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More than 18 years of R&D and production experience of gearbox
Provide professional and customized service for you

About ZHAOWEI

Founded in 2001, Shenzhen ZHAOWEI Machinery & Electronics Co., Ltd. is a manufacturing enterprise that designs, develops and manufactures precision transmission systems. The products mainly involve intelligent automotive transmission, communication equipment, smart home, medical care, and electronic products, and we provide customized services for customers’ intelligent transmission.

18年以上的齿轮箱设计研发生产经验
为您提供专业的定制化服务

关于兆威
**Company Profile**

ZHAOWEI Machinery & Electronics Co., Ltd. is a manufacturing enterprise that designs, develops, and manufactures precision transmission systems, and provides customers with transmission design, mold manufacturing, parts production, and assembly services. Our products mainly involve intelligent automobile transmission, communication equipment, smart home, medical care, electronic products, and personalized core parts for various systems.

ZHAOWEI has been accredited with ISO 9001, ISO 14001, TS 16949, and ISO 13485 and won the title of High-Tech Enterprise. Meanwhile, the company attaches importance to the scientific and technological strength and independent R&D. In 4G base station antenna electric modulation system, home automation, intelligent robot core driving module, ZHAOWEI has obtained many patents of micro gear transmission. Besides, ZHAOWEI has set up a long-term strategic partnership with many Fortune 500 companies, such as Bosch, HUAWEI, etc.

ZHAOWEI has Japanese Sumitomo injection molding machines, Swiss AGIE wire cutting machines, AGIE EDM machines, MAKINO, FANUC, RODERS, and other high-precision processing equipment. ZHAOWEI has provided professional customization services in the intelligent micro-gear transmission for many domestic and foreign customers for many years.

**Company History**

In May 2011, product strategy was formulated which included automotive intelligent drive, communication equipment, smart home appliance, medical care, electronic products and customized core parts. ZHAOWEI has provided services for various systems, such as automotive, mobile communications, home appliances, and medical care.

In 2017, ZHAOWEI Industrial Park was established and put into use.
Business Partners

汽车行业 | Automobile
博世(BOSCH)、博泽(brose)、法雷奥(Valeo)
海拉(HELLA)、丰田(TOYOTA)、通用(General Motors)
比亚迪(BYD)、长城(Great Wall)、马勒(MAHLE)……

通讯行业 | Communication Equipment
华为(HUAWEI)、腾讯(Tencent)、HUBER+SUUNNER
vivo、OPPO……

医疗保健 | Medical Care
美敦力(Medtronic)、BD医疗(BD biosciences)、威高(WEGO)……

智能家居 | Smart Home
伊莱克斯(Electrolux)、康奈尔(CONAIR)、尚飞(sonmy)、三星(Samsung)
微软(Microsoft)、德国倍福(WUK)、格力(GREE)、美的(Midea)……

电子产品 | CE Products
vivo、OPPO、小米(Xiaomi)……
Quality Certification & Systems

ZhaoWei management system is the core part of enterprise operation. All employees strictly comply with the ISO system from product design, development to production.

We are committed to controlling the risks of our products and improving the reliability of our products under harsh environmental conditions.

Our mission is to provide customers with innovative products that meet their needs.

PRODUCT CERTIFICATION

CE  CCC  UL  RoHS

COMPANY CERTIFICATION

ISO13485 (CN18/42018)  ISO9001:2015 (CN11/30731)  ATF16949 (CN11/30730.01)  ISO14001 (L006616E0153R3M)

PROJECT MANAGEMENT

Shenzhen ZhaoWei Machinery & Electronics Co., Ltd. is committed to providing customers with innovative and stable quality products in strict accordance with the ZhaoWei project management system, so that the product market competitiveness meets the needs of customers. ZhaoWei project management system is committed to achieving the following objectives:

- Clear product selection
- Products have market competitiveness
- New products are released on time
- Product quality meets customer requirements
- To control the cost of project development
- To control product cost
研发团队

R&D Team

兆威机电的研究团队涵盖微型齿轮和齿轮箱设计开发、精密模具设计加工、注塑与组装自动化、齿轮检测和传动系统测试等领域。

团队构成 | TEAM COMPOSITION

兆威机电的R&D团队由教授、博士、硕士及高级工程师等组成。其中研发技术人员占比15%，研究生和本科生占比75%，平均年龄32岁，形成了从研发、设计、制造到实验检测的系统性、综合性的开发平台。

The team members of R&D includes professors, doctors, masters and senior engineers. Total amount of members are 250, including 3 gear specialists, 65 postgraduates, 75 undergraduates and the average age of members are 32 years old, which forms a systematic and comprehensive development platform from R&D, design, manufacturing to experimental testing.

15%
研发设计技术人员

32岁
平均年龄

75%
研究生本科生

专家

45年的齿轮设计
开发经验

自动化团队
Automation team

- 专业加工技术
Flexible machining technology
- 注塑无人化
Injection automation
- 组装自动化
Assembly automation

齿轮技术团队
Gear Technical Team

- 传动原理
Transmission principles
- 影像验证
Simulation verification
- 材料研究
Material research
- 软件开发
Software development

研发设计团队
R&D design team

- 齿轮箱的设计
Development of gearboxes
- 定制化开发
Customized development
- 马达设计
Motor design
- 模具设计
Mould design
- 成型工艺
Moulding process

齿轮检测实验室
Gear testing laboratory

- 齿轮双端仪
Gear double end instrument
- 齿轮检测中心
Gear testing center
- 三坐标测量
Three-coordinate measurement
- 热重分析仪
Thermo-gravimetric analyzer

综合测试实验室
Comprehensive test laboratory

- 噪声分析
Noise analysis
- 马达综合测试
Motor comprehensive test
- 高低温实验室
High and low temperature test
- 寿命测试
Life test
企业荣誉
Enterprise Honor

- “数字化设计与制造创新联盟”会员单位
- 广东省机器人增材企业
- 2017年度广东省“守合同重信用”企业
- moldbank控制系统优秀供应商
- 参与齿轮精度标准起草与制定
- 中国机械工业科学技术奖
- 广东（行业类）名牌企业
- "Digital Design and Manufacturing Innovation Alliance" Member
- Robot Training Enterprise of Guangdong Province
- "Abide by contract and credit" Enterprise of Guangdong Province
- Valuable supplier of Bosch chassis control system
- Participated in the drafting and formulation of gear precision standards
- China Machinery Industry Award of Science & Technology
- Guangdong Top Brand Enterprise

生产技术
Production technology

型腔压力技术 | CAVITY PRESSURE TECHNOLOGY

型腔压力技术是在模具型腔内安装压力传感器，通过压力曲线可以检测注塑成型过程中型腔压力的变化，准确地反映出注塑工艺的情况，监控产品品质。

- 型腔压力技术，可快速实现型腔压力曲线与模板的匹配，提高品质一致性；
- 通过对型腔压力峰值和曲线的综合分析进行监控，判断出制品的品质状况，结合伺服机械手实现对成型不良品的自动分拣。

Cavity pressure technology is installed the pressure sensors in the mold cavities, it can detect the pressure changes in the processing of injection molding by pressure curves, reflect the molding process and monitor product quality.

