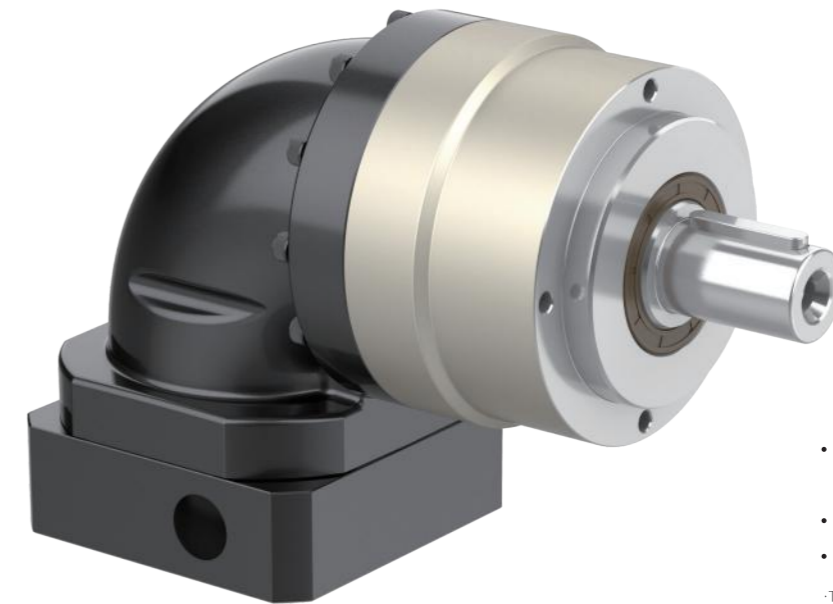
WAER

Series planetary gearbox
系列行星减速机

FEATURES

产品特点

- » 行星臂架与输出轴采用一体式结构设计，确保最大的扭转刚性。
- » 行星轮采用满滚针设计，增加接触面积以提高结构刚性与输出扭矩。
- » 齿轮采用低碳钢表面渗碳淬火到HRC62，以获得最佳的耐磨及冲击韧性。
- » 齿形引用国外进口软件辅助设计，以获得最佳的齿形降低噪音。
- » 采用蜗线伞齿轮设计，容许输出扭矩高、比直伞齿轮高30%以上。
- » 高容许输入转速，比直伞齿轮输入高8倍以上。
- » 蜗线伞齿轮的啮合齿印，经最佳优化设计，接触齿面负载均一，运转寿命长。
- » 蜗线伞齿轮啮合，经最佳运动误差分析与严格的制程控制，以确保高精度的运转背隙。
- » Planetary boom and output shaft are intergrated structure designed to ensure maximum torsional rigidity.
- » Planetary wheel with full needle design, increase the contact area to improve the rigidity and output torque.
- » The gears are carburized and quenched to the HRC62 with low carbon steel surface for optimum wear and impact toughness.
- » Gears refer to foreign imported software-assisted design to obtain the best tooth shape to reduce noise.
- » Adopt spiral bevel gear design, allow high output torque, more than 30% higher than straight bevel gear.
- » High tolerance input speed, more than 8 times higher than straight bevel gear input.
- » The meshing tooth imprint of spiral bevel gear has been optimized by optimum design, and the contact tooth surface load is uniform, and long running life.
- » Cochlear bevel gears are meshed by optimum motion error analysis and strict process control to ensure high precision running back clearance.



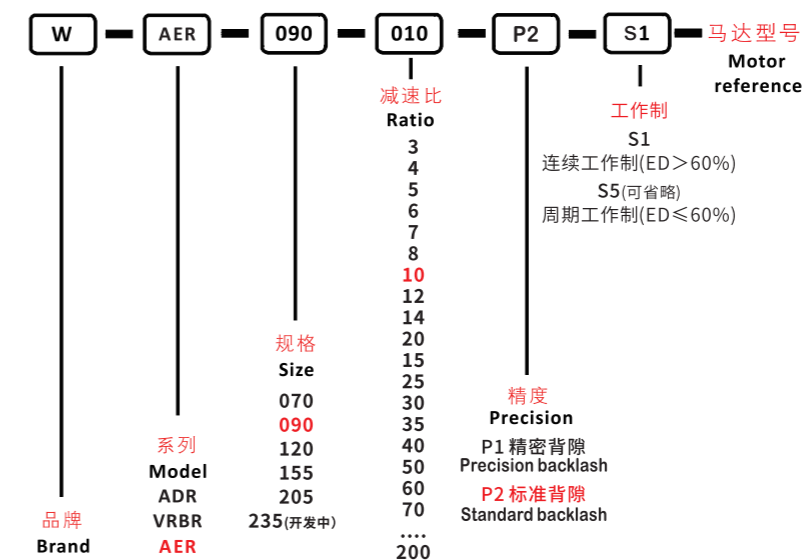
- 标准版行星减速机，适用于高定位精度、高动态周期工作制的应用上
- 要求用于S1连续工作制时，请与我们联系
- 或推荐使用WSHR/WTHR系列

The standard planetary gearbox is suitable for applications that requires high positioning accuracy and high dynamic periodic operation
if it needs to be used for S1 continuous operation, please contact us
Alternatively, we recommend using the WSH/WTH series

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
- 入力方式和入力转速
- 马达厂牌型号或法兰及马达轴尺寸
- Type, model and torque
- Ratio or output speed
- Working conditions and connection methods
- Quantity and installed machine name
- Input mode and input speed
- Motor brand model or flange and motor shaft size

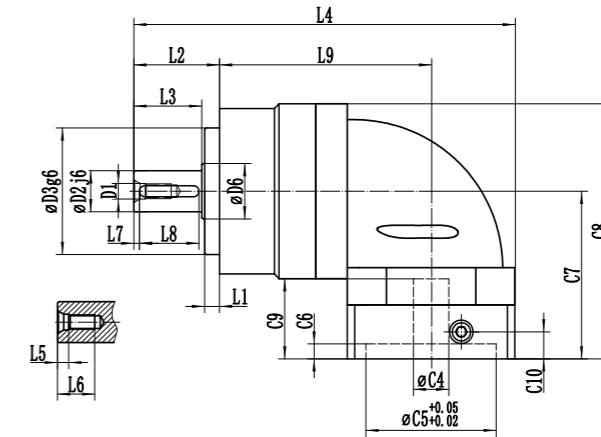
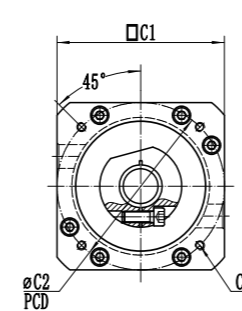
减速机性能资料/Performance

| 规格 Specification | 单位 Unit | 节数 Stage | 减速比 Ratio | WAER070 | WAER090 | WAER120 | WAER155 | WAER205 | WAER235 | |
|--|------------|-------------|--------------|--|---------|---------|---------|---------|---------|---|
| 额定输出力矩 Rated output torque T _{2N} | Nm | 1 | 3 | 55 | 130 | 208 | 342 | 588 | - | - |
| | | | 4 | 50 | 140 | 290 | 540 | 1050 | - | - |
| | | | 5 | 60 | 160 | 330 | 650 | 1200 | - | - |
| | | | 6 | 55 | 150 | 310 | 600 | 1100 | - | - |
| | | | 7 | 50 | 140 | 300 | 550 | 1000 | - | - |
| | | | 8 | 50 | 140 | 290 | 542 | 1050 | - | - |
| | | | 10 | 60 | 160 | 330 | 650 | 1200 | - | - |
| | | | 12 | 55 | 150 | 310 | 600 | 1100 | - | - |
| | | | 14 | 50 | 140 | 300 | 550 | 1000 | - | - |
| | | | 20 | 35 | 90 | 200 | 400 | 760 | - | - |
| | | 2 | 15 | 55 | 130 | 208 | 342 | 588 | - | - |
| | | | 25 | 60 | 160 | 330 | 650 | 1200 | - | - |
| | | | 30 | 55 | 130 | 208 | 342 | 588 | - | - |
| | | | 35 | 50 | 140 | 300 | 550 | 1000 | - | - |
| | | | 40 | 50 | 140 | 290 | 542 | 1050 | - | - |
| | | | 50 | 60 | 160 | 330 | 650 | 1200 | - | - |
| | | | 60 | 55 | 150 | 310 | 600 | 1100 | - | - |
| | | | 70 | 50 | 140 | 300 | 550 | 1000 | - | - |
| | | | 80 | 50 | 140 | 290 | 542 | 1050 | - | - |
| | | | 100 | 60 | 160 | 330 | 650 | 1200 | - | - |
| 急停扭矩/Emergency stop torque T _{2NOT} | Nm | 1,2 | 3~200 | 三倍额定输出力矩(允许1000次) / Triple rated output torque | | | | | | |
| | | | | 5000 4000 4000 3000 3000 - | | | | | | |
| | | | | 10000 8000 8000 6000 6000 - | | | | | | |
| | | | | - - - - - | | | | | | |
| 额定输入转速/Rated input speed n _{1N} | rpm | 1,2 | 3~200 | 5000 4000 4000 3000 3000 - | | | | | | |
| | | | | 10000 8000 8000 6000 6000 - | | | | | | |
| 最大输入转速/Maximum input speed n _{1B} | rpm | 1,2 | 3~200 | 10000 8000 8000 6000 6000 - | | | | | | |
| | | | | - - - - - | | | | | | |
| 精密背隙/Precision backlash P1 | arcmin | 1 | 3~20 | ≤5 ≤5 ≤5 ≤5 ≤5 - | | | | | | |
| | | | | - - - - - | | | | | | |
| 标准背隙/Standard backlash P2 | arcmin | 2 | 15~200 | ≤7 ≤7 ≤7 ≤7 ≤7 - | | | | | | |
| | | | | - - - - - | | | | | | |
| 扭转刚性/Torsional rigidity | Nm/arcmin | 1 | 3~20 | ≤7 ≤7 ≤7 ≤7 ≤7 - | | | | | | |
| | | | | - - - - - | | | | | | |
| 容许径向力/Allowable radial force F _{2aB} | N | 2 | 15~200 | ≤10 ≤10 ≤10 ≤10 ≤10 - | | | | | | |
| | | | | - - - - - | | | | | | |
| 容许轴向力/Allowable axial force F _{2aB} | N | 1,2 | 3~200 | 7 14 25 50 145 - | | | | | | |
| | | | | - - - - - | | | | | | |
| 使用寿命/Lifespan | hr | 1,2 | 3~200 | 20000 - - - - - | | | | | | |
| | | | | - - - - - | | | | | | |
| 效率/Efficiency | % | 1 | 3~20 | 95% - - - - - | | | | | | |
| | | | | - - - - - | | | | | | |
| 重量/Weight | kg | 2 | 25~200 | 92% - - - - - | | | | | | |
| | | | | - - - - - | | | | | | |
| 使用温度/Working temperature | °C | 1,2 | 3~200 | -20°C - +40°C - | | | | | | |
| | | | | - - - - - | | | | | | |
| 润滑/Lubricating | | | | 合成润滑脂/Synthetic lubricating grease | | | | | | |
| 防护等级/IP Grade | | 1,2 | 3~200 | IP65 | | | | | | |
| 安装方向/Installation direction | | | 3~200 | 任意方向/In any direction | | | | | | |
| 噪音值(n1=3000, 无负载) Noise level (n1=3000, off load) | dB(A) | 1,2 | 3~200 | ≤63 | ≤65 | ≤68 | ≤70 | ≤72 | - | |

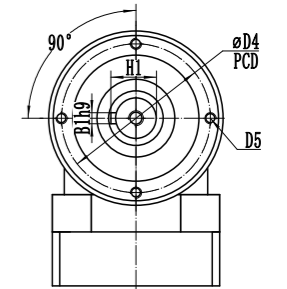
减速机转动惯量 /Rotational inertia

| 规格 Specification | 单位 Unit | 节数 Stage | 减速比 Ratio | WAER070 | WAER090 | WAER120 | WAER155 | WAER205 | WAER235 |
|---------------------------------|--------------------|-------------|--------------|---------|---------|---------|---------|---------|---------|
| 转动惯量J1 Rotational inertia J1 | kg.cm ² | 1 | 3~10 | 0.35 | 2.25 | 6.84 | 23.4 | 68.9 | - |
| | | | 12、14 | 0.07 | 1.87 | 6.25 | 21.8 | 65.6 | - |
| | | | 20 | 0.07 | 1.87 | 6.25 | 21.8 | 65.6 | - |
| | | 2 | 15 | 0.35 | 2.25 | 6.84 | 23.4 | 68.9 | - |
| | | | 25~100 | 0.09 | 0.35 | 2.25 | 6.84 | 23.4 | - |
| | | | 0.007 | 0.01 | 0.31 | 1.87 | 6.25 | 21.8 | - |

输入端 (Input)



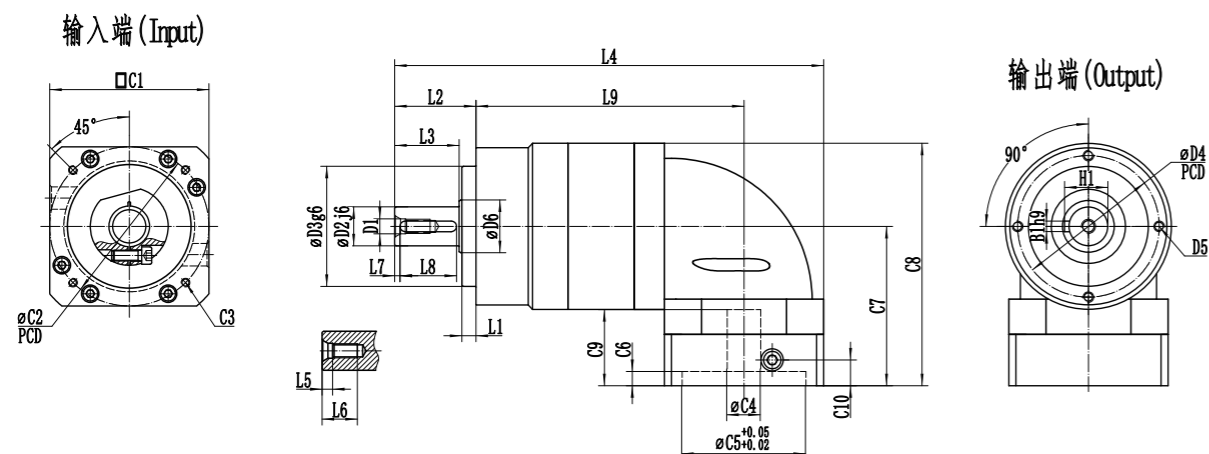
输出端 (Output)



DIMENSION
SINGLE SECTION

尺寸 (单节, 减速比 i=3~200)
Dimension (single stage, Ratio i=3~200)

| 尺寸/Dimension | WAER070 | WAER090 | WAER120 | WAER155 | WAER205 | WAER235 |
|--------------|---------|---------|---------|---------|---------|---------|
| D1 | M5 | M8 | M12 | M16 | M16 | - |
| D2j6 | 16 | 22 | 32 | 40 | 55 | - |
| D3g6 | 52 | 68 | 90 | 120 | 160 | - |
| D4 | 62 | 80 | 108 | 140 | 184 | - |
| D5 | 4-M5 | 4-M6 | 4-M8 | 4-M10 | 4-M12 | - |
| D6 | 17.5 | 29.8 | 39.5 | 49.5 | 69.5 | - |
| L1 | 6.5 | 8 | 17 | 15 | 15 | - |
| L2 | 36 | 46 | 70 | 97 | 100 | - |
| L3 | 28.5 | 36.5 | 51 | 79 | 82 | - |
| L4 | 152.2 | 205 | 259 | 347 | 394 | - |
| L5 | 4 | 6 | 10 | 12 | 11.5 | - |
| L6 | 13 | 20 | 28 | 36 | 42 | - |
| L7 | 1 | 2 | 5 | 5 | 6 | - |
| L8 | 25 | 30 | 40 | 63 | 70 | - |
| L9 | 86.2 | 114 | 131.5 | 179 | 204 | - |
| C1 | 60 | 90 | 130 | 180 | 180 | - |
| C2 | 70 | 90 | 145 | 200 | 200 | - |
| C3 | 4-M4 | 4-M5 | 4-M8 | 4-M12 | 4-M12 | - |
| C4 | ≤14 | ≤19/≤24 | ≤24/≤35 | ≤35/≤42 | ≤42 | - |
| C5 | 50 | 70 | 110 | 114.3 | 114.3 | - |
| C6 | 5 | 8 | 14 | 19 | 15 | - |
| C7 | 71.9 | 90.1 | 126.5 | 162.5 | 195.5 | - |
| C8 | 106.9 | 137.1 | 189 | 237.5 | 295.5 | - |
| C9 | 35 | 43 | 71 | 86 | 119 | - |
| C10 | 11.5 | 14.5 | 27 | 32 | 65 | - |
| B1 | 5 | 6 | 10 | 12 | 16 | - |
| H1 | 18 | 24.5 | 35 | 43 | 59 | - |



DIMENSION

SINGLE SECTION

尺寸 (双节, 减速比 i=15~200)

Dimension(double stage, Ratio i=15~200)

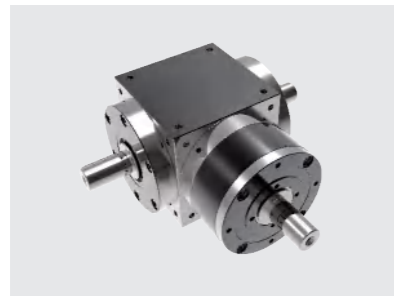
| 尺寸/Dimension | WAER070 | WAER090 | WAER120 | WAER155 | WAER205 | WAER235 |
|--------------|---------|-----------|-----------|-----------|-----------|---------|
| D1 | M5 | M8 | M12 | M16 | M16 | - |
| D2j6 | 16 | 22 | 32 | 40 | 55 | - |
| D3g6 | 52 | 68 | 90 | 120 | 160 | - |
| D4 | 62 | 80 | 108 | 140 | 184 | - |
| D5 | 4-M5 | 4-M6 | 4-M8 | 4-M10 | 4-M12 | - |
| D6 | 17.5 | 29.8 | 39.5 | 49.5 | 69.5 | - |
| L1 | 6.5 | 8 | 17 | 15 | 15 | - |
| L2 | 36 | 46 | 70 | 97 | 100 | - |
| L3 | 28.5 | 36.5 | 51 | 79 | 82 | - |
| L4 | 184.2 | 242.5 | 304 | 408 | 431.5 | - |
| L5 | 4 | 6 | 10 | 12 | 11.5 | - |
| L6 | 13 | 20 | 28 | 36 | 42 | - |
| L7 | 1 | 2 | 5 | 5 | 6 | - |
| L8 | 25 | 30 | 40 | 63 | 70 | - |
| L9 | 118.2 | 151.5 | 176.5 | 240 | 241.5 | - |
| C1 | 60 | 90 | 130 | 180 | 180 | - |
| C2 | 70 | 90 | 145 | 200 | 200 | - |
| C3 | 4-M4 | 4-M5 | 4-M8 | 4-M12 | 4-M12 | - |
| C4 | ≤ 14 | ≤ 14/≤ 19 | ≤ 19/≤ 24 | ≤ 24/≤ 35 | ≤ 35/≤ 42 | - |
| C5 | 50 | 70 | 110 | 114.3 | 114.3 | - |
| C6 | 5 | 8 | 14 | 19 | 15 | - |
| C7 | 71.9 | 90.1 | 126.5 | 162.5 | 195.5 | - |
| C8 | 106.9 | 137.1 | 189 | 237.5 | 295.5 | - |
| C9 | 35 | 43 | 71 | 86 | 119 | - |
| C10 | 11.5 | 14.5 | 27 | 32 | 65 | - |
| B1 | 5 | 6 | 10 | 12 | 16 | - |
| H1 | 18 | 24.5 | 35 | 43 | 59 | - |

WAT Series planetary gearbox 系列行星减速机

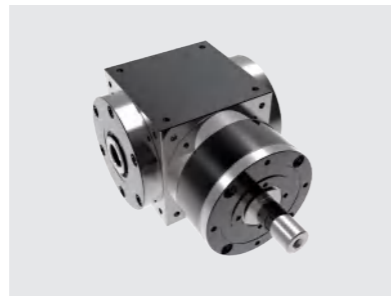
FEATURES

产品特点

- » 采用顶级蜗线伞齿轮的设计软件, 经最佳化设计接触齿面负载均容许高扭矩输出, 齿轮采用高强度渗碳合金钢, 研磨精密度符合DIN5级标准以内。
- » 高精度研磨的蜗线伞齿轮组结合最佳化设计的另一齿轮组可以达到1000:1的减速比。
- » 高扭矩低背隙的精简结构设计适用于精密伺服的应用。
- » 专利的油封设计, 免保养无需更换润滑油, 运转寿命长。
- » By using top-level design software for worm gear and worm wheel, the contact tooth surface load can allow for high torque output through optimal design. The gear is made of high-strength carburized alloy steel and ground to a precision level within DIN 5 standards.
- » The high-precision ground worm and helical gear set, combined with another optimized gear set, can achieve a reduction ratio of 1000:1.
- » The compact design with high torque and low backlash is suitable for precision servo applications.
- » The patented oil seal design eliminates the need for maintenance and oil replacement, thus ensuring long service life.



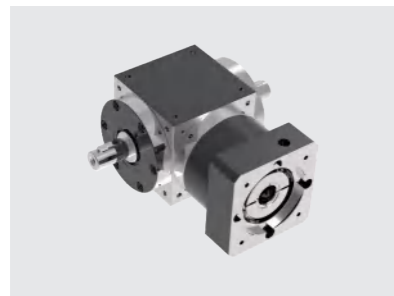
WATAD/L/R系列



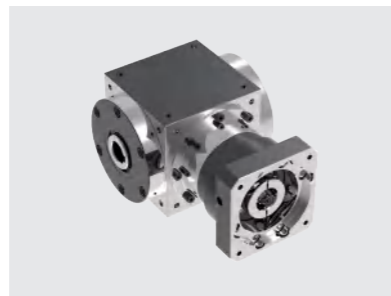
WATAH系列



WATAC系列



WATD/L/R系列



WATH系列

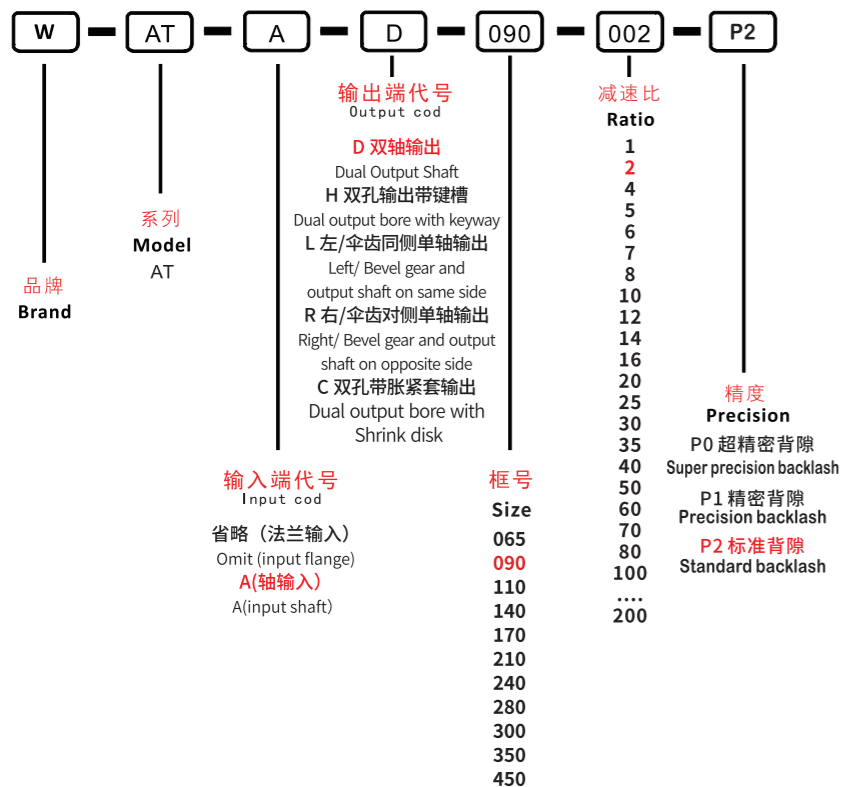


WATC系列

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
- 入力方式和入力转速
- 马达厂牌型号或法兰及马达轴尺寸
- Type, model and torque
- Ratio or output speed
- Working conditions and connection methods
- Quantity and installed machine name
- Input mode and input speed
- Motor brand model or flange and motor shaft size

PLANETARY GEARBOX

减速机性能资料 / Performance

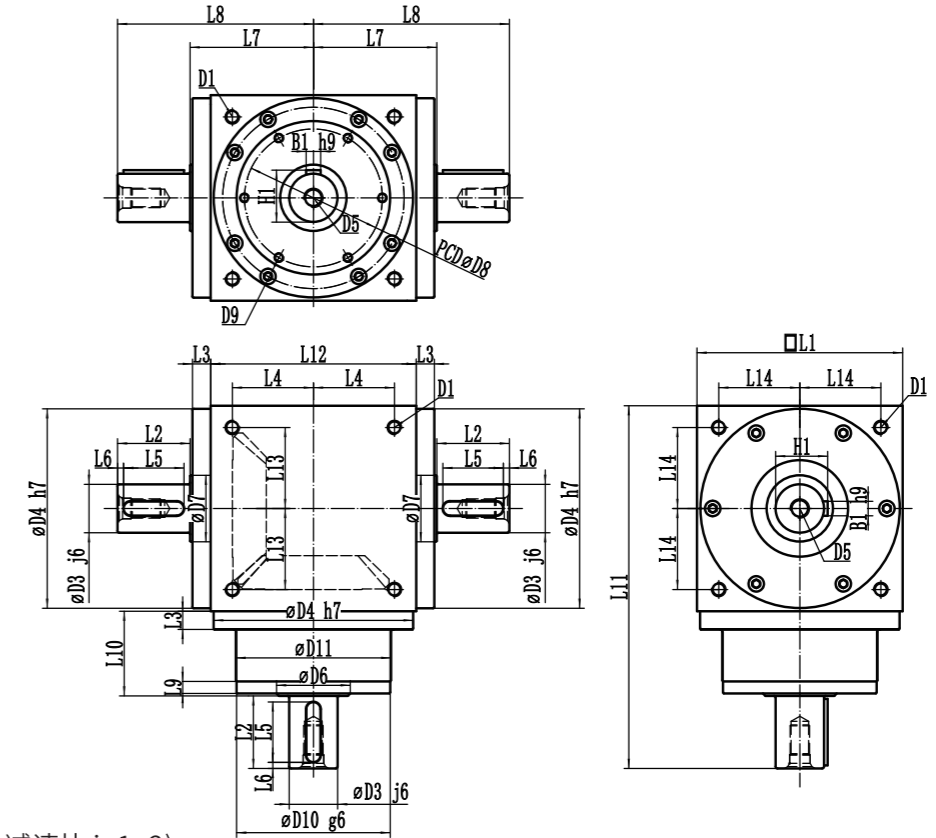
| 规格 Specification | 单位 Unit | 极数 Stage | 减速比 Ratio | WAT065 | WAT090 | WAT110 | WAT140 | WAT170 | WAT210 | WAT240 | WAT280 | WAT200 | WAT300 | WAT350 | WAT450 | | |
|-----------------------------------|---------|----------|-----------|-----------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---|---|
| 额定输出扭矩 Rated Output Torque T2N | Nm | 1 | 1 | 25 | 78 | 150 | 360 | 580 | 1300 | 2150 | 3200 | / | / | / | / | | |
| | | | 2 | 25 | 68 | 150 | 360 | 580 | 1300 | 2150 | 3200 | 1500 | 3800 | 7000 | 14000 | | |
| | | 2 | 4 | 25 | 50 | 150 | 305 | 580 | 1300 | 1700 | 1700 | / | / | / | / | / | |
| | | | 5 | 25 | 60 | 150 | 330 | 580 | 1300 | 2000 | 2000 | / | / | / | / | / | |
| | | | 6 | 25 | 50 | 140 | 300 | 550 | 1000 | / | / | / | / | / | / | / | |
| | | | 7 | 25 | 50 | 140 | 300 | 550 | 1000 | 1700 | 1700 | / | / | / | / | / | |
| | | | 8 | 25 | 68 | 150 | 360 | 580 | 1300 | 2150 | 3200 | 1500 | 3800 | 7000 | 14000 | / | |
| | | | 10 | 25 | 68 | 150 | 360 | 580 | 1300 | 2150 | 3200 | 1500 | 3800 | 7000 | 13600 | / | |
| | | | 12 | 25 | 68 | 150 | 360 | 580 | 1300 | / | / | / | / | 7000 | 10200 | / | |
| | | | 14 | 25 | 68 | 150 | 360 | 580 | 1300 | 2150 | 3200 | / | 3400 | / | / | / | |
| | | | 16 | 25 | 68 | 150 | 360 | 580 | 1300 | / | / | / | / | / | / | / | / |
| | | | 20 | 25 | 68 | 150 | 360 | 580 | 1300 | 2150 | 2700 | / | 2700 | 4000 | 5200 | / | |
| | | 3 | 25 | 25 | 60 | 150 | 330 | 580 | 1300 | 2000 | 2000 | / | / | / | / | / | |
| | | | 30 | 25 | 50 | 140 | 300 | 550 | 1000 | / | / | / | / | / | / | / | |
| | | | 35 | 25 | 50 | 140 | 300 | 550 | 1000 | 1700 | 1700 | / | / | / | / | / | |
| | | | 40 | 25 | 68 | 150 | 360 | 580 | 1300 | 2150 | 3200 | 1500 | 3800 | 7000 | 14000 | / | |
| | | | 50 | 25 | 68 | 150 | 360 | 580 | 1300 | 2150 | 3200 | 1500 | 3800 | 7000 | 13600 | / | |
| | | | 60 | 25 | 68 | 150 | 360 | 580 | 1300 | / | / | / | 3800 | 7000 | 10200 | / | |
| | | | 70 | 25 | 68 | 150 | 360 | 580 | 1300 | 2150 | 3200 | 1500 | 3400 | 7000 | 13600 | / | |
| | | | 80 | 25 | 68 | 150 | 360 | 580 | 1300 | 2150 | 3200 | 1500 | 3800 | 7000 | 10400 | / | |
| 100 | 25 | | 68 | 150 | 360 | 580 | 1300 | 2150 | 3200 | 1500 | 3800 | 7000 | 13000 | / | | | |
| 120 | 25 | | 68 | 150 | 360 | 580 | 1300 | / | / | / | 3800 | 7000 | 10200 | / | | | |
| 140 | 25 | 68 | 150 | 360 | 580 | 1300 | 2150 | 3200 | / | 3400 | / | / | / | | | | |
| 160 | 25 | 68 | 150 | 360 | 580 | 1300 | / | / | / | 2900 | / | / | / | | | | |
| 200 | 25 | 68 | 150 | 360 | 580 | 1300 | 2150 | 2700 | / | 2700 | 4000 | 5200 | / | | | | |
| 急停扭矩 Emergency stop Torque | Nm | 1, 2, 3 | 1~200 | 2倍额定输出力矩 (允许1000次) 2 Times T2N | | | | | | | | | | | | | |
| 额定输入转速 Rated Input Speed n1N | rpm | 1 | 1~2 | 3000 | 3000 | 3000 | 3000 | 3000 | 2000 | 1000 | 1000 | 2000 | 1000 | 1000 | 1000 | | |
| | | 2 | 4~20 | 3000 | 3000 | 3000 | 3000 | 3000 | 3000 | 2000 | 2000 | 3000 | 1500 | 1500 | 1500 | | |
| | | 3 | 25~200 | 3000 | 3000 | 3000 | 3000 | 3000 | 3000 | 3000 | 3000 | 3000 | 2000 | 2000 | 1500 | | |

PLANETARY GEARBOX

减速机性能资料 / Performance

| 规格 Specification | 单位 Unit | 极数 Stage | 减速比 Ratio | WAT065 | WAT090 | WAT110 | WAT140 | WAT170 | WAT210 | WAT240 | WAT280 | WAT200 | WAT300 | WAT350 | WAT450 |
|--------------------------------------|------------|-------------|--------------|----------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 最大输入转速 Max Input Speed n1B | rpm | 1 | 1~2 | 6000 | 6000 | 5000 | 4500 | 3500 | 3000 | 1500 | 1500 | 3000 | 1500 | 1500 | 1000 |
| | | 2 | 4~20 | 6000 | 6000 | 5000 | 4500 | 3500 | 3000 | 3000 | 3000 | 3000 | 3000 | 3000 | 2500 |
| | | 3 | 25~200 | 6000 | 6000 | 6000 | 5000 | 4500 | 3500 | 3000 | 3000 | 3000 | 3500 | 3500 | 3500 |
| 超精密背隙 Super Precision Backlash P0 | arcmin | 1 | 1~2 | / | / | / | / | / | / | / | / | / | / | / | / |
| | | 2 | 4~20 | ≤4 | ≤4 | ≤4 | ≤4 | ≤4 | ≤4 | ≤4 | ≤4 | ≤4 | ≤4 | ≤4 | ≤4 |
| | | 3 | 25~200 | ≤6 | ≤6 | ≤6 | ≤6 | ≤6 | ≤6 | ≤6 | ≤6 | ≤6 | ≤6 | ≤6 | ≤6 |
| 精密背隙 Precision Backlash P1 | arcmin | 1 | 1~2 | ≤4 | ≤4 | ≤4 | ≤4 | ≤4 | ≤4 | ≤4 | ≤4 | ≤4 | ≤4 | ≤4 | ≤4 |
| | | 2 | 4~20 | ≤6 | ≤6 | ≤6 | ≤6 | ≤6 | ≤6 | ≤6 | ≤6 | ≤6 | ≤6 | ≤6 | ≤6 |
| | | 3 | 25~200 | ≤8 | ≤8 | ≤8 | ≤8 | ≤8 | ≤8 | ≤8 | ≤8 | ≤8 | ≤8 | ≤8 | ≤8 |
| 标准背隙 Standard Backlash P2 | arcmin | 1 | 1~2 | ≤6 | ≤6 | ≤6 | ≤6 | ≤6 | ≤6 | ≤6 | ≤6 | ≤6 | ≤6 | ≤6 | ≤6 |
| | | 2 | 4~20 | ≤8 | ≤8 | ≤8 | ≤8 | ≤8 | ≤8 | ≤8 | ≤8 | ≤8 | ≤8 | ≤8 | ≤8 |
| | | 3 | 25~200 | ≤10 | ≤10 | ≤10 | ≤10 | ≤10 | ≤10 | ≤10 | ≤10 | ≤10 | ≤10 | ≤10 | ≤10 |
| 容许径向力 Allowable Radial Force F2R | N | | | 2000 | 3200 | 5000 | 6500 | 9100 | 13000 | 16000 | 18000 | 15000 | 20000 | 26000 | 40000 |
| 容许轴向力 Allowable Axle Force F2A | N | | | 1000 | 1600 | 2500 | 3250 | 4550 | 6500 | 8500 | 9000 | 7500 | 10000 | 16000 | 20000 |
| 使用寿命/Service Life | h | | | 20000 | | | | | | | | | | | |
| 效率/Efficient | % | 1 | 1~2 | ≥97 | | | | | | | | | | | |
| | | 2 | 4~20 | ≥94 | | | | | | | | | | | |
| | | 3 | 25~200 | ≥92 | | | | | | | | | | | |
| 使用温度 Operating temperature | °C | | | -20°C ~ 90°C | | | | | | | | | | | |
| 重量/Weight | kg | 1 | 1~2 | 3 | 7 | 11.5 | 19.5 | 34 | 65 | 95 | 140 | 55 | 140 | 200 | 300 |
| | | 2 | 4~20 | 3.2 | 8 | 14 | 24 | 38 | 74 | 102 | 175 | 64 | 175 | 250 | 375 |
| | | 3 | 25~200 | 3.4 | 8.5 | 14.5 | 27 | 39 | 75 | 115 | 190 | 65 | 190 | 270 | 405 |
| 防护等级/Protection class | | | | IP65 | | | | | | | | | | | |
| 润滑/Lubrication | | | | 全合成润滑油/Synthetic Lubricating Oil | | | | | | | | | | | |
| 安装方向/Mounting position | | | | 任意方向 | | | | | | | | | | | |
| 噪音/Noise | dB(A) | | | ≤72 | ≤74 | ≤76 | ≤78 | ≤80 | ≤81 | ≤82 | ≤83 | ≤70 | ≤75 | ≤75 | ≤78 |

WATAD-L1

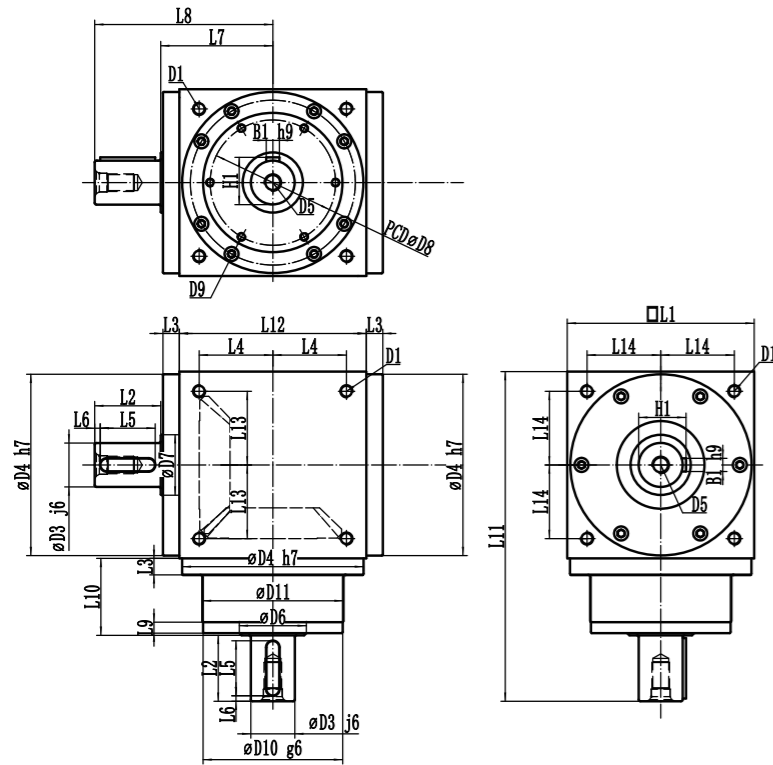


尺寸 (单节, 减速比 i=1~2)

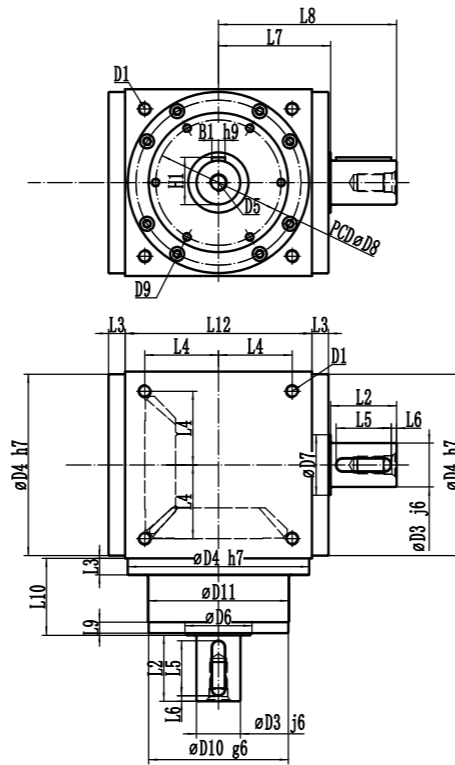
Dimension (single stage, Ratio i=1~2)

| 尺寸 | WATAD065 | WATAD090 | WATAD110 | WATAD140 | WATAD170 | WATAD210 | WATAD240 | WATAD280 | WATAD300 | WATAD350 | WATAD450 |
|--------|----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|------------|------------|------------|
| D1 | M4 ↓ 8 | M6 ↓ 12 | M8 ↓ 16 | M10 ↓ 20 | M12 ↓ 25 | M16 ↓ 32 | M16 ↓ 40 | M16 ↓ 35 | M20 ↓ 40 | M20 ↓ 40 | M24 ↓ 45 |
| D3 j6 | 13 | 18 | 22 | 32 | 40 | 50 | 55 | 60 | 75 | 85 | 100 |
| D4 h7 | 63 | 88 | 108 | 135 | 165 | 205 | 235 | 275 | 296 | 364 | 446 |
| D5 | M4 ↓ 8 | M5 ↓ 10 | M8 ↓ 16 | M12 ↓ 25 | M16 ↓ 32 | M16 ↓ 32 | M16 ↓ 36 | M20 ↓ 42 | M20 ↓ 40 | M20 ↓ 40 | M24 ↓ 50 |
| D6 | 29.5 | 39.5 | 49.5 | 59.5 | 74.5 | 94.5 | 85 | 100 | 130 | 130 | 130 |
| D7 | 19.9 | 29.9 | 39.9 | 44.9 | 54.9 | 74.9 | 84.9 | 104.8 | 120 | 130 | 160 |
| D8 | 53 | 76 | 95 | 92 | 114 | 142 | 160 | 176 | 200 | 210 | 210 |
| D9 | 4-M4 ↓ 8 | 4-M5 ↓ 10 | 6-M6 ↓ 12 | 6-M6 ↓ 12 | 6-M8 ↓ 16 | 6-M8 ↓ 16 | 6-M8 ↓ 16 | 6-M10 ↓ 20 | 6-M12 ↓ 25 | 6-M16 ↓ 30 | 6-M16 ↓ 30 |
| D10 g6 | 62.9 | 87 | 107 | 103 | 127 | 158 | 178 | 198 | 220 | 240 | 240 |
| D11 | 62 | 86 | 106 | 104 | 128 | 160 | 180 | 200 | 222 | 242 | 242 |
| L1 | 65 | 90 | 110 | 140 | 170 | 210 | 240 | 280 | 300 | 350 | 450 |
| L2 | 19.5 | 35 | 40 | 50 | 60 | 75 | 85 | 110 | 120 | 130 | 140 |
| L3 | 13 | 15 | 15 | 15 | 15 | 20 | 25 | 25 | 35 | 30 | 35 |
| L4 | 27 | 36 | 44 | 55 | 67 | 85 | 95 | 110 | 100 | 110 | 130 |
| L5 | 16 | 25 | 32 | 44 | 55 | 69 | 75 | 100 | 110 | 130 | 130 |
| L6 | 2 | 5 | 3 | 2.5 | 2.5 | 2.5 | 2.5 | 4 | 4 | 4 | 4 |
| L7 | 47.5 | 62 | 72 | 87 | 102 | 127 | 147 | 167 | 157 | 170 | 200 |
| L8 | 67 | 97 | 112 | 137 | 162 | 202 | 232 | 277 | 277 | 300 | 340 |
| L9 | 8 | 8 | 8 | 10 | 10 | 10 | 10 | 10 | 10 | 13 | 13 |
| L10 | 43 | 55 | 60 | 60 | 70 | 90 | 105 | 120 | 120 | 120 | 120 |
| L11 | 127.5 | 180 | 210 | 250 | 300 | 375 | 430 | 510 | 540 | 600 | 710 |
| L12 | 65 | 90 | 110 | 140 | 170 | 210 | 240 | 280 | 240 | 270 | 320 |
| L13 | 27 | 36 | 44 | 55 | 67 | 85 | 95 | 110 | 107.5 | 127.5 | 167.5 |
| L14 | 27 | 36 | 44 | 55 | 67 | 85 | 95 | 110 | 130.8 | 150 | 195 |
| B1 h9 | 5 | 6 | 6 | 10 | 12 | 14 | 16 | 18 | 22 | 22 | 28 |
| H1 | 15 | 20.5 | 24.5 | 35 | 43 | 53.5 | 59 | 64 | 90.4 | 95 | 106 |

WATAL-L1



WATAR

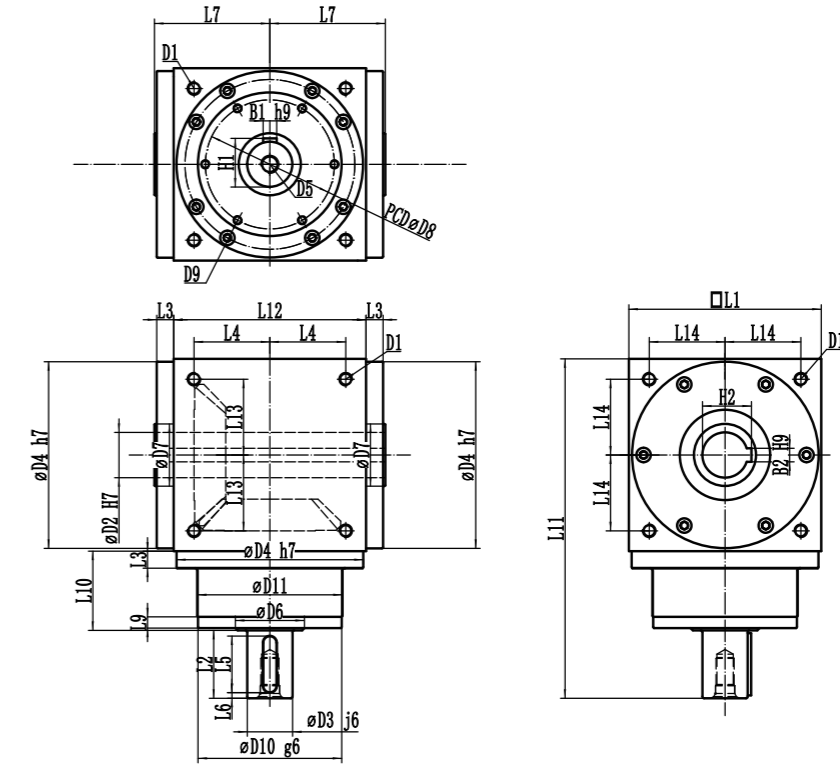


尺寸 (单节, 减速比 i=1~2)

Dimension (singlestage, Ratio i=1~2)

| 尺寸 | WATAL /R065 | WATAL /R090 | WATAL /R110 | WATAL /R140 | WATAL /R170 | WATAL /R210 | WATAL /R240 | WATAL /R280 | WATAL /R300 | WATAL /R350 | WATAL /R450 |
|--------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| D1 | M4 ↓ 8 | M6 ↓ 12 | M8 ↓ 16 | M10 ↓ 20 | M12 ↓ 25 | M16 ↓ 32 | M16 ↓ 40 | M16 ↓ 35 | M20 ↓ 40 | M20 ↓ 40 | M24 ↓ 45 |
| D3 j6 | 13 | 18 | 22 | 32 | 40 | 50 | 55 | 60 | 75 | 85 | 100 |
| D4 h7 | 63 | 88 | 108 | 135 | 165 | 205 | 235 | 275 | 296 | 364 | 446 |
| D5 | M4 ↓ 8 | M5 ↓ 10 | M8 ↓ 16 | M12 ↓ 25 | M16 ↓ 32 | M16 ↓ 32 | M16 ↓ 36 | M20 ↓ 42 | M20 ↓ 40 | M20 ↓ 40 | M24 ↓ 50 |
| D6 | 29.5 | 39.5 | 49.5 | 59.5 | 74.5 | 94.5 | 84.9 | 104.8 | 130 | 130 | 130 |
| D7 | 19.9 | 29.9 | 39.9 | 44.9 | 54.9 | 74.9 | 84.9 | 104.8 | 120 | 130 | 160 |
| D8 | 53 | 76 | 95 | 92 | 114 | 142 | 160 | 176 | 200 | 210 | 210 |
| D9 | 4-M4 ↓ 8 | 4-M5 ↓ 10 | 6-M6 ↓ 12 | 6-M6 ↓ 12 | 6-M8 ↓ 16 | 6-M8 ↓ 16 | 6-M8 ↓ 16 | 6-M10 ↓ 20 | 6-M12 ↓ 25 | 6-M16 ↓ 30 | 6-M16 ↓ 30 |
| D10 g6 | 62.9 | 87 | 107 | 103 | 127 | 158 | 178 | 198 | 220 | 240 | 240 |
| D11 | 62 | 86 | 106 | 104 | 128 | 160 | 180 | 200 | 222 | 242 | 242 |
| L1 | 65 | 90 | 110 | 140 | 170 | 210 | 240 | 280 | 300 | 350 | 450 |
| L2 | 19.5 | 35 | 40 | 50 | 60 | 75 | 85 | 110 | 120 | 130 | 140 |
| L3 | 13 | 15 | 15 | 15 | 15 | 20 | 25 | 25 | 35 | 30 | 35 |
| L4 | 27 | 36 | 44 | 55 | 67 | 85 | 95 | 110 | 100 | 110 | 130 |
| L5 | 16 | 25 | 32 | 44 | 55 | 69 | 75 | 100 | 110 | 130 | 130 |
| L6 | 2 | 5 | 3 | 2.5 | 2.5 | 2.5 | 2.5 | 4 | 4 | 4 | 4 |
| L7 | 47.5 | 62 | 72 | 87 | 102 | 127 | 147 | 167 | 157 | 170 | 200 |
| L9 | 8 | 8 | 8 | 10 | 10 | 10 | 10 | 10 | 10 | 13 | 13 |
| L10 | 43 | 55 | 60 | 60 | 70 | 90 | 105 | 120 | 120 | 120 | 120 |
| L11 | 127.5 | 180 | 210 | 250 | 300 | 375 | 430 | 510 | 540 | 600 | 710 |
| L12 | 65 | 90 | 110 | 140 | 170 | 210 | 240 | 280 | 240 | 270 | 320 |
| L13 | 27 | 36 | 44 | 55 | 67 | 85 | 95 | 110 | 107.5 | 127.5 | 167.5 |
| L14 | 27 | 36 | 44 | 55 | 67 | 85 | 95 | 110 | 130.8 | 150 | 195 |
| B1 h9 | 5 | 6 | 6 | 10 | 12 | 14 | 16 | 18 | 22 | 22 | 28 |
| H1 | 15 | 20.5 | 24.5 | 35 | 43 | 53.5 | 59 | 64 | 90.4 | 95 | 106 |

WATAH-L1

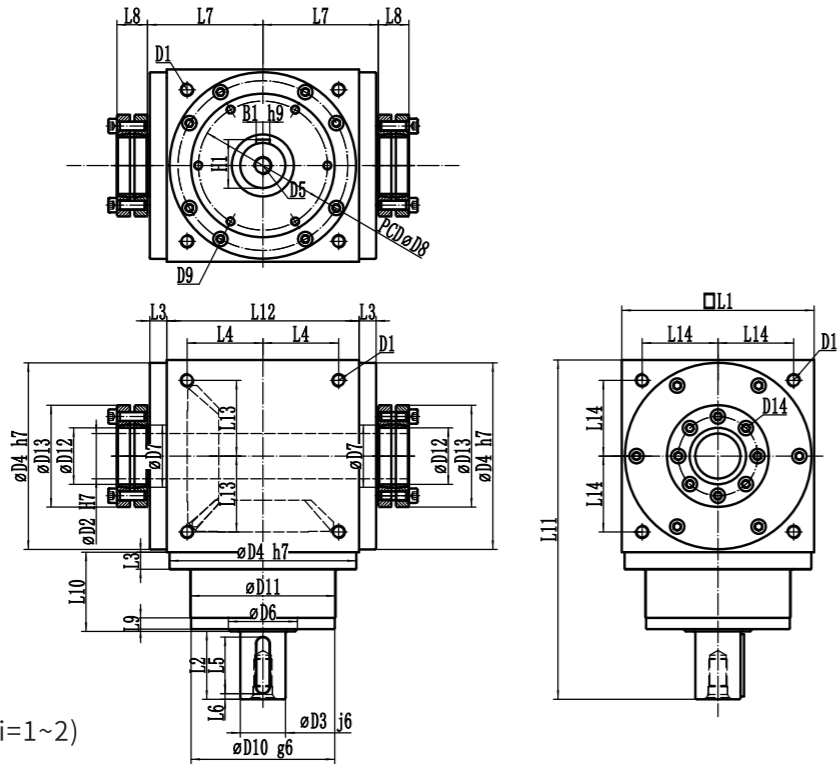


尺寸 (单节, 减速比 i=1~2)

Dimension (singlestage, Ratio i=1~2)

| 尺寸 | WATAH065 | WATAH090 | WATAH110 | WATAH140 | WATAH170 | WATAH210 | WATAH240 | WATAH280 | WATAH300 | WATAH350 | WATAH450 |
|--------|----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|------------|------------|------------|
| D1 | M4 ↓ 8 | M6 ↓ 12 | M8 ↓ 16 | M10 ↓ 20 | M12 ↓ 25 | M16 ↓ 32 | M16 ↓ 40 | M16 ↓ 35 | M20 ↓ 40 | M20 ↓ 40 | M24 ↓ 45 |
| D2 H7 | 13 | 18 | 22 | 32 | 40 | 50 | 55 | 60 | 75 | 85 | 100 |
| D3 j6 | 13 | 18 | 22 | 32 | 40 | 50 | 55 | 60 | 75 | 85 | 100 |
| D4 h7 | 63 | 88 | 108 | 135 | 165 | 205 | 235 | 275 | 296 | 364 | 446 |
| D5 | M4 ↓ 8 | M5 ↓ 10 | M8 ↓ 16 | M12 ↓ 25 | M16 ↓ 32 | M16 ↓ 32 | M16 ↓ 36 | M20 ↓ 42 | M20 ↓ 40 | M20 ↓ 40 | M24 ↓ 50 |
| D6 | 29.5 | 39.5 | 49.5 | 59.5 | 74.5 | 94.5 | 85 | 100 | 130 | 130 | 130 |
| D7 | 19.9 | 29.9 | 39.9 | 44.9 | 54.9 | 74.9 | 84.9 | 104.8 | 120 | 130 | 160 |
| D8 | 53 | 76 | 95 | 92 | 114 | 142 | 160 | 176 | 200 | 210 | 210 |
| D9 | 4-M4 ↓ 8 | 4-M5 ↓ 10 | 6-M6 ↓ 12 | 6-M6 ↓ 12 | 6-M8 ↓ 16 | 6-M8 ↓ 16 | 6-M8 ↓ 16 | 6-M10 ↓ 20 | 6-M12 ↓ 25 | 6-M16 ↓ 30 | 6-M16 ↓ 30 |
| D10 g6 | 62.9 | 87 | 107 | 103 | 127 | 158 | 178 | 198 | 220 | 240 | 240 |
| D11 | 62 | 86 | 106 | 104 | 128 | 160 | 180 | 200 | 222 | 242 | 242 |
| L1 | 65 | 90 | 110 | 140 | 170 | 210 | 240 | 280 | 300 | 350 | 450 |
| L2 | 19.5 | 35 | 40 | 50 | 60 | 75 | 85 | 110 | 120 | 130 | 140 |
| L3 | 13 | 15 | 15 | 15 | 15 | 20 | 25 | 25 | 35 | 30 | 35 |
| L4 | 27 | 36 | 44 | 55 | 67 | 85 | 95 | 110 | 100 | 110 | 130 |
| L5 | 16 | 25 | 32 | 44 | 55 | 69 | 75 | 100 | 110 | 130 | 130 |
| L6 | 2 | 5 | 3 | 2.5 | 2.5 | 2.5 | 2.5 | 4 | 4 | 4 | 4 |
| L7 | 47.5 | 62 | 72 | 87 | 102 | 127 | 147 | 167 | 157 | 170 | 200 |
| L9 | 8 | 8 | 8 | 10 | 10 | 10 | 10 | 10 | 10 | 13 | 13 |
| L10 | 43 | 55 | 60 | 60 | 70 | 90 | 105 | 120 | 120 | 120 | 120 |
| L11 | 127.5 | 180 | 210 | 250 | 300 | 375 | 430 | 510 | 540 | 600 | 710 |
| L12 | 65 | 90 | 110 | 140 | 170 | 210 | 240 | 280 | 240 | 270 | 320 |
| L13 | 27 | 36 | 44 | 55 | 67 | 85 | 95 | 110 | 107.5 | 127.5 | 167.5 |
| L14 | 27 | 36 | 44 | 55 | 67 | 85 | 95 | 110 | 130.8 | 150 | 195 |
| B1 h9 | 5 | 6 | 6 | 10 | 12 | 14 | 16 | 18 | 22 | 22 | 28 |
| B2 H9 | 5 | 6 | 6 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 28 |
| H1 | 15 | 20.5 | 24.5 | 35 | 43 | 53.5 | 59 | 64 | 90.4 | 95 | 106 |
| H2 | 15.3 | 20.8 | 24.8 | 35.3 | 43.3 | 53.8 | 59.3 | 64.3 | 79.9 | 90.4 | 106.4 |

WATAC-L1

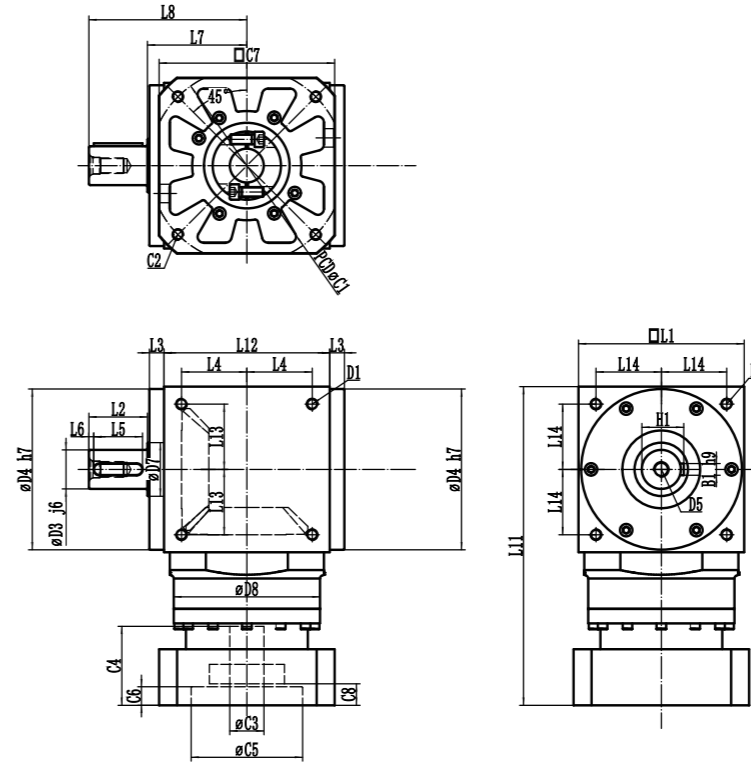


尺寸 (单节, 减速比 i=1~2)

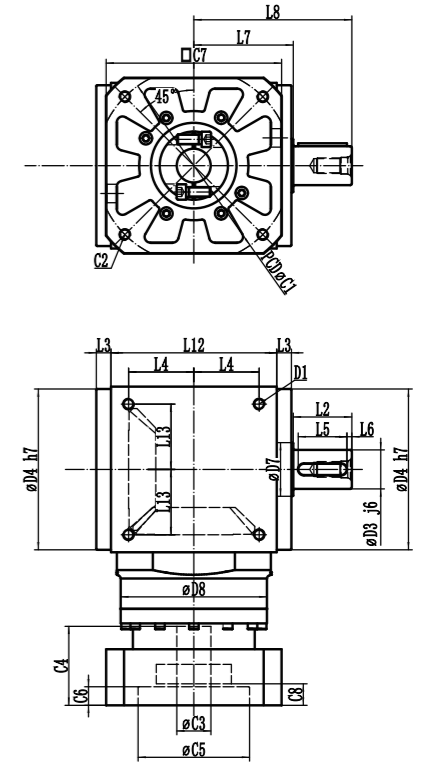
Dimension (singlestage, Ratio i=1~2)

| 尺寸 | WATAC065 | WATAC090 | WATAC110 | WATAC140 | WATAC170 | WATAC210 | WATAC240 | WATAC280 | WATAC300 | WATAC350 | WATAC450 |
|--------|----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|------------|------------|------------|
| D1 | M4 ↓ 8 | M6 ↓ 12 | M8 ↓ 16 | M10 ↓ 20 | M12 ↓ 25 | M16 ↓ 32 | M16 ↓ 40 | M16 ↓ 35 | M20 ↓ 40 | M20 ↓ 40 | M24 ↓ 45 |
| D2 H7 | 13 | 18 | 22 | 32 | 40 | 50 | 55 | 60 | 75 | 85 | 100 |
| D3 j6 | 13 | 18 | 22 | 32 | 40 | 50 | 55 | 60 | 75 | 85 | 100 |
| D4 h7 | 63 | 88 | 108 | 135 | 165 | 205 | 235 | 275 | 296 | 364 | 446 |
| D5 | M4 ↓ 8 | M5 ↓ 10 | M8 ↓ 16 | M12 ↓ 25 | M16 ↓ 32 | M16 ↓ 32 | M16 ↓ 36 | M20 ↓ 42 | M20 ↓ 40 | M20 ↓ 40 | M24 ↓ 50 |
| D6 | 29.5 | 39.5 | 49.5 | 59.5 | 74.5 | 94.5 | 85 | 100 | 130 | 130 | 130 |
| D7 | 19.9 | 29.9 | 39.9 | 44.9 | 54.9 | 74.9 | 84.9 | 104.8 | 120 | 130 | 160 |
| D8 | 53 | 76 | 95 | 92 | 114 | 142 | 160 | 176 | 200 | 210 | 210 |
| D9 | 4-M4 ↓ 8 | 4-M5 ↓ 10 | 6-M6 ↓ 12 | 6-M6 ↓ 12 | 6-M8 ↓ 16 | 6-M8 ↓ 16 | 6-M8 ↓ 16 | 6-M10 ↓ 20 | 6-M12 ↓ 25 | 6-M16 ↓ 30 | 6-M16 ↓ 30 |
| D10 g6 | 62.9 | 87 | 107 | 103 | 127 | 158 | 178 | 198 | 220 | 240 | 240 |
| D11 | 62 | 86 | 106 | 104 | 128 | 160 | 180 | 200 | 222 | 242 | 242 |
| D12 | 16 | 22 | 27 | 44 | 50 | 62 | 68 | 75 | 100 | 115 | 130 |
| D13 | 41 | 50 | 53 | 80 | 90 | 110 | 115 | 138 | 170 | 188 | 215 |
| D14 | 6-M6 | 6-M6 | 7-M6 | 8-M6 | 8-M8 | 8-M8 | 8-M8 | 8-M8 | 8-M8 | 8-M10 | 10-M10 |
| L1 | 65 | 90 | 110 | 140 | 170 | 210 | 240 | 280 | 300 | 350 | 450 |
| L2 | 19.5 | 35 | 40 | 50 | 60 | 75 | 85 | 110 | 120 | 130 | 140 |
| L3 | 13 | 15 | 15 | 15 | 15 | 20 | 25 | 25 | 35 | 30 | 35 |
| L4 | 27 | 36 | 44 | 55 | 67 | 85 | 95 | 110 | 100 | 110 | 130 |
| L5 | 16 | 25 | 32 | 44 | 55 | 69 | 75 | 100 | 110 | 130 | 130 |
| L6 | 2 | 5 | 3 | 2.5 | 2.5 | 2.5 | 4 | 4 | 4 | 4 | 4 |
| L7 | 47.5 | 62 | 72 | 87 | 102 | 127 | 147 | 167 | 157 | 170 | 200 |
| L8 | 18 | 20 | 20 | 25 | 27 | 30 | 34.5 | 38 | 44 | 50 | 54 |
| L9 | 8 | 8 | 8 | 10 | 10 | 10 | 10 | 10 | 10 | 13 | 13 |
| L10 | 43 | 55 | 60 | 60 | 70 | 90 | 103 | 120 | 120 | 120 | 120 |
| L11 | 127.5 | 180 | 210 | 250 | 300 | 375 | 430 | 510 | 540 | 600 | 710 |
| L12 | 65 | 90 | 110 | 140 | 170 | 210 | 240 | 280 | 240 | 270 | 320 |
| L13 | 27 | 36 | 44 | 55 | 67 | 85 | 95 | 110 | 107.5 | 127.5 | 167.5 |
| L14 | 27 | 36 | 44 | 55 | 67 | 85 | 95 | 110 | 130.8 | 150 | 195 |
| B1 h9 | 5 | 6 | 6 | 10 | 12 | 14 | 16 | 18 | 22 | 22 | 28 |
| H1 | 15 | 20.5 | 24.5 | 35 | 43 | 53.5 | 59 | 64 | 90.4 | 95 | 106 |

WATL-L2



WATR-L2

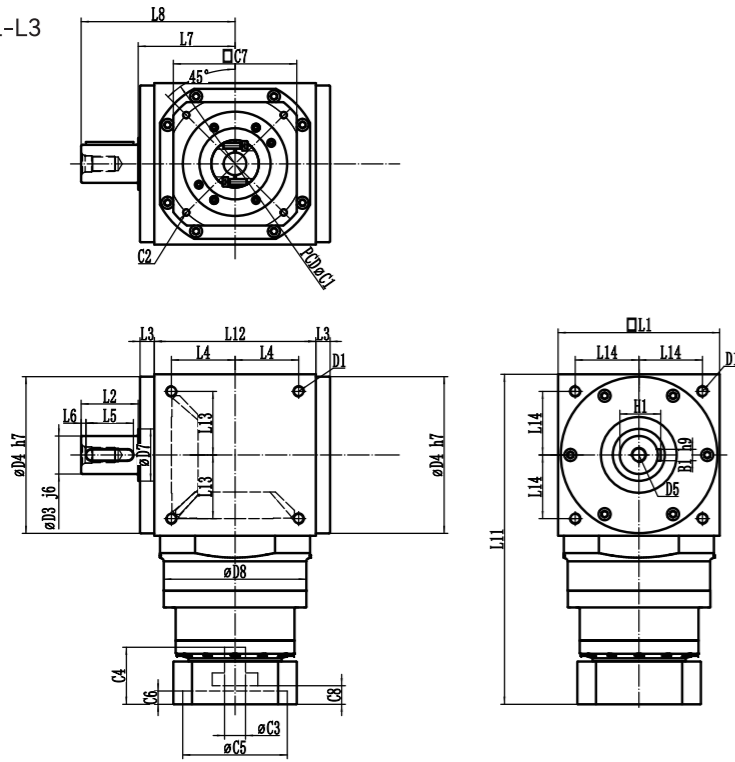


尺寸 (双节, 减速比 i=4~20)

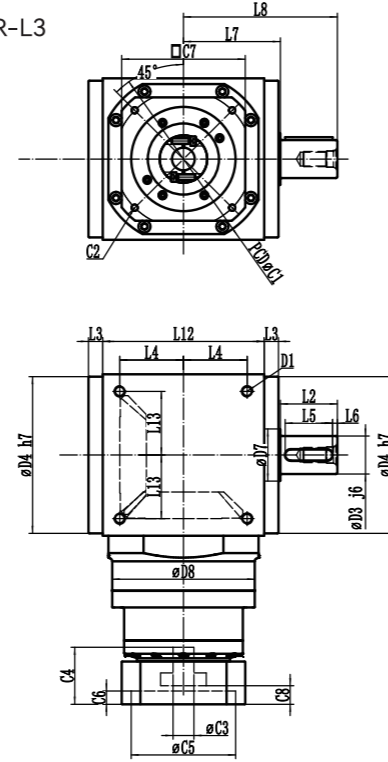
Dimension (doublestage, Ratio i=4~20)

| 尺寸 | WATL/R065 | WATL/R090 | WATL/R110 | WATL/R140 | WATL/R170 | WATL/R210 | WATL/R240 | WATL/R280 | WATL/R300 | WATL/R350 | WATL/R450 |
|-------|-----------|-------------|-----------|-------------|-----------|-------------|-------------|-------------|-------------|-----------|-----------|
| D1 | M4 ↓ 8 | M6 ↓ 12 | M8 ↓ 16 | M10 ↓ 20 | M12 ↓ 25 | M16 ↓ 32 | M16 ↓ 40 | M16 ↓ 35 | M20 ↓ 40 | M20 ↓ 40 | M24 ↓ 45 |
| D3 j6 | 13 | 18 | 22 | 32 | 40 | 50 | 55 | 60 | 75 | 85 | 100 |
| D4 h7 | 63 | 88 | 108 | 135 | 165 | 205 | 235 | 275 | 296 | 364 | 446 |
| D5 | M4 ↓ 8 | M5 ↓ 10 | M8 ↓ 16 | M12 ↓ 25 | M16 ↓ 32 | M16 ↓ 32 | M16 ↓ 36 | M20 ↓ 42 | M20 ↓ 40 | M20 ↓ 40 | M24 ↓ 50 |
| D7 | 19.9 | 29.9 | 39.9 | 44.9 | 54.9 | 74.9 | 84.9 | 104.8 | 120 | 130 | 160 |
| D8 | 64 | 70 | 94 | 125 | 150 | 170 | 225 | 225 | 225 | 254 | 284.5 |
| L1 | 65 | 90 | 110 | 140 | 170 | 210 | 240 | 280 | 300 | 350 | 450 |
| L2 | 19.5 | 35 | 40 | 50 | 60 | 75 | 85 | 110 | 120 | 130 | 140 |
| L3 | 13 | 15 | 15 | 15 | 15 | 20 | 25 | 25 | 35 | 30 | 35 |
| L4 | 27 | 36 | 44 | 55 | 67 | 85 | 95 | 110 | 100 | 110 | 130 |
| L5 | 16 | 25 | 32 | 44 | 55 | 69 | 75 | 100 | 110 | 130 | 130 |
| L6 | 2 | 5 | 3 | 2.5 | 2.5 | 2.5 | 2.5 | 4 | 4 | 4 | 4 |
| L7 | 47.5 | 62 | 72 | 87 | 102 | 127 | 147 | 167 | 157 | 170 | 200 |
| L8 | 67 | 97 | 112 | 137 | 162 | 202 | 232 | 277 | 277 | 300 | 340 |
| L11 | 129/142 | 155.8/168.8 | 197/215 | 255.5/277.5 | 327/360 | 405.3/408.3 | 438.5/471.5 | 478.5/511.5 | 498.5/535.5 | 622 | 739 |
| L12 | 65 | 90 | 110 | 140 | 170 | 210 | 240 | 280 | 240 | 270 | 320 |
| L13 | 27 | 36 | 44 | 55 | 67 | 85 | 95 | 110 | 107.5 | 127.5 | 167.5 |
| L14 | 27 | 36 | 44 | 55 | 67 | 85 | 95 | 110 | 130.8 | 150 | 195 |
| B1 h9 | 5 | 6 | 6 | 10 | 12 | 14 | 16 | 18 | 22 | 22 | 28 |
| H1 | 15 | 20.5 | 24.5 | 35 | 43 | 53.5 | 59 | 64 | 90.4 | 95 | 106 |
| C1 | 70/90 | 70/90 | 90/145 | 145/200 | 200 | 200/235 | 235/200 | 235/200 | 200/235 | 235/350 | 235/350 |
| C2 | M4/M5 | M4/M5 | M5/M8 | M8/M12 | M12 | M12 | M12 | M12 | M12 | M12/M18 | M12/M18 |
| C3 | ≤14/≤19 | ≤14/≤19 | ≤19/≤24 | ≤24/≤35 | ≤35/≤42 | ≤42/≤55 | ≤42/≤55 | ≤42/≤55 | ≤42/≤55 | ≤42/≤55 | ≤42/≤55 |
| C4 | 31.5/41 | 31.5/41 | 41/59 | 60/81 | 81/114 | 114/117 | 114/117 | 114/117 | 114/117 | 114/118 | 114/118 |
| C5 | 50/70 | 50/70 | 70/110 | 110/114.3 | 114.3 | 114.3/200 | 114.3/200 | 114.3/200 | 114.3/200 | 200/300 | 200/300 |
| C6 | 5/6 | 5/6 | 6/14 | 14/23 | 19/15 | 24 | 20 | 20 | 20 | 10 | 10 |
| C7 | 60/80 | 60/80 | 80/130 | 130/180 | 180 | 180/220 | 180/220 | 180/220 | 180/220 | 220/350 | 220/350 |
| C8 | 6/9 | 6/9 | 9.5/21.5 | 19.5/25 | 22/55 | 30/33 | 15/17.5 | 15/17.5 | 15/17.5 | 24 | 24 |

WATL-L3



WATR-L3

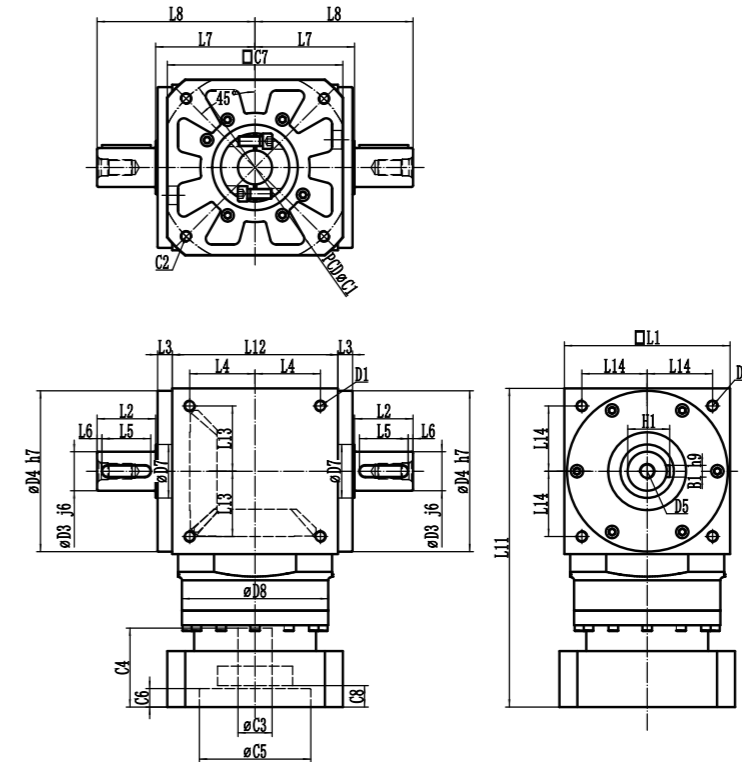


尺寸 (三节, 减速比 i=25~200)

