



Metal Machine Assembly Model

金属机器 组装模型



Turbocharged
Four-Cylinder Engine
涡轮增压四缸发动机



Degree of Difficulty: ★★★★★

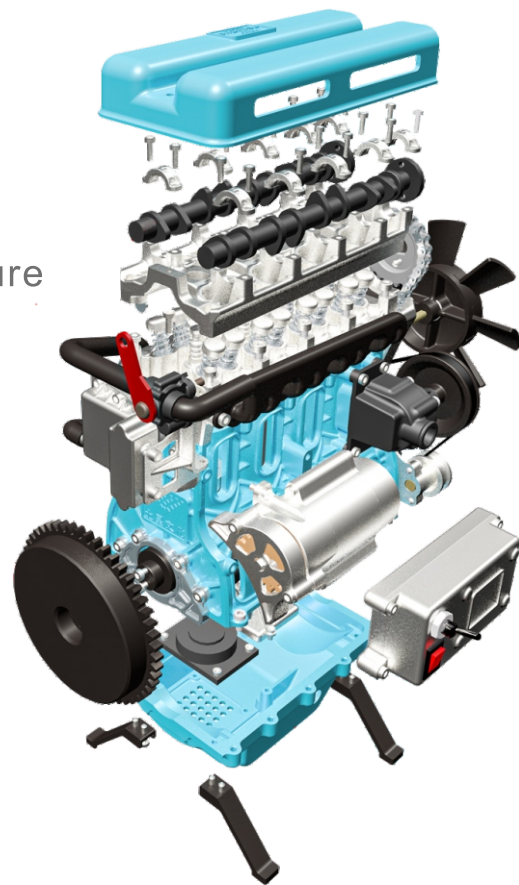
Model: DM111

难度系数: ★★★★★

型号: DM111

Structural Features 结构特点

1. 四缸直列式布置结构
1. Four-cylinder straight line arrangement structure
2. 凸轮顶置式气门控制机构
2. A camshaft-mounted valve control mechanism
3. 凸轮链条传动机构
3. Cam chain transmission mechanism
4. 传统曲轴连杆机构
4. Traditional crankshaft joining mechanism
5. 涡轮增压机构
5. Turbocharger mechanism



Real Models Real Worlds

真模型 真世界

产品基本信息

一.产品参数

产品名称: 涡轮增压四缸 发动机

产品型号: DM 111

主要材质: 阳极氧化铝+不锈钢+锌合金

充电电压: 直流5V

电池容量: 450 mAh

组装难度: IV级

产品标准: GB/T9254-2008

GB/T17626.2-2006

质检等级: A

二. 产品介绍

- ◆ 土星工匠师系列产品为金属机构组装模型。主要材料选用铝合金表面阳极氧化, 产品结构采用真实的工业结构;
- ◆ 使用各种工具组装零件, 安装工序及方法接近实际工业要求;
- ◆ 该系列产品主要用来提高用户的动手能力、专注力, 培养严谨讲秩序的习惯;
- ◆ 认识各种工业机器, 学习各种工业结构, 提高用户的探究及创新力。

三. 组装要求

- ◆ 组装前要认真阅读《标准件组装基础知识》, 学会基本的标准件组装方法和工具使用;
- ◆ 要求组装时桌面整洁, 防止丢失零件或错装。组装严谨有序, 看图仔细, 避免组装错误;
- ◆ 注意说明书中的提示语, 注意零件的安装方向, 防止理解错误。注意检测环节的要求;
- ◆ 摩擦部位尽量使用润滑油, 防止运转时卡死。紧固螺钉必须安装到底, 防止零件松动;
- ◆ 组装完成后要调试装配间隙及松紧度, 有疑问可查询本公司相关网站或微信公众号;
- ◆ 鼓励在成人看护及确保安全的情况下, 使用锉刀、砂纸等简单去材料工具, 优化零件;
- ◆ 鼓励用户在没有安全隐患的情况下, 将模型进行零部件修改或总体改