- The cavity pressure technology can quickly achieve the tool plate matching of cavity pressure curve and repeat the injection process to improve product quality and consistency
- By the comprehensive analysis of the peak pressure and pressure curve to identify the quality condition of the product, also transmit the data to the servo manipulator to pick up the defective part and stock separately automatically.

流形冷却技术 | COOLING TECHNOLOGY IN INJECTION MOLDING

传统冷却水路采用直通式，水路的设计受到加工方式的限制，冷却不均匀，冷却效果差。ZHEAOWEI采用3D激光打印技术，根据产品结构，可以加工出复杂的异形冷却水路，提高了产品的冷却效果，使产品的品质更稳定，生产效率更高。

The traditional cooling waterway adopts a straight-through type, and the design of the waterway is limited by the processing method, and the cooling is uneven and the effect is poor. ZHEAOWEI adopts 3D laser printing technology. According to the product structure, it can process complex shaped cooling water channels, improving the cooling effect of the products, making the quality of the products more stable and the production efficiency is higher.
模具开发
Tooling development

齿轮箱设计
Gear box design

齿轮箱设计综合平台 | GEARBOX DESIGN PLATFORM

齿轮箱箱体设计的重要性在齿轮箱设计过程中，齿箱箱体设计是齿轮箱设计的重要组成部分。齿箱箱体的设计直接影响到齿轮箱的性能和寿命。

齿轮箱箱体设计需要考虑的因素包括：

1. 齿箱箱体的尺寸和形状应与齿轮箱的具体要求相匹配。
2. 齿箱箱体应具有足够的强度和刚度，以承受工作时的载荷。
3. 齿箱箱体的加工工艺应易于实现，以保证齿轮箱的制造质量。
4. 齿箱箱体的材料应具有良好的耐腐蚀性和热稳定性。

齿轮箱箱体设计的过程包括：

1. 齿箱箱体的设计应根据齿轮箱的具体要求进行。
2. 齿箱箱体的设计应考虑齿轮箱的尺寸和形状。
3. 齿箱箱体的设计应考虑齿轮箱的载荷和工作条件。
4. 齿箱箱体的设计应考虑齿轮箱的加工工艺。
5. 齿箱箱体的设计应考虑齿轮箱的材料。

齿轮箱箱体设计的目的是为了保证齿轮箱的性能和寿命。

齿轮箱箱体设计的步骤包括：

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3. 齿箱箱体的设计应考虑齿轮箱的载荷和工作条件。
精密加工
Precision machining

精加工中心 | PRECISION PRECESSING CENTER

兆威机电模具制造中心拥有瑞士AGIE线切割机、AGIE火花机、日本沙迪克线切割、MAKINO、FANUC、RODERS、日本HAMAi吸气机、瑞士WAHL等多台加工设备，提高加工精度。

精密加工与品质控制
Machining and Quality Control

深圳市兆威机电股份有限公司拥有瑞士AGIE线切割机、AGIE火花机、MAKINO、HAMAi等众多加工设备和德国蔡司三坐标、DIATEST内齿测量仪、冷热冲击实验箱、喷淋实验箱、步进式恒温恒湿室、可程式恒温恒湿箱、齿轮双面啮合仪等质检设备，ZHAOWEI专注于微型齿轮和齿轮箱精密模具设计加工、齿轮检测和传动系统测试等，为客户提供精度高、质量优的产品。

Shenzhen Zhaowei Machinery & Electronics Co., Ltd. has many processing equipments such as Switzerland AGIE wire cutting machine, AGIE spark machine, MAKINO, HAMAI, etc. and Germany ZEISS three-coordinate, DIATEST internal tooth measuring instrument, cold and thermal shock testing chamber, Ran and spray testing chamber, step in-class constant temperature and humidity chamber, programmable constant temperature and humidity chamber, gear double-sided meshing instrument and other quality inspection equipment. ZHAOWEI specializes in precision gear design and processing of micro gears and gearboxes, gear detection and transmission system testing, providing high precision and high-quality products to customers.
品质控制

Quality Control

高精度检测设备 | HIGH PRECISION TESTING EQUIPMENT

Zhaowei has many high-precision measurement devices such as Germany Zeiss coordinate measuring machine, WERTH CMM, Japan Osaka gear measuring center, Japan Osaka gear meshing device, OGP plane detector, Switzerland thermogravimetric analyzer (TGA) etc., which improves the product quality.
OSAKA SEIMITSU CLP-35S gear test center, which mainly measures the tooth profile and tooth direction error (adjacent, single, cumulative) and radial runout of spur gears, helical gears, worm gears and internal gears, and can generate test reports for gear standards in various countries, such as ISO, DIN, JIS.

PULSE Labshop

The PULSE system is a multi-functional analyzer for noise and vibration consisting of software and hardware. Real-time FFT (spectral analysis), Fourier analysis, and third-octave analysis are available. At the same time, data acquisition, automatic calibration, measurement, real-time multiple analysis, and post-processing report generation are available.

OSAKA SEIMITSU gear meshing tester mainly uses the "standard gear" and "product gear" for the meshing test to measure the change of the distance between the axes of the two gears as the accuracy error of the measurement, which is used to test the accuracy of the single tooth. The error and the accuracy error of the whole circumference tooth are suitable for the judgment of the quality standard such as JIS/ISO/AGMA/DIN/JGMA.
**SURFACE ROUGHNESS MEASUREMENT**

MITUTOYO SUEFTEST SJ-41D is a surface roughness measuring system utilized to measure the roughness of gear surface and its test results are compliant with JIS (JIS B 0601-1984, JIS B 0601-1984, JIS B 0601-1984), VDA, ISO-199 and ANSI. The system not only calculates test data but also displays the combined calculation results and evaluation profiles in load curve and amplitude curve.

**LUMINESCENT INSTRUMENTS**

German Mahr roundness measuring instrument MMQ 150 is a measuring instrument that automatically measures size and position tolerances. It can be used in production or measurement rooms with precise measurements and optimized for geometric tolerances to reduce the number of defective parts.

The reliability and stability of a product is a comprehensive indicator for evaluating the technical level of the product. To analyze, evaluate, verify and improve the reliability of products, we test assemblies and parts of our products in failure conditions to get reliable data. Shenzhen has established a multi-functional laboratory such as 3D Vibration Testing Device, Constant Temperature and Humidity Chamber, Cold and Thermal Shock Testing Chamber, Rain and Spray Testing Chamber, Salt Spray Testing Chamber, Noise Room.

**LABORATORY EQUIPMENT**
Production Strength

Shenzhen ZhaoWei Machinery & Electronics Co., Ltd. has introduced automatic production lines and strictly implemented IATF16949 (CN11/30730.01), ISO14001 (U006616E0153R3M), ISO9001:2015 (CN11/30731), ISO13485 (CN18/4201) system standards. By adopting the production mode of short-line flattening, injection molding and assembly automation, Shenzhen ZhaoWei can shorten the production cycle, fast delivery and achieve win-win.

Parts production centre

ZHACWEI parts production centre has injection molding equipment imported from Japan, such as Sumitomo, FANAC, SODIC, etc. Through the cavity pressure technology to achieve automatic sorting, SAP production information management system is gradually introduced, forming a reliable manufacturing production center.
Automated parts production lines

All injection molding machines of Zhaowei are equipped with manipulators, which improves production efficiency and quality consistency.