Dimension (3 stage, Ratio i=25~200)

| 尺寸 | WATL/R065 | WATL/R090 | WATL/R110 | WATL/R140 | WATL/R170 | WATL/R210 | WATL/R240 | WATL/R280 | WATL/R300 | WATL/R350 | WATL/R450 |
|-------|-----------|-------------|-------------|-----------|-----------|-----------|-----------|-----------|-----------|-------------|-------------|
| D1 | M4↓8 | M6↓12 | M8↓16 | M10↓20 | M12↓25 | M16↓32 | M16↓40 | M16↓35 | M20↓40 | M20↓40 | M24↓45 |
| D3j6 | 13 | 18 | 22 | 32 | 40 | 50 | 55 | 60 | 75 | 85 | 100 |
| D4 h7 | 63 | 88 | 108 | 135 | 165 | 205 | 235 | 275 | 296 | 364 | 446 |
| D5 | M4↓8 | M5↓10 | M8↓16 | M12↓25 | M16↓32 | M16↓32 | M16↓36 | M20↓42 | M20↓40 | M20↓40 | M24↓50 |
| D7 | 19.9 | 29.9 | 39.9 | 44.9 | 54.9 | 74.9 | 84.9 | 104.8 | 120 | 130 | 160 |
| D8 | 64 | 70 | 94 | 125 | 150 | 170 | 225 | 225 | 254 | 254 | 284.5 |
| L1 | 65 | 90 | 110 | 140 | 170 | 210 | 240 | 280 | 300 | 350 | 450 |
| L2 | 19.5 | 35 | 40 | 50 | 60 | 75 | 85 | 110 | 120 | 130 | 140 |
| L3 | 13 | 15 | 15 | 15 | 15 | 20 | 25 | 25 | 35 | 30 | 35 |
| L4 | 27 | 36 | 44 | 55 | 67 | 85 | 95 | 110 | 100 | 110 | 130 |
| L5 | 16 | 25 | 32 | 44 | 55 | 69 | 75 | 100 | 110 | 130 | 130 |
| L6 | 2 | 5 | 3 | 2.5 | 2.5 | 2.5 | 2.5 | 4 | 4 | 4 | 4 |
| L7 | 47.5 | 62 | 72 | 87 | 102 | 127 | 147 | 167 | 157 | 170 | 200 |
| L8 | 67 | 97 | 112 | 137 | 162 | 202 | 232 | 277 | 277 | 300 | 340 |
| L11 | 161/174 | 187.8/200.8 | 216.5/234.5 | 270/300.5 | 347.5/388 | 438/471 | 507/540.5 | 547/580 | 567/603 | 651.5/688.5 | 801.5/832.5 |
| L12 | 65 | 90 | 110 | 140 | 170 | 210 | 240 | 280 | 240 | 270 | 320 |
| L13 | 27 | 36 | 44 | 55 | 67 | 85 | 95 | 110 | 107.5 | 127.5 | 167.5 |
| L14 | 27 | 36 | 44 | 55 | 67 | 85 | 95 | 110 | 130.8 | 150 | 195 |
| B1 h9 | 5 | 6 | 6 | 10 | 12 | 14 | 16 | 18 | 22 | 22 | 28 |
| H1 | 15 | 20.5 | 24.5 | 35 | 43 | 53.5 | 59 | 64 | 90.4 | 95 | 106 |
| C1 | 70/90 | 70/90 | 70/90 | 90/145 | 145/200 | 200 | 235/200 | 235/200 | 200/235 | 235/350 | 235/350 |
| C2 | M4/M5 | M4/M5 | M4/M5 | M5/M8 | M8/M12 | M12 | M12 | M12 | M12 | M12/M18 | M12/M18 |
| C3 | ≤14/≤19 | ≤14/≤19 | ≤14/≤19 | ≤19/≤24 | ≤24/≤35 | ≤35/≤42 | ≤42/≤55 | ≤42/≤55 | ≤42/≤55 | ≤42/≤55 | ≤42/≤55 |
| C4 | 31.5/41 | 31.5/41 | 31.5/41 | 41/60 | 60/81 | 81/114 | 114/117 | 114/117 | 114/117 | 114/118 | 114/118 |
| C5 | 50/70 | 50/70 | 50/70 | 70/110 | 110/114.3 | 114.3 | 114.3/200 | 114.3/200 | 114.3/200 | 200/300 | 200/300 |
| C6 | 5/6 | 5/6 | 5/6 | 6/14 | 14/19 | 19/15 | 20 | 20 | 20 | 10 | 10 |
| C7 | 60/80 | 60/80 | 60/80 | 80/130 | 130/180 | 180 | 180/220 | 180/220 | 180/220 | 220/350 | 220/350 |
| C8 | 6/9 | 6/9 | 6/9.5 | 9.5/19.5 | 19.5/22 | 22/55 | 15/17.5 | 15/17.5 | 15/17.5 | 24 | 24 |

WATD-L2

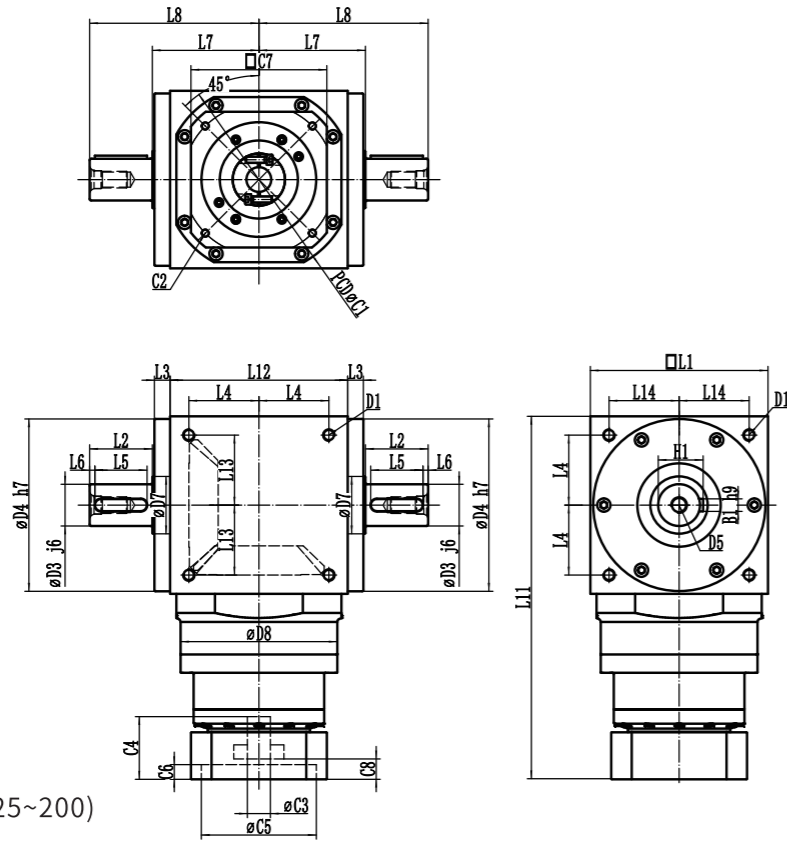


尺寸 (双节, 减速比 i=4~20)

Dimension (double stage, Ratio i=4~20)

| 尺寸 | WATD065 | WATD090 | WATD110 | WATD140 | WATD170 | WATD210 | WATD240 | WATD280 | WATD300 | WATD350 | WATD450 |
|-------|---------|-------------|----------|-------------|---------|-------------|-------------|-------------|-------------|---------|---------|
| D1 | M4↓8 | M6↓12 | M8↓16 | M10↓20 | M12↓25 | M16↓32 | M16↓40 | M16↓35 | M20↓40 | M20↓40 | M24↓45 |
| D3j6 | 13 | 18 | 22 | 32 | 40 | 50 | 55 | 60 | 75 | 85 | 100 |
| D4 h7 | 63 | 88 | 108 | 135 | 165 | 205 | 235 | 275 | 296 | 364 | 446 |
| D5 | M4↓8 | M5↓10 | M8↓16 | M12↓25 | M16↓32 | M16↓32 | M16↓36 | M20↓42 | M20↓40 | M20↓40 | M24↓50 |
| D7 | 19.9 | 29.9 | 39.9 | 44.9 | 54.9 | 74.9 | 84.9 | 104.8 | 120 | 130 | 160 |
| D8 | 64 | 70 | 94 | 125 | 150 | 170 | 225 | 225 | 225 | 254 | 284.5 |
| L1 | 65 | 90 | 110 | 140 | 170 | 210 | 240 | 280 | 300 | 350 | 450 |
| L2 | 19.5 | 35 | 40 | 50 | 60 | 75 | 85 | 110 | 120 | 130 | 140 |
| L3 | 13 | 15 | 15 | 15 | 15 | 20 | 25 | 25 | 35 | 30 | 35 |
| L4 | 27 | 36 | 44 | 55 | 67 | 85 | 95 | 110 | 100 | 110 | 130 |
| L5 | 16 | 25 | 32 | 44 | 55 | 69 | 75 | 100 | 110 | 130 | 130 |
| L6 | 2 | 5 | 3 | 2.5 | 2.5 | 2.5 | 2.5 | 4 | 4 | 4 | 4 |
| L7 | 47.5 | 62 | 72 | 87 | 102 | 127 | 147 | 167 | 157 | 170 | 200 |
| L8 | 67 | 97 | 112 | 137 | 162 | 202 | 232 | 277 | 277 | 300 | 340 |
| L11 | 129/142 | 155.8/168.8 | 197/215 | 255.5/277.5 | 327/360 | 405.3/408.3 | 438.5/471.5 | 478.5/511.5 | 498.5/535.5 | 622 | 739 |
| L12 | 65 | 90 | 110 | 140 | 170 | 210 | 240 | 280 | 240 | 270 | 320 |
| L13 | 27 | 36 | 44 | 55 | 67 | 85 | 95 | 110 | 107.5 | 127.5 | 167.5 |
| L14 | 27 | 36 | 44 | 55 | 67 | 85 | 95 | 110 | 130.8 | 150 | 195 |
| B1 h9 | 5 | 6 | 6 | 10 | 12 | 14 | 16 | 18 | 22 | 22 | 28 |
| H1 | 15 | 20.5 | 24.5 | 35 | 43 | 53.5 | 59 | 64 | 90.4 | 95 | 106 |
| C1 | 70/90 | 70/90 | 90/145 | 145/200 | 200 | 200/235 | 200/235 | 200/235 | 200/235 | 235/350 | 235/350 |
| C2 | M4/M5 | M4/M5 | M5/M8 | M8/M12 | M12 | M12 | M12 | M12 | M12 | M12/M18 | M12/M18 |
| C3 | ≤14/≤19 | ≤14/≤19 | ≤19/≤24 | ≤24/≤35 | ≤35/≤42 | ≤42/≤55 | ≤42/≤55 | ≤42/≤55 | ≤42/≤55 | ≤42/≤55 | ≤42/≤55 |
| C4 | 31.5/41 | 31.5/41 | 41/59 | 60/81 | 81/114 | 114/117 | 114/117 | 114/117 | 114/117 | 114/118 | 114/118 |
| C5 | 50/70 | 50/70 | 70/110 | 110/114.3 | 114.3 | 114.3/200 | 114.3/200 | 114.3/200 | 114.3/200 | 200/300 | 200/300 |
| C6 | 5/6 | 5/6 | 6/14 | 14/23 | 19/15 | 24 | 20 | 20 | 20 | 10 | 10 |
| C7 | 60/80 | 60/80 | 80/130 | 130/180 | 180 | 180/220 | 180/220 | 180/220 | 180/220 | 220/350 | 220/350 |
| C8 | 6/9 | 6/9 | 9.5/21.5 | 19.5/25 | 22/55 | 30/33 | 15/17.5 | 15/17.5 | 15/17.5 | 24 | 24 |

WATD-L3

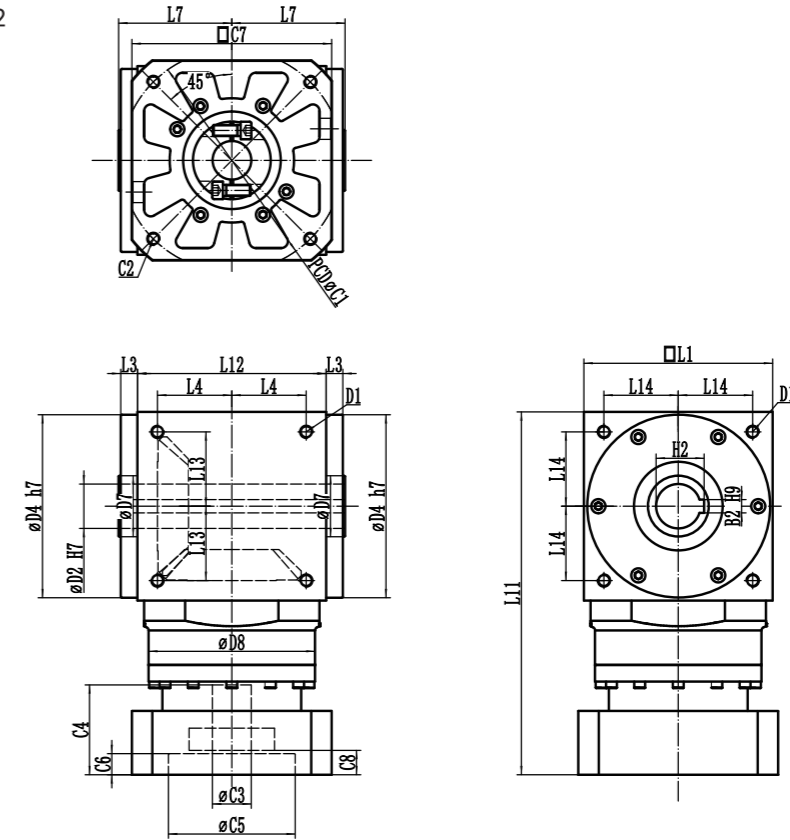


尺寸 (三节, 减速比 i=25~200)

Dimension (3stage, Ratio i=25~200)

| 尺寸 | WATD065 | WATD090 | WATD110 | WATD140 | WATD170 | WATD210 | WATD240 | WATD280 | WATD300 | WATD350 | WATD450 |
|-------|---------|-------------|-------------|-----------|-----------|---------|-----------|-----------|-----------|-------------|-------------|
| D1 | M4↓8 | M6↓12 | M8↓16 | M10↓20 | M12↓25 | M16↓32 | M16↓40 | M16↓35 | M20↓40 | M20↓40 | M24↓45 |
| D3j6 | 13 | 18 | 22 | 32 | 40 | 50 | 55 | 60 | 75 | 85 | 100 |
| D4 h7 | 63 | 88 | 108 | 135 | 165 | 205 | 235 | 275 | 296 | 364 | 446 |
| D5 | M4↓8 | M5↓10 | M8↓16 | M12↓25 | M16↓32 | M16↓32 | M16↓36 | M20↓42 | M20↓40 | M20↓40 | M24↓50 |
| D7 | 19.9 | 29.9 | 39.9 | 44.9 | 54.9 | 74.9 | 84.9 | 104.8 | 120 | 130 | 160 |
| D8 | 64 | 70 | 94 | 125 | 150 | 170 | 225 | 225 | 225 | 254 | 284.5 |
| L1 | 65 | 90 | 110 | 140 | 170 | 210 | 240 | 280 | 300 | 350 | 450 |
| L2 | 19.5 | 35 | 40 | 50 | 60 | 75 | 85 | 110 | 120 | 130 | 140 |
| L3 | 13 | 15 | 15 | 15 | 15 | 20 | 25 | 25 | 35 | 30 | 35 |
| L4 | 27 | 36 | 44 | 55 | 67 | 85 | 95 | 110 | 100 | 110 | 130 |
| L5 | 16 | 25 | 32 | 44 | 55 | 69 | 75 | 100 | 110 | 130 | 130 |
| L6 | 2 | 5 | 3 | 2.5 | 2.5 | 2.5 | 2.5 | 4 | 4 | 4 | 4 |
| L7 | 47.5 | 62 | 72 | 87 | 102 | 127 | 147 | 167 | 157 | 170 | 200 |
| L8 | 67 | 97 | 112 | 137 | 162 | 202 | 232 | 277 | 277 | 300 | 340 |
| L11 | 161/174 | 187.8/200.8 | 216.5/234.5 | 270/300.5 | 347.5/388 | 438/471 | 507/540.5 | 547/580 | 567/603 | 651.5/688.5 | 801.5/832.5 |
| L12 | 65 | 90 | 110 | 140 | 170 | 210 | 240 | 280 | 240 | 270 | 320 |
| L13 | 27 | 36 | 44 | 55 | 67 | 85 | 95 | 110 | 107.5 | 127.5 | 167.5 |
| L14 | 27 | 36 | 44 | 55 | 67 | 85 | 95 | 110 | 130.8 | 150 | 195 |
| B1 h9 | 5 | 6 | 6 | 10 | 12 | 14 | 16 | 18 | 22 | 22 | 28 |
| H1 | 15 | 20.5 | 24.5 | 35 | 43 | 53.5 | 59 | 64 | 90.4 | 95 | 106 |
| C1 | 70/90 | 70/90 | 70/90 | 90/145 | 145/200 | 200 | 235/200 | 235/200 | 200/235 | 235/350 | 235/350 |
| C2 | M4/M5 | M4/M5 | M4/M5 | M5/M8 | M8/M12 | M12 | M12 | M12 | M12 | M12/M18 | M12/M18 |
| C3 | ≤14/≤19 | ≤14/≤19 | ≤14/≤19 | ≤19/≤24 | ≤24/≤35 | ≤35/≤42 | ≤42/≤55 | ≤42/≤55 | ≤42/≤55 | ≤42/≤55 | ≤42/≤55 |
| C4 | 31.5/41 | 31.5/41 | 31.5/41 | 41/60 | 60/81 | 81/114 | 114/117 | 114/117 | 114/117 | 114/118 | 114/118 |
| C5 | 50/70 | 50/70 | 50/70 | 70/110 | 110/114.3 | 114.3 | 114.3/200 | 114.3/200 | 114.3/200 | 200/300 | 200/300 |
| C6 | 5/6 | 5/6 | 5/6 | 6/14 | 14/19 | 19/15 | 20 | 20 | 20 | 10 | 10 |
| C7 | 60/80 | 60/80 | 60/80 | 80/130 | 130/180 | 180 | 180/220 | 180/220 | 180/220 | 220/350 | 220/350 |
| C8 | 6/9 | 6/9 | 6/9.5 | 9.5/19.5 | 19.5/22 | 22/55 | 15/36 | 15/46 | 15/17.5 | 24 | 24 |

WATH-L2

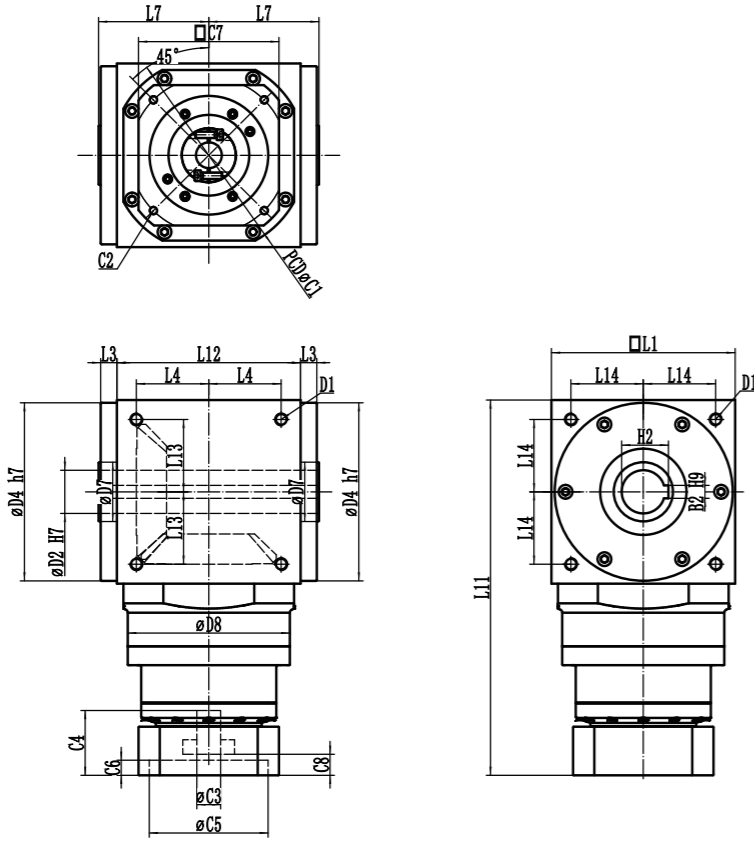


尺寸 (双节, 减速比 i=4~20)

Dimension (doublestage, Ratio i=4~20)

| 尺寸 | WATH065 | WATH090 | WATH110 | WATH140 | WATH170 | WATH210 | WATH240 | WATH280 | WATH300 | WATH350 | WATH450 |
|-------|---------|-------------|----------|-------------|---------|-------------|-------------|-------------|-------------|---------|---------|
| D1 | M4↓8 | M6↓12 | M8↓16 | M10↓20 | M12↓25 | M16↓32 | M16↓40 | M16↓35 | M20↓40 | M20↓40 | M24↓45 |
| D2 H7 | 13 | 18 | 22 | 32 | 40 | 50 | 55 | 60 | 75 | 85 | 100 |
| D4 h7 | 63 | 88 | 108 | 135 | 165 | 205 | 235 | 275 | 296 | 364 | 446 |
| D7 | 19.9 | 29.9 | 39.9 | 44.9 | 54.9 | 74.9 | 75 | 104.8 | 120 | 130 | 160 |
| D8 | 64 | 70 | 94 | 125 | 150 | 170 | 225 | 225 | 225 | 254 | 284.5 |
| L1 | 65 | 90 | 110 | 140 | 170 | 210 | 240 | 280 | 300 | 350 | 450 |
| L3 | 13 | 15 | 15 | 15 | 15 | 20 | 25 | 25 | 35 | 30 | 35 |
| L4 | 27 | 36 | 44 | 55 | 67 | 85 | 95 | 110 | 100 | 110 | 130 |
| L7 | 47.5 | 62 | 72 | 87 | 102 | 127 | 147 | 167 | 157 | 170 | 200 |
| L11 | 129/142 | 155.8/168.8 | 197/215 | 255.5/277.5 | 327/360 | 405.3/408.3 | 438.5/471.5 | 478.5/511.5 | 498.5/535.5 | 622 | 739 |
| L12 | 65 | 90 | 110 | 140 | 170 | 210 | 240 | 280 | 240 | 270 | 320 |
| L13 | 27 | 36 | 44 | 55 | 67 | 85 | 95 | 110 | 107.5 | 127.5 | 167.5 |
| L14 | 27 | 36 | 44 | 55 | 67 | 85 | 95 | 110 | 130.8 | 150 | 195 |
| B2 H9 | 5 | 6 | 6 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 28 |
| H2 | 15.3 | 20.8 | 24.8 | 35.3 | 43.3 | 53.8 | 59.3 | 64.3 | 79.9 | 90.4 | 106.4 |
| C1 | 70/90 | 70/90 | 90/145 | 145/200 | 200 | 200/235 | 235/200 | 235/200 | 200/235 | 235/350 | 235/350 |
| C2 | M4/M5 | M4/M5 | M5/M8 | M8/M12 | M12 | M12 | M12 | M12 | M12 | M12/M18 | M12/M18 |
| C3 | ≤14/≤19 | ≤14/≤19 | ≤19/≤24 | ≤24/≤35 | ≤35/≤42 | ≤42/≤55 | ≤42/≤55 | ≤42/≤55 | ≤42/≤55 | ≤42/≤55 | ≤42/≤55 |
| C4 | 31.5/41 | 31.5/41 | 41/59 | 60/81 | 81/114 | 114/117 | 114/117 | 114/117 | 114/117 | 114/118 | 114/118 |
| C5 | 50/70 | 50/70 | 70/110 | 110/114.3 | 114.3 | 114.3/200 | 114.3/200 | 114.3/200 | 114.3/200 | 200/300 | 200/300 |
| C6 | 5/6 | 5/6 | 6/14 | 14/23 | 19/15 | 24 | 20 | 20 | 20 | 10 | 10 |
| C7 | 60/80 | 60/80 | 80/130 | 130/180 | 180 | 180/220 | 180/220 | 180/220 | 180/220 | 220/350 | 220/350 |
| C8 | 6/9 | 6/9 | 9.5/21.5 | 19.5/25 | 22/55 | 30/33 | 17.5/15 | 17.5/15 | 15/17.5 | 24 | 24 |

WATH-L3

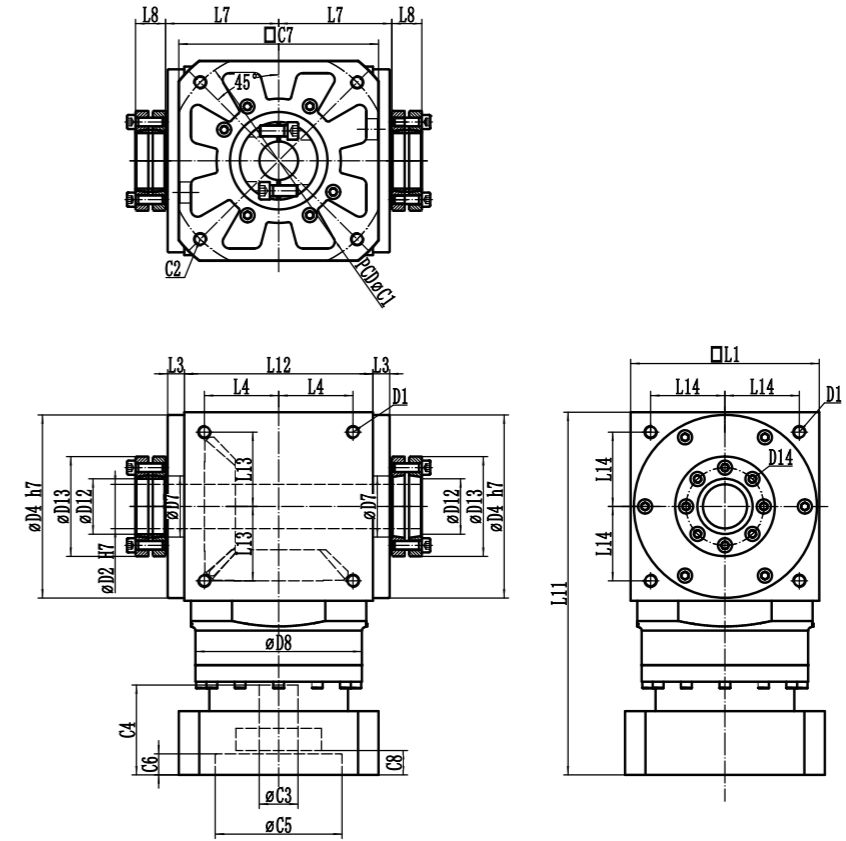


尺寸 (双节, 减速比 i=25~200)

Dimension (double stage, Ratio i=25~200)

| 尺寸 | WATH065 | WATH090 | WATH110 | WATH140 | WATH170 | WATH210 | WATH240 | WATH280 | WATH300 | WATH350 | WATH450 |
|-------|---------|-------------|-------------|-----------|-----------|----------|-----------|-----------|-----------|-------------|-------------|
| D1 | M4 ↓ 8 | M6 ↓ 12 | M8 ↓ 16 | M10 ↓ 20 | M12 ↓ 25 | M16 ↓ 32 | M16 ↓ 40 | M16 ↓ 35 | M20 ↓ 40 | M20 ↓ 40 | M24 ↓ 45 |
| D2 H7 | 13 | 18 | 22 | 32 | 40 | 50 | 55 | 60 | 75 | 85 | 100 |
| D4 h7 | 63 | 88 | 108 | 135 | 165 | 205 | 235 | 275 | 296 | 364 | 446 |
| D7 | 19.9 | 29.9 | 39.9 | 44.9 | 54.9 | 74.9 | 75 | 104.8 | 120 | 130 | 160 |
| D8 | 64 | 70 | 94 | 125 | 150 | 170 | 225 | 225 | 225 | 254 | 284.5 |
| L1 | 65 | 90 | 110 | 140 | 170 | 210 | 240 | 280 | 300 | 350 | 450 |
| L3 | 13 | 15 | 15 | 15 | 15 | 20 | 25 | 25 | 35 | 30 | 35 |
| L4 | 27 | 36 | 44 | 55 | 67 | 85 | 95 | 110 | 100 | 110 | 130 |
| L7 | 47.5 | 62 | 72 | 87 | 102 | 127 | 147 | 167 | 157 | 170 | 200 |
| L11 | 161/174 | 187.8/200.8 | 216.5/234.5 | 270/300.5 | 347.5/388 | 438/471 | 507/540.5 | 547/580 | 567/603 | 651.5/688.5 | 801.5/832.5 |
| L12 | 65 | 90 | 110 | 140 | 170 | 210 | 240 | 280 | 240 | 270 | 320 |
| L13 | 27 | 36 | 44 | 55 | 67 | 85 | 95 | 110 | 107.5 | 127.5 | 167.5 |
| L14 | 27 | 36 | 44 | 55 | 67 | 85 | 95 | 110 | 130.8 | 150 | 195 |
| B2 H9 | 5 | 6 | 6 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 28 |
| H2 | 15.3 | 20.8 | 24.8 | 35.3 | 43.3 | 53.8 | 59.3 | 64.3 | 79.9 | 90.4 | 106.4 |
| C1 | 70/90 | 70/90 | 70/90 | 90/145 | 145/200 | 200 | 235/200 | 235/200 | 200/235 | 235/350 | 235/350 |
| C2 | M4/M5 | M4/M5 | M4/M5 | M5/M8 | M8/M12 | M12 | M12 | M12 | M12 | M12/M18 | M12/M18 |
| C3 | ≤14/≤19 | ≤14/≤19 | ≤14/≤19 | ≤19/≤24 | ≤24/≤35 | ≤35/≤42 | ≤42/≤55 | ≤42/≤55 | ≤42/≤55 | ≤42/≤55 | ≤42/≤55 |
| C4 | 31.5/41 | 31.5/41 | 31.5/41 | 41/60 | 60/81 | 81/114 | 114/117 | 114/117 | 114/117 | 114/118 | 114/118 |
| C5 | 50/70 | 50/70 | 50/70 | 70/110 | 110/114.3 | 114.3 | 114.3/200 | 114.3/200 | 114.3/200 | 200/300 | 200/300 |
| C6 | 5/6 | 5/6 | 5/6 | 6/14 | 14/19 | 19/15 | 20 | 20 | 20 | 10 | 10 |
| C7 | 60/80 | 60/80 | 60/80 | 80/130 | 130/180 | 180 | 180/220 | 180/220 | 180/220 | 220/350 | 220/350 |
| C8 | 6/9 | 6/9 | 6/9.5 | 9.5/19.5 | 19.5/22 | 22/55 | 15/36 | 15/46 | 15/17.5 | 24 | 24 |

WATC-L2

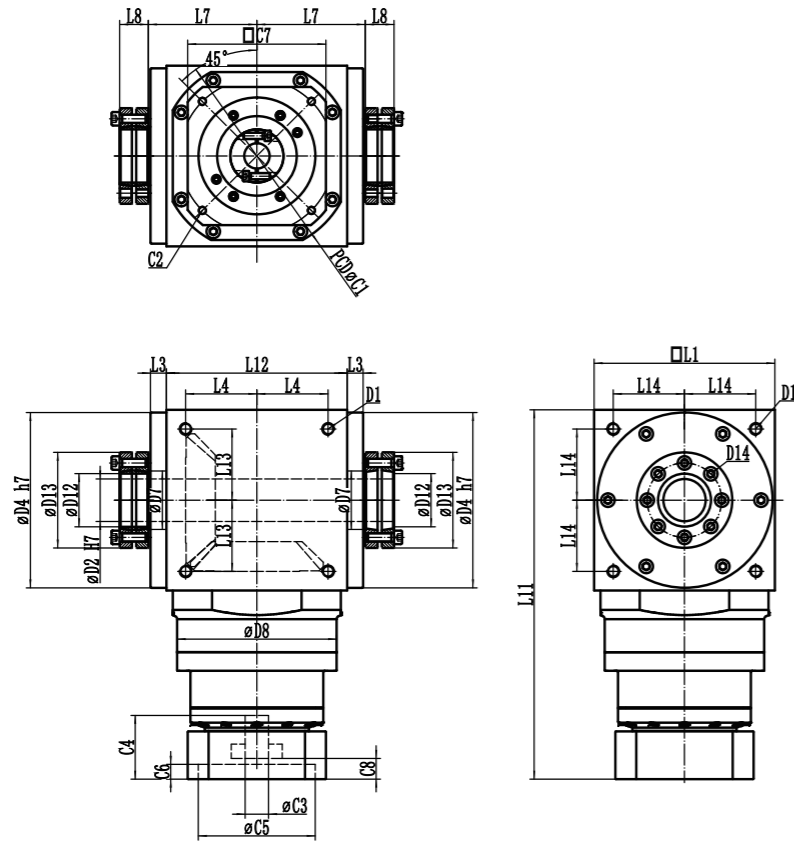


尺寸 (双节, 减速比 i=4~20)

Dimension (double stage, Ratio i=4~20)

| 尺寸 | WATC065 | WATC090 | WATC110 | WATC140 | WATC170 | WATC210 | WATC240 | WATC280 | WATC300 | WATC350 | WATC450 |
|-------|---------|-------------|----------|-------------|----------|-------------|-------------|-------------|-------------|----------|----------|
| D1 | M4 ↓ 8 | M6 ↓ 12 | M8 ↓ 16 | M10 ↓ 20 | M12 ↓ 25 | M16 ↓ 32 | M16 ↓ 40 | M16 ↓ 35 | M20 ↓ 40 | M20 ↓ 40 | M24 ↓ 45 |
| D2 H7 | 13 | 18 | 22 | 32 | 40 | 50 | 55 | 60 | 75 | 85 | 100 |
| D4 h7 | 63 | 88 | 108 | 135 | 165 | 205 | 235 | 275 | 296 | 364 | 446 |
| D7 | 19.9 | 29.9 | 39.9 | 44.9 | 54.9 | 74.9 | 84.9 | 104.8 | 120 | 130 | 160 |
| D8 | 64 | 70 | 94 | 125 | 150 | 170 | 225 | 200 | 225 | 254 | 284.5 |
| D12 | 16 | 22 | 27 | 44 | 50 | 62 | 68 | 75 | 100 | 115 | 130 |
| D13 | 41 | 50 | 53 | 80 | 90 | 110 | 115 | 138 | 170 | 188 | 215 |
| D14 | 6-M6 | 6-M6 | 7-M6 | 8-M6 | 8-M8 | 8-M8 | 8-M8 | 8-M8 | 8-M8 | 8-M10 | 10-M10 |
| L1 | 65 | 90 | 110 | 140 | 170 | 210 | 240 | 280 | 300 | 350 | 450 |
| L3 | 13 | 15 | 15 | 15 | 15 | 20 | 25 | 25 | 35 | 30 | 35 |
| L4 | 27 | 36 | 44 | 55 | 67 | 85 | 95 | 110 | 100 | 110 | 130 |
| L7 | 47.5 | 62 | 72 | 87 | 102 | 127 | 147 | 167 | 157 | 170 | 200 |
| L8 | 18 | 20 | 20 | 25 | 27 | 30 | 34.5 | 38 | 44 | 50 | 54 |
| L11 | 129/142 | 155.8/168.8 | 197/215 | 255.5/277.5 | 327/360 | 405.3/408.3 | 438.5/471.5 | 478.5/511.5 | 498.5/535.5 | 622 | 739 |
| L12 | 65 | 90 | 110 | 140 | 170 | 210 | 240 | 280 | 240 | 270 | 320 |
| L13 | 27 | 36 | 44 | 55 | 67 | 85 | 95 | 110 | 107.5 | 127.5 | 167.5 |
| L14 | 27 | 36 | 44 | 55 | 67 | 85 | 95 | 110 | 130.8 | 150 | 195 |
| C1 | 70/90 | 70/90 | 90/145 | 145/200 | 200 | 200/235 | 235/200 | 235/200 | 200/235 | 235/350 | 235/350 |
| C2 | M4/M5 | M4/M5 | M5/M8 | M8/M12 | M12 | M12 | M12 | M12 | M12 | M12/M18 | M12/M18 |
| C3 | ≤14/≤19 | ≤14/≤19 | ≤19/≤24 | ≤24/≤35 | ≤35/≤42 | ≤42/≤55 | ≤42/≤55 | ≤42/≤55 | ≤42/≤55 | ≤42/≤55 | ≤42/≤55 |
| C4 | 31.5/41 | 31.5/41 | 41/59 | 60/81 | 81/114 | 114/117 | 114/117 | 114/117 | 114/117 | 114/118 | 114/118 |
| C5 | 50/70 | 50/70 | 70/110 | 110/114.3 | 114.3 | 114.3/200 | 114.3/200 | 114.3/200 | 114.3/200 | 200/300 | 200/300 |
| C6 | 5/6 | 5/6 | 6/14 | 14/23 | 19/15 | 24 | 20 | 20 | 20 | 10 | 10 |
| C7 | 60/80 | 60/80 | 80/130 | 130/180 | 180 | 180/220 | 180/220 | 180/220 | 180/220 | 220/350 | 220/350 |
| C8 | 6/9 | 6/9 | 9.5/21.5 | 19.5/25 | 22/55 | 30/33 | 17.5/15 | 17.5/15 | 15/17.5 | 24 | 24 |

WATC-L3

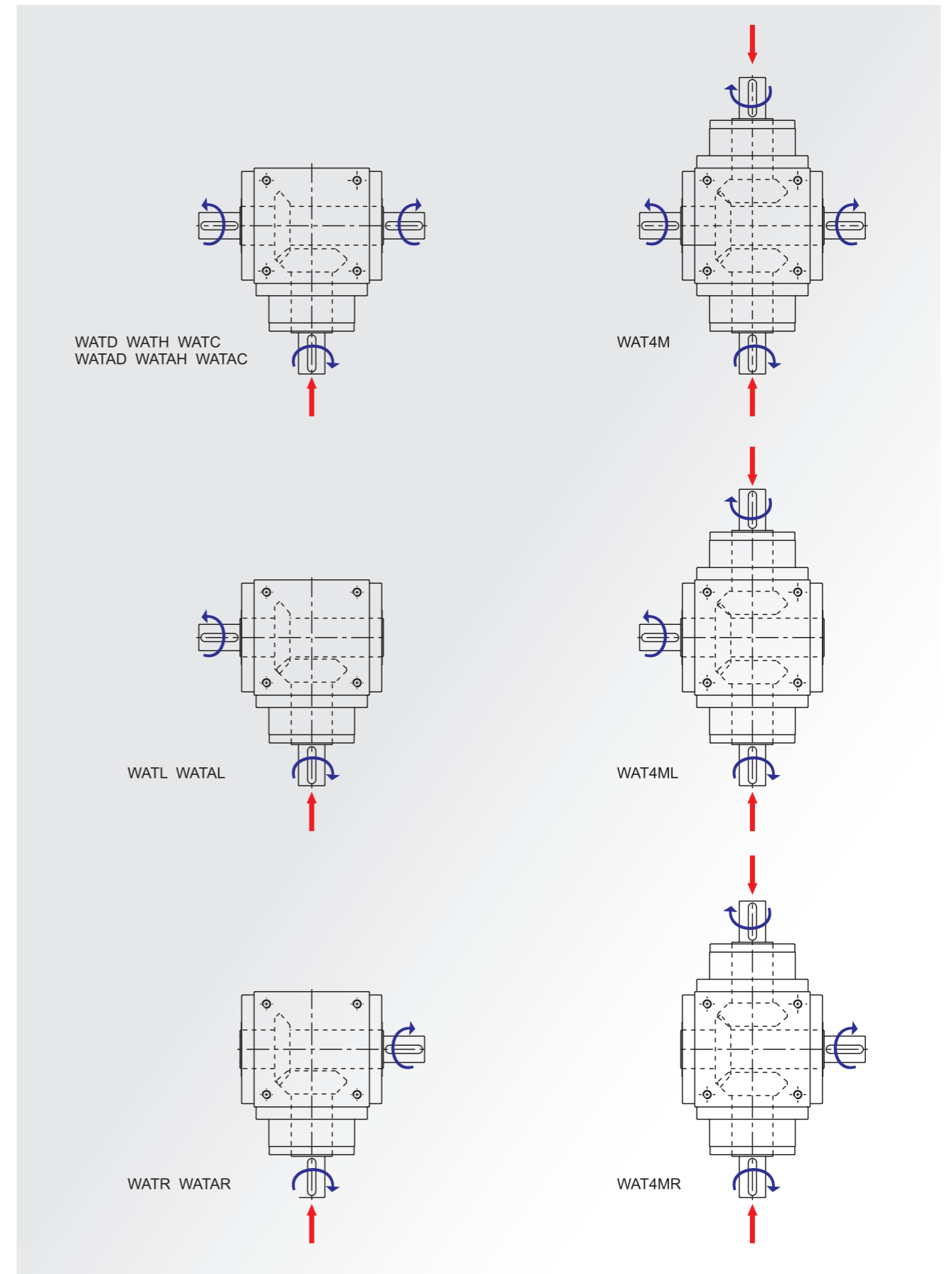


尺寸 (三节, 减速比 i=25~200)

Dimension (3 stage, Ratio i=25~200)

| 尺寸 | WATC065 | WATC090 | WATC110 | WATC140 | WATC170 | WATC210 | WATC240 | WATC280 | WATC300 | WATC350 | WATC450 |
|-------|---------|-------------|-------------|-----------|-----------|----------|-----------|-----------|-----------|-------------|-------------|
| D1 | M4 ↓ 8 | M6 ↓ 12 | M8 ↓ 16 | M10 ↓ 20 | M12 ↓ 25 | M16 ↓ 32 | M16 ↓ 40 | M16 ↓ 35 | M20 ↓ 40 | M20 ↓ 40 | M24 ↓ 45 |
| D2 H7 | 13 | 18 | 22 | 32 | 40 | 50 | 55 | 60 | 75 | 85 | 100 |
| D4 h7 | 63 | 88 | 108 | 135 | 165 | 205 | 235 | 275 | 296 | 364 | 446 |
| D7 | 19.9 | 29.9 | 39.9 | 44.9 | 54.9 | 74.9 | 84.9 | 104.8 | 120 | 130 | 160 |
| D8 | 64 | 70 | 94 | 125 | 150 | 170 | 225 | 200 | 225 | 254 | 284.5 |
| D12 | 16 | 22 | 27 | 44 | 50 | 62 | 68 | 75 | 100 | 115 | 130 |
| D13 | 41 | 50 | 53 | 80 | 90 | 110 | 115 | 138 | 170 | 188 | 215 |
| D14 | 6-M6 | 6-M6 | 7-M6 | 8-M6 | 8-M8 | 8-M8 | 8-M8 | 8-M8 | 8-M8 | 8-M10 | 10-M10 |
| L1 | 65 | 90 | 110 | 140 | 170 | 210 | 240 | 280 | 300 | 350 | 450 |
| L3 | 13 | 15 | 15 | 15 | 15 | 20 | 25 | 25 | 35 | 30 | 35 |
| L4 | 27 | 36 | 44 | 55 | 67 | 85 | 95 | 110 | 100 | 110 | 130 |
| L7 | 47.5 | 62 | 72 | 87 | 102 | 127 | 147 | 167 | 157 | 170 | 200 |
| L8 | 18 | 20 | 20 | 25 | 27 | 30 | 34.5 | 38 | 44 | 50 | 54 |
| L11 | 161/174 | 187.8/200.8 | 216.5/234.5 | 270/300.5 | 347.5/388 | 438/471 | 507/540.5 | 547/580 | 567/603 | 651.5/688.5 | 801.5/832.5 |
| L12 | 65 | 90 | 110 | 140 | 170 | 210 | 240 | 280 | 240 | 270 | 320 |
| L13 | 27 | 36 | 44 | 55 | 67 | 85 | 95 | 110 | 107.5 | 127.5 | 167.5 |
| L14 | 27 | 36 | 44 | 55 | 67 | 85 | 95 | 110 | 130.8 | 150 | 195 |
| C1 | 70/90 | 70/90 | 70/90 | 90/145 | 145/200 | 200 | 235/200 | 235/200 | 200/235 | 235/350 | 235/350 |
| C2 | M4/M5 | M4/M5 | M4/M5 | M5/M8 | M8/M12 | M12 | M12 | M12 | M12 | M12/M18 | M12/M18 |
| C3 | ≤14/≤19 | ≤14/≤19 | ≤14/≤19 | ≤19/≤24 | ≤24/≤35 | ≤35/≤42 | ≤42/≤55 | ≤42/≤55 | ≤42/≤55 | ≤42/≤55 | ≤42/≤55 |
| C4 | 31.5/41 | 31.5/41 | 31.5/41 | 41/60 | 60/81 | 81/114 | 114/117 | 114/117 | 114/117 | 114/118 | 114/118 |
| C5 | 50/70 | 50/70 | 50/70 | 70/110 | 110/114.3 | 114.3 | 114.3/200 | 114.3/200 | 114.3/200 | 200/300 | 200/300 |
| C6 | 5/6 | 5/6 | 5/6 | 6/14 | 14/19 | 19/15 | 20 | 20 | 20 | 10 | 10 |
| C7 | 60/80 | 60/80 | 60/80 | 80/130 | 130/180 | 180 | 180/220 | 180/220 | 180/220 | 220/350 | 220/350 |
| C8 | 6/9 | 6/9 | 6/9.5 | 9.5/19.5 | 19.5/22 | 22/55 | 15/36 | 15/46 | 15/17.5 | 24 | 24 |

转向图



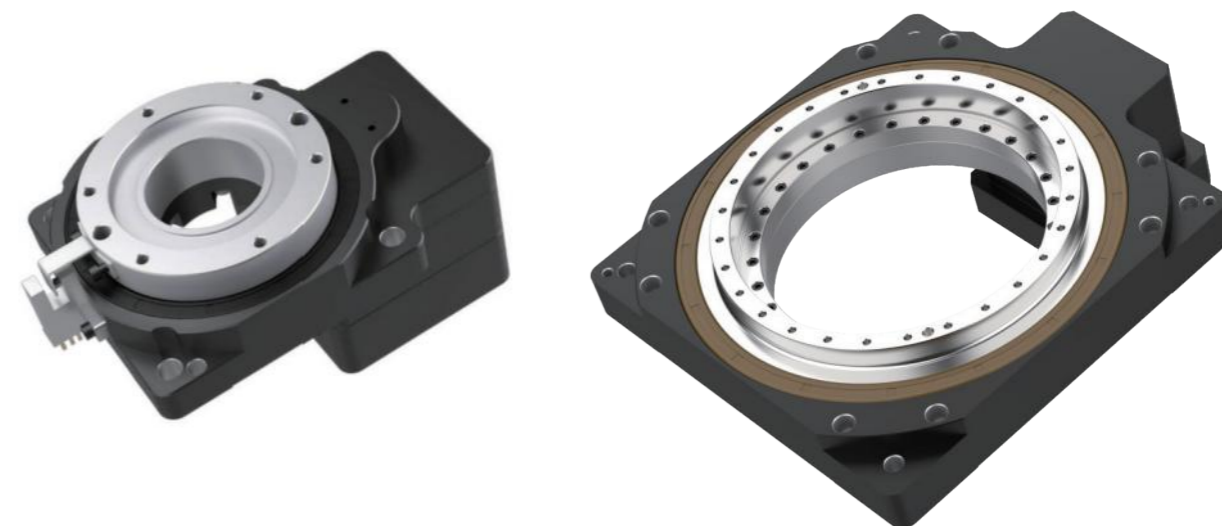
WTN Hollow Rotary Platform 系列中空旋转平台

FEATURES

产品特点

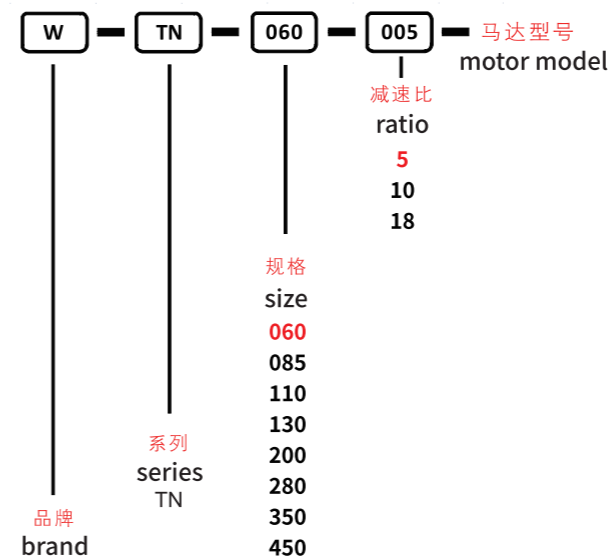
- » 相对DD马达、分割器优势、价格更低
- » 中空孔更大，配线、管方便
- » 体积更小，功率密度更大
- » 交叉轴承输出，承载更大

- » Competitive price
- » Larger hollow hole, convenient for wiring and piping
- » Compact size, greater power density
- » Crossed roller bearing output, with greater load-bearing capacity



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
- 入力方式和入力转速
- 马达厂牌型号或法兰及马达轴尺寸

- Type, model and torque
- Ratio or output speed
- Working conditions and connection methods
- Quantity and installed machine name
- Input mode and input speed
- Motor brand model or flange and motor shaft size

WTN060性能参数/Heavy-load type

WTN060系列性能表/WTN060 series Performance data sheet

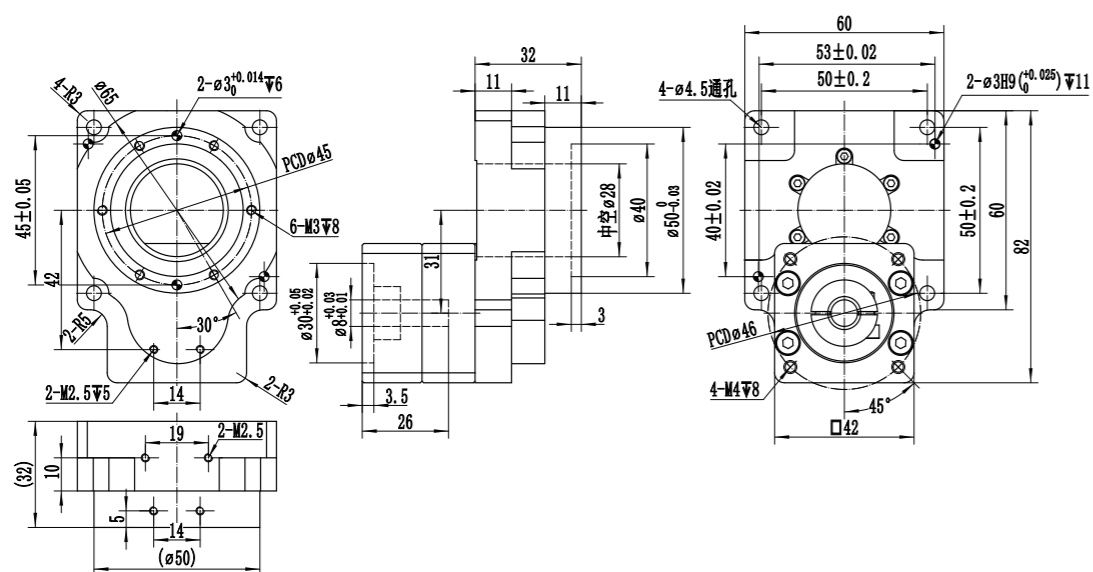
| 特性/Specifications | 单位/unit | WTN060 |
|--|-------------------|-------------------------------|
| 搭载马达型号/Applicable motor models | | 42型步进马达/42 stepper motor |
| 支撑旋转平台轴承/Bearing type | | 交叉滚子轴承/crossed roller bearing |
| 减速比/Ratio | | 5 10 |
| 转动惯量/Rotational inertia | Kg.m ² | 3507×10-7 |
| 额定输出扭矩/Rated output torque | N·m | 5.2 4.6 |
| 额定输出转速/Rated output speed | rpm | 300 |
| 角度传动精度/Angular transmission accuracy | arcmin | <2 |
| 反复定位精度/Reset positioning accuracy | arcsec | <15 |
| 齿隙/Backlash | arcmin | <1 |
| 允许轴向负载/Allowable axial load | N | 250 |
| 允许惯性力矩/Allowable moment of inertia | N·m | 5 |
| 旋转平台平行度/Parallelism of rotation platform | mm | 0.015 |
| 旋转平台同心度/Concentricity of rotation platform | mm | 0.01 |
| 输出端面跳动/Output end face runout | mm | 0.008 |
| 噪音/Noise | dB | 65 |
| 使用寿命/Service life | h | 20000 |
| 防护等级/Protection level | IP | 40 |
| 重量/Weight | Kg | 0.6 |

WTN085性能参数/Heavy-load type

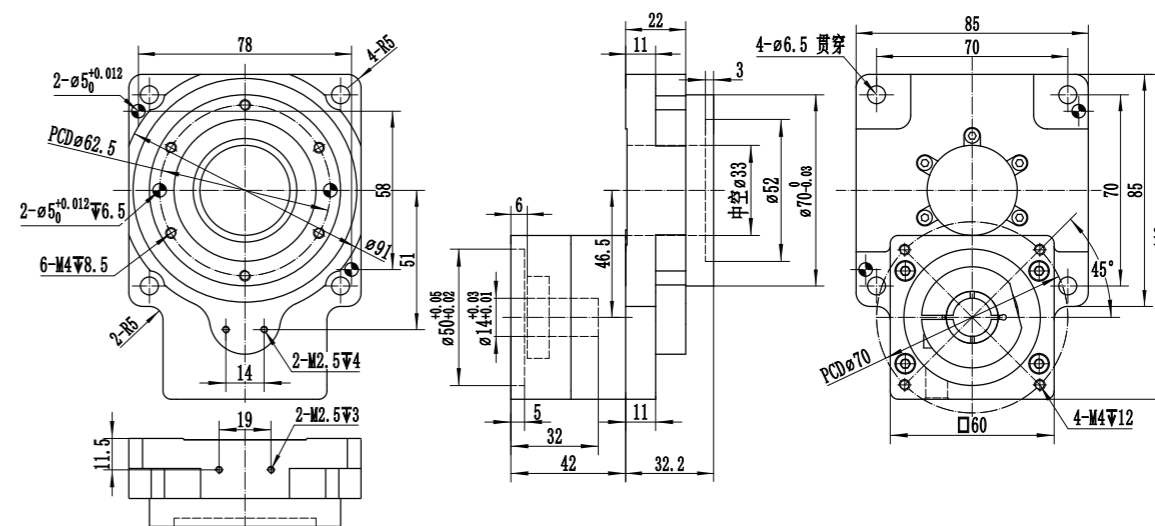
WTN085系列性能表/WTN085 series Performance data sheet

| 特性/Specifications | 单位/unit | WTN085 | WTN085+WVRB060 | WTN085+WRS060 |
|--|-------------------|-------------------------------|--|---------------------------------|
| 搭载马达型号/Applicable motor models | | 57型步进马达 57 stepper motor | 200W~400W伺服电机 200W-400W servo motor | 电机轴径≤14 motor shaft diameter |
| 支撑旋转平台轴承/Bearing type | | 交叉滚子轴承/crossed roller bearing | | |
| 减速比/Ratio | | 5 10 | 30 40 50 70 100 | 15 30 50 |
| 转动惯量/Rotational inertia | Kg.m ² | 12593x10-7 | | |
| 额定输出扭矩/Rated output torque | N·m | 12 10 | 12 | 12 |
| 额定输出转速/Rated output speed | rpm | 300 | | |
| 角度传动精度/Angular transmission accuracy | arcmin | <2 | | |
| 反复定位精度/Reset positioning accuracy | arcsec | <15 | | |
| 齿隙/Backlash | arcmin | <1 | <2 | <2 |
| 允许轴向负载/Allowable axial load | N | 500 | | |
| 允许惯性力矩/Allowable moment of inertia | N·m | 10 | | |
| 旋转平台平行度/Parallelism of rotation platform | mm | 0.015 | | |
| 旋转平台同心度/Concentricity of rotation platform | mm | 0.01 | | |
| 输出端面跳动/Output end face runout | mm | 0.008 | | |
| 噪音/Noise | dB | 65 | 60 | 65 |
| 使用寿命/Service life | h | 20000 | | |
| 防护等级/Protection level | IP | 40 | | |
| 重量/Weight | Kg | 1.2 | 2.7 | 2.5 |

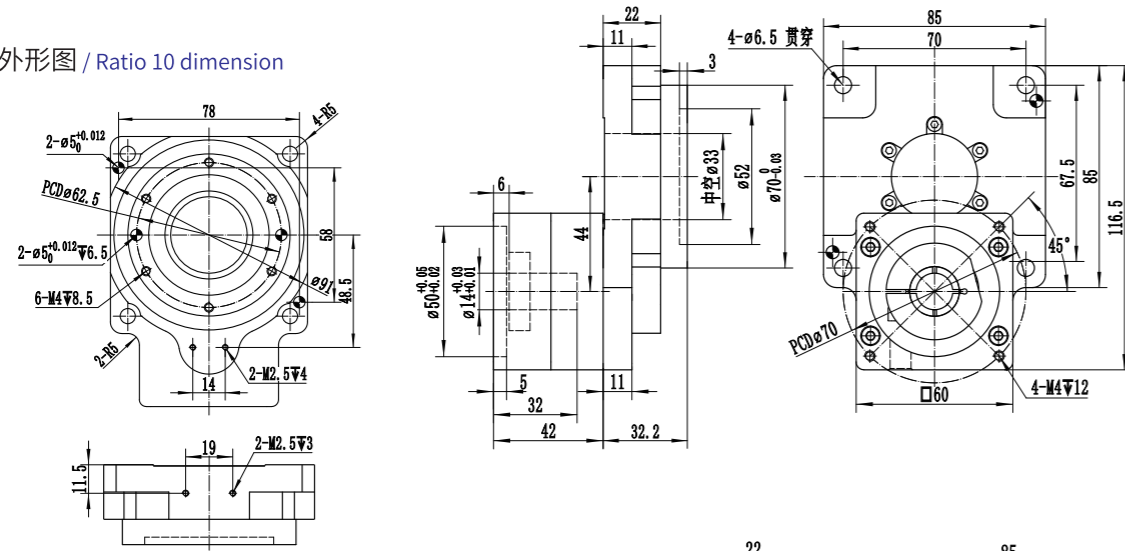
5/10比外形图 / Ratio 5/10 dimension



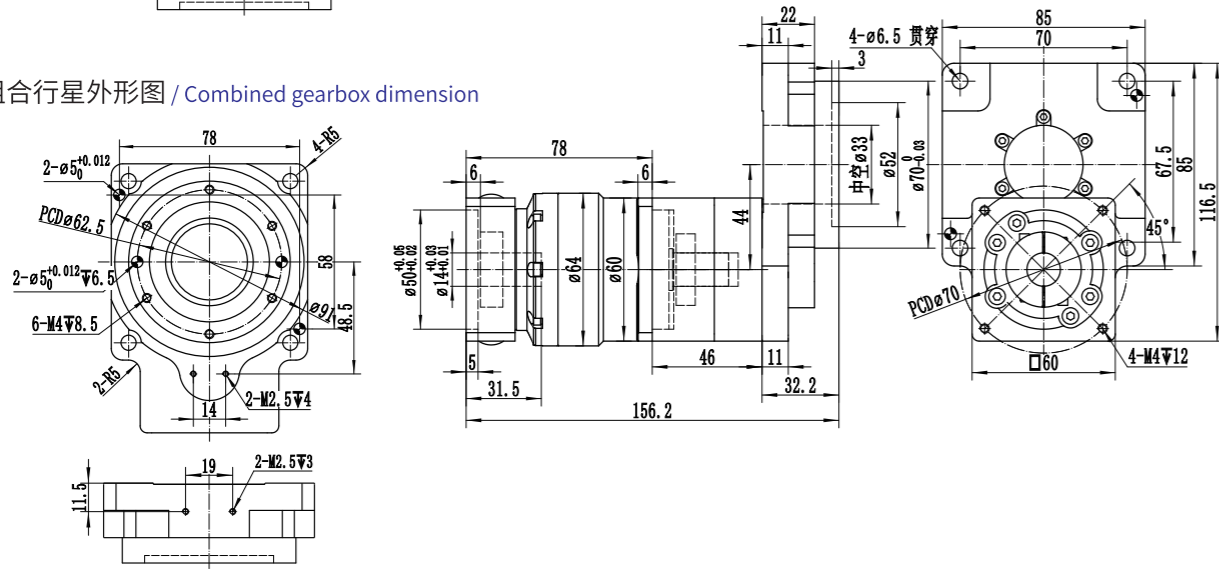
5比外形图 / Ratio 5 dimension



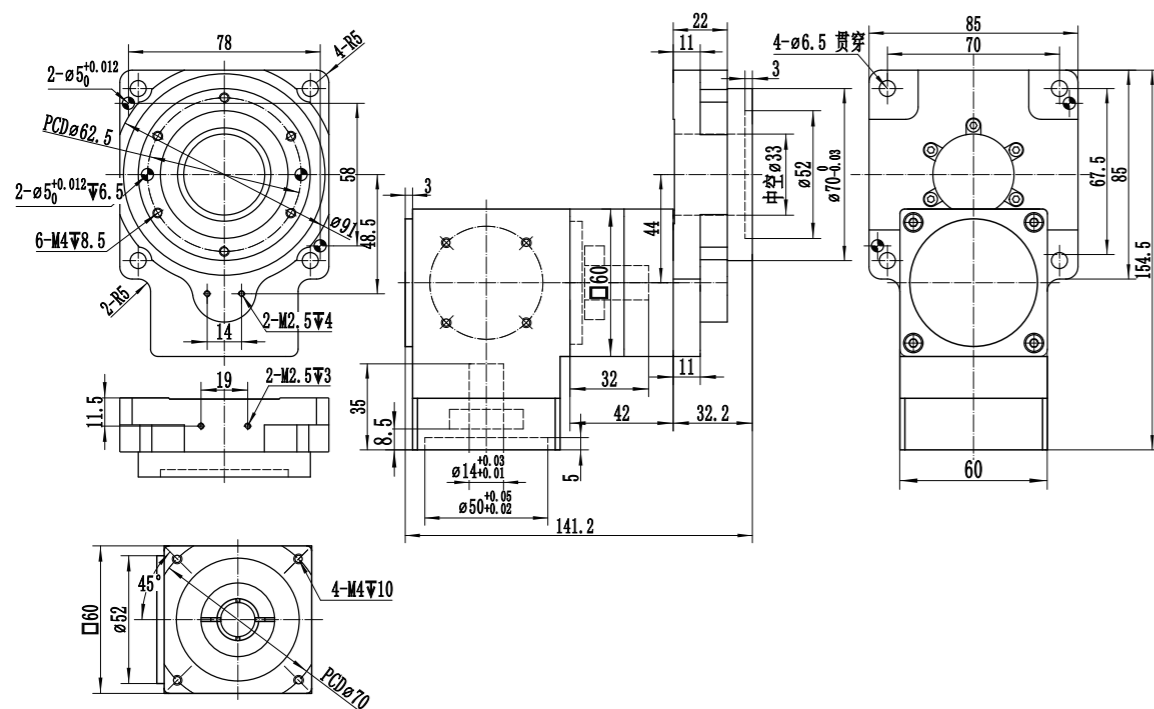
10比外形图 / Ratio 10 dimension



组合行星外形图 / Combined gearbox dimension



组合转角外形图 / Combined right-angle gearbox dimension

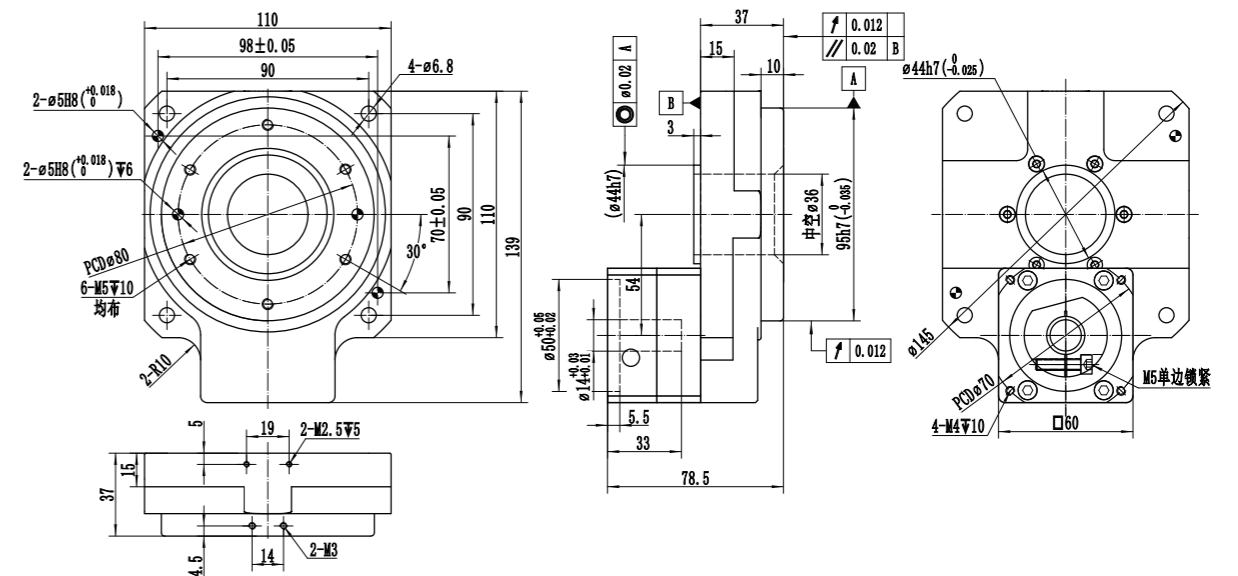


WTN110性能参数/Heavy-load type

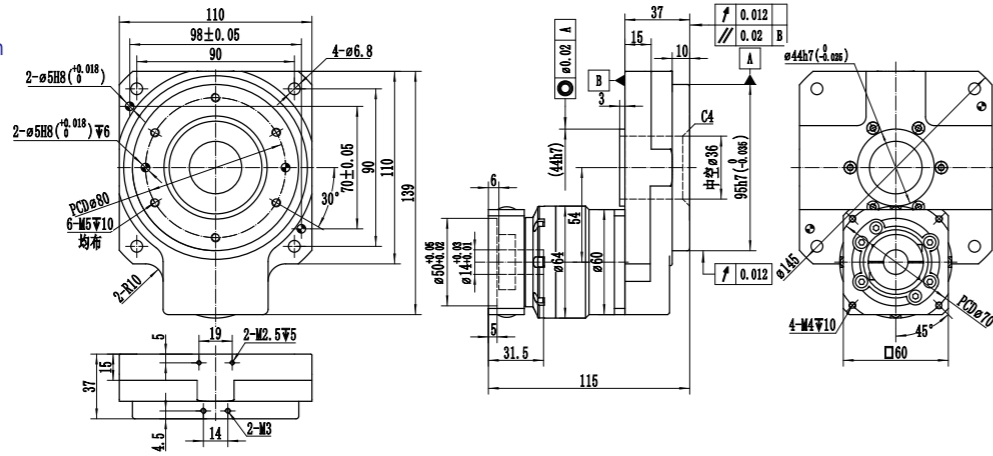
WTN110系列性能表/WTN110 series Performance data sheet

| 特性/Specifications | 单位/unit | WTN110 | WTN110+WWRB060 | WTN110+WRS060 |
|--|-------------------|-------------------------------|--|---------------------------------|
| 搭载马达型号/Applicable motor models | | 57型步进马达 57 stepper motor | 200W~400W伺服电机 200W~400W servo motor | 电机轴径≤14 motor shaft diameter |
| 支撑旋转平台轴承/Bearing type | | 交叉滚子轴承/crossed roller bearing | | |
| 减速比/Ratio | | 10 | 30 40 50 70 100 | 10 30 50 |
| 转动惯量/Rotational inertia | Kg.m ² | | 1483x10-6 | |
| 额定输出扭矩/Rated output torque | N·m | 40 | 40 | 40 |
| 额定输出转速/Rated output speed | rpm | | 300 | |
| 角度传动精度/Angular transmission accuracy | arcmin | | <1.5 | |
| 反复定位精度/Reset positioning accuracy | arcsec | | <15 | |
| 齿隙/Backlash | arcmin | <1 | <2 | <2 |
| 允许轴向负载/Allowable axial load | N | | 1000 | |
| 允许惯性力矩/Allowable moment of inertia | N·m | | 25 | |
| 旋转平台平行度/Parallelism of rotation platform | mm | | 0.02 | |
| 旋转平台同心度/Concentricity of rotation platform | mm | | 0.012 | |
| 输出端面跳动/Output end face runout | mm | | 0.012 | |
| 噪音/Noise | dB | 65 | 60 | 65 |
| 使用寿命/Service life | h | | 20000 | |
| 防护等级/Protection level | IP | | 40 | |
| 重量/Weight | Kg | 2.2 | 3.5 | 3.5 |

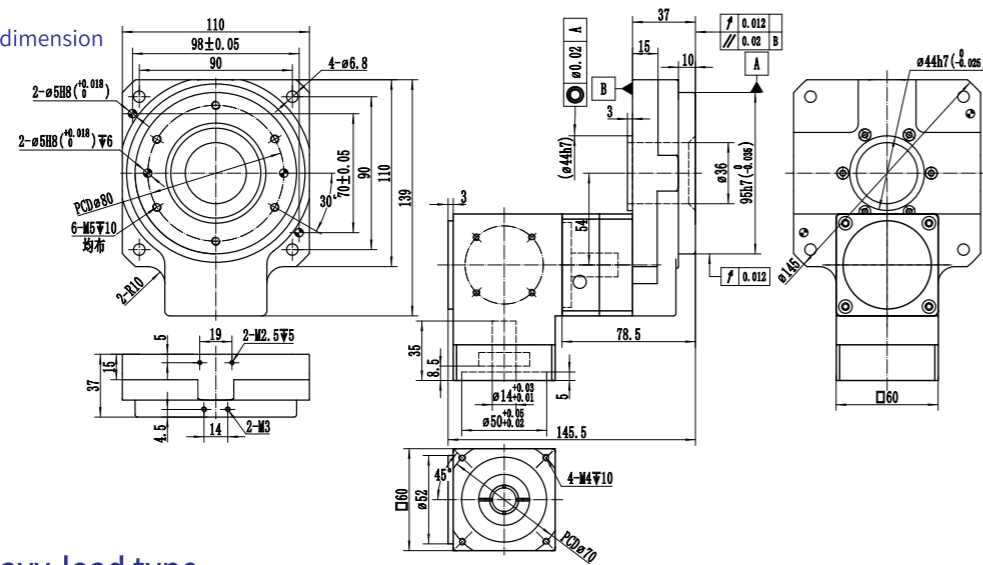
10比外形图 / Ratio 10 dimension



组合行星外形图
/ Combined gearbox dimension



组合转角外形图
Combined right-angle gearbox dimension

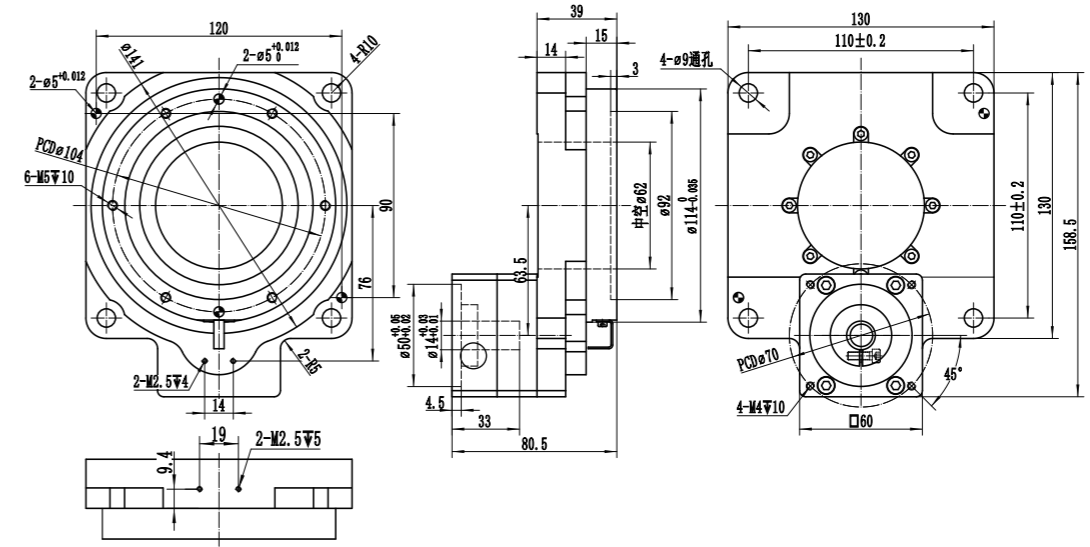


WTN130性能参数/Heavy-load type

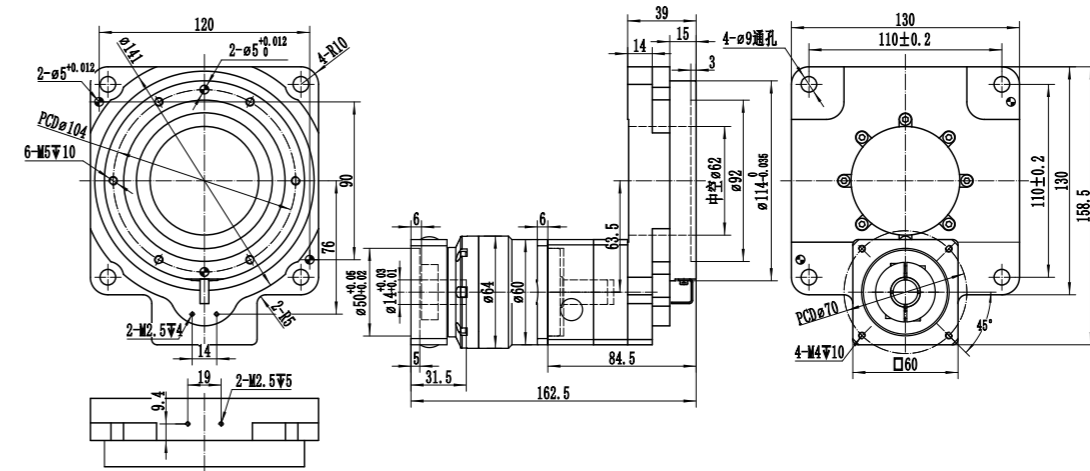
WTN130系列性能表/WTN130 series Performance data sheet

| 特性/Specifications | 单位/unit | WTN130 | WTN130+WVRB060 | WTN130+WRS060 |
|--|-------------------|-------------------------------|--|---------------------------------|
| 搭载马达型号/Applicable motor models | | 57型步进马达 57 stepper motor | 200W~400W伺服电机 200W-400W servo motor | 电机轴径≤14 motor shaft diameter |
| 支撑旋转平台轴承/Bearing type | | 交叉滚子轴承/crossed roller bearing | | |
| 减速比/Ratio | | 10 18 | 30 40 50 70 100 | 10 30 50 |
| 转动惯量/Rotational inertia | Kg.m ² | 8155x10 ⁻⁶ | | |
| 额定输出扭矩/Rated output torque | N·m | 32 20 | 32 | 32 |
| 额定输出转速/Rated output speed | rpm | 200 | | |
| 角度传动精度/Angular transmission accuracy | arcmin | <1.5 | | |
| 反复定位精度/Reset positioning accuracy | arcsec | <15 | | |
| 齿隙/Backlash | arcmin | <1 | <2 | <2 |
| 允许轴向负载/Allowable axial load | N | 2000 | | |
| 允许惯性力矩/Allowable moment of inertia | N·m | 50 | | |
| 旋转平台平行度/Parallelism of rotation platform | mm | 0.02 | | |
| 旋转平台同心度/Concentricity of rotation platform | mm | 0.012 | | |
| 输出端面跳动/Output end face runout | mm | 0.012 | | |
| 噪音/Noise | dB | 65 | 60 | 65 |
| 使用寿命/Service life | h | 20000 | | |
| 防护等级/Protection level | IP | 40 | | |
| 重量/Weight | Kg | 2.8 | 4.3 | 4.1 |

