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# 专业微型齿轮传动系统 方案解决提供商

PROFESSIONAL MICRO GEAR  
TRANSMISSION SYSTEM



广东西格传动智能科技有限公司

Guangdong Siggear Drive Intelligent Technology Co.,Ltd

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# 公司简介 Introduction

西格传动，位于珠三角腹地东莞市谢岗镇粤海智造中心、交通便利、环境优美、独栋厂房，面积达10000平方。

公司始于2008年，专业提供齿轮传动系统解决方案，是一家集研发、设计、生产、销售为一体的高新技术企业，拥有一批专业扎实的研发人员和经验丰富的生产技工。

公司主营机器人关节模组、微型摆线针轮齿轮箱、内嵌式齿轮箱电机模组、行星齿轮箱、减速电机、正齿轮箱及精密传动配件的研发设计和生产组装。产品广泛应用于机器人、无人机、医疗设备、智能家居、智慧农业、汽车电子、园林工具和工业自动化等领域。

公司为国际知名企业提供完整的核心传动部件解决方案。拥有一系列高精密生产设备和高精度检测仪器，精度可达到国标5级。通过了ISO9001国际质量管理体系和IATF16949汽车电子行业品质体系认证。



SigGear is located in the Guangdong Intelligent Manufacturing Center, Xiegang Town, Dongguan City, the hinterland of the Pearl River Delta, with convenient transportation, beautiful environment, and a single-family factory building with an area of 10,000 square meters.

The company was founded in 2008 and specializes in providing gear transmission system solutions. It is a high-tech enterprise integrating R&D, design, production and sales. It has a group of professional and solid R&D personnel and experienced production technicians. The company's main business is the R&D, design, production and assembly of robot joint modules, micro-cycloidal pinwheel gearboxes, embedded gearbox motor modules, planetary gearboxes, reduction motors, spur gearboxes and precision transmission accessories. Products are widely used in fields such as robots, drones, medical equipment, smart homes, smart agriculture, automotive electronics, garden tools, and industrial automation.

The company provides complete core transmission component solutions to internationally renowned companies. It has a series of high-precision production equipment and high-precision testing instruments, and the accuracy can reach national standard level 5. It has passed ISO9001 international quality management system and IATF16949 automotive electronics industry quality system certification.



# 发展历程 History

从 2005 年初创时的传动零件贸易，到 2008 年成立西格传动，进而迈入制造领域，西格传动在传动零件行业内已经走过了近 20 年的发展历程。

From its inception in 2005 as a transmission parts trading business to the establishment of SIGE Transmission in 2008 and its subsequent entry into the manufacturing sector, SIGE Transmission has been navigating the transmission parts industry for nearly 20 years.

2005

2008

2011

2013

2005 年公司创始人王建先生在深圳市从事传动零件国内外贸易活动

2008 年 9 月 16 日，西格传动正式成立，4 名合伙人投资 8 万元，开始生产齿轮、蜗杆，这是我们的前身

2011 年独立研发并生产牙科行星齿轮箱，由此进入医疗行业；并且第一代的扫地机机器人边刷和边轮齿轮组从西格传动诞生。

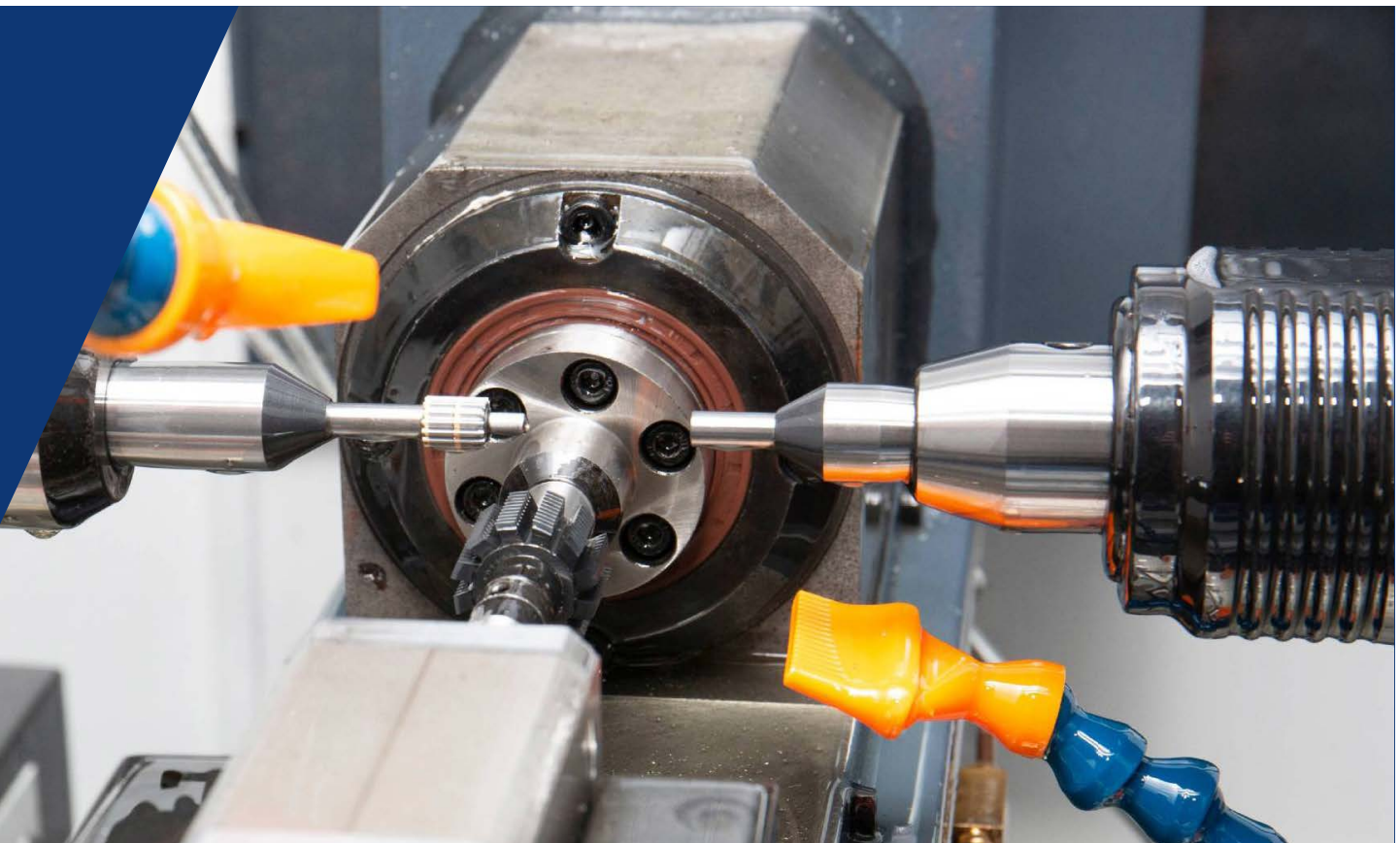
2013 年在惠州设立生产基地，不断优化管理，保持产品高质量稳定生产。同时，西格传动成功研发国内第一套电动树枝剪刀齿轮箱，进入电动工具行业市场。

In 2005, Mr. Wang Jian, the founder of the company, was engaged in domestic and foreign trading activities of transmission parts in Shenzhen.

On September 16, 2008, SigGear was officially established. Four partners invested 80,000 yuan and began to produce gears and worms. This is our predecessor.

In 2011, it independently developed and produced dental planetary gearboxes, thus entering the medical industry; and the first generation of side brushes and side wheel gear sets for sweeping robots were born from Sig Transmission.

In 2013, a production base was established in Huizhou to continuously optimize management and maintain high-quality and stable production of products. At the same time, SigGear successfully developed the first set of electric branch gearboxes in China and entered the power tool industry market.



**2014**

2014年，西格传动向汽车配件行业迈进，研发出汽车尾门自动升降系统行星齿轮箱模组

In 2014, SigGear moved towards the auto parts industry and developed a planetary gearbox module for the automatic tailgate lifting system.

**2016**

2016年，全球第一代智能家用拖地机滚筒滚刷齿轮箱，投入量产，在广大的家居市场占据一席之地。

In 2016, the world's first-generation smart home mop roller brush gearbox was put into mass production, occupying a place in the vast home market.

**2018**

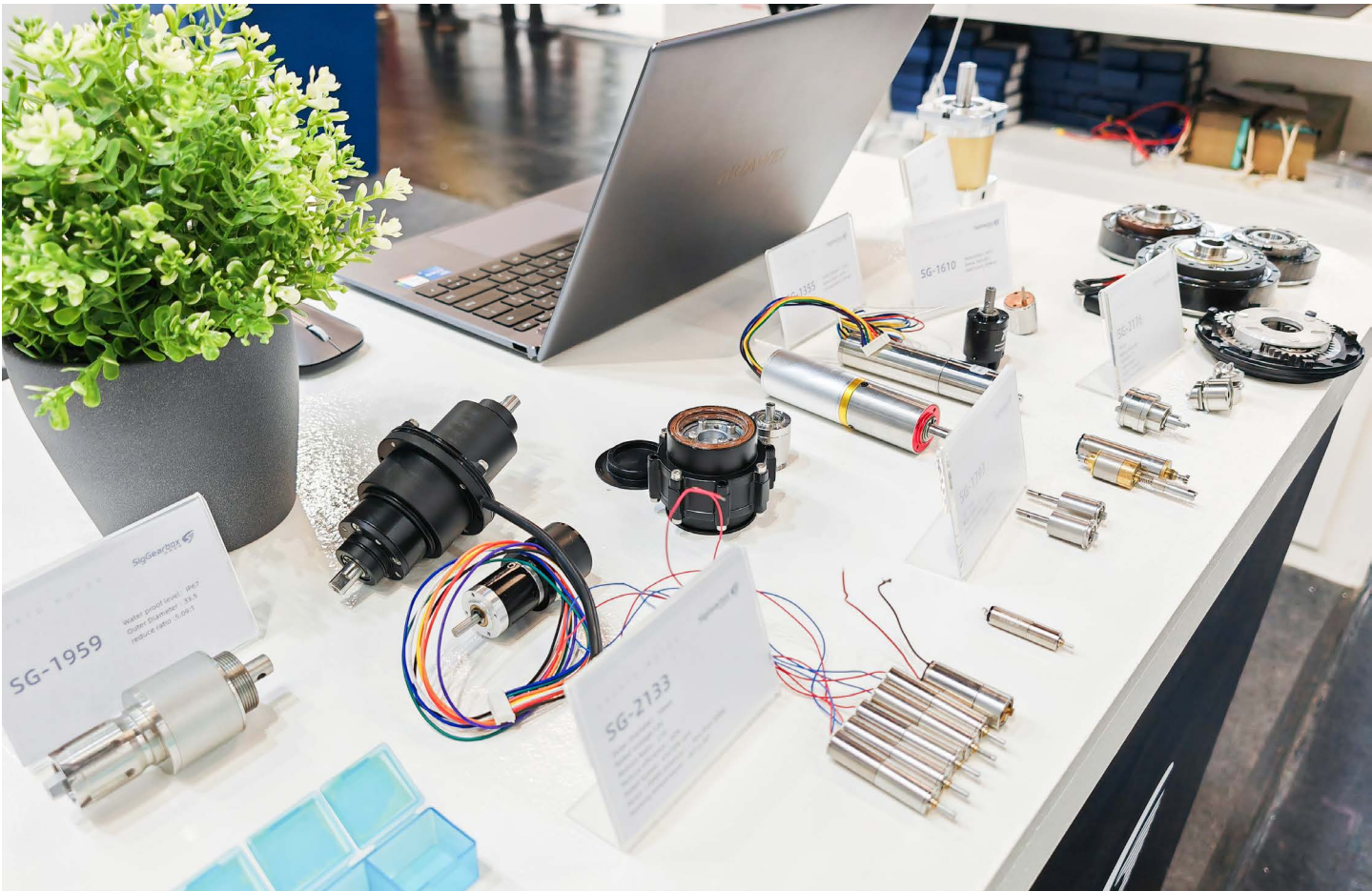
2018年，正式进入全球无人机头部企业供应商体系，为其各系列传动项目做研发生产。

In 2018, it officially entered the supplier system of the world's leading drone companies and conducted R&D and production for its various series of transmission projects.

**2021**

2021年独立研发设计微型摆线针轮关节减速电机、外骨骼齿轮箱。向更高精度需求的机器人行业进军

In 2021, we will independently develop and design micro-cycloidal pinwheel joint reduction motors and exoskeleton gearboxes. Marching into the robotics industry with higher precision requirements



## 2022

## 2023

## 2024

2022年研发出国内外最小的摆线针齿齿轮箱；并成立“广东西格华创精密智造有限公司”主要研发和生产塑胶齿轮箱，拥有模流分析、模具设计、成形试作、精密制造、精密检测等一体化运作系统



In 2022, the smallest cycloidal needle gearbox at home and abroad was developed; and "Guangdong SigHuact Precise CHI-MADE CO.,LTD." was established  
It mainly develops and produces plastic gearboxes and has integrated operation systems such as mold flow analysis, mold design, forming prototypes, precision manufacturing, and precision testing.

2023年参加了德国纽伦堡的SPS自动化展，并在展会上被MAXON的技术总监高度认可。



In 2023, it participated in the SPS Automation Exhibition in Nuremberg, Germany, and was highly recognized by MAXON's technical director at the exhibition.

2024年，8-42mm行星齿轮箱标品完成设计组装；扁平化关节减速电机“西格·马”和内嵌式微型摆线针轮减速电机“西格·虎”以标准品定位发售。



In 2024, the design and assembly of standard 8-42mm planetary gearboxes will be completed; The flat joint reduction motor "SigGear·Horse" and the built-in micro cycloidal pinwheel reduction motor "SigGear·Tiger" are sold as standard products.

# 企业文化 Culture

## 经营理念 Business philosophy

成就客户 专注创新 精益求精 团结奋进

Clients , Focus , Innovation , Cooperation



## 企业使命

突破传动技术壁垒  
传承匠心智造精神  
振兴民族传动工业

### Our Mission

Break through the barriers of transmission technology, inherit the spirit of ingenuity, and revitalize the national transmission industry.

## 核心价值观

以客户价值为中心  
以产品质量为根本  
以奋进者为荣誉

### Core value

Focus on customer value  
Based on product quality  
Honor the pioneers

## 企业愿景

成为一家让客户信赖，让员工自豪，让国人骄傲的企业

### Corporate vision

Become an enterprise that makes customers trust, employees proud, and national honored

# 我们的荣誉

# Honor

坚持“以技术为先”的战略，追求技术创新，致力于打造领先行业的技术优势。

Adhering to a 'technology-first' strategy, we pursue technological innovation and are committed to establishing a leading technological advantage in the industry.