- Taking servo manipulators can achieve automatic sorting of products
- Multifunctional and multi-directional process automation

Assembly lines

In the research of assembly lines, ZHAOWE applies lean production and industrial engineering technology to the production line, and improves the existing production line from place, production efficiency to the intensity of labor time per employee.
Automatic assembly lines

All injection machines are equipped with servo manipulators, which can improve production efficiency and consistency of production quality. The automatic production line image recognition, manipulators and EPSON system complete the assembly of the entire gearbox through the image recognition, servo robot cooperation.

PRODUCT SYSTEM

ZHAOWEI has developed the micro gearbox 3.4mm in the industry. Its gear outer diameter is 0.996mm, and modulus 0.065mm, effectively solving the intelligent transmission of tiny precision drive components, such as medical endoscope transmission, full-screen mobile phone camera intelligent transmission, vr/ vr intelligent transmission and so on.
齿轮箱

Gear box

- Universal motor drive, regulator gearbox and other gear transmission.
- Customized precision gear, turbine worm drive mechanism.
- Precision plastic gears, metal powder injection molded parts and integrated assembly components.
- Full range of precision geared planetary gearboxes, diameters 3, 4, 6, 8, 10, 12, 16, 20, 28, 32, 38mm, output speed 5-2000rpm, reduction ratio 5-1500, output torque 1gf.cm to 50Kg.cm.
Intelligent car drive solutions

Working closely with automakers, ZHAOWEI has focused on automotive gearbox design for 18 years. It is a certified supplier of automotive components in Bosch and VALEO, which provides customers with standardized micro gear box and customized drive system services such as rear door motor, EPB gearbox, etc. ZHAOWEI has provided technical support and quality service for automotive parts and micro transmission gear customers...

Car Accessories
- Doors and windows: lifting glass, door lock, skylight, power tailgate, curtain
- Seat: seat adjuster, safety headrest, smart armrest
- Instrument table: instrument motor, multifunction navigation
- Other: precision parts

Chassis & Accessories
- Engine: gear parts
- Brake: EPB/ABS parts
- Steering wheel: booster parts, motor components
- Other: precision parts

Electronic appliances
- Air conditioning: Active grille shutter, gear drive parts
- Lamp: Adaptive front-lighting system
- Navigation: intelligent navigation drive parts
- Other: precision parts
项目名称：
安全保护头枕

项目说明：
当车遇到后面碰撞时，头枕将主动保护乘客的头部。通过在头枕内部添加安全保护头枕组件，手动调整头枕可以上下前后调整。当车子被撞击时，整个头枕通过金属支撑柱向上移，从而保护人的头部。

Project name:
Active head restraint

Project instruction:
The headrest will actively protect the head and neck of passengers when the car is hit in the rear by adding safe headrest mechanisms to the headrest. The active headrest can be adjusted up and down and back and forth. When the car is hit, the entire headrest will move upward through the metal support to protect the head and neck.

项目名称：
新能源汽车智能充电桩

项目说明：
充电模式采用高电压、大电流的工作方式，对安全充电提出了高要求。充电桩在充电过程中需要在插座或固定座的对应位置，达到锁紧功能。充完电（反向运动时）与插座或固定座的配合位置，达到解锁功能，解决了充电安全，可实现无人看护情况下给电动汽车充电。

Project name:
EV charging station

Project instruction:
Charging stations generally use high voltage, high current working methods, and put forward high requirements for safety charging. Zhaoweid uses the reduction gear box and the screw rod to make the charging plug stably stay in the buckle of the socket or the fixed seat, when the charging plug is moving forward, and the anti-off lock function is achieved. When the charging is completed (in the reverse movement) and the socket or the buckle of the fixed seat is separated, the unlocking function is achieved, which improves the charging safety, and the electric vehicle can be charged under the condition of unattended care.
**Project name:**
Car seat

**Project instruction:**
In order to improve driving comfort, there is no need to change the sitting posture. The control key can be used to adjust the seat in 12 directions to achieve stepless adjustment. We use a small permanent magnet DC motor combined with helical gears for car seat transmission, through the control switch on the door armrest to control the seat circuit path and current direction, to achieve intelligent multifunctional adjustment of the seat horizontal, height, and angle.

**项目名称:**
汽车座椅调节

**项目说明:**
为提高行车舒适性，无需改变坐姿，使用控制键即可对座椅进行12向调整。我们使用小型永磁直流电机结合齿轮进行汽车座椅传动，通过门扶手上的控制开关来控制座椅电路通路和电流方向，实现智能调节座椅水平、高度、角度多功能调节的目的。
项目名称：
EPB电子驻车系统

项目说明：
我们通过对电子驻车制动系统的分析及设计，采取在短时间内响应、在大电流下大力矩的驱动下，解决整个电子驻车系统的齿轮及齿形后问题，减少产品噪音及震动对模块性能的影响。

Project name:
Electric park brake EPB

Project instruction:
In order to make the gearbox respond in a short time and output large torque under high current, through the analysis and design of the electric park brake system, ZH-AOWEI modifies the gears and tooth profiles of the electric park brake system, achieving small volume and large torque, and low noise and reducing the impact of product noise and vibration on the performance of the module.

项目名称：
汽车电动尾门推杆

项目说明：
我们对整体的尾门电动推杆电机齿轮及齿轮件进行优化及尾门齿轮箱的结构调整，解决汽车尾门电动推杆力矩小、噪音大的技术难题。

Project name:
Power tailgate

Project instruction:
Zhao's constantly optimizes gears for power tailgate and adjusts structures of gearboxes, which solves the technical problem of small torque and high noise of the power tailgate push rod.
**Project name:**
Instrument panel

**Project instruction:**
ZHAIWEI continuously adjusts the structure of instrument panel gearbox and gear accuracy, solving the jitter of the pointer and the noise problem of the product during use.

**Project name:**
Panoramic sliding sunroof

**Project instruction:**
Through the analysis and design of panoramic sliding sunroof, ZHAOYI modifies the gears and tooth profiles of panoramic sliding sunroof gearbox, realizing the noise reduction function of the gearbox under the frequency vibration and the demand of large torque output in a small volume.
项目名称：
汽车空调风门控制器

Project Name:
Car air conditioning damper actuator

Project instruction:
Through the optimization of the damper actuator gearbox and the optimization of the product structure, we solve the problem of damper actuator angle and gear damage use in long term.

项目名称：
汽车大灯调节器

Project name:
Adaptive front-lighting system(AFS)

Project instruction:
By optimizing the tooth shape and the structure of the AFS gearbox, ZHAOWEI solves some problem, for example, gear damage when used in long-term, the unstable angle of the gear drive on a pothole road.
Project name: Electric folding side mirror gearbox for new energy vehicle

Project instruction: Based on the consideration of driving safety in the market, Zhaowei researches and designs the gearbox solution for rearview mirror base, so that the electric folding side mirror can be adjusted at will or can be folded and opened in time to reduce the risk of scratching and breaking.