装，及早具备改装能力；

- ◆ 说明书后面附零件表，用户可根据列表拆散模型并重新装入盒中；
- ◆ 如果零件有丢失，可向我公司咨询或采购（土星官方网店）；
- ◆ 模型结构可能持续优化，如有说明书内容与实物不符，请参考公司最新组装资讯；
- ◆ 本产品长期不使用可能会造成电池失效、润滑油干枯、产品间隙沉积灰尘等造成产品无法运行的，请更换电池或拆解零件进行清洗。

注意事项

一. 安全须知

- ◆ 请仔细阅读本手册中的内容，以确保您能够正确且安全的使用本产品；
- ◆ 该系列产品为工业级别金属机构模型，因此组装和使用该模型需要一定的安全意识，提高安全意识也是该模型的作用之一；
- ◆ 本模型适合14岁及以上用户使用，相关安全事项请仔细阅读本说明提示；
- ◆ 严禁让儿童或宠物吞咬本产品或其备件，以免造成伤害；
- ◆ 合理使用组装工具，严格按说明书组装零件，避免强装硬拆，防止划伤。严禁工具或零件尖角部位离眼睛太近，以免挫伤身体；
- ◆ 本模型主要由金属零件组成，具有一定的硬度和重量，请妥善放置，避免产品及配件受到强烈冲击和震动，以免砸伤身体或损坏本产品；

- ◆ 机械运动时，请不要将手指或身体其它部位放入零件运动范围内，避免压伤；
- ◆ 电线接头须按说明书指示标记连接，避免错接引起电路短路或失灵；
- ◆ 电池充放电及放置方法请按要求进行，电池停用3个月以上建议更换电池；
- ◆ 请勿以任何形式强行阻碍零件运转，如需关闭请直接关闭电源即可；
- ◆ 如对模型进行改装，请留意相关零件参数，避免使用大功率电器动力零部件或装置，导致意外；
- ◆ 请按说明书正确使用本产品的零部件，切勿做其它用途。

二. 电池和充电注意事项

- ◆ 本产品配备专用充电线。用户自备电源适配器，其输出DC电压需5V，其输出DC电流不小于1000mA。禁止使用高于6V的适配器给产品充电；
- ◆ 充电前请确保触点干燥，无脏污。产品不使用或维修拆机时请不要充电；
- ◆ 不可将电池投入火中，也不能将其暴露在诸如日照、火烤或类似过热的环境中，以免电池漏液、过热、爆裂或起火；
- ◆ 如果电池更换不当会有爆炸危险，只能用同样类型或等效型电池来更换；
- ◆ 本产品配备的锂电池，严禁拆卸、挤压、加热或燃烧电池，严禁使用尖锐物、螺钉刀等触碰、撬电池，以上操作可能会引起电池起火

或燃烧；

- ◆ 如果电池在使用、充电或保存过程中有温度过高、变色、起鼓、漏液等异常现象，请停止使用并更换新电池，以免造成安全问题；
- ◆ 充电时，由于电池温度会升高，请不要将电池和易燃物放在一起（如：床头、衣物、书本等），以免引发火灾；
- ◆ 请勿在高温、潮湿等环境中充电，温度以0至35摄氏度为宜，湿度应在65%以下，产品设计使用最高环境温度为45摄氏度；
- ◆ 为减少儿童触电危险，请在家长或其他监护人的指导下操作。

三. 产品声明

- ◆ 使用本产品前，请您仔细阅读并遵守本手册中的各种说明及警示。对于不正确使用或不遵守本产品相关说明使用所造成的后果，本公司概不负责；
- ◆ 本产品适合于14岁及以上用户使用。因使用本产品用户年龄偏小或将产品给对本产品相关安全要求不熟悉者使用，造成的安全问题本公司概不负责；
- ◆ 本产品是工业机构模型，仅作为学习和体验使用。不得将产品作为其它用途使用，否则本公司不承担任何责任；
- ◆ 本公司在不断提高、完善产品的设计和使用功能，如说明书所载内容与实际产品的内容略有不同，恕无法另行通知，敬请见谅。因此任何以本说明书的数据、图片或文字描述为依据的索赔要求将不予受理；