**20+**  
技术发明专利

Technology  
invention  
patent

**50+**  
企业各项荣誉

Enterprise  
honors

**70%**  
市场占有率

Market share

**3** 项  
国际认证体系

International  
certification  
system

# 主要产品 Main products

西格传动的产品分为两大类：标准品和非标定制品。

标准品主要有：

8mm 到 42mm 的传统行星齿轮箱（或减速电机）；另有专为机器人关节设计的扁平化减速电机“西格马”和“西格虎”，两者最大的区别是减速结构的不同，“西格马”是行星结构，“西格虎”是摆线针轮结构。

非标定制产品：

传统结构行星齿轮箱 / 减速电机；扁平化结构 / 内嵌式外转子减速电机；微型摆线针轮减速器；轮毂减速电机；定制形式为：研发部门根据客户的需求提供传动系统解决方案，从研发设计到打样，以及批量生产，一站式服务。

## 标准品

### Traditional structure

### 8-42mm



## Our products are divided into two main categories: standard products and custom products.

### Standard Products:

Our standard products primarily include traditional planetary gearboxes (or geared motors) ranging from 8mm to 42mm. Additionally, we offer specially designed flat geared motors for robot joints, namely "SigGear-Horse" and "SigGear-Tiger". The main difference between the two lies in their reduction structures: "SigGear-Horse" uses a planetary structure, while "SigGear-Tiger" employs a cycloidal pinwheel structure. (For detailed information, please refer to the specifications sheet provided later.)

### Non-standard customized products:

traditional structure planetary gearbox/reduction motor; flat structure/embedded external rotor reduction motor; micro cycloidal pinwheel reducer; hub reduction motor; customization form: the R&D department provides transmission according to customer needs System solutions, from R&D and design to proofing and mass production, one-stop service.



**产品名称:** 西格马  
**减速方式:** 行星结构  
**其他:** 带驱动 / 支持编码

**Name:** SigGear-Horse  
**Reduction Method:**  
Planetary Structure  
**Additional Features:**  
With Drive / Supports  
Encoder



**产品名称:** 西格虎  
**减速方式:** 摆线针轮  
**其他:** 带霍尔传感器

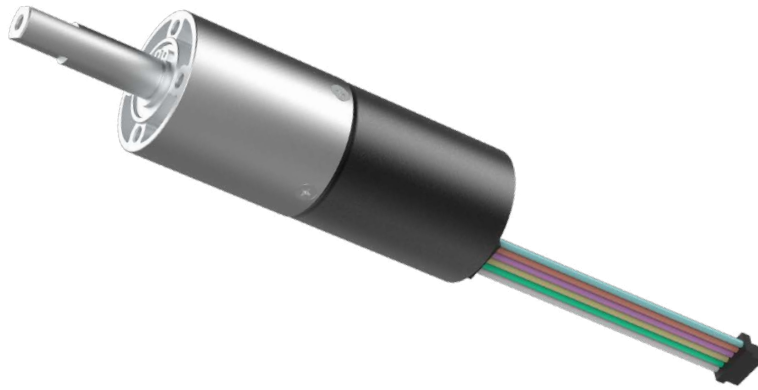
**Name:** SigGear-Tiger  
**Reduction Method:**  
Cycloidal Pinwheel  
**Additional Features:**  
With Hall Sensor

# 非标定制 Introduction

## 传统结构 Traditional structure

西格传动在传统型行星齿轮箱和减速电机的项目主要集中在医疗工具、电动工具和智能家居行业

Our projects in traditional planetary gearboxes and geared motors are primarily concentrated in the medical device, electric tools, and smart home industries.



定制范围

背隙: < 0.5°

外径: 8-120mm

扭矩: < 2000N·m



医疗工具:  
电动骨钻  
智能手术刀

Medical Tools:  
Electric bone drill  
Smart scalpel



智慧农业:  
植保无人机  
电动工具

Smart agriculture:  
Plant protection  
Electrical toolsdriver



智能家居:  
智能扫地机  
智能马桶

Smart home:  
Smart sweeper  
Smart toilet

# 扁平化结构

## Flat structure

随着科技的发展，各种智能化机器产品面世。其中最为火热的是服务型机器人和仿生机器狗。西格传动紧跟市场需求，设计出扁平化的机器人关节减速电机模组。

With the development of science and technology, various intelligent machine products have become available. The most popular ones are service robots and bionic robot dogs. SIG Transmission closely follows the market demand and designs a flat robot joint reduction motor module.



定制范围

结构：内嵌电机

外径：35-120mm

扭矩：< 2000N·m



机械外骨骼装置：  
康复医疗外骨骼  
负重外骨骼装备

Mechanical exoskeleton device:  
Rehabilitation medical  
exoskeleton  
Weight-bearing exoskeleton  
equipment



机器人关节：  
人形机器人关节  
机械臂关节

Robot joints:  
humanoid robot  
joint  
Robotic arm joint



仿生机器狗：  
检测型机器狗  
服务运输型机器狗

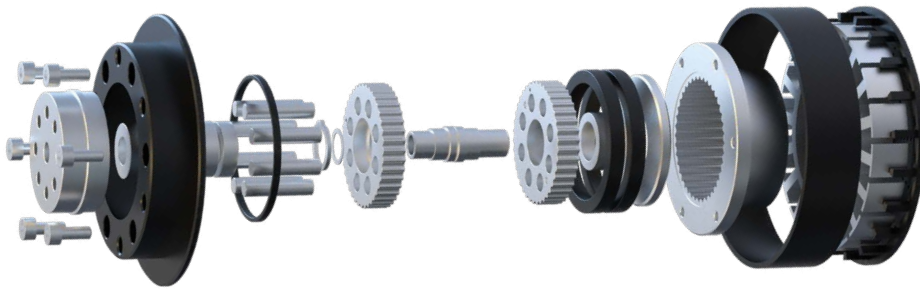
Bionic robot dog:  
Detection robot dog  
Service transportation  
robot dog

# 微型摆线针轮

## Micro cycloidal pinwheel

近年，人形机器人的火爆让其关节减速电机成为热点，但是常规的行星齿轮箱及谐波齿轮箱各有优劣势。于是我们的研发团队尝试将传统的大型重载摆线针轮微型化，拓宽市场。摆线针轮满足了小空间、大扭矩、扁平化、轻量化、高精度、抗冲击等机器人关节的特殊要求。在研发期间，我们不断挑战行业的特殊要求，如反驱透明度和中空过线形态，并致力于逐一攻克这些难题

In recent years, the popularity of humanoid robots has made their joint reduction motors a hot topic, but conventional planetary gearboxes and harmonic gearboxes each have their own advantages and disadvantages. So our R&D team tried to miniaturize the traditional large heavy-duty cycloidal pinwheel to expand the market. The cycloidal pinwheel meets the special requirements of robot joints such as small space, large torque, flatness, lightweight, high precision, and impact resistance. During the research and development period, we continued to challenge the special requirements of the industry, such as backwash transparency and hollow pass-through form, and are committed to overcoming these problems one by one.



定制范围

背隙：5-10 弧分

外径：20-120mm

减速比：13-79



高智能人形机器人：  
灵巧手  
医用级机器人

Highly intelligent humanoid robot:  
electric scissors  
electric screw driver



智能车辆：  
康复移动机器人  
AGV 车辆

Smart vehicles:  
Rehabilitation mobile robot  
AGV vehicle



户外装备：  
载人高空攀爬装备  
其他

Outdoor equipment:  
Manned high-altitude climbing equipment  
Other

# 轮毂减速电机

## Hub reduction motor

随着科技的发展和人们对环保出行需求的增加，智能化的交通工具正逐渐成为人们日常生活的重要部分。在这样的背景下，Ebike 自行车作为智能出行的代表，正引领着一场绿色出行的革命。

With the development of science and technology, more and more intelligent machine products are becoming available. The most important ones are service robots and bionic robot dogs. SIG Transmission followed suit and designed a flat robot joint reduction motor.



定制范围

扭矩： < 200N·m

外径： 20-150mm

功率： < 2kw



智能庭院：割草机器人  
扫雪机器人  
泳池清洁机器人

Smart Yard: Robot  
Lawn Mower  
snow clearing robot  
Pool cleaning robot



助力车辆：  
Ebike 中置电机  
电动轮椅

Assist vehicles:  
Ebike mid-mounted  
motor  
Electric wheelchair



智慧农业：  
无人驾驶喷雾车辆  
自动采摘运输车辆

Smart agriculture:  
Unmanned spray  
vehicle  
Automatic picking and  
transportation vehicles



# 核心技术 Core Technology

## 微型摆线针轮

小空间，大扭矩，轻量化，重负载；背隙优于行星、耐冲击优于谐波

## 行星齿轮箱

单级传动效率 > 95%；内置离合结构；虚位 < 0.5°

## 系统化综合设计

深耕于不同行业的传动系统研发设计，为各大知名企业或初创科技单位输送高匹配度的解决方案

### **Micro cycloidal pinwheel:**

Small space, large torque, lightweight, heavy load; backlash is better than planetary, impact resistance is better than harmonics

### **Planetary gearbox:**

Single-stage transmission efficiency > 95%; built-in clutch structure; virtual position < 0.5°

### **Systematic comprehensive design:**

Deeply engaged in the R&D and design of transmission systems in different industries, delivering highly matching solutions to major well-known enterprises or start-up technology units



# 研发团队 R & D Team

## 技术人员:

拥有 20 多年传动设计经验的资深研发工程师和人工智能行业的新锐工程师 20+ 名。

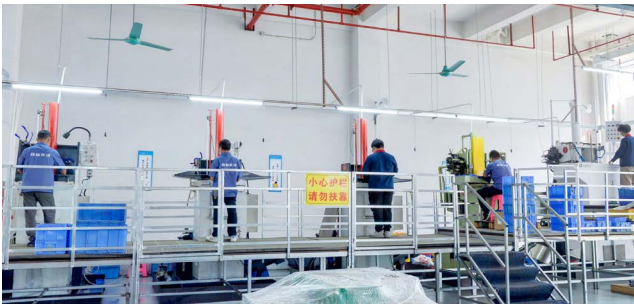
**Technical staff:** There are more than 20 senior R&D engineers with more than 20 years of experience in transmission design and cutting-edge engineers in the artificial intelligence industry.

## 行业经验:

16 年的齿轮传动系统设计与制造，让西格传动在各领域都有丰富的项目经验，能够迅速应对各种技术挑战和项目需求。

**Industry experience:** With 16 years of gear transmission system design and manufacturing, SigGear has rich project experience in their respective fields and can quickly respond to various technical challenges and project needs.





# 生产能力 Production Capacity

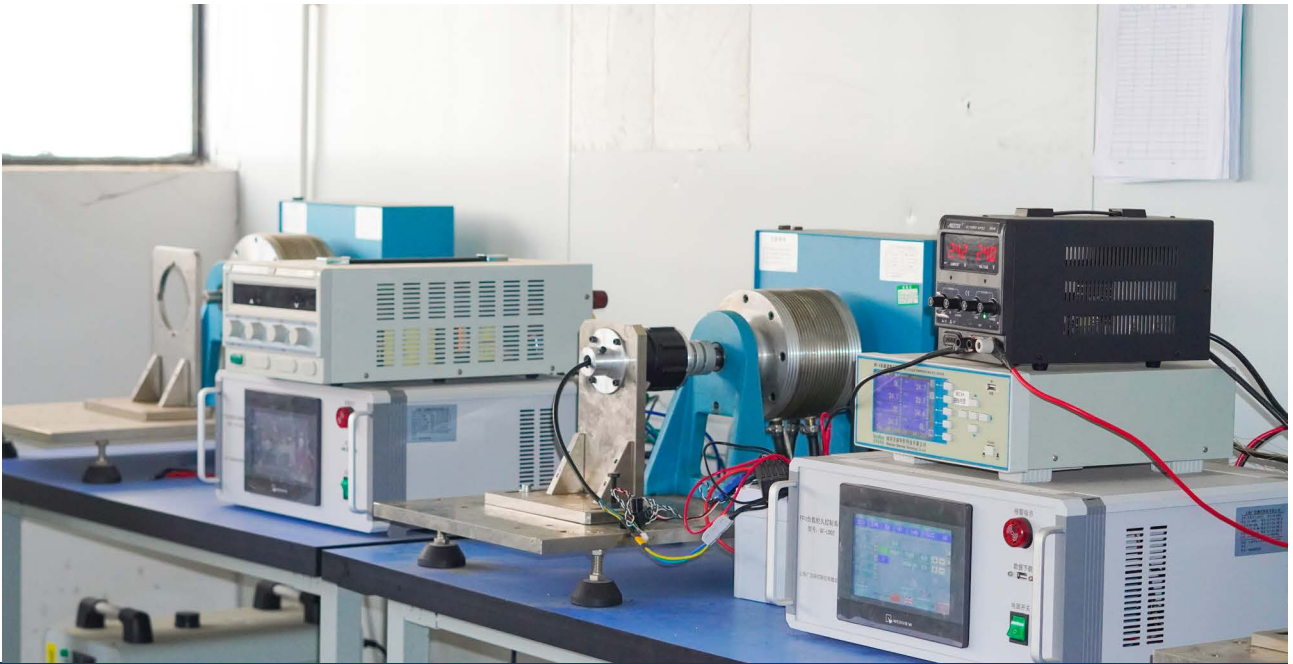
我们拥有独栋厂房，一楼为数控加工中心，二楼为组装线和仓管，三楼设行政管理、研发部、工程部、市场营销部和后勤部。

研发设计人员 20 多名，生产与检测设备 200 多台，总占地面积为 10000 平方米。

We have a single-family factory building with a CNC machining center on the first floor, an assembly line and warehouse on the second floor, and administrative management, R&D department, engineering department, marketing department and logistics department on the third floor.

There are more than 20 R&D and design personnel, more than 200 production and testing equipment, and a total area of 10,000 square meters.





以产品质量为根本，是西格传动的核心价值观。用心才能造就好的品质，优胜劣汰是亘古不变的道理，超越现在，才能成就更好的未来。我们致力于用高端的设备，精益求精的态度，在产品质量上，不断完善与突破，为客户提供物超所值的高质量产品，成就客户的价值

Taking product quality as the foundation is the core value of SIG Transmission. Only hard work can create good quality. Survival of the fittest is an eternal principle. Only by transcending the present can we achieve a better future. We are committed to using high-end equipment and an attitude of excellence to continuously improve and make breakthroughs in product quality, to provide customers with high-quality products that are worth their money and to achieve customer value.



2022 年并购“华创精密”成立“广东西格华创精密智造有限公司”，新增塑胶齿轮事业部。

In 2022, "Huachuang Precision" was acquired to establish "Guangdong Xige Huachuang Precision Intelligent Manufacturing Co., Ltd.", adding a new plastic gear division.