Project name: Head-up display (HUD)

Project instruction: The gearbox solution is used to drive the car HUD to flip, intelligently controlling the angle of the display flip, meeting the display requirements of HUD for users of different heights.
Intelligent Communication Device Drive Systems Open the 5G Age

From 4G to 5G is unlikely to happen overnight, because achieving wider spectrum, unparalleled millimeter-wave bandwidth (28 GHz and 39 GHz), and ongoing but imperfect standards are challenges. In order to meet these challenges and to make communication devices faster, less energy consuming and more environmentally friendly, ZHAOWEI which has 18 years of experience in developing and designing miniature gearboxes and combined with the needs of antenna (wireless) front-line manufacturers, designed carefully micro gearboxes for the antenna. The gearboxes for the antenna is micro, large torque, small volume, low noise, high efficiency and resistance to high and low temperatures.

- Video conference system
- Smart PTZ camera
- Seismic tester
- Mobile phone rotating camera
- Base station antenna

Project name: Car tailgate electric lock-driving box

Project instruction: Optimize the overall rear door gear and scheme of the car and adjust the cable structure to solve the difficulty of the lock-driving box torque and the noise problem of the gear box.
MOBILE PHONE ELECTRIC ROTATING CAMERA

Project name:
Mobile phone electric rotating camera

Project instruction:
The 6MM planetary reduction gearbox developed by ZHAIOWEI meets the demand of small volume and long service life of the mobile phone camera drive structure. Then the mobile phone camera stepping motor of the gearbox makes the camera have high flexibility of electric rotation and rotation in a limited space.

ALL-SCREEN PHONE CAMERA

Project name:
All-screen phone camera

Project instruction:
Using combination of the stepping motor and the planetary gearbox, the all-screen phone camera motor and gearbox solution solves how to place the full screen front camera. Our planetary gearbox solutions of 3.4mm, 4mm, 5mm, reduction transmission can be applied to multiple solutions such as mobile phone rear camera, side camera flip and machine top camera lift.
地震测试仪 | SEISMIC TESTING INSTRUMENT

项目名称：
地震测试仪齿轮箱

项目说明：
为解决地震时各种噪声干扰以及触发点不固定造成的波形记录抖动或重叠情况，地震测试仪齿轮箱通过永磁交流电机数字控制传动，同时产品结构上采用斜齿轮的精密传动及丝杆的作用传递来达到需要的精度，使得地震仪对波形记录的形成不会产生抖动或重叠。

Project name:
Seismic testing instrument

Project instruction:
In order to solve the jitter or overlap of the waveform records during the earthquake caused by the various noise interferences and the instability of the trigger point, the seismic testing instrument gearbox is digitally controlled and transmitted by the permanent magnet DC motor, and the gearbox structure adopts the helical gear worm of the precision transmission and the lead screw, realizing the required accuracy. Then the seismic testing instrument does not create jitter or overlap on the formation of the waveform record.

5G基站天线 | 5G BASE STATION ANTENNA

项目名称：
5G基站天线

项目说明：
为解决齿轮箱在极寒气候下难以正常工作，使用寿命短的问题，我们优化了传动丝杆和螺母之间的间隙，提高产品在-40℃ - 85℃高温传动，性能稳定，达到10年的使用寿命。

Project name:
5G base station antenna

Project instruction:
In order to solve some problems, for example, the gearbox is difficult to work normally for a long time under extreme weather conditions, the gearbox has a short service life, we have optimized the gap between the drive screw and the nut to improve high efficiency drive and stable performance of the gearbox at -40℃ - 85℃, and reach a 10-year service life.
无纸化办公显示屏 | PAPERLESS OFFICE LIFT TABLET

**Project name:**
Paperless office lift tablet.

**Project instruction:**
The planetary gearbox is combined with the stepping motor and the worm turbine to perform a first-stage deceleration. A nut fixed on the inner tube is rotated by a push rod and the nut is pushed up. The drive solution for paperless office lift tablet can adjust the tilt angle of the lift tablet according to the sitting posture and height.

视频会议系统 | VIDEO CONFERENCE EQUIPMENT

**Project name:**
Video conference equipment.

**Project instruction:**
The main problem with video conference equipment gearboxes is the gear backlash. By optimizing the structure and design of the entire gearbox, we control the gear backlash of the gearbox to a small arc to achieve low noise.

项目名称：
视频会议系统

项目说明：
视频会议系统齿轮箱的主要问题是回程差。我们通过对整个齿轮箱的结构及设计进行优化，将回程差控制在小弧度以内，实现产品的低噪音。
项目名称：VR磁感应系统

项目说明：
VR磁感应系统齿轮箱配合无刷电机控制整个VR系统中倾斜传感器的信号传输，实现稳定控制自转的速度，降低VR磁感应系统受动性，提高磁铁的平衡的矫正。

Project name: VR magnetic induction system

Project instruction: The VR magnetic induction system gear box cooperates with the brushless motor to control the signal transmission and the stability control of the tilt sensor in the whole VR system, ensuring a stable rotation speed of the VR system and improving the balance of the magnet.
项目名称：
高速球摄像头云台

项目说明：
通过内置高解细分的步进电机，摄像头支架齿轮箱可解决
由于摄像头支架松动、垂直运行角度误差，运行速度和抖动
造成摄像模糊的问题，提高产品的稳定性与使用寿命。

Project name:
PTZ camera

Project instruction:
Through the built-in high-resolution subdivision stepper motor and the PTZ camera gearbox, it can solve the problem
that the camera is not clear due to the horizontal, vertical
running or running speed of the camera, and improve the
stability and service life of the product.

项目名称：
摄像头对焦马达

项目说明：
在极小的安装空间内，通过优化调整齿轮箱结构，实现小
型高精度的对焦解决方案，解决在小、轻重量下摄像
头动态运动的稳定性和低噪音。

Project name:
Camera autofocus motor

Project instruction:
In the small installation space, optimize the gearbox structure
to realize the small volume and high-precision high-torque
transmission demand, solving the stability and low noise of the
dynamic movement of the camera in light weight.
**Project name:**
Motorized Pan and Tilt Head

**Project instruction:**
The common pan/tilt will have gap jitter after 2-3 years of use. ZHAIOWEI uses permanent magnet DC motor and helical gear as the transmission mode, which solves the problem of jitter and noise of the electric pan/tilt, and improves the service life and stability of the product.

**Project name:**
5G smart antenna

**Project instruction:**
We use the spindle motor’s push rod motor and gearbox drive thread spindle to intelligently adjust the elevation angle of the base station antenna according to the bandwidth flow used by the human flow which improves the products high and low temperature difference and humidity difference.
智能医疗传动解决方案

Intelligent medical drive solutions

步进电机和行星齿轮箱在医疗机械行业逐渐取代伺服电机，让传统医疗走向智慧大健康。我们
18年致力于向智能医疗电机市场提供创新性的技术
解决方案和创新，研发设计高端微型、大扭矩小
体积、低噪音、耐高低温差、高效率等特点的医疗
用电机。

- 智能微型胰岛素泵
- 微创手术切割吻合器
- 康复鞋
- 智能输液系统
- 骨科手术切面清洗器
- 自动刀
- 自动脉搏监测器

Stepper motor with planetary gearboxes replace gradually
serve motor in the medical devices, making traditional
medical step into big health. For 18 years, ZHAOWEI has
been dedicated to providing innovative solutions and
services for the market of smart medical, and develops and
designs the medical motors with the characteristics of
miniature, large torque, small volume, low noise, high
efficiency, resistance to high and low temperatures and so
on.