- ◆ 本着不断完善，持续发展的原则，本公司保留在不预先通知的情况下，对本手册中描述的任何产品细节进行修改和改进的权利；
- ◆ 产品说明书中的图片用于指导用户操作，仅供参考，具体请以实物为准；
- ◆ 在使用法律允许的最大限度内，在任何情况下，本公司与其供应商均不对任何特殊、偶然、附带、或间接损失承担责任，无论该损失由何种原因引起；
- ◆ 本手册中含有重要信息，请保留备用。

General information about product

I. Product Data

Product name: Turbocharged Four-Cylinder Engine

Product model: DM 111

Main materials: Anodic aluminum oxide + stainless steel + zinc alloy

Charging voltage: DC 5V

Battery capacity: 450mAh

Assembly difficulty: Level IV

Product standards: GB/T9254–2008

GB/T17626.2–2006

II. Product description

- ◆ Teching Craftsman series of products are metal structure assembly models. Its primary material is aluminum alloy with anodized surface, and the product structure is a real industrial structure;
- ◆ Assemble parts using various tools with the installation procedures and methods substantially compliant with practical industrial requirements;
- ◆ This series of products are principally designed to improve users' hands-on ability and concentration, and to develop habits of "preciseness and stress on discipline";
- ◆ Learn about various industrial machines, and study various industrial structures to improve user's capability of research and innovation.

III. Assembly Requirements

- ◆ Be sure to read the Basics of Standard Parts Assembly carefully to master basic standard parts assembly procedure and the usage of tools before assembly;
- ◆ The table shall be kept tidy and clean during assembly to prevent parts being lost or incorrectly assembled. Assemble parts in a rigorous and orderly fashion, view the diagrams carefully, and avoid incorrect assembly;
- ◆ Pay attention to the prompt text in instruction manual, carefully view the part installation orientation, and avoid incorrect comprehension. Pay attention to the requirements on testing;
- ◆ Lubricating oil shall be applied to friction areas to the greatest extent to prevent jamming during operation. Fastening screws must be thoroughly mounted to prevent looseness of parts;
- ◆ If you have any doubt when adjusting any assembly clearance or tightness after the completion of assembly, please refer to our website or WeChat public account;
- ◆ Users are encouraged to optimize the parts using material removing tools like files and sand paper with adult care where the personal safety is guaranteed;

- ◆ Users are encouraged to perform part modification or overall modification of model without potential safety hazard so as to develop modification capability as soon as possible;
- ◆ The user may disassemble this model and put it in the package again according to the parts list attached hereto;
- ◆ If any part is lost, please inquire of or purchase it from us (Teching official online store);
- ◆ The model structure is subject to continual improvement. If the real object differs from the instruction manual, please refer to our latest assembly information.
- ◆ Once the product fails to function due to battery failure, lubricating oil shortage or dust accumulation in product gaps because it is left unused for long, it's advisable to change the battery or disassemble and clean its parts.

Precautions

I. Safety Instruction

- ◆ Please read this manual carefully so that you are in a position to use this product correctly and safely;
- ◆ This series of products are industrial-level metal models, so its assembly and use requires certain safety awareness; improvement of safety awareness is also a function of the model;
- ◆ This model is suitable for users aged 14 and over. Please read this manual carefully for relevant safety information;
- ◆ Strictly prohibit children or pets swallowing or biting this product or its spare parts, since this may cause injury/damage;
- ◆ Use assembly tools rationally, assemble the parts in strict conformity with the instruction manual, and avoid forcible handling to avoid scratches; keep sharp points of tools or parts away from the eyes to avoid contusions;