## 设备清单 生产设备 Production equipment

# Equipment List

设备名称 Equipment	生产商 / 生产地 Production address/Manufacturer
● 滚齿机 Hobbing Machine	瑞士 / 德国 / 日本 Switzerland/Germany/Japan
● 拉齿机 Gear Pulling Machine	中国台湾 Taiwan China
● 插齿机 Gear Shaping Machine	中国湖北 Hubei China
● 车齿机 Gear turning machine	南京二机 (njmT2) Y8130CNC Nanjing China
● 凸轮轴磨床 Camshaft grinder	Teber MK8320CNC-550C Jiangsu China
● 成形砂轮磨齿机 Gear grinding machine	星合 (THINK HEAD) PG2840 Shanghai China
● 注塑机 Injection Molding Machine	住友 / FANUC 法兰克 Japan
● 火花机 Gear Shaping Machine	MAKINO EDGE2i / GF P350 / WINTOP Switzerland
● 慢走丝 Gear Wire Walking	GF CUTE350 Switzerland
● CNC Operating temperature range	北京精雕 Beijing Jingdiao



## 检测设备

Production and testing equipment

设备名称 Equipment	生产商 / 生产地 Production address/Manufacturer
● 三坐标测量仪 CMM	日本三丰 Mitutoyo
● 齿轮检测中心 Gear Testing Center	日本·TTI TTI Japan
● 齿轮啮合仪 Gear Mesh Tester	日本大阪 Osaka, Japan
● 二次元检测 Two-dimensional detection	海克斯康 Sweden HEXAGON
● 显微镜 Microscope	日本尼康 Nikon Japan
● 千分尺 Micrometer	日本三丰 Mitutoyo
● 测功机 Dynamometer	上海广法测控 China
● 冷热冲击箱 Gear Shaping Machine	爱思贝克 Avex
● 高低温箱 Gear Wire Walking	KSON Mitutoyo, Japan
● 寿命测试仪 Life Tester	中国 China
● 盐雾测试仪 Salt Spray tester	TERCHY Taiwan China
● ROHS2.0 检测仪 ROHS2.0 Detector	莱州华仪 China
● Xray 检测 Xray Detection	日联 UNICOMP
● 背隙检测仪 Backlash Detector	中创 China

# 定制流程

## Custom Process

# 1.

### 客户需求分析 Customer needs analysis

初步沟通，了解客户的基本需求，获取客户的详细参数

Initial communication to understand the customer's basic needs and obtain the customer's detailed parameters

# 2.

### 需求确认与可行性分析 Requirements confirmation and feasibility analysis

内部会议（包括研发、工程和销售，讨论客户需求的可行性；制定初步的技术方案 and 解决思路，评估技术难度和开发周期。

Internal meetings (including R&D, engineering and sales) to discuss the feasibility of customer needs; formulate preliminary technical plans and solution ideas, and evaluate technical difficulty and development cycles.

# 3.

### 方案制定与图纸设计 Plan formulation and drawing design

编写详细的技术方案文档，包括设计说明、材料选择、工艺流程等

Write detailed technical plan documents, including design instructions, material selection, process flow, etc.

# 4.

### 客户确认与合同签订 Customer confirmation and contract signing

根据客户反馈进行必要的修改和优化，直到客户满意

Make necessary modifications and optimizations based on customer feedback until customers are satisfied

# 5.

### 样品开发与测试 Sample development and testing

样品制作和内部测试，验证设计的可行性和可靠性

Sample production and internal testing to verify the feasibility and reliability of the design

# 6.

### 批量生产与交付 Mass production and delivery

制定详细的生产计划，包括材料采购、生产工艺、工序安排等；小批量试产成功验证后进行大批量生产

Develop detailed production plans, including material procurement, production processes, process arrangements, etc.; carry out mass production after successful verification of small batch trial production;

# 部分合作伙伴 Some Partners

感谢与我们一起  
并肩作战的伙伴们

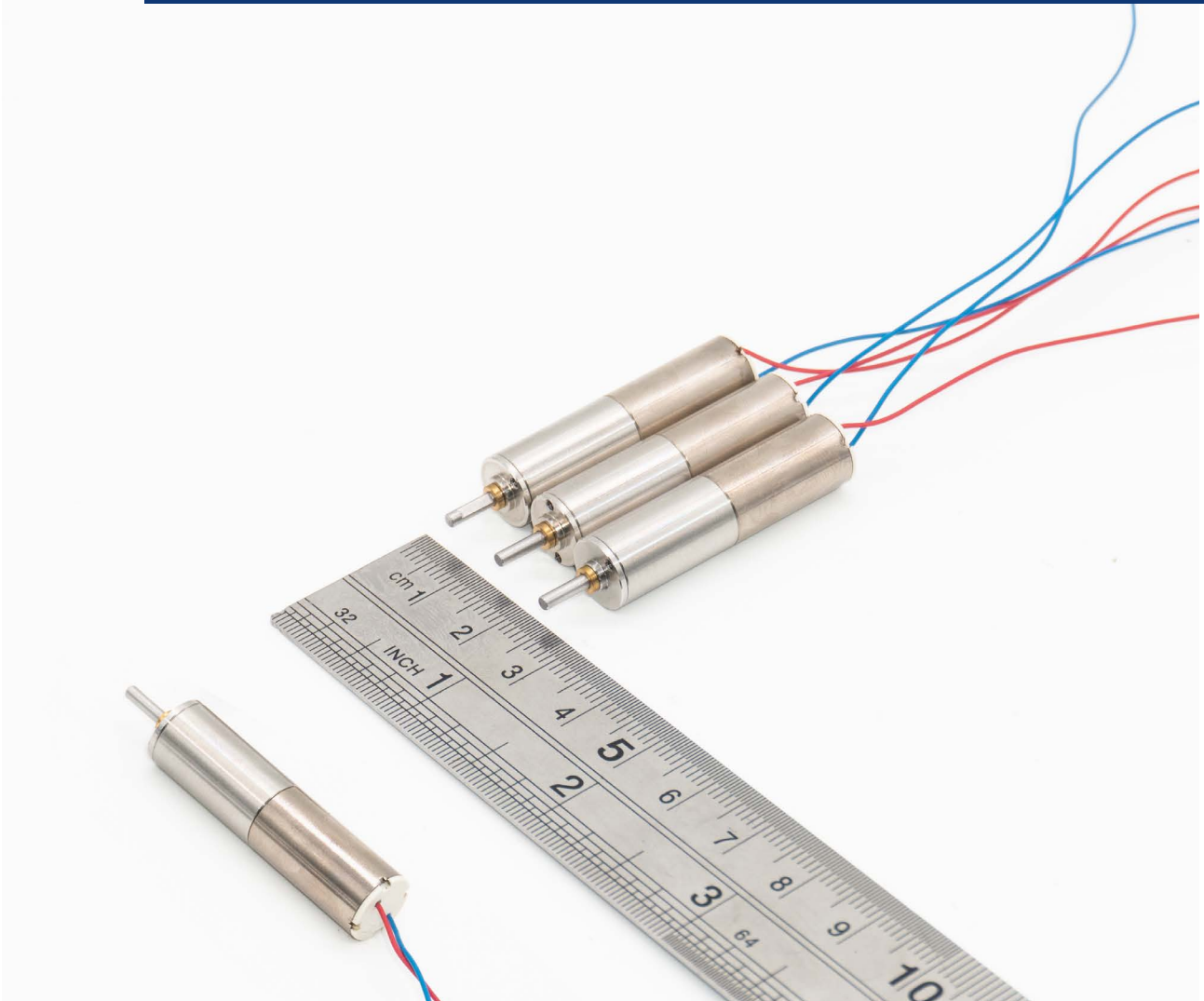
Thanks to our partners who fight side  
by side with us.

# 200<sup>+</sup>

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 POSITEC	 康诺思腾	 拓邦	 EFFORT TECH
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 傅利叶智能	 天雁	 优必选 UBTECH	 汉王 Hanvon
 微创医疗 一个属于患者和医生的品牌	 中国科学院 CHINESE ACADEMY OF SCIENCES	 Enhanced Robotics	 远也科技 YROBOT
 Amphenol	 北京航空航天大学 LUDANG UNIVERSITY	 达闼科技	 laifen
 中电海康集团有限公司	 BYD	 MOONS' moving in better ways	 宇森医疗

# 标品参数

## Standard parameter





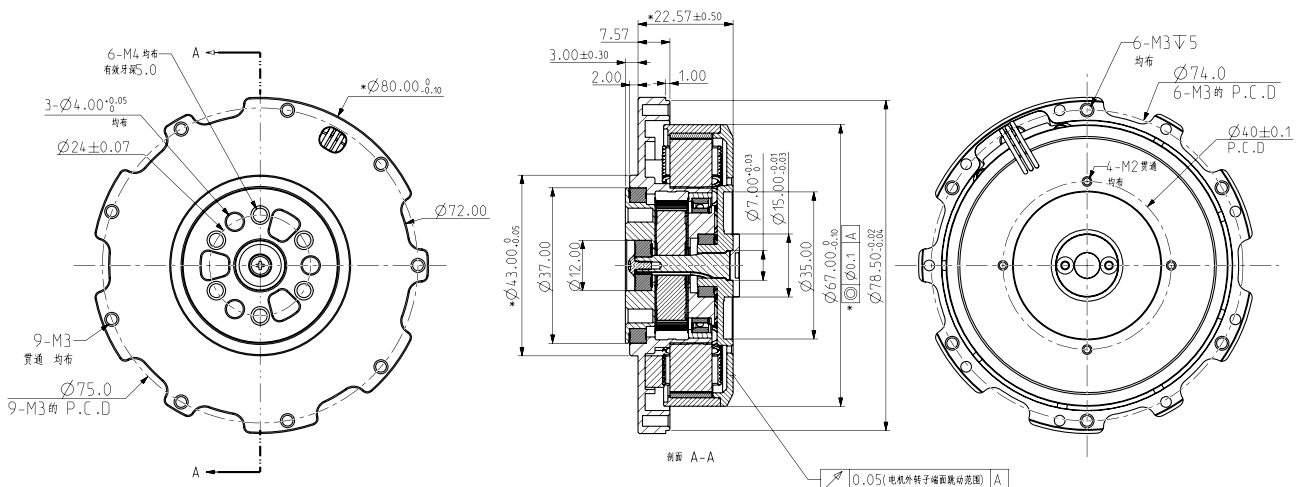
## 西格·马系列 -SG-6010H

## 内置行星齿轮箱关节减速电机

● 传动结构	Transmission structure	行星结构 Planetary structure
● 外径尺寸	Outer diameter	80.0 mm
● 产品厚度	Thickness	25.6 mm
● 减速比	Reduction ratio	i=9.67
● 背隙	Backlash	15-20 arcmin
● 电机功率	Motor Power	328 W
● 额定电压	Rated Voltage	24-48 V
● 额定转速	Rated Speed	310 rpm
● 额定扭矩	Rated Torque	6 Nm
● 峰值扭矩	Peak Torque	18 Nm
● 空载转速	No-load speed	400 rpm
● 相位阻尼	Phase damping	224 $\mu\Omega$
● 相位电感	Phase inductance	235 $\mu\text{H}$
● 相电流满量程	Phase current full scale	33 A
● 额定母线电流	Rated bus current	12 A
● 静态工作母线电流	Static working bus current	0.08 A
● 电机结构	Motor structure	18N20P
● 热敏电阻	Thermistor	10k $\text{B}3435\%1$
● ntc 的 B 值	B value of ntc	3435
● 反电动势常数 (Ke)	Back electromotive force constant	0.0727Vs/Rad
● 电机 KV 值	Motor KV value	104 kv
● 产品重量	Weight	305 g



### ■ 技术插图 Technical illustration



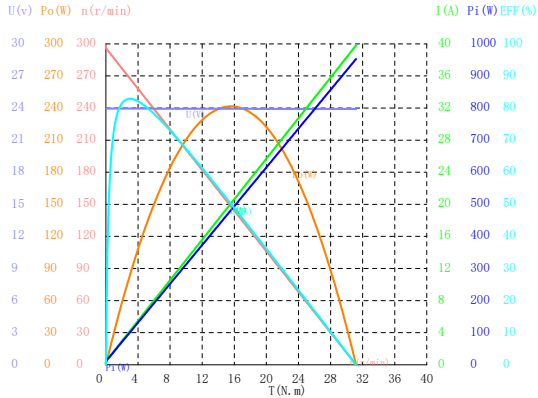
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## 西格·马系列 -SG-6010H

### 24V 测功数据 温度 环境温度: 18.1°C - 18.7°C

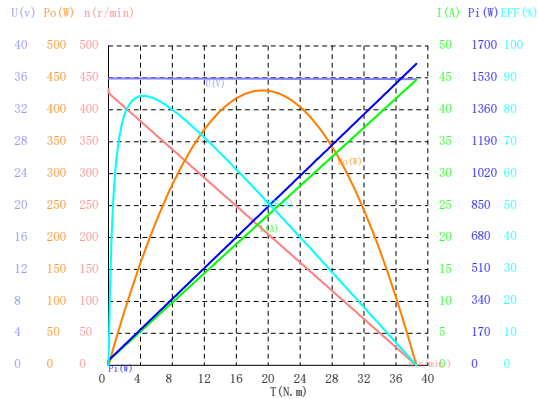
24V power test data Temperature Ambient temperature: 18.1°C - 18.7°C



特征点	n (r/min)	T (N.m)	Po (W)	U (V)	I (A)	Pi (W)	EFF
空载点	298.76	0.0000	0.0000	23.950	0.0877	2.1082	0.00%
最大效率	267.23	3.0348	84.922	23.946	4.2799	102.45	82.89%
最大输出	148.63	15.526	241.64	23.933	20.050	479.93	50.35%
最大转矩	0.0000	31.180	0.0000	23.916	39.813	952.98	0.00%
堵转点	0.0000	31.180	0.0000	23.916	39.813	952.98	0.00%
额定点1							
额定点2							
额定点3							
额定点4							
额定点5							

### 36V 测功数据 温度 环境温度: 18.4°C - 18.4°C

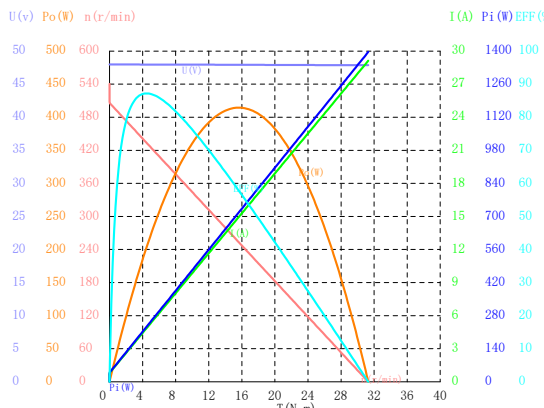
36V power test data Temperature Ambient temperature: 18.4°C - 18.4°C



特征点	n (r/min)	T (N.m)	Po (W)	U (V)	I (A)	Pi (W)	EFF
空载点	433.03	0.0000	0.0000	35.933	0.0388	1.4218	0.00%
最大效率	378.63	4.3162	171.13	35.923	5.6490	202.86	84.36%
最大输出	213.25	19.271	430.31	35.891	22.704	815.23	52.78%
最大转矩	0.0000	38.554	0.0000	35.850	44.696	1604.9	0.00%
堵转点	0.0000	38.554	0.0000	35.850	44.696	1604.9	0.00%
额定点1							
额定点2							
额定点3							
额定点4							
额定点5							