- Insulin Pump
- Surgical Stapling Device
- Therapeutic Shoes
- Smart Infusion Pump
- Pulse Lavage System
- Self Coagulation Knife
- Wrist Blood Pressure Monitors

项目名称：
智能微型胰岛素泵

项目说明：
用于治疗糖尿病患者，并能智能控制胰岛素的注射
量，我们通过步进电机的传动来控制丝杆的转动，使得设
计出来的胰岛素泵转轴达到毫米级的尺寸。通过传动
丝杆的设计可以的控制胰岛素的注射量，从而让血糖随时
保持均衡的水平。

Project name:
Insulin pump

Project instruction:
This insulin pump is very convenient for diabetics, because it
can intelligently control the injection volume of insulin. We
control the ejection of the screw by the transmission of the
stepping motor, so that the designed insulin gearbox can
reach the size of the matchbox.
项目名称：Surgical stapling device gearbox

项目说明：
我们专注于微创手术用的微型齿轮箱的研发。开发的微型直剪吻合器齿轮箱
的传动模块可驱动手术器械，解决在有限的空间输出大力矩的难点及产品使用过程中
的噪音问题。通过对传动模组的结构研究，在齿轮箱的材质及齿轮的优化设计上
传动系统中的大力矩低噪音的问题。

Project name: Surgical stapling device gearbox

Project instruction:
We specialize in the development of miniature gearboxes. The transmission module of the developed surgical stapling device gearbox can drive surgical instruments to solve the difficulty of outputting large torque in a limited space and the noise problem of the product during use. By studying the structure of the stapling device and optimizing the material of the gearbox and gears, we realize large torque and low noise in the instrument transmission system.

项目名称：Therapeutic shoe

项目说明：
智能医疗按摩鞋

Project name: Therapeutic shoe

Project instruction:
The brushless motor of the massage shoe has almost zero self-locking. In order to solve this problem, the brushless motor transmits its torque to the left and right feet by the parallel gearbox, then the screw controls the massage board on the bracket to perform the lifting movement, realizing feet massage, which improves blood circulation and lower body medical rehabilitation.
智能输液系统 | SMART INFUSION PUMP

项目名称：
智能输液系统

项目说明：
为提高输液系统自动化与降低输液过程中的隐患，我们通过对输送泵和输液器的优化，使智能输液系统结构简单、操作方便、电磁兼容性好。

Project name:
Smart infusion pump

Project instruction:
To improve the automation of the infusion system and reduce the hidden troubles in the infusion process, we combine the pressure of the helical worm and the pressure of the infusion to make the telescopic head of the infusion pump gear box intelligently open or close, achieving accurate position control, low noise and stable transmission efficiency.

自凝刀（苏克泵刀） | SELF COAGULATION KNIFE (SUCCO PUMP KNIFE)

项目名称：
自凝刀（苏克泵刀）

项目说明：
针对超声输出自身及可靠性要求较高，我们对自凝刀的驱动机构进行分析，研发设计了自凝刀双斜齿的传动齿轮箱，调整优化齿轮参数，解决了齿轮在传动过程中的噪声及传动效率问题，得到客户的认可。

Project name:
Self coagulation knife (SUCCO pump knife)

Project instruction:
For the medical gearbox, the requirements for noise and reliability are relatively high. We analyzed the driving structure of the self-condensing knife, developed and designed the gear box of the self-condensing knife and double helical gear, adjusting and optimizing the gear parameters, and solving the noise problem, and the gear transmission efficiency, which is recognized by our customers.
项目名称：
按摩器

项目说明：
为解决小体积齿轮箱的寿命、力矩及噪音的问题，我们
通过改进齿轮箱的结构及方案进行研发，产品满足于按
摩器产品的力矩、寿命客户要求，并实现产品的低噪音需
求。

Project name: Scalp and visage massager

Project instruction: In order to solve the problem of the service life, torque and
noise of the small-volume gearbox, we modify the structure
and scheme of the massager gearbox. The product satisfies
the torque and life requirements of the massager product and
realizes the low noise demand of the product.

项目名称：
骨科手术创面冲洗泵

项目说明：
产品应用于骨科手术冲洗流量的调节，冲洗泵压力可调，
具有合理的中低档压力设置，根据不同的腔面及手术要求
进行合理的临床选择，冲洗流量大可大可小，提高手术效
率。

Project name: Orthopedic surgery lavage system

Project instruction: Our gearbox is applied to the adjustment of the irrigation flow
of orthopedic surgery. The orthopedic surgery lavage system
has the appropriate medium and low pressure setting, so the
pressure of the flushing pump is adjustable. According to
different wounds and surgical requirements, reasonable
clinical selection is made, and the flushing flow can be large
or small, which improves the operating efficiency.
Project name:
Wrist blood pressure monitors

Project instruction:
We use a worm and a worm gear of a plastic planetary gearbox to perform a first-stage deceleration, so that the nut fixed to the inner tube forward and backward with the screw. By switching the positive and negative poles of 24V DC, the motor will rotate forward or reverse, thus achieving the telescopic action of the wrist blood pressure monitors wristband.
马桶自动清洗泵 | AUTOMATIC TOILET CLEANING PUMP

项目名称：
马桶自动清洗泵

项目说明：
我们结合市场需求开发的马桶自动清洗泵齿轮箱。通过斜齿轮和蜗杆蜗轮来控制清洗剂的喷洒，结合感应器在设定时间内均匀喷洒至马桶内壁，实现自动清洗的功能。

Project name: Automatic toilet cleaning pump

Project instruction:
ZHAOWEI combines the market demand to develop the automatic cleaning pump gearbox of the toilet. The gearbox can control the intelligent transmission of the cleaning agent spray pump through the helical gear, combining with sensors, so the toilet cleaning pump can evenly spray the cleaning agent for one or two circles on the inner wall of the toilet in the set time to realize cleaning function.

扫地机 | ROBOT VACUUM CLEANER

项目名称：
扫地机

项目说明：
我们通过对扫地机结构和齿轮进行优化设计，采用平行齿轮实现扫地机齿轮箱噪音小，扭矩大。为避免头发缠绕进入驱动装置而导致马达损坏，我们对主刷齿轮箱进行了结构优化设计，有效地提高了产品的使用寿命。

Project name: Robot Vacuum cleaner

Project instruction:
Through the optimized design of the gears and tooth profiles of the vacuum cleaner gearbox, the parallel gear is used to realize the low noise and large torque of the vacuum cleaner gearbox. In order to prevent the hair from being damaged by winding the hair into the driving device, we have optimized the structure of the main brush gearbox to effectively improve the service life of the product.
Project name: Sensor trash can

Project instruction: In order to realize the stability of the automatic flip cover of the trash can, we design the transmission module of the damping reduction gear box, and adopt the double structure of the helical gear and the planetary gear box which can turn up the cover of the trash can up to 15kg, improving the comfort and convenience of the smart home.