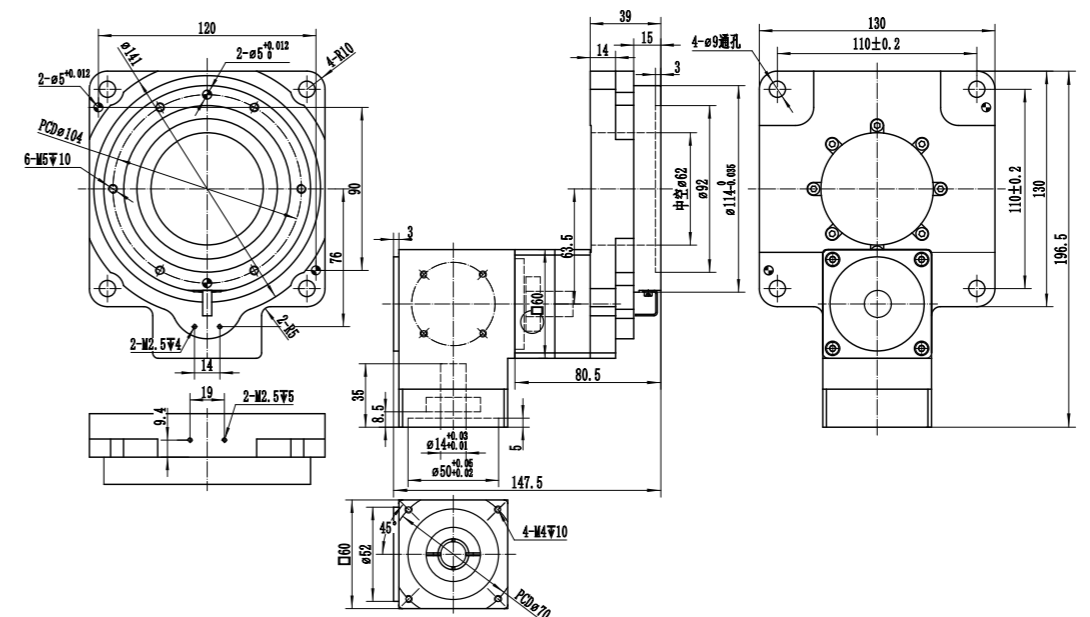
10/18比外形图 / Ratio 10/18 dimension



组合行星外形图 / Combined gearbox dimension



组合转角外形图 Combined right-angle gearbox dimension

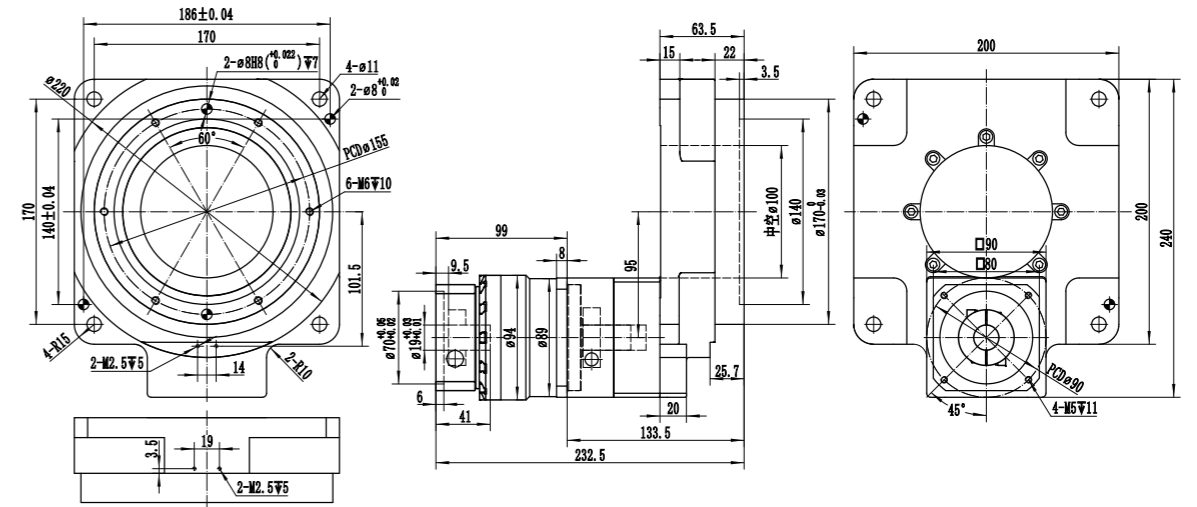


WTN200性能参数/Heavy-load type

WTN200系列性能表/WTN200 series Performance data sheet

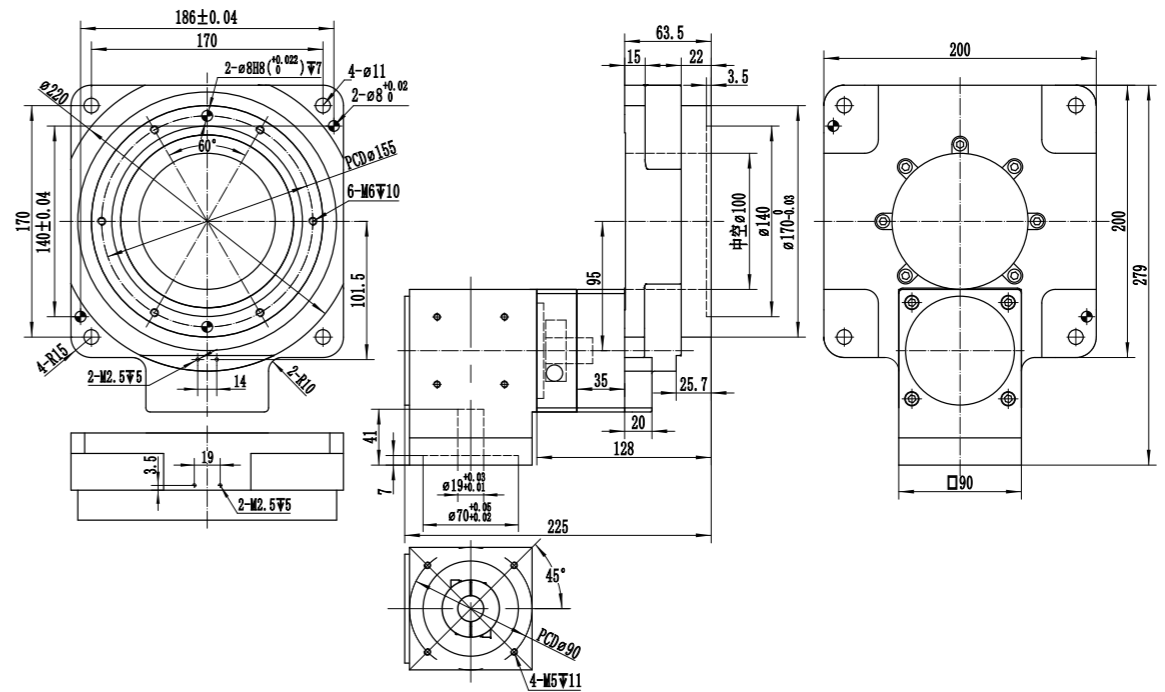
| 特性/Specifications | 单位/unit | WTN200 | WTN200+WVRB090 | WTN200+WRS090 |
|--|-------------------|-------------------------------|------------------------------|---------------------------------|
| 搭载马达型号/Applicable motor models | | 86型步进马达 86 stepper motor | 750W伺服电机 750W servo motor | 电机轴径≤19 motor shaft diameter |
| 支撑旋转平台轴承/Bearing type | | 交叉滚子轴承/crossed roller bearing | | |
| 减速比/Ratio | | 10 18 | 30 40 50 70 100 | 10 30 50 |
| 转动惯量/Rotational inertia | Kg.m ² | 36122x10 ⁻⁶ | | |
| 额定输出扭矩/Rated output torque | N·m | 70 70 | 70 | 70 |
| 额定输出转速/Rated output speed | rpm | 200 | | |
| 角度传动精度/Angular transmission accuracy | arcmin | <1 | | |
| 反复定位精度/Reset positioning accuracy | arcsec | <10 | | |
| 齿隙/Backlash | arcmin | <1 | <2 | <2 |
| 允许轴向负载/Allowable axial load | N | 4000 | | |
| 允许惯性力矩/Allowable moment of inertia | N·m | 100 | | |
| 旋转平台平行度/Parallelism of rotation platform | mm | 0.02 | | |
| 旋转平台同心度/Concentricity of rotation platform | mm | 0.012 | | |
| 输出端面跳动/Output end face runout | mm | 0.012 | | |
| 噪音/Noise | dB | 67 | 62 | 67 |
| 使用寿命/Service life | h | 20000 | | |
| 防护等级/Protection level | IP | 40 | | |
| 重量/Weight | Kg | 9.6 | 13.3 | 13.7 |

组合行星外形图 / Combined gearbox dimension

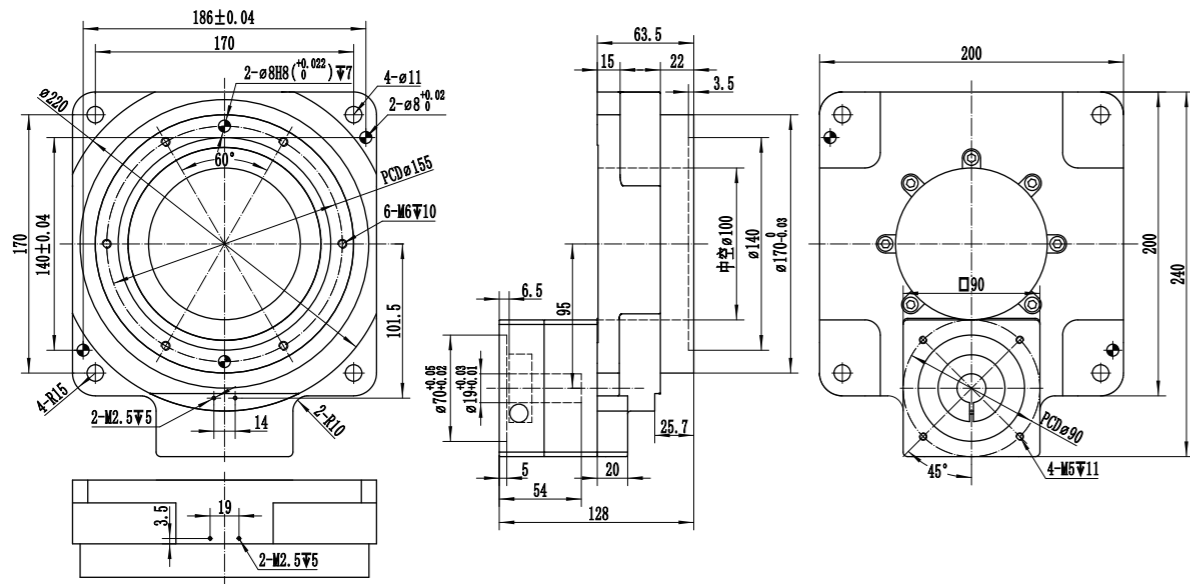


组合转角外形图

Combined right-angle gearbox dimension



10/18比外形图 / Ratio 10/18 dimension

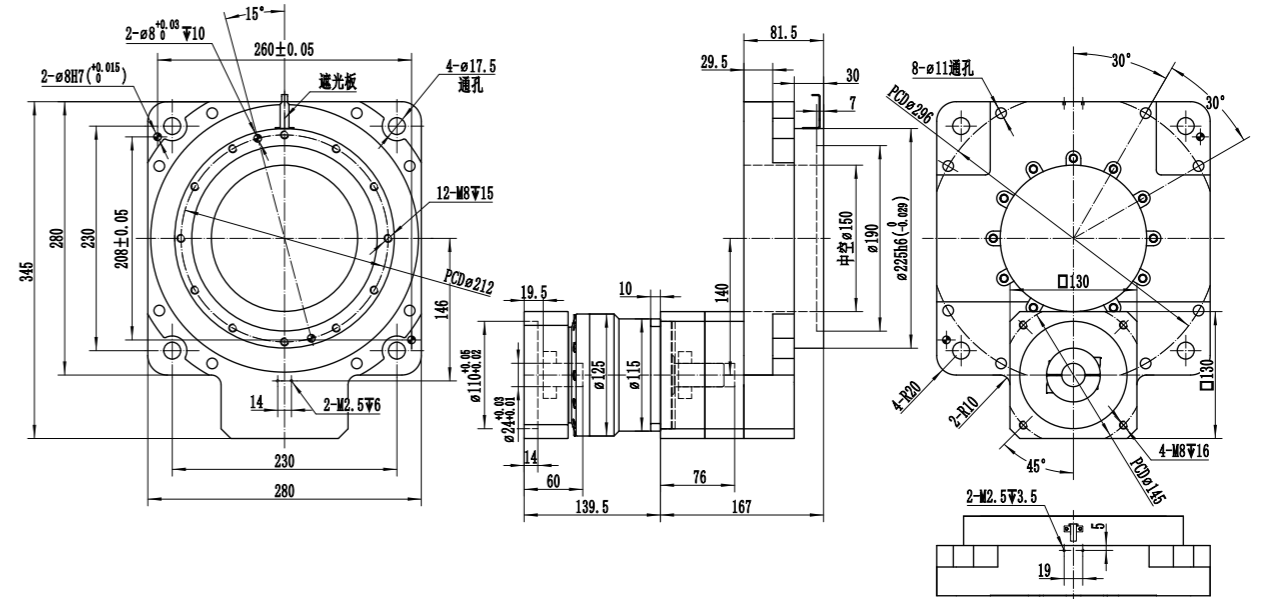


WTN280性能参数/Heavy-load type

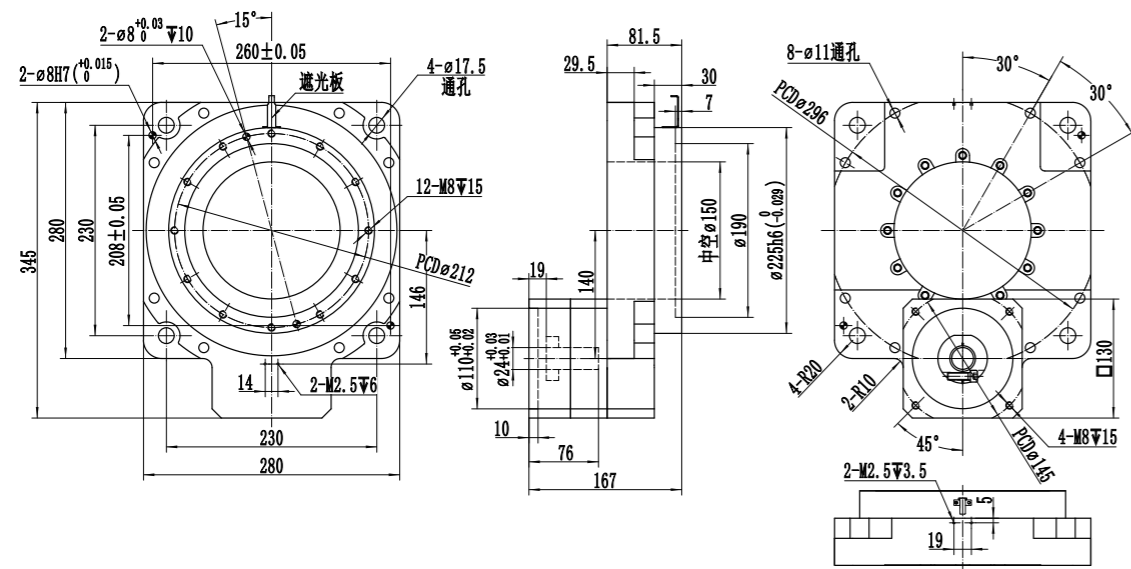
WTN280系列性能表/WTN280 series Performance data sheet

| 特性/Specifications | 单位/unit | WTN280 | WTN280+WVRB115 |
|--|-------------------|---------------------------------------|---|
| 搭载马达型号/Applicable motor models | | 110/130型步进马达 110/130 stepper motor | 1000W~3000W伺服电机 1000W~3000W servo motor 电机轴径≤24 motor shaft diameter |
| 支撑旋转平台轴承/Bearing type | | | 交叉滚子轴承/crossed roller bearing |
| 减速比/Ratio | | 10 | 30 40 50 70 100 |
| 转动惯量/Rotational inertia | Kg.m ² | | 14600x10-5 |
| 额定输出扭矩/Rated output torque | N·m | 180 | 180 |
| 急停扭矩/Emergency stop Torque T2NOT | rpm | | 3倍额定输出扭矩/Rated output torque |
| 额定输出转速/Rated output speed | rpm | | 200 |
| 角度传动精度/Angular transmission accuracy | arcmin | | <1 |
| 反复定位精度/Reset positioning accuracy | arcsec | | <10 |
| 齿隙/Backlash | arcmin | <1 | <2 |
| 允许轴向负载/Allowable axial load | N | | 7000 |
| 允许惯性力矩/Allowable moment of inertia | N·m | | 200 |
| 旋转平台平行度/Parallelism of rotation platform | mm | | 0.030 |
| 旋转平台同心度/Concentricity of rotation platform | mm | | 0.015 |
| 输出端面跳动/Output end face runout | mm | | 0.015 |
| 噪音/Noise | dB | 71 | 65 |
| 使用寿命/Service life | h | | 20000 |
| 防护等级/Protection level | IP | | 40 |
| 重量/Weight | Kg | 18 | 25.8 |

组合行星外形图 / Combined gearbox dimension



10比外形图 / Ratio 10 dimension

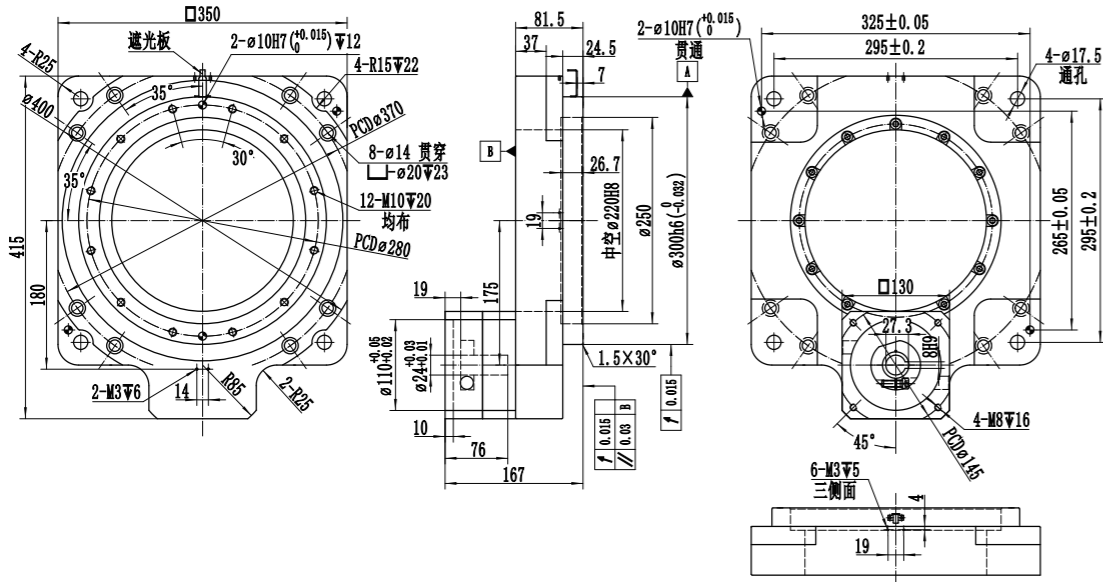


WTN350性能参数/Heavy-load type

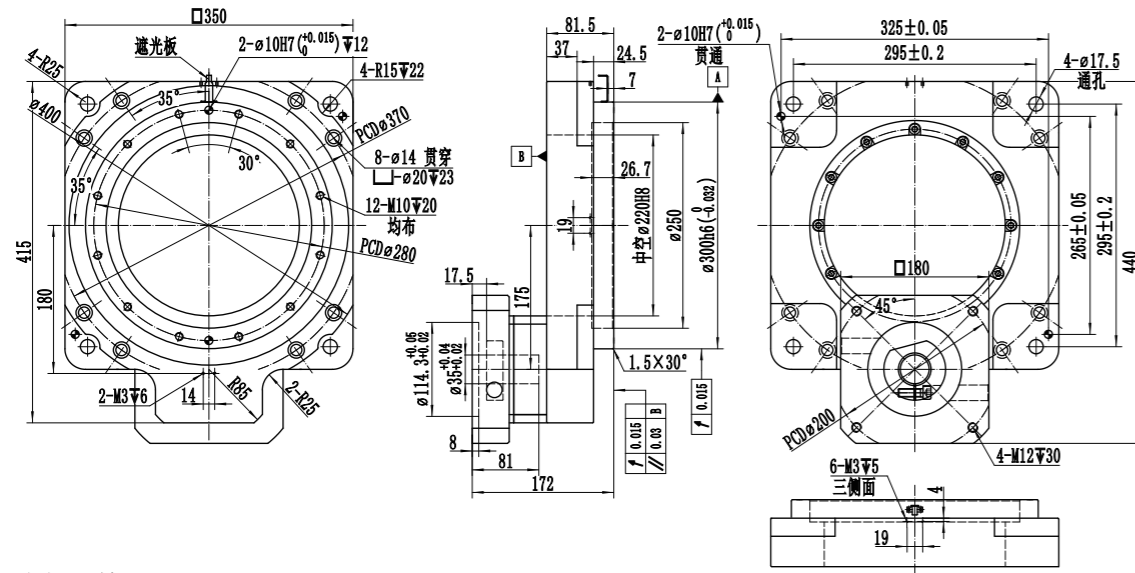
WTN350系列性能表/WTN350 series Performance data sheet

| 特性/Specifications | 单位/unit | WTN350 | WTN350+WVRB115 |
|--|-------------------|-------------------------------|---|
| 搭载马达型号/Applicable motor models | | 130型步进马达 130 stepper motor | 1000W~4400W伺服电机 1000W~3000W servo motor 电机轴径≤35 motor shaft diameter |
| 支撑旋转平台轴承/Bearing type | | | 交叉滚子轴承/crossed roller bearing |
| 减速比/Ratio | | 10 18 | 30 40 50 70 100 |
| 转动惯量/Rotational inertia | Kg.m ² | | 25500X10-5 |
| 额定输出扭矩/Rated output torque | N·m | 320 260 | 320 |
| 急停扭矩/Emergency stop Torque T2NOT | rpm | | 3倍额定输出扭矩/Rated output torque |
| 额定输出转速/Rated output speed | rpm | | 150 |
| 角度传动精度/Angular transmission accuracy | arcmin | | <1 |
| 反复定位精度/Reset positioning accuracy | arcsec | | <10 |
| 齿隙/Backlash | arcmin | <1 | <1.5 |
| 允许轴向负载/Allowable axial load | N | | 9000 |
| 允许惯性力矩/Allowable moment of inertia | N·m | | 300 |
| 旋转平台平行度/Parallelism of rotation platform | mm | | 0.03 |
| 旋转平台同心度/Concentricity of rotation platform | mm | | 0.015 |
| 输出端面跳动/Output end face runout | mm | | 0.015 |
| 噪音/Noise | dB | 73 | 66 |
| 使用寿命/Service life | h | | 20000 |
| 防护等级/Protection level | IP | | 40 |
| 重量/Weight | Kg | 25.5 | 33.3 |

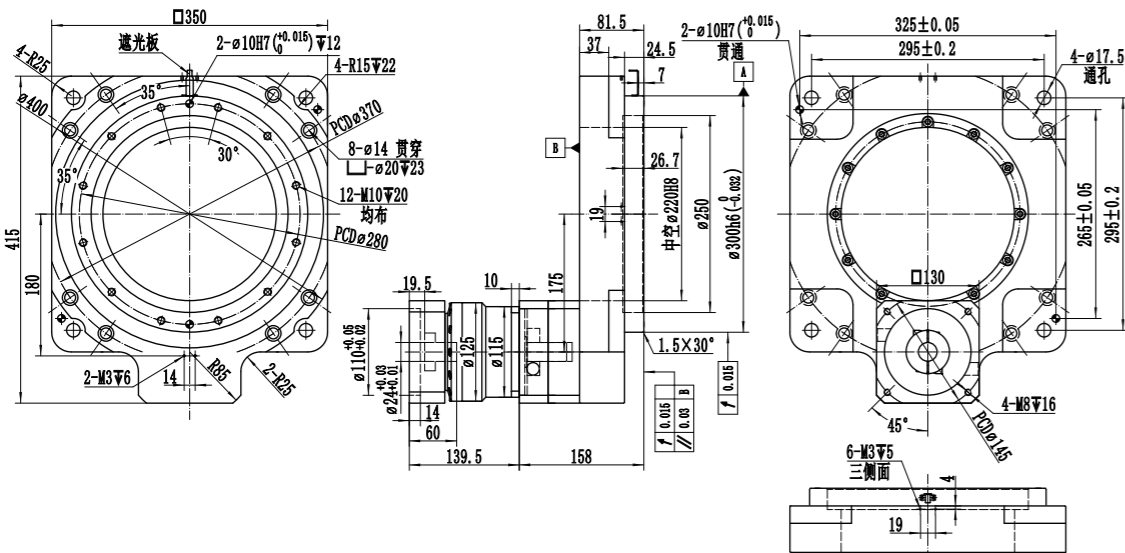
10/18比电机轴24外形图 Ratio 10/18 dimension(motor shaft OD 24mm)



10/18比电机轴35外形图 Ratio 10/18 dimension(motor shaft OD 35mm)



组合行星外形图 / Combined gearbox dimension

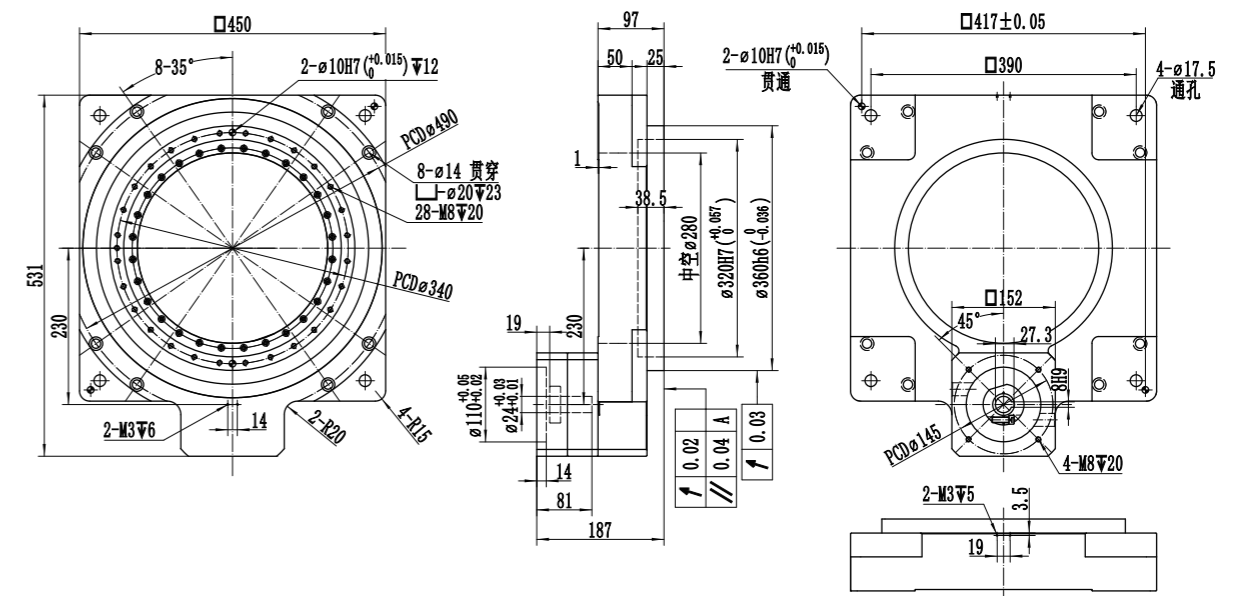


WTN450性能参数/Heavy-load type

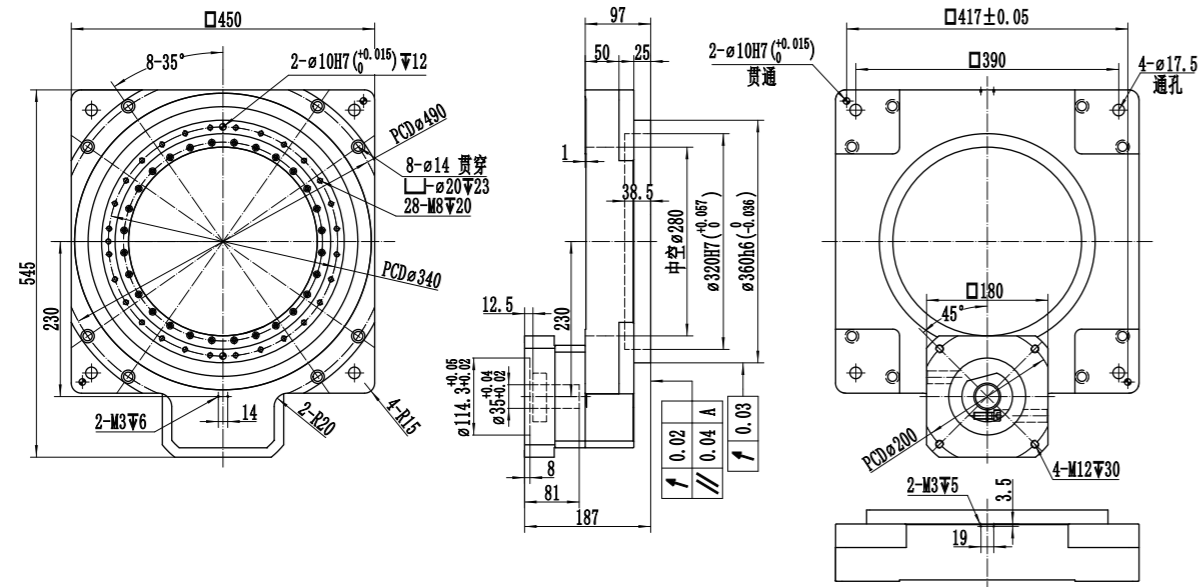
WTN450系列性能表/WTN450 series Performance data sheet

| 特性/Specifications | 单位/unit | WTN450 | WTN450+WVRB115 |
|--|-------------------|-------------------------------|---|
| 搭载马达型号/Applicable motor models | | 130型步进马达 130 stepper motor | 1000W~5500W伺服电机 1000W-5500W servo motor 电机轴径≤38 motor shaft diameter |
| 支撑旋转平台轴承/Bearing type | | 交叉滚子轴承/crossed roller bearing | |
| 减速比/Ratio | | 10 | 30 40 50 70 100 |
| 转动惯量/Rotational inertia | Kg.m ² | 80500X10-5 | |
| 额定输出扭矩/Rated output torque | N.m | 400 | 400 |
| 急停扭矩/Emergency stop Torque T2NOT | rpm | 3倍额定输出扭矩/Rated output torque | |
| 额定输出转速/Rated output speed | rpm | 150 | |
| 角度传动精度/Angular transmission accuracy | arcmin | <1 | |
| 反复定位精度/Reset positioning accuracy | arcsec | <10 | |
| 齿隙/Backlash | arcmin | <1 | <1.5 |
| 允许轴向负载/Allowable axial load | N | 11000 | |
| 允许惯性力矩/Allowable moment of inertia | N.m | 400 | |
| 旋转平台平行度/Parallelism of rotation platform | mm | 0.040 | |
| 旋转平台同心度/Concentricity of rotation platform | mm | 0.02 | |
| 输出端面跳动/Output end face runout | mm | 0.02 | |
| 噪音/Noise | dB | 75 | 66 |
| 使用寿命/Service life | h | 20000 | |
| 防护等级/Protection level | IP | 40 | |
| 重量/Weight | Kg | 49 | 56.8 |

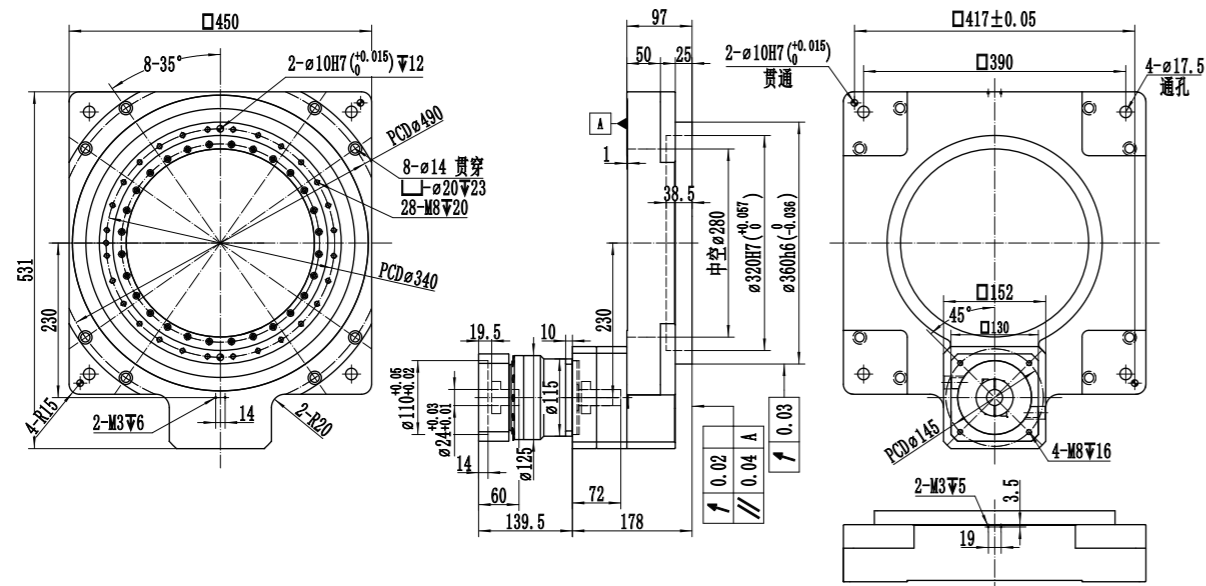
电机轴24外形图 / Dimension(motor shaft OD 24mm)



电机轴35外形图 / Dimension(motor shaft OD 35mm)



组合行星外形图 / Combined gearbox dimension



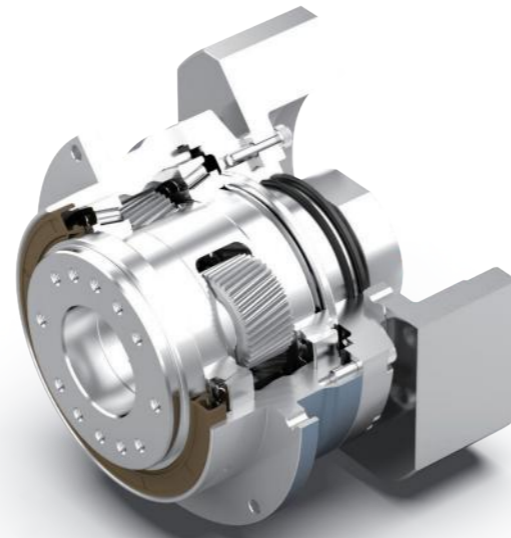
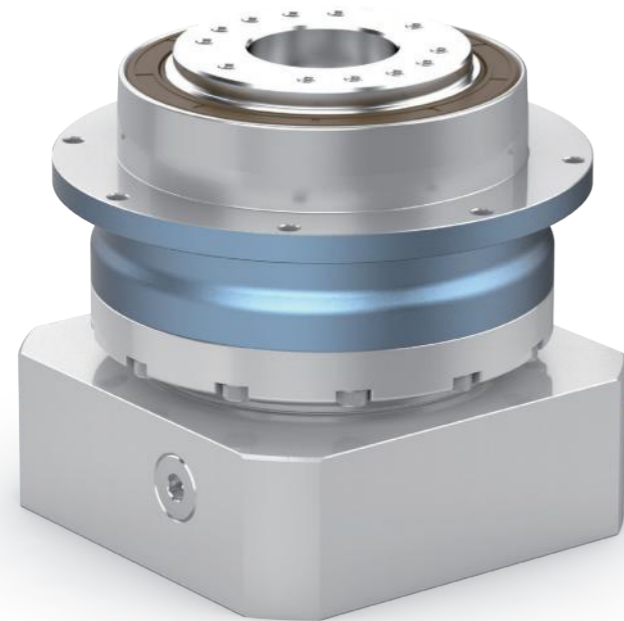
WTH Series planetary gearbox 系列行星减速机

FEATURES

产品特点

- » 高精度, 尺寸短, 密封性好
- » 安装尺寸通用性高
- » 显著提升整体刚性、耐振性、任意方向的承载能力
- » 内齿轮增加特殊工艺, 确保整个寿命周期内, 精度保持更优
- » 输出轴承采用双支撑结构, 跨距长, 倾覆力矩能力更优
- » 相比市场同型号, 总长进一步缩短, 功率密度更高

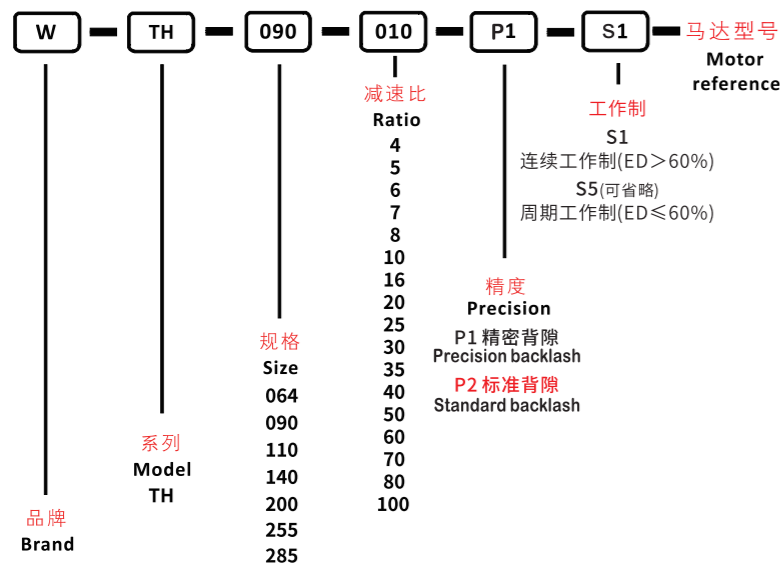
- » High precision, compact dimensions, excellent sealing performance.
- » High universality in installation dimensions.
- » Significantly enhances overall rigidity, vibration resistance, and load-bearing capacity in any direction.
- » Special manufacturing processes for annular gear to ensure superior accuracy throughout its entire lifespan.
- » The output bearings adopt a double-support structure, leads to a longer span and superior overturning torque capacity.
- » Compared to similar models in the market, its total length is further reduced, resulting in higher power density.



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
- 入力方式和入力转速
- 马达厂牌型号或法兰及马达轴尺寸
- Type, model and torque
- Ratio or output speed
- Working conditions and connection methods
- Quantity and installed machine name
- Input mode and input speed
- Motor brand model or flange and motor shaft size

WTH064-1级

| 规格/Specification | 单位/Unit | WTH064-1级/1-Stage | | | | | |
|--|-----------|---|------|------|------|------|------|
| | | 4 | 5 | 6 | 7 | 8 | 10 |
| 减速比/Ratio | | | | | | | |
| 额定输出扭矩/Rated Output Torque T _{2N} | Nm | 55 | 60 | 55 | 50 | 40 | 35 |
| 急停扭矩/Emergency stop Torque T _{2NOT} | Nm | 3倍额定输出力矩(允许1000次)/3 Times T _{2N} | | | | | |
| 额定输入转速/Rated Input Speed n _{1N} ^(a) | rpm | 3300 | 3300 | 3300 | 4000 | 4000 | 4000 |
| 最大输入转速/Max Input Speed n _{1B} | rpm | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 |
| 空载力矩/No Load Running Torque (n ₁ =3000rpm, 20°C, 运转2min内) | Nm | 0.55 | 0.45 | 0.45 | 0.33 | 0.27 | 0.27 |
| 最大背隙/Max Backlash | arcmin | P0≤1.5 / P1≤3 / P2≤5 | | | | | |
| 扭转刚性/Torsional rigidity | Nm/arcmin | 13 | | | | | |
| 最大侧倾力矩/Max Tilting Moment M _{2k} | Nm | 130 | | | | | |
| 容许径向力/Allowable Radial Force F _{2R} ^(b) | N | 2500 | | | | | |
| 容许轴向力/Allowable Axle Force F _{2A} ^(b) | N | 2000 | | | | | |
| 使用寿命/Service Life | h | 20000 | | | | | |
| 效率/Efficient | % | ≥97 | | | | | |
| 使用环境温度/Use of temperature | °C | -20°C~+40°C | | | | | |
| 重量/Weight | kg | 1.5 | | | | | |
| 防护等级/Protection class | | IP65 | | | | | |
| 润滑/Lubrication ^(c) | | 全合成润滑油/Synthetic Lubricating Oil | | | | | |
| 噪音/Noise | dB(A) | ≤58 | | | | | |
| 转动惯量/Rotational inertia J ₁ | ≤14 | 0.22 | 0.2 | 0.18 | 0.18 | 0.18 | 0.18 |
| | ≤19 | 0.55 | 0.5 | 0.45 | 0.45 | 0.45 | 0.45 |

(a)环境温度超过20°C时, 建议适当降低转速使用/When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

(b)作用于输出轴中心点/Applied to the center point of the output shaft.

(c)要求改为润滑脂时, 不适合S1连续工作制, 请与我们联系/If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

WTH064-2级

| 规格/Specification | | WTH064-2级/2-Stage | | | | | | | | | | | |
|--|-----------|---|------|------|------|------|------|------|------|------|------|------|------|
| 减速比/Ratio | 单位/Unit | 16 | 20 | 25 | 30 | 35 | 40 | 50 | 60 | 70 | 80 | 100 | |
| 额定输出扭矩/Rated Output Torque T _{2N} | Nm | 55 | 55 | 60 | 55 | 50 | 55 | 60 | 55 | 50 | 40 | 35 | |
| 急停扭矩/Emergency stop Torque T _{2NOT} | Nm | 3倍额定输出力矩(允许1000次)/3 Times T _{2N} | | | | | | | | | | | |
| 额定输入转速/Rated Input Speed n _{1N} ^(a) | rpm | 3500 | 3500 | 3500 | 3500 | 3500 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | |
| 最大输入转速/Max Input Speed n _{1B} | rpm | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | |
| 空载力矩/No Load Running Torque (n ₁ =3000rpm, 20°C, 运转2min内) | Nm | 0.45 | 0.32 | 0.32 | 0.32 | 0.32 | 0.2 | 0.2 | 0.2 | 0.2 | 0.16 | 0.16 | |
| 最大背隙/Max Backlash | arcmin | P0≤3 / P1≤5 / P2≤8 | | | | | | | | | | | |
| 扭转刚性/Torsional rigidity | Nm/arcmin | 13 | | | | | | | | | | | |
| 最大侧倾力矩/Max Tilting Moment M _{2k} | Nm | 130 | | | | | | | | | | | |
| 容许径向力/Allowable Radial Force F _{2R} ^(b) | N | 2500 | | | | | | | | | | | |
| 容许轴向力/Allowable Axle Force F _{2A} ^(b) | N | 2000 | | | | | | | | | | | |
| 使用寿命/Service Life | h | 20000 | | | | | | | | | | | |
| 效率/Efficient | % | ≥95 | | | | | | | | | | | |
| 使用环境温度/Use of temperature | °C | -20°C~+40°C | | | | | | | | | | | |
| 重量/Weight | kg | 2.1 | | | | | | | | | | | |
| 防护等级/Protection class | | IP65 | | | | | | | | | | | |
| 润滑/Lubrication ^(c) | | 全合成润滑油/Synthetic Lubricating Oil | | | | | | | | | | | |
| 噪音/Noise | dB(A) | ≤58 | | | | | | | | | | | |
| 转动惯量/Rotational inertia J ₁ | ≤8 | kg.cm ² | 0.12 | 0.1 | 0.1 | 0.1 | 0.1 | 0.08 | 0.08 | 0.08 | 0.08 | 0.08 | 0.08 |
| | ≤14 | | 0.22 | 0.17 | 0.17 | 0.17 | 0.17 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 |

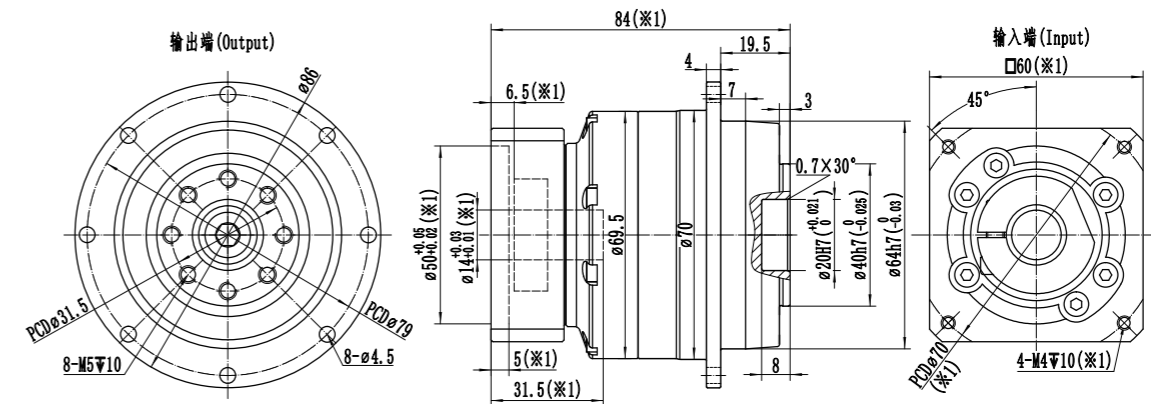
(a)环境温度超过20°C时, 建议适当降低转速使用/When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

(b)作用于输出轴中心点/Applied to the center point of the output shaft.

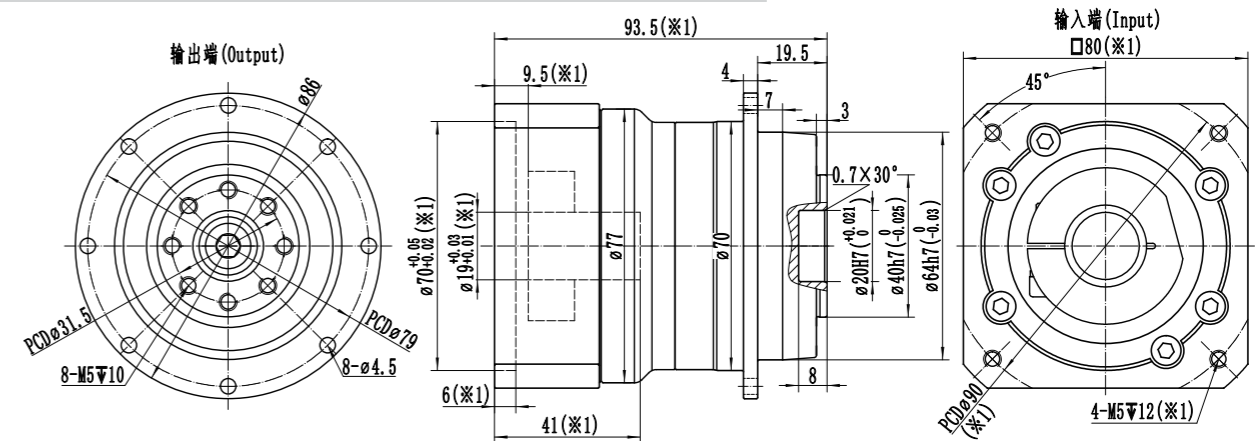
(c)要求改为润滑脂时, 不适合S1连续工作制, 请与我们联系/If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

WTH064-L1 最大14(※2)夹紧孔直径/Max.14(※2)clamping hub's bore diameter

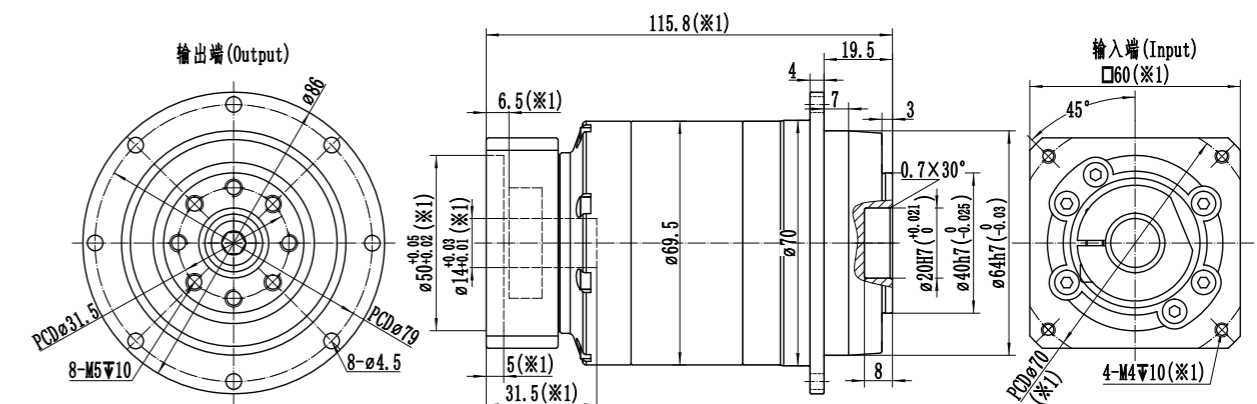
电机轴直径/motor shaft diameter (mm)



WTH064-L1 最大19(※2)夹紧孔直径/Max.19(※2)clamping hub's bore diameter



WTH064-L2 最大14(※2)夹紧孔直径/Max.14(※2)clamping hub's bore diameter



※1: 尺寸会随电机尺寸而变化;

※2: 电机轴尺寸偏小时, 可能会使用轴套, 轴套最小壁厚1mm;

※减速机夹紧孔需要开键槽时, 请提前备注;

※注意安装前检查电机轴径和减速机夹紧孔径;

※请按要求安装电机

※1: Dimension will vary with the motor size;

※2: If the motor shaft diameter is undersized, a bushing with a minimum thickness of 1 mm may be used;

※ If Keyway is needed for the clamping bore, please notify in advance;

※ Pay attention to the motor shaft diameter and reducer input clamping diameter before installation;

※ Please install the motor as requested.

WTH090-1级

| 规格/Specification | | WTH090-1级/1-Stage | | | | | |
|--|-----------|---|------|------|------|------|------|
| 减速比/Ratio | 单位/Unit | 4 | 5 | 6 | 7 | 8 | 10 |
| 额定输出扭矩/Rated Output Torque T _{2N} | Nm | 150 | 160 | 150 | 140 | 100 | 90 |
| 急停扭矩/Emergency stop Torque T _{2NOT} | Nm | 3倍额定输出力矩(允许1000次)/3 Times T _{2N} | | | | | |
| 额定输入转速/Rated Input Speed n _{1N} ^(a) | rpm | 3300 | 3300 | 3300 | 4000 | 4000 | 4000 |
| 最大输入转速/Max Input Speed n _{1B} | rpm | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 |
| 空载力矩/No Load Running Torque (n ₁ =3000rpm,20°C,运转2min内) | Nm | 1.1 | 0.75 | 0.75 | 0.6 | 0.5 | 0.5 |
| 最大背隙/Max Backlash | arcmin | P0≤1.5 / P1≤3 / P2≤5 | | | | | |
| 扭转刚性/Torsional rigidity | Nm/arcmin | 31 | | | | | |
| 最大侧倾力矩/Max Tilting Moment M _{2K} | Nm | 280 | | | | | |
| 容许径向力/Allowable Radial Force F _{2R} ^(b) | N | 4800 | | | | | |
| 容许轴向力/Allowable Axle Force F _{2A} ^(b) | N | 3500 | | | | | |
| 使用寿命/Service Life | h | 20000 | | | | | |
| 效率/Efficient | % | ≥97 | | | | | |
| 使用环境温度/Use of temperature | °C | -20°C~+40°C | | | | | |
| 重量/Weight | kg | 3.8 | | | | | |
| 防护等级/Protection class | | IP65 | | | | | |
| 润滑/Lubrication ^(c) | | 全合成润滑油/Synthetic Lubricating Oil | | | | | |
| 噪音/Noise | dB(A) | ≤60 | | | | | |
| 转动惯量/Rotational inertia J ₁ | ≤19 | 0.85 | 0.75 | 0.65 | 0.65 | 0.65 | 0.65 |
| | ≤24 | 2.1 | 2 | 1.9 | 1.9 | 1.9 | 1.9 |

(a)环境温度超过20°C时,建议适当降低转速使用/When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

(b)作用于输出轴中心点/Applied to the center point of the output shaft.

(c)要求改为润滑脂时,不适合S1连续工作制,请与我们联系/If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

WTH090-2级

| 规格/Specification | | WTH090-2级/2-Stage | | | | | | | | | | |
|--|-----------|---|------|------|------|------|------|------|------|------|------|------|
| 减速比/Ratio | 单位/Unit | 16 | 20 | 25 | 30 | 35 | 40 | 50 | 60 | 70 | 80 | 100 |
| 额定输出扭矩/Rated Output Torque T _{2N} | Nm | 150 | 150 | 160 | 150 | 140 | 150 | 160 | 150 | 140 | 100 | 90 |
| 急停扭矩/Emergency stop Torque T _{2NOT} | Nm | 3倍额定输出力矩(允许1000次)/3 Times T _{2N} | | | | | | | | | | |
| 额定输入转速/Rated Input Speed n _{1N} ^(a) | rpm | 3500 | 3500 | 3500 | 3500 | 3500 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 |
| 最大输入转速/Max Input Speed n _{1B} | rpm | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 |
| 空载力矩/No Load Running Torque (n ₁ =3000rpm,20°C,运转2min内) | Nm | 0.7 | 0.5 | 0.5 | 0.5 | 0.5 | 0.35 | 0.35 | 0.35 | 0.35 | 0.3 | 0.3 |
| 最大背隙/Max Backlash | arcmin | P0≤3 / P1≤5 / P2≤8 | | | | | | | | | | |
| 扭转刚性/Torsional rigidity | Nm/arcmin | 31 | | | | | | | | | | |
| 最大侧倾力矩/Max Tilting Moment M _{2K} | Nm | 280 | | | | | | | | | | |
| 容许径向力/Allowable Radial Force F _{2R} ^(b) | N | 4800 | | | | | | | | | | |
| 容许轴向力/Allowable Axle Force F _{2A} ^(b) | N | 3500 | | | | | | | | | | |
| 使用寿命/Service Life | h | 20000 | | | | | | | | | | |
| 效率/Efficient | % | ≥95 | | | | | | | | | | |
| 使用环境温度/Use of temperature | °C | -20°C~+40°C | | | | | | | | | | |
| 重量/Weight | kg | 4.4 | | | | | | | | | | |
| 防护等级/Protection class | | IP65 | | | | | | | | | | |
| 润滑/Lubrication ^(c) | | 全合成润滑油/Synthetic Lubricating Oil | | | | | | | | | | |
| 噪音/Noise | dB(A) | ≤60 | | | | | | | | | | |
| 转动惯量/Rotational inertia J ₁ | ≤14 | 0.22 | 0.19 | 0.19 | 0.19 | 0.19 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 |
| | ≤19 | 0.7 | 0.6 | 0.6 | 0.6 | 0.6 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |

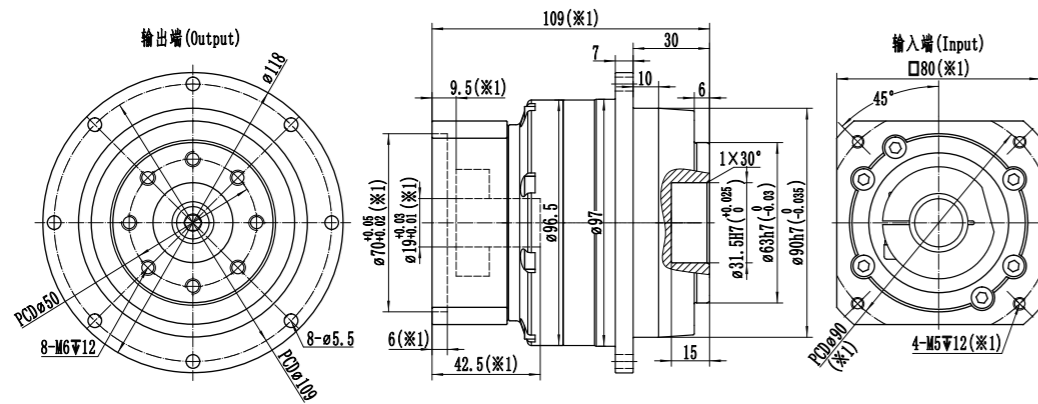
(a)环境温度超过20°C时,建议适当降低转速使用/When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

(b)作用于输出轴中心点/Applied to the center point of the output shaft.

(c)要求改为润滑脂时,不适合S1连续工作制,请与我们联系/If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

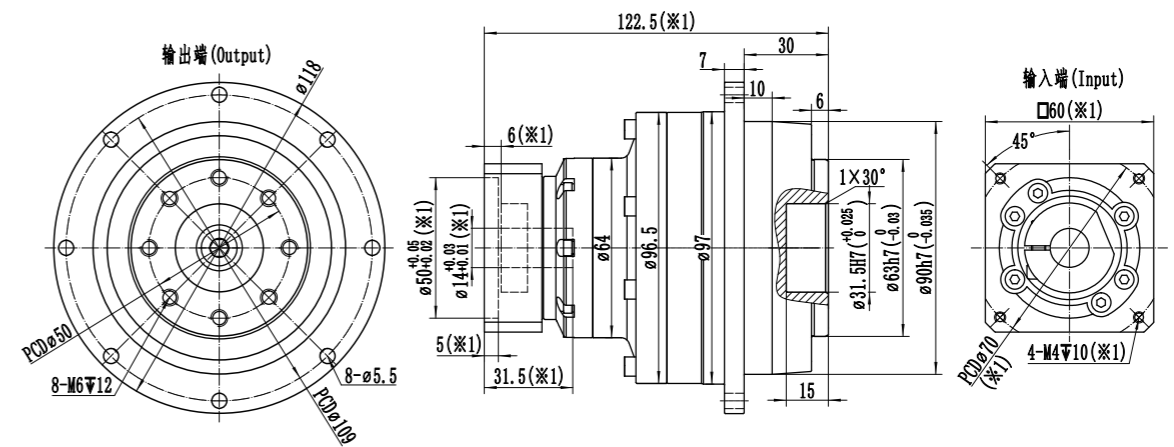
WTH090-L1 最大19(※2)夹紧孔直径 / Max.19(※2)clamping hub's bore diameter

电机轴直径/motor shaft diameter (mm)

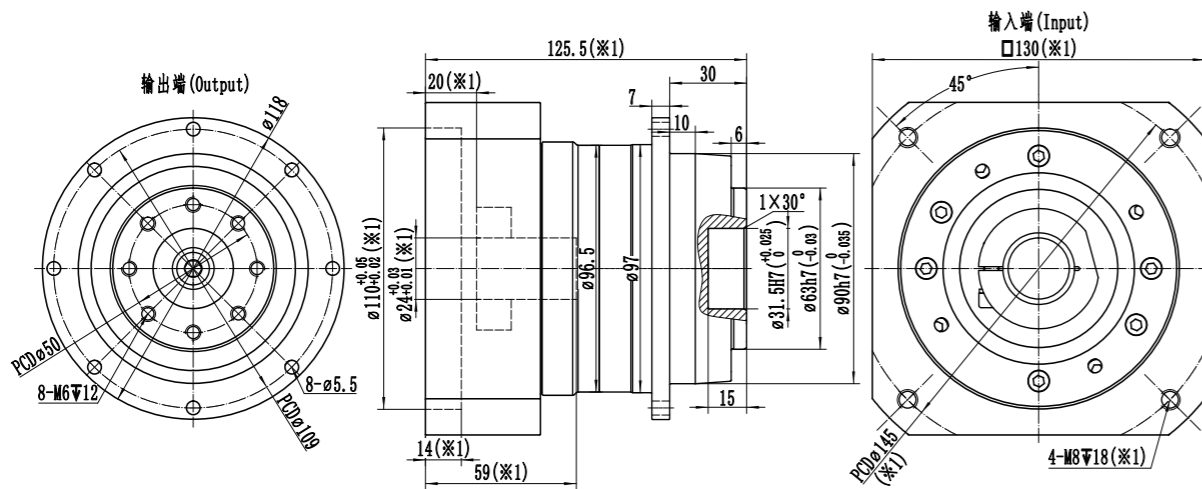


WTH090-L2 最大14(※2)夹紧孔直径 / Max.14(※2)clamping hub's bore diameter

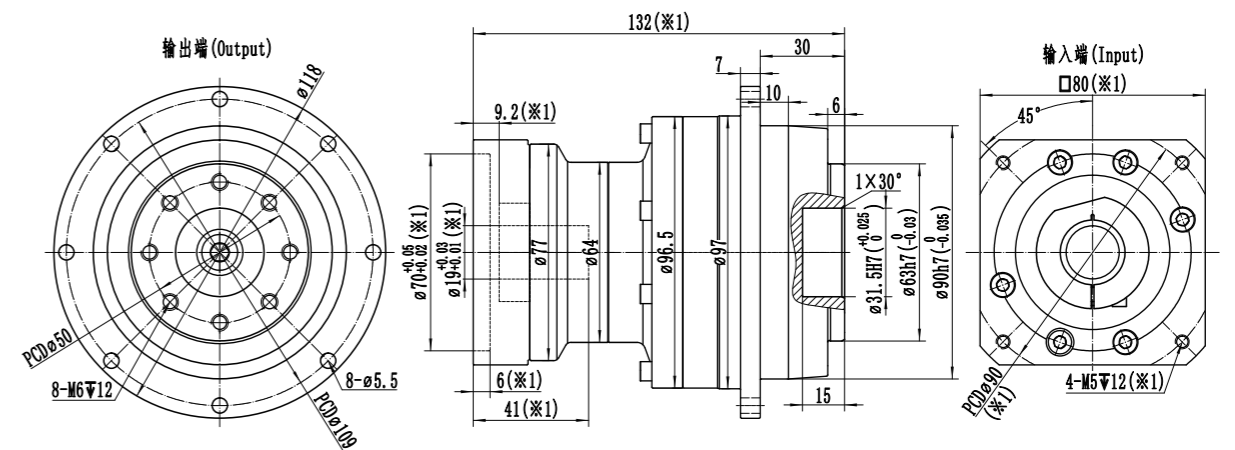
电机轴直径/motor shaft diameter (mm)



WTH090-L1 最大24(※2)夹紧孔直径 Max.24(※2)clamping hub's bore diameter



WTH090-L2 最大19(※2)夹紧孔直径 / Max.19(※2)clamping hub's bore diameter



- ※1: 尺寸会随电机尺寸而变化;
- ※2: 电机轴尺寸偏小时,可能会使用轴套,轴套最小壁厚1mm;
- ※减速机夹紧孔需要开键槽时,请提前备注;
- ※注意安装前检查电机轴径和减速机夹紧孔径;
- ※请按要求安装电机

- ※1: Dimension will vary with the motor size;
- ※2: If the motor shaft diameter is undersized, a bushing with a minimum thickness of 1 mm may be used;
- ※ If Keyway is needed for the clamping bore, please notify in advance;
- ※ Pay attention to the motor shaft diameter and reducer input clamping diameter before installation;
- ※ Please install the motor as requested.

- ※1: 尺寸会随电机尺寸而变化;
- ※2: 电机轴尺寸偏小时,可能会使用轴套,轴套最小壁厚1mm;
- ※减速机夹紧孔需要开键槽时,请提前备注;
- ※注意安装前检查电机轴径和减速机夹紧孔径;
- ※请按要求安装电机

- ※1: Dimension will vary with the motor size;
- ※2: If the motor shaft diameter is undersized, a bushing with a minimum thickness of 1 mm may be used;
- ※ If Keyway is needed for the clamping bore, please notify in advance;
- ※ Pay attention to the motor shaft diameter and reducer input clamping diameter before installation;
- ※ Please install the motor as requested.

WTH110-1级

| 规格/Specification | | WTH110-1级/1-Stage | | | | | |
|--|-----------|---|------|------|------|------|------|
| 减速比/Ratio | 单位/Unit | 4 | 5 | 6 | 7 | 8 | 10 |
| 额定输出扭矩/Rated Output Torque T _{2N} | Nm | 330 | 330 | 310 | 300 | 230 | 200 |
| 急停扭矩/Emergency stop Torque T _{2NOT} | Nm | 3倍额定输出力矩(允许1000次)/3 Times T _{2N} | | | | | |
| 额定输入转速/Rated Input Speed n _{1N} ^(a) | rpm | 2800 | 2800 | 2800 | 3300 | 3300 | 3300 |
| 最大输入转速/Max Input Speed n _{1B} | rpm | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 |
| 空载力矩/No Load Running Torque (n ₁ =3000rpm,20°C,运转2min内) | Nm | 2 | 1.5 | 1.5 | 1.3 | 1 | 1 |
| 最大背隙/Max Backlash | arcmin | P0≤1.5 / P1≤3 / P2≤5 | | | | | |
| 扭转刚性/Torsional rigidity | Nm/arcmin | 82 | | | | | |
| 最大侧倾力矩/Max Tilting Moment M _{2K} | Nm | 510 | | | | | |
| 容许径向力/Allowable Radial Force F _{2R} ^(b) | N | 7800 | | | | | |
| 容许轴向力/Allowable Axle Force F _{2A} ^(b) | N | 6000 | | | | | |
| 使用寿命/Service Life | h | 20000 | | | | | |
| 效率/Efficient | % | ≥97 | | | | | |
| 使用环境温度/Use of temperature | °C | -20°C~+40°C | | | | | |
| 重量/Weight | kg | 6.1 | | | | | |
| 防护等级/Protection class | | IP65 | | | | | |
| 润滑/Lubrication ^(c) | | 全合成润滑油/Synthetic Lubricating Oil | | | | | |
| 噪音/Noise | dB(A) | ≤63 | | | | | |
| 转动惯量/Rotational inertia J ₁ | ≤19 | 2.5 | 2 | 1.5 | 1.5 | 1.5 | 1.5 |
| | ≤24 | 3 | 2.5 | 2 | 2 | 2 | 2 |
| | ≤28 | 3.5 | 3 | 2.5 | 2.5 | 2.5 | 2.5 |
| | ≤35 | 10 | 9.5 | 9 | 9 | 9 | 9 |

(a)环境温度超过20°C时,建议适当降低转速使用/When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

(b)作用于输出轴中心点/Applied to the center point of the output shaft.

(c)要求改为润滑脂时,不适合S1连续工作制,请与我们联系/If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

WTH110-2级

| 规格/Specification | | WTH110-2级/2-Stage | | | | | | | | | | |
|--|-----------|---|------|------|------|------|------|------|------|------|------|------|
| 减速比/Ratio | 单位/Unit | 16 | 20 | 25 | 30 | 35 | 40 | 50 | 60 | 70 | 80 | 100 |
| 额定输出扭矩/Rated Output Torque T _{2N} | Nm | 330 | 330 | 330 | 310 | 300 | 330 | 330 | 310 | 300 | 230 | 200 |
| 急停扭矩/Emergency stop Torque T _{2NOT} | Nm | 3倍额定输出力矩(允许1000次)/3 Times T _{2N} | | | | | | | | | | |
| 额定输入转速/Rated Input Speed n _{1N} ^(a) | rpm | 3300 | 3300 | 3300 | 3300 | 3300 | 3800 | 3800 | 3800 | 3800 | 3800 | 3800 |
| 最大输入转速/Max Input Speed n _{1B} | rpm | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 |
| 空载力矩/No Load Running Torque (n ₁ =3000rpm,20°C,运转2min内) | Nm | 0.95 | 0.7 | 0.7 | 0.7 | 0.7 | 0.6 | 0.6 | 0.6 | 0.6 | 0.5 | 0.5 |
| 最大背隙/Max Backlash | arcmin | P0≤3 / P1≤5 / P2≤8 | | | | | | | | | | |
| 扭转刚性/Torsional rigidity | Nm/arcmin | 82 | | | | | | | | | | |
| 最大侧倾力矩/Max Tilting Moment M _{2K} | Nm | 510 | | | | | | | | | | |
| 容许径向力/Allowable Radial Force F _{2R} ^(b) | N | 7800 | | | | | | | | | | |
| 容许轴向力/Allowable Axle Force F _{2A} ^(b) | N | 6000 | | | | | | | | | | |
| 使用寿命/Service Life | h | 20000 | | | | | | | | | | |
| 效率/Efficient | % | ≥95 | | | | | | | | | | |
| 使用环境温度/Use of temperature | °C | -20°C~+40°C | | | | | | | | | | |
| 重量/Weight | kg | 6.8 | | | | | | | | | | |
| 防护等级/Protection class | | IP65 | | | | | | | | | | |
| 润滑/Lubrication ^(c) | | 全合成润滑油/Synthetic Lubricating Oil | | | | | | | | | | |
| 噪音/Noise | dB(A) | ≤61 | | | | | | | | | | |
| 转动惯量/Rotational inertia J ₁ | ≤19 | 0.85 | 0.7 | 0.7 | 0.7 | 0.7 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| | ≤24 | 2.1 | 1.9 | 1.9 | 1.9 | 1.9 | 1.85 | 1.85 | 1.85 | 1.85 | 1.85 | 1.85 |

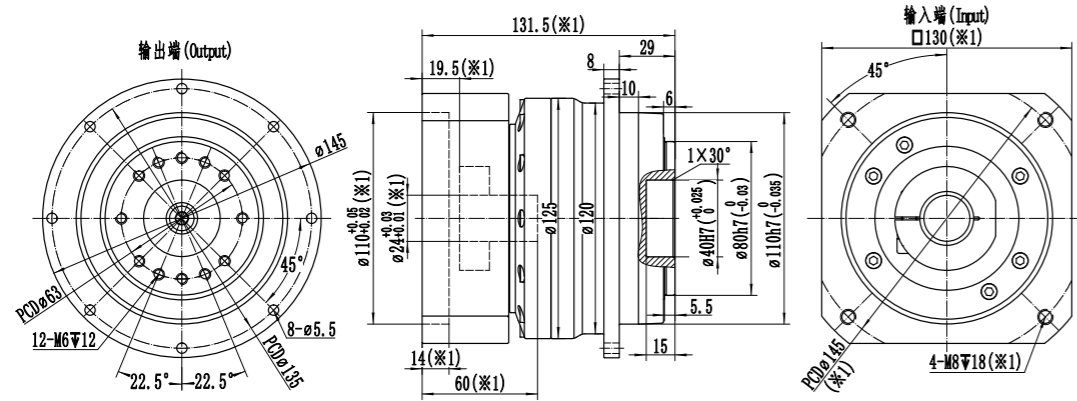
(a)环境温度超过20°C时,建议适当降低转速使用/When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

(b)作用于输出轴中心点/Applied to the center point of the output shaft.