### 48V 测功数据 温度 环境温度: 18.6°C - 19.0°C

48V power test data Temperature Ambient temperature: 18.6°C - 19.0°C



特征点	n (r/min)	T (N.m)	Po (W)	U (V)	I (A)	Pi (W)	EFF
空载点	540.58	0.0000	0.0000	47.998	0.0000	0.0000	0.00%
最大效率	434.64	4.4160	200.98	47.974	4.8053	230.44	87.21%
最大输出	252.63	15.672	414.57	47.932	14.991	718.78	57.68%
最大转矩	0.0000	31.295	0.0000	47.875	29.128	1396.6	0.00%
堵转点	0.0000	31.295	0.0000	47.875	29.128	1396.6	0.00%
额定点1							
额定点2							
额定点3							
额定点4							
额定点5							

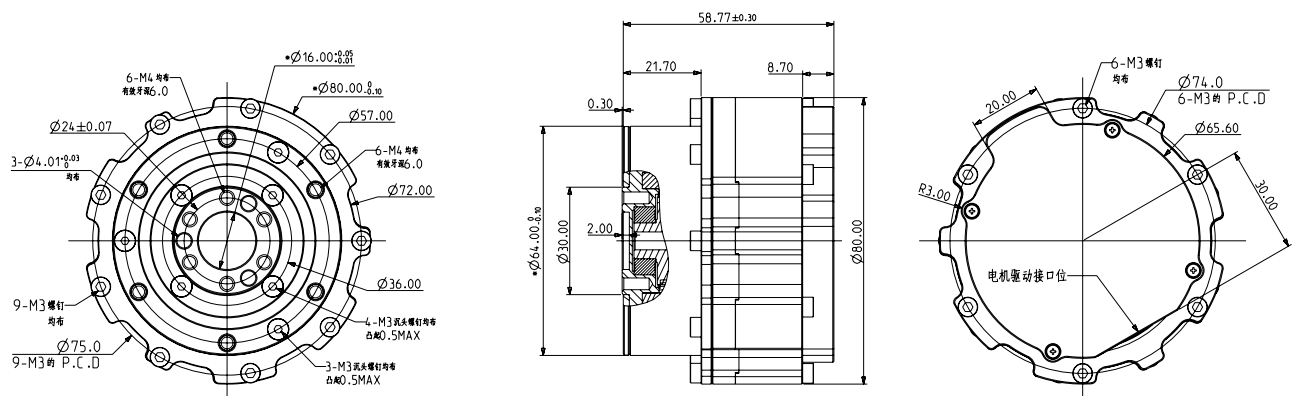
## 西格·马系列 -SG-6010D

## 内置行星齿轮箱关节减速电机

● 传动结构	Transmission structure	行星结构 Planetary structure
● 外径尺寸	Outer diameter	80.0 mm
● 产品厚度	Thickness	58.77 mm
● 减速比	Reduction ratio	i=28.13
● 背隙	Backlash	15-30 arcmin
● 电机功率	Motor Power	328 W
● 额定电压	Rated Voltage	24-48 V
● 额定转速	Rated Speed	100 rpm
● 额定扭矩	Rated Torque	16 Nm
● 峰值扭矩	Peak Torque	50 Nm
● 空载转速	No-load speed	170 rpm
● 相位阻尼	Phase damping	224 $\mu\Omega$
● 相位电感	Phase inductance	235 $\mu\text{H}$
● 相电流满量程	Phase current full scale	33 A
● 额定母线电流	Rated bus current	12 A
● 静态工作母线电流	Static working bus current	0.08 A
● 电机结构	Motor structure	18N20P
● 热敏电阻	Thermistor	10kB3435 %1
● ntc 的 B 值	B value of ntc	3435
● 反电动势常数 (Ke)	Back electromotive force constant	0.0727Vs/Rad
● 电机 KV 值	Motor KV value	104 kv
● 产品重量	Weight	791 g



## ■ 技术插图 Technical illustration



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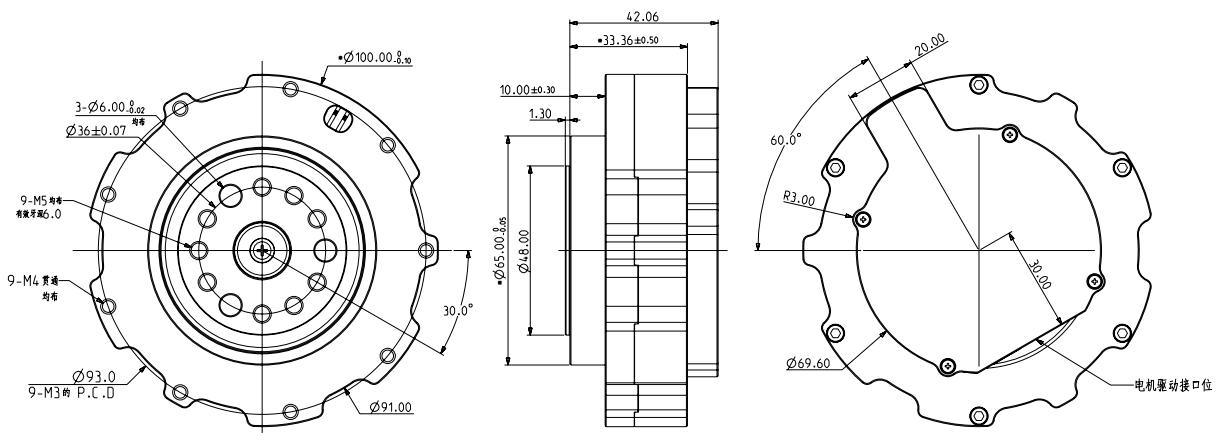
## 西格·马系列 -SG-8021

## 内置行星齿轮箱关节减速电机

● 传动结构	Transmission structure	行星结构 Planetary structure
● 外径尺寸	Outer diameter	100 mm
● 产品厚度	Thickness	42.6 mm
● 减速比	Reduction ratio	i=9.25
● 背隙	Backlash	15-20 arcmin
● 电机功率	Motor Power	213 W
● 额定电压	Rated Voltage	24-48 V
● 额定转速	Rated Speed	160 rpm
● 额定扭矩	Rated Torque	10 Nm
● 峰值扭矩	Peak Torque	30 Nm
● 空载转速	No-load speed	240 rpm
● 相位电感	Phase inductance	290 uH
● 相电流满量程	Phase current full scale	33 A
● 额定母线电流	Rated bus current	12 A
● 静态工作母线电流	Static working bus current	0.08 A
● 电机结构	Motor structure	21 对极
● 热敏电阻	Thermistor	10kB3435 %1
● ntc 的 B 值	B value of ntc	3435
● 反电动势常数 (Ke)	Back electromotive force constant	0.143Vs/Rad
● 电机 KV 值	Motor KV value	63 kv
● 产品重量	Weight	671 g
● 允许径向力	Allowable radial force	1300 N
● 允许轴向力	Allowable axial force	550 N



## ■ 技术插图 Technical illustration



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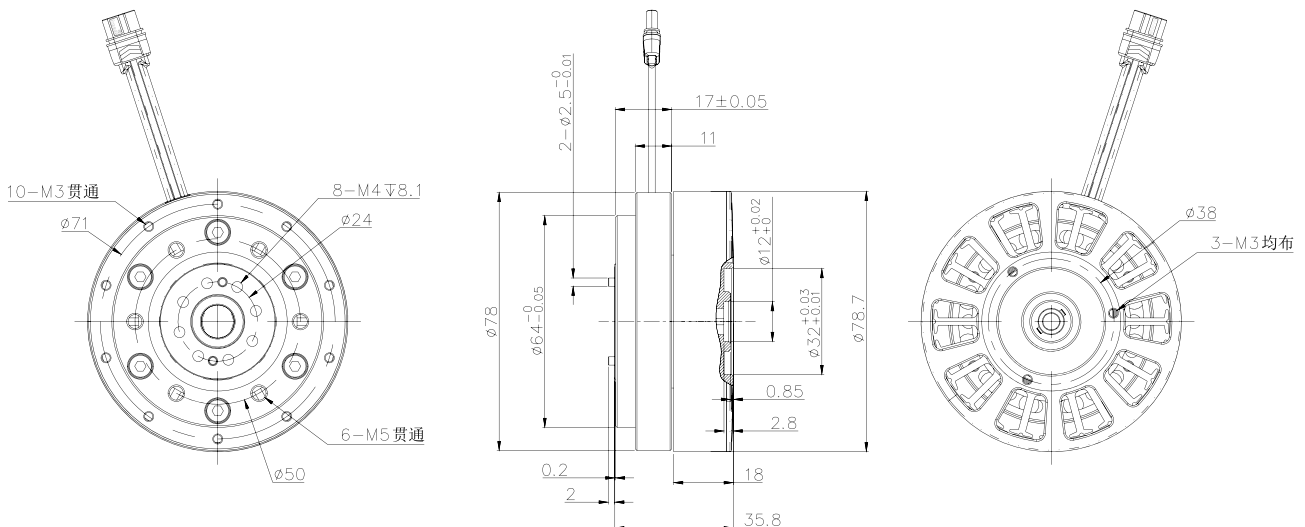
## 西格·虎系列 -SG-2368B

## 内置摆线结构关节减速电机

● 产品材质	Material	金属 Steel
● 外径尺寸	Outer diameter	78.7mm
● 产品厚度	Thickness	35.8mm
● 重量	Weight	600g
● 减速比	Reduction ratio	39
● 背隙	Backlash	2.73arcmin
● 电压	Voltage	36V
● 电机功率	Rated power	200W
● 额定转速	Rated speed	48RPM
● 空载转速	No-load speed	54RPM
● 额定扭矩	Rated torque	20NM
● 峰值扭矩	Peak torque	52NM
● 霍尔角度	Hall angle	120°
● 相电阻	Phase resistance	0.225Ω
● 相电感	Phase inductance	425uH
● 最大相电流	Maximum phase current	13A
● 额定母线电流	Rated bus current	5A
● 静态工作母线	Static working bus	0.1A
● 电机结构	Motor structure	28P24N
● 传动结构	Transmission structure	摆线针轮 Cycloidal pinwheel
● 温感	Sense of warmth	型号 MF52B
● 反电动势常数	Reaction potential constant	0.149V/rad



## ■ 技术插图 Technical illustration



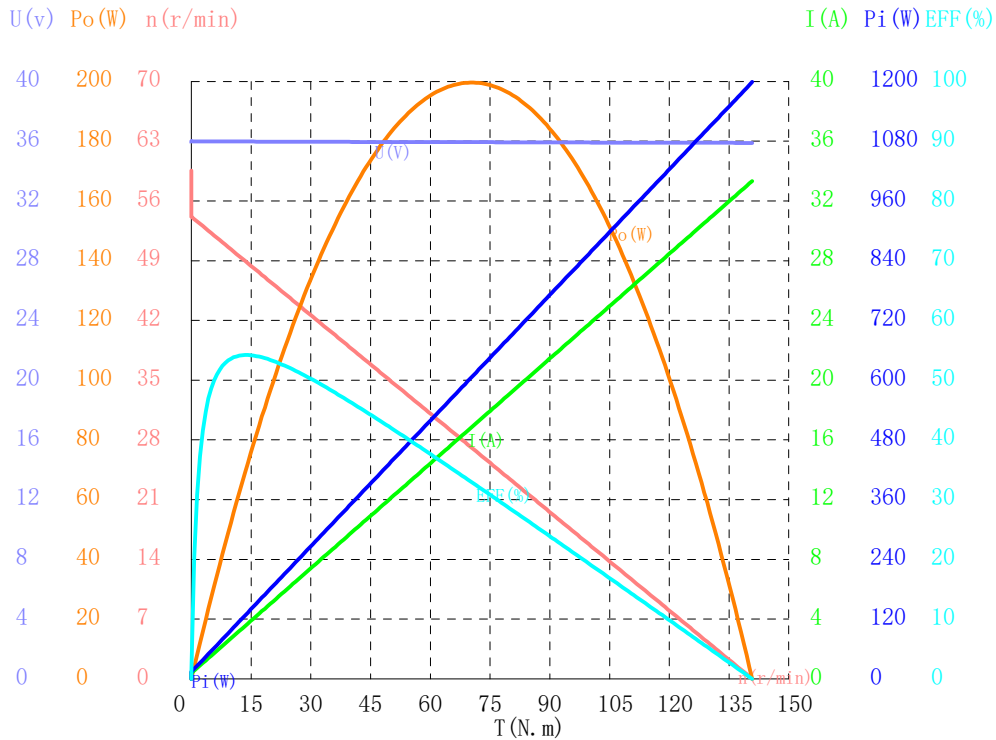
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## 西格·虎系列 -SG-2368B

■ 36V 测功数据 温度 环境温度: 24.4°C - 24.5°C

36V power test data Temperature Ambient temperature: 24.4°C - 24.5°C



特征点	n(r/min)	T(N.m)	Po(W)	U(V)	I(A)	Pi(W)	EFF
空载点	59.563	0.0000	0.0000	36.001	0.0000	0.0000	0.00%
最大效率	48.978	13.468	69.072	35.981	3.5423	127.42	54.21%
最大输出	27.210	70.075	199.66	35.939	16.787	603.68	33.07%
最大转矩	0.0000	140.83	0.0000	35.886	33.342	1199.0	0.00%
堵转点	0.0000	140.83	0.0000	35.886	33.342	1199.0	0.00%
额定点1							
额定点2							
额定点3							
额定点4							
额定点5							

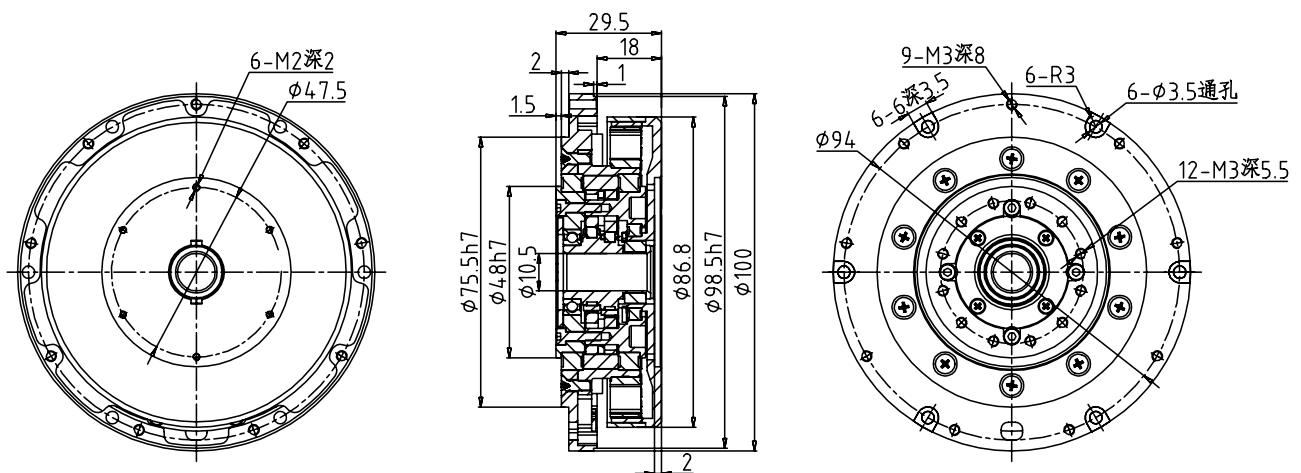
## 西格·虎系列 -SG-2556

## 内置摆线结构关节减速电机

● 产品材质	Material	金属 Steel
● 外径尺寸	Outer diameter	100MM
● 产品厚度	Thickness	29.5MM
● 背隙	Backlash	5-10arcmin
● 减速比	Reduction ratio	25
● 电压	Voltage	24V-48V
● 电机功率	Rated power	213W
● 额定转速	Rated speed	60RPM
● 空载转速	No-load speed	90RPM
● 额定扭矩	Rated torque	25NM
● 峰值扭矩	Peak torque	75NM
● 电机 KV 值	Motor KV value	63kv
● 热敏电阻	Thermistor	10KB3435%1
● 相位电感	Phase inductance	290uH
● 相电流满量程	Phase current full scale	33A
● 额定母线电流	Rated bus current	15A
● 静态工作母线	Static working bus	0.08A
● 电机结构	Motor structure	21 对极 (Antipodes)
● 重量	Weight	822g
● 传动结构	Transmission structure	摆线针轮 Cycloidal pinwheel
● 反电动势常数	Reaction potential constant	0.143V/rad