项目名称：智能翻盖垃圾桶
项目说明：
为实现垃圾桶自动翻盖的稳定性，我们设计了模态减速齿轮箱的传动模块，采用斜齿与行星齿轮箱双重结构，实现确定翻起重量达15kg的盖子，翻盖时间短，提高了智能家居的舒适性与便捷性。

Project name: Gas valve of gas water heater

Project instruction: The gas valve gearbox of gas water heater has two, three, four stage drive changes, which can change the reduction ratio and adjust the input speed and torque of the gearbox according to the design requirements of the gas valve motor, so it can intelligently and stably control the gas heater valve to keep water temperature constant.

项目名称：燃气热水器天然气阀
项目说明：
燃气热水器天然气阀齿轮箱有二级、三级、四级传动变化，可根据天然气气阀电机的设计需求进行减速比的调整及调整齿轮箱的输入转速及功率，确保能够准确控制天然气阀门，保证天然气水温恒定。
项目名称：
智能升降桌

项目说明：
针对家庭生活中，大人与儿童的身高高度不一，我们设计研发了智能升降桌齿轮箱方案。在桌子的升降系统加入升降杆齿轮箱运动组件实现智能升降桌大范围升降，解决小体积大力矩升降不卡顿，稳定性好，噪音低。

Project name: 
Smart lift desk

Project instruction: 
For family life, adults and children are different in height. We design and develop the intelligent lifting table gearbox solution. In the lifting system of the table, we add the lifting rod gearbox moving component to realize the wide lifting of the intelligent lifting table, which effectively solves some challenges, such as the small volume and large torque, lifting or lowering is not stuck, good stability and low noise.

项目名称：
智能电动窗帘

项目说明：
采用人字齿的设计，解决管状行星电机齿轮箱在室内的噪音大的问题，大大提高了生活品质。

Project Name: 
Electric curtain

Project instruction: 
The design of the herringbone teeth solves the problem of large noise inside the tubular planetary motor gearbox, which greatly improves the quality of life.
项目名称：
智能马桶翻盖

项目说明：
为解决双个翻盖面板的困难及翻盖时间长及力矩寿命的问题，我们研发出阻尼减速齿轮箱机构，采用斜齿及行星齿轮双重结构，能轻松翻起重达15kg的面盖，从0°到90°的翻盖仅需要3秒。

Project name: Automatic toilet seat cover

Project instruction: In order to solve the problems of double flip panels and the long flip time and torque life, we have developed a damping reduction gearbox mechanism, which adopts a double structure of helical gears and planetary gearboxes, so it takes only 3 seconds to flip a cover weighing up to 15kg easily, from 0° to 90°.

项目名称：
弧形齿条

项目说明：
将减速齿轮箱应用在空调开合系统，解决家用空调低噪音、开合平稳及大角度送风的难题。

Project name: Arc rack for air conditioner

Project instruction: The reduction gear box is applied to an air-conditioning opening system which can effectively solve problems of low noise, a large angle of air supply of a household air conditioner and makes the air conditioner open stably.
项目名称：
自动洗手液给皂齿轮泵

项目说明：
解决液体回流及输出流量的难题，自动洗手液给皂齿轮泵
齿轮箱解决方案，可智能控制驱动出液的压力按钮，促使
给皂（出液）的流量稳定及解决产品的给皂稳定性问题。

Project name: Automatic soap dispenser

Project instruction: In order to solve the problem of liquid reflux and output flow, the intelligent drive of the automatic soap dispenser gearbox solution controls the pressure button, which is advantageous to
give soap timely and make the flow rate of soap more stable.

项目名称：
智能家居门锁

项目说明：
解决智能门锁的安全性和可靠性，我们通过智能家居门锁
电机控制系统解决方案，可在锁芯系统植入齿轮齿条电
机，提高开锁的可靠性，实现开锁速度和门锁的安全性，
锁芯使用寿命长。

Project name: Smart door lock

Project instruction: In order to solve the security and reliability of the smart door lock, Zhaowei puts forward the solution of micro motor for
smart door lock. By implanting the gear motor into the lock
core system, it can ensure the reliability of unlocking, improve the
speed of opening lock and improve the safety of the door
lock, meanwhile it can prolong the lock core service life.
项目名称：智能电动沙发  
Project name: Electric sofa  
Project instruction: Zhaowei uses customized planetary gearbox to realize the transmission torque requirement of sofa motor with small volume and large torque. The reduction ratio, input speed and torque can be adjusted as needs.

项目名称：智能升降料理锅  
Project name: Lift hot pot cooker  
Project instruction: The lift gearbox is built into the lift guide column of lift hot pot cooker to reduce the mechanical loss, which meets the needs of low noise, stability and smooth operation, realizing the intelligent lift of the hot pot.
**Project name:** Electric lift mosquito net

**Project instruction:**
The drive system for electric lift mosquito net realizes the horizontal roll up function of mosquito net by the screw clockwise and counterclockwise rotation and the electric horizontal rotating rod, thereby intelligently rolling up or unwinding the electric mosquito net.

**Project name:** Range hood flip cover

**Project instruction:**
The solution adopts the double structure of the worm gear and the planetary gear box to solve the difficulty of the automatic flip panel of the range hood, and also shortens the flip time and improves the service life of the product.
**Project name:**
Pop-up camera TV

**Project instruction:**
The lift gear drive structure is built into the TV set to intelligently control the concealment and ejection of the camera.

**Project name:**
Intelligent locks for cabinet or drawer

**Project instruction:**
Zhaowei uses the industry’s smaller 10MM planetary gearbox to solve the reliability of unlocking and locking. The unlocking and locking functions of the lock cylinder can be effectively controlled by the geared motor drive.
项目名称：
洗碗机自动喷洗泵

项目说明：
使得设计出来的洗碗机齿轮箱达到火柴盒大小的尺寸，通过步进电机的齿轮传动来控制丝杆的运动，可以控制洗碗粉或清洁剂的用量，实现自动给定给清洁剂。

Project name:
Automatic dishwasher pump

Project instruction:
The dishwasher gearbox designed by Zhaowei is up to the size of a matchbox. Through the gear transmission of stepping motor to control the ejection of screw, the amount of the dishwasher powder or the cleaning agent can be controlled, and the detergent can be given automatically and stably.

智能机器人传动解决方案
Intelligent robot drive solutions

ZHAOWEI has been providing brushless reduction motors with high speed and small volume for 18 years. Our products are widely used in key motion control fields such as cooperative robot joint, light robot joint, medical robot and so on. ZHAOWEI can custom products according to your needs.

Robot Reduction motors
- Small volume. Large torque
- Low power consumption. Small gap
- High efficiency. Low noise
- High speed. Stability
- Easy to install. Long service life
项目名称：儿童智能陪护机器人

项目说明：
我们生产的儿童智能陪护机器人减速齿轮箱产品规格有3.4MM到45MM不等。公司研发的机器人减速器在结构、空间设计实现创新,不仅提高性能，降低成本，还具有阻断性大、振动小、耐冲击性强、承载能力大、启动功率大、传动低效率等特点，更好地满足六自由度机器人适应性、自主性传动需求。

项目名称：Intelligent escort robot

项目说明：
Intelligent escort robot

Project instruction: Our escort robot gearboxes range in size from 3.4mm to 45mm. The robot reducer developed by the company realizes innovation in structure and space design, which not only improves reliability and reduces total cost, but also has the characteristics of large torque rigidity, small vibration, strong impact resistance, large bearing capacity, large starting power and high transmission efficiency. Then it can better meet the adaptability and autonomous transmission requirements of six degrees of freedom robots.