- ◆ This model is made up of metallic parts mainly, and has a certain level of hardness and a certain weight; please place it properly to avoid bodily injuries; Protect the products and accessories against intense shock and vibration so as to avoid personal injury and product damage;
- ◆ During mechanical movement, do not put a finger or any other part of the body within the movement range to avoid contusions;
- ◆ Wire connectors must be connected according to the marks specified in the instruction manual to avoid short-circuit or failure arising from wrong connection;
- ◆ Charge, discharge and place the battery as required; it is advised to replace the battery when it has not been used for 3 months or more;
- ◆ Do not prevent any part from running forcibly in any form; to do this, turn off the power directly;
- ◆ To refit this model, please pay attention to the relevant part parameters, and avoid using any high-power electric part or device that may result in an accident.
- ◆ Please use parts of this product properly as per instruction manual. Don't use them for other purposes.

II. Battery and charging precautions

- ◆ This product is delivered with dedicated charging cable. Users shall use their own power adapters; output DC voltage: 5V; output DC current $\geq 1000\text{mA}$;
- ◆ Please make sure the contact is dry and free of dirt before charging. Please don't charge the battery if the product is not in use or is in repair;
- ◆ Don't put the battery in fire or have it exposed to sunlight, fire or similar excessively hot environment, since this may lead to leakage, excessively high temperature, bursting or ignition of battery;
- ◆ If improper change of battery may cause explosion, the battery must be replaced with one of identical or equivalent type;

- ◆ Never disassemble, squeeze, heat and set fire to the lithium battery delivered with this product, and never touch and pry the battery using any sharp object or screwdriver, etc., since this may cause the battery to ignite or burn;
- ◆ In the case of excessively high temperature, discoloration, bulging, leakage and other anomalies during the use, charging or keeping of battery, please take it out of service and change it with a new one to avoid safety problem;
- ◆ Since the battery temperature rises when it's being charged, please don't have the battery to come into contact with inflammables (e.g. bedside, clothing and books, etc.) since this may result in a fire;
- ◆ Please don't charge the battery in a moist space with high temperature; the temperature is recommended to be 0~35° C, and the humidity shall not exceed 65%; the design max. ambient temperature for using the product is 45° C;
- ◆ To alleviate the risk of electric shock, children are not allowed to use the product without the help of their parents or other custodians.

III. Product Declaration

- ◆ Please carefully read and observe various instructions and warnings in this manual before using this product. Our company shall not be held responsible for any consequence of failure to properly use this product or observe related operating instructions;
- ◆ This product is suitable for users aged 14 and over. Our company shall not be held responsible for any safety problem arising from the use of this product by too young users or users who are not familiar with relevant safety requirements;
- ◆ As a model in industrial structure, this product is designed exclusively for learning and experience. Do not use this product for other purposes; otherwise, we will assume no responsibility for any consequence thereof;

- ◆ We have been improving the design and operation features of our product, so separate notice will not be given for slight difference between instruction manual and actual product. Hence, any claim for compensation filed based on the data, pictures or text of this instruction manual will be rejected;
- ◆ For constant improvement and sustainable development, our company reserves the right to modify and improve any product detail given in this manual without prior notice;
- ◆ The pictures in instruction manual guide users for operation, and are thus for indication only; the real product shall prevail;
- ◆ Our company and its suppliers shall not be held responsible for any special, incidental, collateral or indirect loss in any case to the greatest extent the law permits, regardless of its cause;
- ◆ Please keep this manual properly since it contains important information.