(c)要求改为润滑脂时,不适合S1连续工作制,请与我们联系/If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

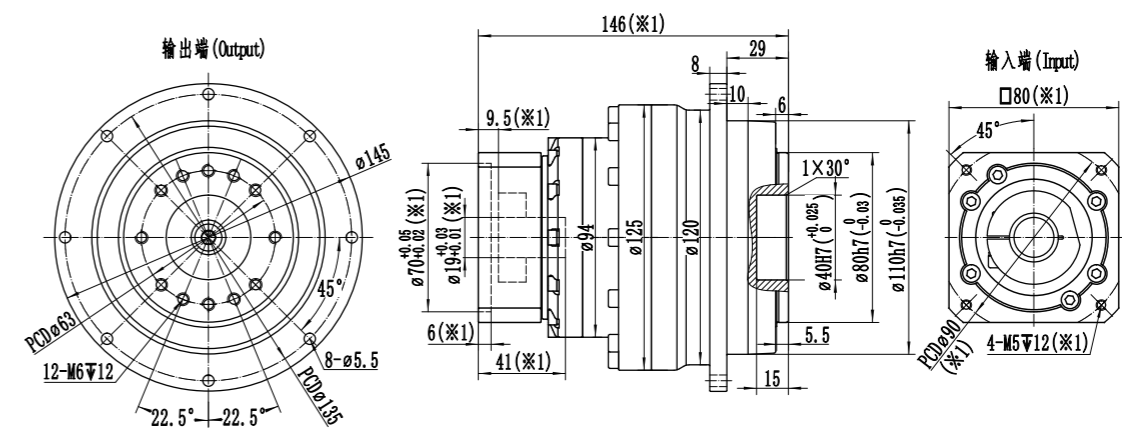
WTH110-L1 最大24(※2)夹紧孔直径 / Max.24(※2)clamping hub's bore diameter

电机轴直径/motor shaft diameter (mm)

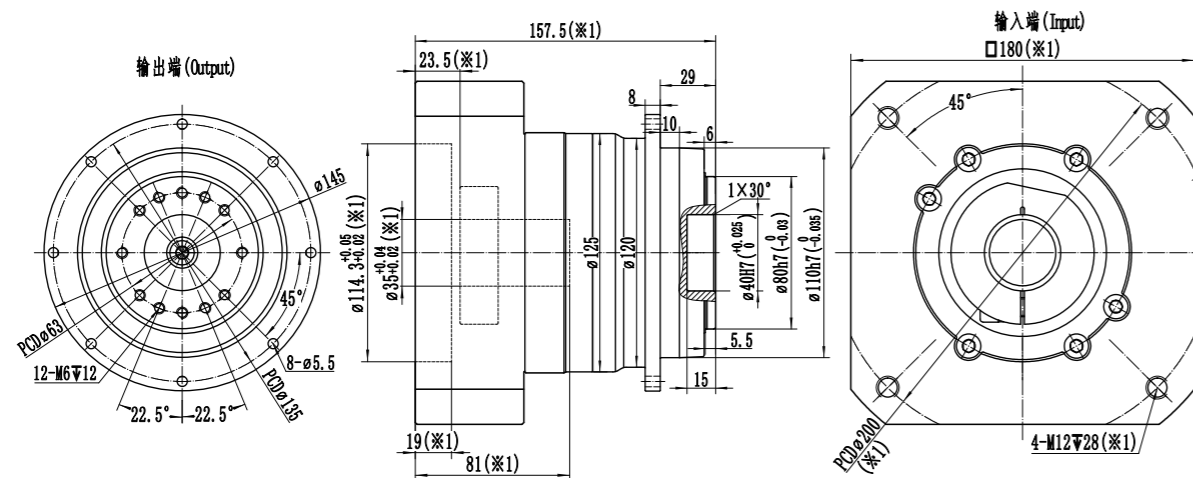


WTH110-L2 最大19(※2)夹紧孔直径 / Max.19(※2)clamping hub's bore diameter

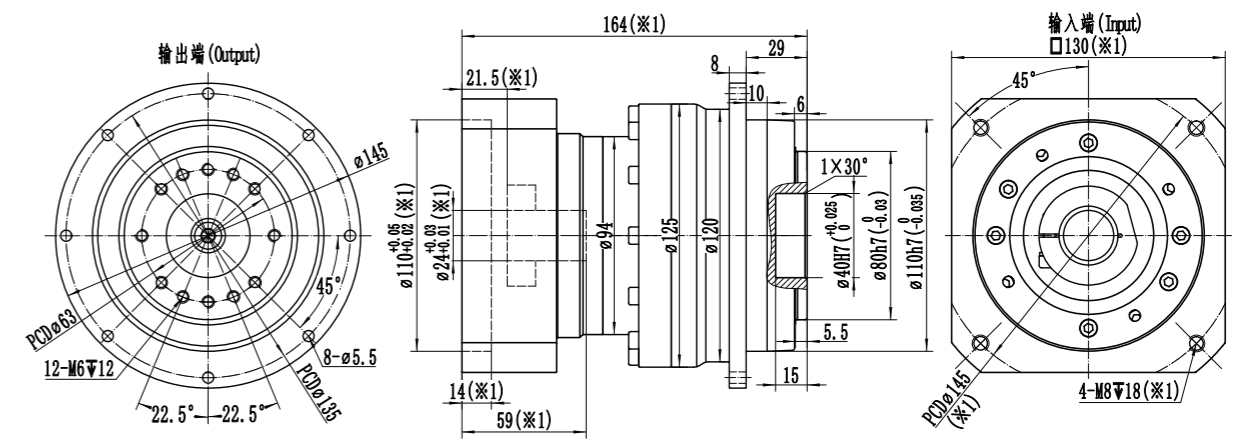
电机轴直径/motor shaft diameter (mm)



WTH110-L1 最大35(※2)夹紧孔直径 / Max.35(※2)clamping hub's bore diameter



WTH110-L2 最大24(※2)夹紧孔直径 / Max.24(※2)clamping hub's bore diameter



- ※1: 尺寸会随电机尺寸而变化;
- ※2: 电机轴尺寸偏小时,可能会使用轴套,轴套最小壁厚1mm;
- ※减速机夹紧孔需要开键槽时,请提前备注;
- ※注意安装前检查电机轴径和减速机夹紧孔径;
- ※请按要求安装电机

- ※1: Dimension will vary with the motor size;
- ※2: If the motor shaft diameter is undersized, a bushing with a minimum thickness of 1 mm may be used;
- ※ If Keyway is needed for the clamping bore, please notify in advance;
- ※ Pay attention to the motor shaft diameter and reducer input clamping diameter before installation;
- ※ Please install the motor as requested.

- ※1: 尺寸会随电机尺寸而变化;
- ※2: 电机轴尺寸偏小时,可能会使用轴套,轴套最小壁厚1mm;
- ※减速机夹紧孔需要开键槽时,请提前备注;
- ※注意安装前检查电机轴径和减速机夹紧孔径;
- ※请按要求安装电机

- ※1: Dimension will vary with the motor size;
- ※2: If the motor shaft diameter is undersized, a bushing with a minimum thickness of 1 mm may be used;
- ※ If Keyway is needed for the clamping bore, please notify in advance;
- ※ Pay attention to the motor shaft diameter and reducer input clamping diameter before installation;
- ※ Please install the motor as requested.

WTH140-1级

| 规格/Specification | | WTH140-1级/1-Stage | | | | | |
|--|-----------|---|------|------|------|------|------|
| 减速比/Ratio | 单位/Unit | 4 | 5 | 6 | 7 | 8 | 10 |
| 额定输出扭矩/Rated Output Torque T _{2N} | Nm | 650 | 650 | 600 | 550 | 450 | 400 |
| 急停扭矩/Emergency stop Torque T _{2NOT} | Nm | 3倍额定输出力矩(允许1000次)/3 Times T _{2N} | | | | | |
| 额定输入转速/Rated Input Speed n _{1N} ^(a) | rpm | 2500 | 2500 | 2500 | 3000 | 3000 | 3000 |
| 最大输入转速/Max Input Speed n _{1B} | rpm | 4500 | 4500 | 4500 | 4500 | 4500 | 4500 |
| 空载力矩/No Load Running Torque (n ₁ =3000rpm,20°C,运转2min内) | Nm | 3.6 | 2.8 | 2.8 | 2 | 1.35 | 1.35 |
| 最大背隙/Max Backlash | arcmin | P0≤1.5 / P1≤3 / P2≤5 | | | | | |
| 扭转刚性/Torsional rigidity | Nm/arcmin | 155 | | | | | |
| 最大侧倾力矩/Max Tilting Moment M _{2K} | Nm | 1350 | | | | | |
| 容许径向力/Allowable Radial Force F _{2R} ^(b) | N | 13000 | | | | | |
| 容许轴向力/Allowable Axle Force F _{2A} ^(b) | N | 11000 | | | | | |
| 使用寿命/Service Life | h | 20000 | | | | | |
| 效率/Efficient | % | ≥97 | | | | | |
| 使用环境温度/Use of temperature | °C | -20°C~+40°C | | | | | |
| 重量/Weight | kg | 14.5 | | | | | |
| 防护等级/Protection class | | IP65 | | | | | |
| 润滑/Lubrication ^(c) | | 全合成润滑油/Synthetic Lubricating Oil | | | | | |
| 噪音/Noise | dB(A) | ≤65 | | | | | |
| 转动惯量/Rotational inertia J ₁ | ≤24 | 7 | 5.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| | ≤28 | 8 | 6.5 | 5.5 | 5.5 | 5.5 | 5.5 |
| | ≤35 | 11.5 | 10 | 9 | 9 | 9 | 9 |
| | ≤42 | 24 | 23 | 22 | 22 | 22 | 22 |

(a)环境温度超过20°C时,建议适当降低转速使用/When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

(b)作用于输出轴中心点/Applied to the center point of the output shaft.

(c)要求改为润滑脂时,不适合S1连续工作制,请与我们联系/If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

WTH140-2级

| 规格/Specification | | WTH140-2级/2-Stage | | | | | | | | | | |
|--|-----------|---|------|------|------|------|------|------|------|------|------|------|
| 减速比/Ratio | 单位/Unit | 16 | 20 | 25 | 30 | 35 | 40 | 50 | 60 | 70 | 80 | 100 |
| 额定输出扭矩/Rated Output Torque T _{2N} | Nm | 650 | 650 | 650 | 600 | 550 | 650 | 650 | 600 | 550 | 450 | 400 |
| 急停扭矩/Emergency stop Torque T _{2NOT} | Nm | 3倍额定输出力矩(允许1000次)/3 Times T _{2N} | | | | | | | | | | |
| 额定输入转速/Rated Input Speed n _{1N} ^(a) | rpm | 3000 | 3000 | 3000 | 3000 | 3000 | 3300 | 3300 | 3300 | 3300 | 3300 | 3300 |
| 最大输入转速/Max Input Speed n _{1B} | rpm | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 |
| 空载力矩/No Load Running Torque (n ₁ =3000rpm,20°C,运转2min内) | Nm | 1.5 | 1.3 | 1.3 | 1.3 | 1.3 | 1.1 | 1.1 | 1.1 | 1.1 | 0.95 | 0.95 |
| 最大背隙/Max Backlash | arcmin | P0≤3 / P1≤5 / P2≤8 | | | | | | | | | | |
| 扭转刚性/Torsional rigidity | Nm/arcmin | 155 | | | | | | | | | | |
| 最大侧倾力矩/Max Tilting Moment M _{2K} | Nm | 1350 | | | | | | | | | | |
| 容许径向力/Allowable Radial Force F _{2R} ^(b) | N | 13000 | | | | | | | | | | |
| 容许轴向力/Allowable Axle Force F _{2A} ^(b) | N | 11000 | | | | | | | | | | |
| 使用寿命/Service Life | h | 20000 | | | | | | | | | | |
| 效率/Efficient | % | ≥95 | | | | | | | | | | |
| 使用环境温度/Use of temperature | °C | -20°C~+40°C | | | | | | | | | | |
| 重量/Weight | kg | 16.5 | | | | | | | | | | |
| 防护等级/Protection class | | IP65 | | | | | | | | | | |
| 润滑/Lubrication ^(c) | | 全合成润滑油/Synthetic Lubricating Oil | | | | | | | | | | |
| 噪音/Noise | dB(A) | ≤63 | | | | | | | | | | |
| 转动惯量/Rotational inertia J ₁ | ≤19 | 3.2 | 2.3 | 2.3 | 2.3 | 2.3 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 |
| | ≤24 | 3.7 | 2.8 | 2.8 | 2.8 | 2.8 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 |
| | ≤28 | 4.2 | 3.3 | 3.3 | 3.3 | 3.3 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 |
| | ≤35 | 10 | 9.3 | 9.3 | 9.3 | 9.3 | 8.5 | 8.5 | 8.5 | 8.5 | 8.5 | 8.5 |

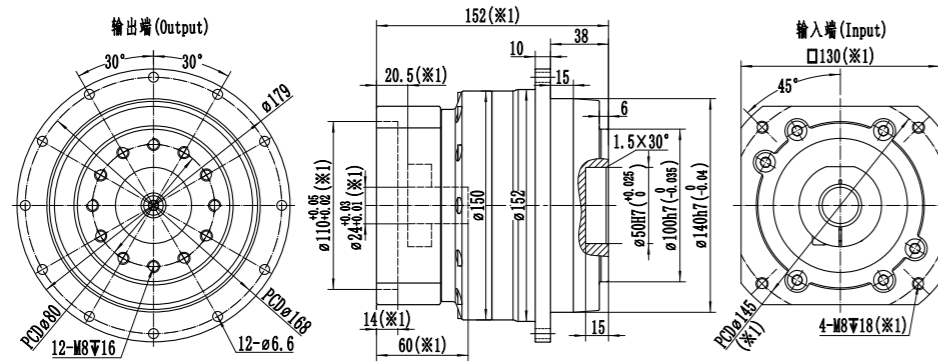
(a)环境温度超过20°C时,建议适当降低转速使用/When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

(b)作用于输出轴中心点/Applied to the center point of the output shaft.

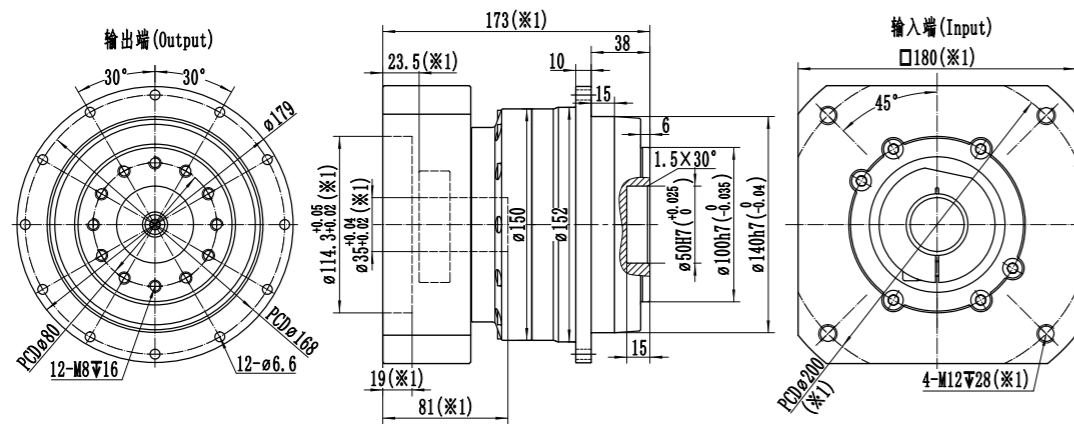
(c)要求改为润滑脂时,不适合S1连续工作制,请与我们联系/If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

WTH140-L1 最大24(※2)夹紧孔直径 / Max.24(※2)clamping hub's bore diameter

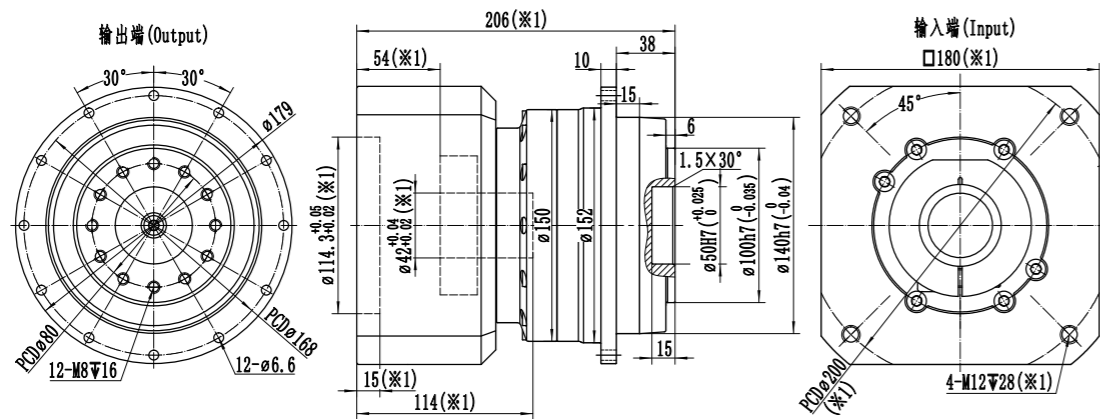
电机轴直径/motor shaft diameter (mm)



WTH140-L1 最大35(※2)夹紧孔直径 / Max.35(※2)clamping hub's bore diameter



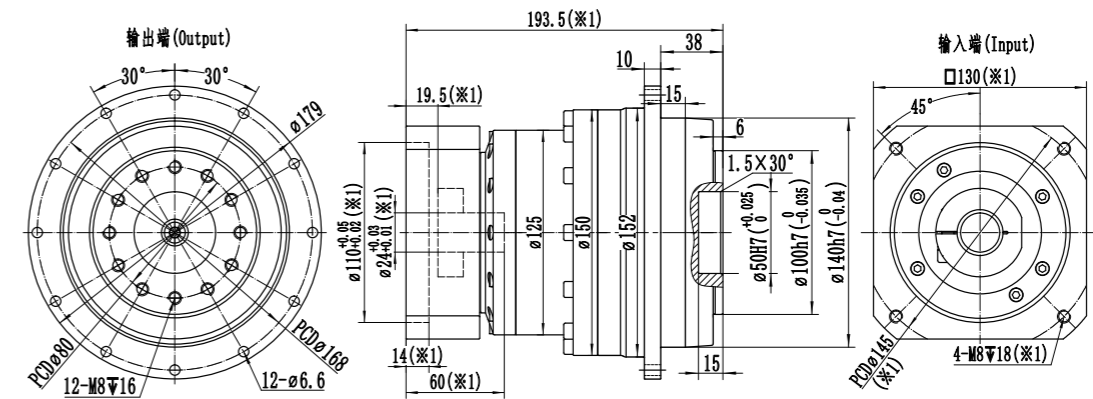
WTH140-L1 最大42(※2)夹紧孔直径 / Max.42(※2)clamping hub's bore diameter



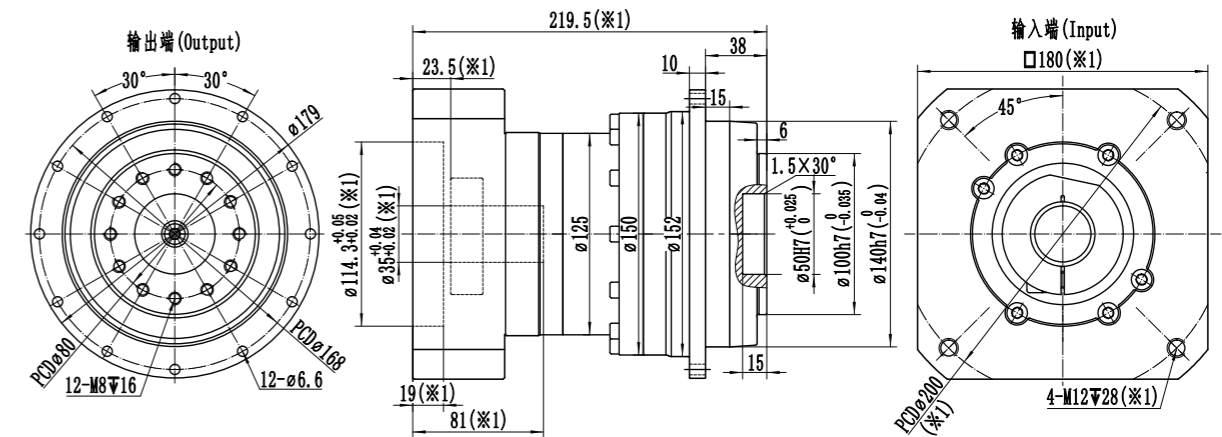
- ※1: 尺寸会随电机尺寸而变化;
- ※2: 电机轴尺寸偏小时, 可能会使用轴套, 轴套最小壁厚1mm;
- ※ 减速机夹紧孔需要开键槽时, 请提前备注;
- ※ 注意安装前检查电机轴径和减速机夹紧孔径;
- ※ 请按要求的安装电机

WTH140-L2 最大24(※2)夹紧孔直径 / Max.35(※2)clamping hub's bore diameter

电机轴直径/motor shaft diameter (mm)



WTH140-L2 最大35(※2)夹紧孔直径 / Max.35(※2)clamping hub's bore diameter



- ※1: 尺寸会随电机尺寸而变化;
- ※2: 电机轴尺寸偏小时, 可能会使用轴套, 轴套最小壁厚1mm;
- ※ 减速机夹紧孔需要开键槽时, 请提前备注;
- ※ 注意安装前检查电机轴径和减速机夹紧孔径;
- ※ 请按要求的安装电机

WTH200-1级

| 规格/Specification | | WTH200-1级/1-Stage | | | | | | |
|--|-----------|---|------|------|------|------|------|----|
| 减速比/Ratio | 单位/Unit | 4 | 5 | 6 | 7 | 8 | 10 | |
| 额定输出扭矩/Rated Output Torque T _{2N} | Nm | 2000 | 2050 | 1950 | 1700 | 1450 | 1350 | |
| 急停扭矩/Emergency stop Torque T _{2NOT} | Nm | 3倍额定输出力矩(允许1000次)/3 Times T _{2N} | | | | | | |
| 额定输入转速/Rated Input Speed n _{1N} ^(a) | rpm | 1500 | 1500 | 1500 | 2000 | 2000 | 2000 | |
| 最大输入转速/Max Input Speed n _{1B} | rpm | 3000 | 3000 | 3000 | 3000 | 3000 | 3000 | |
| 空载力矩/No Load Running Torque (n ₁ =2000rpm,20°C,运转2min内) | Nm | 8.1 | 6.1 | 6.1 | 4.5 | 3 | 3 | |
| 最大背隙/Max Backlash | arcmin | P0≤1.5 / P1≤3 / P2≤5 | | | | | | |
| 扭转刚性/Torsional rigidity | Nm/arcmin | 650 | | | | | | |
| 最大侧倾力矩/Max Tilting Moment M _{2K} | Nm | 3400 | | | | | | |
| 容许径向力/Allowable Radial Force F _{2R} ^(b) | N | 26000 | | | | | | |
| 容许轴向力/Allowable Axle Force F _{2A} ^(b) | N | 21000 | | | | | | |
| 使用寿命/Service Life | h | 20000 | | | | | | |
| 效率/Efficient | % | ≥97 | | | | | | |
| 使用环境温度/Use of temperature | °C | -20°C~+40°C | | | | | | |
| 重量/Weight | kg | 41 | | | | | | |
| 防护等级/Protection class | | IP65 | | | | | | |
| 润滑/Lubrication ^(c) | | 全合成润滑油/Synthetic Lubricating Oil | | | | | | |
| 噪音/Noise | dB(A) | ≤66 | | | | | | |
| 转动惯量/Rotational inertia J ₁ | ≤35 | kg.cm ² | 37 | 30 | 22 | 19 | 12 | 12 |
| | ≤42 | | 48 | 41 | 33 | 30 | 23 | 23 |
| | ≤55 | | 70 | 61 | 53 | 50 | 43 | 43 |
| | ≤65 | | 98 | 89 | 81 | 78 | 71 | 71 |

(a)环境温度超过20°C时,建议适当降低转速使用/When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

(b)作用于输出轴中心点/Applied to the center point of the output shaft.

(c)要求改为润滑脂时,不适合S1连续工作制,请与我们联系/If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

WTH200-2级

| 规格/Specification | | WTH200-2级/2-Stage | | | | | | | | | | | |
|--|-----------|---|------|------|------|------|------|------|------|------|------|------|-----|
| 减速比/Ratio | 单位/Unit | 16 | 20 | 25 | 30 | 35 | 40 | 50 | 60 | 70 | 80 | 100 | |
| 额定输出扭矩/Rated Output Torque T _{2N} | Nm | 2000 | 2000 | 2050 | 1950 | 1700 | 2000 | 2050 | 1950 | 1700 | 1450 | 1350 | |
| 急停扭矩/Emergency stop Torque T _{2NOT} | Nm | 3倍额定输出力矩(允许1000次)/3 Times T _{2N} | | | | | | | | | | | |
| 额定输入转速/Rated Input Speed n _{1N} ^(a) | rpm | 2000 | 2000 | 2000 | 2000 | 2000 | 2500 | 2500 | 2500 | 2500 | 2500 | 2500 | |
| 最大输入转速/Max Input Speed n _{1B} | rpm | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 | |
| 空载力矩/No Load Running Torque (n ₁ =2000rpm,20°C,运转2min内) | Nm | 4.3 | 2.85 | 2.85 | 2.85 | 2.85 | 2.3 | 2.3 | 2.3 | 2.3 | 2.15 | 2.15 | |
| 最大背隙/Max Backlash | arcmin | P0≤3 / P1≤5 / P2≤8 | | | | | | | | | | | |
| 扭转刚性/Torsional rigidity | Nm/arcmin | 650 | | | | | | | | | | | |
| 最大侧倾力矩/Max Tilting Moment M _{2K} | Nm | 3400 | | | | | | | | | | | |
| 容许径向力/Allowable Radial Force F _{2R} ^(b) | N | 26000 | | | | | | | | | | | |
| 容许轴向力/Allowable Axle Force F _{2A} ^(b) | N | 21000 | | | | | | | | | | | |
| 使用寿命/Service Life | h | 20000 | | | | | | | | | | | |
| 效率/Efficient | % | ≥95 | | | | | | | | | | | |
| 使用环境温度/Use of temperature | °C | -20°C~+40°C | | | | | | | | | | | |
| 重量/Weight | kg | 49 | | | | | | | | | | | |
| 防护等级/Protection class | | IP65 | | | | | | | | | | | |
| 润滑/Lubrication ^(c) | | 全合成润滑油/Synthetic Lubricating Oil | | | | | | | | | | | |
| 噪音/Noise | dB(A) | ≤66 | | | | | | | | | | | |
| 转动惯量/Rotational inertia J ₁ | ≤28 | kg.cm ² | 13.5 | 8.5 | 8.5 | 8.5 | 8.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 |
| | ≤35 | | 16 | 11 | 11 | 11 | 11 | 10 | 10 | 10 | 10 | 10 | 10 |
| | ≤42 | | 27 | 22 | 22 | 22 | 22 | 17 | 17 | 17 | 17 | 16 | 16 |
| | ≤55 | | 41 | 36 | 36 | 36 | 36 | 31 | 31 | 31 | 31 | 30 | 30 |

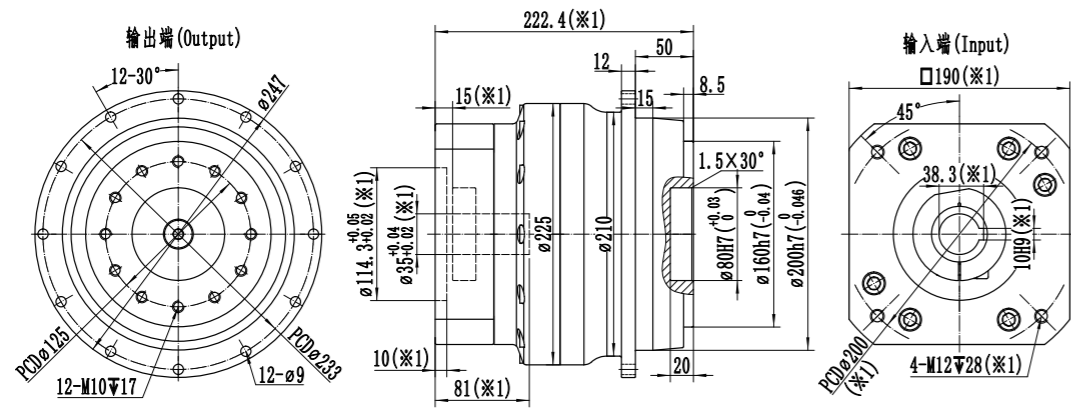
(a)环境温度超过20°C时,建议适当降低转速使用/When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

(b)作用于输出轴中心点/Applied to the center point of the output shaft.

(c)要求改为润滑脂时,不适合S1连续工作制,请与我们联系/If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

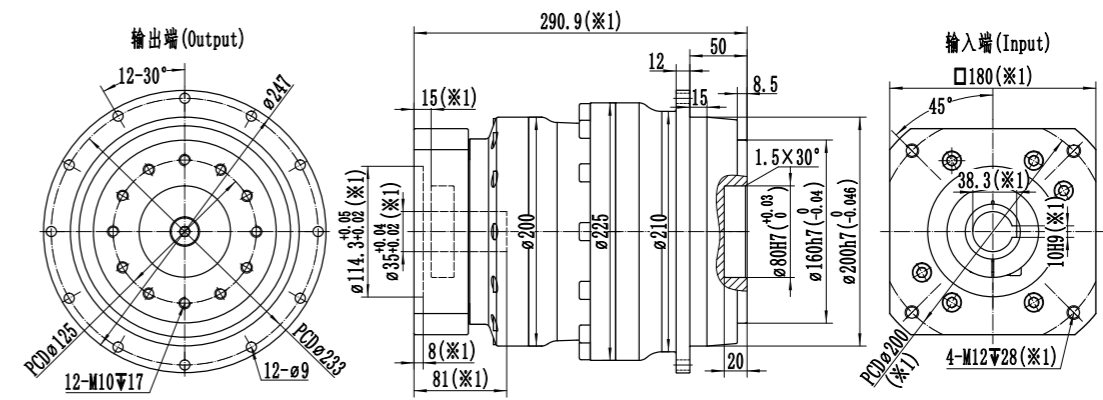
WTH200-L1 最大35(※2)夹紧孔直径 / Max.35(※2)clamping hub's bore diameter

电机轴直径/motor shaft diameter (mm)

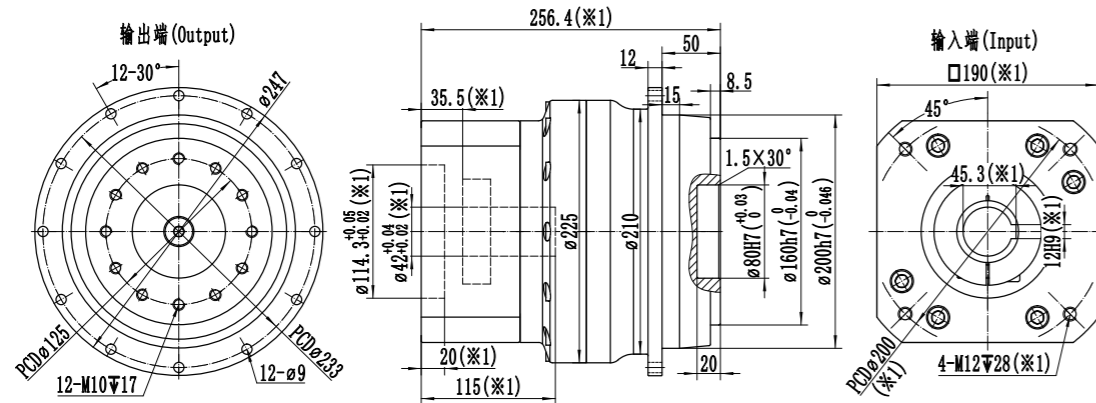


WTH200-L2 最大35(※2)夹紧孔直径 / Max.35(※2)clamping hub's bore diameter

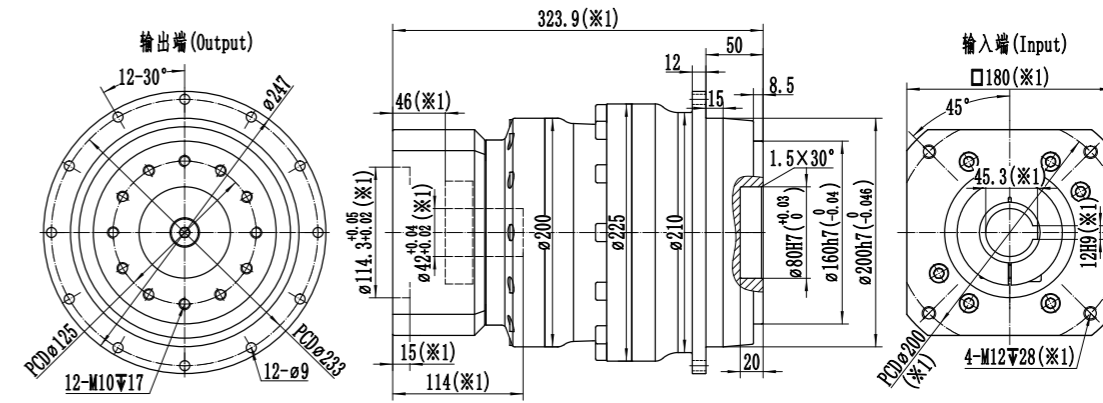
电机轴直径/motor shaft diameter (mm)



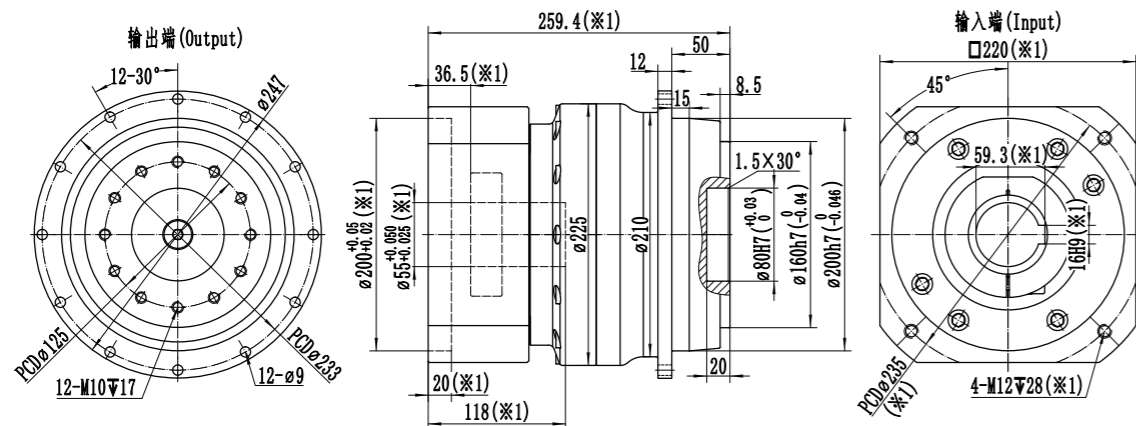
WTH200-L1 最大42(※2)夹紧孔直径 / Max.55(※2)clamping hub's bore diameter



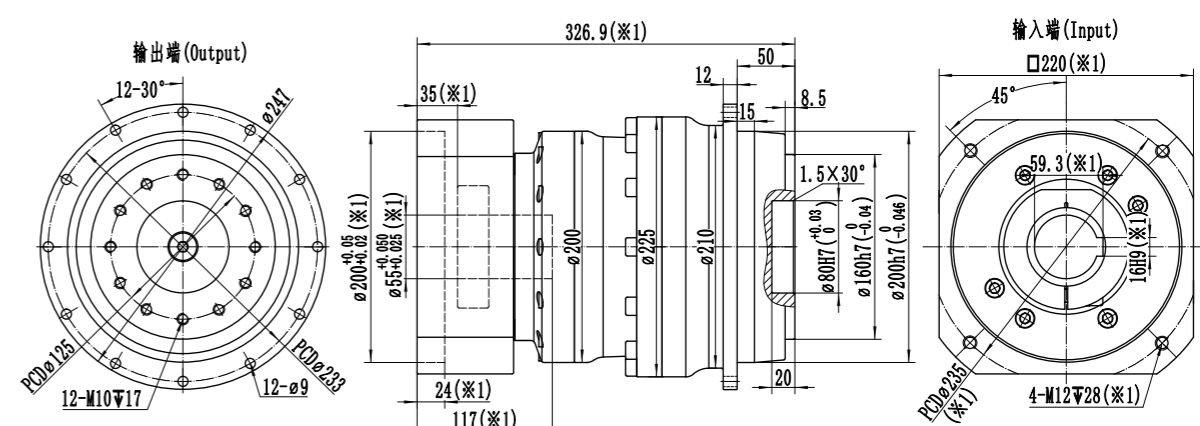
WTH200-L2 最大42(※2)夹紧孔直径 / Max.45(※2)clamping hub's bore diameter



WTH200-L1 最大55(※2)夹紧孔直径 / Max.55(※2)clamping hub's bore diameter



WTH200-L2 最大55(※2)夹紧孔直径 / Max.55(※2)clamping hub's bore diameter



※1: 尺寸会随电机尺寸而变化;
 ※2: 电机轴尺寸偏小时,可能会使用轴套,轴套最小壁厚1mm;
 ※WTH200减速机,夹紧孔默认开键槽,无需开键槽时,请提前备注;
 ※注意安装前检查电机轴径和减速机夹紧孔径;
 ※请按要求安装电机

※1: Dimension will vary with the motor size;
 ※2: If the motor shaft diameter is undersized, a bushing with a minimum thickness of 1 mm may be used;
 ※WTH200 gearbox: Default keyway on input shaft. Please notify if not needed.
 ※Pay attention to the motor shaft diameter and reducer input clamping diameter before installation;
 ※Please install the motor as requested.

※1: 尺寸会随电机尺寸而变化;
 ※2: 电机轴尺寸偏小时,可能会使用轴套,轴套最小壁厚1mm;
 ※WTH200减速机,夹紧孔默认开键槽,无需开键槽时,请提前备注;
 ※注意安装前检查电机轴径和减速机夹紧孔径;
 ※请按要求安装电机

※1: Dimension will vary with the motor size;
 ※2: If the motor shaft diameter is undersized, a bushing with a minimum thickness of 1 mm may be used;
 ※WTH200 gearbox: Default keyway on input shaft. Please notify if not needed.
 ※Pay attention to the motor shaft diameter and reducer input clamping diameter before installation;
 ※Please install the motor as requested.

WTH255-L1/L2级

| 规格/Specification | | WTH255-1级/1-Stage | | | | WTH255-2级/2-Stage | | | | | | | |
|--|-----------|---|-------|------|------|--------------------|------|------|------|------|------|------|------|
| 减速比/Ratio | 单位/Unit | 4 | 5 | 6 | 10 | 16 | 20 | 25 | 30 | 35 | 40 | 50 | 60 |
| 额定输出扭矩/Rated Output Torque T _{2N} | Nm | 5500 | 5100 | 3600 | 2000 | 5500 | 5500 | 5100 | 3600 | 5100 | 4200 | 5100 | 3600 |
| 急停扭矩/Emergency stop Torque T _{2NOT} | Nm | 3倍额定输出力矩(允许1000次)/3 Times T _{2N} | | | | | | | | | | | |
| 额定输入转速/Rated Input Speed n _{1N} ^(a) | rpm | 1500 | 1500 | 1500 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2500 | 2500 | 2500 |
| 最大输入转速/Max Input Speed n _{1B} | rpm | 3000 | 3000 | 3000 | 3000 | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 |
| 空载力矩/No Load Running Torque (n ₁ =2000rpm,20°C,运转2min内) | Nm | 13 | 10 | 10 | 8 | 9 | 8 | 8 | 8 | 7 | 5 | 5 | 5 |
| 最大背隙/Max Backlash | arcmin | P0≤1.5 / P1≤3 / P2≤5 | | | | P0≤3 / P1≤5 / P2≤8 | | | | | | | |
| 扭转刚性/Torsional rigidity | Nm/arcmin | 1400 | | 1100 | | 1300 | | 1000 | | 1300 | | 1000 | |
| 最大侧倾力矩/Max Tilting Moment M _{2K} | Nm | 7100 | | | | 7100 | | | | | | | |
| 容许径向力/Allowable Radial Force F _{2R} ^(b) | N | 41000 | | | | 41000 | | | | | | | |
| 容许轴向力/Allowable Axle Force F _{2A} ^(b) | N | 33000 | | | | 33000 | | | | | | | |
| 使用寿命/Service Life | h | 20000 | | | | 20000 | | | | | | | |
| 效率/Efficient | % | ≥97 | | | | ≥95 | | | | | | | |
| 使用环境温度/Use of temperature | °C | -20°C~+40°C | | | | -20°C~+40°C | | | | | | | |
| 重量/Weight | kg | 52 | | | | 62 | | | | | | | |
| 防护等级/Protection class | | IP65 | | | | IP65 | | | | | | | |
| 润滑/Lubrication ^(c) | | 全合成润滑油/Synthetic Lubricating Oil | | | | | | | | | | | |
| 噪音/Noise | dB(A) | ≤68 | | | | ≤66 | | | | | | | |
| 转动惯量/Rotational inertia J ₁ | ≤35 | / | / | / | / | 30 | 25 | 25 | 25 | 25 | 25 | 21 | 21 |
| | ≤42 | 113 | 92.5 | 67 | 47.5 | 41 | 36 | 36 | 36 | 36 | 36 | 29 | 29 |
| | ≤55 | 135 | 112.5 | 87 | 67.5 | 55 | 50 | 50 | 50 | 50 | 50 | 43 | 43 |
| | ≤65 | 13 | 140.5 | 115 | 95.5 | / | / | / | / | / | / | / | / |

(a)环境温度超过20°C时,建议适当降低转速使用/When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

(b)作用于输出轴中心点/Applied to the center point of the output shaft.

(c)要求改为润滑脂时,不适合S1连续工作制,请与我们联系/If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

WTH255-L3级

| 规格/Specification | | WTH255-3级/3-Stage | | | | | | | | | |
|--|-----------|---|------|------|------|------|------|------|------|------|--|
| 减速比/Ratio | 单位/Unit | 80 | 100 | 125 | 160 | 200 | 250 | 350 | 400 | 500 | |
| 额定输出扭矩/Rated Output Torque T _{2N} | Nm | 5500 | 5100 | 5100 | 5500 | 5500 | 5100 | 5100 | 4200 | 5100 | |
| 急停扭矩/Emergency stop Torque T _{2NOT} | Nm | 3倍额定输出力矩(允许1000次)/3 Times T _{2N} | | | | | | | | | |
| 额定输入转速/Rated Input Speed n _{1N} ^(a) | rpm | 2500 | 2500 | 2500 | 3000 | 3000 | 3000 | 3000 | 3000 | 3000 | |
| 最大输入转速/Max Input Speed n _{1B} | rpm | 4500 | 4500 | 4500 | 4500 | 4500 | 4500 | 4500 | 4500 | 4500 | |
| 空载力矩/No Load Running Torque (n ₁ =2000rpm,20°C,运转2min内) | Nm | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 2.5 | 2.5 | |
| 最大背隙/Max Backlash | arcmin | P0≤5 / P1≤7 / P2≤10 | | | | | | | | | |
| 扭转刚性/Torsional rigidity | Nm/arcmin | 1200 | | | | | | | | | |
| 最大侧倾力矩/Max Tilting Moment M _{2K} | Nm | 7100 | | | | | | | | | |
| 容许径向力/Allowable Radial Force F _{2R} ^(b) | N | 41000 | | | | | | | | | |
| 容许轴向力/Allowable Axle Force F _{2A} ^(b) | N | 33000 | | | | | | | | | |
| 使用寿命/Service Life | h | 20000 | | | | | | | | | |
| 效率/Efficient | % | ≥93 | | | | | | | | | |
| 使用环境温度/Use of temperature | °C | -20°C~+40°C | | | | | | | | | |
| 重量/Weight | kg | 72 | | | | | | | | | |
| 防护等级/Protection class | | IP65 | | | | | | | | | |
| 润滑/Lubrication ^(c) | | 全合成润滑油/Synthetic Lubricating Oil | | | | | | | | | |
| 噪音/Noise | dB(A) | ≤66 | | | | | | | | | |
| 转动惯量/Rotational inertia J ₁ | ≤28 | 12.5 | 12.5 | 12.5 | 8.5 | 8.5 | 8.5 | 8.5 | 7.5 | 7.5 | |
| | ≤35 | 14 | 14 | 14 | 10 | 10 | 10 | 10 | 9 | 9 | |
| | ≤42 | 26 | 26 | 26 | 22 | 22 | 22 | 22 | 21 | 21 | |

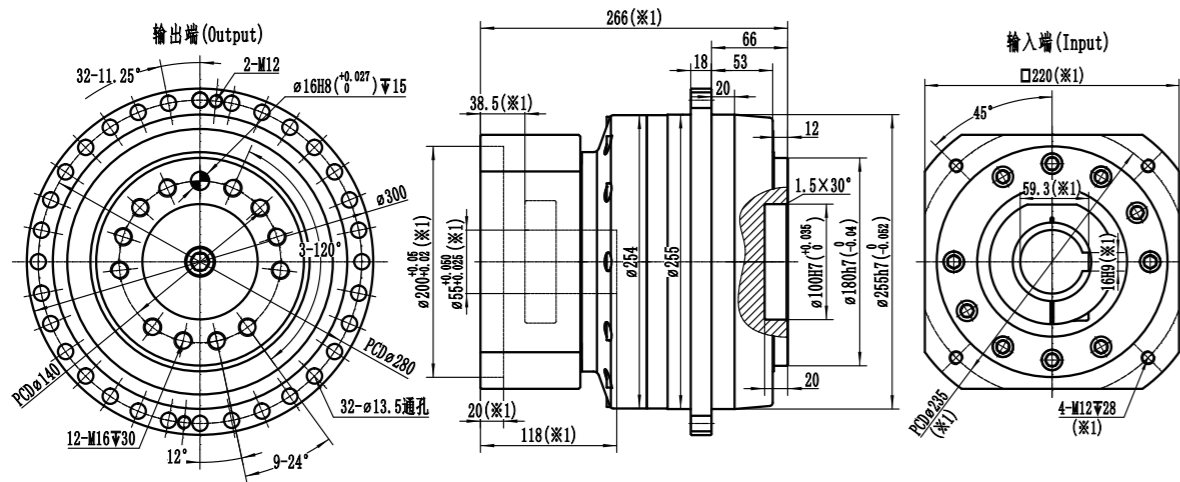
(a)环境温度超过20°C时,建议适当降低转速使用/When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

(b)作用于输出轴中心点/Applied to the center point of the output shaft.

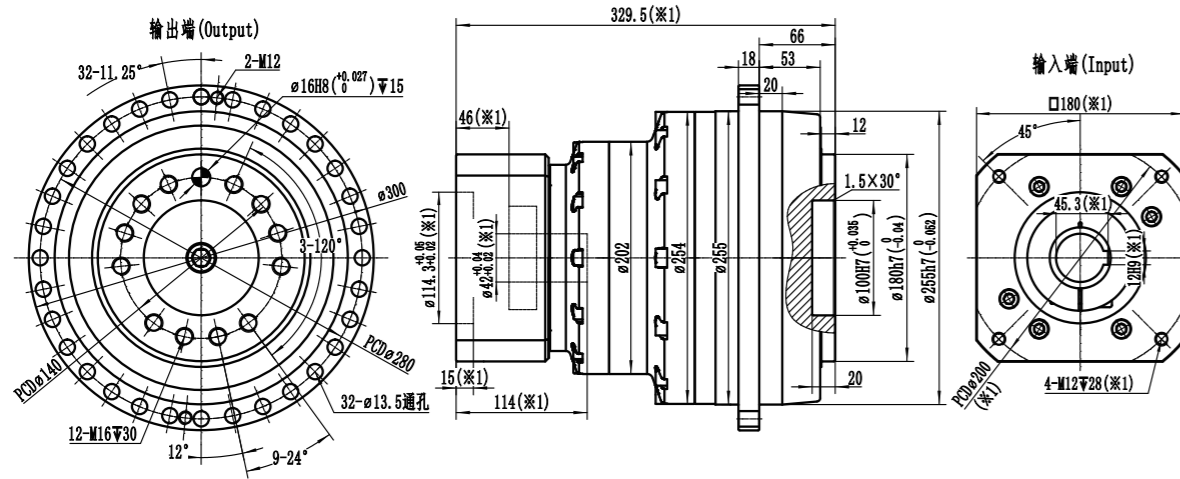
(c)要求改为润滑脂时,不适合S1连续工作制,请与我们联系/If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

WTH255-L1 最大65(※2)夹紧孔直径 / Max.65(※2)clamping hub's bore diameter

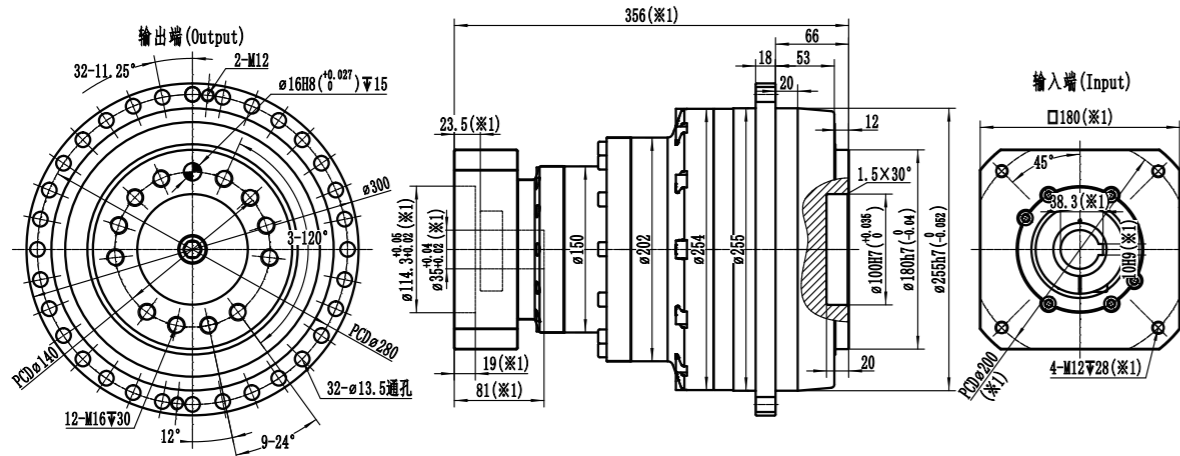
电机轴直径 (mm)



WTH255-L2 最大55(※2)夹紧孔直径 / Max.55(※2)clamping hub's bore diameter



WTH255-L3 最大42(※2)夹紧孔直径 / Max.42(※2)clamping hub's bore diameter



※1: 尺寸会随电机尺寸而变化;
 ※2: 电机轴尺寸偏小时, 可能会使用轴套, 轴套最小壁厚1mm;
 ※WTH255减速机, 夹紧孔默认开键槽, 无需开键槽时, 请提前备注;
 ※注意安装前检查电机轴径和减速机夹紧孔径;
 ※请按要求安装电机

※1: Dimension will vary with the motor size;
 ※2: If the motor shaft diameter is undersized, a bushing with a minimum thickness of 1 mm may be used;
 ※WTH255 gearbox: Default keyway on input shaft. Please notify if not needed.
 ※Pay attention to the motor shaft diameter and reducer input clamping diameter before installation;
 ※Please install the motor as requested.

WTH285-L1/L2级

| 规格/Specification | 单位/Unit | WTH285-1级/1-Stage | | | | WTH285-2级/2-Stage | | | | | | | |
|---|------------------|--|------|-------|------|--|------|------|------|------|------|------|------|
| | | 4 | 5 | 6 | 10 | 16 | 20 | 25 | 30 | 35 | 40 | 50 | 60 |
| 减速比/Ratio | | 4 | 5 | 6 | 10 | 16 | 20 | 25 | 30 | 35 | 40 | 50 | 60 |
| 额定输出扭矩/Rated Output Torque T_{2N} | Nm | 7500 | 6800 | 5100 | 2600 | 7500 | 7500 | 6800 | 5100 | 6800 | 7500 | 6800 | 5100 |
| 急停扭矩/Emergency stop Torque T_{2NOT} | Nm | 3倍额定输出力矩 (允许1000次) / 3 Times T_{2N} | | | | | | | | | | | |
| 额定输入转速/Rated Input Speed n_{1N} (a) | rpm | 1000 | 1500 | 1500 | 2000 | 1500 | 1000 | 1500 | 1500 | 1800 | 2000 | 2000 | 2000 |
| 最大输入转速/Max Input Speed n_{1B} | rpm | 2500 | 2500 | 2500 | 2500 | 3000 | 3000 | 3000 | 3000 | 3000 | 3000 | 3000 | 3000 |
| 空载力矩/No Load Running Torque ($n_1=2000\text{rpm}, 20^\circ\text{C}$, 运转2min内) | Nm | 18 | 14 | 14 | 11 | 12 | 11 | 11 | 11 | 10 | 7 | 7 | 7 |
| 最大背隙/Max Backlash | arcmin | $P_0 \leq 1.5 / P_1 \leq 3 / P_2 \leq 5$ | | | | $P_0 \leq 3 / P_1 \leq 5 / P_2 \leq 8$ | | | | | | | |
| 扭转刚性/Torsional rigidity | Nm/arcmin | 1800 | | 1300 | | 1700 | | 1200 | | 1700 | | 1200 | |
| 最大侧倾力矩/Max Tilting Moment M_{2K} | Nm | 10000 | | | | 10000 | | | | | | | |
| 容许径向力/Allowable Radial Force F_{2R} (b) | N | 62000 | | | | 62000 | | | | | | | |
| 容许轴向力/Allowable Axle Force F_{2A} (b) | N | 50000 | | | | 50000 | | | | | | | |
| 使用寿命/Service Life | h | 20000 | | | | 20000 | | | | | | | |
| 效率/Efficient | % | ≥ 97 | | | | ≥ 95 | | | | | | | |
| 使用环境温度/Use of temperature | $^\circ\text{C}$ | $-20^\circ\text{C} \sim +40^\circ\text{C}$ | | | | $-20^\circ\text{C} \sim +40^\circ\text{C}$ | | | | | | | |
| 重量/Weight | kg | 85 | | | | 100 | | | | | | | |
| 防护等级/Protection class | | IP65 | | | | IP65 | | | | | | | |
| 润滑/Lubrication (c) | | 全合成润滑油/Synthetic Lubricating Oil | | | | | | | | | | | |
| 噪音/Noise | dB(A) | ≤ 68 | | | | ≤ 66 | | | | | | | |
| 转动惯量/Rotational inertia J_1 | ≤ 35 | / | / | / | / | 69 | 63 | 60 | 60 | 60 | 60 | 41 | 41 |
| | ≤ 42 | 194 | 160 | 119.2 | 88 | 80 | 74 | 71 | 71 | 71 | 71 | 49 | 49 |
| | ≤ 55 | 216 | 180 | 139.2 | 108 | 94 | 88 | 85 | 85 | 85 | 85 | 63 | 63 |
| | ≤ 65 | 244 | 208 | 167.2 | 136 | / | / | / | / | / | / | / | / |

(a) 环境温度超过 20°C 时, 建议适当降低转速使用/When the ambient temperature exceeds 20°C , it is recommended to reduce the rotational speed appropriately for use.
 (b) 作用于输出轴中心点/Applied to the center point of the output shaft.
 (c) 要求改为润滑脂时, 不适合S1连续工作制, 请与我们联系/If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

WTH285-L3级

| 规格/Specification | | WTH285-3级/3-Stage | | | | | | | | | |
|--|-----------|---|------|------|------|------|------|------|------|------|------|
| 减速比/Ratio | 单位/Unit | 80 | 100 | 125 | 160 | 200 | 250 | 350 | 400 | 500 | |
| 额定输出扭矩/Rated Output Torque T _{2N} | Nm | 7500 | 6800 | 6800 | 7500 | 7500 | 6800 | 6800 | 7500 | 6800 | |
| 急停扭矩/Emergency stop Torque T _{2NOT} | Nm | 3倍额定输出力矩(允许1000次)/3 Times T _{2N} | | | | | | | | | |
| 额定输入转速/Rated Input Speed n _{1N} ^(a) | rpm | 2000 | 2000 | 2000 | 2500 | 2500 | 2500 | 2500 | 2500 | 2500 | |
| 最大输入转速/Max Input Speed n _{1B} | rpm | 3500 | 3500 | 3500 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | |
| 空载力矩/No Load Running Torque (n ₁ =2000rpm,20°C,运转2min内) | Nm | 5 | 5 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | |
| 最大背隙/Max Backlash | arcmin | P0≤5 / P1≤7 / P2≤10 | | | | | | | | | |
| 扭转刚性/Torsional rigidity | Nm/arcmin | 1600 | | | | | | | | | |
| 最大侧倾力矩/Max Tilting Moment M _{2K} | Nm | 10000 | | | | | | | | | |
| 容许径向力/Allowable Radial Force F _{2R} ^(b) | N | 62000 | | | | | | | | | |
| 容许轴向力/Allowable Axle Force F _{2A} ^(b) | N | 50000 | | | | | | | | | |
| 使用寿命/Service Life | h | 20000 | | | | | | | | | |
| 效率/Efficient | % | ≥93 | | | | | | | | | |
| 使用环境温度/Use of temperature | °C | -20°C~+40°C | | | | | | | | | |
| 重量/Weight | kg | 110 | | | | | | | | | |
| 防护等级/Protection class | | IP65 | | | | | | | | | |
| 润滑/Lubrication ^(c) | | 全合成润滑油/Synthetic Lubricating Oil | | | | | | | | | |
| 噪音/Noise | dB(A) | ≤66 | | | | | | | | | |
| 转动惯量/Rotational inertia J ₁ | ≤28 | kg.cm ² | 23.5 | 23.5 | 23.5 | 16.5 | 16.5 | 16.5 | 16.5 | 14.5 | 14.5 |
| | ≤35 | | 25 | 25 | 25 | 18 | 18 | 18 | 18 | 16 | 16 |
| | ≤42 | | 36 | 36 | 36 | 29 | 29 | 29 | 29 | 27 | 27 |

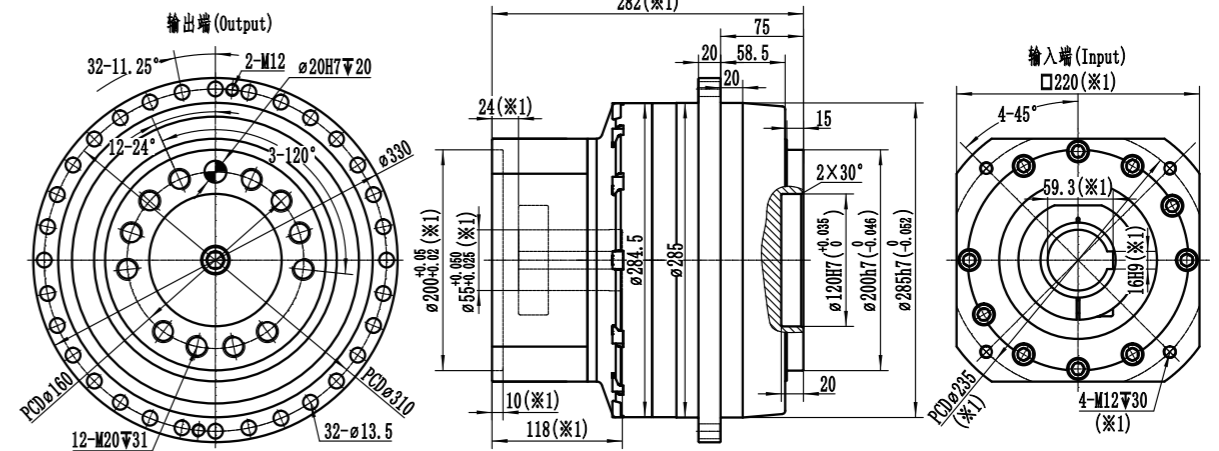
(a)环境温度超过20°C时,建议适当降低转速使用/When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

(b)作用于输出轴中心点/Applied to the center point of the output shaft.

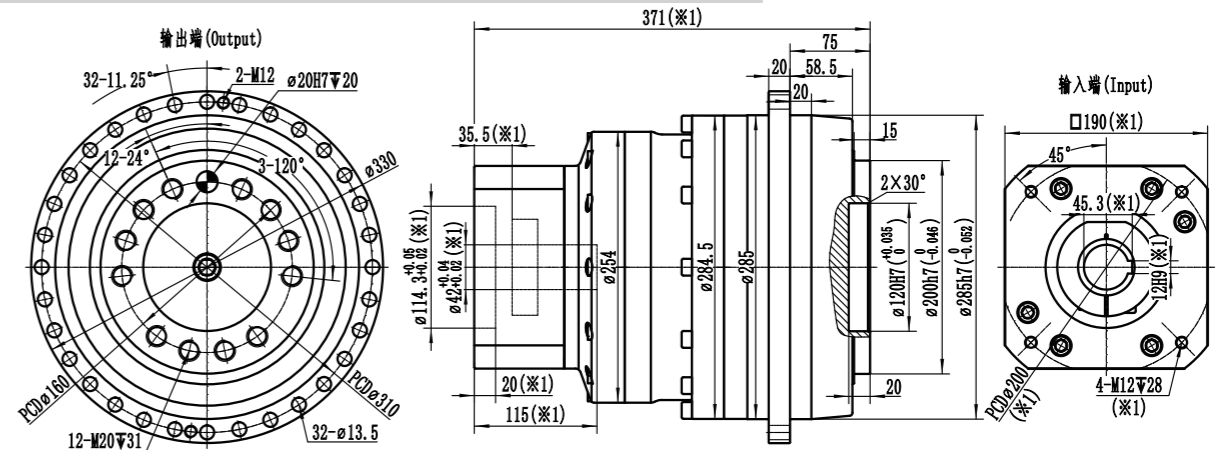
(c)要求改为润滑脂时,不适合S1连续工作制,请与我们联系/If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

WTH285-L1 最大65(※2)夹紧孔直径 /Max.65(※2)clamping hub's bore diameter

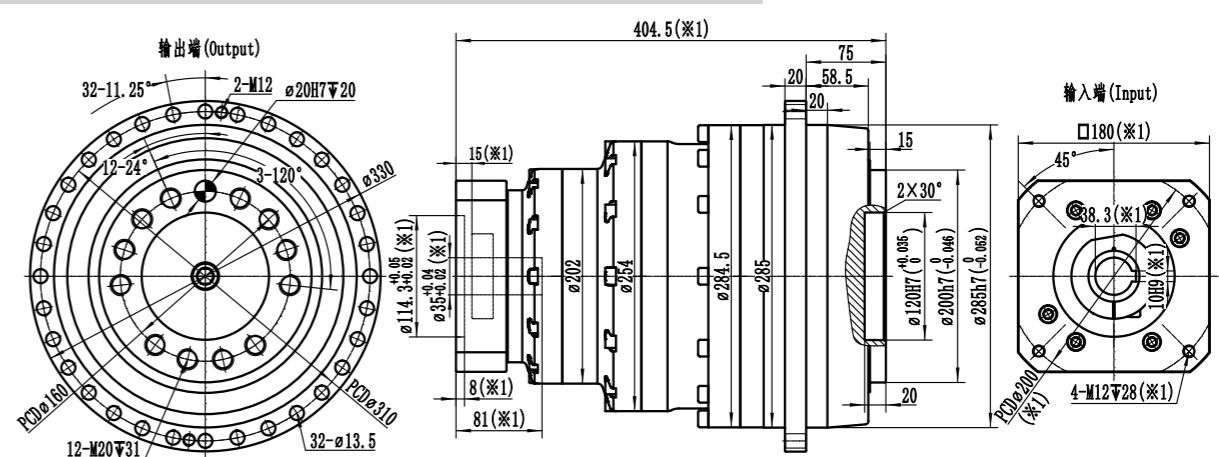
电机轴直径(mm)



WTH285-L2 最大55(※2)夹紧孔直径 /Max.55(※2)clamping hub's bore diameter



WTH285-L3 最大42(※2)夹紧孔直径 /Max.42(※2)clamping hub's bore diameter



※1:尺寸会随电机尺寸而变化;

※2:电机轴尺寸偏小时,可能会使用轴套,轴套最小壁厚1mm;

※WTH285减速机,夹紧孔默认开键槽,无需开键槽时,请提前备注;

※注意安装前检查电机轴径和减速机夹紧孔径;

※请按要求安装电机

※1: Dimension will vary with the motor size;

※2: If the motor shaft diameter is undersized, a bushing with a minimum thickness of 1 mm may be used;

※WTH255 gearbox: Default keyway on input shaft. Please notify if not needed.

※Pay attention to the motor shaft diameter and reducer input clamping diameter before installation;

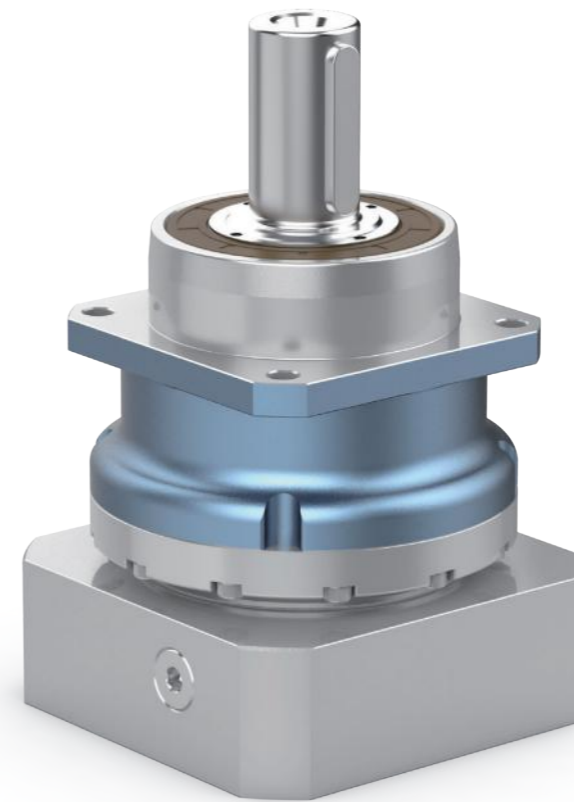
※Please install the motor as requested.

WSH Series planetary gearbox 系列行星减速机

FEATURES

产品特点

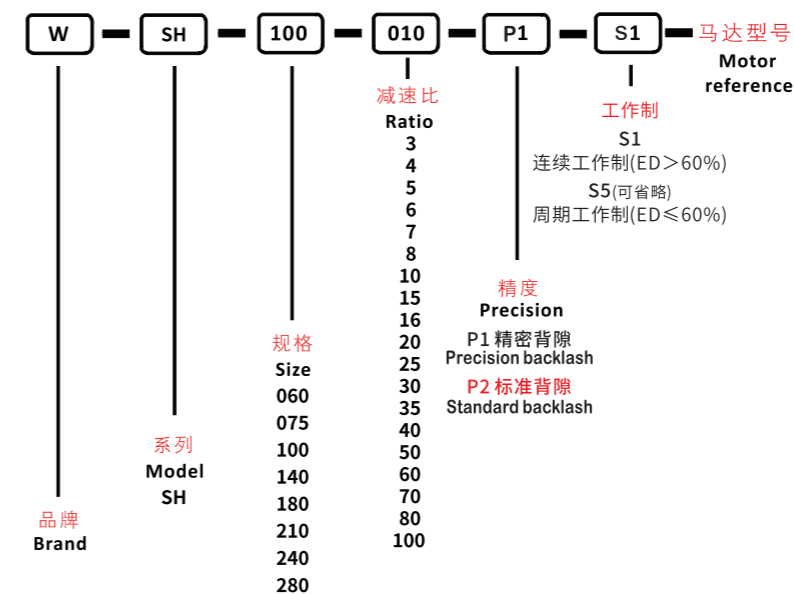
- » 高精度, 尺寸短, 密封性好
 - » 安装尺寸通用性高
 - » 显著提升整体刚性、耐振性、任意方向的承载能力
 - » 内齿轮增加特殊工艺, 确保整个寿命周期内, 精度保持更优
 - » WSH100及其以上系列, 输出轴承采用双支撑结构, 跨距长, 倾覆力矩能力更优
 - » 相比市场同型号, 总长进一步缩短, 功率密度更高
-
- » High precision, compact dimensions, excellent sealing performance.
 - » High universality in installation dimensions.
 - » Significantly enhances overall rigidity, vibration resistance, and load-bearing capacity in any direction.
 - » Special manufacturing processes for annular gear to ensure superior accuracy throughout its entire lifespan.
 - » For WSH series with size 100 above, the output bearings adopt a double-support structure, leads to a longer span and superior overturning torque capacity.
 - » Compared to similar models in the market, its total length is further reduced, resulting in higher power density.



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
 - 入力方式和入力转速
 - 马达厂牌型号或法兰及马达轴尺寸
-
- Type, model and torque
 - Ratio or output speed
 - Working conditions and connection methods
 - Quantity and installed machine name
 - Input mode and input speed
 - Motor brand model or flange and motor shaft size

WSH060-1级

| 规格/Specification | | WSH060-1级/1-Stage | | | | | | |
|--|-----------|---|------|------|------|------|------|------|
| 减速比/Ratio | 单位/Unit | 3 | 4 | 5 | 6 | 7 | 8 | 10 |
| 额定输出扭矩/Rated Output Torque T _{2N} | Nm | 50 | 55 | 60 | 55 | 50 | 40 | 35 |
| 急停扭矩/Emergency stop Torque T _{2NOT} | Nm | 3倍额定输出力矩(允许1000次)/3 Times T _{2N} | | | | | | |
| 额定输入转速/Rated Input Speed n _{1N} ^(a) | rpm | 3300 | 3300 | 3300 | 3300 | 4000 | 4000 | 4000 |
| 最大输入转速/Max Input Speed n _{1B} | rpm | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 |
| 空载力矩/No Load Running Torque (n ₁ =3000rpm,20°C,运转2min内) | Nm | 0.6 | 0.5 | 0.4 | 0.4 | 0.3 | 0.25 | 0.25 |
| 最大背隙/Max Backlash | arcmin | P0≤1.5 / P1≤3 / P2≤5 | | | | | | |
| 扭转刚性/Torsional rigidity | Nm/arcmin | 7 | | | | | | |
| 最大侧倾力矩/Max Tilting Moment M _{2K} | Nm | 160 | | | | | | |
| 容许径向力/Allowable Radial Force F _{2R} ^(b) | N | 3000 | | | | | | |
| 容许轴向力/Allowable Axle Force F _{2A} ^(b) | N | 2400 | | | | | | |
| 使用寿命/Service Life | h | 20000 | | | | | | |
| 效率/Efficient | % | ≥97 | | | | | | |
| 使用环境温度/Use of temperature | °C | -20°C~+40°C | | | | | | |
| 重量/Weight | kg | 1.6 | | | | | | |
| 防护等级/Protection class | | IP65 | | | | | | |
| 润滑/Lubrication ^(c) | | 全合成润滑油/Synthetic Lubricating Oil | | | | | | |
| 噪音/Noise | dB(A) | ≤58 | | | | | | |
| 转动惯量/Rotational inertia J ₁ | ≤14 | 0.28 | 0.22 | 0.2 | 0.18 | 0.18 | 0.18 | 0.18 |
| | ≤19 | 0.61 | 0.55 | 0.5 | 0.45 | 0.45 | 0.45 | 0.45 |

(a)环境温度超过20°C时, 建议适当降低转速使用/When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

(b)作用于输出轴中心点/Applied to the center point of the output shaft.

(c)要求改为润滑脂时, 不适合S1连续工作制, 请与我们联系/If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

WSH060-2级

| 规格/Specification | | WSH060-2级/2-Stage | | | | | | | | | | | |
|--|-----------|---|------|------|------|------|------|------|------|------|------|------|------|
| 减速比/Ratio | 单位/Unit | 15 | 16 | 20 | 25 | 30 | 35 | 40 | 50 | 60 | 70 | 80 | 100 |
| 额定输出扭矩/Rated Output Torque T _{2N} | Nm | 50 | 55 | 55 | 60 | 55 | 50 | 55 | 60 | 55 | 50 | 40 | 35 |
| 急停扭矩/Emergency stop Torque T _{2NOT} | Nm | 3倍额定输出力矩(允许1000次)/3 Times T _{2N} | | | | | | | | | | | |
| 额定输入转速/Rated Input Speed n _{1N} ^(a) | rpm | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 |
| 最大输入转速/Max Input Speed n _{1B} | rpm | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 |
| 空载力矩/No Load Running Torque (n ₁ =3000rpm,20°C,运转2min内) | Nm | 0.4 | 0.4 | 0.3 | 0.3 | 0.3 | 0.3 | 0.2 | 0.2 | 0.2 | 0.2 | 0.16 | 0.16 |
| 最大背隙/Max Backlash | arcmin | P0≤3 / P1≤5 / P2≤8 | | | | | | | | | | | |
| 扭转刚性/Torsional rigidity | Nm/arcmin | 7 | | | | | | | | | | | |
| 最大侧倾力矩/Max Tilting Moment M _{2K} | Nm | 160 | | | | | | | | | | | |
| 容许径向力/Allowable Radial Force F _{2R} ^(b) | N | 3000 | | | | | | | | | | | |
| 容许轴向力/Allowable Axle Force F _{2A} ^(b) | N | 2400 | | | | | | | | | | | |
| 使用寿命/Service Life | h | 20000 | | | | | | | | | | | |
| 效率/Efficient | % | ≥95 | | | | | | | | | | | |
| 使用环境温度/Use of temperature | °C | -20°C~+40°C | | | | | | | | | | | |
| 重量/Weight | kg | 2.2 | | | | | | | | | | | |
| 防护等级/Protection class | | IP65 | | | | | | | | | | | |
| 润滑/Lubrication ^(c) | | 全合成润滑油/Synthetic Lubricating Oil | | | | | | | | | | | |
| 噪音/Noise | dB(A) | ≤58 | | | | | | | | | | | |
| 转动惯量/Rotational inertia J ₁ | ≤8 | 0.12 | 0.12 | 0.1 | 0.1 | 0.1 | 0.1 | 0.08 | 0.08 | 0.08 | 0.08 | 0.08 | 0.08 |
| | ≤14 | 0.22 | 0.22 | 0.17 | 0.17 | 0.17 | 0.17 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 |

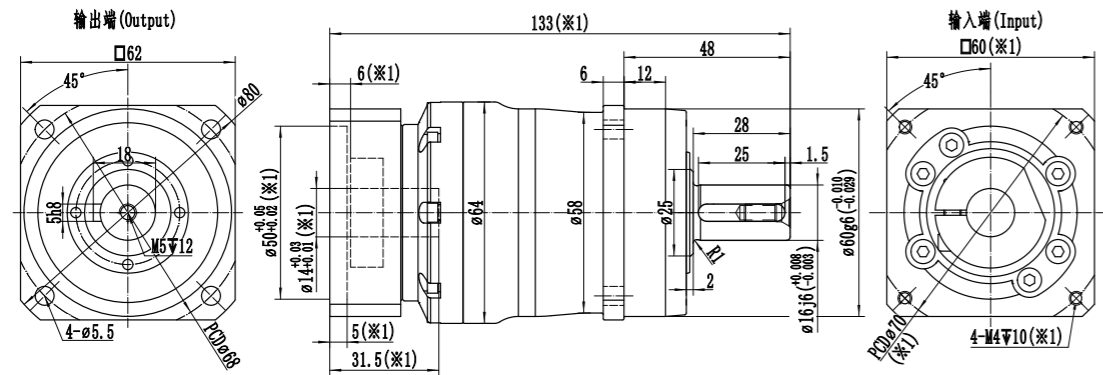
(a)环境温度超过20°C时, 建议适当降低转速使用/When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

(b)作用于输出轴中心点/Applied to the center point of the output shaft.