项目名称：机器人关节

项目说明：
为适应现代高科技研制的各种类型的机器人关节需求，我们生产的机器人关节减速齿轮箱产品规格有3.4MM到45MM不等，为降低机器人关节的误差差，我们在KISSOFF的基础上，根据公司多年的研发设计经验结合机器人关节的市场需求优化了机器人关节的设计及制造精度。

项目名称：Robot joint gearbox

Project instruction: In order to meet the needs of various types of robot joints developed by modern high technology, we have produced robot joint gearbox specifications ranging from 3.4MM to 45MM. In order to reduce the gear backlash of the robot steering gear on the basis of KISSOFF, ZHAOWEI optimizes the design and manufacturing precision of the steering gear according to our many years of R & D experience and the market demand of robot joint.
**Project name:**
Educational robot.

**Project instruction:**
Based on the customer's requirements for the "tablet + smart base" product, we use multi-stage gearbox design structure to intelligently adjust the base angle of the tablet according to the distance of the eye from the screen, then it can reduce the damage of the electronic screen to the eyes of the children, and develop a good view habit.

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**Project name:**
Q robot gearbox.

**Project instruction:**
Based on the customer's requirement of shape size and intelligent transmission, through multi-stage gearbox design structure, the small Q robot can respond and interact with each other through head and eye according to human language, touch and other behaviors.
项目名称：
伺服电机用于机器人头部旋转

Project name:
Servo motors for robot head rotation

项目说明：
伺服电机用于机器人头部旋转，可实现机器人头部的同步转动，提高了机器人的使用便利度。

Project instruction:
The Zhaowei gearbox drive module for robot head rotation can realize the stability of the head of the robot to simulate the left and right and up and down rotation of the human head, and improves the service life of the robot.

项目名称：
轮式行走机器人

Project name:
Wheeled robots

项目说明：
轮式行走机器人结构简单，空间设计严格，具有高刚性、低振动、冲击性能、承载能力大、体积小等特点，更好满足轻自由度机器人的传动需求。

Project instruction:
The servo motor for wheeled robots gear has strict structure and space design, and has the characteristics of large torque rigidity, small vibration, strong impact resistance, large bearing capacity and small volume, which better meets the drive requirements of six-degree-of-freedom robots.
Project name: Coding robot motor

Project instruction: The servo motor solution is applied to the angle sensor and gear drive of the coding robot, which improves the joint control of the robot and makes the position of the robot joint rotation and other movable parts more flexible.

Project name: Robot eyes system

Project instruction: By optimizing the wear-resistant material technology, processing technology technology, lubrication technology and improving transmission mechanism, Zhaowei developed a low-weight series of visual reducers suitable for robots to improve the perception and recognition performance of intelligent robots.
**Project name:**
Automatic feeder

**Project instruction:**
By the planetary gear box and stepper motor, the feeder automatically supplies pets foods. We provide customized products as requirement, helping the feeder technology to be more flexible.

**Project name:**
Intelligent building block drive

**Project instruction:**
In the limited space, the planetary gearbox structure is optimized and adjusted to meet the transmission requirements of small volume and large torque, and to solve the stability of walking, grabbing, shooting or load-bearing of intelligent building blocks.
个人护理传动解决方案

Project name:
Servo motors for medical robot.

Project instruction:
We adjusted and optimized the gearbox structure of the servo motor for medical robot, solved the difficulty of outputting large torque in the limited space of the medical servo motor and the noise problem during the use of the product, and realized the robot six-degree-of-freedom modular transmission.
筋膜枪 | FASCIA GUN

项目名称：筋膜枪

项目说明：通过对齿箱结构的调整，对筋膜枪传动齿轮及齿轮做修正，解决小体积、大功率及齿轮箱的噪音问题，减少产品噪音及振动对使用者的伤害。

Project name: Fascia gun

Project instruction: By adjusting the gearbox structure, we modified the drive gear and tooth profile of the fascia gun to solve the problems of small volume and large torque, reducing the influence of product noise and vibration on the performance of the module.

电动磨脚器 | ELECTRIC FOOT GRINDER

项目名称：电动磨脚器

项目说明：通过变频电源启动微型电机旋转，带动内部行星结构的齿轮啮合，可以智能调整磨头旋转力度，控制磨脚力度。

Project name: Electric foot grinder

Project instruction: The variable voltage power supply starts the micro motor to rotate, so that the motor drives the gear meshing of the internal planet structure, which will intelligently adjust the rotation strength of the grinding head and control the grinding force.
项目名称：
跑步机踏板

项目说明：
通过优化调整跑步机踏板调节齿轮箱结构结合无刷电机，智能调整跑步机踏板的角度，实现根据运动强度需求改变跑步机踏板的运动轨迹。

项目名称：
智能电动牙刷

项目说明：
通过永磁直流电机与传动行星齿轮箱配合，设计出来的智能电动牙刷齿轮箱结构小巧，使用过程中传动稳定，力矩大，噪声小。

Project name: Elliptical pedal

Project instruction: We had optimized and adjusted the elliptical pedal adjustment gearbox structure combined with the brushless motor to intelligently adjust the angle of the biangular pedic, realizing that the motion track will be changed according to the exercise intensity requirement.

Project name: Electric toothbrush

Project instruction: Through the coordination of permanent magnet DC motor and gearbox with planet structure, the designed intelligent electric toothbrush gear box has compact structure, the transmission is stable, the torque is large and the noise is small during use.
项目名称：美容仪器纳米补水仪
Project name: Water supply instrument

项目说明：美容仪器纳米补水仪
Project instruction: Water supply instrument with Zhaowei planetary gear reducer can greatly improve the quality and efficiency of beauty equipment, and solve the demand for low noise in operation.

项目名称：龙爪手按摩器
Project name: Water supply instrument

项目说明：通过对齿轮箱的结构及方案的修改，产品满足龙爪手按摩器齿轮箱产品的力矩、寿命达到客户要求，降低产品噪音。
Project instruction: By optimizing the gearbox structure and scheme, the product meets the torque and life requirements of the massagers and realizes the low noise demand of the product.
项目名称：
自动卷发器

项目说明：
在烫发的同时，不伤头发。产品采用无刷直流电机及斜齿的设计结构实现自锁，解决头发旋转弯曲后达到一定力矩时，解决旋转机构的回位难点及提高产品的寿命。

Project name: Automatic hair curler

Project instruction: While perming, do not hurt the hair. The gearbox adopts the brushless DC motor and the helical tooth design mechanism to realize self-locking, and solves the difficulty of retracting the rotating mechanism and improves the life of the product when the hair is curled to reach a certain torque.

项目名称：
吸黑头仪

项目说明：
在有限空间内，通过优化调整齿轮箱结构，解决产品在运转静音（微噪音）需求，提高产品的使用寿命。

Project name: Facial pore cleanser

Project instruction: In the limited space, the gearbox structure is optimized and adjusted to solve the requirement of quiet (micro-noise) operation and improve the service life of the product.
项目名称:
智能洗脸仪

Project name:
Face cleaning machine

项目说明:
为解决智能洗脸仪小体积大力矩的多级传动需求，调整洗脸仪的齿轮箱结构，对齿轮及齿形做修正，提高了洗脸仪的使用寿命，降低产品噪音。

Project instruction:
In order to solve the multi-stage transmission demand of the small volume and large torque of the face cleaning machine, we adjusted the gear box structure of the face cleaning machine to correct the gear and tooth shape, improve the service life of the face cleaning machine and reduce the product noise.