## ■ 技术插图 Technical illustration



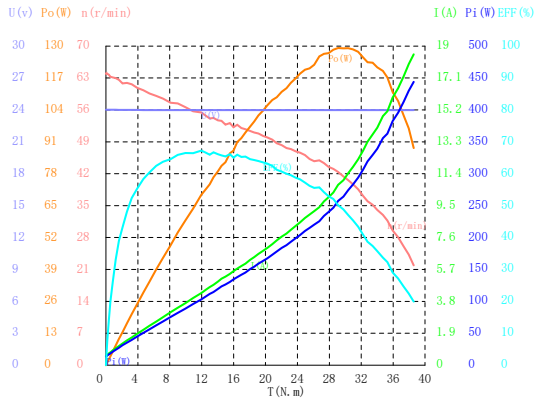
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## 西格·虎系列 -SG-2556

### 24V 测功数据 温度 环境温度: 28.5°C - 28.6°C

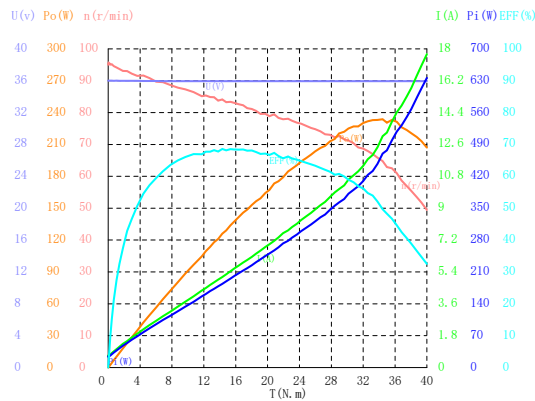
24V power test data Temperature Ambient temperature: 28.5°C - 28.6°C



特征点	n (r/min)	T (N.m)	Po (W)	U (V)	I (A)	Pi (W)	EFF
空载点	63.990	0.0000	0.0000	24.018	0.5813	13.961	0.00%
最大效率	55.456	11.960	69.452	23.988	4.3037	103.24	67.27%
最大输出	42.401	29.097	129.19	23.986	10.738	257.56	50.16%
最大转矩	21.910	38.567	88.480	23.988	18.512	444.07	19.92%
堵转点							
额定点1							
额定点2							
额定点3							
额定点4							
额定点5							

### 36V 测功数据 温度 环境温度: 27.8°C - 27.9°C

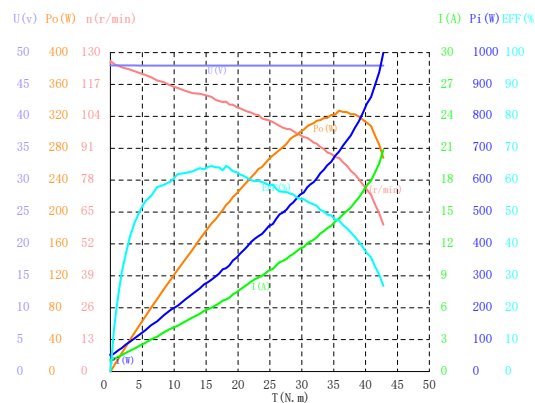
36V power test data Temperature Ambient temperature: 27.8°C - 27.9°C



特征点	n (r/min)	T (N.m)	Po (W)	U (V)	I (A)	Pi (W)	EFF
空载点	95.037	0.0000	0.0000	36.003	0.6868	24.725	0.00%
最大效率	84.107	14.310	126.03	35.957	5.1119	183.81	68.56%
最大输出	64.781	34.451	233.70	35.956	13.074	470.10	49.71%
最大转矩	49.456	39.992	207.10	35.955	17.697	636.30	32.55%
堵转点							
额定点1							
额定点2							
额定点3							
额定点4							
额定点5							

### 48V 测功数据 温度 环境温度: 28.6°C - 28.7°C

48V power test data Temperature Ambient temperature: 28.6°C - 28.7°C



特征点	n (r/min)	T (N.m)	Po (W)	U (V)	I (A)	Pi (W)	EFF
空载点	125.79	0.0000	0.0000	47.995	1.1101	53.281	0.00%
最大效率	109.99	18.151	209.05	47.947	6.7651	324.36	64.45%
最大输出	87.121	35.847	327.01	47.945	14.391	690.00	47.39%
最大转矩	59.815	42.791	268.02	47.945	20.838	999.07	26.83%
堵转点							
额定点1							
额定点2							
额定点3							
额定点4							
额定点5							



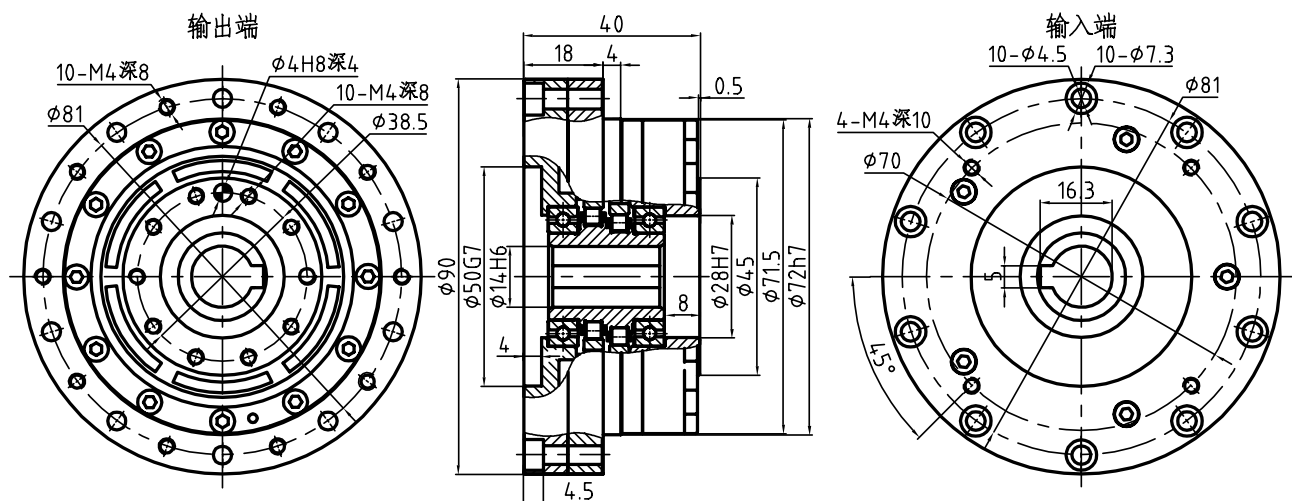
## SG-APH072-SigGear

## 摆线针轮减速箱

● 外壳材料	Housing material	金属 steel
● 齿轮材料	Gearwhddl material	金属 steel
● 外径尺寸	Outer diameter	90mm
● 产品厚度	Thickness	40mm
● 减速比	Reduction ratio	25 49
● 额定输出扭矩	Rated output torque	60NM 90NM
● 故障停止扭矩	Back drive torque	3 倍额定输出扭矩
● 容许径向载荷	Allowable radial load	480N
● 容许轴向载荷	Allowable axial load	480N
● 满载效率	Full load efficiency	80%
● 防护等级	IP Grade	IP65
● 工作温度范围	Operating temperature range	-25° ~+90°
● 平均寿命时间	Average lifetime	20000h
● 额定输入转速	Rated input speed	3000min-1
● 最大输入转速	Maximum input speed	5500min-1
● 回程间隙	Backhaul clearance	≤ 10arcmin
● 传动结构	Transmission structure	摆线针轮 Cycloidal pinwheel
● 配电机尺寸	Adapted Motor	φ14×30/φ50×3/4-φ4.5-φ70
● 重量	Weight	946g



## ■ 技术插图 Technical illustration



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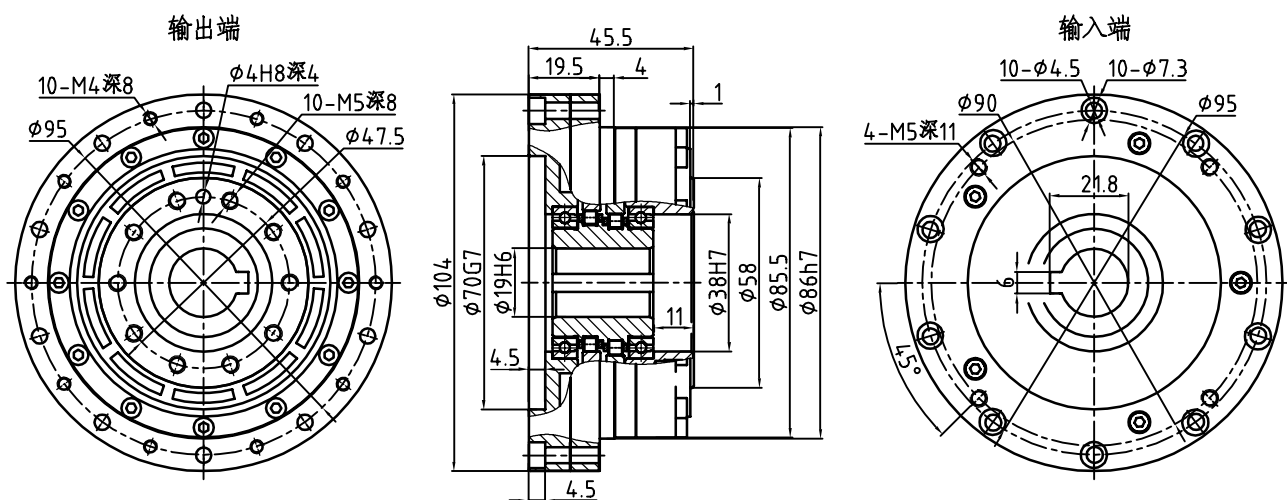
## SG-APH086-SigGear

## 摆线针轮减速箱

● 外壳材料	Housing material	金属 steel
● 齿轮材料	Gearwhddl material	金属 steel
● 外径尺寸	Outer diameter	104mm
● 产品厚度	Thickness	45.5mm
● 减速比	Reduction ratio	25 49
● 额定输出扭矩	Rated output torque	90NM 130NM
● 故障停止扭矩	Back drive torque	3 倍额定输出扭矩
● 容许径向载荷	Allowable radial load	770N
● 容许轴向载荷	Allowable axial load	770N
● 满载效率	Full load efficiency	80%
● 防护等级	IP Grade	IP65
● 工作温度范围	Operating temperature range	-25° ~+90°
● 平均寿命时间	Average lifetime	20000h
● 额定输入转速	Rated input speed	3000min-1
● 最大输入转速	Maximum input speed	5500min-1
● 回程间隙	Backhaul clearance	≤ 10arcmin
● 传动结构	Transmission structure	摆线针轮 Cycloidal pinwheel
● 配电机尺寸	Adapted Motor	φ19×35/φ70×3/4-φ5.5-φ90
● 重量	Weight	1416g



## ■ 技术插图 Technical illustration



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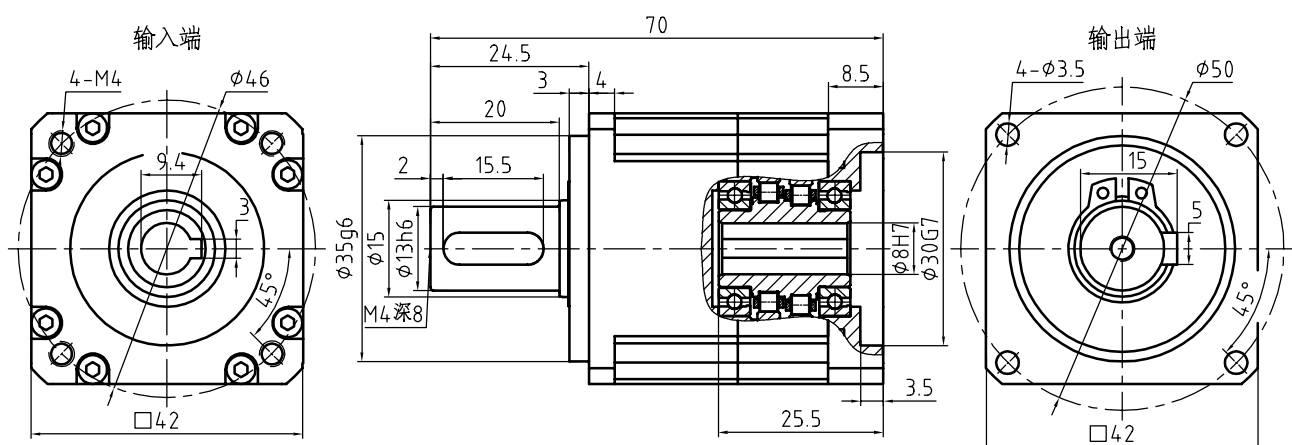
## SG-APX042-SigGear

## 摆线针轮减速箱

● 外壳材料	Housing material	金属 steel
● 齿轮材料	Gearwhddl material	金属 steel
● 外径尺寸	Outer diameter	42mm
● 产品高度	Thickness	70mm
● 减速比	Reduction ratio	25 49
● 额定输出扭矩	Rated output torque	20NM 30NM
● 故障停止扭矩	Back drive torque	3 倍额定输出扭矩
● 容许径向载荷	Allowable radial load	600N
● 容许轴向载荷	Allowable axial load	400N
● 满载效率	Full load efficiency	80%
● 防护等级	IP Grade	IP65
● 工作温度范围	Operating temperature range	-25° ~+90°
● 平均寿命时间	Average lifetime	20000h
● 额定输入转速	Rated input speed	3000min-1
● 最大输入转速	Maximum input speed	5500min-1
● 回程间隙	Backhaul clearance	≤ 10arcmin
● 传动结构	Transmission structure	摆线针轮 Cycloidal pinwheel
● 配电机尺寸	Adapted Motor	φ8×25/φ30×3/4-φ4.5-φ46
● 重量	Weight	351.1g