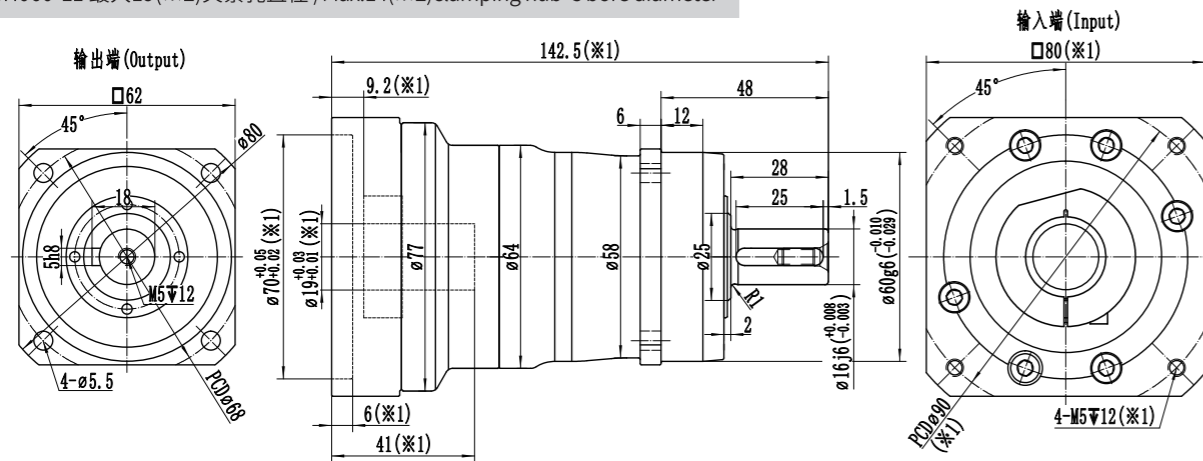
(c)要求改为润滑脂时, 不适合S1连续工作制, 请与我们联系/If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

WSH060-L1 最大14(※2)夹紧孔直径 / Max.14(※2)clamping hub's bore diameter

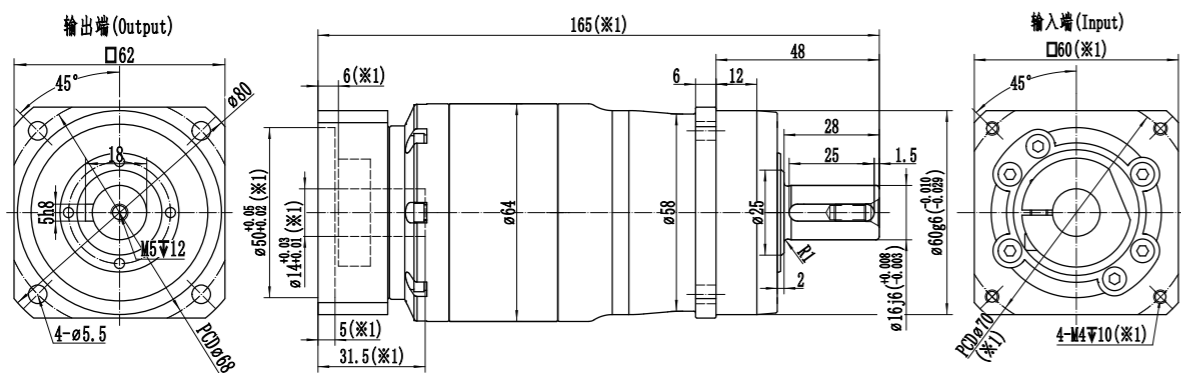
电机轴直径/motor shaft diameter (mm)



WSH060-L1 最大19(※2)夹紧孔直径 / Max.14(※2)clamping hub's bore diameter



WSH060-L2 最大14(※2)夹紧孔直径 / Max.14(※2)clamping hub's bore diameter



- ※1: 尺寸会随电机尺寸而变化;
- ※2: 电机轴尺寸偏小时, 可能会使用轴套, 轴套最小壁厚1mm;
- ※减速机夹紧孔需要开键槽时, 请提前备注;
- ※注意安装前检查电机轴径和减速机夹紧孔径;
- ※请按要求安装电机

- ※1: Dimension will vary with the motor size;
- ※2: If the motor shaft diameter is undersized, a bushing with a minimum thickness of 1 mm may be used;
- ※ If Keyway is needed for the clamping bore, please notify in advance;
- ※Pay attention to the motor shaft diameter and reducer input clamping diameter before installation;
- ※Please install the motor as requested.

WSH075-1级

| 规格/Specification | WSH075-1级/1-Stage | | | | | | | | |
|--|-------------------|--|------|------|------|------|------|------|-----|
| 减速比/Ratio | 单位/Unit | 3 | 4 | 5 | 6 | 7 | 8 | 10 | |
| 额定输出扭矩/Rated Output Torque T _{2N} | Nm | 130 | 150 | 160 | 150 | 140 | 100 | 90 | |
| 急停扭矩/Emergency stop Torque T _{2NOT} | Nm | 3倍额定输出力矩 (允许1000次)/3 Times T _{2N} | | | | | | | |
| 额定输入转速/Rated Input Speed n _{1N} ^(a) | rpm | 3300 | 3300 | 3300 | 3300 | 4000 | 4000 | 4000 | |
| 最大输入转速/Max Input Speed n _{1B} | rpm | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | |
| 空载力矩/No Load Running Torque (n ₁ =3000rpm, 20°C, 运转2min内) | Nm | 1.2 | 1 | 0.7 | 0.7 | 0.6 | 0.5 | 0.5 | |
| 最大背隙/Max Backlash | arcmin | P0≤1.5 / P1≤3 / P2≤5 | | | | | | | |
| 扭转刚性/Torsional rigidity | Nm/arcmin | 14 | | | | | | | |
| 最大侧倾力矩/Max Tilting Moment M _{2K} | Nm | 270 | | | | | | | |
| 容许径向力/Allowable Radial Force F _{2R} ^(b) | N | 4500 | | | | | | | |
| 容许轴向力/Allowable Axle Force F _{2A} ^(b) | N | 3350 | | | | | | | |
| 使用寿命/Service Life | h | 20000 | | | | | | | |
| 效率/Efficient | % | ≥97 | | | | | | | |
| 使用环境温度/Use of temperature | °C | -20°C~+40°C | | | | | | | |
| 重量/Weight | kg | 4 | | | | | | | |
| 防护等级/Protection class | | IP65 | | | | | | | |
| 润滑/Lubrication ^(c) | | 全合成润滑油/Synthetic Lubricating Oil | | | | | | | |
| 噪音/Noise | dB(A) | ≤60 | | | | | | | |
| 转动惯量/Rotational inertia J ₁ | ≤19 | kg.cm ² | 1 | 0.8 | 0.7 | 0.6 | 0.6 | 0.6 | 0.6 |
| | ≤24 | | 2.2 | 2 | 1.9 | 1.8 | 1.8 | 1.8 | 1.8 |

(a)环境温度超过20°C时, 建议适当降低转速使用/When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

(b)作用于输出轴中心点/Applied to the center point of the output shaft.

(c)要求改为润滑脂时, 不适合S1连续工作制, 请与我们联系/If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

WSH075-2级

| 规格/Specification | | WSH075-2级/2-Stage | | | | | | | | | | | |
|--|-----------|---|------|------|------|------|------|------|------|------|------|------|------|
| 减速比/Ratio | 单位/Unit | 15 | 16 | 20 | 25 | 30 | 35 | 40 | 50 | 60 | 70 | 80 | 100 |
| 额定输出扭矩/Rated Output Torque T _{2N} | Nm | 130 | 150 | 150 | 160 | 150 | 140 | 150 | 160 | 150 | 140 | 100 | 90 |
| 急停扭矩/Emergency stop Torque T _{2NOT} | Nm | 3倍额定输出力矩(允许1000次)/3 Times T _{2N} | | | | | | | | | | | |
| 额定输入转速/Rated Input Speed n _{1N} ^(a) | rpm | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 |
| 最大输入转速/Max Input Speed n _{1B} | rpm | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 |
| 空载力矩/No Load Running Torque (n ₁ =3000rpm,20°C,运转2min内) | Nm | 0.7 | 0.7 | 0.5 | 0.5 | 0.5 | 0.5 | 0.35 | 0.35 | 0.35 | 0.35 | 0.3 | 0.3 |
| 最大背隙/Max Backlash | arcmin | P0≤3 / P1≤5 / P2≤8 | | | | | | | | | | | |
| 扭转刚性/Torsional rigidity | Nm/arcmin | 14 | | | | | | | | | | | |
| 最大侧倾力矩/Max Tilting Moment M _{2k} | Nm | 270 | | | | | | | | | | | |
| 容许径向力/Allowable Radial Force F _{2R} ^(b) | N | 4500 | | | | | | | | | | | |
| 容许轴向力/Allowable Axle Force F _{2A} ^(b) | N | 3350 | | | | | | | | | | | |
| 使用寿命/Service Life | h | 20000 | | | | | | | | | | | |
| 效率/Efficient | % | ≥95 | | | | | | | | | | | |
| 使用环境温度/Use of temperature | °C | -20°C~+40°C | | | | | | | | | | | |
| 重量/Weight | kg | 4.6 | | | | | | | | | | | |
| 防护等级/Protection class | | IP65 | | | | | | | | | | | |
| 润滑/Lubrication ^(c) | | 全合成润滑油/Synthetic Lubricating Oil | | | | | | | | | | | |
| 噪音/Noise | dB(A) | ≤60 | | | | | | | | | | | |
| 转动惯量/Rotational inertia J ₁ | ≤14 | 0.22 | 0.22 | 0.19 | 0.19 | 0.19 | 0.19 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 |
| | ≤19 | 0.7 | 0.7 | 0.6 | 0.6 | 0.6 | 0.6 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |

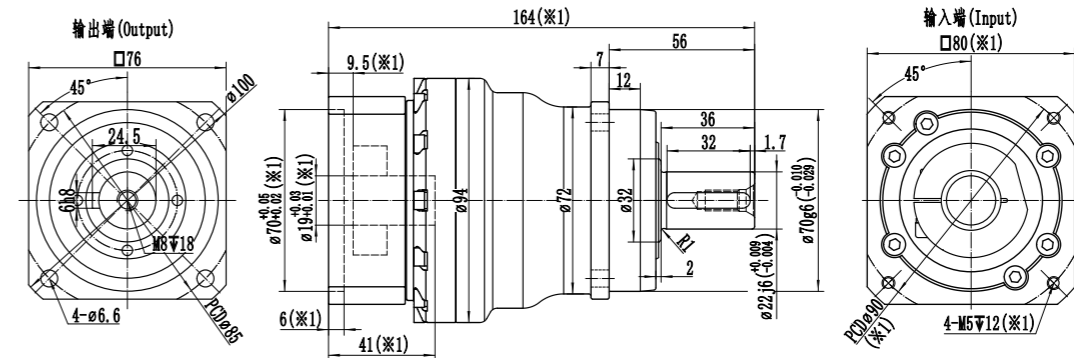
(a)环境温度超过20°C时, 建议适当降低转速使用/When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

(b)作用于输出轴中心点/Applied to the center point of the output shaft.

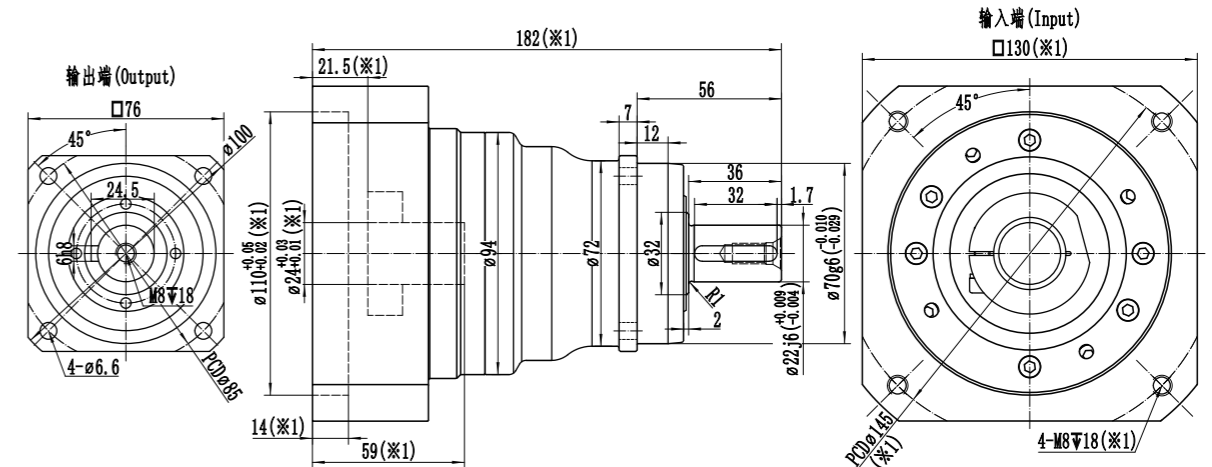
(c)要求改为润滑油时, 不适合S1连续工作制, 请与我们联系/If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

WSH075-L1 最大19(※2)夹紧孔直径 /Max.19(※2)clamping hub's bore diameter

电机轴直径/motor shaft diameter (mm)



WSH075-L1 最大24(※2)夹紧孔直径 /Max.24(※2)clamping hub's bore diameter



※1: 尺寸会随电机尺寸而变化;
 ※2: 电机轴尺寸偏小时, 可能会使用轴套, 轴套最小壁厚1mm;
 ※减速机夹紧孔需要开键槽时, 请提前备注;
 ※注意安装前检查电机轴径和减速机夹紧孔径;
 ※请按要求安装电机

※1: Dimension will vary with the motor size;
 ※2: If the motor shaft diameter is undersized, a bushing with a minimum thickness of 1 mm may be used;
 ※ If Keyway is needed for the clamping bore, please notify in advance;
 ※Pay attention to the motor shaft diameter and reducer input clamping diameter before installation;
 ※Please install the motor as requested.

WSH100-1级

| 规格/Specification | | WSH100-1级/1-Stage | | | | | | |
|--|-----------|---|------|------|------|------|------|------|
| 减速比/Ratio | 单位/Unit | 3 | 4 | 5 | 6 | 7 | 8 | 10 |
| 额定输出扭矩/Rated Output Torque T _{2N} | Nm | 230 | 330 | 330 | 310 | 300 | 230 | 200 |
| 急停扭矩/Emergency stop Torque T _{2NOT} | Nm | 3倍额定输出力矩(允许1000次)/3 Times T _{2N} | | | | | | |
| 额定输入转速/Rated Input Speed n _{1N} ^(a) | rpm | 2800 | 2800 | 2800 | 2800 | 3300 | 3300 | 3300 |
| 最大输入转速/Max Input Speed n _{1B} | rpm | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 |
| 空载力矩/No Load Running Torque (n ₁ =3000rpm,20°C,运转2min内) | Nm | 2.3 | 1.9 | 1.4 | 1.4 | 1.2 | 0.95 | 0.95 |
| 最大背隙/Max Backlash | arcmin | P0≤1.5 / P1≤3 / P2≤5 | | | | | | |
| 扭转刚性/Torsional rigidity | Nm/arcmin | 32 | | | | | | |
| 最大侧倾力矩/Max Tilting Moment M _{2K} | Nm | 670 | | | | | | |
| 容许径向力/Allowable Radial Force F _{2R} ^(b) | N | 8500 | | | | | | |
| 容许轴向力/Allowable Axle Force F _{2A} ^(b) | N | 7000 | | | | | | |
| 使用寿命/Service Life | h | 20000 | | | | | | |
| 效率/Efficient | % | ≥97 | | | | | | |
| 使用环境温度/Use of temperature | °C | -20°C~+40°C | | | | | | |
| 重量/Weight | kg | 6.4 | | | | | | |
| 防护等级/Protection class | | IP65 | | | | | | |
| 润滑/Lubrication ^(c) | | 全合成润滑油/Synthetic Lubricating Oil | | | | | | |
| 噪音/Noise | dB(A) | ≤63 | | | | | | |
| 转动惯量/Rotational inertia J ₁ | ≤19 | 3.5 | 2.5 | 2 | 1.5 | 1.5 | 1.5 | 1.5 |
| | ≤24 | 4 | 3 | 2.5 | 2 | 2 | 2 | 2 |
| | ≤28 | 4.5 | 3.5 | 3 | 2.5 | 2.5 | 2.5 | 2.5 |
| | ≤35 | 11.5 | 10 | 9.5 | 9 | 9 | 9 | 9 |

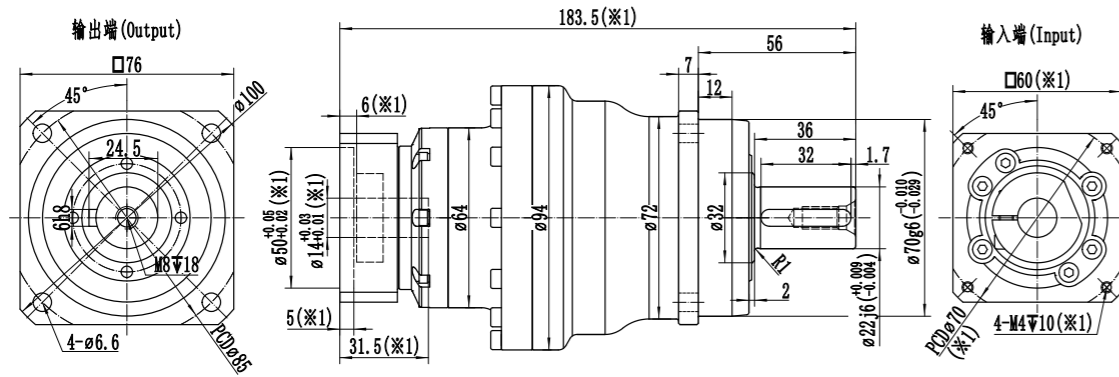
(a)环境温度超过20°C时, 建议适当降低转速使用/When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

(b)作用于输出轴中心点/Applied to the center point of the output shaft.

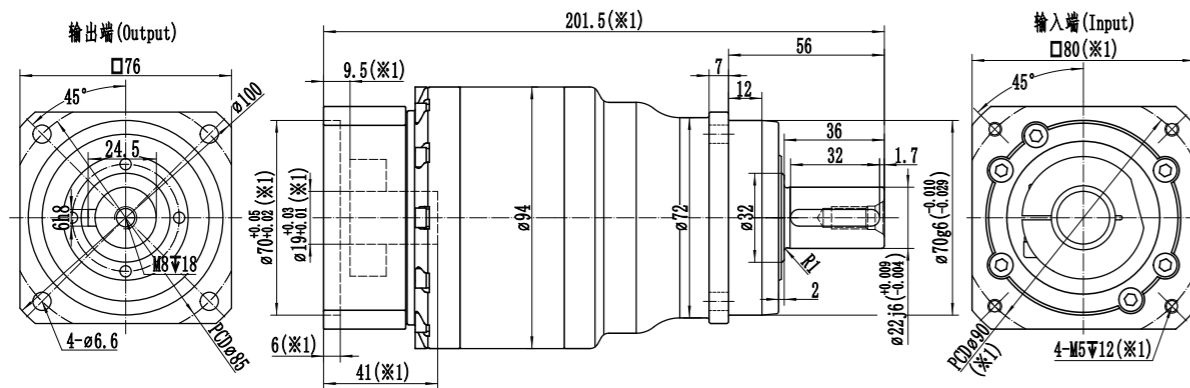
(c)要求改为润滑脂时, 不适合S1连续工作制, 请与我们联系/If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

WSH075-L2 最大14(※2)夹紧孔直径 /Max.14(※2)clamping hub's bore diameter

电机轴直径/motor shaft diameter (mm)



WSH075-L2 最大19(※2)夹紧孔直径 /Max.19(※2)clamping hub's bore diameter



※1: 尺寸会随电机尺寸而变化;
 ※2: 电机轴尺寸偏小时, 可能会使用轴套, 轴套最小壁厚1mm;
 ※减速机夹紧孔需要开键槽时, 请提前备注;
 ※注意安装前检查电机轴径和减速机夹紧孔径;
 ※请按要求安装电机

※1: Dimension will vary with the motor size;
 ※2: If the motor shaft diameter is undersized, a bushing with a minimum thickness of 1 mm may be used;
 ※ If Keyway is needed for the clamping bore, please notify in advance;
 ※Pay attention to the motor shaft diameter and reducer input clamping diameter before installation;
 ※Please install the motor as requested.

WSH100-2级

| 规格/Specification | | WSH100-2级/2-Stage | | | | | | | | | | | |
|--|-----------|---|------|------|------|------|------|------|------|------|------|------|------|
| 减速比/Ratio | 单位/Unit | 15 | 16 | 20 | 25 | 30 | 35 | 40 | 50 | 60 | 70 | 80 | 100 |
| 额定输出扭矩/Rated Output Torque T _{2N} | Nm | 230 | 330 | 330 | 330 | 310 | 300 | 330 | 330 | 310 | 300 | 230 | 200 |
| 急停扭矩/Emergency stop Torque T _{2NOT} | Nm | 3倍额定输出力矩(允许1000次)/3 Times T _{2N} | | | | | | | | | | | |
| 额定输入转速/Rated Input Speed n _{1N} ^(a) | rpm | 3300 | 3300 | 3300 | 3300 | 3300 | 3300 | 3800 | 3800 | 3800 | 3800 | 3800 | 3800 |
| 最大输入转速/Max Input Speed n _{1B} | rpm | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 |
| 空载力矩/No Load Running Torque (n ₁ =3000rpm,20°C,运转2min内) | Nm | 0.95 | 0.95 | 0.7 | 0.7 | 0.7 | 0.7 | 0.6 | 0.6 | 0.6 | 0.6 | 0.5 | 0.5 |
| 最大背隙/Max Backlash | arcmin | P0≤3 / P1≤5 / P2≤8 | | | | | | | | | | | |
| 扭转刚性/Torsional rigidity | Nm/arcmin | 32 | | | | | | | | | | | |
| 最大侧倾力矩/Max Tilting Moment M _{2K} | Nm | 670 | | | | | | | | | | | |
| 容许径向力/Allowable Radial Force F _{2R} ^(b) | N | 8500 | | | | | | | | | | | |
| 容许轴向力/Allowable Axle Force F _{2A} ^(b) | N | 7000 | | | | | | | | | | | |
| 使用寿命/Service Life | h | 20000 | | | | | | | | | | | |
| 效率/Efficient | % | ≥95 | | | | | | | | | | | |
| 使用环境温度/Use of temperature | °C | -20°C~+40°C | | | | | | | | | | | |
| 重量/Weight | kg | 7.1 | | | | | | | | | | | |
| 防护等级/Protection class | | IP65 | | | | | | | | | | | |
| 润滑/Lubrication ^(c) | | 全合成润滑油/Synthetic Lubricating Oil | | | | | | | | | | | |
| 噪音/Noise | dB(A) | ≤61 | | | | | | | | | | | |
| 转动惯量/Rotational inertia J ₁ | ≤19 | 0.85 | 0.85 | 0.7 | 0.7 | 0.7 | 0.7 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| | ≤24 | 2.1 | 2.1 | 1.9 | 1.9 | 1.9 | 1.9 | 1.85 | 1.85 | 1.85 | 1.85 | 1.85 | 1.85 |

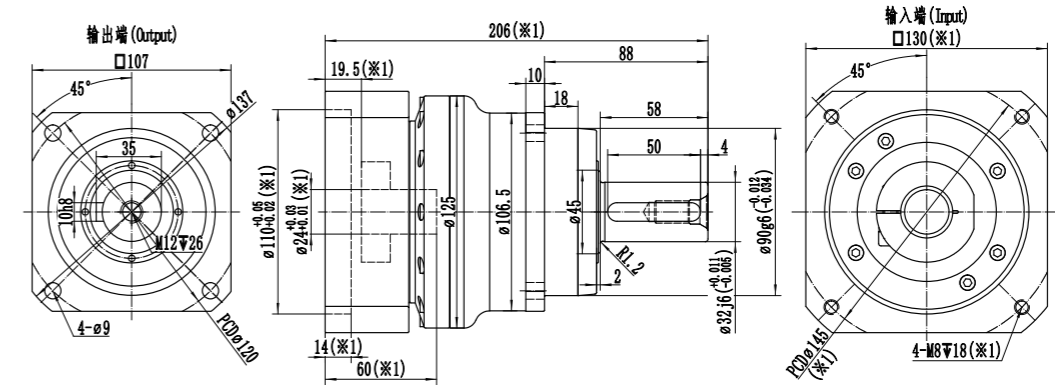
(a)环境温度超过20°C时, 建议适当降低转速使用/When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

(b)作用于输出轴中心点/Applied to the center point of the output shaft.

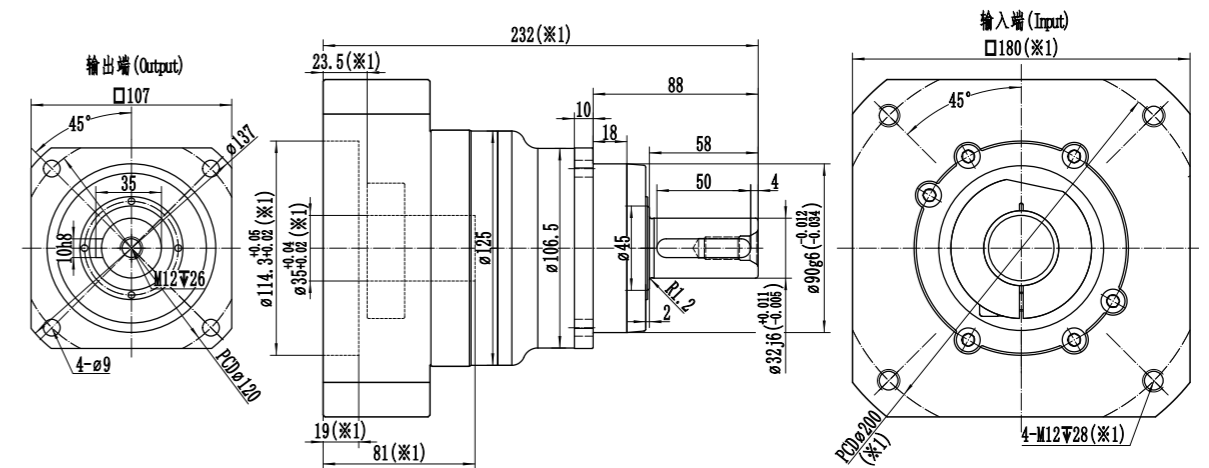
(c)要求改为润滑脂时, 不适合S1连续工作制, 请与我们联系/If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

WSH100-L1 最大24(※2)夹紧孔直径 /Max.24(※2)clamping hub's bore diameter

电机轴直径/motor shaft diameter (mm)



WSH100-L1 最大35(※2)夹紧孔直径 Max.35(※2)clamping hub's bore diameter

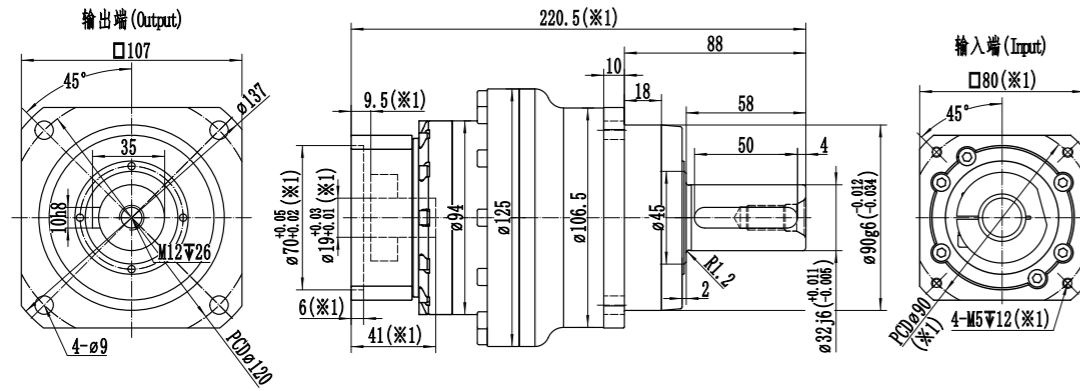


- ※1: 尺寸会随电机尺寸而变化;
- ※2: 电机轴尺寸偏小时, 可能会使用轴套, 轴套最小壁厚1mm;
- ※减速机夹紧孔需要开键槽时, 请提前备注;
- ※注意安装前检查电机轴径和减速机夹紧孔径;
- ※请按要求安装电机

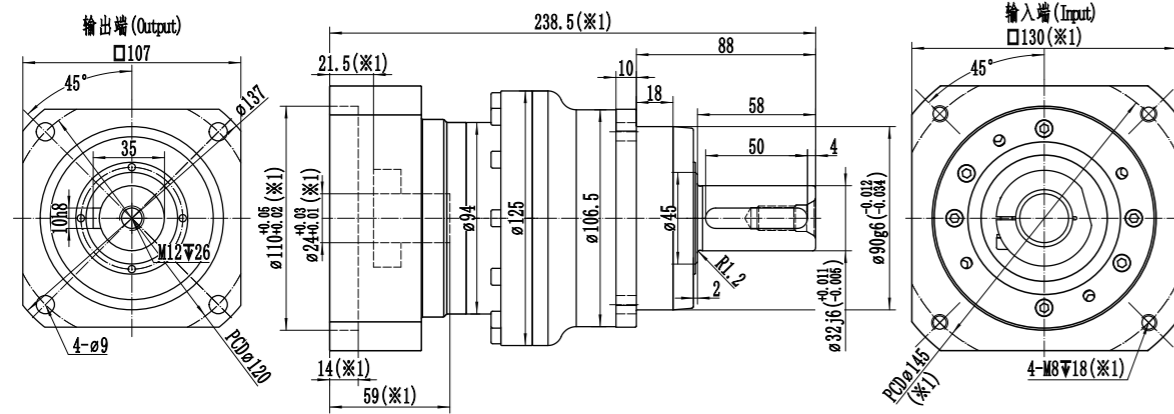
- ※1: Dimension will vary with the motor size;
- ※2: If the motor shaft diameter is undersized, a bushing with a minimum thickness of 1 mm may be used;
- ※ If Keyway is needed for the clamping bore, please notify in advance;
- ※Pay attention to the motor shaft diameter and reducer input clamping diameter before installation;
- ※Please install the motor as requested.

WSH100-L2 最大19(※2)夹紧孔直径 /Max.19(※2)clamping hub' s bore diameter

电机轴直径/motor shaft diameter (mm)



WSH100-L2最大24(※2)夹紧孔直径 /Max.24(※2)clamping hub' s bore diameter



- ※1: 尺寸会随电机尺寸而变化;
- ※2: 电机轴尺寸偏小时, 可能会使用轴套, 轴套最小壁厚1mm;
- ※减速机夹紧孔需要开键槽时, 请提前备注;
- ※注意安装前检查电机轴径和减速机夹紧孔径;
- ※请按要求安装电机

- ※1: Dimension will vary with the motor size;
- ※2: If the motor shaft diameter is undersized, a bushing with a minimum thickness of 1 mm may be used;
- ※ If Keyway is needed for the clamping bore, please notify in advance;
- ※ Pay attention to the motor shaft diameter and reducer input clamping diameter before installation;
- ※ Please install the motor as requested.

WSH140-1级

| 规格/Specification | 单位/Unit | WSH140-1级/1-Stage | | | | | | | |
|--|-----------|---|------|------|------|------|------|------|-----|
| | | 3 | 4 | 5 | 6 | 7 | 8 | 10 | |
| 减速比/Ratio | | | | | | | | | |
| 额定输出扭矩/Rated Output Torque T _{2N} | Nm | 400 | 650 | 650 | 600 | 550 | 450 | 400 | |
| 急停扭矩/Emergency stop Torque T _{2NOT} | Nm | 3倍额定输出力矩(允许1000次)/3 Times T _{2N} | | | | | | | |
| 额定输入转速/Rated Input Speed n _{1N} ^(a) | rpm | 2500 | 2500 | 2500 | 2500 | 3000 | 3000 | 3000 | |
| 最大输入转速/Max Input Speed n _{1B} | rpm | 4500 | 4500 | 4500 | 4500 | 4500 | 4500 | 4500 | |
| 空载力矩/No Load Running Torque (n ₁ =3000rpm, 20°C, 运转2min内) | Nm | 4.3 | 3.4 | 2.6 | 2.6 | 1.9 | 1.3 | 1.3 | |
| 最大背隙/Max Backlash | arcmin | P0≤1.5 / P1≤3 / P2≤5 | | | | | | | |
| 扭转刚性/Torsional rigidity | Nm/arcmin | 60 | | | | | | | |
| 最大侧倾力矩/Max Tilting Moment M _{2k} | Nm | 1630 | | | | | | | |
| 容许径向力/Allowable Radial Force F _{2R} ^(b) | N | 16000 | | | | | | | |
| 容许轴向力/Allowable Axle Force F _{2A} ^(b) | N | 12000 | | | | | | | |
| 使用寿命/Service Life | h | 20000 | | | | | | | |
| 效率/Efficient | % | ≥97 | | | | | | | |
| 使用环境温度/Use of temperature | °C | -20°C~+40°C | | | | | | | |
| 重量/Weight | kg | 15.1 | | | | | | | |
| 防护等级/Protection class | | IP65 | | | | | | | |
| 润滑/Lubrication ^(c) | | 全合成润滑油/Synthetic Lubricating Oil | | | | | | | |
| 噪音/Noise | dB(A) | ≤65 | | | | | | | |
| 转动惯量/Rotational inertia J ₁ | ≤24 | kg.cm ² | 9.5 | 7 | 5.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| | ≤28 | | 10.5 | 8 | 6.5 | 5.5 | 5.5 | 5.5 | 5.5 |
| | ≤35 | | 14.5 | 11.5 | 10 | 9 | 9 | 9 | 9 |
| | ≤42 | | 26 | 24 | 23 | 22 | 22 | 22 | 22 |

(a)环境温度超过20°C时, 建议适当降低转速使用/When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

(b)作用于输出轴中心点/Applied to the center point of the output shaft.

(c)要求改为润滑脂时, 不适合S1连续工作制, 请与我们联系/If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

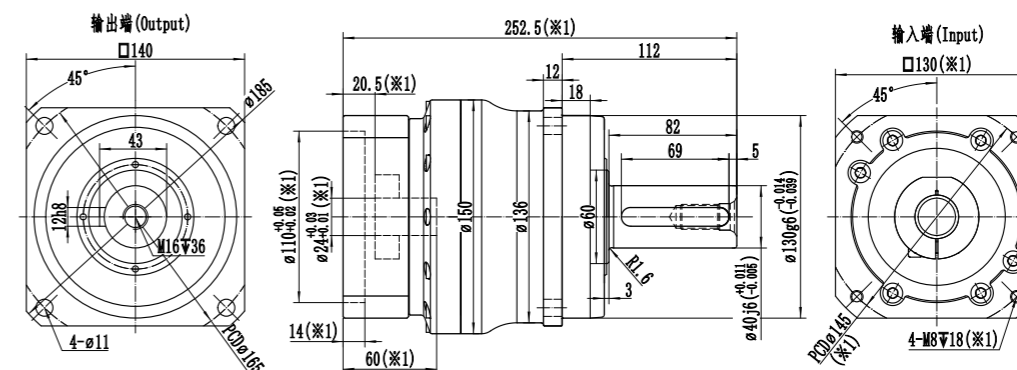
WSH140-2级

| 规格/Specification | | WSH140-2级/2-Stage | | | | | | | | | | | | |
|--|-----------|---|------|------|------|------|------|------|------|------|------|------|------|-----|
| 减速比/Ratio | 单位/Unit | 15 | 16 | 20 | 25 | 30 | 35 | 40 | 50 | 60 | 70 | 80 | 100 | |
| 额定输出扭矩/Rated Output Torque T _{2N} | Nm | 400 | 650 | 650 | 650 | 600 | 550 | 650 | 650 | 600 | 550 | 450 | 400 | |
| 急停扭矩/Emergency stop Torque T _{2NOT} | Nm | 3倍额定输出力矩(允许1000次)/3 Times T _{2N} | | | | | | | | | | | | |
| 额定输入转速/Rated Input Speed n _{1N} ^(a) | rpm | 3000 | 3000 | 3000 | 3000 | 3000 | 3000 | 3300 | 3300 | 3300 | 3300 | 3300 | 3300 | |
| 最大输入转速/Max Input Speed n _{1B} | rpm | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | |
| 空载力矩/No Load Running Torque (n ₁ =3000rpm,20°C,运转2min内) | Nm | 1.5 | 1.5 | 1.3 | 1.3 | 1.3 | 1.3 | 1.1 | 1.1 | 1.1 | 1.1 | 0.95 | 0.95 | |
| 最大背隙/Max Backlash | arcmin | P0≤3 / P1≤5 / P2≤8 | | | | | | | | | | | | |
| 扭转刚性/Torsional rigidity | Nm/arcmin | 60 | | | | | | | | | | | | |
| 最大侧倾力矩/Max Tilting Moment M _{2k} | Nm | 1630 | | | | | | | | | | | | |
| 容许径向力/Allowable Radial Force F _{2R} ^(b) | N | 16000 | | | | | | | | | | | | |
| 容许轴向力/Allowable Axle Force F _{2A} ^(b) | N | 12000 | | | | | | | | | | | | |
| 使用寿命/Service Life | h | 20000 | | | | | | | | | | | | |
| 效率/Efficient | % | ≥95 | | | | | | | | | | | | |
| 使用环境温度/Use of temperature | °C | -20°C~+40°C | | | | | | | | | | | | |
| 重量/Weight | kg | 17.1 | | | | | | | | | | | | |
| 防护等级/Protection class | | IP65 | | | | | | | | | | | | |
| 润滑/Lubrication ^(c) | | 全合成润滑油/Synthetic Lubricating Oil | | | | | | | | | | | | |
| 噪音/Noise | dB(A) | ≤63 | | | | | | | | | | | | |
| 转动惯量/Rotational inertia J ₁ | ≤19 | kg.cm ² | 3.2 | 3.2 | 2.3 | 2.3 | 2.3 | 2.3 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 |
| | ≤24 | | 3.7 | 3.7 | 2.8 | 2.8 | 2.8 | 2.8 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 |
| | ≤28 | | 4.2 | 4.2 | 3.3 | 3.3 | 3.3 | 3.3 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 |
| | ≤35 | | 10 | 10 | 9.3 | 9.3 | 9.3 | 9.3 | 8.5 | 8.5 | 8.5 | 8.5 | 8.5 | 8.5 |

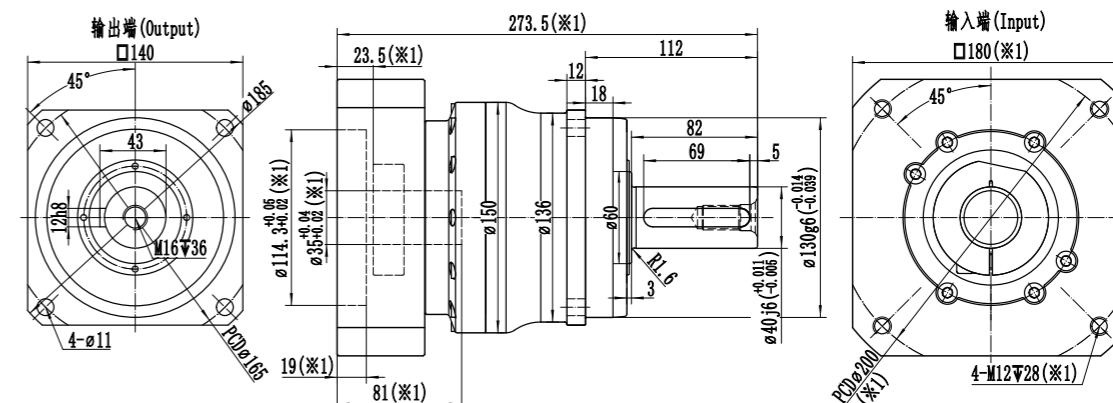
(a)环境温度超过20°C时, 建议适当降低转速使用/When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.
 (b)作用于输出轴中心点/Applied to the center point of the output shaft.
 (c)要求改为润滑脂时, 不适合S1连续工作制, 请与我们联系/If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

WSH140-L1 最大24(※2)夹紧孔直径 Max.24(※2)clamping hub's bore diameter

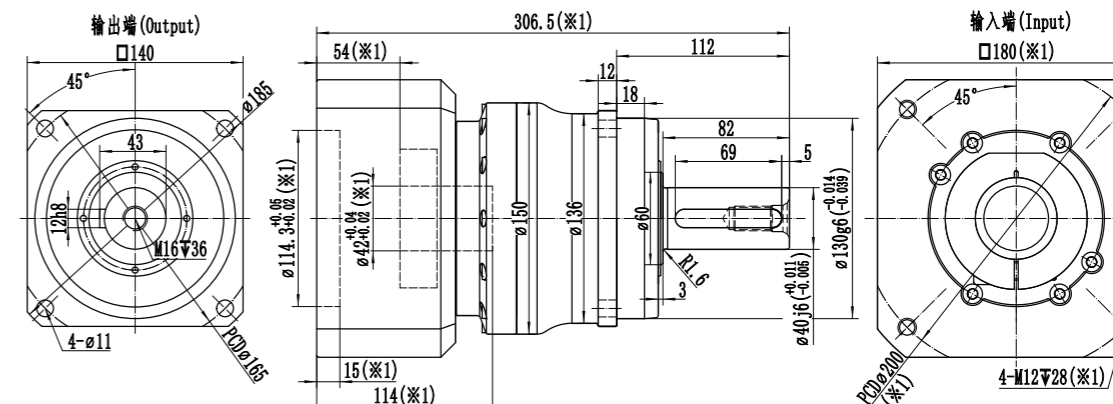
电机轴直径/motor shaft diameter (mm)



WSH140-L1 最大35(※2)夹紧孔直径 /Max.35(※2)clamping hub's bore diameter



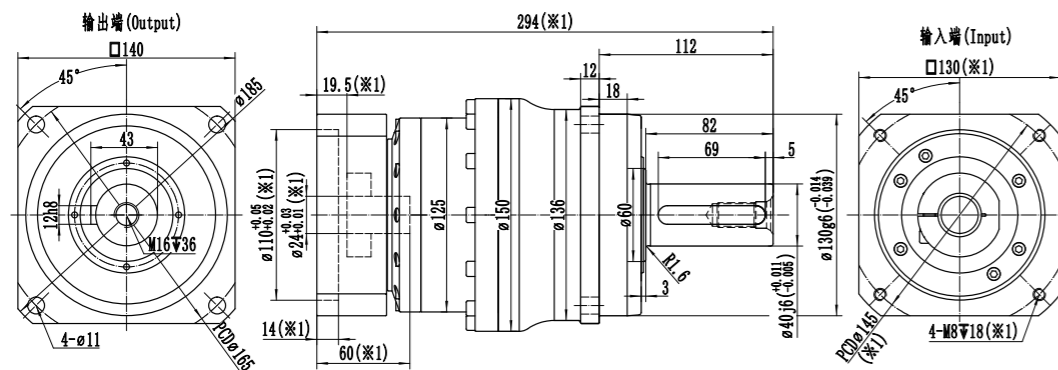
WSH140-L1 最大42(※2)夹紧孔直径 /Max.42(※2)clamping hub's bore diameter



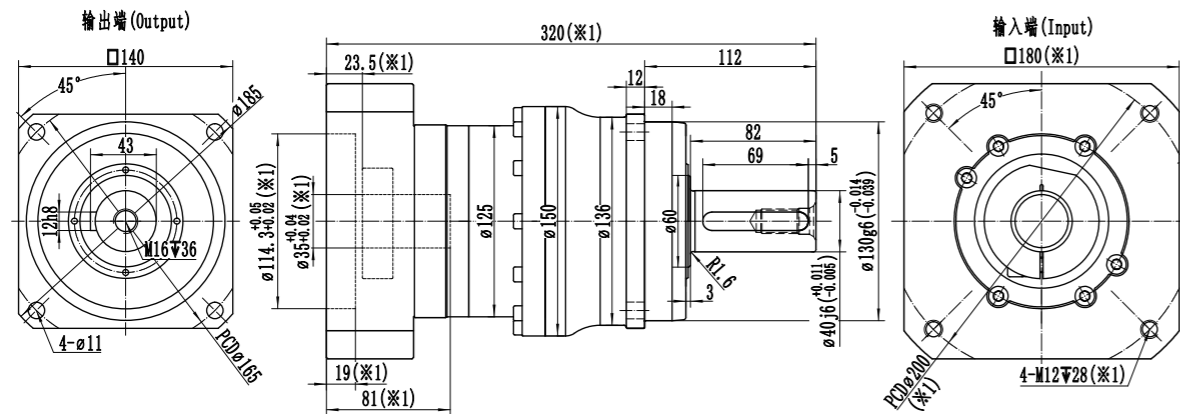
※1: 尺寸会随电机尺寸而变化; ※1: Dimension will vary with the motor size;
 ※2: 电机轴尺寸偏小时, 可能会使用轴套, 轴套最小壁厚1mm; ※2: If the motor shaft diameter is undersized, a bushing with a minimum thickness of 1mm may be used;
 ※减速机夹紧孔需要开键槽时, 请提前备注; ※ If Keyway is needed for the clamping bore, please notify in advance;
 ※注意安装前检查电机轴径和减速机夹紧孔径; ※ Pay attention to the motor shaft diameter and reducer input clamping diameter before installation;
 ※请按要求安装电机; ※ Please install the motor as requested.

WSH140-L2 最大24(※2)夹紧孔直径 / Max.24(※2)clamping hub's bore diameter

电机轴直径/motor shaft diameter (mm)



WSH140-L2 最大35(※2)夹紧孔直径 / Max.35(※2)clamping hub's bore diameter



- ※1: 尺寸会随电机尺寸而变化;
- ※2: 电机轴尺寸偏小时, 可能会使用轴套, 轴套最小壁厚1mm;
- ※减速机夹紧孔需要开键槽时, 请提前备注;
- ※注意安装前检查电机轴径和减速机夹紧孔直径;
- ※请按要求安装电机

- ※1: Dimension will vary with the motor size;
- ※2: If the motor shaft diameter is undersized, a bushing with a minimum thickness of 1 mm may be used;
- ※ If Keyway is needed for the clamping bore, please notify in advance;
- ※Pay attention to the motor shaft diameter and reducer input clamping diameter before installation;
- ※Please install the motor as requested.

WSH180-1级

| 规格/Specification | 单位/Unit | WSH180-1级/1-Stage | | | | | | |
|--|-----------|--|------|------|------|------|------|------|
| | | 3 | 4 | 5 | 6 | 7 | 8 | 10 |
| 减速比/Ratio | | 3 | 4 | 5 | 6 | 7 | 8 | 10 |
| 额定输出扭矩/Rated Output Torque T _{2N} | Nm | 1000 | 1400 | 1400 | 1100 | 1000 | 850 | 760 |
| 急停扭矩/Emergency stop Torque T _{2NOT} | Nm | 3倍额定输出力矩 (允许1000次) / 3 Times T _{2N} | | | | | | |
| 额定输入转速/Rated Input Speed n _{1N} ^(a) | rpm | 2000 | 2000 | 2000 | 2000 | 2500 | 2500 | 2500 |
| 最大输入转速/Max Input Speed n _{1B} | rpm | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 |
| 空载力矩/No Load Running Torque (n ₁ =2000rpm, 20°C, 运转2min内) | Nm | 7.2 | 5.7 | 4.3 | 4.3 | 3.2 | 2.15 | 2.15 |
| 最大背隙/Max Backlash | arcmin | P0≤1.5 / P1≤3 / P2≤5 | | | | | | |
| 扭转刚性/Torsional rigidity | Nm/arcmin | 175 | | | | | | |
| 最大侧倾力矩/Max Tilting Moment M _{2K} | Nm | 3200 | | | | | | |
| 容许径向力/Allowable Radial Force F _{2R} ^(b) | N | 23000 | | | | | | |
| 容许轴向力/Allowable Axle Force F _{2A} ^(b) | N | 19000 | | | | | | |
| 使用寿命/Service Life | h | 20000 | | | | | | |
| 效率/Efficient | % | ≥97 | | | | | | |
| 使用环境温度/Use of temperature | °C | -20°C~+40°C | | | | | | |
| 重量/Weight | kg | 30 | | | | | | |
| 防护等级/Protection class | | IP65 | | | | | | |
| 润滑/Lubrication ^(c) | | 全合成润滑油/Synthetic Lubricating Oil | | | | | | |
| 噪音/Noise | dB(A) | ≤66 | | | | | | |
| 转动惯量/Rotational inertia J1 | ≤28 | - | - | - | - | - | - | - |
| | ≤35 | 52 | 25 | 20 | 16 | 14 | 12 | 12 |
| | ≤42 | 52 | 36 | 31 | 27 | 25 | 23 | 23 |
| | ≤55 | 66 | 50 | 45 | 40 | 38 | 36 | 36 |

(a)环境温度超过20°C时, 建议适当降低转速使用/When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.
 (b)作用于输出轴中心点/Applied to the center point of the output shaft.
 (c)要求改为润滑脂时, 不适合S1连续工作制, 请与我们联系/If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

WSH180-2级

| 规格/Specification | | WSH180-2级/2-Stage | | | | | | | | | | | |
|--|-----------|---|------|------|------|------|------|------|------|------|------|------|------|
| 减速比/Ratio | 单位/Unit | 15 | 16 | 20 | 25 | 30 | 35 | 40 | 50 | 60 | 70 | 80 | 100 |
| 额定输出扭矩/Rated Output Torque T _{2N} | Nm | 1000 | 1400 | 1400 | 1400 | 1100 | 1100 | 1400 | 1400 | 1100 | 1000 | 850 | 760 |
| 急停扭矩/Emergency stop Torque T _{2NOT} | Nm | 3倍额定输出力矩(允许1000次)/3 Times T _{2N} | | | | | | | | | | | |
| 额定输入转速/Rated Input Speed n _{1N} ^(a) | rpm | 2500 | 2500 | 2500 | 2500 | 2500 | 2500 | 3000 | 3000 | 3000 | 3000 | 3000 | 3000 |
| 最大输入转速/Max Input Speed n _{1B} | rpm | 4500 | 4500 | 4500 | 4500 | 4500 | 4500 | 4500 | 4500 | 4500 | 4500 | 4500 | 4500 |
| 空载力矩/No Load Running Torque (n ₁ =2000rpm, 20°C, 运转2min内) | Nm | 2.6 | 2.6 | 1.7 | 1.7 | 1.7 | 1.7 | 1.4 | 1.4 | 1.4 | 1.4 | 1.3 | 1.3 |
| 最大背隙/Max Backlash | arcmin | P0≤3 / P1≤5 / P2≤8 | | | | | | | | | | | |
| 扭转刚性/Torsional rigidity | Nm/arcmin | 175 | | | | | | | | | | | |
| 最大侧倾力矩/Max Tilting Moment M _{2k} | Nm | 3200 | | | | | | | | | | | |
| 容许径向力/Allowable Radial Force F _{2R} ^(b) | N | 23000 | | | | | | | | | | | |
| 容许轴向力/Allowable Axle Force F _{2A} ^(b) | N | 19000 | | | | | | | | | | | |
| 使用寿命/Service Life | h | 20000 | | | | | | | | | | | |
| 效率/Efficient | % | ≥95 | | | | | | | | | | | |
| 使用环境温度/Use of temperature | °C | -20°C~+40°C | | | | | | | | | | | |
| 重量/Weight | kg | 35 | | | | | | | | | | | |
| 防护等级/Protection class | | IP65 | | | | | | | | | | | |
| 润滑/Lubrication ^(c) | | 全合成润滑油/Synthetic Lubricating Oil | | | | | | | | | | | |
| 噪音/Noise | dB(A) | ≤65 | | | | | | | | | | | |
| 转动惯量/Rotational inertia J1 | ≤24 | 6 | 6 | 5 | 5 | 5 | 5 | 4 | 4 | 4 | 4 | 4 | 4 |
| | ≤28 | 6.5 | 6.5 | 5.5 | 5.5 | 5.5 | 5.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| | ≤35 | 8 | 8 | 7 | 7 | 7 | 7 | 6 | 6 | 6 | 6 | 6 | 6 |
| | ≤42 | 20 | 20 | 19 | 19 | 19 | 19 | 18 | 18 | 18 | 18 | 18 | 18 |

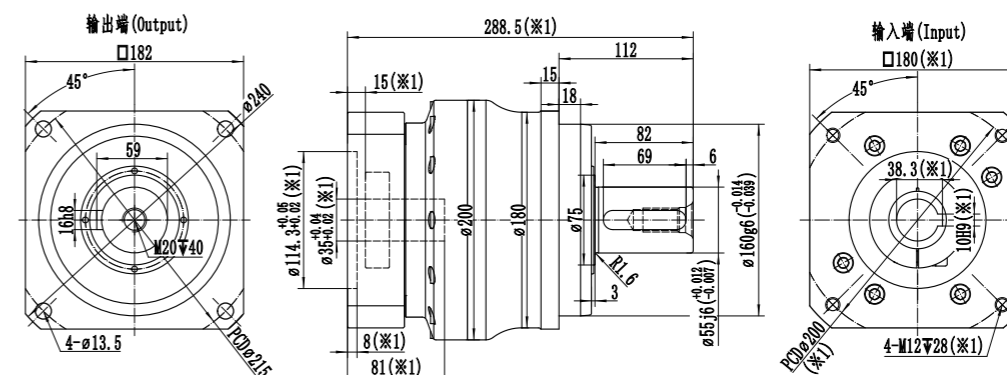
(a)环境温度超过20°C时, 建议适当降低转速使用/When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

(b)作用于输出轴中心点/Applied to the center point of the output shaft.

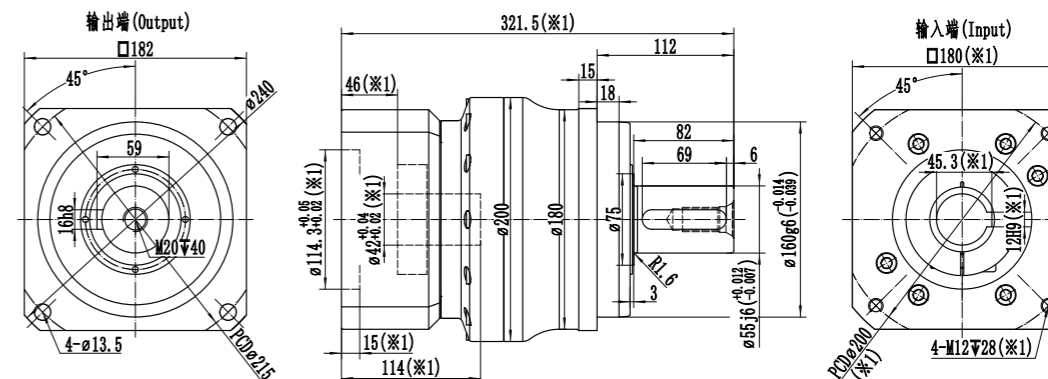
(c)要求改为润滑脂时, 不适合S1连续工作制, 请与我们联系/If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

WSH180-L1 最大35(※2)夹紧孔直径 /Max.35(※2)clamping hub's bore diameter

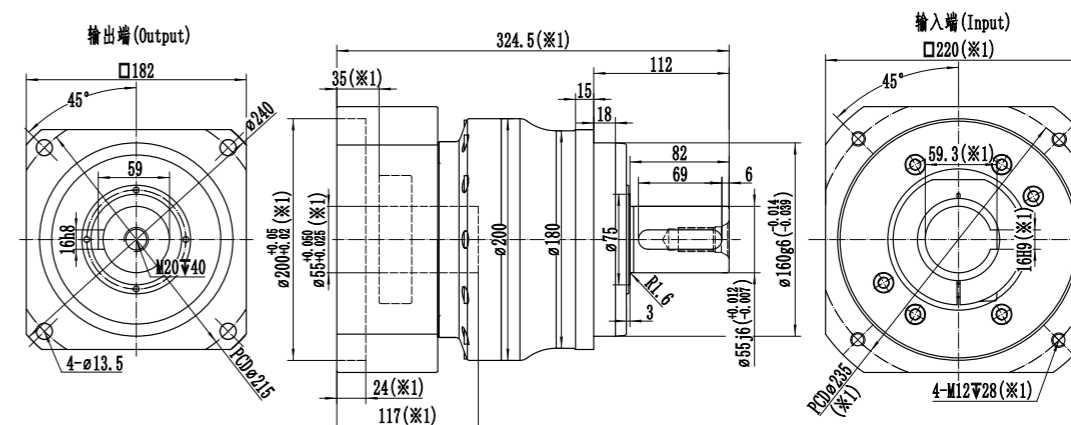
电机轴直径/motor shaft diameter (mm)



WSH180-L1 最大42(※2)夹紧孔直径 /Max.42(※2)clamping hub's bore diameter



WSH180-L1 最大55(※2)夹紧孔直径 /Max.55(※2)clamping hub's bore diameter



※1: 尺寸会随电机尺寸而变化;

※2: 电机轴尺寸偏小时, 可能会使用轴套, 轴套最小壁厚1mm;

※WSH180减速机, 夹紧孔默认开键槽, 无需开键槽时, 请提前备注;

※注意安装前检查电机轴径和减速机夹紧孔径;

※请按要求安装电机

※1: Dimension will vary with the motor size;

※2: If the motor shaft diameter is undersized, a bushing with a minimum thickness of 1mm may be used;

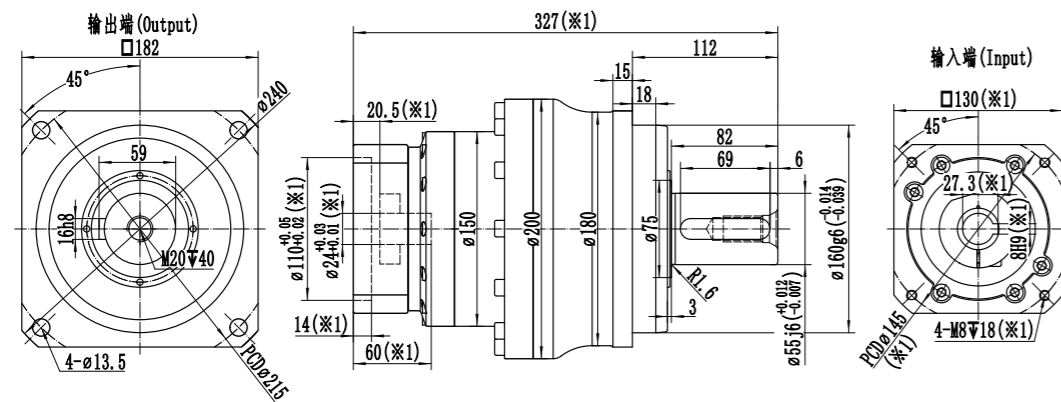
※WSH180 gearbox: Default keyway on input shaft. Please notify if not needed.

※Pay attention to the motor shaft diameter and reducer input clamping diameter before installation;

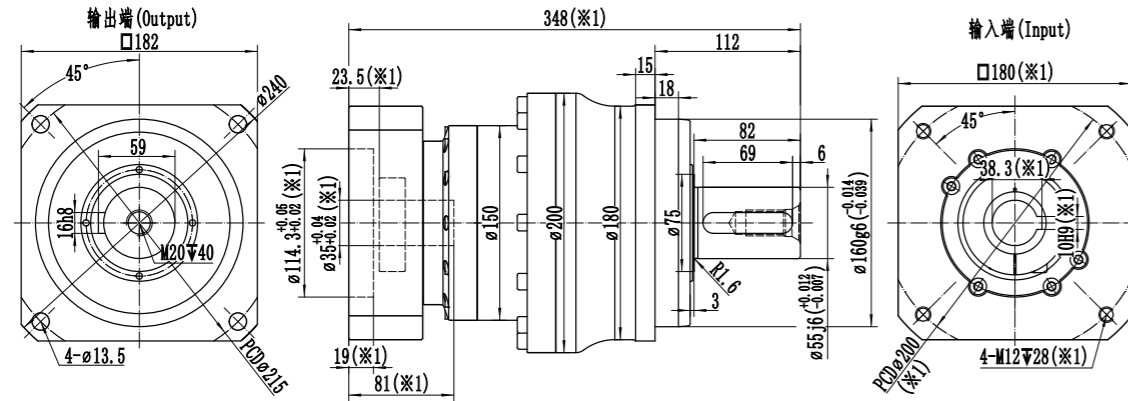
※Please install the motor as requested.

WSH180-L2 最大24(※2)夹紧孔直径 Max.24(※2)clamping hub's bore diameter

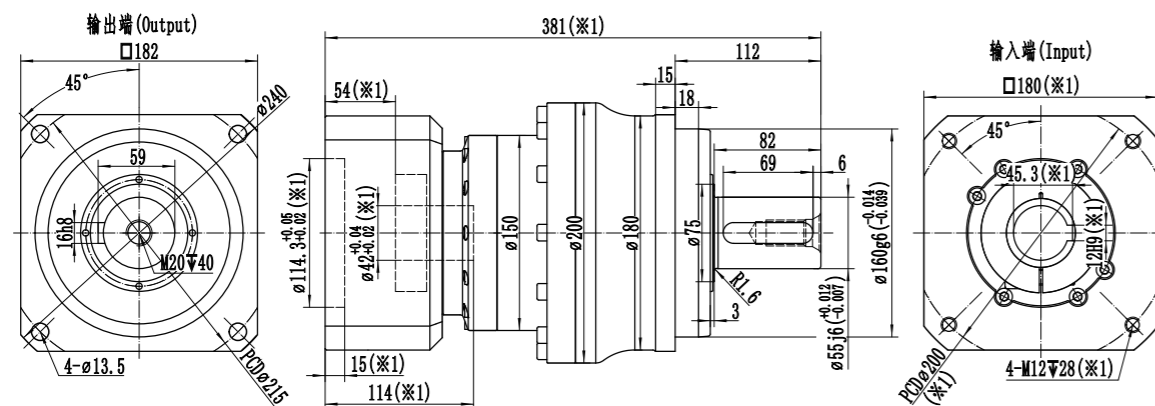
电机轴直径/motor shaft diameter (mm)



WSH180-L2 最大35(※2)夹紧孔直径 Max.35(※2)clamping hub's bore diameter



WSH180-L2 最大42(※2)夹紧孔直径 Max.42(※2)clamping hub's bore diameter



※1: 尺寸会随电机尺寸而变化;
 ※2: 电机轴尺寸偏小时, 可能会使用轴套, 轴套最小壁厚1mm;
 ※WSH180减速机, 夹紧孔默认开键槽, 无需开键槽时, 请提前备注;
 ※注意安装前检查电机轴径和减速机夹紧孔径;
 ※请按要安装电机

※1: Dimension will vary with the motor size;
 ※2: If the motor shaft diameter is undersized, a bushing with a minimum thickness of 1 mm may be used;
 ※ WSH180 gearbox: Default keyway on input shaft. Please notify if not needed.
 ※Pay attention to the motor shaft diameter and reducer input clamping diameter before installation;
 ※Please install the motor as requested.

WSH210-1级

| 规格/Specification | | WSH210-1级/1-Stage | | | | | | | |
|--|-----------|--|------|------|------|------|------|------|----|
| 减速比/Ratio | 单位/Unit | 3 | 4 | 5 | 6 | 7 | 8 | 10 | |
| 额定输出扭矩/Rated Output Torque T _{2N} | Nm | 1800 | 2400 | 2400 | 1950 | 1700 | 1450 | 1350 | |
| 急停扭矩/Emergency stop Torque T _{2NOT} | Nm | 3倍额定输出力矩 (允许1000次) / 3 Times T _{2N} | | | | | | | |
| 额定输入转速/Rated Input Speed n _{1N} (a) | rpm | 1500 | 1500 | 1500 | 1500 | 2000 | 2000 | 2000 | |
| 最大输入转速/Max Input Speed n _{1B} | rpm | 3000 | 3000 | 3000 | 3000 | 3000 | 3000 | 3000 | |
| 空载力矩/No Load Running Torque (n ₁ =2000rpm, 20°C, 运转2min内) | Nm | 9.55 | 7.65 | 5.7 | 5.7 | 4.2 | 2.85 | 2.85 | |
| 最大背隙/Max Backlash | arcmin | P0≤1.5 / P1≤3 / P2≤5 | | | | | | | |
| 扭转刚性/Torsional rigidity | Nm/arcmin | 410 | | | | | | | |
| 最大侧倾力矩/Max Tilting Moment M _{2K} | Nm | 5300 | | | | | | | |
| 容许径向力/Allowable Radial Force F _{2R} (b) | N | 30000 | | | | | | | |
| 容许轴向力/Allowable Axle Force F _{2A} (b) | N | 24000 | | | | | | | |
| 使用寿命/Service Life | h | 20000 | | | | | | | |
| 效率/Efficient | % | ≥97 | | | | | | | |
| 使用环境温度/Use of temperature | °C | -20°C~+40°C | | | | | | | |
| 重量/Weight | kg | 50 | | | | | | | |
| 防护等级/Protection class | | IP65 | | | | | | | |
| 润滑/Lubrication (c) | | 全合成润滑油/Synthetic Lubricating Oil | | | | | | | |
| 噪音/Noise | dB(A) | ≤66 | | | | | | | |
| 转动惯量/Rotational inertia J ₁ | ≤42 | kg·cm ² | 80 | 58 | 51 | 43 | 40 | 33 | 33 |
| | ≤55 | | 105 | 80 | 71 | 63 | 60 | 53 | 53 |
| | ≤65 | | 133 | 108 | 99 | 91 | 88 | 81 | 81 |

(a) 环境温度超过20°C时, 建议适当降低转速使用/When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

(b) 作用于输出轴中心点/Applied to the center point of the output shaft.

(c) 要求改为润滑脂时, 不适合S1连续工作制, 请与我们联系/If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

WSH210-2级

| 规格/Specification | | WSH210-2级/2-Stage | | | | | | | | | | | | |
|--|-----------|---|------|------|------|------|------|------|------|------|------|------|------|----|
| 减速比/Ratio | 单位/Unit | 15 | 16 | 20 | 25 | 30 | 35 | 40 | 50 | 60 | 70 | 80 | 100 | |
| 额定输出扭矩/Rated Output Torque T _{2N} | Nm | 1800 | 2400 | 2400 | 2400 | 1950 | 1700 | 2400 | 2400 | 1950 | 1700 | 1450 | 1350 | |
| 急停扭矩/Emergency stop Torque T _{2NOT} | Nm | 3倍额定输出力矩(允许1000次)/3 Times T _{2N} | | | | | | | | | | | | |
| 额定输入转速/Rated Input Speed n _{1N} ^(a) | rpm | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2500 | 2500 | 2500 | 2500 | 2500 | 2500 | |
| 最大输入转速/Max Input Speed n _{1B} | rpm | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 | |
| 空载力矩/No Load Running Torque (n ₁ =2000rpm, 20°C, 运转2min内) | Nm | 4.3 | 4.3 | 2.85 | 2.85 | 2.85 | 2.85 | 2.3 | 2.3 | 2.3 | 2.3 | 2.15 | 2.15 | |
| 最大背隙/Max Backlash | arcmin | P0≤3 / P1≤5 / P2≤8 | | | | | | | | | | | | |
| 扭转刚性/Torsional rigidity | Nm/arcmin | 410 | | | | | | | | | | | | |
| 最大侧倾力矩/Max Tilting Moment M _{2k} | Nm | 5300 | | | | | | | | | | | | |
| 容许径向力/Allowable Radial Force F _{2R} ^(b) | N | 30000 | | | | | | | | | | | | |
| 容许轴向力/Allowable Axle Force F _{2A} ^(b) | N | 24000 | | | | | | | | | | | | |
| 使用寿命/Service Life | h | 20000 | | | | | | | | | | | | |
| 效率/Efficient | % | ≥95 | | | | | | | | | | | | |
| 使用环境温度/Use of temperature | °C | -20°C~+40°C | | | | | | | | | | | | |
| 重量/Weight | kg | 57 | | | | | | | | | | | | |
| 防护等级/Protection class | | IP65 | | | | | | | | | | | | |
| 润滑/Lubrication ^(c) | | 全合成润滑油/Synthetic Lubricating Oil | | | | | | | | | | | | |
| 噪音/Noise | dB(A) | ≤66 | | | | | | | | | | | | |
| 转动惯量/Rotational inertia J1 | ≤35 | kg·cm ² | 18 | 18 | 13 | 13 | 13 | 13 | 10 | 10 | 10 | 10 | 10 | 10 |
| | ≤42 | | 29 | 29 | 24 | 24 | 24 | 24 | 19 | 19 | 19 | 19 | 19 | 19 |
| | ≤55 | | 43 | 43 | 38 | 38 | 38 | 38 | 33 | 33 | 33 | 33 | 33 | 33 |

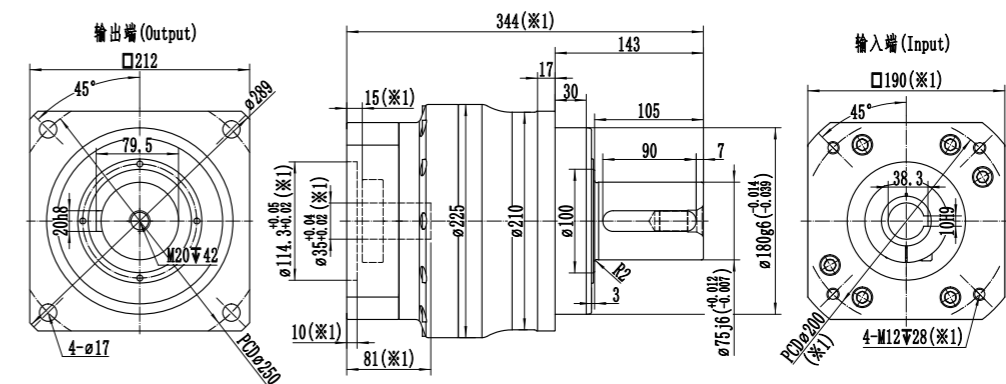
(a)环境温度超过20°C时, 建议适当降低转速使用/When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

(b)作用于输出轴中心点/Applied to the center point of the output shaft.

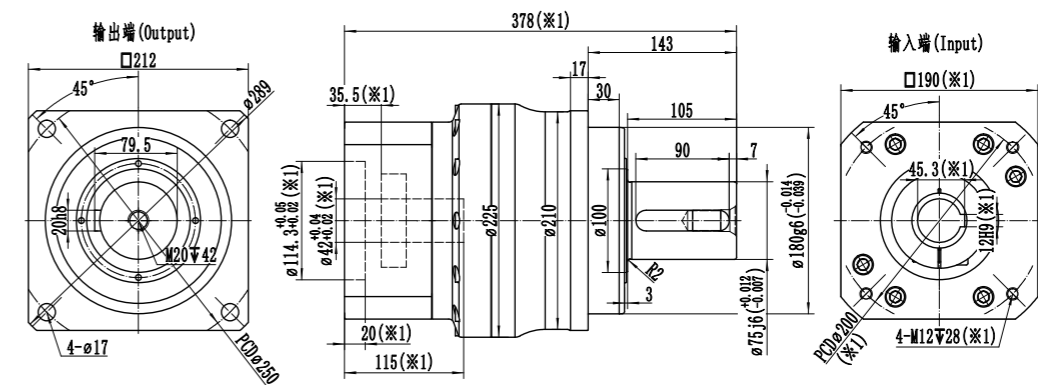
(c)要求改为润滑脂时, 不适合S1连续工作制, 请与我们联系/If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

WSH210-L1 最大35(※2)夹紧孔直径 / Max.35(※2)clamping hub's bore diameter

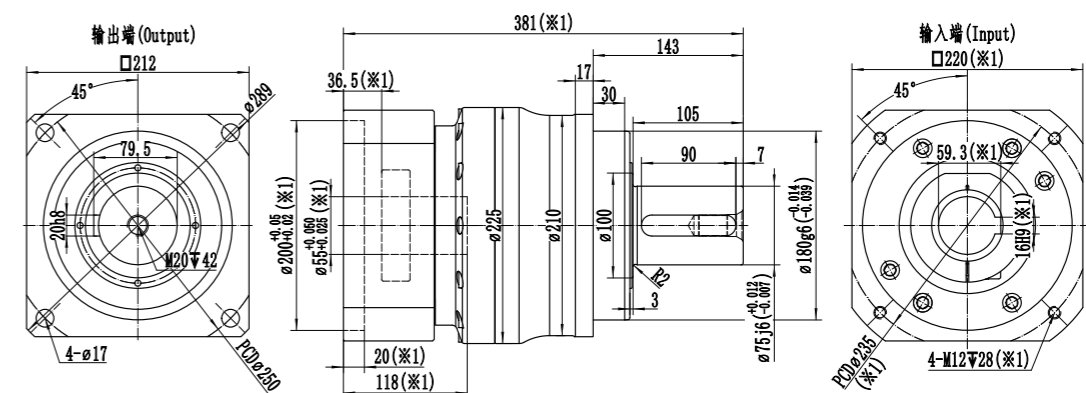
电机轴直径/motor shaft diameter (mm)



WSH210-L1 最大42(※2)夹紧孔直径 / Max.42(※2)clamping hub's bore diameter



WSH210-L1 最大55(※2)夹紧孔直径 / Max.55(※2)clamping hub's bore diameter



※1: 尺寸会随电机尺寸而变化;

※2: 电机轴尺寸偏小时, 可能会使用轴套, 轴套最小壁厚1mm;

※WSH210减速机, 夹紧孔默认开键槽, 无需开键槽时, 请提前备注;

※注意安装前检查电机轴径和减速机夹紧孔径;

※请按要求安装电机

※1: Dimension will vary with the motor size;

※2: If the motor shaft diameter is undersized, a bushing with a minimum thickness of 1 mm may be used;

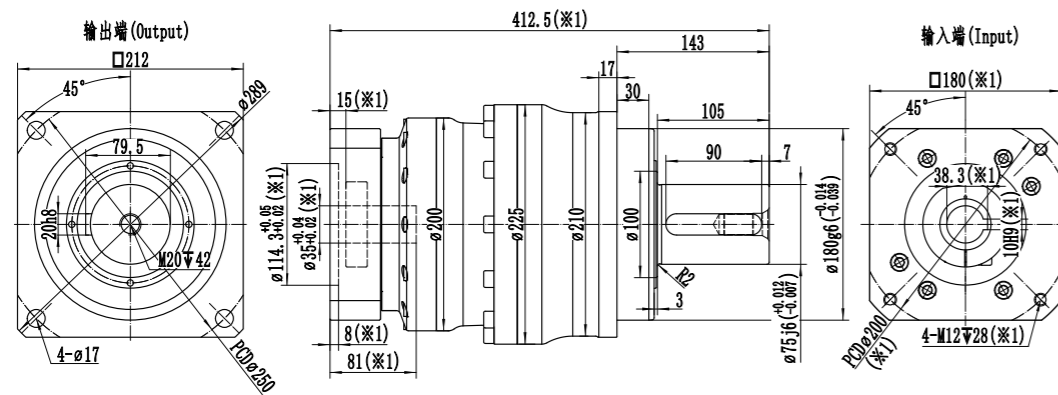
※WSH210 gearbox: Default keyway on input shaft. Please notify if not needed.