电子产品传动解决方案
Electronic product drive solutions

凭借ZHAOWEI在各领域的微型齿轮箱解决方案的经验积累，您所需的各类电子产品传动需求，我们都能提供按需定制服务，为您提供经济有效符合所需的需求解决方案。

- 智能手机拍照打印机
- 耳机线绞线自动装置
- 智能防近视笔
- 智能自行车锁
- 电子烟清洁
- 便携式电子烟
- 自动售货机
- 智能电动螺丝刀
- 智能鼠标

With experience in micro gearbox solutions in various fields, ZHAOWEI is able to provide customized services according to the transmission requirements of all kinds of electronic products you need, providing you with the fastest, most economical and effective solutions.

- Portable Photo Printer
- Automatic Winder For Earphone
- Smart Anti Myopia Pen
- Smart Bike Lock
- Intelligent Cleaning of E-cigarette
- Hidden Electronic Cigarette
- Vending Machine
- Electric Screwdriver
- Smart Mouse
项目名称：
智能手机照片打印机

项目说明：
为实现高清彩色还原，便携易用，我对智能手机照片打印机齿轮结构进行优化调整，确定手机照片打印机轴转的速度，解决小型产品的同心度及匀速转速问题。

Project name:
Portable photo printer

Project instruction:
In order to achieve high color reproduction, portable and easy to use, we optimize the gearbox structure of the smartphone photo printer; stabilize the speed of the photo printer; and solve the problem of concentricity and uniform speed of small-volume products.

项目名称：
耳机电线收线自动装置

项目说明：
采用通过蜗杆齿轮箱来实现耳机电线收线，提高小型产品的收线速度，提高产品使用寿命、降低噪音。

Project name:
Automatic cord winder for earphone

Project instruction:
Automatic cord winder manages the earphone cable through the worm gearbox from Zhaowei to reduce the wire take-up speed of small-volume products, improve product life and reduce noise.
智能近视笔  |  SMART ANTI MYOPIA PEN

项目名称：
智能近视笔

项目说明：
我们设计的智能防近视笔铅笔箱的传动模块，通过步进电机的齿轮传动来控制丝杆的旋转，使得设计出来的铅笔箱达到6MM的小尺寸。通过传动丝杆的设计可以智能控制笔芯伸缩长度及时间，可以智能监控与强制纠正孩子的握笔姿势、写字姿势等。

Project name:  
Smart anti-myopia pen

Project instruction:  
The transmission module of the smart anti-myopia pen gearbox is designed to control the ejection of the screw by the gear transmission of the stepping motor, so that the designed pen box can reach a small size of 6mm. Through the design of the drive screw, the smart anti-myopia pen can control the extension length and time of pen core and intelligently monitor and forcibly correct the child’s pen posture and writing posture.

智能自行车锁  |  SMART BIKE LOCK

项目名称：
智能自行车锁

项目说明：
智能自行车锁齿轮箱通过丝杆的传动拉动自行车的锁芯来控制产品的位置，这种设计使得产品的位置可控，锁定好，寿命长。

Project name:  
Smart bike lock

Project instruction:  
We use the reduction gear box plus the screw rod to pull the lock core of the bike through the drive of the screw rod to control the position of the product. This design makes the position of the product controllable, have good stability and long life.
项目名称：
电子烟清洁

项目说明：
通过对电子烟主机结构分析，在加热器驱动结构上加入升降系统齿轮箱运动组件，利用4M4M行星齿轮箱的精密紧凑体结构，解决电子烟弹放入、拔出难以及清洁难的问题。

Project name: Intelligent cleaning of E-cigarette

Project instruction: Through the analysis of the structure of the e-cigarette, the lifting system gearbox assembly is added to the heater driving structure, and the precision compact box structure of the 4M4M planetary gear box is utilized to solve the problem that the e-cigarette cartridge is difficult to insert, pull out and clean.

项目名称：
隐藏式电子烟

项目说明：
使用步进电机+4mm齿轮箱+丝杆输出轴+螺母传动实现隐藏式电子烟的设计，只需要按动电源按钮，电子烟液储存装置会在相对于雾化装置基座的一个方向旋转时，隐藏式烟嘴自动升起，供用户使用。

Project name: Hidden electronic cigarette

Project instruction: We use stepper motor, 4mm gearbox, screw output shaft and nut drive to realize the design of the hidden cigarette holder of e-cigarette. Just press the power button, and the electronic cigarette liquid storage device will rotate in one direction relative to the atomizer base. When rotating, the hidden cigarette holder automatically rises for the user to use.
项目名称：
自动售货机

项目说明：
兆威研发设计的自动售货机减速齿轮箱解决方案，解决了自动售货机运行噪音大、寿命短、置物不稳定的问题，可以根据自动售货机电机的参数需求进行定制电压、电流、负载等各参数。

Project name: Vending machine

Project instruction: The gear reducer solution for vending machine developed by Zhaowei solves the problems of loud noise, short life and unstable fuel of goods of vending machine. We can customize product voltage, current, load according to the parameters of vending machine.

项目名称：
智能电动螺丝刀

项目说明：
用正反转行星齿轮箱实现电动螺丝刀智能拧紧和松动螺钉。在安全性上，利用减速齿轮箱加上丝杆可以实现安全自锁。

Project name: Electric screwdriver

Project instruction: Use the clockwise and counter-clockwise planetary gearbox to intelligently tighten and loosen the electric screwdriver. In terms of safety, the self-locking can be achieved by using a reduction gear box and a screw.
智能鼠标 | SMART MOUSE

项目名称：
智能鼠标

项目说明：
智能鼠标齿轮箱模块是通过直流永磁电机与平行齿轮的传动实现短时间内的，这种设计使得产品的稳定性好、寿命长。

Project name:
Smart mouse

Project instruction:
The smart mouse gearbox module realizes conversion in short time through the transmission of permanent magnet dc motor and parallel gear. This design makes the product have good stability and long service life.

团队文化
Company culture

让员工与企业一起成长
Let the staffs grow together with ZHAOWEI

让员工与企业一起成长
Let the staffs grow together with ZHAOWEI

一方面，为了加强员工的团队凝聚力，ZHAOWEI每年定期组织员工进行集体旅游活动。这种活动不仅能够增进同事之间的感情，使员工在紧张的工作之余放松心情，充分享受大自然的美景，同时也提高了员工的归属感和企业的工作热情。

While becoming bigger and stronger, Zhaowei pays great attention to enriching the amateur life of employees and insists on taking organizational tourism as a welfare for employees. ZHAOWEI organizes the collective tourism activities for employees in the spring and autumn seasons every year, which promotes the feelings among colleagues, makes employees relax and enjoy the beautiful natural scenery in addition to the intense work, increases the knowledge of the people, improves the cohesiveness of the company and the enthusiasm of the employees.

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