## ■ 技术插图 Technical illustration



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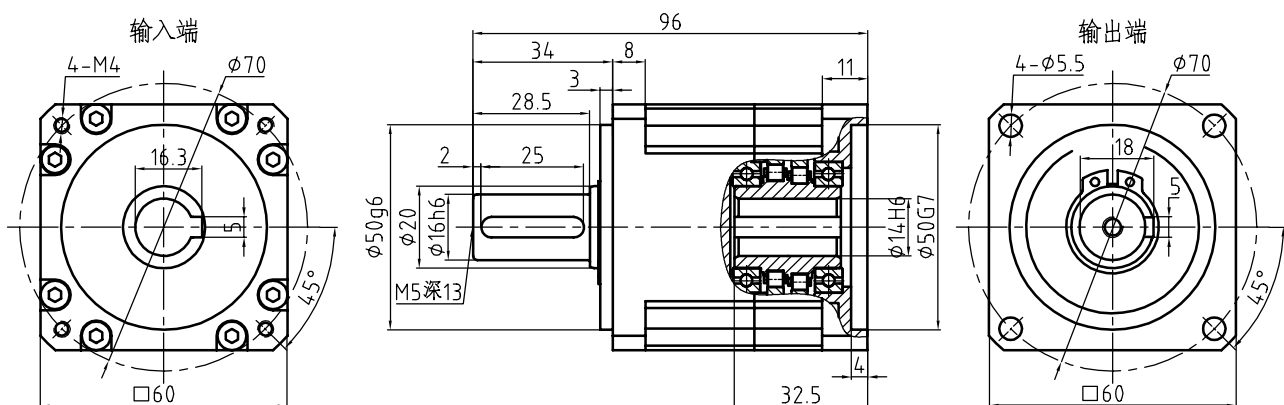
## SG-APX060-SigGear

## 摆线针轮减速箱

● 外壳材料	Housing material	金属 steel
● 齿轮材料	Gearwhddl material	金属 steel
● 外径尺寸	Outer diameter	60mm
● 产品高度	Thickness	96mm
● 减速比	Reduction ratio	25 49
● 额定输出扭矩	Rated output torque	68NM 80NM
● 故障停止扭矩	Back drive torque	3 倍额定输出扭矩
● 容许径向载荷	Allowable radial load	800N
● 容许轴向载荷	Allowable axial load	550N
● 满载效率	Full load efficiency	80%
● 防护等级	IP Grade	IP65
● 工作温度范围	Operating temperature range	-25° ~+90°
● 平均寿命时间	Average lifetime	20000h
● 额定输入转速	Rated input speed	3000min-1
● 最大输入转速	Maximum input speed	5500min-1
● 回程间隙	Backhaul clearance	≤ 10arcmin
● 传动结构	Transmission structure	摆线针轮 Cycloidal pinwheel
● 配电机尺寸	Adapted Motor	φ14×30/φ50×3/4-φ4.5-φ70
● 重量	Weight	859.7g



## ■ 技术插图 Technical illustration



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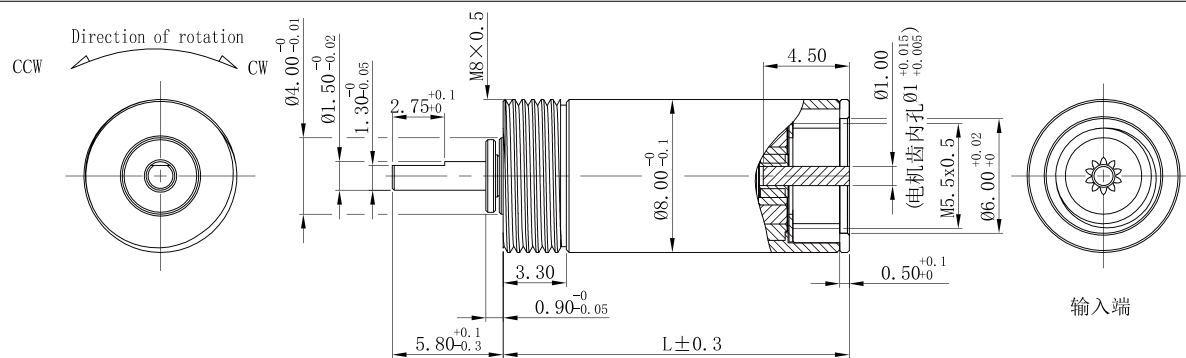
## PLANETARY GEAR HEAD 8P

## 行星结构减速箱

● 外壳材料	Housing material	金属 steel
● 齿轮材料	Gearwhddl material	金属 steel
● 输出轴承型式	Bearing at output	滚珠轴承 Ball bearings
● 径向负载	Radial load (10mm from flange)	≤ 0.4 Kgf
● 轴向负载	Shaft axial load	≤ 0.1 Kgf
● 径向间隙	Radial play of shaft	≤ 0.04mm
● 轴向间隙	Thrust play of shaft	≤ 0.15mm
● 背隙 (空载时)	Backlash, at no-load	≤ 1.5°
● 连续运行时最高允许输入转速	Max permissible speed at continuous working	≤ 8000rpm
● 工作温度范围	Operating temperature range	-40~120°C



### ■ 技术插图 Technical illustration



### ■ 齿轮箱规格 Gearbox Specifications

级数 Number of stages	L (mm)	减速比 Reduction ratio	额定允许负载 Exact reduction torque	瞬间允许负载 Max momentary tolerance torque	效率 Efficiency
1	10.15	3.8 / 4.5 / 5.2	0.2Kgf-cm	0.4Kgf-cm	90%
2	12.80	14.4 / 17.1 / 19.8 / 20.3 / 23.4 / 27	0.25Kgf-cm	0.5Kgf-cm	80%
3	15.45	54.9 / 65 / 75.1 / 76.95 / 88.9 / 91.1 / 102.75 / 105.3 / 121.7 / 140.6	0.3Kgf-cm	0.6Kgf-cm	73%
4	18.10	208.5 / 246.9 / 285.3 / 292.4 / 337.9 / 346.3 / 390.46 / 400.14 / 410.1 / 462.4 / 473.85 / 534.3 / 547.56 / 632.74 / 731.16	0.4Kgf-cm	0.8Kgf-cm	66%

### ■ 适配电机 Adapted Motor

额定电压 (VDC) Nominal(VDC)	3 ~ 36VDC
直流电机 DC motors	适配功率小于 2.5W 的直流电机, 当电机不能满足减速器安装要求时, 需另行商定 Suitable for DC motors with power less than 2.5W, When the motor cannot meet the installation requirements of the reducer, it needs to be negotiated separately.

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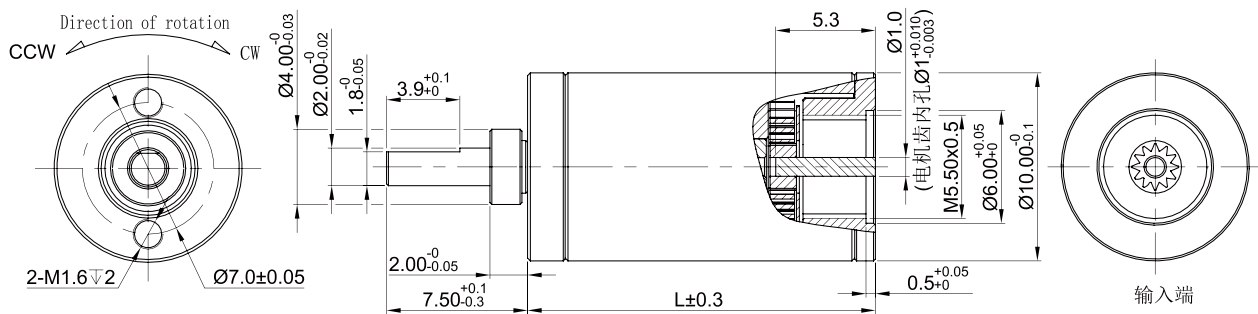
# PLANETARY GEAR HEAD 10P

# 行星结构减速箱

● 外壳材料	Housing material	金属 steel
● 齿轮材料	Gearwhddl material	金属 steel
● 输出轴承型式	Bearing at output	滚珠轴承 Ball bearings
● 径向负载	Radial load (10mm from flange)	≤ 0.6 Kgf
● 轴向负载	Shaft axial load	≤ 0.15 Kgf
● 径向间隙	Radial play of shaft	≤ 0.04mm
● 轴向间隙	Thrust play of shaft	≤ 0.15mm
● 背隙 (空载时)	Backlash, at no-load	≤ 1.5°
● 连续运行时最高允许输入转速	Max permissible speed at continuous working	≤ 8000rpm
● 工作温度范围	Operating temperature range	-40~120°C



## 技术插图 Technical illustration



## 齿轮箱规格 Gearbox Specifications

级数 Number of stages	L (mm)	减速比 Reduction ratio	额定允许负载 Exact reduction torque	瞬间允许负载 Max momentary tolerance torque	效率 Efficiency
1	10.25	3.5 / 4 / 4.75	1.3Kgf-cm	2.6Kgf-cm	90%
2	13.00	12.25 / 14 / 16 / 16.6 / 19 / 22.6	1.5Kgf-cm	3.0Kgf-cm	80%
3	15.75	42.9 / 49 / 56 / 58.2 / 64 / 66.5 / 76 / 79 / 90.25 / 107.2	1.8Kgf-cm	3.6Kgf-cm	73%
4	18.50	150.1 / 171.5 / 196 / 203.7 / 224 / 232.7 / 256 / 266 / 276.4 / 304 / 315.9 / 361 / 375.1 / 428.7 / 509.1	2.0Kgf-cm	4.0Kgf-cm	66%

## 适配电机 Adapted Motor

额定电压 (VDC) Nominal(VDC)	3 ~ 36VDC
直流电机 DC motors	适配功率小于 3W 的直流电机, 当电机不能满足减速器安装要求时, 需另行商定 Suitable for DC motors with power less than 3W, When the motor cannot meet the installation requirements of the reducer, it needs to be negotiated separately.

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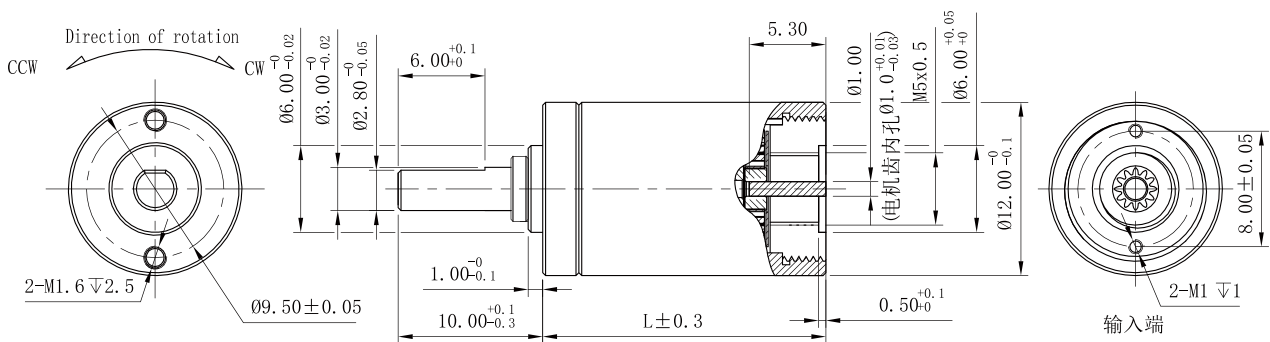
# PLANETARY GEAR HEAD 12P

# 行星结构减速箱

● 外壳材料	Housing material	金属 steel
● 齿轮材料	Gearwhddl material	金属 steel
● 输出轴承型式	Bearing at output	滚珠轴承 Ball bearings
● 径向负载	Radial load (10mm from flange)	≤ 0.8 Kgf
● 轴向负载	Shaft axial load	≤ 0.25 Kgf
● 径向间隙	Radial play of shaft	≤ 0.04mm
● 轴向间隙	Thrust play of shaft	≤ 0.2mm
● 背隙 (空载时)	Backlash, at no-load	≤ 1.5°
● 连续运行时最高允许输入转速	Max permissible speed at continuous working	≤ 8000rpm
● 工作温度范围	Operating temperature range	-40~120°C



## 技术插图 Technical illustration



## 齿轮箱规格 Gearbox Specifications

级数 Number of stages	L (mm)	减速比 Reduction ratio	额定允许负载 Exact reduction torque	瞬间允许负载 Max momentary tolerance torque	效率 Efficiency
1	11.35	3.5 / 4 / 4.75	2.0Kgf-cm	4.0Kgf-cm	90%
2	14.10	12.25 / 14 / 16 / 16.6 / 19 / 22.6	3.0Kgf-cm	6.0Kgf-cm	80%
3	16.85	42.9 / 49 / 56 / 58.2 / 64 / 66.5 / 76 / 79 / 90.25 / 107.2	3.6Kgf-cm	7.2Kgf-cm	73%
4	19.60	150.1 / 171.5 / 196 / 203.7 / 224 / 232.7 / 256 / 266 / 276.4 / 304 / 315.9 / 361 / 375.1 / 428.7 / 509.1	4.2Kgf-cm	8.4Kgf-cm	66%

## 适配电机 Adapted Motor

额定电压 (VDC) Nominal(VDC)	3 ~ 36VDC
直流电机 DC motors	适配功率小于 4W 的直流电机, 当电机不能满足减速器安装要求时, 需另行商定 Suitable for DC motors with power less than 4W, When the motor cannot meet the installation requirements of the reducer, it needs to be negotiated separately.