※Pay attention to the motor shaft diameter and reducer input clamping diameter before installation;

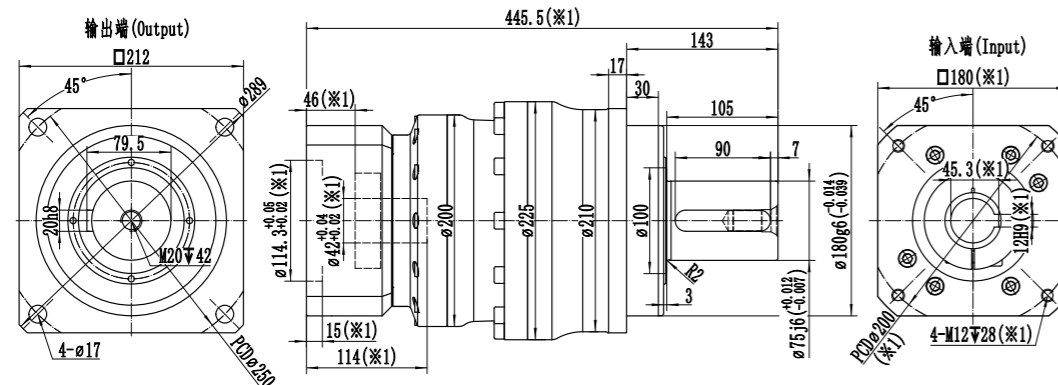
※Please install the motor as requested.

WSH210-L2 最大35(※2)夹紧孔直径 / Max.35(※2)clamping hub' s bore diameter

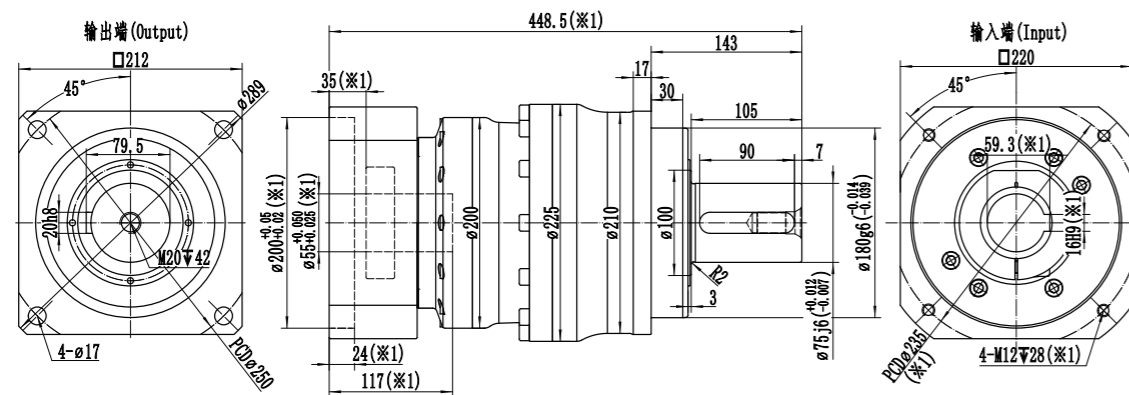
电机轴直径/motor shaft diameter (mm)



WSH210-L2 最大42(※2)夹紧孔直径 / Max.42(※2)clamping hub' s bore diameter



WSH210-L2 最大55(※2)夹紧孔直径 / Max.55(※2)clamping hub' s bore diameter



- ※1: 尺寸会随电机尺寸而变化;
- ※2: 电机轴尺寸偏小时, 可能会使用轴套, 轴套最小壁厚1mm;
- ※WSH210减速机, 夹紧孔默认开键槽, 无需开键槽时, 请提前备注;
- ※注意安装前检查电机轴径和减速机夹紧孔径;
- ※请按要求安装电机

- ※1: Dimension will vary with the motor size;
- ※2: If the motor shaft diameter is undersized, a bushing with a minimum thickness of 1 mm may be used;
- ※WSH210 gearbox: Default keyway on input shaft. Please notify if not needed.
- ※Pay attention to the motor shaft diameter and reducer input clamping diameter before installation;
- ※Please install the motor as requested.

WSH240-L1/L2级

| 规格/Specification | 单位/Unit | WSH240-1级/1-Stage | | | | | WSH240-2级/2-Stage | | | | | | | | |
|--|-----------|--|------|------|-------|------|--------------------|------|------|------|------|------|------|------|------|
| | | 3 | 4 | 5 | 6 | 10 | 15 | 16 | 20 | 25 | 30 | 35 | 40 | 50 | 60 |
| 减速比/Ratio | | | | | | | | | | | | | | | |
| 额定输出扭矩/Rated Output Torque T _{2N} | Nm | 4100 | 5500 | 5100 | 3600 | 2000 | 4100 | 5500 | 5500 | 5100 | 3600 | 5100 | 4200 | 5100 | 3600 |
| 急停扭矩/Emergency stop Torque T _{2NOT} | Nm | 3倍额定输出力矩 (允许1000次) / 3 Times T _{2N} | | | | | | | | | | | | | |
| 额定输入转速/Rated Input Speed n _{1N} ^(a) | rpm | 1500 | 1500 | 1500 | 1500 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2500 | 2500 | 2500 |
| 最大输入转速/Max Input Speed n _{1B} | rpm | 3000 | 3000 | 3000 | 3000 | 3000 | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 |
| 空载力矩/No Load Running Torque (n ₁ =2000rpm, 20°C, 运转2min内) | Nm | 14.5 | 11.5 | 9 | 9 | 7 | 8 | 8 | 7 | 7 | 7 | 6 | 4 | 4 | 4 |
| 最大背隙/Max Backlash | arcmin | P0≤1.5 / P1≤3 / P2≤5 | | | | | P0≤3 / P1≤5 / P2≤8 | | | | | | | | |
| 扭转刚性/Torsional rigidity | Nm/arcmin | 900 | | 700 | | 800 | | 600 | | 800 | | 600 | | | |
| 最大侧倾力矩/Max Tilting Moment M _{2K} | Nm | 7400 | | | | | 7400 | | | | | | | | |
| 容许径向力/Allowable Radial Force F _{2R} ^(b) | N | 45000 | | | | | 45000 | | | | | | | | |
| 容许轴向力/Allowable Axle Force F _{2A} ^(b) | N | 35000 | | | | | 35000 | | | | | | | | |
| 使用寿命/Service Life | h | 20000 | | | | | 20000 | | | | | | | | |
| 效率/Efficient | % | ≥97 | | | | | ≥95 | | | | | | | | |
| 使用环境温度/Use of temperature | °C | -20°C~+40°C | | | | | -20°C~+40°C | | | | | | | | |
| 重量/Weight | kg | 60 | | | | | 70 | | | | | | | | |
| 防护等级/Protection class | | IP65 | | | | | IP65 | | | | | | | | |
| 润滑/Lubrication ^(c) | | 全合成润滑油/Synthetic Lubricating Oil | | | | | | | | | | | | | |
| 噪音/Noise | dB(A) | ≤68 | | | | | ≤66 | | | | | | | | |
| 转动惯量/Rotational inertia J ₁ | ≤35 | / | / | / | / | / | 25 | 25 | 20 | 20 | 20 | 20 | 20 | 16 | 16 |
| | ≤42 | 150 | 104 | 85 | 61.2 | 43 | 36 | 36 | 31 | 31 | 31 | 31 | 31 | 24 | 24 |
| | ≤55 | 175 | 126 | 105 | 81.2 | 63 | 50 | 50 | 50 | 50 | 50 | 43 | 43 | 43 | 43 |
| | ≤65 | 203 | 154 | 133 | 109.2 | 91 | / | / | / | / | / | / | / | / | / |

(a)环境温度超过20°C时, 建议适当降低转速使用/When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

(b)作用于输出轴中心点/Applied to the center point of the output shaft.

(c)要求改为润滑脂时, 不适合S1连续工作制, 请与我们联系/If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

WSH240-L3级

| 规格/Specification | | WSH240-3级/3-Stage | | | | | | | | | |
|--|-----------|---|------|------|------|------|------|------|------|------|--|
| 减速比/Ratio | 单位/Unit | 80 | 100 | 125 | 160 | 200 | 250 | 350 | 400 | 500 | |
| 额定输出扭矩/Rated Output Torque T _{2N} | Nm | 5500 | 5100 | 5100 | 5500 | 5500 | 5100 | 5100 | 4200 | 5100 | |
| 急停扭矩/Emergency stop Torque T _{2NOT} | Nm | 3倍额定输出力矩(允许1000次)/3 Times T _{2N} | | | | | | | | | |
| 额定输入转速/Rated Input Speed n _{1N} ^(a) | rpm | 2500 | 2500 | 2500 | 3000 | 3000 | 3000 | 3000 | 3000 | 3000 | |
| 最大输入转速/Max Input Speed n _{1B} | rpm | 4500 | 4500 | 4500 | 4500 | 4500 | 4500 | 4500 | 4500 | 4500 | |
| 空载力矩/No Load Running Torque (n ₁ =2000rpm, 20°C, 运转2min内) | Nm | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 1.8 | 1.8 | |
| 最大背隙/Max Backlash | arcmin | P0≤5/P1≤7/P2≤10 | | | | | | | | | |
| 扭转刚性/Torsional rigidity | Nm/arcmin | 700 | | | | | | | | | |
| 最大侧倾力矩/Max Tilting Moment M _{2K} | Nm | 7400 | | | | | | | | | |
| 容许径向力/Allowable Radial Force F _{2R} ^(b) | N | 45000 | | | | | | | | | |
| 容许轴向力/Allowable Axle Force F _{2A} ^(b) | N | 35000 | | | | | | | | | |
| 使用寿命/Service Life | h | 20000 | | | | | | | | | |
| 效率/Efficient | % | ≥93 | | | | | | | | | |
| 使用环境温度/Use of temperature | °C | -20°C~+40°C | | | | | | | | | |
| 重量/Weight | kg | 80 | | | | | | | | | |
| 防护等级/Protection class | | IP65 | | | | | | | | | |
| 润滑/Lubrication ^(c) | | 全合成润滑油/Synthetic Lubricating Oil | | | | | | | | | |
| 噪音/Noise | dB(A) | ≤66 | | | | | | | | | |
| 转动惯量/Rotational inertia J ₁ | ≤28 | 8.5 | 8.5 | 8.5 | 6.5 | 6.5 | 6.5 | 6.5 | 5.5 | 5.5 | |
| | ≤35 | 10 | 10 | 10 | 8 | 8 | 8 | 8 | 7 | 8 | |
| | ≤42 | 22 | 22 | 22 | 20 | 20 | 20 | 20 | 19 | 19 | |

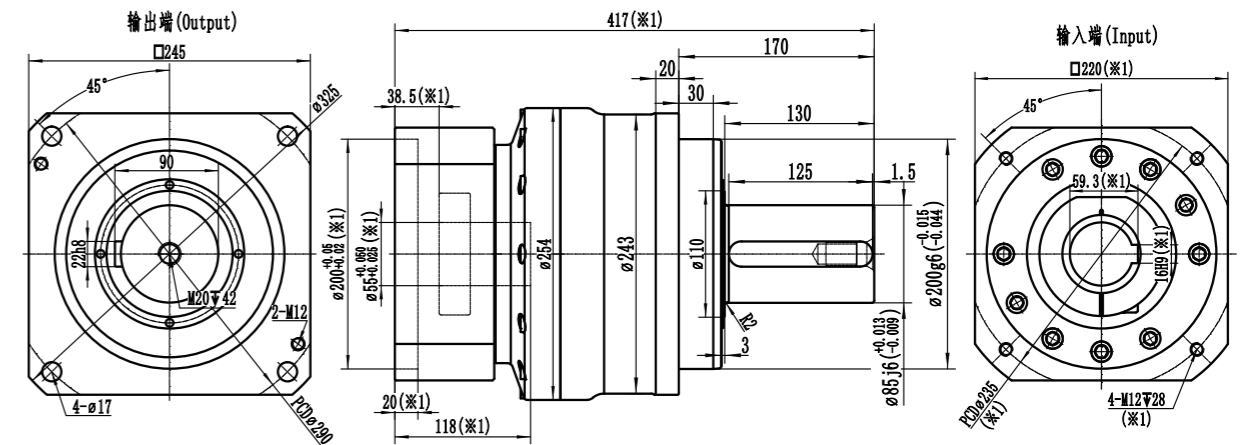
(a)环境温度超过20°C时, 建议适当降低转速使用/When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

(b)作用于输出轴中心点/Applied to the center point of the output shaft.

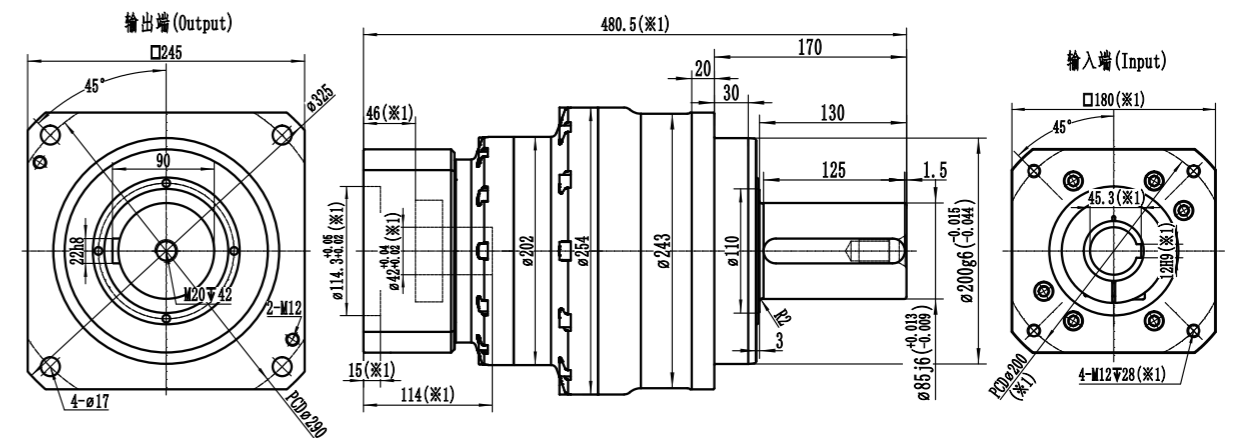
(c)要求改为润滑脂时, 不适合S1连续工作制, 请与我们联系/If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

WSH240-L1最大65(※2)夹紧孔直径 /Max.24(※2)clamping hub's bore diameter

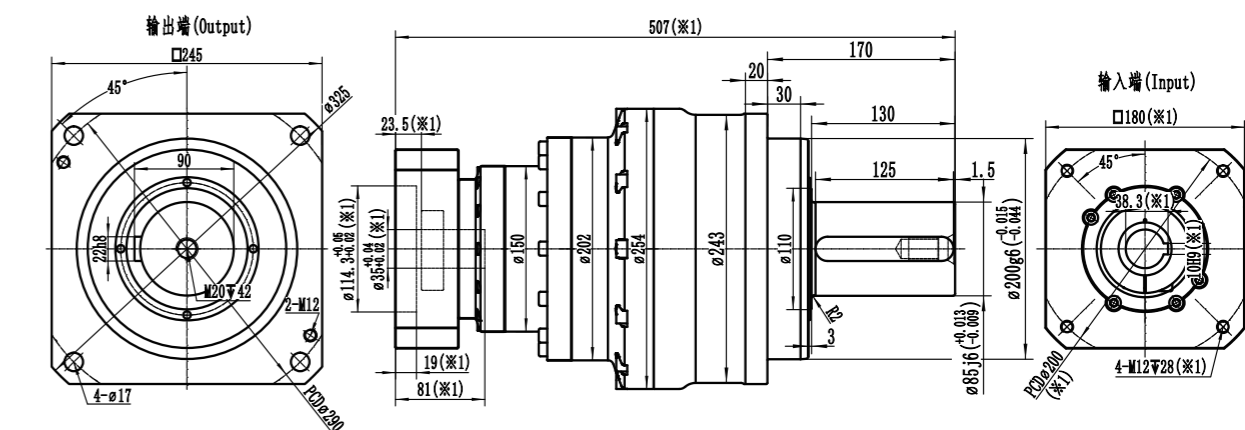
电机轴直径 (mm)



WSH240-L2最大55(※2)夹紧孔直径 /Max.24(※2)clamping hub's bore diameter



WSH240-L3最大42(※2)夹紧孔直径 /Max.42(※2)clamping hub's bore diameter



※1: 尺寸会随电机尺寸而变化;

※2: 电机轴尺寸偏小时, 可能会使用轴套, 轴套最小壁厚1mm;

※WSH240减速机, 夹紧孔默认开键槽, 无需开键槽时, 请提前备注;

※注意安装前检查电机轴径和减速机夹紧孔径;

※请按要求安装电机

※1: Dimension will vary with the motor size;

※2: If the motor shaft diameter is undersized, a bushing with a minimum thickness of 1 mm may be used;

※WSH240 gearbox: Default keyway on input shaft. Please notify if not needed.

※Pay attention to the motor shaft diameter and reducer input clamping diameter before installation;

※Please install the motor as requested.

WSH280-L1/L2级

| 规格/Specification | | WSH280-1级/1-Stage | | | | | WSH280-2级/2-Stage | | | | | | | | | |
|--|-----------|---|------|------|-------|------|--------------------|------|------|------|------|------|------|------|------|--|
| 减速比/Ratio | 单位/Unit | 3 | 4 | 5 | 6 | 10 | 15 | 16 | 20 | 25 | 30 | 35 | 40 | 50 | 60 | |
| 额定输出扭矩/Rated Output Torque T _{2N} | Nm | 5400 | 7500 | 6800 | 5100 | 2600 | 5400 | 7500 | 7500 | 6800 | 5100 | 6800 | 7500 | 6800 | 5100 | |
| 急停扭矩/Emergency stop Torque T _{2NOT} | Nm | 3倍额定输出力矩(允许1000次)/3 Times T _{2N} | | | | | | | | | | | | | | |
| 额定输入转速/Rated Input Speed n _{1N} ^(a) | rpm | 1000 | 1000 | 1500 | 1500 | 2000 | 1500 | 1500 | 1500 | 1500 | 1500 | 2000 | 2000 | 2000 | 2000 | |
| 最大输入转速/Max Input Speed n _{1B} | rpm | 2500 | 2500 | 2500 | 2500 | 2500 | 3000 | 3000 | 3000 | 3000 | 3000 | 3000 | 3000 | 3000 | 3000 | |
| 空载力矩/No Load Running Torque (n ₁ =2000rpm,20°C,运转2min内) | Nm | 19 | 15 | 12 | 12 | 9.5 | 10.5 | 10.5 | 9.5 | 9.5 | 9.5 | 8 | 5.5 | 5.5 | 5.5 | |
| 最大背隙/Max Backlash | arcmin | P0≤1.5 / P1≤3 / P2≤5 | | | | | P0≤3 / P1≤5 / P2≤8 | | | | | | | | | |
| 扭转刚性/Torsional rigidity | Nm/arcmin | 1800 | | | 1300 | | 1700 | | | 1200 | | 1700 | | | 1200 | |
| 最大侧倾力矩/Max Tilting Moment M _{2K} | Nm | 11000 | | | | | 11000 | | | | | | | | | |
| 容许径向力/Allowable Radial Force F _{2R} ^(b) | N | 66000 | | | | | 66000 | | | | | | | | | |
| 容许轴向力/Allowable Axle Force F _{2A} ^(b) | N | 53000 | | | | | 53000 | | | | | | | | | |
| 使用寿命/Service Life | h | 20000 | | | | | 20000 | | | | | | | | | |
| 效率/Efficient | % | ≥97 | | | | | ≥95 | | | | | | | | | |
| 使用环境温度/Use of temperature | °C | -20°C~+40°C | | | | | -20°C~+40°C | | | | | | | | | |
| 重量/Weight | kg | 98 | | | | | 117 | | | | | | | | | |
| 防护等级/Protection class | | IP65 | | | | | IP65 | | | | | | | | | |
| 润滑/Lubrication ^(c) | | 全合成润滑油/Synthetic Lubricating Oil | | | | | | | | | | | | | | |
| 噪音/Noise | dB(A) | ≤68 | | | | | ≤66 | | | | | | | | | |
| 转动惯量/Rotational inertia J ₁ | ≤35 | / | / | / | / | / | 65 | 65 | 55 | 55 | 55 | 55 | 35 | 38 | 38 | |
| | ≤42 | 250 | 176 | 145 | 107.6 | 79 | 76 | 76 | 66 | 66 | 66 | 66 | 46 | 46 | 46 | |
| | ≤55 | 275 | 198 | 165 | 127.6 | 99 | 90 | 90 | 80 | 80 | 80 | 80 | 60 | 60 | 60 | |
| | ≤65 | 303 | 226 | 193 | 155.6 | 127 | / | / | / | / | / | / | / | / | / | |

(a)环境温度超过20°C时, 建议适当降低转速使用/When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

(b)作用于输出轴中心点/Applied to the center point of the output shaft.

(c)要求改为润滑脂时, 不适合S1连续工作制, 请与我们联系/If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

WSH280-L3级

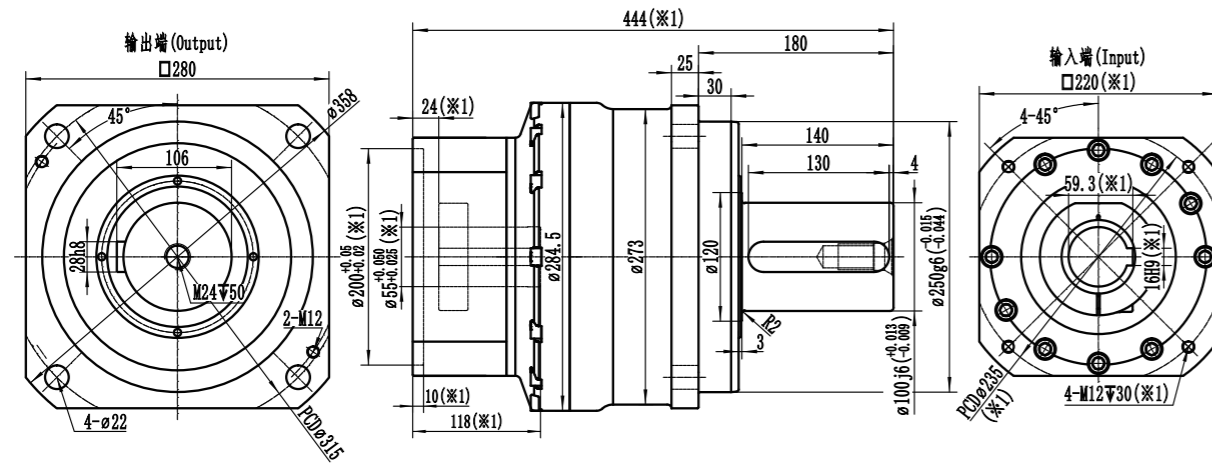
| 规格/Specification | | WSH280-3级/3-Stage | | | | | | | | | |
|--|-----------|---|------|------|------|------|------|------|------|------|--|
| 减速比/Ratio | 单位/Unit | 80 | 100 | 125 | 160 | 200 | 250 | 350 | 400 | 500 | |
| 额定输出扭矩/Rated Output Torque T _{2N} | Nm | 7500 | 6800 | 6800 | 7500 | 7500 | 6800 | 6800 | 7500 | 6800 | |
| 急停扭矩/Emergency stop Torque T _{2NOT} | Nm | 3倍额定输出力矩(允许1000次)/3 Times T _{2N} | | | | | | | | | |
| 额定输入转速/Rated Input Speed n _{1N} ^(a) | rpm | 2000 | 2000 | 2000 | 2500 | 2500 | 2500 | 2500 | 2500 | 2500 | |
| 最大输入转速/Max Input Speed n _{1B} | rpm | 3500 | 3500 | 3500 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | |
| 空载力矩/No Load Running Torque (n ₁ =2000rpm,20°C,运转2min内) | Nm | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | |
| 最大背隙/Max Backlash | arcmin | P0≤5 / P1≤7 / P2≤10 | | | | | | | | | |
| 扭转刚性/Torsional rigidity | Nm/arcmin | 1600 | | | | | | | | | |
| 最大侧倾力矩/Max Tilting Moment M _{2K} | Nm | 11000 | | | | | | | | | |
| 容许径向力/Allowable Radial Force F _{2R} ^(b) | N | 66000 | | | | | | | | | |
| 容许轴向力/Allowable Axle Force F _{2A} ^(b) | N | 53000 | | | | | | | | | |
| 使用寿命/Service Life | h | 20000 | | | | | | | | | |
| 效率/Efficient | % | ≥93 | | | | | | | | | |
| 使用环境温度/Use of temperature | °C | -20°C~+40°C | | | | | | | | | |
| 重量/Weight | kg | 127 | | | | | | | | | |
| 防护等级/Protection class | | IP65 | | | | | | | | | |
| 润滑/Lubrication ^(c) | | 全合成润滑油/Synthetic Lubricating Oil | | | | | | | | | |
| 噪音/Noise | dB(A) | ≤66 | | | | | | | | | |
| 转动惯量/Rotational inertia J ₁ | ≤28 | 23.5 | 23.5 | 23.5 | 16.5 | 16.5 | 16.5 | 14.5 | 14.5 | 14.5 | |
| | ≤35 | 25 | 25 | 25 | 18 | 18 | 18 | 16 | 16 | 16 | |
| | ≤42 | 36 | 36 | 36 | 29 | 29 | 29 | 27 | 27 | 27 | |

(a)环境温度超过20°C时, 建议适当降低转速使用/When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

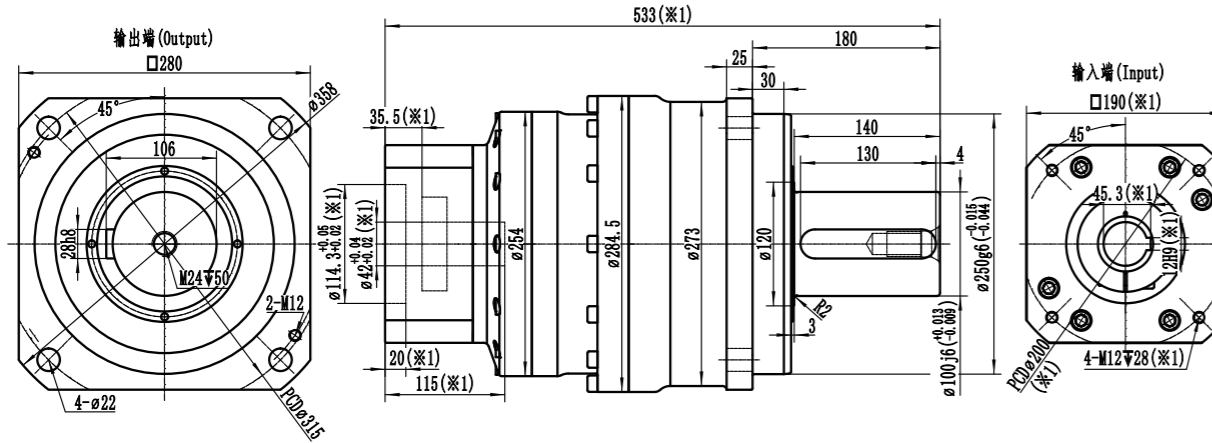
(b)作用于输出轴中心点/Applied to the center point of the output shaft.

(c)要求改为润滑脂时, 不适合S1连续工作制, 请与我们联系/If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

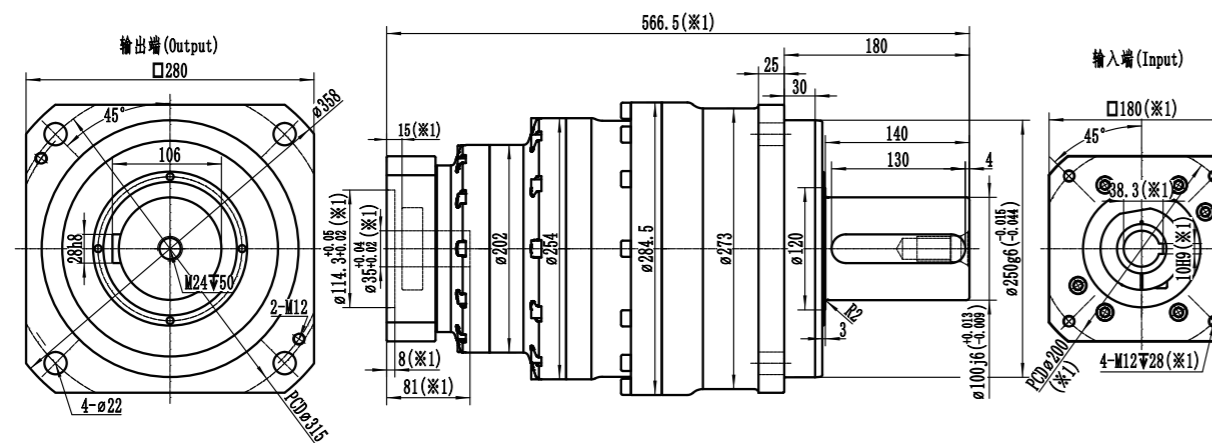
WSH280-L1最大65(※2)夹紧孔直径 Max.65(※2)clamping hub's bore diameter



WSH280-L2最大55(※2)夹紧孔直径 / Max.55(※2)clamping hub's bore diameter



WSH280-L3最大42(※2)夹紧孔直径 / Max.42(※2)clamping hub's bore diameter



※1: 尺寸会随电机尺寸而变化;

※2: 电机轴尺寸偏小时, 可能会使用轴套, 轴套最小壁厚1mm;

※WSH280减速机, 夹紧孔默认开键槽, 无需开键槽时, 请提前备注;

※注意安装前检查电机轴径和减速机夹紧孔径;

※请按要安装电机

※1: Dimension will vary with the motor size;

※2: If the motor shaft diameter is undersized, a bushing with a minimum thickness of 1 mm may be used;

※WSH280 gearbox: Default keyway on input shaft. Please notify if not needed.

※Pay attention to the motor shaft diameter and reducer input clamping diameter before installation;

※Please install the motor as requested.

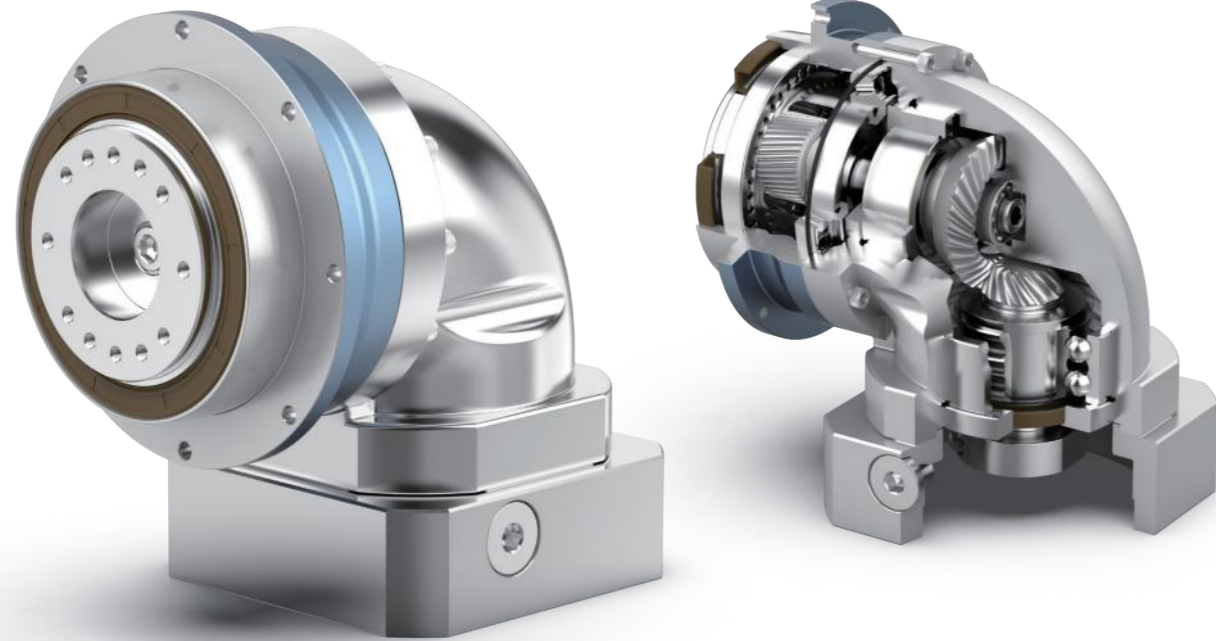
WTHR

Series planetary gearbox
系列行星减速机

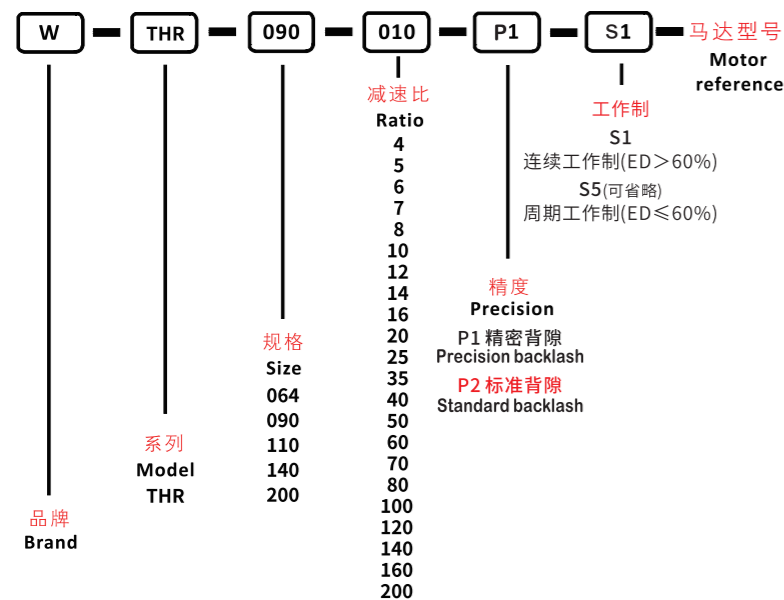
FEATURES

产品特点

- » 转速更高、更稳定、振动更小
 - » 安装尺寸通用性高
 - » 全新生产工艺, 精度保持更优
 - » 显著提升整体刚性、耐振性、任意方向的承载能力
 - » 输入级采用特殊工艺的螺旋锥齿轮, 工作噪音更低, 背隙更小
 - » 相比市场同型号, 总长进一步缩短, 功率密度更高
-
- » Higher and more stable rotation speed, less vibration.
 - » High universality in installation dimensions.
 - » Brand-new manufacturing processes for superior accuracy retention.
 - » Significantly enhances overall rigidity, vibration resistance, and load-bearing capacity in any direction.
 - » Special manufacturing processes for input stages using spiral bevel gears, resulting in lower working noise and higher precision.
 - » Compared to similar models in the market, its total length is further reduced, resulting in higher power density.



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
- 入力方式和入力转速
- 马达厂牌型号或法兰及马达轴尺寸
- Type, model and torque
- Ratio or output speed
- Working conditions and connection methods
- Quantity and installed machine name
- Input mode and input speed
- Motor brand model or flange and motor shaft size

WTHR064-1级

| 规格/Specification | | WTHR064-1级/1-Stage | | | | | | | | | |
|--|-----------|---|------|------|------|------|------|------|------|------|------|
| 减速比/Ratio | 单位/Unit | 4 | 5 | 6 | 7 | 8 | 10 | 12 | 14 | 16 | 20 |
| 额定输出扭矩/Rated Output Torque T _{2N} | Nm | 55 | 60 | 55 | 50 | 55 | 60 | 55 | 50 | 40 | 35 |
| 急停扭矩/Emergency stop Torque T _{2NOT} | Nm | 3倍额定输出力矩(允许1000次)/3 Times T _{2N} | | | | | | | | | |
| 额定输入转速/Rated Input Speed n _{1N} ^(a) | rpm | 3300 | 3300 | 3300 | 3300 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 |
| 最大输入转速/Max Input Speed n _{1B} | rpm | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 |
| 空载力矩/No Load Running Torque (n ₁ =3000rpm, 20°C, 运转2min内) | Nm | 0.65 | 0.55 | 0.55 | 0.55 | 0.45 | 0.4 | 0.4 | 0.4 | 0.35 | 0.35 |
| 最大背隙/Max Backlash | arcmin | P1≤4 / P2≤6 | | | | | | | | | |
| 扭转刚性/Torsional rigidity | Nm/arcmin | 13 | | | | | | | | | |
| 最大侧倾力矩/Max Tilting Moment M _{2K} | Nm | 130 | | | | | | | | | |
| 容许径向力/Allowable Radial Force F _{2R} ^(b) | N | 2500 | | | | | | | | | |
| 容许轴向力/Allowable Axle Force F _{2A} ^(b) | N | 2000 | | | | | | | | | |
| 使用寿命/Service Life | h | 20000 | | | | | | | | | |
| 效率/Efficient | % | ≥95 | | | | | | | | | |
| 使用环境温度/Use of temperature | °C | -20°C~+40°C | | | | | | | | | |
| 重量/Weight | kg | 2.2 | | | | | | | | | |
| 防护等级/Protection class | | IP65 | | | | | | | | | |
| 润滑/Lubrication ^(c) | | 全合成润滑油/Synthetic Lubricating Oil | | | | | | | | | |
| 噪音/Noise | dB(A) | ≤63 | | | | | | | | | |
| 转动惯量/Rotational inertia J ₁ | ≤14 | kg.cm ² | 0.42 | 0.4 | 0.38 | 0.38 | 0.33 | 0.31 | 0.31 | 0.31 | 0.31 |
| | ≤19 | | 0.75 | 0.7 | 0.65 | 0.65 | 0.68 | 0.63 | 0.58 | 0.58 | 0.58 |

(a)环境温度超过20°C时, 建议适当降低转速使用/When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

(b)作用于输出轴中心点/Applied to the center point of the output shaft.

(c)要求改为润滑脂时, 不适合S1连续工作制, 请与我们联系/If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

WTHR064-2级

| 规格/Specification | | WTHR064-2级/2-Stage | | | | | | | | | | | | |
|--|-----------|---|------|------|------|------|------|------|------|------|------|------|------|------|
| 减速比/Ratio | 单位/Unit | 25 | 35 | 40 | 50 | 60 | 70 | 80 | 100 | 120 | 140 | 160 | 200 | |
| 额定输出扭矩/Rated Output Torque T _{2N} | Nm | 60 | 50 | 55 | 60 | 55 | 50 | 55 | 60 | 55 | 50 | 40 | 35 | |
| 急停扭矩/Emergency stop Torque T _{2NOT} | Nm | 3倍额定输出力矩(允许1000次)/3 Times T _{2N} | | | | | | | | | | | | |
| 额定输入转速/Rated Input Speed n _{1N} ^(a) | rpm | 3300 | 3300 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | |
| 最大输入转速/Max Input Speed n _{1B} | rpm | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | |
| 空载力矩/No Load Running Torque (n ₁ =3000rpm, 20°C, 运转2min内) | Nm | 0.5 | 0.5 | 0.4 | 0.4 | 0.4 | 0.4 | 0.35 | 0.35 | 0.35 | 0.35 | 0.3 | 0.3 | |
| 最大背隙/Max Backlash | arcmin | P1≤7 / P2≤9 | | | | | | | | | | | | |
| 扭转刚性/Torsional rigidity | Nm/arcmin | 13 | | | | | | | | | | | | |
| 最大侧倾力矩/Max Tilting Moment M _{2k} | Nm | 130 | | | | | | | | | | | | |
| 容许径向力/Allowable Radial Force F _{2R} ^(b) | N | 2500 | | | | | | | | | | | | |
| 容许轴向力/Allowable Axle Force F _{2A} ^(b) | N | 2000 | | | | | | | | | | | | |
| 使用寿命/Service Life | h | 20000 | | | | | | | | | | | | |
| 效率/Efficient | % | ≥92 | | | | | | | | | | | | |
| 使用环境温度/Use of temperature | °C | -20°C~+40°C | | | | | | | | | | | | |
| 重量/Weight | kg | 2.8 | | | | | | | | | | | | |
| 防护等级/Protection class | | IP65 | | | | | | | | | | | | |
| 润滑/Lubrication ^(c) | | 全合成润滑油/Synthetic Lubricating Oil | | | | | | | | | | | | |
| 噪音/Noise | dB(A) | ≤63 | | | | | | | | | | | | |
| 转动惯量/Rotational inertia J ₁ | ≤8 | kg.cm ² | 0.3 | 0.3 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 |
| | ≤14 | | 0.37 | 0.37 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 |

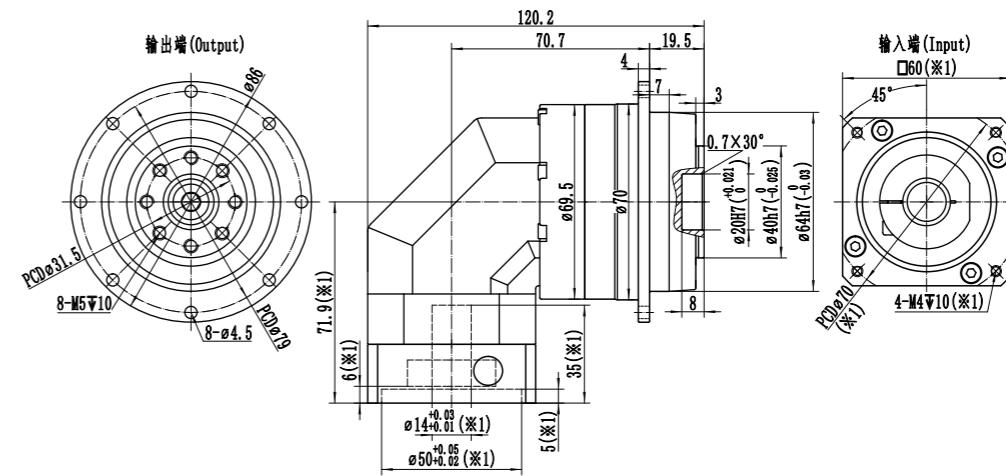
(a)环境温度超过20°C时, 建议适当降低转速使用/When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

(b)作用于输出轴中心点/Applied to the center point of the output shaft.

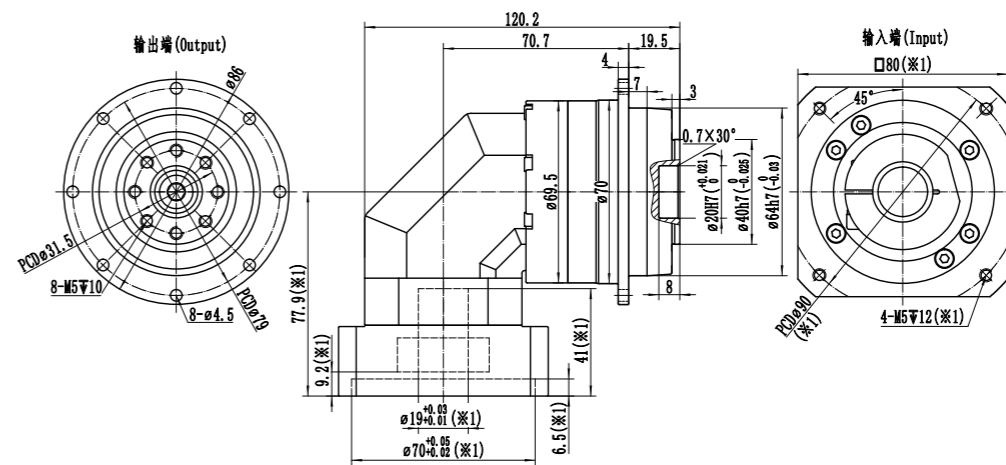
(c)要求改为润滑油时, 不适合S1连续工作制, 请与我们联系/If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

WTHR064-L1 最大14(※2)夹紧孔直径 Max.14(※2)clamping hub's bore diameter

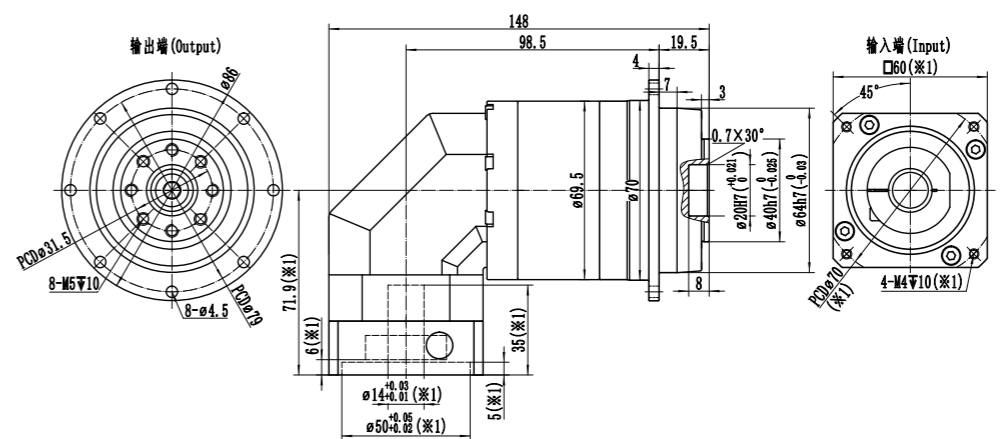
电机轴直径/motor shaft diameter (mm)



WTHR064-L1 最大19(※2)夹紧孔直径 /Max.19(※2)clamping hub's bore diameter



WTHR064-L2 最大14(※2)夹紧孔直径 /Max.14(※2)clamping hub's bore diameter



※1: 尺寸会随电机尺寸而变化;

※2: 电机轴尺寸偏小时, 可能会使用轴套, 轴套最小壁厚1mm;

※减速机夹紧孔需要开键槽时, 请提前备注;

※注意安装前检查电机轴径和减速机夹紧孔径;

※请按要求安装电机

※1: Dimension will vary with the motor size;

※2: If the motor shaft diameter is undersized, a bushing with a minimum thickness of 1 mm may be used;

※ If Keyway is needed for the clamping bore, please notify in advance;

※ Pay attention to the motor shaft diameter and reducer input clamping diameter before installation;

※ Please install the motor as requested.

WTHR090-1级

| 规格/Specification | | WTHR090-1级/1-Stage | | | | | | | | | |
|--|-----------|---|------|------|------|------|------|------|------|------|------|
| 减速比/Ratio | 单位/Unit | 4 | 5 | 6 | 7 | 8 | 10 | 12 | 14 | 16 | 20 |
| 额定输出扭矩/Rated Output Torque T _{2N} | Nm | 150 | 160 | 150 | 140 | 150 | 160 | 150 | 140 | 100 | 90 |
| 急停扭矩/Emergency stop Torque T _{2NOT} | Nm | 3倍额定输出力矩(允许1000次)/3 Times T _{2N} | | | | | | | | | |
| 额定输入转速/Rated Input Speed n _{1N} ^(a) | rpm | 3300 | 3300 | 3300 | 3300 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 |
| 最大输入转速/Max Input Speed n _{1B} | rpm | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 |
| 空载力矩/No Load Running Torque (n ₁ =3000rpm,20°C,运转2min内) | Nm | 1.2 | 0.95 | 0.95 | 0.95 | 0.85 | 0.8 | 0.8 | 0.8 | 0.7 | 0.7 |
| 最大背隙/Max Backlash | arcmin | P1≤4 / P2≤6 | | | | | | | | | |
| 扭转刚性/Torsional rigidity | Nm/arcmin | 31 | | | | | | | | | |
| 最大侧倾力矩/Max Tilting Moment M _{2K} | Nm | 280 | | | | | | | | | |
| 容许径向力/Allowable Radial Force F _{2R} ^(b) | N | 4800 | | | | | | | | | |
| 容许轴向力/Allowable Axle Force F _{2A} ^(b) | N | 3500 | | | | | | | | | |
| 使用寿命/Service Life | h | 20000 | | | | | | | | | |
| 效率/Efficient | % | ≥95 | | | | | | | | | |
| 使用环境温度/Use of temperature | °C | -20°C~+40°C | | | | | | | | | |
| 重量/Weight | kg | 6.5 | | | | | | | | | |
| 防护等级/Protection class | | IP65 | | | | | | | | | |
| 润滑/Lubrication ^(c) | | 全合成润滑油/Synthetic Lubricating Oil | | | | | | | | | |
| 噪音/Noise | dB(A) | ≤65 | | | | | | | | | |
| 转动惯量/Rotational inertia J ₁ | ≤19 | 2.5 | 2.4 | 2.3 | 2.3 | 2 | 1.9 | 1.8 | 1.8 | 1.8 | 1.8 |
| | ≤24 | 3.7 | 3.6 | 3.5 | 3.5 | 3.2 | 3.1 | 3 | 3 | 3 | 3 |

(a)环境温度超过20°C时, 建议适当降低转速使用/When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

(b)作用于输出轴中心点/Applied to the center point of the output shaft.

(c)要求改为润滑脂时, 不适合S1连续工作制, 请与我们联系/If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

WTHR090-2级

| 规格/Specification | | WTHR090-2级/2-Stage | | | | | | | | | | | | |
|--|-----------|---|------|------|------|------|------|------|------|------|------|------|------|--|
| 减速比/Ratio | 单位/Unit | 25 | 35 | 40 | 50 | 60 | 70 | 80 | 100 | 120 | 140 | 160 | 200 | |
| 额定输出扭矩/Rated Output Torque T _{2N} | Nm | 160 | 140 | 150 | 160 | 150 | 140 | 150 | 160 | 150 | 140 | 100 | 90 | |
| 急停扭矩/Emergency stop Torque T _{2NOT} | Nm | 3倍额定输出力矩(允许1000次)/3 Times T _{2N} | | | | | | | | | | | | |
| 额定输入转速/Rated Input Speed n _{1N} ^(a) | rpm | 3300 | 3300 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | |
| 最大输入转速/Max Input Speed n _{1B} | rpm | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | |
| 空载力矩/No Load Running Torque (n ₁ =3000rpm,20°C,运转2min内) | Nm | 0.6 | 0.6 | 0.5 | 0.5 | 0.5 | 0.5 | 0.4 | 0.4 | 0.4 | 0.4 | 0.35 | 0.35 | |
| 最大背隙/Max Backlash | arcmin | P1≤7 / P2≤9 | | | | | | | | | | | | |
| 扭转刚性/Torsional rigidity | Nm/arcmin | 31 | | | | | | | | | | | | |
| 最大侧倾力矩/Max Tilting Moment M _{2K} | Nm | 280 | | | | | | | | | | | | |
| 容许径向力/Allowable Radial Force F _{2R} ^(b) | N | 4800 | | | | | | | | | | | | |
| 容许轴向力/Allowable Axle Force F _{2A} ^(b) | N | 3500 | | | | | | | | | | | | |
| 使用寿命/Service Life | h | 20000 | | | | | | | | | | | | |
| 效率/Efficient | % | ≥92 | | | | | | | | | | | | |
| 使用环境温度/Use of temperature | °C | -20°C~+40°C | | | | | | | | | | | | |
| 重量/Weight | kg | 5.1 | | | | | | | | | | | | |
| 防护等级/Protection class | | IP65 | | | | | | | | | | | | |
| 润滑/Lubrication ^(c) | | 全合成润滑油/Synthetic Lubricating Oil | | | | | | | | | | | | |
| 噪音/Noise | dB(A) | ≤63 | | | | | | | | | | | | |
| 转动惯量/Rotational inertia J ₁ | ≤14 | 0.45 | 0.45 | 0.31 | 0.31 | 0.31 | 0.31 | 0.31 | 0.31 | 0.31 | 0.31 | 0.31 | 0.31 | |
| | ≤19 | 0.8 | 0.8 | 0.66 | 0.66 | 0.66 | 0.66 | 0.66 | 0.66 | 0.66 | 0.66 | 0.66 | 0.66 | |
| | | kg.cm ² | | | | | | | | | | | | |

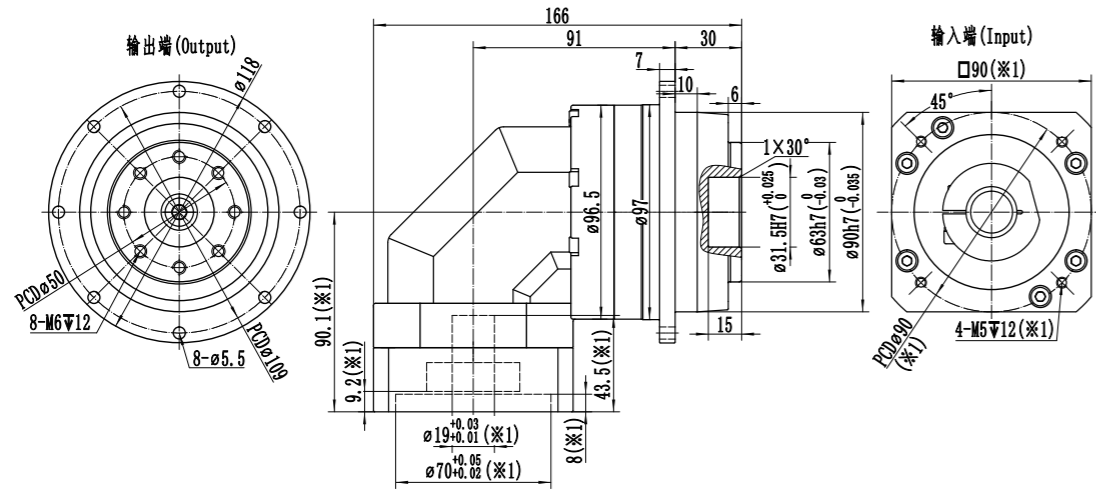
(a)环境温度超过20°C时, 建议适当降低转速使用/When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

(b)作用于输出轴中心点/Applied to the center point of the output shaft.

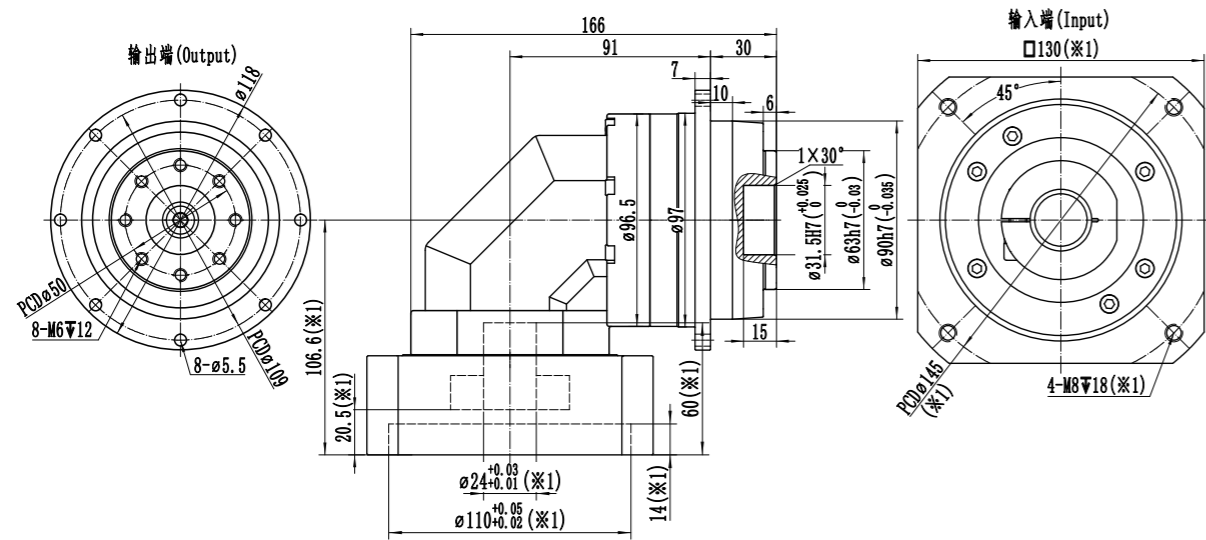
(c)要求改为润滑脂时, 不适合S1连续工作制, 请与我们联系/If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

WTHR090-L1 最大19(※2)夹紧孔直径 Max.19(※2)clamping hub's bore diameter

电机轴直径/motor shaft diameter (mm)



WTHR090-L1 最大24(※2)夹紧孔直径 Max.24(※2)clamping hub's bore diameter

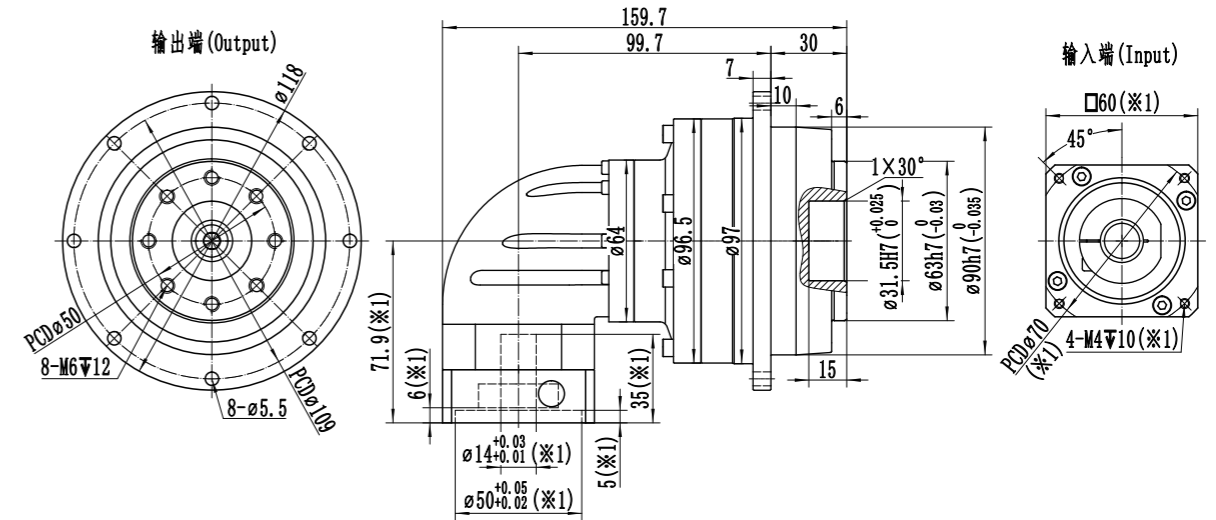


- ※1: 尺寸会随电机尺寸而变化;
- ※2: 电机轴尺寸偏小时, 可能会使用轴套, 轴套最小壁厚1mm;
- ※减速机夹紧孔需要开键槽时, 请提前备注;
- ※注意安装前检查电机轴径和减速机夹紧孔径;
- ※请按要求安装电机

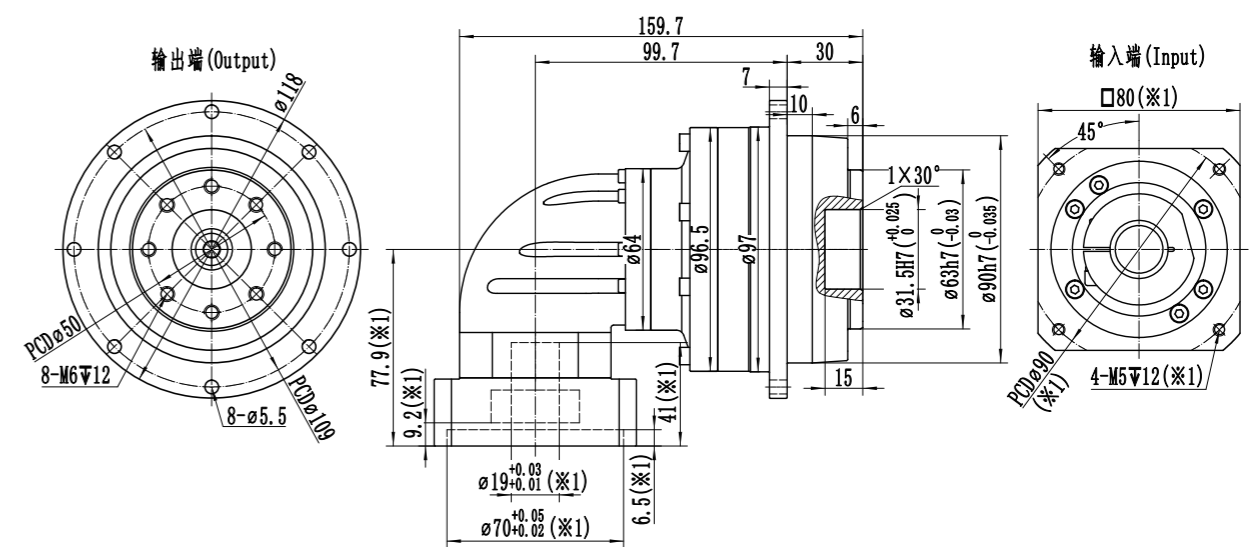
- ※1: Dimension will vary with the motor size;
- ※2: If the motor shaft diameter is undersized, a bushing with a minimum thickness of 1 mm may be used;
- ※ If Keyway is needed for the clamping bore, please notify in advance;
- ※ Pay attention to the motor shaft diameter and reducer input clamping diameter before installation;
- ※ Please install the motor as requested.

WTHR090-L2 最大14(※2)夹紧孔直径 Max.14(※2)clamping hub's bore diameter

电机轴直径/motor shaft diameter (mm)



WTHR090-L2 最大19(※2)夹紧孔直径 Max.19(※2)clamping hub's bore diameter



- ※1: 尺寸会随电机尺寸而变化;
- ※2: 电机轴尺寸偏小时, 可能会使用轴套, 轴套最小壁厚1mm;
- ※减速机夹紧孔需要开键槽时, 请提前备注;
- ※注意安装前检查电机轴径和减速机夹紧孔径;
- ※请按要求安装电机

- ※1: Dimension will vary with the motor size;
- ※2: If the motor shaft diameter is undersized, a bushing with a minimum thickness of 1 mm may be used;
- ※ If Keyway is needed for the clamping bore, please notify in advance;
- ※ Pay attention to the motor shaft diameter and reducer input clamping diameter before installation;
- ※ Please install the motor as requested.

WTHR110-1级

| 规格/Specification | | WTHR110-1级/1-Stage | | | | | | | | | | |
|--|-----------|---|------|------|------|------|------|------|------|------|------|-----|
| 减速比/Ratio | 单位/Unit | 4 | 5 | 6 | 7 | 8 | 10 | 12 | 14 | 16 | 20 | |
| 额定输出扭矩/Rated Output Torque T _{2N} | Nm | 330 | 330 | 310 | 300 | 330 | 330 | 310 | 300 | 230 | 200 | |
| 急停扭矩/Emergency stop Torque T _{2NOT} | Nm | 3倍额定输出力矩(允许1000次)/3 Times T _{2N} | | | | | | | | | | |
| 额定输入转速/Rated Input Speed n _{1N} ^(a) | rpm | 2800 | 2800 | 2800 | 3300 | 3300 | 3300 | 3300 | 3300 | 3300 | 3300 | |
| 最大输入转速/Max Input Speed n _{1B} | rpm | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | |
| 空载力矩/No Load Running Torque (n ₁ =3000rpm,20°C,运转2min内) | Nm | 2.3 | 1.9 | 1.9 | 1.9 | 1.6 | 1.55 | 1.55 | 1.55 | 1.4 | 1.4 | |
| 最大背隙/Max Backlash | arcmin | P1≤4 / P2≤6 | | | | | | | | | | |
| 扭转刚性/Torsional rigidity | Nm/arcmin | 82 | | | | | | | | | | |
| 最大侧倾力矩/Max Tilting Moment M _{2k} | Nm | 510 | | | | | | | | | | |
| 容许径向力/Allowable Radial Force F _{2R} ^(b) | N | 7800 | | | | | | | | | | |
| 容许轴向力/Allowable Axle Force F _{2A} ^(b) | N | 6000 | | | | | | | | | | |
| 使用寿命/Service Life | h | 20000 | | | | | | | | | | |
| 效率/Efficient | % | ≥95 | | | | | | | | | | |
| 使用环境温度/Use of temperature | °C | -20°C~+40°C | | | | | | | | | | |
| 重量/Weight | kg | 11.3 | | | | | | | | | | |
| 防护等级/Protection class | | IP65 | | | | | | | | | | |
| 润滑/Lubrication ^(c) | | 全合成润滑油/Synthetic Lubricating Oil | | | | | | | | | | |
| 噪音/Noise | dB(A) | ≤68 | | | | | | | | | | |
| 转动惯量/Rotational inertia J ₁ | ≤19 | kg.cm ² | 5.9 | 5.4 | 4.9 | 4.9 | 4.4 | 4.3 | 4.2 | 4.2 | 4.2 | 4.2 |
| | ≤24 | | 6.4 | 5.9 | 5.4 | 5.4 | 4.9 | 4.8 | 4.7 | 4.7 | 4.7 | 4.7 |
| | ≤28 | | 6.9 | 6.4 | 5.9 | 5.9 | 5.4 | 5.3 | 5.2 | 5.2 | 5.2 | 5.2 |
| | ≤35 | | 13.4 | 12.9 | 12.4 | 12.4 | 11.5 | 11.2 | 11 | 11 | 11 | 11 |

(a)环境温度超过20°C时, 建议适当降低转速使用/When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

(b)作用于输出轴中心点/Applied to the center point of the output shaft.

(c)要求改为润滑脂时, 不适合S1连续工作制, 请与我们联系/If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

WTHR110-2级

| 规格/Specification | | WTHR110-2级/2-Stage | | | | | | | | | | | | |
|--|-----------|---|------|------|------|------|------|------|------|------|------|------|------|--|
| 减速比/Ratio | 单位/Unit | 25 | 35 | 40 | 50 | 60 | 70 | 80 | 100 | 120 | 140 | 160 | 200 | |
| 额定输出扭矩/Rated Output Torque T _{2N} | Nm | 330 | 300 | 330 | 330 | 310 | 300 | 330 | 330 | 310 | 300 | 230 | 200 | |
| 急停扭矩/Emergency stop Torque T _{2NOT} | Nm | 3倍额定输出力矩(允许1000次)/3 Times T _{2N} | | | | | | | | | | | | |
| 额定输入转速/Rated Input Speed n _{1N} ^(a) | rpm | 3300 | 3300 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | |
| 最大输入转速/Max Input Speed n _{1B} | rpm | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | |
| 空载力矩/No Load Running Torque (n ₁ =3000rpm,20°C,运转2min内) | Nm | 1 | 1 | 0.85 | 0.85 | 0.85 | 0.85 | 0.75 | 0.75 | 0.75 | 0.75 | 0.7 | 0.7 | |
| 最大背隙/Max Backlash | arcmin | P1≤7 / P2≤9 | | | | | | | | | | | | |
| 扭转刚性/Torsional rigidity | Nm/arcmin | 82 | | | | | | | | | | | | |
| 最大侧倾力矩/Max Tilting Moment M _{2k} | Nm | 510 | | | | | | | | | | | | |
| 容许径向力/Allowable Radial Force F _{2R} ^(b) | N | 7800 | | | | | | | | | | | | |
| 容许轴向力/Allowable Axle Force F _{2A} ^(b) | N | 6000 | | | | | | | | | | | | |
| 使用寿命/Service Life | h | 20000 | | | | | | | | | | | | |
| 效率/Efficient | % | ≥92 | | | | | | | | | | | | |
| 使用环境温度/Use of temperature | °C | -20°C~+40°C | | | | | | | | | | | | |
| 重量/Weight | kg | 9.5 | | | | | | | | | | | | |
| 防护等级/Protection class | | IP65 | | | | | | | | | | | | |
| 润滑/Lubrication ^(c) | | 全合成润滑油/Synthetic Lubricating Oil | | | | | | | | | | | | |
| 噪音/Noise | dB(A) | ≤65 | | | | | | | | | | | | |
| 转动惯量/Rotational inertia J ₁ | ≤19 | kg.cm ² | 2.5 | 2.5 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | |
| | ≤24 | | 3.7 | 3.7 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | |

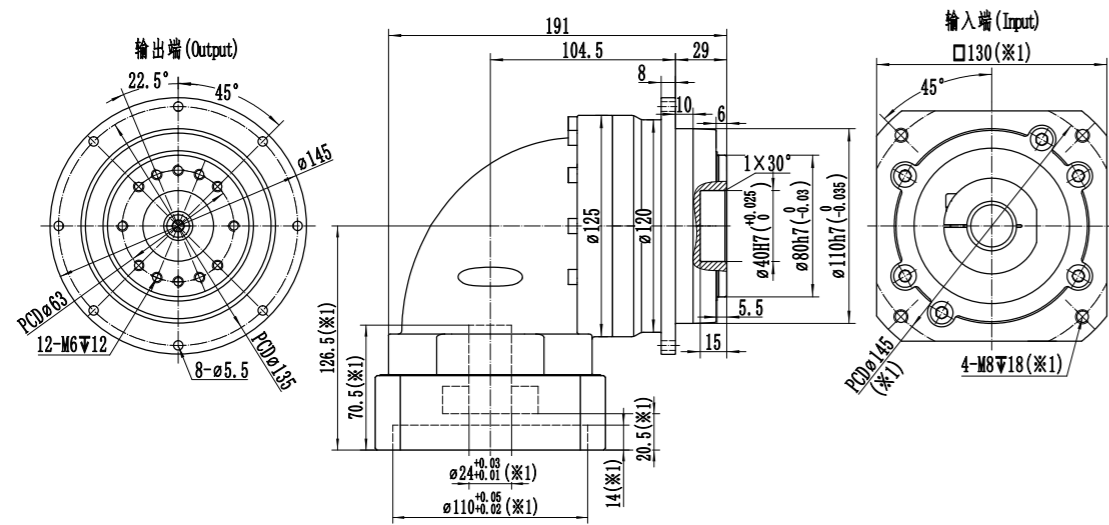
(a)环境温度超过20°C时, 建议适当降低转速使用/When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

(b)作用于输出轴中心点/Applied to the center point of the output shaft.

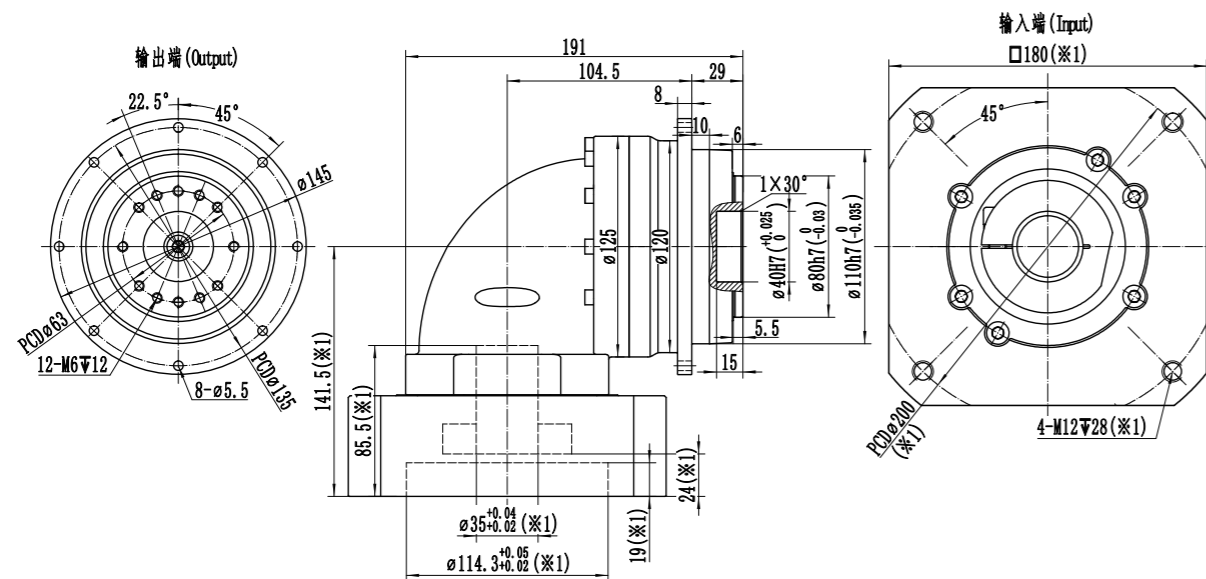
(c)要求改为润滑脂时, 不适合S1连续工作制, 请与我们联系/If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

WTHR110-L1 最大24(※2)夹紧孔直径 / Max.24(※2)clamping hub's bore diameter

电机轴直径/motor shaft diameter (mm)



WTHR110-L1 最大35(※2)夹紧孔直径 / Max.35(※2)clamping hub's bore diameter

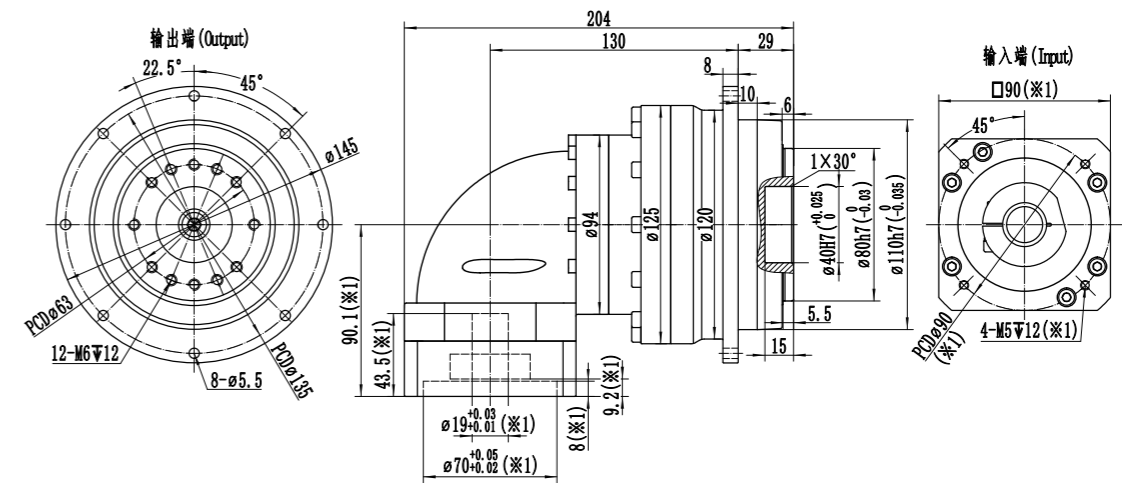


- ※1: 尺寸会随电机尺寸而变化;
- ※2: 电机轴尺寸偏小时, 可能会使用轴套, 轴套最小壁厚1mm;
- ※减速机夹紧孔需要开键槽时, 请提前备注;
- ※注意安装前检查电机轴径和减速机夹紧孔径;
- ※请按要求安装电机

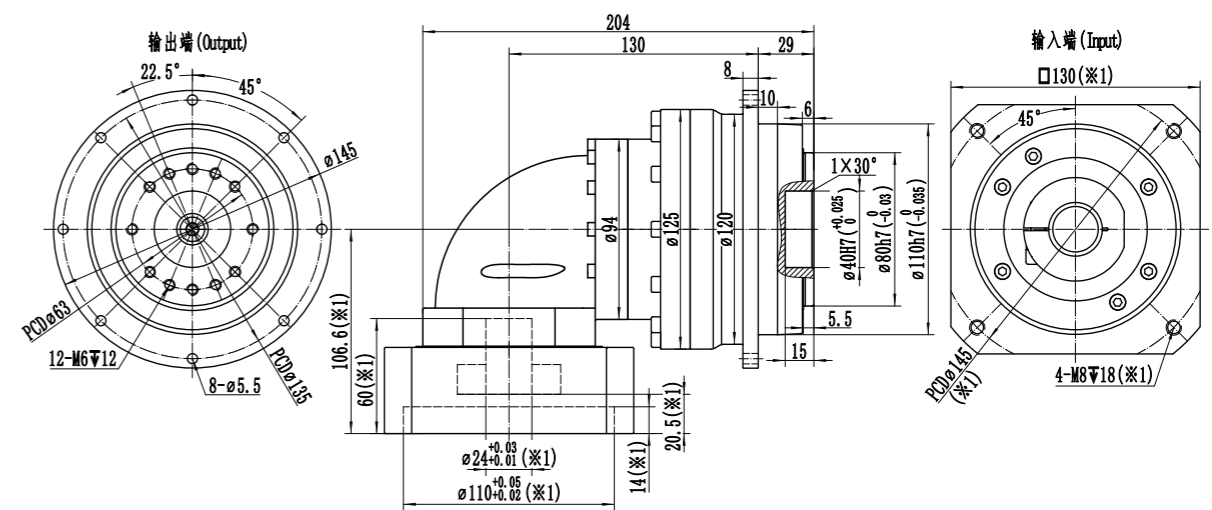
- ※1: Dimension will vary with the motor size;
- ※2: If the motor shaft diameter is undersized, a bushing with a minimum thickness of 1mm may be used;
- ※ If Keyway is needed for the clamping bore, please notify in advance;
- ※Pay attention to the motor shaft diameter and reducer input clamping diameter before installation;
- ※Please install the motor as requested.

WTHR110-L2 最大19(※2)夹紧孔直径 / Max.19(※2)clamping hub's bore diameter

电机轴直径/motor shaft diameter (mm)



WTHR110-L2 最大24(※2)夹紧孔直径 / Max.24(※2)clamping hub's bore diameter



- ※1: 尺寸会随电机尺寸而变化;
- ※2: 电机轴尺寸偏小时, 可能会使用轴套, 轴套最小壁厚1mm;
- ※减速机夹紧孔需要开键槽时, 请提前备注;
- ※注意安装前检查电机轴径和减速机夹紧孔径;
- ※请按要求安装电机

- ※1: Dimension will vary with the motor size;
- ※2: If the motor shaft diameter is undersized, a bushing with a minimum thickness of 1mm may be used;
- ※ If Keyway is needed for the clamping bore, please notify in advance;
- ※Pay attention to the motor shaft diameter and reducer input clamping diameter before installation;
- ※Please install the motor as requested.

WTHR140-1级

| 规格/Specification | | WTHR140-1级/1-Stage | | | | | | | | | |
|--|-----------|---|------|------|------|------|------|------|------|------|------|
| 减速比/Ratio | 单位/Unit | 4 | 5 | 6 | 7 | 8 | 10 | 12 | 14 | 16 | 20 |
| 额定输出扭矩/Rated Output Torque T _{2N} | Nm | 650 | 650 | 600 | 550 | 650 | 650 | 600 | 550 | 450 | 400 |
| 急停扭矩/Emergency stop Torque T _{2NOT} | Nm | 3倍额定输出力矩(允许1000次)/3 Times T _{2N} | | | | | | | | | |
| 额定输入转速/Rated Input Speed n _{1N} ^(a) | rpm | 2300 | 2300 | 2300 | 2300 | 2800 | 2800 | 2800 | 2800 | 2800 | 2800 |
| 最大输入转速/Max Input Speed n _{1B} | rpm | 4500 | 4500 | 4500 | 4500 | 4500 | 4500 | 4500 | 4500 | 4500 | 4500 |
| 空载力矩/No Load Running Torque (n ₁ =3000rpm,20°C,运转2min内) | Nm | 4.4 | 3.6 | 3.6 | 3.6 | 3.1 | 3 | 3 | 3 | 2.9 | 2.9 |
| 最大背隙/Max Backlash | arcmin | P1≤4 / P2≤6 | | | | | | | | | |
| 扭转刚性/Torsional rigidity | Nm/arcmin | 155 | | | | | | | | | |
| 最大侧倾力矩/Max Tilting Moment M _{2K} | Nm | 1350 | | | | | | | | | |
| 容许径向力/Allowable Radial Force F _{2R} ^(b) | N | 13000 | | | | | | | | | |
| 容许轴向力/Allowable Axle Force F _{2A} ^(b) | N | 11000 | | | | | | | | | |
| 使用寿命/Service Life | h | 20000 | | | | | | | | | |
| 效率/Efficient | % | ≥95 | | | | | | | | | |
| 使用环境温度/Use of temperature | °C | -20°C~+40°C | | | | | | | | | |
| 重量/Weight | kg | 23 | | | | | | | | | |
| 防护等级/Protection class | | IP65 | | | | | | | | | |
| 润滑/Lubrication ^(c) | | 全合成润滑油/Synthetic Lubricating Oil | | | | | | | | | |
| 噪音/Noise | dB(A) | ≤70 | | | | | | | | | |
| 转动惯量/Rotational inertia J ₁ | ≤24 | 19 | 17.5 | 16.5 | 16.5 | 15.3 | 15 | 14.8 | 14.8 | 14.8 | 14.8 |
| | ≤28 | 20 | 18.5 | 17.5 | 17.5 | 16.3 | 16 | 15.8 | 15.8 | 15.8 | 15.8 |
| | ≤35 | 23.5 | 22 | 21 | 21 | 19.8 | 19.5 | 19.3 | 19.3 | 19.3 | 19.3 |
| | ≤42 | 36 | 35 | 34 | 34 | 32.8 | 32.5 | 32.3 | 32.3 | 32.3 | 32.3 |

(a)环境温度超过20°C时, 建议适当降低转速使用/When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

(b)作用于输出轴中心点/Applied to the center point of the output shaft.

(c)要求改为润滑脂时, 不适合S1连续工作制, 请与我们联系/If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

WTHR140-2级

| 规格/Specification | | WTHR140-2级/2-Stage | | | | | | | | | | | | | |
|--|-----------|---|------|------|------|------|------|------|------|------|------|------|------|--|--|
| 减速比/Ratio | 单位/Unit | 25 | 35 | 40 | 50 | 60 | 70 | 80 | 100 | 120 | 140 | 160 | 200 | | |
| 额定输出扭矩/Rated Output Torque T _{2N} | Nm | 650 | 550 | 650 | 650 | 600 | 550 | 650 | 650 | 600 | 500 | 450 | 400 | | |
| 急停扭矩/Emergency stop Torque T _{2NOT} | Nm | 3倍额定输出力矩(允许1000次)/3 Times T _{2N} | | | | | | | | | | | | | |
| 额定输入转速/Rated Input Speed n _{1N} ^(a) | rpm | 2800 | 2800 | 3300 | 3300 | 3300 | 3300 | 3300 | 3300 | 3300 | 3300 | 3300 | 3300 | | |
| 最大输入转速/Max Input Speed n _{1B} | rpm | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | | |
| 空载力矩/No Load Running Torque (n ₁ =3000rpm,20°C,运转2min内) | Nm | 2 | 2 | 1.8 | 1.8 | 1.8 | 1.8 | 1.7 | 1.7 | 1.7 | 1.7 | 1.6 | 1.6 | | |
| 最大背隙/Max Backlash | arcmin | P1≤7 / P2≤9 | | | | | | | | | | | | | |
| 扭转刚性/Torsional rigidity | Nm/arcmin | 155 | | | | | | | | | | | | | |
| 最大侧倾力矩/Max Tilting Moment M _{2K} | Nm | 1350 | | | | | | | | | | | | | |
| 容许径向力/Allowable Radial Force F _{2R} ^(b) | N | 13000 | | | | | | | | | | | | | |
| 容许轴向力/Allowable Axle Force F _{2A} ^(b) | N | 11000 | | | | | | | | | | | | | |
| 使用寿命/Service Life | h | 20000 | | | | | | | | | | | | | |
| 效率/Efficient | % | ≥92 | | | | | | | | | | | | | |
| 使用环境温度/Use of temperature | °C | -20°C~+40°C | | | | | | | | | | | | | |
| 重量/Weight | kg | 21.7 | | | | | | | | | | | | | |
| 防护等级/Protection class | | IP65 | | | | | | | | | | | | | |
| 润滑/Lubrication ^(c) | | 全合成润滑油/Synthetic Lubricating Oil | | | | | | | | | | | | | |
| 噪音/Noise | dB(A) | ≤68 | | | | | | | | | | | | | |
| 转动惯量/Rotational inertia J ₁ | ≤19 | 5.5 | 5.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | |
| | ≤24 | 6 | 6 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | | |
| | ≤28 | 6.5 | 6.5 | 5.4 | 5.4 | 5.4 | 5.4 | 5.4 | 5.4 | 5.4 | 5.4 | 5.4 | 5.4 | | |
| | ≤35 | 13 | 13 | 11.3 | 11.3 | 11.3 | 11.3 | 11.3 | 11.3 | 11.3 | 11.3 | 11.3 | 11.3 | | |

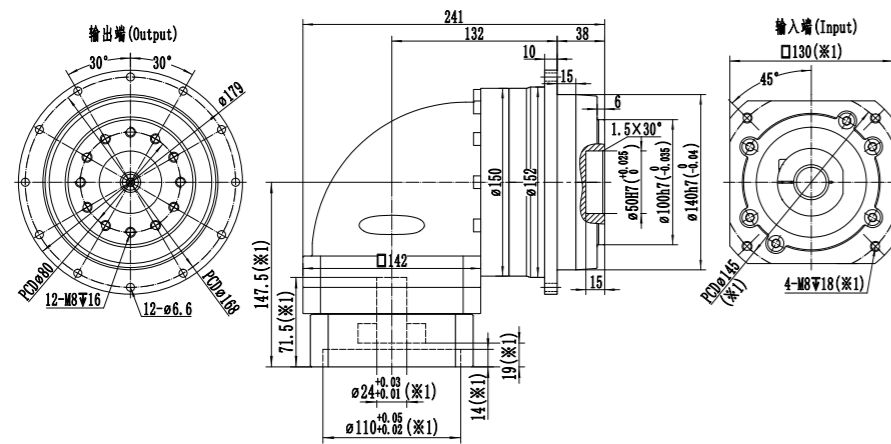
(a)环境温度超过20°C时, 建议适当降低转速使用/When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

(b)作用于输出轴中心点/Applied to the center point of the output shaft.

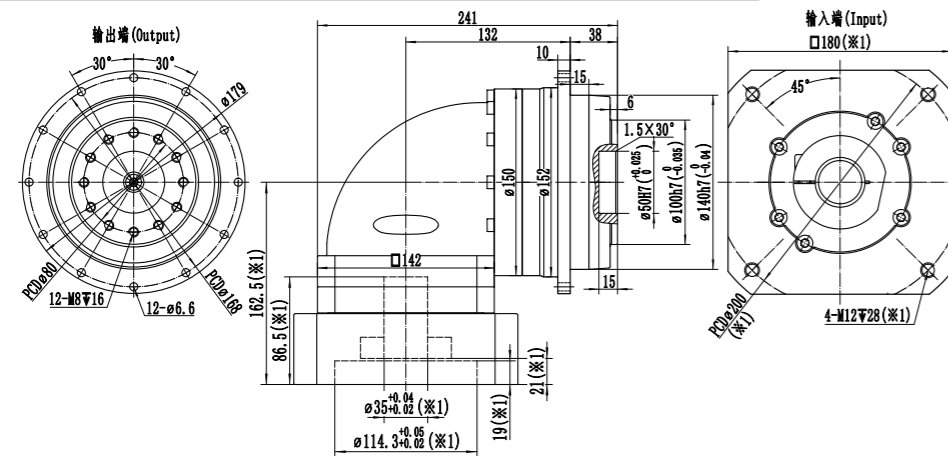
(c)要求改为润滑脂时, 不适合S1连续工作制, 请与我们联系/If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

WTHR140-L1 最大24(※2)夹紧孔直径 / Max.24(※2)clamping hub's bore diameter

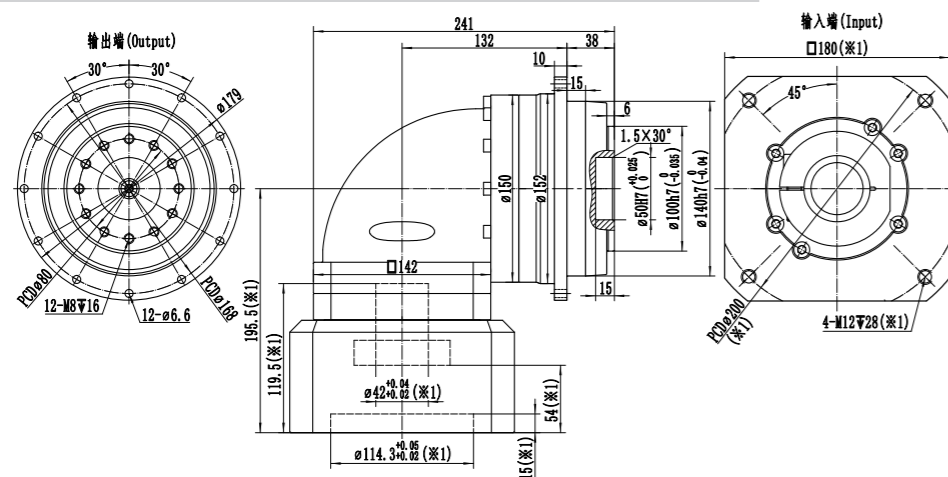
电机轴直径/motor shaft diameter (mm)



WTHR140-L1 最大35(※2)夹紧孔直径 / Max.35(※2)clamping hub's bore diameter



WTHR140-L1 最大42(※2)夹紧孔直径 / Max.42(※2)clamping hub's bore diameter

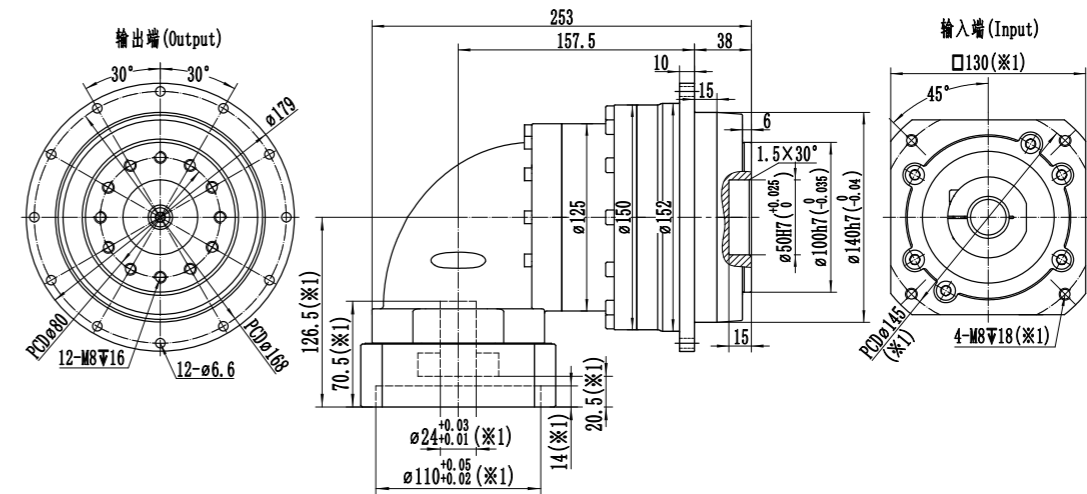


- ※1: 尺寸会随电机尺寸而变化;
- ※2: 电机轴尺寸偏小时, 可能会使用轴套, 轴套最小壁厚1mm;
- ※减速机夹紧孔需要开键槽时, 请提前备注;
- ※注意安装前检查电机轴径和减速机夹紧孔径;
- ※请按要求安装电机

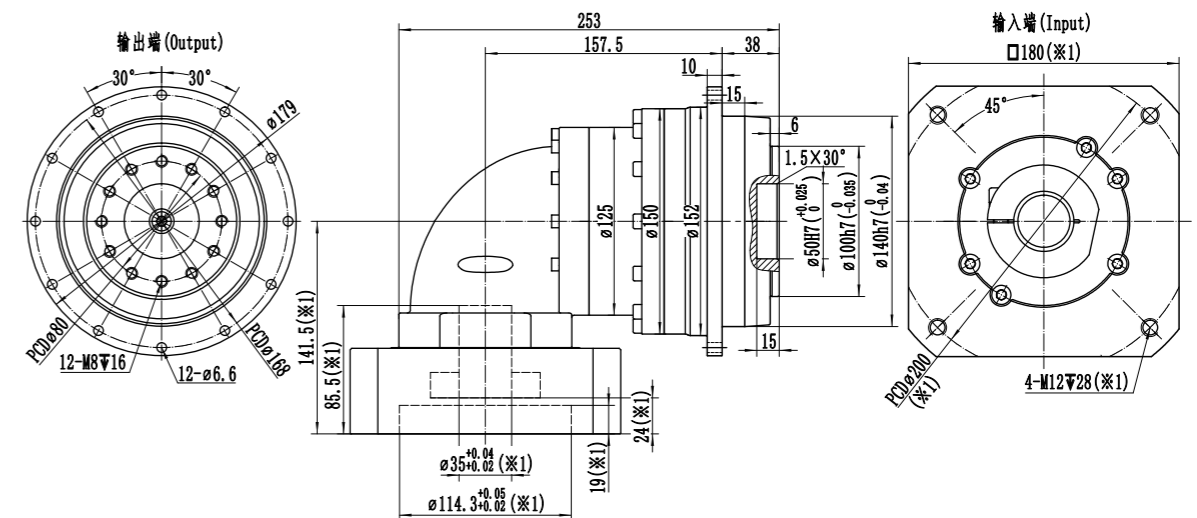
- ※1: Dimension will vary with the motor size;
- ※2: If the motor shaft diameter is undersized, a bushing with a minimum thickness of 1 mm may be used;
- ※ If Keyway is needed for the clamping bore, please notify in advance;
- ※Pay attention to the motor shaft diameter and reducer input clamping diameter before installation;
- ※Please install the motor as requested.

WTHR140-L2 最大24(※2)夹紧孔直径 / Max.24(※2)clamping hub's bore diameter

电机轴直径/motor shaft diameter (mm)



WTHR140-L2 最大35(※2)夹紧孔直径 / Max.35(※2)clamping hub's bore diameter



- ※1: 尺寸会随电机尺寸而变化;
- ※2: 电机轴尺寸偏小时, 可能会使用轴套, 轴套最小壁厚1mm;
- ※减速机夹紧孔需要开键槽时, 请提前备注;
- ※注意安装前检查电机轴径和减速机夹紧孔径;
- ※请按要求安装电机

- ※1: Dimension will vary with the motor size;
- ※2: If the motor shaft diameter is undersized, a bushing with a minimum thickness of 1 mm may be used;
- ※ If Keyway is needed for the clamping bore, please notify in advance;
- ※Pay attention to the motor shaft diameter and reducer input clamping diameter before installation;
- ※Please install the motor as requested.

WTHR200-1级

| 规格/Specification | | WTHR200-1级/1-Stage | | | | | | | | | | |
|--|-----------|---|------|------|------|------|------|------|------|------|------|-----|
| 减速比/Ratio | 单位/Unit | 4 | 5 | 6 | 7 | 8 | 10 | 12 | 14 | 16 | 20 | |
| 额定输出扭矩/Rated Output Torque T _{2N} | Nm | 2000 | 2050 | 1950 | 1700 | 2000 | 2050 | 1950 | 1700 | 1450 | 1350 | |
| 急停扭矩/Emergency stop Torque T _{2NOT} | Nm | 3倍额定输出力矩(允许1000次)/3 Times T _{2N} | | | | | | | | | | |
| 额定输入转速/Rated Input Speed n _{1N} ^(a) | rpm | 1500 | 1500 | 1500 | 1500 | 1500 | 1800 | 1800 | 1800 | 1800 | 1800 | |
| 最大输入转速/Max Input Speed n _{1B} | rpm | 3000 | 3000 | 3000 | 3000 | 3000 | 3000 | 3000 | 3000 | 3000 | 3000 | |
| 空载力矩/No Load Running Torque (n ₁ =2000rpm,20°C,运转2min内) | Nm | 13.5 | 11 | 11 | 11 | 9 | 9 | 9 | 9 | 7.5 | 7.5 | |
| 最大背隙/Max Backlash | arcmin | P1≤4 / P2≤6 | | | | | | | | | | |
| 扭转刚性/Torsional rigidity | Nm/arcmin | 650 | | | | | | | | | | |
| 最大侧倾力矩/Max Tilting Moment M _{2K} | Nm | 3400 | | | | | | | | | | |
| 容许径向力/Allowable Radial Force F _{2R} ^(b) | N | 26000 | | | | | | | | | | |
| 容许轴向力/Allowable Axle Force F _{2A} ^(b) | N | 21000 | | | | | | | | | | |
| 使用寿命/Service Life | h | 20000 | | | | | | | | | | |
| 效率/Efficient | % | ≥95 | | | | | | | | | | |
| 使用环境温度/Use of temperature | °C | -20°C~+40°C | | | | | | | | | | |
| 重量/Weight | kg | 61.5 | | | | | | | | | | |
| 防护等级/Protection class | | IP65 | | | | | | | | | | |
| 润滑/Lubrication ^(c) | | 全合成润滑油/Synthetic Lubricating Oil | | | | | | | | | | |
| 噪音/Noise | dB(A) | ≤72 | | | | | | | | | | |
| 转动惯量/Rotational inertia J ₁ | ≤28 | kg.cm ² | - | - | - | - | - | - | - | - | - | - |
| | ≤35 | | 72 | 67 | 62 | 62 | 57 | 52 | 52 | 52 | 52 | 52 |
| | ≤42 | | 92 | 87 | 82 | 82 | 77 | 72 | 72 | 72 | 72 | 72 |
| | ≤55 | | 120 | 115 | 110 | 110 | 105 | 100 | 100 | 100 | 100 | 100 |

(a)环境温度超过20°C时, 建议适当降低转速使用/When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

(b)作用于输出轴中心点/Applied to the center point of the output shaft.

(c)要求改为润滑脂时, 不适合S1连续工作制, 请与我们联系/If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

WTHR200-2级

| 规格/Specification | | WTHR200-2级/2-Stage | | | | | | | | | | | | | |
|--|-----------|---|------|------|------|------|------|------|------|------|------|------|------|------|--|
| 减速比/Ratio | 单位/Unit | 25 | 35 | 40 | 50 | 60 | 70 | 80 | 100 | 120 | 140 | 160 | 200 | | |
| 额定输出扭矩/Rated Output Torque T _{2N} | Nm | 2025 | 1700 | 2000 | 2050 | 1950 | 1700 | 2000 | 2050 | 1950 | 1700 | 1450 | 1350 | | |
| 急停扭矩/Emergency stop Torque T _{2NOT} | Nm | 3倍额定输出力矩(允许1000次)/3 Times T _{2N} | | | | | | | | | | | | | |
| 额定输入转速/Rated Input Speed n _{1N} ^(a) | rpm | 2000 | 2000 | 2500 | 2500 | 2500 | 2500 | 2500 | 2500 | 2500 | 2500 | 2500 | 2500 | | |
| 最大输入转速/Max Input Speed n _{1B} | rpm | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 | | |
| 空载力矩/No Load Running Torque (n ₁ =2000rpm,20°C,运转2min内) | Nm | 4.4 | 4.4 | 4 | 4 | 4 | 4 | 3.8 | 3.8 | 3.8 | 3.8 | 3.7 | 3.7 | | |
| 最大背隙/Max Backlash | arcmin | P1≤7 / P2≤9 | | | | | | | | | | | | | |
| 扭转刚性/Torsional rigidity | Nm/arcmin | 650 | | | | | | | | | | | | | |
| 最大侧倾力矩/Max Tilting Moment M _{2K} | Nm | 3400 | | | | | | | | | | | | | |
| 容许径向力/Allowable Radial Force F _{2R} ^(b) | N | 26000 | | | | | | | | | | | | | |
| 容许轴向力/Allowable Axle Force F _{2A} ^(b) | N | 21000 | | | | | | | | | | | | | |
| 使用寿命/Service Life | h | 20000 | | | | | | | | | | | | | |
| 效率/Efficient | % | ≥92 | | | | | | | | | | | | | |
| 使用环境温度/Use of temperature | °C | -20°C~+40°C | | | | | | | | | | | | | |
| 重量/Weight | kg | 59.5 | | | | | | | | | | | | | |
| 防护等级/Protection class | | IP65 | | | | | | | | | | | | | |
| 润滑/Lubrication ^(c) | | 全合成润滑油/Synthetic Lubricating Oil | | | | | | | | | | | | | |
| 噪音/Noise | dB(A) | ≤70 | | | | | | | | | | | | | |
| 转动惯量/Rotational inertia J ₁ | ≤24 | kg.cm ² | 21.8 | 21.8 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | |
| | ≤28 | | 22.8 | 22.8 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | |
| | ≤35 | | 26.3 | 26.3 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 | |
| | ≤42 | | 39.3 | 39.3 | 37.5 | 37.5 | 37.5 | 37.5 | 37.5 | 37.5 | 37.5 | 37.5 | 37.5 | 37.5 | |

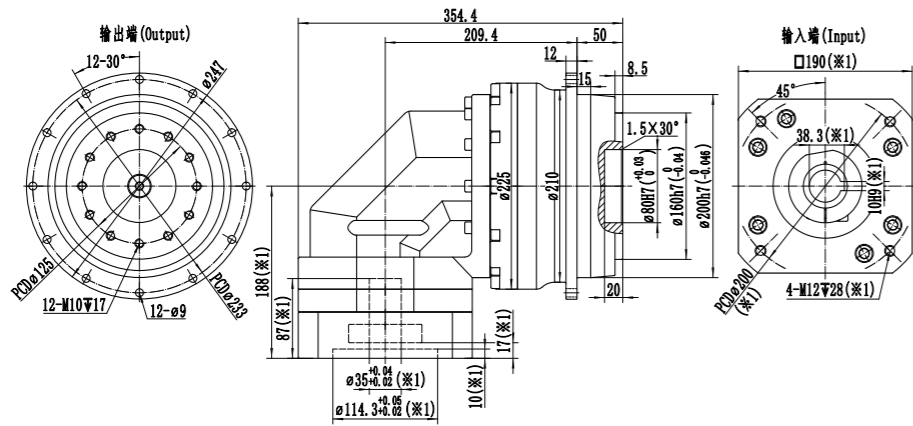
(a)环境温度超过20°C时, 建议适当降低转速使用/When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

(b)作用于输出轴中心点/Applied to the center point of the output shaft.

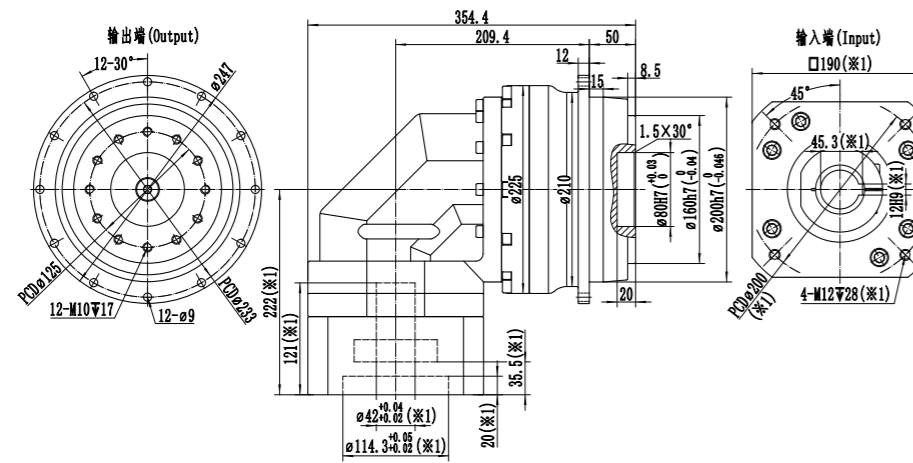
(c)要求改为润滑脂时, 不适合S1连续工作制, 请与我们联系/If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

WTHR200-L1 最大35(※2)夹紧孔直径 / Max.35(※2)clamping hub's bore diameter

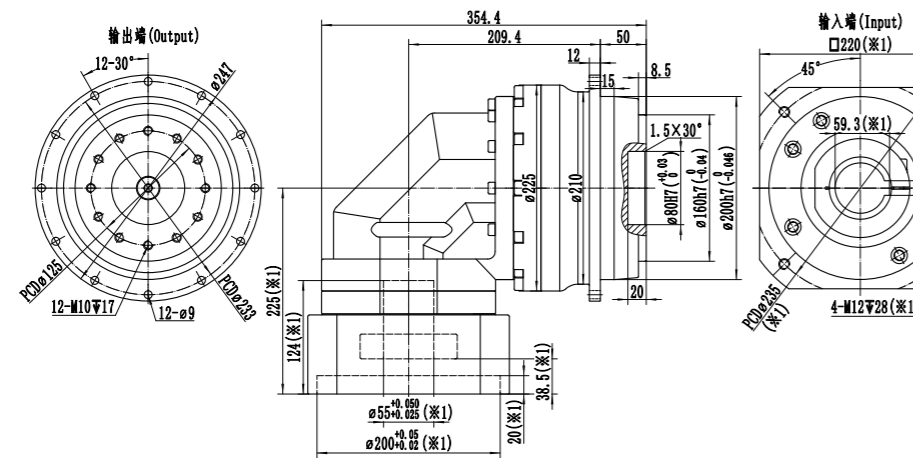
电机轴直径/motor shaft diameter (mm)



WTHR200-L1 最大42(※2)夹紧孔直径 / Max.42(※2)clamping hub's bore diameter



WTHR200-L1 最大55(※2)夹紧孔直径 / Max.55(※2)clamping hub's bore diameter

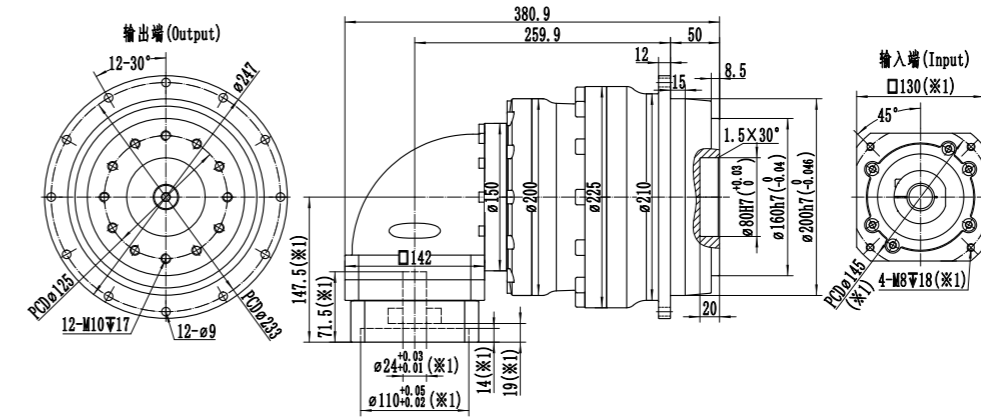


※1: 尺寸会随电机尺寸而变化;
 ※2: 电机轴尺寸偏小时, 可能会使用轴套, 轴套最小壁厚1mm;
 ※WTHR200减速机, 夹紧孔默认开键槽, 无需开键槽时, 请提前备注;
 ※注意安装前检查电机轴径和减速机夹紧孔径;
 ※请按要求安装电机

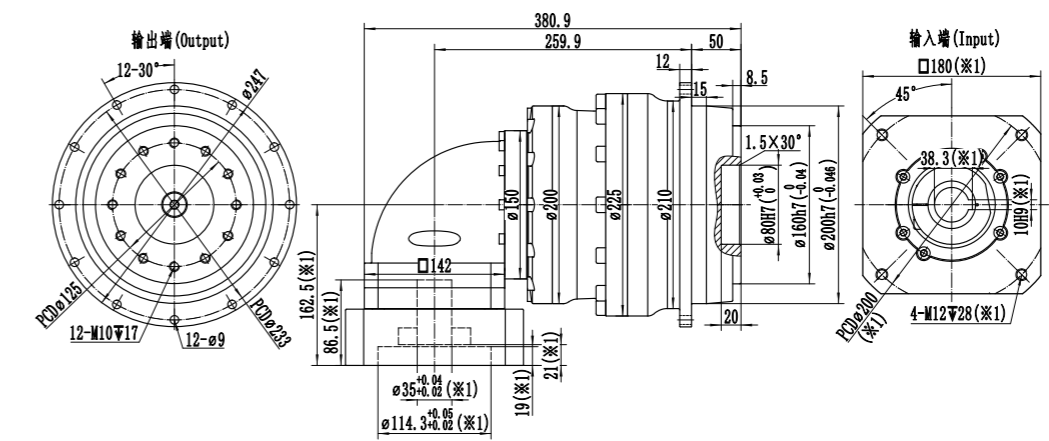
※1: Dimension will vary with the motor size;
 ※2: If the motor shaft diameter is undersized, a bushing with a minimum thickness of 1 mm may be used;
 ※ WTHR200 gearbox: Default keyway on input shaft. Please notify if not needed.
 ※Pay attention to the motor shaft diameter and reducer input clamping diameter before installation;
 ※Please install the motor as requested.

WTHR200-L2 最大24(※2)夹紧孔直径 / Max.24(※2)clamping hub's bore diameter

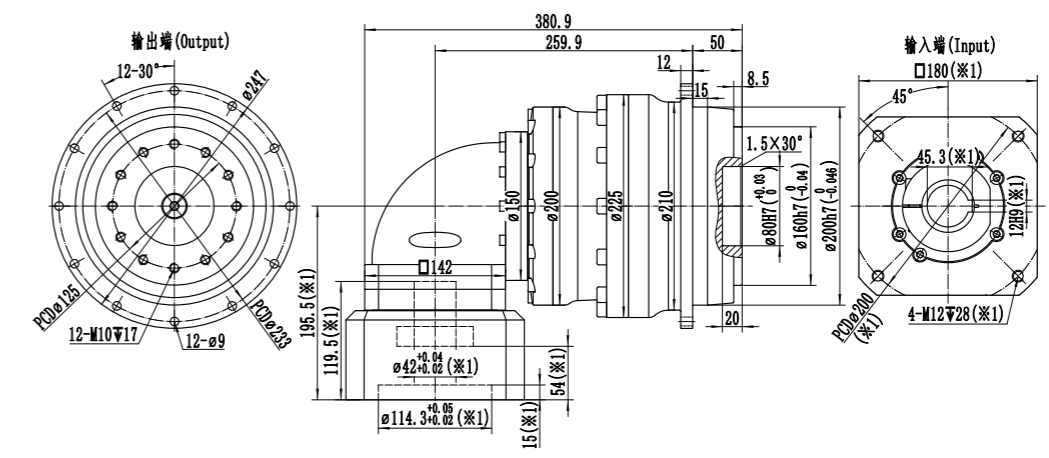
电机轴直径/motor shaft diameter (mm)



WTHR200-L2 最大35(※2)夹紧孔直径 / Max.35(※2)clamping hub's bore diameter



WTHR200-L2 最大42(※2)夹紧孔直径 / Max.42(※2)clamping hub's bore diameter



※1: 尺寸会随电机尺寸而变化;
 ※2: 电机轴尺寸偏小时, 可能会使用轴套, 轴套最小壁厚1mm;
 ※WTHR200减速机, 夹紧孔默认开键槽, 无需开键槽时, 请提前备注;
 ※注意安装前检查电机轴径和减速机夹紧孔径;
 ※请按要求安装电机

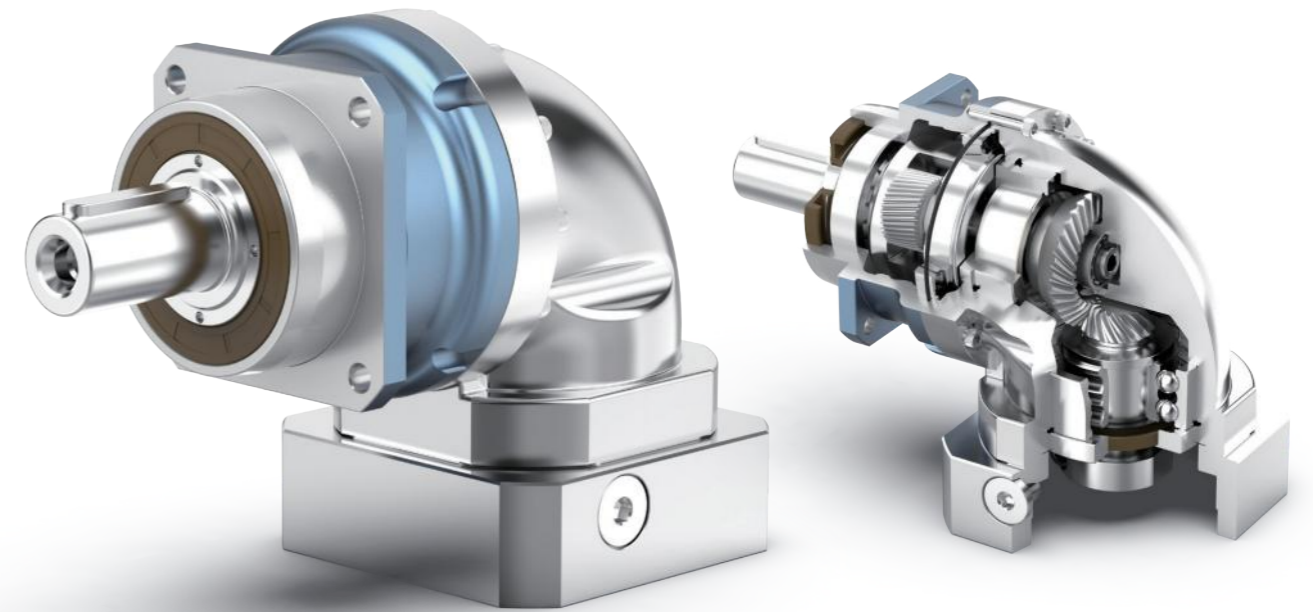
※1: Dimension will vary with the motor size;
 ※2: If the motor shaft diameter is undersized, a bushing with a minimum thickness of 1 mm may be used;
 ※ WTHR200 gearbox: Default keyway on input shaft. Please notify if not needed.
 ※Pay attention to the motor shaft diameter and reducer input clamping diameter before installation;
 ※Please install the motor as requested.

WSHR Series planetary gearbox 系列行星减速机

FEATURES

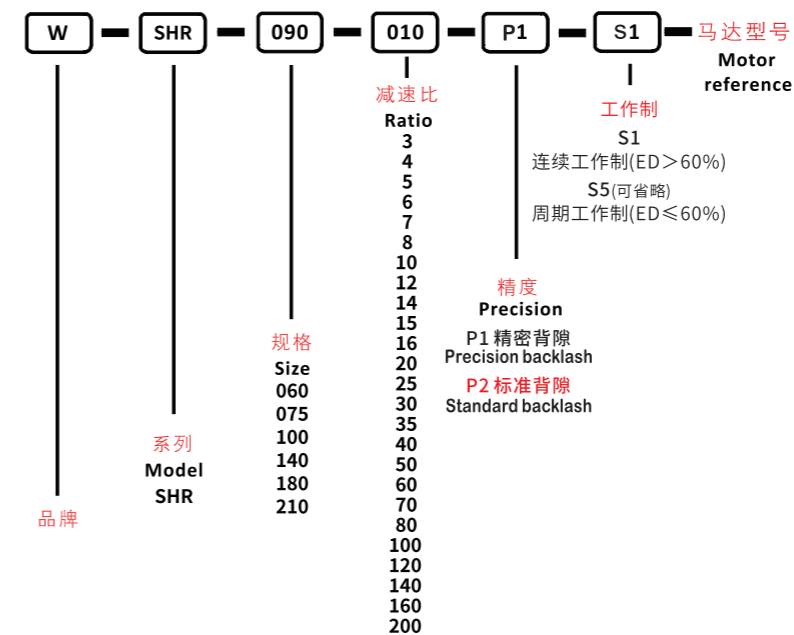
产品特点

- » 转速更高、更稳定、振动更小
 - » 安装尺寸通用性高
 - » 全新生产工艺, 精度保持更优
 - » 显著提升整体刚性、耐振性、任意方向的承载能力
 - » 输入级采用特殊工艺的螺旋锥齿轮, 工作噪音更低, 背隙更小
 - » 相比市场同型号, 总长进一步缩短, 功率密度更高
-
- » Higher and more stable rotation speed, less vibration.
 - » High universality in installation dimensions.
 - » Brand-new manufacturing processes for superior accuracy retention.
 - » Significantly enhances overall rigidity, vibration resistance, and load-bearing capacity in any direction.
 - » Special manufacturing processes for input stages using spiral bevel gears, resulting in lower working noise and higher precision.
 - » Compared to similar models in the market, its total length is further reduced, resulting in higher power density.



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
 - 入力方式和入力转速
 - 马达厂牌型号或法兰及马达轴尺寸
-
- Type, model and torque
 - Ratio or output speed
 - Working conditions and connection methods
 - Quantity and installed machine name
 - Input mode and input speed
 - Motor brand model or flange and motor shaft size

WSHR060-1级

| 规格/Specification | | WSHR060-1级/1-Stage | | | | | | | | | | | |
|---|-----------|---|------|------|------|------|------|------|------|------|------|------|------|
| 减速比/Ratio | 单位/Unit | 3 | 4 | 5 | 6 | 7 | 8 | 10 | 12 | 14 | 16 | 20 | |
| 额定输出扭矩/ Rated Output Torque T _{2N} | Nm | 50 | 55 | 60 | 55 | 50 | 55 | 60 | 55 | 50 | 40 | 35 | |
| 急停扭矩/ Emergency stop Torque T _{2NOT} | Nm | 3倍额定输出力矩(允许1000次)/3 Times T _{2N} | | | | | | | | | | | |
| 额定输入转速/ ^(a) Rated Input Speed n _{1N} | rpm | 3300 | 3300 | 3300 | 3300 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | |
| 最大输入转速/ Max Input Speed n _{1B} | rpm | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | |
| 空载力矩/ No Load Running Torque (n ₁ =3000rpm,20°C,运转2min内) | Nm | 0.7 | 0.6 | 0.5 | 0.5 | 0.5 | 0.4 | 0.4 | 0.4 | 0.4 | 0.35 | 0.35 | |
| 最大背隙/Max Backlash | arcmin | P1≤4 / P2≤6 | | | | | | | | | | | |
| 扭转刚性/Torsional rigidity | Nm/arcmin | 7 | | | | | | | | | | | |
| 最大侧倾力矩/ Max Tilting Moment M _{2K} | Nm | 160 | | | | | | | | | | | |
| 容许径向力/ ^(b) Allowable Radial Force F _{2R} | N | 3000 | | | | | | | | | | | |
| 容许轴向力/ ^(b) Allowable Axle Force F _{2A} | N | 2400 | | | | | | | | | | | |
| 使用寿命/Service Life | h | 20000 | | | | | | | | | | | |
| 效率/Efficient | % | ≥95 | | | | | | | | | | | |
| 使用环境温度/ Use of temperature | °C | -20°C~+40°C | | | | | | | | | | | |
| 重量/Weight | kg | 2.2 | | | | | | | | | | | |
| 防护等级/Protection class | | IP65 | | | | | | | | | | | |
| 润滑/Lubrication ^(c) | | 全合成润滑油/Synthetic Lubricating Oil | | | | | | | | | | | |
| 噪音/Noise | dB(A) | ≤63 | | | | | | | | | | | |
| 转动惯量/ Rotational inertia J ₁ | ≤14 | kg·cm ² | 0.48 | 0.42 | 0.4 | 0.38 | 0.38 | 0.35 | 0.33 | 0.31 | 0.31 | 0.31 | 0.31 |
| | ≤19 | | 0.81 | 0.75 | 0.7 | 0.65 | 0.65 | 0.68 | 0.63 | 0.58 | 0.58 | 0.58 | 0.58 |

(a)环境温度超过20°C时, 建议适当降低转速使用/When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

(b)作用于输出轴中心点/Applied to the center point of the output shaft.

(c)要求改为润滑脂时, 不适合S1连续工作制, 请与我们联系/If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

WSHR060-2级

| 规格/Specification | | WSHR060-2级/2-Stage | | | | | | | | | | | | | | | |
|---|-----------|---|------|------|------|------|------|------|------|------|------|------|------|------|------|--|--|
| 减速比/Ratio | 单位/Unit | 15 | 25 | 30 | 35 | 40 | 50 | 60 | 70 | 80 | 100 | 120 | 140 | 160 | 200 | | |
| 额定输出扭矩/ Rated Output Torque T _{2N} | Nm | 50 | 60 | 50 | 50 | 55 | 60 | 55 | 50 | 55 | 60 | 55 | 50 | 40 | 35 | | |
| 急停扭矩/ Emergency stop Torque T _{2NOT} | Nm | 3倍额定输出力矩(允许1000次)/3 Times T _{2N} | | | | | | | | | | | | | | | |
| 额定输入转速/ ^(a) Rated Input Speed n _{1N} | rpm | 3300 | 3300 | 3300 | 3300 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | | |
| 最大输入转速/ Max Input Speed n _{1B} | rpm | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | | |
| 空载力矩/ No Load Running Torque (n ₁ =3000rpm,20°C,运转2min内) | Nm | 0.5 | 0.5 | 0.45 | 0.5 | 0.4 | 0.4 | 0.4 | 0.4 | 0.35 | 0.35 | 0.35 | 0.35 | 0.3 | 0.3 | | |
| 最大背隙/Max Backlash | arcmin | P1≤7 / P2≤9 | | | | | | | | | | | | | | | |
| 扭转刚性/Torsional rigidity | Nm/arcmin | 7 | | | | | | | | | | | | | | | |
| 最大侧倾力矩/ Max Tilting Moment M _{2K} | Nm | 160 | | | | | | | | | | | | | | | |
| 容许径向力/ ^(b) Allowable Radial Force F _{2R} | N | 3000 | | | | | | | | | | | | | | | |
| 容许轴向力/ ^(b) Allowable Axle Force F _{2A} | N | 2400 | | | | | | | | | | | | | | | |
| 使用寿命/Service Life | h | 20000 | | | | | | | | | | | | | | | |
| 效率/Efficient | % | ≥92 | | | | | | | | | | | | | | | |
| 使用环境温度/ Use of temperature | °C | -20°C~+40°C | | | | | | | | | | | | | | | |
| 重量/Weight | kg | 2.8 | | | | | | | | | | | | | | | |
| 防护等级/Protection class | | IP65 | | | | | | | | | | | | | | | |
| 润滑/Lubrication ^(c) | | 全合成润滑油/Synthetic Lubricating Oil | | | | | | | | | | | | | | | |
| 噪音/Noise | dB(A) | ≤63 | | | | | | | | | | | | | | | |
| 转动惯量/ Rotational inertia J ₁ | ≤8 | kg·cm ² | 0.32 | 0.3 | 0.23 | 0.3 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 | 0.21 | | |
| | ≤14 | | 0.42 | 0.37 | 0.3 | 0.37 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 | | |

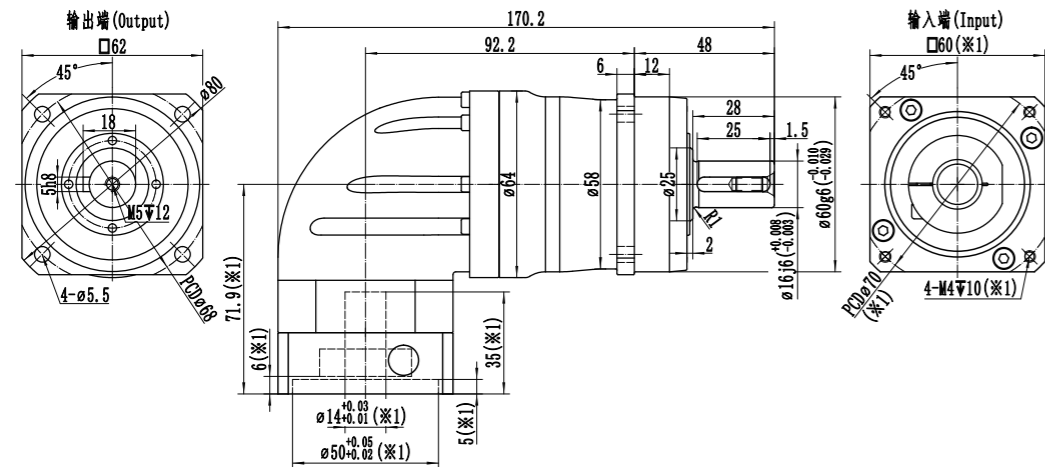
(a)环境温度超过20°C时, 建议适当降低转速使用/When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

(b)作用于输出轴中心点/Applied to the center point of the output shaft.

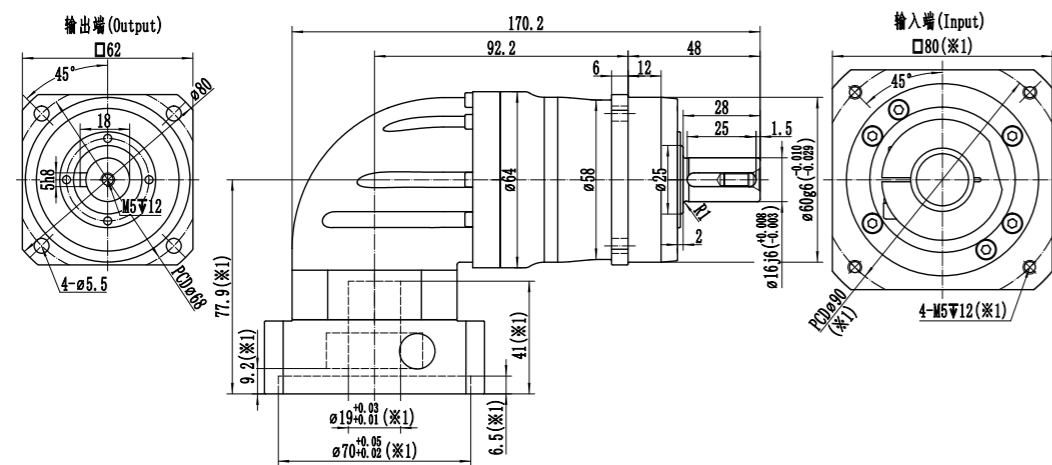
(c)要求改为润滑脂时, 不适合S1连续工作制, 请与我们联系/If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

WSHR060-L1 最大14(※2)夹紧孔直径 Max.14(※2)clamping hub' s bore diameter

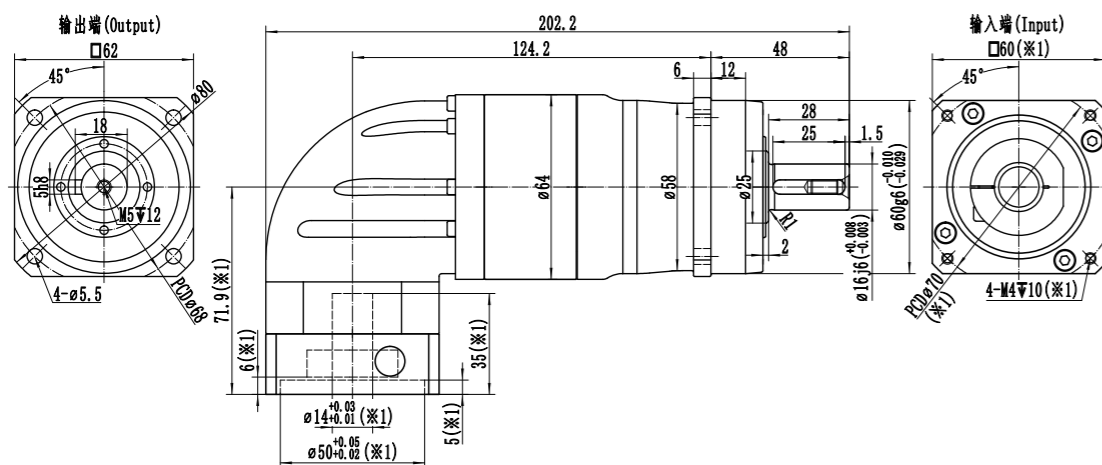
电机轴直径/motor shaft diameter (mm)



WSHR060-L1 最大19(※2)夹紧孔直径 Max.19(※2)clamping hub' s bore diameter



WSHR060-L2 最大14(※2)夹紧孔直径 Max.14(※2)clamping hub' s bore diameter



※1: 尺寸会随电机尺寸而变化;

※2: 电机轴尺寸偏小时, 可能会使用轴套, 轴套最小壁厚1mm;

※减速机夹紧孔需要开键槽时, 请提前备注;

※注意安装前检查电机轴径和减速机夹紧孔径;

※请按要求的安装电机

※1: Dimension will vary with the motor size;

※2: If the motor shaft diameter is undersized, a bushing with a minimum thickness of 1 mm may be used;

※ If Keyway is needed for the clamping bore, please notify in advance;

※ Pay attention to the motor shaft diameter and reducer input clamping diameter before installation;

※ Please install the motor as requested.

WSHR075-1级

| 规格/Specification | | WSHR075-1级/1-Stage | | | | | | | | | | |
|---|-----------|---|------|------|------|------|------|------|------|------|------|------|
| 减速比/Ratio | 单位/Unit | 3 | 4 | 5 | 6 | 7 | 8 | 10 | 12 | 14 | 16 | 20 |
| 额定输出扭矩/ Rated Output Torque T _{2N} | Nm | 130 | 150 | 160 | 150 | 140 | 150 | 160 | 150 | 140 | 100 | 90 |
| 急停扭矩/ Emergency stop Torque T _{2NOT} | Nm | 3倍额定输出力矩(允许1000次) / 3 Times T _{2N} | | | | | | | | | | |
| 额定输入转速/ ^(a) Rated Input Speed n _{1N} | rpm | 3300 | 3300 | 3300 | 3300 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 |
| 最大输入转速/ Max Input Speed n _{1B} | rpm | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 |
| 空载力矩/ No Load Running Torque (n ₁ =3000rpm, 20°C, 运转2min内) | Nm | 1.35 | 1.15 | 0.9 | 0.9 | 0.9 | 0.8 | 0.8 | 0.8 | 0.8 | 0.7 | 0.7 |
| 最大背隙/Max Backlash | arcmin | P1≤4 / P2≤6 | | | | | | | | | | |
| 扭转刚性/Torsional rigidity | Nm/arcmin | 14 | | | | | | | | | | |
| 最大侧倾力矩/ Max Tilting Moment M _{2K} | Nm | 270 | | | | | | | | | | |
| 容许径向力/ ^(b) Allowable Radial Force F _{2R} | N | 4500 | | | | | | | | | | |
| 容许轴向力/ ^(b) Allowable Axle Force F _{2A} | N | 3350 | | | | | | | | | | |
| 使用寿命/Service Life | h | 20000 | | | | | | | | | | |
| 效率/Efficient | % | ≥95 | | | | | | | | | | |
| 使用环境温度/ Use of temperature | °C | -20°C~+40°C | | | | | | | | | | |
| 重量/Weight | kg | 6.7 | | | | | | | | | | |
| 防护等级/Protection class | | IP65 | | | | | | | | | | |
| 润滑/Lubrication ^(c) | | 全合成润滑油/Synthetic Lubricating Oil | | | | | | | | | | |
| 噪音/Noise | dB(A) | ≤65 | | | | | | | | | | |
| 转动惯量/ Rotational inertia J ₁ | ≤19 | 2.7 | 2.5 | 2.4 | 2.3 | 2.3 | 2 | 1.9 | 1.8 | 1.8 | 1.8 | 1.8 |
| | ≤24 | 3.9 | 3.7 | 3.6 | 3.5 | 3.5 | 3.2 | 3.1 | 3 | 3 | 3 | 3 |

(a)环境温度超过20°C时, 建议适当降低转速使用/When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

(b)作用于输出轴中心点/Applied to the center point of the output shaft.

(c)要求改为润滑脂时, 不适合S1连续工作制, 请与我们联系/If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

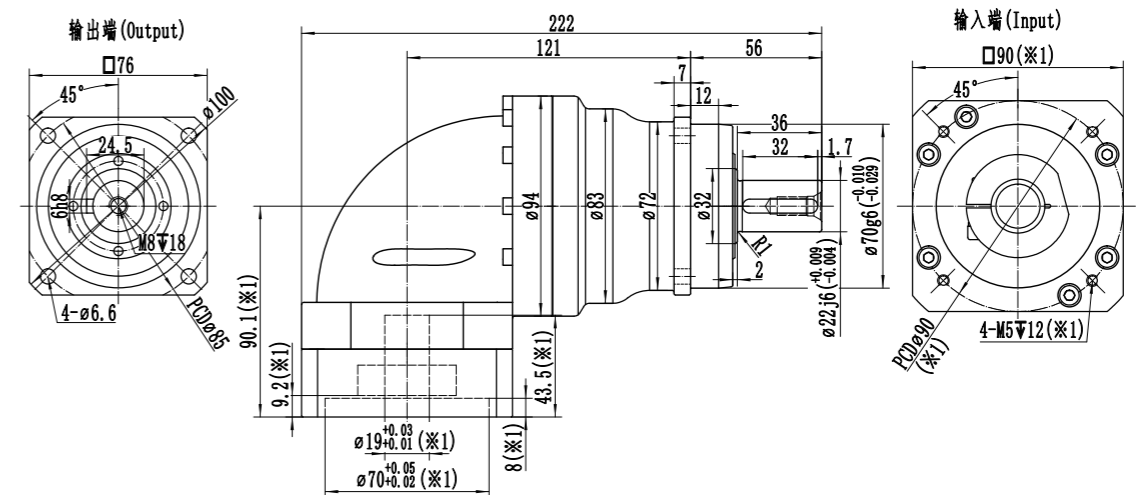
WSHR075-2级

| 规格/Specification | | WSHR075-2级/2-Stage | | | | | | | | | | | | | |
|---|-----------|---|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 减速比/Ratio | 单位/Unit | 15 | 25 | 30 | 35 | 40 | 50 | 60 | 70 | 80 | 100 | 120 | 140 | 160 | 200 |
| 额定输出扭矩/ Rated Output Torque T _{2N} | Nm | 130 | 160 | 130 | 140 | 150 | 160 | 150 | 140 | 150 | 160 | 150 | 140 | 100 | 90 |
| 急停扭矩/ Emergency stop Torque T _{2NOT} | Nm | 3倍额定输出力矩(允许1000次)/3 Times T _{2N} | | | | | | | | | | | | | |
| 额定输入转速/ ^(a) Rated Input Speed n _{1N} | rpm | 3300 | 3300 | 3300 | 3300 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 |
| 最大输入转速/ Max Input Speed n _{1B} | rpm | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 |
| 空载力矩/ No Load Running Torque (n ₁ =3000rpm,20°C,运转2min内) | Nm | 0.9 | 0.9 | 0.8 | 0.9 | 0.8 | 0.8 | 0.8 | 0.8 | 0.7 | 0.7 | 0.7 | 0.7 | 0.65 | 0.65 |
| 最大背隙/Max Backlash | arcmin | P1≤7 / P2≤9 | | | | | | | | | | | | | |
| 扭转刚性/Torsional rigidity | Nm/arcmin | 14 | | | | | | | | | | | | | |
| 最大侧倾力矩/ Max Tilting Moment M _{2K} | Nm | 270 | | | | | | | | | | | | | |
| 容许径向力/ ^(b) Allowable Radial Force F _{2R} | N | 4500 | | | | | | | | | | | | | |
| 容许轴向力/ ^(b) Allowable Axle Force F _{2A} | N | 3350 | | | | | | | | | | | | | |
| 使用寿命/Service Life | h | 20000 | | | | | | | | | | | | | |
| 效率/Efficient | % | ≥92 | | | | | | | | | | | | | |
| 使用环境温度/ Use of temperature | °C | -20°C~+40°C | | | | | | | | | | | | | |
| 重量/Weight | kg | 7.3 | | | | | | | | | | | | | |
| 防护等级/Protection class | | IP65 | | | | | | | | | | | | | |
| 润滑/Lubrication ^(c) | | 全合成润滑油/Synthetic Lubricating Oil | | | | | | | | | | | | | |
| 噪音/Noise | dB(A) | ≤65 | | | | | | | | | | | | | |
| 转动惯量/ Rotational inertia J ₁ | ≤14 | kg·cm ² | 0.45 | 0.45 | 0.35 | 0.45 | 0.31 | 0.31 | 0.31 | 0.31 | 0.31 | 0.31 | 0.31 | 0.31 | 0.31 |
| | ≤19 | | 2.4 | 2.3 | 1.8 | 2.3 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 |

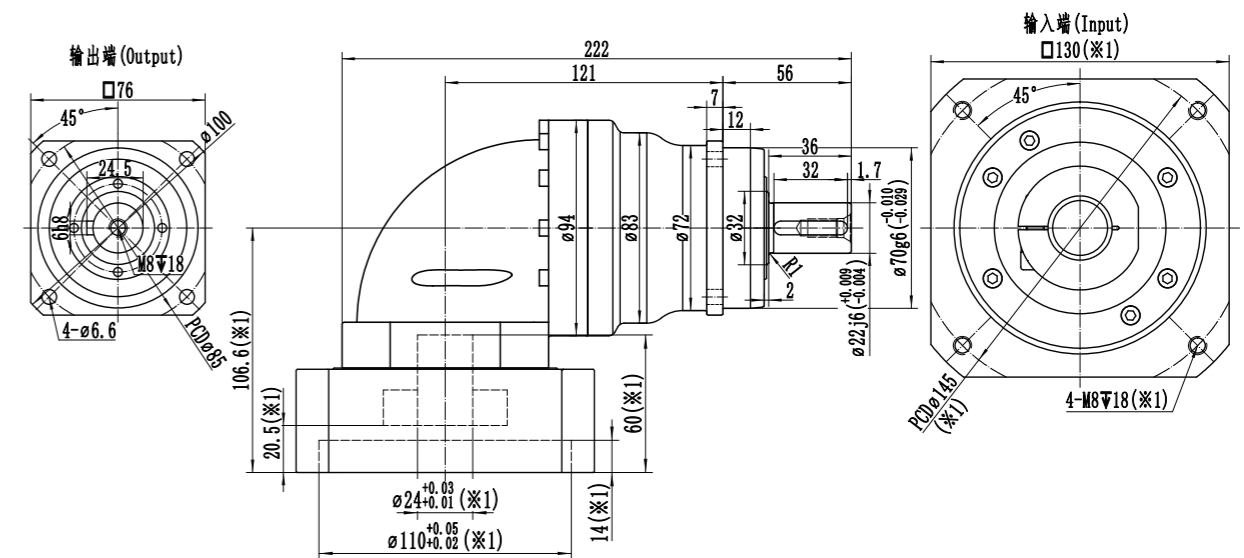
(a)环境温度超过20°C时, 建议适当降低转速使用/When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.
 (b)作用于输出轴中心点/Applied to the center point of the output shaft.
 (c)要求改为润滑脂时, 不适合S1连续工作制, 请与我们联系/If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

WSHR075-L1 最大19(※2)夹紧孔直径 /Max.19(※2)clamping hub's bore diameter

电机轴直径/motor shaft diameter (mm)



WSHR075-L1 最大24(※2)夹紧孔直径 Max.24(※2)clamping hub's bore diameter



※1: 尺寸会随电机尺寸而变化;
 ※2: 电机轴尺寸偏小时, 可能会使用轴套, 轴套最小壁厚1mm;
 ※减速机夹紧孔需要开键槽时, 请提前备注;
 ※注意安装前检查电机轴径和减速机夹紧孔径;
 ※请按要求安装电机

※1: Dimension will vary with the motor size;
 ※2: If the motor shaft diameter is undersized, a bushing with a minimum thickness of 1 mm may be used;
 ※ If Keyway is needed for the clamping bore, please notify in advance;
 ※Pay attention to the motor shaft diameter and reducer input clamping diameter before installation;
 ※Please install the motor as requested.

WSHR100-1级

| 规格/Specification | | WSHR100-1级/1-Stage | | | | | | | | | | |
|---|-----------|--|------|------|------|------|------|------|------|------|------|------|
| 减速比/Ratio | 单位/Unit | 3 | 4 | 5 | 6 | 7 | 8 | 10 | 12 | 14 | 16 | 20 |
| 额定输出扭矩/ Rated Output Torque T _{2N} | Nm | 230 | 330 | 330 | 310 | 300 | 330 | 330 | 310 | 300 | 230 | 200 |
| 急停扭矩/ Emergency stop Torque T _{2NOT} | Nm | 3倍额定输出力矩 (允许1000次) / 3 Times T _{2N} | | | | | | | | | | |
| 额定输入转速/ ^(a) Rated Input Speed n _{1N} | rpm | 2800 | 2800 | 2800 | 2800 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 |
| 最大输入转速/ Max Input Speed n _{1B} | rpm | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 | 5000 |
| 空载力矩/ No Load Running Torque (n ₁ =3000rpm, 20°C, 运转2min内) | Nm | 2.6 | 2.2 | 1.8 | 1.8 | 1.8 | 1.5 | 1.5 | 1.5 | 1.5 | 1.4 | 1.4 |
| 最大背隙/Max Backlash | arcmin | P1≤4 / P2≤6 | | | | | | | | | | |
| 扭转刚性/Torsional rigidity | Nm/arcmin | 32 | | | | | | | | | | |
| 最大侧倾力矩/ Max Tilting Moment M _{2k} | Nm | 670 | | | | | | | | | | |
| 容许径向力/ ^(b) Allowable Radial Force F _{2R} | N | 8500 | | | | | | | | | | |
| 容许轴向力/ ^(b) Allowable Axle Force F _{2A} | N | 7000 | | | | | | | | | | |
| 使用寿命/Service Life | h | 20000 | | | | | | | | | | |
| 效率/Efficient | % | ≥95 | | | | | | | | | | |
| 使用环境温度/ Use of temperature | °C | -20°C~+40°C | | | | | | | | | | |
| 重量/Weight | kg | 11.6 | | | | | | | | | | |
| 防护等级/Protection class | | IP65 | | | | | | | | | | |
| 润滑/Lubrication ^(c) | | 全合成润滑油/Synthetic Lubricating Oil | | | | | | | | | | |
| 噪音/Noise | dB(A) | ≤68 | | | | | | | | | | |
| 转动惯量/ Rotational inertia J ₁ | ≤19 | 6.9 | 5.9 | 5.4 | 4.9 | 4.9 | 4.4 | 4.3 | 4.2 | 4.2 | 4.2 | 4.2 |
| | ≤24 | 7.4 | 6.4 | 5.9 | 5.4 | 5.4 | 4.9 | 4.8 | 4.7 | 4.7 | 4.7 | 4.7 |
| | ≤28 | 7.9 | 6.9 | 6.4 | 5.9 | 5.9 | 5.4 | 5.3 | 5.2 | 5.2 | 5.2 | 5.2 |
| | ≤35 | 14.9 | 13.4 | 12.9 | 12.4 | 12.4 | 11.5 | 11.2 | 11 | 11 | 11 | 11 |

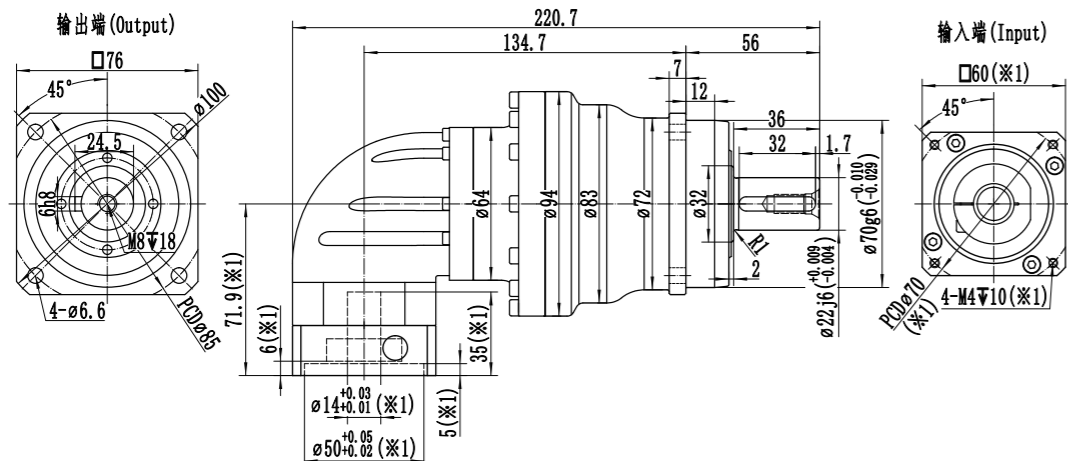
(a)环境温度超过20°C时, 建议适当降低转速使用/When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

(b)作用于输出轴中心点/Applied to the center point of the output shaft.

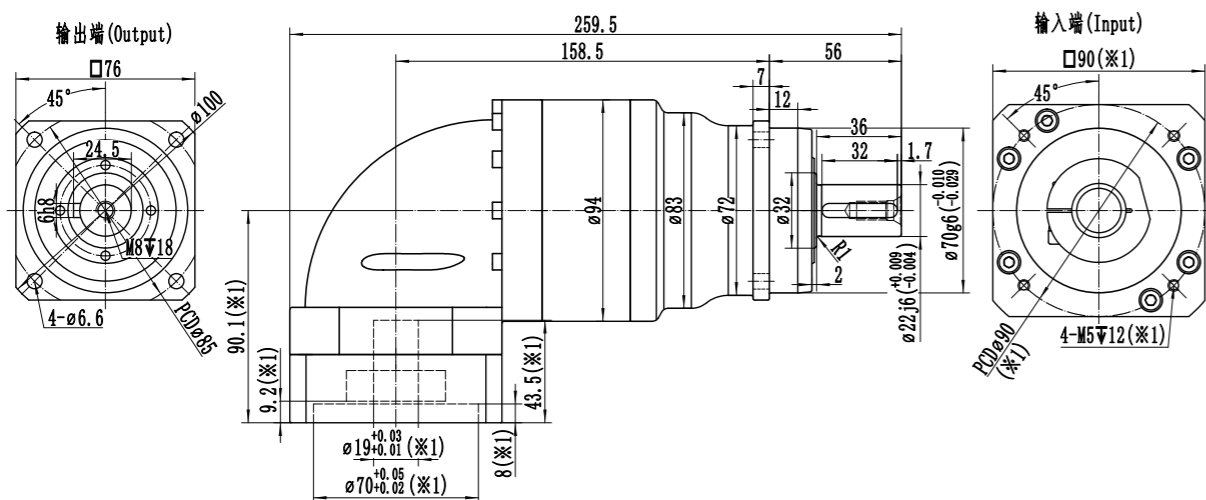
(c)要求改为润滑脂时, 不适合S1连续工作制, 请与我们联系/If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

WSHR075-L2 最大14(※2)夹紧孔直径 /Max.14(※2)clamping hub's bore diameter

电机轴直径/motor shaft diameter (mm)



WSHR075-L2 最大19(※2)夹紧孔直径 /Max.19(※2)clamping hub's bore diameter



※1:尺寸会随电机尺寸而变化;
 ※2:电机轴尺寸偏小时,可能会使用轴套,轴套最小壁厚1mm;
 ※减速机夹紧孔需要开键槽时,请提前备注;
 ※注意安装前检查电机轴径和减速机夹紧孔径;
 ※请按要求的安装电机

※1: Dimension will vary with the motor size;
 ※2: If the motor shaft diameter is undersized, a bushing with a minimum thickness of 1 mm may be used;
 ※ If Keyway is needed for the clamping bore, please notify in advance;
 ※ Pay attention to the motor shaft diameter and reducer input clamping diameter before installation;
 ※ Please install the motor as requested.