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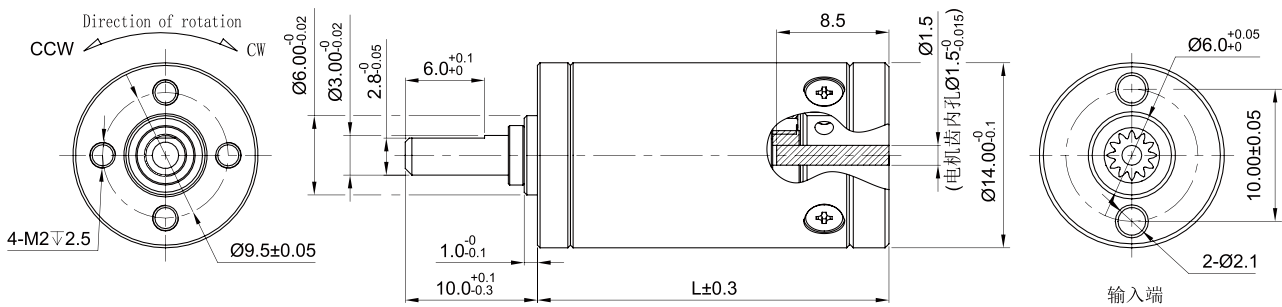
# PLANETARY GEAR HEAD 14P

# 行星结构减速箱

● 外壳材料	Housing material	金属 steel
● 齿轮材料	Gearwhddl material	金属 steel
● 输出轴承型式	Bearing at output	滚珠轴承 Ball bearings
● 径向负载	Radial load (10mm from flange)	≤ 0.8 Kgf
● 轴向负载	Shaft axial load	≤ 0.25 Kgf
● 径向间隙	Radial play of shaft	≤ 0.04mm
● 轴向间隙	Thrust play of shaft	≤ 0.2mm
● 背隙 (空载时)	Backlash, at no-load	≤ 1.5°
● 连续运行时最高允许输入转速	Max permissible speed at continuous working	≤ 8000rpm
● 工作温度范围	Operating temperature range	-40~120°C



## ■ 技术插图 Technical illustration



## ■ 齿轮箱规格 Gearbox Specifications

级数 Number of stages	L (mm)	减速比 Reduction ratio	额定允许负载 Exact reduction torque	瞬间允许负载 Max momentary tolerance torque	效率 Efficiency
1	15.2	3.75 / 4.38 / 4.66	3.5Kgf-cm	7.0Kgf-cm	90%
2	19.0	14 / 16.4 / 17.5 / 19.2 / 20.4 / 21.7	4.0Kgf-cm	8.0Kgf-cm	80%
3	22.8	52.7 / 61.6 / 65.5 / 71.9 / 76.5 / 81.4 / 84 / 89.4 / 95.1 / 101.2	5.0Kgf-cm	10.0Kgf-cm	73%
4	26.6	197.75 / 231 / 245.74 / 269.8 / 287 / 305.4 / 315.1 / 335.25 / 356.7 / 368 / 379.5 / 391.6 / 416.6 / 443.2 / 471.6	6.0Kgf-cm	12.0Kgf-cm	66%

## ■ 适配电机 Adapted Motor

额定电压 (VDC) Nominal(VDC)	3 ~ 36VDC
直流电机 DC motors	适配功率小于 5W 的直流电机, 当电机不能满足减速器安装要求时, 需另行商定 Suitable for DC motors with power less than 5W, When the motor cannot meet the installation requirements of the reducer, it needs to be negotiated separately.

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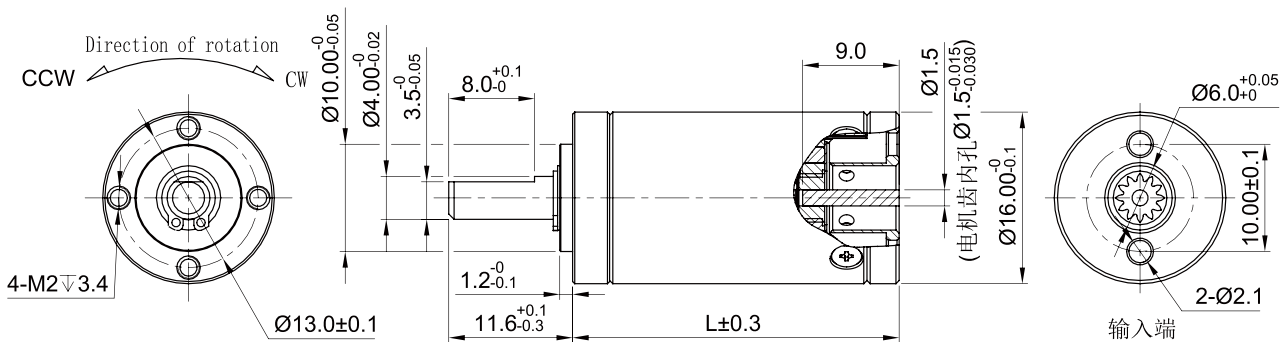
## PLANETARY GEAR HEAD 16P

## 行星结构减速箱

● 外壳材料	Housing material	金属 steel
● 齿轮材料	Gearwhddl material	金属 steel
● 输出轴承型式	Bearing at output	滚珠轴承 Ball bearings
● 径向负载	Radial load (10mm from flange)	≤ 1.6 Kgf
● 轴向负载	Shaft axial load	≤ 0.5 Kgf
● 径向间隙	Radial play of shaft	≤ 0.04mm
● 轴向间隙	Thrust play of shaft	≤ 0.2mm
● 背隙 (空载时)	Backlash, at no-load	≤ 1.5°
● 连续运行时最高允许输入转速	Max permissible speed at continuous working	≤ 8000rpm
● 工作温度范围	Operating temperature range	-40~120°C



### ■ 技术插图 Technical illustration



### ■ 齿轮箱规格 Gearbox Specifications

级数 Number of stages	L (mm)	减速比 Reduction ratio	额定允许负载 Exact reduction torque	瞬间允许负载 Max momentary tolerance torque	效率 Efficiency
1	17.55	3.85 / 4.33 / 4.63	4.0Kgf-cm	8.0Kgf-cm	90%
2	21.85	14.8 / 16.7 / 17.8 / 18.7 / 20 / 21.4	5.0Kgf-cm	10.0Kgf-cm	80%
3	26.15	57.1 / 64.2 / 68.6 / 72.2 / 77.2 / 81.2 / 82.5 / 86.8 / 92.8 / 99.25	7.0Kgf-cm	20.0Kgf-cm	73%
4	30.45	219.7 / 247 / 264.2 / 277.9 / 297.2 / 312.55 / 317.75 / 334.2 / 351.5 / 357.4 / 375.9 / 382.1 / 401.9 / 429.8 / 459.5	9.0Kgf-cm	26.0Kgf-cm	66%

### ■ 适配电机 Adapted Motor

额定电压 (VDC) Nominal(VDC)	3 ~ 36VDC
直流电机 DC motors	适配功率小于 10W 的直流电机, 当电机不能满足减速器安装要求时, 需另行商定 Suitable for DC motors with power less than 10W, When the motor cannot meet the installation requirements of the reducer, it needs to be negotiated separately.

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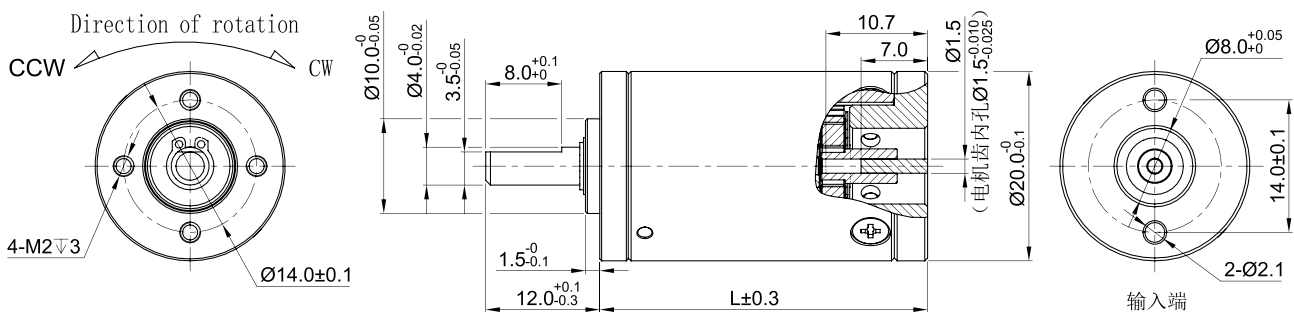
# PLANETARY GEAR HEAD 20P

# 行星结构减速箱

● 外壳材料	Housing material	金属 steel
● 齿轮材料	Gearwhddl material	金属 steel
● 输出轴承型式	Bearing at output	滚珠轴承 Ball bearings
● 径向负载	Radial load (10mm from flange)	≤ 1.6 Kgf
● 轴向负载	Shaft axial load	≤ 0.5 Kgf
● 径向间隙	Radial play of shaft	≤ 0.04mm
● 轴向间隙	Thrust play of shaft	≤ 0.2mm
● 背隙 (空载时)	Backlash, at no-load	≤ 1.5°
● 连续运行时最高允许输入转速	Max permissible speed at continuous working	≤ 8000rpm
● 工作温度范围	Operating temperature range	-40~120°C



## ■ 技术插图 Technical illustration



## ■ 齿轮箱规格 Gearbox Specifications

级数 Number of stages	L (mm)	减速比 Reduction ratio	额定允许负载 Exact reduction torque	瞬间允许负载 Max momentary tolerance torque	效率 Efficiency
1	20.1	4 / 4.75 / 6	6.0Kgf-cm	12.0Kgf-cm	90%
2	24.9	16 / 19 / 22.6 / 24 / 28.5 / 36	7.0Kgf-cm	14.0Kgf-cm	80%
3	29.7	64 / 76 / 90.2 / 96 / 107.2 / 114 / 135.4 / 144 / 171 / 216	10.0Kgf-cm	20.0Kgf-cm	73%
4	34.5	256 / 304 / 361 / 384 / 428.7 / 456 / 509.1 / 541.5 / 576 / 643 / 684 / 812.2 / 864 / 1026 / 1296	13.0Kgf-cm	26.0Kgf-cm	66%

## ■ 适配电机 Adapted Motor

额定电压 (VDC) Nominal(VDC)	3 ~ 36VDC
直流电机 DC motors	适配功率小于 20W 的直流电机, 当电机不能满足减速器安装要求时, 需另行商定 Suitable for DC motors with power less than 20W, When the motor cannot meet the installation requirements of the reducer, it needs to be negotiated separately.

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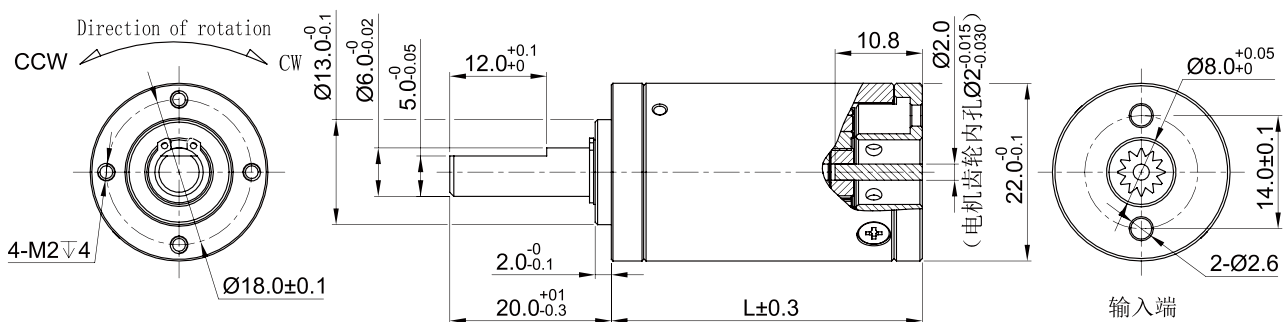
# PLANETARY GEAR HEAD 22P

# 行星结构减速箱

● 外壳材料	Housing material	金属 steel
● 齿轮材料	Gearwhddl material	金属 steel
● 输出轴承型式	Bearing at output	滚珠轴承 Ball bearings
● 径向负载	Radial load (10mm from flange)	≤ 1.6 Kgf
● 轴向负载	Shaft axial load	≤ 0.5 Kgf
● 径向间隙	Radial play of shaft	≤ 0.04mm
● 轴向间隙	Thrust play of shaft	≤ 0.2mm
● 背隙 (空载时)	Backlash, at no-load	≤ 1.5°
● 连续运行时最高允许输入转速	Max permissible speed at continuous working	≤ 8000rpm
● 工作温度范围	Operating temperature range	-40~120°C



## 技术插图 Technical illustration



## 齿轮箱规格 Gearbox Specifications

级数 Number of stages	L (mm)	减速比 Reduction ratio	额定允许负载 Exact reduction torque	瞬间允许负载 Max momentary tolerance torque	效率 Efficiency
1	22.6	3.5 / 4 / 4.75	8.0Kgf-cm	16.0Kgf-cm	90%
2	27.9	12.25 / 14 / 16 / 16.6 / 19 / 22.6	10.0Kgf-cm	20.0Kgf-cm	80%
3	33.2	42.9 / 49 / 56 / 58.2 / 64 / 66.5 / 76 / 79 / 90.25 / 107.2	15.0Kgf-cm	30.0Kgf-cm	73%
4	38.5	150.1 / 171.5 / 196 / 203.7 / 224 / 232.7 / 256 / 266 / 276.4 / 304 / 315.9 / 361 / 375.1 / 428.7 / 509.1	25.0Kgf-cm	50.0Kgf-cm	66%

## 适配电机 Adapted Motor

额定电压 (VDC) Nominal(VDC)	3 ~ 36VDC
直流电机 DC motors	适配功率小于 25W 的直流电机, 当电机不能满足减速器安装要求时, 需另行商定 Suitable for DC motors with power less than 25W, When the motor cannot meet the installation requirements of the reducer, it needs to be negotiated separately.

注: 我司可定制各种非标产品, 接受特殊规格的设计与开发, 如有需求欢迎来电咨询

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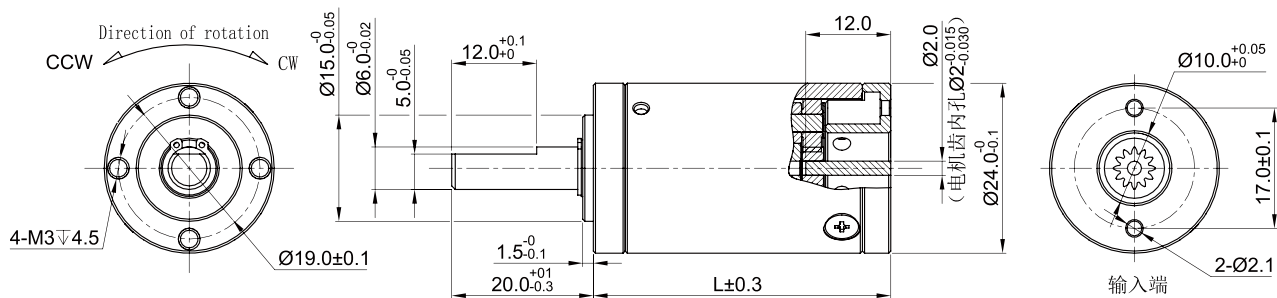
# PLANETARY GEAR HEAD 24P

# 行星结构减速箱

● 外壳材料	Housing material	金属 steel
● 齿轮材料	Gearwhddl material	金属 steel
● 输出轴承型式	Bearing at output	滚珠轴承 Ball bearings
● 径向负载	Radial load (10mm from flange)	≤ 3.0 Kgf
● 轴向负载	Shaft axial load	≤ 1.0 Kgf
● 径向间隙	Radial play of shaft	≤ 0.04mm
● 轴向间隙	Thrust play of shaft	≤ 0.3mm
● 背隙 (空载时)	Backlash, at no-load	≤ 1.2°
● 连续运行时最高允许输入转速	Max permissible speed at continuous working	≤ 8000rpm
● 工作温度范围	Operating temperature range	-40~120°C



## 技术插图 Technical illustration



## 齿轮箱规格 Gearbox Specifications

级数 Number of stages	L (mm)	减速比 Reduction ratio	额定允许负载 Exact reduction torque	瞬间允许负载 Max momentary tolerance torque	效率 Efficiency
1	24.6	3.83 / 4.4 / 5.25	10.0Kgf-cm	20.0Kgf-cm	90%
2	30.4	14.7 / 16.8 / 19.4 / 20.1 / 23 / 27.7	15.0Kgf-cm	30.0Kgf-cm	80%
3	36.2	56.2 / 64.5 / 74.1 / 77 / 85.2 / 88.5 / 101.6 / 105.6 / 121.3 / 144.7	20.0Kgf-cm	40.0Kgf-cm	73%
4	42.0	215.2 / 247.2 / 284 / 294.9 / 326.2 / 338.8 / 374.8 / 389.3 / 404.3 / 447.2 / 464.5 / 533.6 / 554.2 / 636.7 / 759.7	30.0Kgf-cm	60.0Kgf-cm	66%

## 适配电机 Adapted Motor

额定电压 (VDC) Nominal(VDC)	3 ~ 36VDC
直流电机 DC motors	适配功率小于 28W 的直流电机, 当电机不能满足减速器安装要求时, 需另行商定 Suitable for DC motors with power less than 28W, When the motor cannot meet the installation requirements of the reducer, it needs to be negotiated separately.

注: 我司可定制各种非标产品, 接受特殊规格的设计与开发, 如有需求欢迎来电咨询

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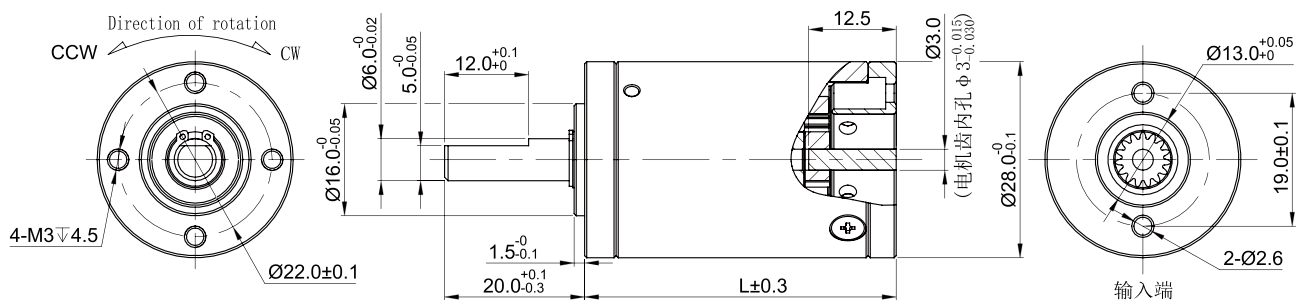
# PLANETARY GEAR HEAD 28P

# 行星结构减速箱

● 外壳材料	Housing material	金属 steel
● 齿轮材料	Gearwhddl material	金属 steel
● 输出轴承型式	Bearing at output	滚珠轴承 Ball bearings
● 径向负载	Radial load (10mm from flange)	≤ 6.0 Kgf
● 轴向负载	Shaft axial load	≤ 3.0 Kgf
● 径向间隙	Radial play of shaft	≤ 0.04mm
● 轴向间隙	Thrust play of shaft	≤ 0.3mm
● 背隙 (空载时)	Backlash, at no-load	≤ 1.2°
● 连续运行时最高允许输入转速	Max permissible speed at continuous working	≤ 8000rpm
● 工作温度范围	Operating temperature range	-40~120°C



## 技术插图 Technical illustration



## 齿轮箱规格 Gearbox Specifications

级数 Number of stages	L (mm)	减速比 Reduction ratio	额定允许负载 Exact reduction torque	瞬间允许负载 Max momentary tolerance torque	效率 Efficiency
1	25.6	3.83 / 4.4 / 5.25	20.0Kgf-cm	40.0Kgf-cm	90%
2	31.9	14.7 / 16.8 / 19.4 / 20.1 / 23 / 27.7	25.0Kgf-cm	50.0Kgf-cm	80%
3	38.2	56.2 / 64.5 / 74.1 / 77 / 85.2 / 88.5 / 101.6 / 105.6 / 121.3 / 144.7	35.0Kgf-cm	70.0Kgf-cm	73%
4	44.5	215.2 / 247.2 / 284 / 294.9 / 326.2 / 338.8 / 374.8 / 389.3 / 404.3 / 447.2 / 464.5 / 533.6 / 554.2 / 636.7 / 759.7	50.0Kgf-cm	100.0Kgf-cm	66%

## 适配电机 Adapted Motor

额定电压 (VDC) Nominal(VDC)	3 ~ 36VDC
直流电机 DC motors	适配功率小于 30W 的直流电机, 当电机不能满足减速器安装要求时, 需另行商定 Suitable for DC motors with power less than 30W, When the motor cannot meet the installation requirements of the reducer, it needs to be negotiated separately.

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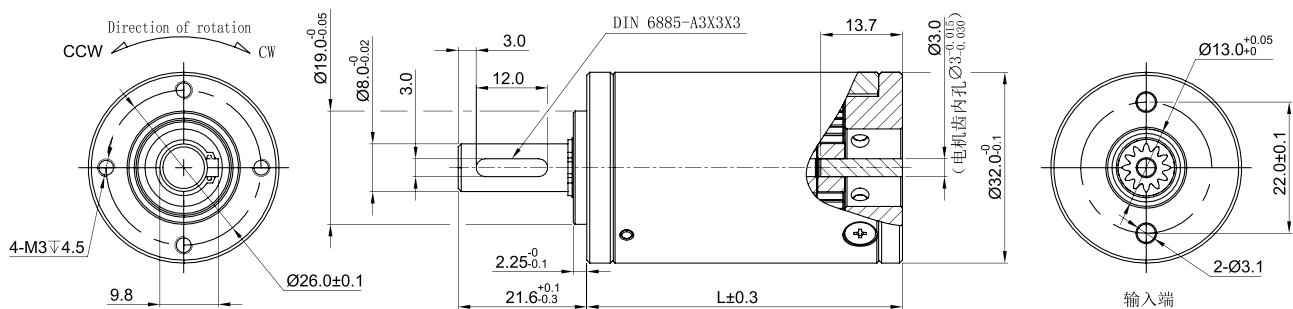
# PLANETARY GEAR HEAD 32P

# 行星结构减速箱

● 外壳材料	Housing material	金属 steel
● 齿轮材料	Gearwhddl material	金属 steel
● 输出轴承型式	Bearing at output	滚珠轴承 Ball bearings
● 径向负载	Radial load (10mm from flange)	≤ 8.0 Kgf
● 轴向负载	Shaft axial load	≤ 3.5 Kgf
● 径向间隙	Radial play of shaft	≤ 0.04mm
● 轴向间隙	Thrust play of shaft	≤ 0.3mm
● 背隙 (空载时)	Backlash, at no-load	≤ 1.2°
● 连续运行时最高允许输入转速	Max permissible speed at continuous working	≤ 8000rpm
● 工作温度范围	Operating temperature range	-40~120°C



## 技术插图 Technical illustration



## 齿轮箱规格 Gearbox Specifications

级数 Number of stages	L (mm)	减速比 Reduction ratio	额定允许负载 Exact reduction torque	瞬间允许负载 Max momentary tolerance torque	效率 Efficiency
1	28.05	3.5 / 4 / 4.75	35.0Kgf-cm	70.0Kgf-cm	90%
2	36.35	12.2 / 14 / 16 / 16.6 / 19 / 22.6	50.0Kgf-cm	100.0Kgf-cm	80%
3	44.65	42.9 / 49 / 56 / 58.2 / 64 / 66.5 / 76 / 79 / 90.2 / 107.2	65.0Kgf-cm	130.0Kgf-cm	73%
4	52.95	150.1 / 171.5 / 196 / 203.7 / 224 / 232.7 / 256 / 266 / 276.4 / 304 / 315.9 / 361 / 375.1 / 428.7 / 509.1	80.0Kgf-cm	160.0Kgf-cm	66%

## 适配电机 Adapted Motor

额定电压 (VDC) Nominal(VDC)	3 ~ 36VDC
直流电机 DC motors	适配功率小于 100W 的直流电机, 当电机不能满足减速器安装要求时, 需另行商定 Suitable for DC motors with power less than 100W, When the motor cannot meet the installation requirements of the reducer, it needs to be negotiated separately.

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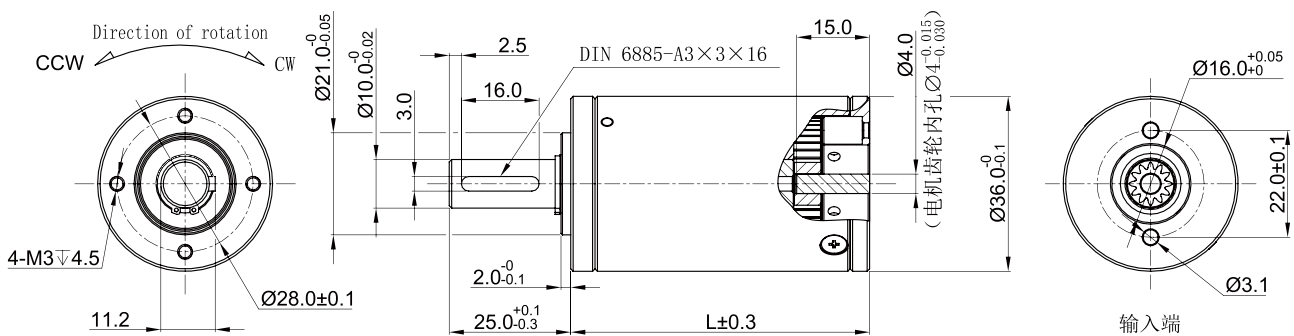
# PLANETARY GEAR HEAD 36P

# 行星结构减速箱

● 外壳材料	Housing material	金属 steel
● 齿轮材料	Gearwhddl material	金属 steel
● 输出轴承型式	Bearing at output	滚珠轴承 Ball bearings
● 径向负载	Radial load (10mm from flange)	≤ 10.0 Kgf
● 轴向负载	Shaft axial load	≤ 6.0 Kgf
● 径向间隙	Radial play of shaft	≤ 0.04mm
● 轴向间隙	Thrust play of shaft	≤ 0.3mm
● 背隙 (空载时)	Backlash, at no-load	≤ 1.2°
● 连续运行时最高允许输入转速	Max permissible speed at continuous working	≤ 8000rpm
● 工作温度范围	Operating temperature range	-40~120°C



## ■ 技术插图 Technical illustration



## ■ 齿轮箱规格 Gearbox Specifications

级数 Number of stages	L (mm)	减速比 Reduction ratio	额定允许负载 Exact reduction torque	瞬间允许负载 Max momentary tolerance torque	效率 Efficiency
1	30.6	3.66 / 4.2 / 5.0	40.0Kgf-cm	80.0Kgf-cm	90%
2	40.9	13.4 / 15.4 / 17.6 / 18.3 / 21 / 25	60.0Kgf-cm	120.0Kgf-cm	80%
3	51.2	49 / 56.3 / 64.6 / 67 / 74.1 / 76.9 / 88.2 / 91.5 / 105 / 125	80.0Kgf-cm	160.0Kgf-cm	73%
4	61.5	179.4 / 205.9 / 236.3 / 245.1 / 271.2 / 281.3 / 311.2 / 322.8 / 334.9 / 370.5 / 384.3 / 441 / 457.5 / 525 / 625	100.0Kgf-cm	200.0Kgf-cm	66%

## ■ 适配电机 Adapted Motor

额定电压 (VDC) Nominal(VDC)	3 ~ 48VDC
直流电机 DC motors	适配功率小于 150W 的直流电机, 当电机不能满足减速器安装要求时, 需另行商定 Suitable for DC motors with power less than 150W, When the motor cannot meet the installation requirements of the reducer, it needs to be negotiated separately.

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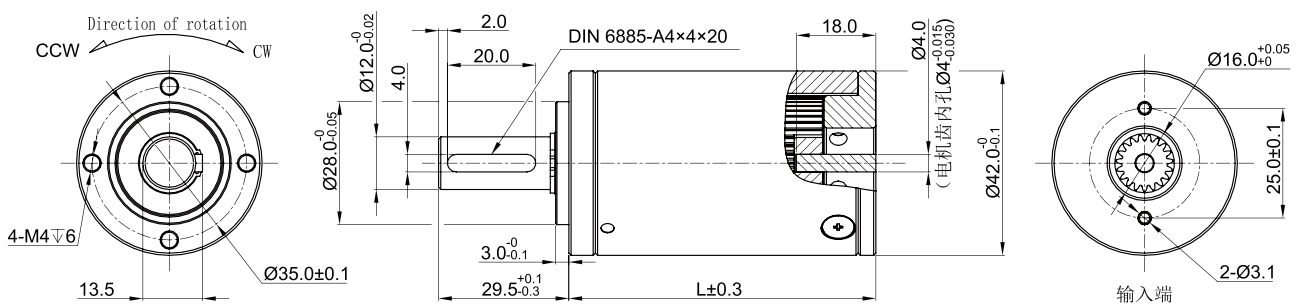
# PLANETARY GEAR HEAD 42P

# 行星结构减速箱

● 外壳材料	Housing material	金属 steel
● 齿轮材料	Gearwhddl material	金属 steel
● 输出轴承型式	Bearing at output	滚珠轴承 Ball bearings
● 径向负载	Radial load (10mm from flange)	≤ 16.0 Kgf
● 轴向负载	Shaft axial load	≤ 8.0 Kgf
● 径向间隙	Radial play of shaft	≤ 0.04mm
● 轴向间隙	Thrust play of shaft	≤ 0.3mm
● 背隙 (空载时)	Backlash, at no-load	≤ 1.2°
● 连续运行时最高允许输入转速	Max permissible speed at continuous working	≤ 8000rpm
● 工作温度范围	Operating temperature range	-40~120°C



## 技术插图 Technical illustration



## 齿轮箱规格 Gearbox Specifications

级数 Number of stages	L (mm)	减速比 Reduction ratio	额定允许负载 Exact reduction torque	瞬间允许负载 Max momentary tolerance torque	效率 Efficiency
1	35.6	3.8 / 4.3 / 5.1	80.0Kgf-cm	160.0Kgf-cm	90%
2	46.9	14.4 / 16.3 / 18.6 / 19.2 / 21.8 / 25.7	100.0Kgf-cm	200.0Kgf-cm	80%
3	58.2	54.4 / 61.9 / 70.4 / 72.8 / 80.1 / 82.8 / 94.2 / 97.4 / 110.8 / 130.3	120.0Kgf-cm	240.0Kgf-cm	73%
4	69.5	206.4 / 234.6 / 266.8 / 276 / 303.5 / 313.9 / 345 / 357 / 369.2 / 406 / 419.9 / 477.5 / 493.93 / 561.70 / 660.7	150.0Kgf-cm	300.0Kgf-cm	66%

## 适配电机 Adapted Motor

额定电压 (VDC) Nominal(VDC)	3 ~ 48VDC
直流电机 DC motors	适配功率小于 200W 的直流电机, 当电机不能满足减速器安装要求时, 需另行商定 Suitable for DC motors with power less than 200W, When the motor cannot meet the installation requirements of the reducer, it needs to be negotiated separately.

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