WSHR100-2级

| 规格/Specification | | WSHR100-2级/2-Stage | | | | | | | | | | | | | |
|---|-----------|---|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 减速比/Ratio | 单位/Unit | 15 | 25 | 30 | 35 | 40 | 50 | 60 | 70 | 80 | 100 | 120 | 140 | 160 | 200 |
| 额定输出扭矩/ Rated Output Torque T _{2N} | Nm | 230 | 330 | 230 | 300 | 330 | 330 | 310 | 300 | 330 | 330 | 310 | 300 | 230 | 200 |
| 急停扭矩/ Emergency stop Torque T _{2NOT} | Nm | 3倍额定输出力矩(允许1000次)/3 Times T _{2N} | | | | | | | | | | | | | |
| 额定输入转速/ ^(a) Rated Input Speed n _{1N} | rpm | 3300 | 3300 | 3300 | 3300 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 | 4000 |
| 最大输入转速/ Max Input Speed n _{1B} | rpm | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 | 6000 |
| 空载力矩/ No Load Running Torque (n ₁ =3000rpm,20°C,运转2min内) | Nm | 1 | 1 | 0.85 | 1 | 0.85 | 0.85 | 0.85 | 0.85 | 0.75 | 0.75 | 0.75 | 0.75 | 0.7 | 0.7 |
| 最大背隙/Max Backlash | arcmin | P1≤7 / P2≤9 | | | | | | | | | | | | | |
| 扭转刚性/Torsional rigidity | Nm/arcmin | 32 | | | | | | | | | | | | | |
| 最大侧倾力矩/ Max Tilting Moment M _{2k} | Nm | 670 | | | | | | | | | | | | | |
| 容许径向力/ ^(b) Allowable Radial Force F _{2R} | N | 8500 | | | | | | | | | | | | | |
| 容许轴向力/ ^(b) Allowable Axle Force F _{2A} | N | 7000 | | | | | | | | | | | | | |
| 使用寿命/Service Life | h | 20000 | | | | | | | | | | | | | |
| 效率/Efficient | % | ≥92 | | | | | | | | | | | | | |
| 使用环境温度/ Use of temperature | °C | -20°C~+40°C | | | | | | | | | | | | | |
| 重量/Weight | kg | 9.8 | | | | | | | | | | | | | |
| 防护等级/Protection class | | IP65 | | | | | | | | | | | | | |
| 润滑/Lubrication ^(c) | | 全合成润滑油/Synthetic Lubricating Oil | | | | | | | | | | | | | |
| 噪音/Noise | dB(A) | ≤65 | | | | | | | | | | | | | |
| 转动惯量/ Rotational inertia J ₁ | ≤19 | kg·cm ² | 2.6 | 2.5 | 2.1 | 2.5 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| | ≤24 | | 3.8 | 3.7 | 3.3 | 3.7 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 |

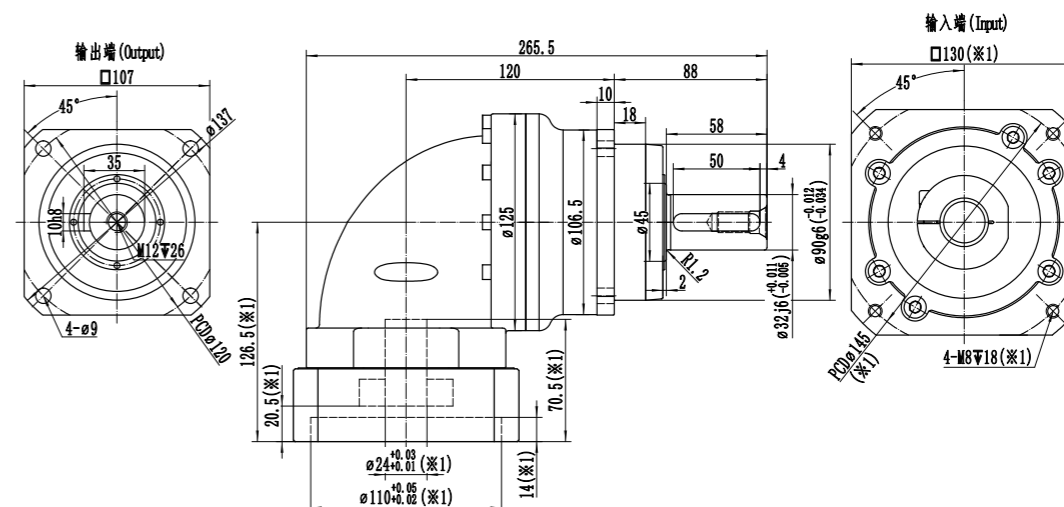
(a)环境温度超过20°C时, 建议适当降低转速使用/When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

(b)作用于输出轴中心点/Applied to the center point of the output shaft.

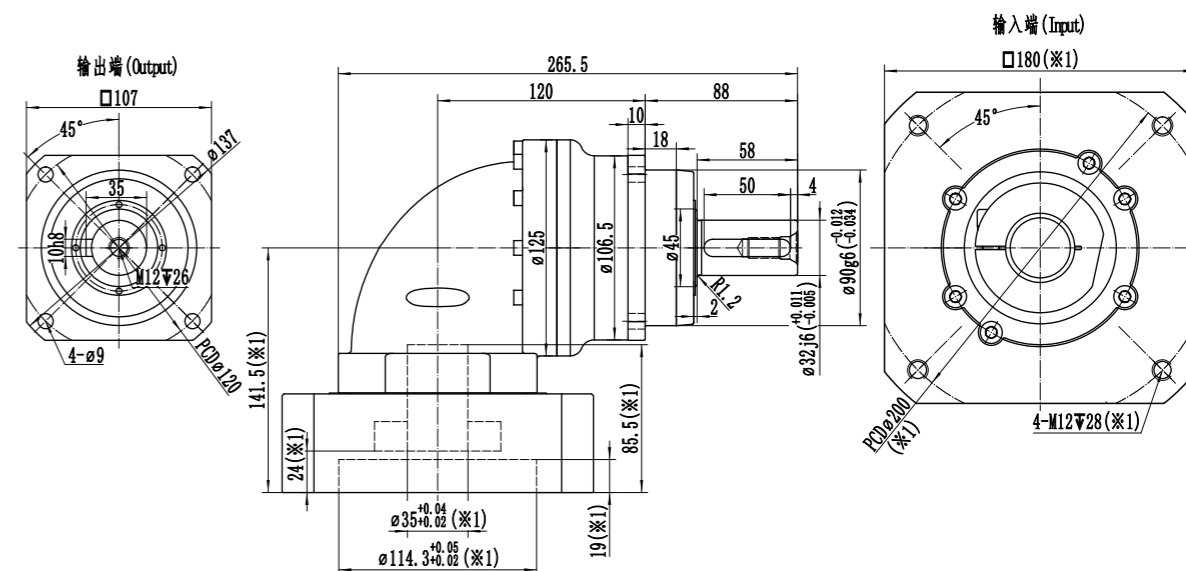
(c)要求改为润滑油时, 不适合S1连续工作制, 请与我们联系/If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

WSHR100-L1 最大24(※2)夹紧孔直径 /Max.24(※2)clamping hub's bore diameter

电机轴直径/motor shaft diameter (mm)



WSHR100-L1 最大35(※2)夹紧孔直径 /Max.35(※2)clamping hub's bore diameter

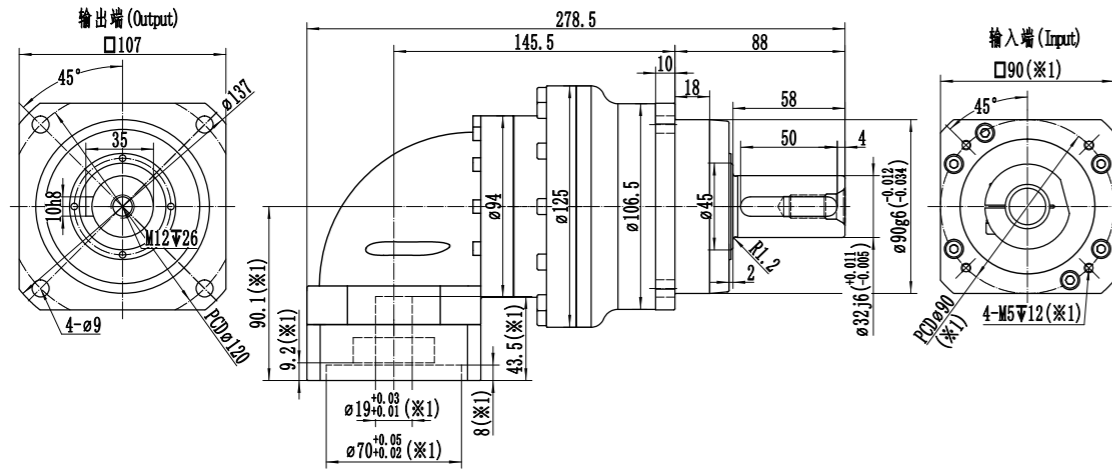


※1: 尺寸会随电机尺寸而变化;
 ※2: 电机轴尺寸偏小时, 可能会使用轴套, 轴套最小壁厚1mm;
 ※减速机夹紧孔需要开键槽时, 请提前备注;
 ※注意安装前检查电机轴径和减速机夹紧孔径;
 ※请按要求安装电机

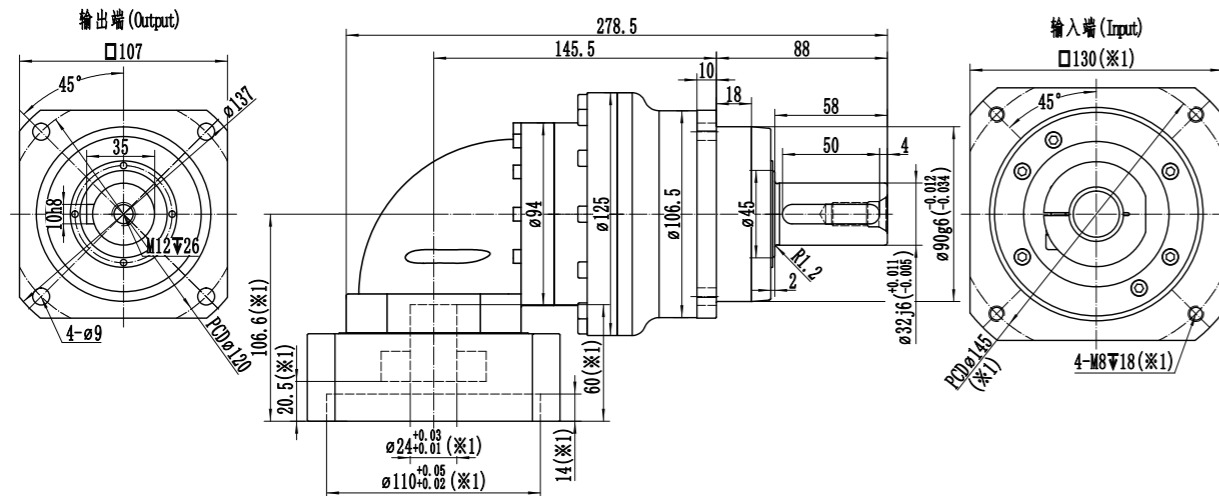
※1: Dimension will vary with the motor size;
 ※2: If the motor shaft diameter is undersized, a bushing with a minimum thickness of 1 mm may be used;
 ※ If Keyway is needed for the clamping bore, please notify in advance;
 ※ Pay attention to the motor shaft diameter and reducer input clamping diameter before installation;
 ※ Please install the motor as requested.

WSHR100-L2 最大19(※2)夹紧孔直径 / Max.19(※2)clamping hub's bore diameter

电机轴直径/motor shaft diameter (mm)



WSHR100-L2 最大24(※2)夹紧孔直径 / Max.24(※2)clamping hub's bore diameter



※1:尺寸会随电机尺寸而变化;
 ※2:电机轴尺寸偏小时,可能会使用轴套,轴套最小壁厚1mm;
 ※减速机夹紧孔需要开键槽时,请提前备注;
 ※注意安装前检查电机轴径和减速机夹紧孔径;
 ※请按要求安装电机

※1: Dimension will vary with the motor size;
 ※2: If the motor shaft diameter is undersized, a bushing with a minimum thickness of 1 mm may be used;
 ※ If Keyway is needed for the clamping bore, please notify in advance;
 ※ Pay attention to the motor shaft diameter and reducer input clamping diameter before installation;
 ※ Please install the motor as requested.

WSHR140-1级

| 规格/Specification | | WSHR140-1级/1-Stage | | | | | | | | | | |
|---|-----------|---|------|------|------|------|------|------|------|------|------|------|
| 减速比/Ratio | 单位/Unit | 3 | 4 | 5 | 6 | 7 | 8 | 10 | 12 | 14 | 16 | 20 |
| 额定输出扭矩/ Rated Output Torque T _{2N} | Nm | 400 | 650 | 650 | 600 | 550 | 650 | 600 | 550 | 450 | 400 | |
| 急停扭矩/ Emergency stop Torque T _{2NOT} | Nm | 3倍额定输出力矩(允许1000次)/3 Times T _{2N} | | | | | | | | | | |
| 额定输入转速/ ^(a) Rated Input Speed n _{1N} | rpm | 2300 | 2300 | 2300 | 2300 | 2300 | 2800 | 2800 | 2800 | 2800 | 2800 | 2800 |
| 最大输入转速/ Max Input Speed n _{1B} | rpm | 4500 | 4500 | 4500 | 4500 | 4500 | 4500 | 4500 | 4500 | 4500 | 4500 | 4500 |
| 空载力矩/ No Load Running Torque (n ₁ =3000rpm,20°C,运转2min内) | Nm | 5.2 | 4.3 | 3.5 | 3.5 | 3.5 | 3 | 3 | 3 | 3 | 2.9 | 2.9 |
| 最大背隙/Max Backlash | arcmin | P1≤4 / P2≤6 | | | | | | | | | | |
| 扭转刚性/Torsional rigidity | Nm/arcmin | 60 | | | | | | | | | | |
| 最大侧倾力矩/ Max Tilting Moment M _{2K} | Nm | 1630 | | | | | | | | | | |
| 容许径向力/ ^(b) Allowable Radial Force F _{2R} | N | 16000 | | | | | | | | | | |
| 容许轴向力/ ^(b) Allowable Axle Force F _{2A} | N | 12000 | | | | | | | | | | |
| 使用寿命/Service Life | h | 20000 | | | | | | | | | | |
| 效率/Efficient | % | ≥95 | | | | | | | | | | |
| 使用环境温度/ Use of temperature | °C | -20°C~+40°C | | | | | | | | | | |
| 重量/Weight | kg | 23.6 | | | | | | | | | | |
| 防护等级/Protection class | | IP65 | | | | | | | | | | |
| 润滑/Lubrication ^(c) | | 全合成润滑油/Synthetic Lubricating Oil | | | | | | | | | | |
| 噪音/Noise | dB(A) | ≤70 | | | | | | | | | | |
| 转动惯量/ Rotational inertia J ₁ | ≤24 | kg.cm ² | 21.5 | 19 | 17.5 | 16.5 | 16.5 | 15.3 | 15 | 14.8 | 14.8 | 14.8 |
| | ≤28 | | 22.5 | 20 | 18.5 | 17.5 | 17.5 | 16.3 | 16 | 15.8 | 15.8 | 15.8 |
| | ≤35 | | 26.5 | 23.5 | 22 | 21 | 21 | 19.8 | 19.5 | 19.3 | 19.3 | 19.3 |
| | ≤42 | | 38 | 36 | 35 | 34 | 34 | 32.8 | 32.5 | 32.3 | 32.3 | 32.3 |

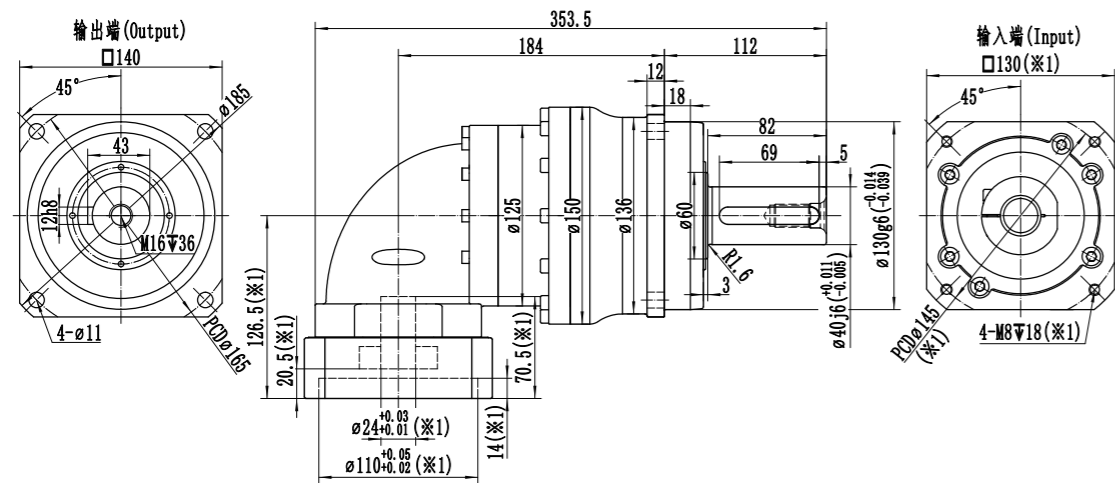
(a)环境温度超过20°C时,建议适当降低转速使用/When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

(b)作用于输出轴中心点/Applied to the center point of the output shaft.

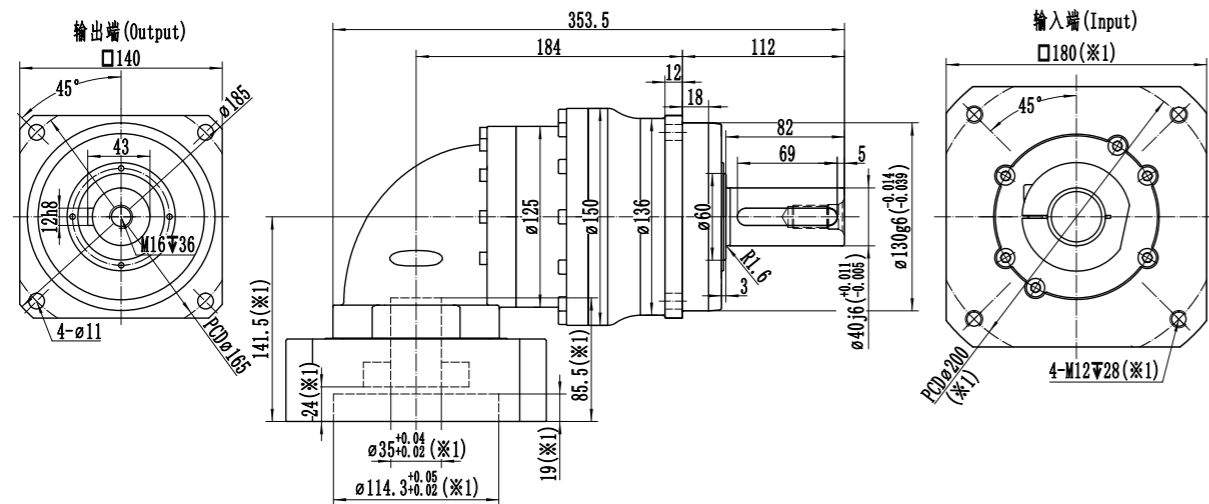
(c)要求改为润滑脂时,不适合S1连续工作制,请与我们联系/If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

WSHR140-L2 最大24(※2)夹紧孔直径 / Max.24(※2)clamping hub's bore diameter

电机轴直径/motor shaft diameter (mm)



WSHR140-L2 最大35(※2)夹紧孔直径 / Max.35(※2)clamping hub's bore diameter



※1: 尺寸会随电机尺寸而变化;
 ※2: 电机轴尺寸偏小时, 可能会使用轴套, 轴套最小壁厚1mm;
 ※减速机夹紧孔需要开键槽时, 请提前备注;
 ※注意安装前检查电机轴径和减速机夹紧孔径;
 ※请按要求的安装电机

※1: Dimension will vary with the motor size;
 ※2: If the motor shaft diameter is undersized, a bushing with a minimum thickness of 1 mm may be used;
 ※ If Keyway is needed for the clamping bore, please notify in advance;
 ※ Pay attention to the motor shaft diameter and reducer input clamping diameter before installation;
 ※ Please install the motor as requested.

WSHR180-1级

| 规格/Specification | | WSHR180-1级/1-Stage | | | | | | | | | | |
|---|-----------|--|------|------|------|------|------|------|------|------|------|------|
| 减速比/Ratio | 单位/Unit | 3 | 4 | 5 | 6 | 7 | 8 | 10 | 12 | 14 | 16 | 20 |
| 额定输出扭矩/ Rated Output Torque T _{2N} | Nm | 1000 | 1400 | 1400 | 1100 | 1000 | 1400 | 1400 | 1100 | 1000 | 850 | 760 |
| 急停扭矩/ Emergency stop Torque T _{2NOT} | Nm | 3倍额定输出力矩 (允许1000次) / 3 Times T _{2N} | | | | | | | | | | |
| 额定输入转速/ ^(a) Rated Input Speed n _{1N} | rpm | 2000 | 2000 | 2000 | 2000 | 2000 | 2200 | 2200 | 2200 | 2200 | 2200 | 2200 |
| 最大输入转速/ Max Input Speed n _{1B} | rpm | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 |
| 空载力矩/ No Load Running Torque (n ₁ =2000rpm, 20°C, 运转2min内) | Nm | 8.6 | 7.1 | 5.7 | 5.7 | 4.6 | 4 | 4 | 4 | 4 | 3.9 | 3.9 |
| 最大背隙/Max Backlash | arcmin | P1≤4 / P2≤6 | | | | | | | | | | |
| 扭转刚性/Torsional rigidity | Nm/arcmin | 175 | | | | | | | | | | |
| 最大侧倾力矩/ Max Tilting Moment M _{2K} | Nm | 3200 | | | | | | | | | | |
| 容许径向力/ ^(b) Allowable Radial Force F _{2R} | N | 23000 | | | | | | | | | | |
| 容许轴向力/ ^(b) Allowable Axle Force F _{2A} | N | 19000 | | | | | | | | | | |
| 使用寿命/Service Life | h | 20000 | | | | | | | | | | |
| 效率/Efficient | % | ≥95 | | | | | | | | | | |
| 使用环境温度/ Use of temperature | °C | -20°C~+40°C | | | | | | | | | | |
| 重量/Weight | kg | 40.5 | | | | | | | | | | |
| 防护等级/Protection class | | IP65 | | | | | | | | | | |
| 润滑/Lubrication ^(c) | | 全合成润滑油/Synthetic Lubricating Oil | | | | | | | | | | |
| 噪音/Noise | dB(A) | ≤72 | | | | | | | | | | |
| 转动惯量/ Rotational inertia J ₁ | ≤28 | - | - | - | - | - | - | - | - | - | - | - |
| | ≤35 | 58 | 42 | 37 | 33 | 31 | 29 | 28.5 | 28.5 | 28.5 | 28.5 | 28.5 |
| | ≤42 | 69 | 53 | 48 | 44 | 42 | 40 | 39.5 | 39.5 | 39.5 | 39.5 | 39.5 |
| | ≤55 | - | - | - | - | - | - | - | - | - | - | - |

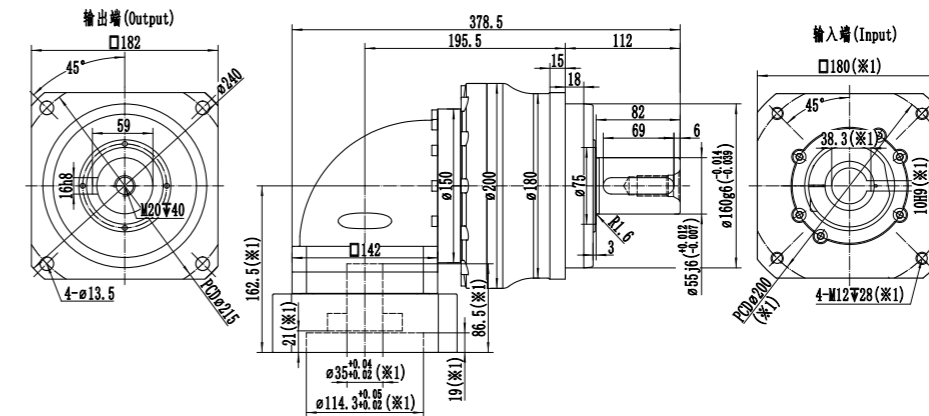
(a)环境温度超过20°C时, 建议适当降低转速使用/When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.
 (b)作用于输出轴中心点/Applied to the center point of the output shaft.
 (c)要求改为润滑脂时, 不适合S1连续工作制, 请与我们联系/If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

WSHR180-2级

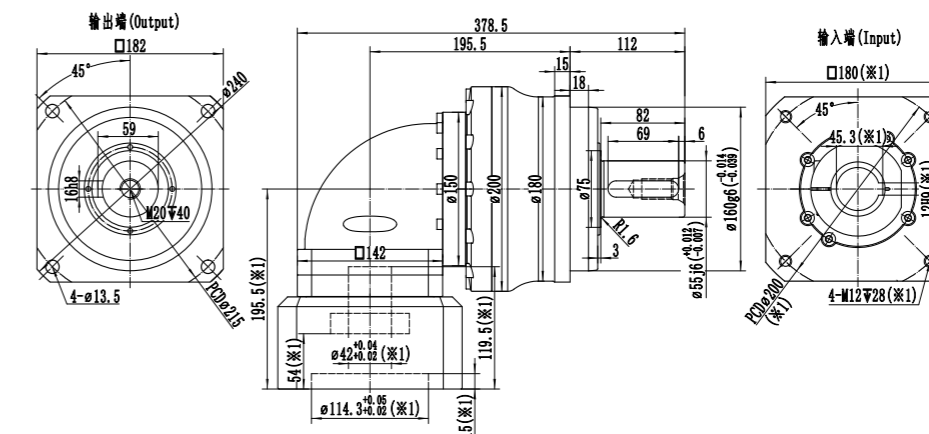
| 规格/Specification | | WSHR180-2级/2-Stage | | | | | | | | | | | | | |
|---|-----------|---|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 减速比/Ratio | 单位/Unit | 15 | 25 | 30 | 35 | 40 | 50 | 60 | 70 | 80 | 100 | 120 | 140 | 160 | 200 |
| 额定输出扭矩/ Rated Output Torque T _{2N} | Nm | 1000 | 1400 | 1000 | 1000 | 1400 | 1400 | 1100 | 1000 | 1400 | 1400 | 1100 | 1000 | 850 | 760 |
| 急停扭矩/ Emergency stop Torque T _{2NOT} | Nm | 3倍额定输出力矩(允许1000次)/3 Times T _{2N} | | | | | | | | | | | | | |
| 额定输入转速/ ^(a) Rated Input Speed n _{1N} | rpm | 2300 | 2300 | 2800 | 2300 | 2800 | 2800 | 2800 | 2800 | 2800 | 2800 | 2800 | 2800 | 2800 | 2800 |
| 最大输入转速/ Max Input Speed n _{1B} | rpm | 4500 | 4500 | 4500 | 4500 | 4500 | 4500 | 4500 | 4500 | 4500 | 4500 | 4500 | 4500 | 4500 | 4500 |
| 空载力矩/ No Load Running Torque (n ₁ =2000rpm,20°C,运转2min内) | Nm | 3.7 | 3.7 | 3.3 | 3.7 | 3.3 | 3.3 | 3.3 | 3.3 | 3.1 | 3.1 | 3.1 | 3.13 | 3 | 3 |
| 最大背隙/Max Backlash | arcmin | P1≤7 / P2≤9 | | | | | | | | | | | | | |
| 扭转刚性/Torsional rigidity | Nm/arcmin | 175 | | | | | | | | | | | | | |
| 最大侧倾力矩/ Max Tilting Moment M _{2k} | Nm | 3200 | | | | | | | | | | | | | |
| 容许径向力/ ^(b) Allowable Radial Force F _{2R} | N | 23000 | | | | | | | | | | | | | |
| 容许轴向力/ ^(b) Allowable Axle Force F _{2A} | N | 19000 | | | | | | | | | | | | | |
| 使用寿命/Service Life | h | 20000 | | | | | | | | | | | | | |
| 效率/Efficient | % | ≥92 | | | | | | | | | | | | | |
| 使用环境温度/ Use of temperature | °C | -20°C~+40°C | | | | | | | | | | | | | |
| 重量/Weight | kg | 43.5 | | | | | | | | | | | | | |
| 防护等级/Protection class | | IP65 | | | | | | | | | | | | | |
| 润滑/Lubrication ^(c) | | 全合成润滑油/Synthetic Lubricating Oil | | | | | | | | | | | | | |
| 噪音/Noise | dB(A) | ≤70 | | | | | | | | | | | | | |
| 转动惯量/ Rotational inertia J ₁ | ≤24 | 17.5 | 16.8 | 15.3 | 16.8 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| | ≤28 | 18.5 | 17.8 | 16.3 | 17.8 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 |
| | ≤35 | 22 | 21.3 | 19.8 | 21.3 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 |
| | ≤42 | 35 | 34.3 | 32.8 | 34.3 | 32.5 | 32.5 | 32.5 | 32.5 | 32.5 | 32.5 | 32.5 | 32.5 | 32.5 | 32.5 |

WSHR180-L1 最大35(※2)夹紧孔直径 /Max.35(※2)clamping hub's bore diameter

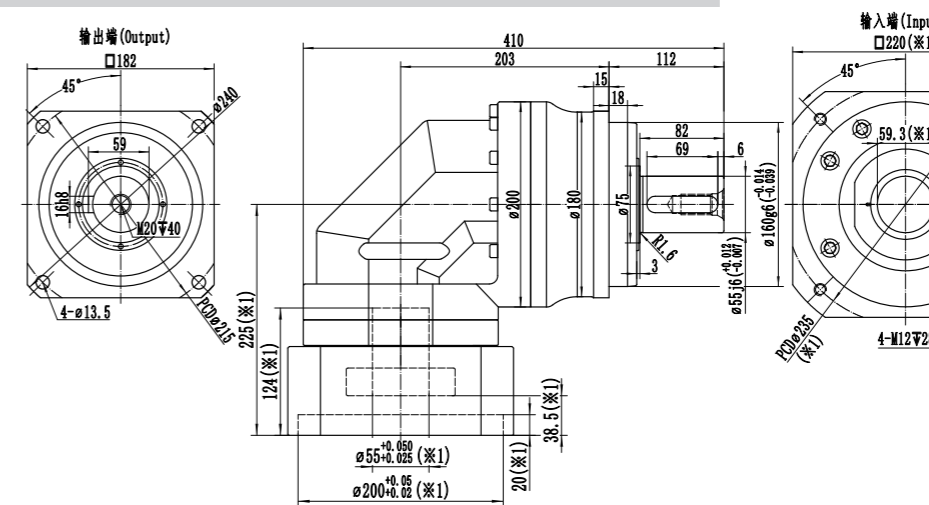
电机轴直径/motor shaft diameter (mm)



WSHR180-L1 最大42(※2)夹紧孔直径 /Max.42(※2)clamping hub's bore diameter



WSHR180-L1 最大55(※2)夹紧孔直径 /Max.55(※2)clamping hub's bore diameter



※1: 尺寸会随电机尺寸而变化;

※2: 电机轴尺寸偏小时, 可能会使用轴套, 轴套最小壁厚1mm;

※WSHR180减速机, 夹紧孔默认开键槽, 无需开键槽时, 请提前备注;

※注意安装前检查电机轴径和减速机夹紧孔径;

※请按要求安装电机

※1: Dimension will vary with the motor size;

※2: If the motor shaft diameter is undersized, a bushing with a minimum thickness of 1 mm may be used;

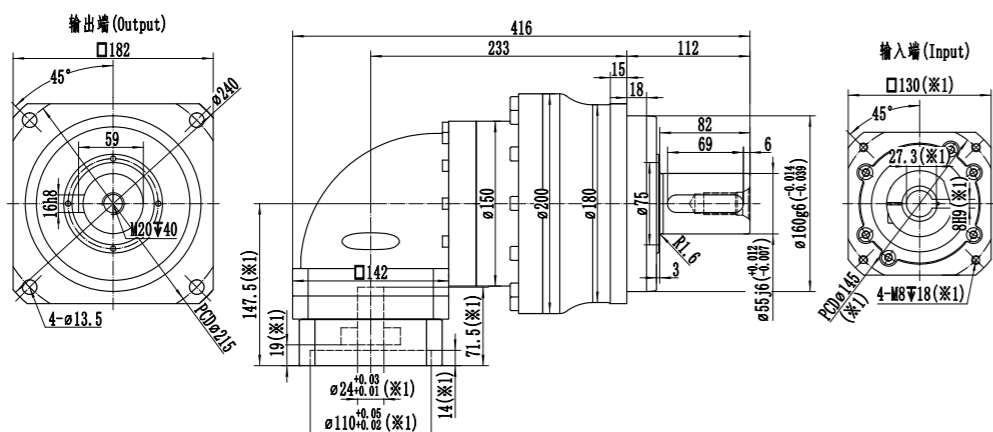
※ WSHR180 gearbox: Default keyway on input shaft. Please notify if not needed.

※Pay attention to the motor shaft diameter and reducer input clamping diameter before installation;

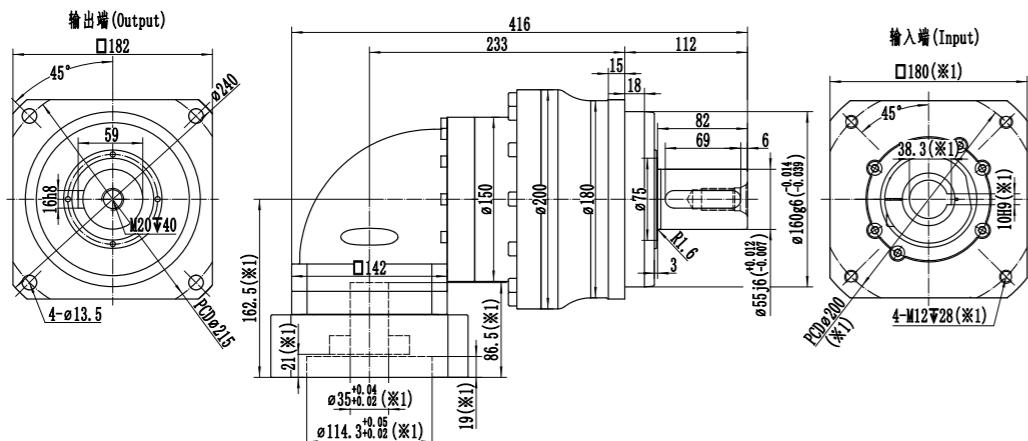
※Please install the motor as requested.

WSHR180-L2 最大24(※2)夹紧孔直径 / Max.24(※2)clamping hub's bore diameter

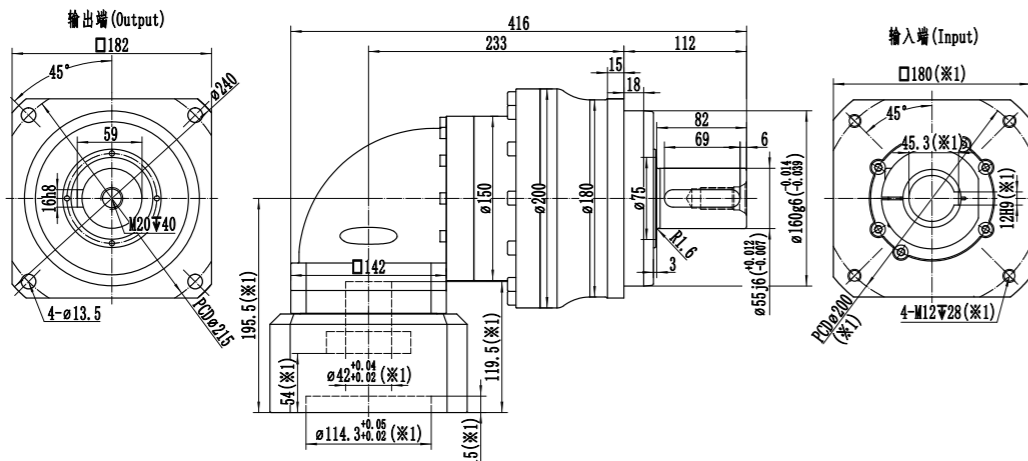
电机轴直径/motor shaft diameter (mm)



WSHR180-L2 最大35(※2)夹紧孔直径 / Max.35(※2)clamping hub's bore diameter



WSHR180-L2 最大42(※2)夹紧孔直径 / Max.42(※2)clamping hub's bore diameter



※1:尺寸会随电机尺寸而变化;

※2:电机轴尺寸偏小时,可能会使用轴套,轴套最小壁厚1mm;

※WSHR180减速机,夹紧孔默认开键槽,无需开键槽时,请提前备注;

※注意安装前检查电机轴径和减速机夹紧孔径;

※请按要求的安装电机

※1: Dimension will vary with the motor size;

※2: If the motor shaft diameter is undersized, a bushing with a minimum thickness of 1 mm may be used;

※ WSHR180 gearbox: Default keyway on input shaft. Please notify if not needed.

※ Pay attention to the motor shaft diameter and reducer input clamping diameter before installation;

※ Please install the motor as requested.

WSHR210-1级

| 规格/Specification | | WSHR210-1级/1-Stage | | | | | | | | | | |
|---|-----------|---|------|------|------|------|------|------|------|------|------|------|
| 减速比/Ratio | 单位/Unit | 3 | 4 | 5 | 6 | 7 | 8 | 10 | 12 | 14 | 16 | 20 |
| 额定输出扭矩/ Rated Output Torque T _{2N} | Nm | 1800 | 2400 | 2400 | 1950 | 1700 | 2400 | 2400 | 1950 | 1700 | 1450 | 1350 |
| 急停扭矩/ Emergency stop Torque T _{2NOT} | Nm | 3倍额定输出力矩(允许1000次)/3 Times T _{2N} | | | | | | | | | | |
| 额定输入转速/ ^(a) Rated Input Speed n _{1N} | rpm | 1500 | 1500 | 1500 | 1500 | 1500 | 1500 | 1800 | 1800 | 1800 | 1800 | 1800 |
| 最大输入转速/ Max Input Speed n _{1B} | rpm | 3000 | 3000 | 3000 | 3000 | 3000 | 3000 | 3000 | 3000 | 3000 | 3000 | 3000 |
| 空载力矩/ No Load Running Torque (n ₁ =2000rpm,20°C,运转2min内) | Nm | 13.5 | 13.5 | 11 | 11 | 11 | 9 | 9 | 9 | 9 | 7.5 | 7.5 |
| 最大背隙/Max Backlash | arcmin | P1≤4 / P2≤6 | | | | | | | | | | |
| 扭转刚性/Torsional rigidity | Nm/arcmin | 410 | | | | | | | | | | |
| 最大侧倾力矩/ Max Tilting Moment M _{2k} | Nm | 5300 | | | | | | | | | | |
| 容许径向力/ ^(b) Allowable Radial Force F _{2R} | N | 30000 | | | | | | | | | | |
| 容许轴向力/ ^(b) Allowable Axle Force F _{2A} | N | 24000 | | | | | | | | | | |
| 使用寿命/Service Life | h | 20000 | | | | | | | | | | |
| 效率/Efficient | % | ≥95 | | | | | | | | | | |
| 使用环境温度/ Use of temperature | °C | -20°C~+40°C | | | | | | | | | | |
| 重量/Weight | kg | 70.5 | | | | | | | | | | |
| 防护等级/Protection class | | IP65 | | | | | | | | | | |
| 润滑/Lubrication ^(c) | | 全合成润滑油/Synthetic Lubricating Oil | | | | | | | | | | |
| 噪音/Noise | dB(A) | ≤74 | | | | | | | | | | |
| 转动惯量/ Rotational inertia J ₁ | ≤28 | - | - | - | - | - | - | - | - | - | - | - |
| | ≤35 | 87 | 72 | 67 | 62 | 62 | 57 | 52 | 52 | 52 | 52 | 52 |
| | ≤42 | 107 | 92 | 87 | 82 | 82 | 77 | 72 | 72 | 72 | 72 | 72 |
| | ≤55 | 135 | 120 | 115 | 110 | 110 | 105 | 100 | 100 | 100 | 100 | 100 |

(a)环境温度超过20°C时,建议适当降低转速使用/When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

(b)作用于输出轴中心点/Applied to the center point of the output shaft.

(c)要求改为润滑脂时,不适合S1连续工作制,请与我们联系/If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

WSHR210-2级

| 规格/Specification | | WSHR210-2级/2-Stage | | | | | | | | | | | | | | |
|--|-----------|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 减速比/Ratio | 单位/Unit | 15 | 25 | 30 | 35 | 40 | 50 | 60 | 70 | 80 | 100 | 120 | 140 | 160 | 200 | |
| 额定输出扭矩/ Rated Output Torque T_{2N} | Nm | 1800 | 2400 | 1800 | 1700 | 2400 | 2400 | 1950 | 1700 | 2400 | 2400 | 1950 | 1700 | 1450 | 1350 | |
| 急停扭矩/ Emergency stop Torque T_{2NOT} | Nm | 3倍额定输出力矩(允许1000次)/3 Times T_{2N} | | | | | | | | | | | | | | |
| 额定输入转速/ ^(a) Rated Input Speed n_{1N} | rpm | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | |
| 最大输入转速/ Max Input Speed n_{1B} | rpm | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 | |
| 空载力矩/ No Load Running Torque ($n_1=2000\text{rpm}, 20^\circ\text{C}, \text{运转}2\text{min}$ 内) | Nm | 4.4 | 4.4 | 4 | 4.4 | 4 | 4 | 4 | 4 | 3.8 | 3.8 | 3.8 | 3.8 | 3.7 | 3.7 | |
| 最大背隙/Max Backlash | arcmin | $P1 \leq 7 / P2 \leq 9$ | | | | | | | | | | | | | | |
| 扭转刚性/Torsional rigidity | Nm/arcmin | 410 | | | | | | | | | | | | | | |
| 最大侧倾力矩/ Max Tilting Moment M_{2K} | Nm | 5300 | | | | | | | | | | | | | | |
| 容许径向力/ ^(b) Allowable Radial Force F_{2R} | N | 30000 | | | | | | | | | | | | | | |
| 容许轴向力/ ^(b) Allowable Axle Force F_{2A} | N | 24000 | | | | | | | | | | | | | | |
| 使用寿命/Service Life | h | 20000 | | | | | | | | | | | | | | |
| 效率/Efficient | % | ≥ 92 | | | | | | | | | | | | | | |
| 使用环境温度/ Use of temperature | °C | $-20^\circ\text{C} \sim +40^\circ\text{C}$ | | | | | | | | | | | | | | |
| 重量/Weight | kg | 74.5 | | | | | | | | | | | | | | |
| 防护等级/Protection class | | IP65 | | | | | | | | | | | | | | |
| 润滑/Lubrication ^(c) | | 全合成润滑油/Synthetic Lubricating Oil | | | | | | | | | | | | | | |
| 噪音/Noise | dB(A) | ≤ 72 | | | | | | | | | | | | | | |
| 转动惯量/ Rotational inertia J_1 | ≤ 24 | kg·cm ² | 23.8 | 21.8 | 21.8 | 21.8 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| | ≤ 28 | | 26.8 | 22.8 | 22.8 | 22.8 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 |
| | ≤ 35 | | 31.3 | 26.3 | 26.3 | 26.3 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 |
| | ≤ 42 | | 44.3 | 39.3 | 39.3 | 39.3 | 37.5 | 37.5 | 37.5 | 37.5 | 37.5 | 37.5 | 37.5 | 37.5 | 37.5 | 37.5 |

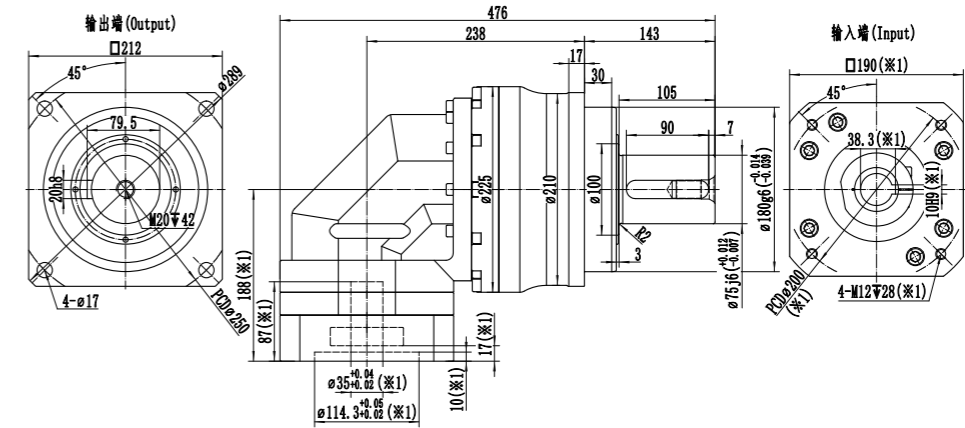
(a)环境温度超过20°C时, 建议适当降低转速使用/When the ambient temperature exceeds 20°C, it is recommended to reduce the rotational speed appropriately for use.

(b)作用于输出轴中心点/Applied to the center point of the output shaft.

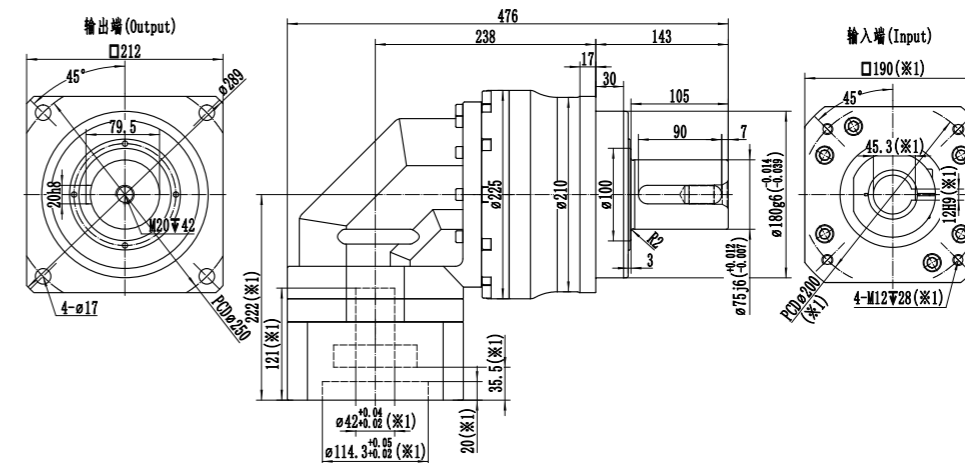
(c)要求改为润滑脂时, 不适合S1连续工作制, 请与我们联系/If it is not suitable for continuous S1 operation mode and need change grease lubrication, Please contact us for further information.

WSHR210-L1 最大35(※2)夹紧孔直径 / Max.35(※2)clamping hub's bore diameter

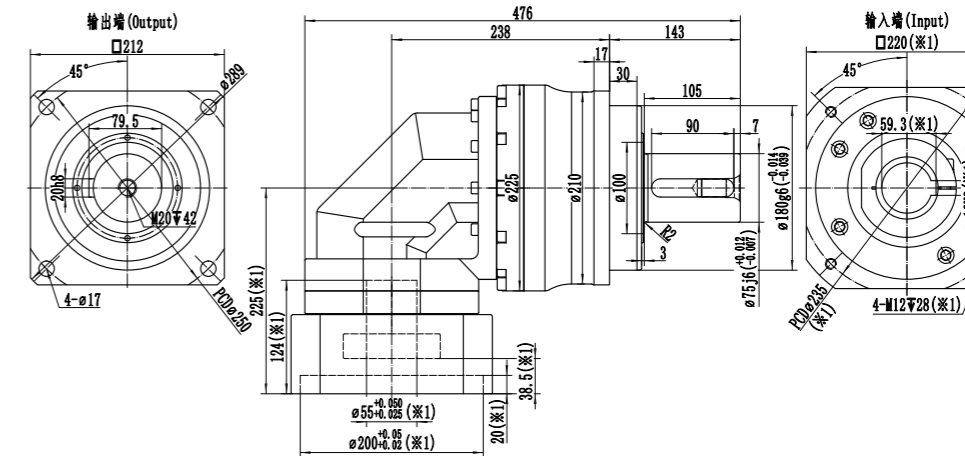
电机轴直径/motor shaft diameter (mm)



WSHR210-L1 最大42(※2)夹紧孔直径 / Max.42(※2)clamping hub's bore diameter



WSHR210-L1 最大55(※2)夹紧孔直径 / Max.55(※2)clamping hub's bore diameter



※1: 尺寸会随电机尺寸而变化;

※2: 电机轴尺寸偏小时, 可能会使用轴套, 轴套最小壁厚1mm;

※WSHR210减速机, 夹紧孔默认开键槽, 无需开键槽时, 请提前备注;

※注意安装前检查电机轴径和减速机夹紧孔径;

※请按要求安装电机

※1: Dimension will vary with the motor size;

※2: If the motor shaft diameter is undersized, a bushing with a minimum thickness of 1 mm may be used;

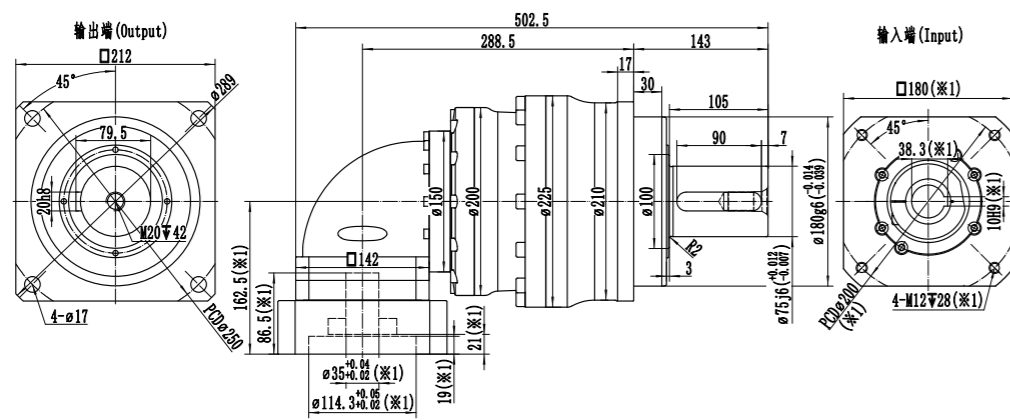
※WSHR210 gearbox: Default keyway on input shaft. Please notify if not needed.

※Pay attention to the motor shaft diameter and reducer input clamping diameter before installation;

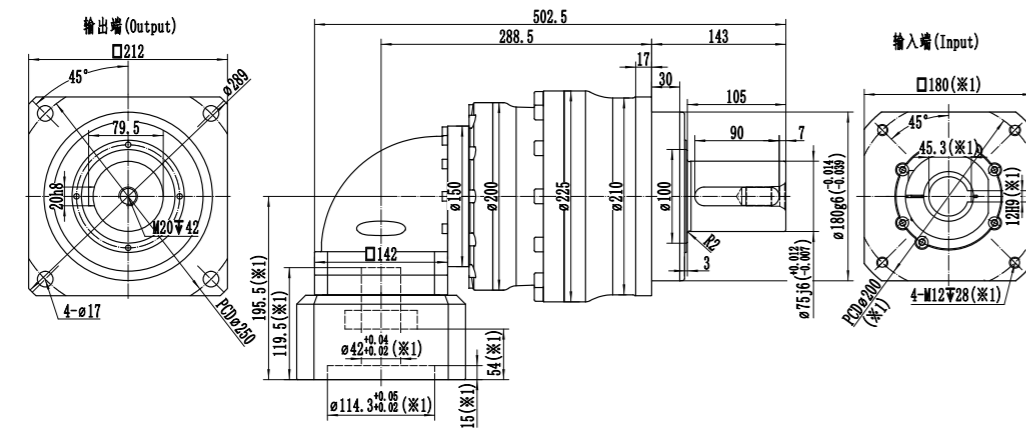
※Please install the motor as requested.

WSHR210-L2 最大35(※2)夹紧孔直径 / Max.35(※2)clamping hub's bore diameter

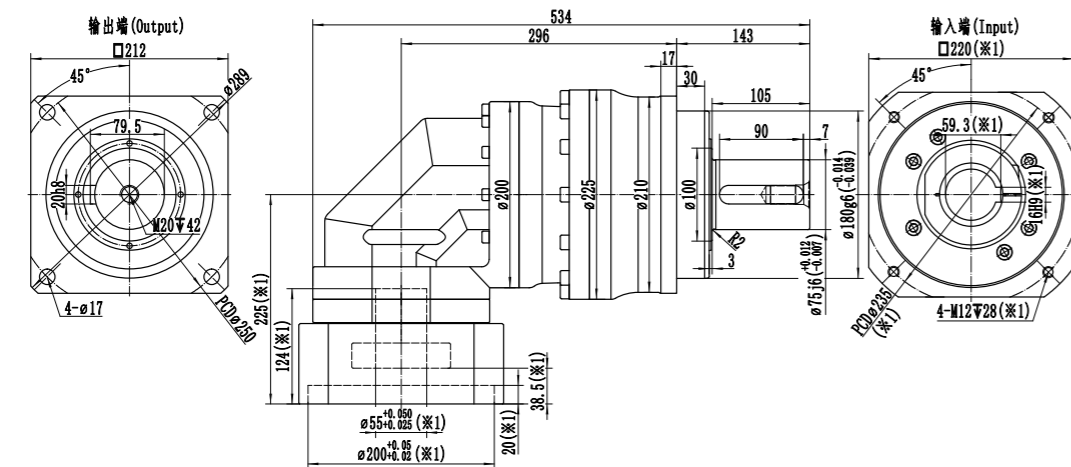
电机轴直径/motor shaft diameter (mm)



WSHR210-L2 最大42(※2)夹紧孔直径 / Max.42(※2)clamping hub's bore diameter



WSHR210-L2 最大55(※2)夹紧孔直径 / Max.55(※2)clamping hub's bore diameter



- ※1: 尺寸会随电机尺寸而变化;
- ※2: 电机轴尺寸偏小时, 可能会使用轴套, 轴套最小壁厚1mm;
- ※WSHR210减速机, 夹紧孔默认开键槽, 无需开键槽时, 请提前备注;
- ※注意安装前检查电机轴径和减速机夹紧孔径;
- ※请按要求安装电机

- ※1: Dimension will vary with the motor size;
- ※2: If the motor shaft diameter is undersized, a bushing with a minimum thickness of 1 mm may be used;
- ※ WSHR210 gearbox: Default keyway on input shaft. Please notify if not needed.
- ※Pay attention to the motor shaft diameter and reducer input clamping diameter before installation;
- ※Please install the motor as requested.

输出齿轮 Output Pinion

FEATURES

产品特点

与WTH高刚性减速机配套使用

Apply with the high rigidity WTH series planetary gearboxes

- » 高精度设计, 可在应用中提供最佳动力传输、出色的运行和精度
- » 较大的分度圆直径, 确保在较低的输入转速下, 获得较高的运动速度
- » 适合于轴向尺寸极紧凑型的环境
- » 可拆解结构、适合后期更换维护

- » High-precision design provides optimal power transfer, excellent operation and accuracy in applications.
- » Large pitch circle diameter ensures high movement velocity even at low input speeds.
- » Suitable for conditions require extremely compact axial dimensions.
- » Detachable structure, suitable for replacement and maintenance.

与WSH高刚性减速机配套使用

Apply with the high rigidity WSH series planetary gearboxes

- » 经过优化设计的啮合几何形状, 实现精准传动
- » 较小的分度圆直径, 确保较低的扭矩下, 获得较高的推力, 实现最高线性刚度
- » 与输出轴过盈热压配合, 辅助键槽的加固连接, 可提供过载保护
- » 可靠的配合工艺, 确保整个工作寿命内齿轮无松动
- » Optimized tooth profile for precise transmission;
- » Small pitch circle diameter ensures higher thrust and maximum linear stiffness at low torque;
- » By thermal pressing and interference fitting with the output shaft, along with reinforced connection through an auxiliary keyway, it can provide overload protection;
- » Reliable matching process ensures that the pinion will not loosen throughout its lifespan.

工厂装配/Factory assembly

我们提供的所有齿轮, 均为工厂加工、装配。

这可以为您带来以下益处:

- ※通过 100% 的最终检查, 确保经过测试的质量
- ※最高的装配质量和工作可靠性, 可避免潜在的风险
- ※齿轮预先安装在减速机上, 可快速地组装在设备里, 由此节省了额外的安装工作

All pinions we provide are processed and assembled by our own factory.

This can bring you the following benefits:

- ※100% full inspection ensure their quality;
- ※Highest assembly quality and working reliability to avoid potential risks;
- ※The pinions are pre-installed on the reducer and can be quickly assembled thus saving additional installation work.

WTH系列输出斜齿轮

WTH series output helical pinion

斜齿齿轮/Helical Pinion

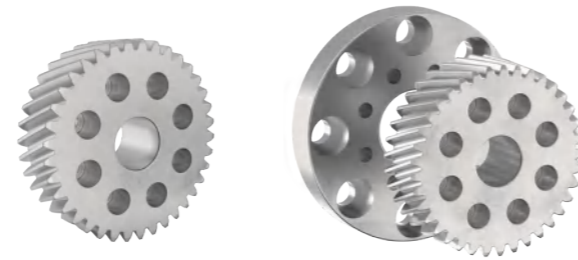
螺旋角/Spiral angle $\beta = -19.5283^\circ$ (左旋/Left-handed)

压力角/Pressure angle $\alpha = 20^\circ$

精度等级/Precision level: GB/T 10095-2008 5级

齿厚公差/The gear thickness tolerance: e24

渗碳淬火、齿面磨削/carburizing and quenching, gear grinding



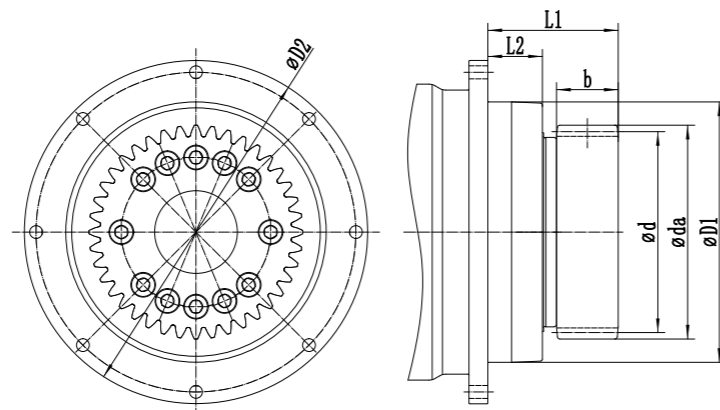
| 减速机规格 Specification | 模数 Modulus m mm | 齿数 No. of gear z | 齿宽 Gear width b mm | 齿顶圆 直径 Addendum circle diameter da mm | 分度圆 直径 Pitch circle diameter d mm | 变位 系数 Modification coefficient x mm | 定心 直径 Centering diameter D1g6 mm | 输出轴 总长 Output shaft length L1 mm | 定心凸 台高度 Centering boss height L2 mm | 法兰 直径 Flange diameter D2 mm | 进给 常量 Feed constant d*π mm | 最大 扭矩 Max. torque T2B Nm | 最大 驱动力 Max. force F2T N |
|------------------------|--------------------------|---------------------------|--------------------------------|---|--|--|---|---|--|--|---|---|--|
| WTH/WTHR064 | 2 | 26 | 26 | 61 | 55.174 | 0.4 | 64 | 45.5 | 16.5 | 86 | 173.334 | 36 | 1287 |
| WTH/WTHR090 | 2 | 29 | 26 | 66.9 | 61.54 | 0.3 | 90 | 66 | 24 | 118 | 193.334 | 67 | 2174 |
| | 2 | 33 | 26 | 75.4 | 70.028 | 0.3 | 90 | 56 | 24 | 118 | 220 | 82 | 2348 |
| WTH/WTHR110 | 2 | 35 | 26 | 79.7 | 74.272 | 0.3 | 110 | 65 | 23 | 145 | 233.334 | 140 | 3770 |
| | 2 | 40 | 26 | 90.3 | 84.883 | 0.3 | 110 | 55 | 23 | 145 | 266.667 | 170 | 4000 |
| WTH/WTHR140 | 3 | 31 | 31 | 106.7 | 98.676 | 0.3 | 140 | 82 | 32 | 179 | 310 | 488 | 9882 |
| | 3 | 35 | 31 | 119.4 | 111.409 | 0.3 | 140 | 69 | 32 | 179 | 350 | 603 | 10817 |
| WTH/WTHR200 | 3 | 40 | 31 | 135.3 | 127.324 | 0.3 | 140 | 69 | 32 | 179 | 400 | 673 | 10575 |
| | 4 | 38 | 41 | 171.4 | 161.277 | 0.25 | 200 | 91 | 41.5 | 247 | 506.667 | 1600 | 19842 |

※技术数据基于负载每小时最多循环 1000 次

※不建议超出最大扭矩使用

※Technical data based on load up to max 1000 cycles per hour

※It's not recommended to exceed the maximum torque.



WSH系列输出斜齿轮

WSH series output helical pinion

斜齿齿轮/Helical Pinion

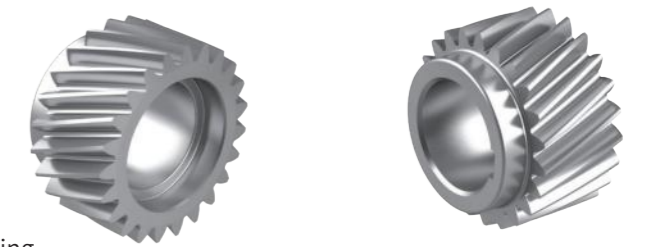
螺旋角/Spiral angle $\beta = -19.5283^\circ$ (左旋/Left-handed)

压力角/Pressure angle $\alpha = 20^\circ$

精度等级/Precision level: GB/T 10095-2008 5级

齿厚公差/The gear thickness tolerance: e25

渗碳淬火、齿面磨削/carburizing and quenching, gear grinding



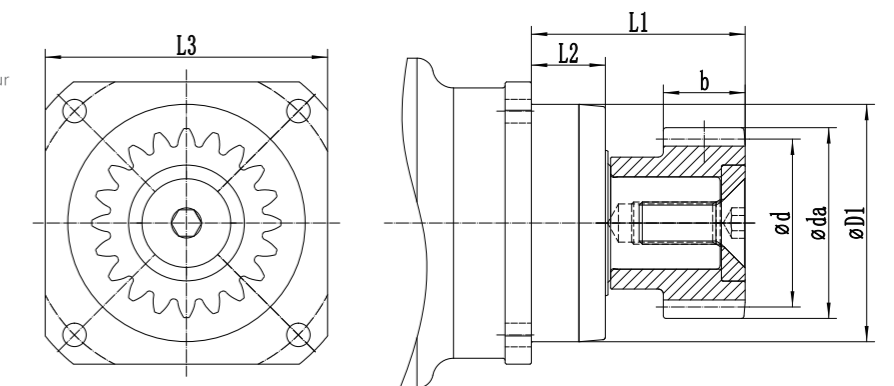
| 减速机规格 Specification | 模数 Modulus m mm | 齿数 No. of gear z | 齿宽 Gear width b mm | 齿顶圆 直径 Addendum circle diameter da mm | 分度圆 直径 Pitch circle diameter d mm | 变位 系数 Modification coefficient x mm | 定心 直径 Centering diameter D1g6 mm | 输出轴 总长 Output shaft length L1 mm | 定心凸 台高度 Centering boss height L2 mm | 法兰 直径 Flange diameter D2 mm | 进给 常量 Feed constant d*π mm | 最大 扭矩 Max. torque T2B Nm | 最大 驱动力 Max. force F2T N |
|------------------------|--------------------------|---------------------------|--------------------------------|---|--|--|---|---|--|--|---|---|--|
| WSH/WSHR060 | 2 | 15 | 26 | 38 | 31.831 | 0.5 | 60 | 48 | 18 | 62 | 100 | 35 | 2183 |
| | 2 | 16 | 26 | 40.2 | 33.953 | 0.5 | 60 | 48 | 18 | 62 | 106.667 | 36 | 2122 |
| WSH/WSHR075 | 2 | 18 | 26 | 44 | 38.197 | 0.4 | 60 | 48 | 18 | 62 | 120 | 40 | 2100 |
| | 2 | 18 | 26 | 44 | 38.197 | 0.4 | 70 | 56 | 18 | 76 | 120 | 59 | 3096 |
| WSH/WSHR100 | 2 | 20 | 26 | 48.3 | 42.441 | 0.4 | 70 | 56 | 18 | 76 | 133.334 | 65 | 3065 |
| | 2 | 22 | 26 | 52.5 | 46.686 | 0.4 | 70 | 56 | 18 | 76 | 146.667 | 71 | 3036 |
| WSH/WSHR140 | 2 | 23 | 26 | 54.6 | 48.808 | 0.4 | 90 | 64 | 28 | 107 | 153.334 | 130 | 5300 |
| | 2 | 25 | 26 | 58.8 | 53.052 | 0.4 | 90 | 64 | 28 | 107 | 166.667 | 141 | 5300 |
| WSH/WSHR180 | 2 | 27 | 26 | 62.7 | 57.296 | 0.3 | 90 | 64 | 28 | 107 | 180 | 151 | 5300 |
| | 3 | 20 | 31 | 72.3 | 63.662 | 0.4 | 130 | 81 | 27 | 140 | 200 | 303 | 9500 |
| WSH/WSHR210 | 3 | 22 | 31 | 78.6 | 70.028 | 0.4 | 130 | 81 | 27 | 140 | 220 | 333 | 9500 |
| | 3 | 24 | 31 | 85 | 76.394 | 0.4 | 130 | 81 | 27 | 140 | 240 | 363 | 9500 |
| WSH/WSHR180 | 4 | 20 | 41 | 96.3 | 84.883 | 0.4 | 160 | 84 | 27 | 182 | 266.667 | 573 | 13500 |
| WSH/WSHR210 | 4 | 25 | 41 | 117 | 106.103 | 0.34 | 180 | 103 | 35 | 212 | 333.334 | 902 | 17000 |

※技术数据基于负载每小时最多循环 1000 次

※不建议超出最大扭矩使用

※Technical data based on load up to max 1000 cycles per hour

※It's not recommended to exceed the maximum torque.



减速机的安装与使用 Installation

减速机如由贵司安装, 请遵守以下要求

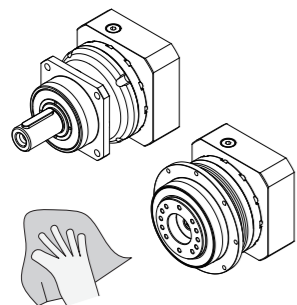
Please comply with the following requirements when installation

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。

The dimension of the adapter on the planetary gearbox differs depending on the servo motor, so please make sure to install the servo motor specified at the time of purchase. The output shaft of the servo motor may be coated with rust inhibitor, etc.

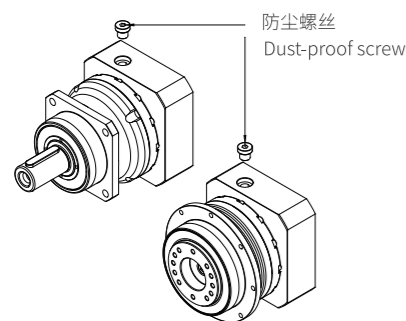
1 将马达轴安装面的防锈剂、油等擦拭干净。

Wipe the rust inhibitor, oil, and other substances off the motor shaft mounting surface.



2 取下塞子。

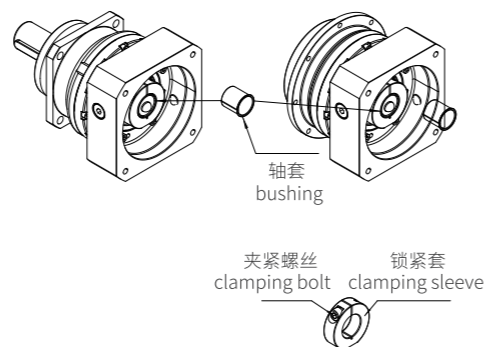
Remove the plug



3 转动输入轴, 使加紧螺栓等头部对准塞孔。

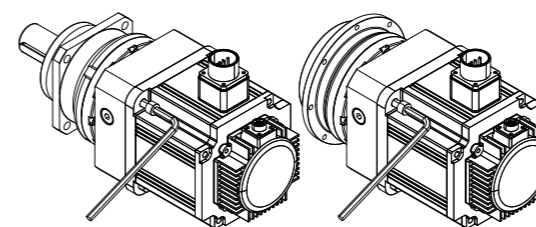
此时请确认加紧螺栓处于松弛状态。将减速机垂直放置于平整场所, 使减速机的马达安装面朝上。(如有轴套, 请按图示进行安装。)

Rotate the input shaft to align the head of the clamping bolt with the plug hole, and please confirm that the clamping bolt is in a relaxed state. Place the reducer vertically in a flat place, with the motor installation surface of the reducer facing upwards. (If there is a bushing, please install it according to the diagram)



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 slowly insert the motor shaft into the input shaft to avoid impact, and confirm that the motor flange surface is tightly attached to the reducer flange surface. Tighten the motor mounting bolts according to the specified tightening torque. (Refer to Table 3)



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)

Use tools such as torque wrench to tighten the clamping bolt of the input shaft according to the specified tightening torque (Refer to Table 3)

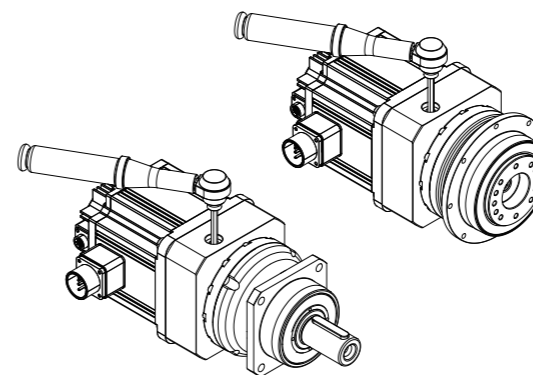


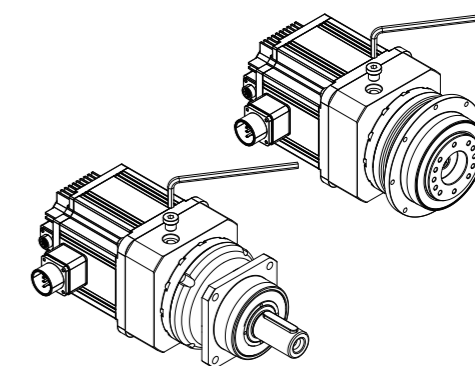
表3 螺栓紧固扭矩

Table 3 Bolt tightening torque

| 螺栓大小 / Bolt size | M3 | M4 | M5 | M6 | M8 | M10 | M12 | M16 |
|--------------------------------|---------------|------|------|------|-----|-----|-----|-----|
| 马达安装螺栓 Motor mounting bolts | N·m 1.0 | 2.5 | 5.1 | 8.7 | 21 | 42 | 72 | 134 |
| 夹紧螺栓 Clamping bolt | kgf·m 0.11 | 0.26 | 0.52 | 0.89 | 2.1 | 4.3 | 7.3 | 14 |
| | 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 | - |

6 安装塞子, 至此作业完成。

Install the plug and complete the task



安装与设置

Installation and Setup

- 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°C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。
- Avoid using in places that come into direct contact with rainwater. (If you need to use it outdoors or in places that come into contact with dust or water droplets, please consult with Wanshsin in advance.)
- Please set it in an environment of 0-40 °C.
- Please install it on a sturdy and vibration free surface, and firmly secure it with bolts, etc.
- During installation, it should be ensured that it is easy to maintain and inspect.

安装到输出法兰部(限法兰型)

Install to the output flange (flange type only)

- 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 device components, etc. onto the output flange, please use tools such as torque wrenches Tighten according to the specified tightening torque.

| 螺栓大小/Bolt size | M3 | M4 | M5 | M6 | M8 | M10 | M12 | M16 | M20 |
|-----------------------|-------|------|------|------|-----|-----|-----|-----|-----|
| 夹紧螺栓 Clamping bolt | N·m | 1.9 | 4.3 | 8.7 | 15 | 36 | 71 | 125 | 310 |
| | 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 bolt strength classification above grade 12.9

输出轴侧连接

Output shaft side connection

- 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。
- 联轴器等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 a gear, pulley, sprocket, etc. on the output flange type, please use a flanged installation design, embed it into the output flange's protruding part. Please be careful not to apply excessive thrust load during installation.
- When installing a coupling, sprocket, etc. on the output shaft type, please be careful not to apply excessive thrust load during installation. Do not forcefully strike the output shaft during embedding, otherwise it cause damage to the bearings and the interior of the gearbox.
- Pls. be noted that excessive clearance between shafts and keys in coupling and other parts can lead to sintering.
- Please accurately center when connecting.

开机前的注意事项

Precautions before starting the machine

- 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。
- It can be used directly after arrival as lubricating oil has been added according to the specified amount.
- When running for the first time, please confirm the steering of the output shaft first, and then gradually increase the load.

运转中的注意事项

Precautions during operation

- 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。
 - 1、温度突然开始升高。
 - 2、突然发出很大异响。
 - 3、转速突然开始不稳定。
- 可能的原因如下, 请及时处理。
 - 1、是否处于过载状态?
 - 2、轴承、齿轮、传动面有无损伤?
 - 3、机器连接条件有无异常?
- Please be careful not to overload.
- The speed of the output shaft must not exceed the specified speed.
- When the following situations occur, please stop the machine for inspection.
 - 1、The temperature suddenly began to rise.
 - 2、Suddenly, there was a loud noise.
 - 3、The speed suddenly began to become unstable.
- The possible reasons are as follows, please handle them promptly.
 - 1、Is it in an overload state?
 - 2、Are there any damages to the bearings, gears, and transmission surfaces?
 - 3、Are there any abnormalities in the machine connection conditions?

润滑油管理

Lubricant

- 油脂不能更换。
- The lubricating oil cannot be replaced

每日检查

Daily Inspection

- 运作中减速机外壳温度有无异常上升?(最高不大于90°C)
- 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?(出现油脂泄露时, 请联系我公司。)
- Is there any abnormal increase in the temperature of the gearbox casing during operation? (Maximum not greater than 90 °C)
- Are there any abnormal noises in bearings, gears, and other parts?
- Is there any abnormal vibration in the gearbox? (When such abnormalities occur, please stop the machine immediately and contact our company.)
- Is there any lubricating oil leakage?(When there is a grease leak, please contact with Wanshsin)

定期检查

Regular Inspection

- 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。)
- Is there an overload state and abnormal rotation?
- Is there any looseness in the installation bolts of the pulley, sprocket, and reducer?
- Inspection and maintenance of main components. (When abnormal phenomena occur, please stop the machine immediately, and contact with Wanshsin)