CATALOG

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组装说明 Instructions for assembly

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P3. 曲轴连杆总成 Crankshaft joint assembly

P6. 油底壳总成 Oil shell assembly

P7. 油底壳内部零件 Internal parts of oil bottom shell

P8. 排气管总成 Exhaust pipe assembly

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P15. 空气过滤器 Air Filter

P16. 电位器总成 Capacitor assembly

P19. 组装总体 Overall assembly

5

List of straight four engine parts

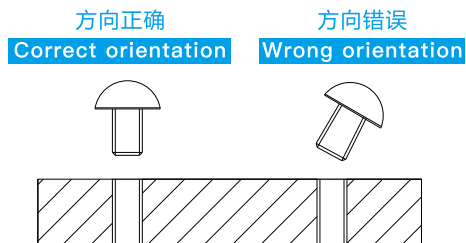
直四发动机零件列表

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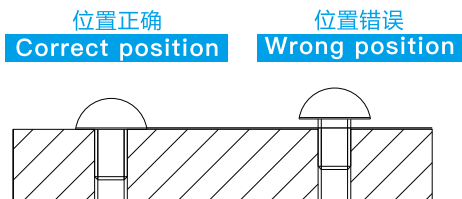
标准件组装基础知识 Basic knowledge of standard parts assembly

1、螺丝安装 Screw installation

(1) 螺丝安装方向 Screw installation direction

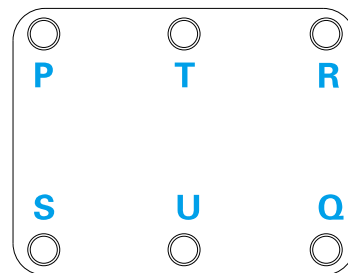


(2) 螺丝拧紧深度 Screw tightening depth

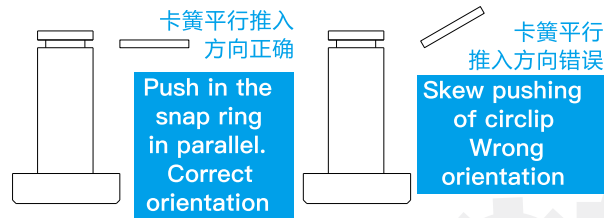


(3) 螺丝安装顺序 Screw installation sequence

按照编号顺序，对角安装螺丝
Mount the screws diagonally in order of number



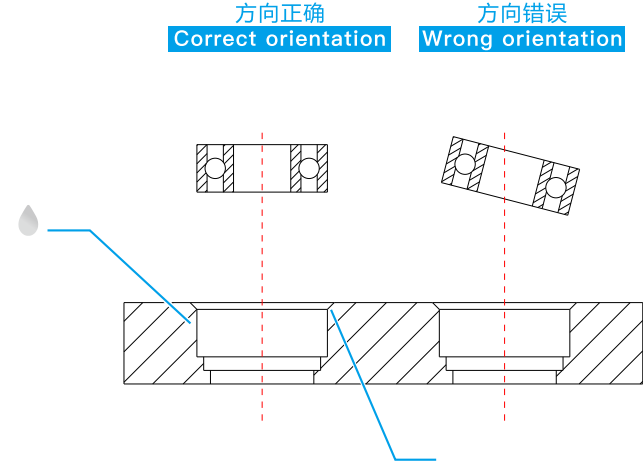
2、卡簧安装方法 Circlip installation method



3、轴承安装 Bearing installation

(1) 轴承装入轴承座孔

Insert the bearing into the bearing housing

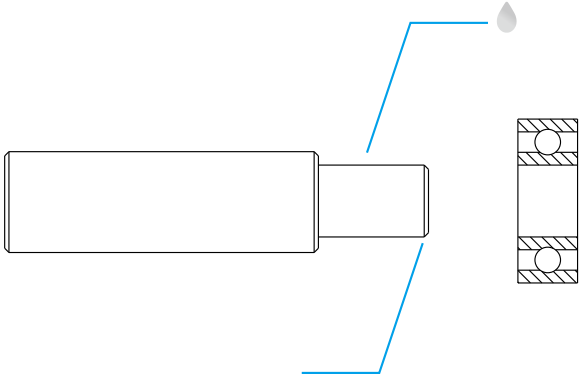


检查轴承座孔倒角及毛刺；
在轴承座孔侧面加少量润
滑油；将轴承对直装入到
底，施压部位为轴承外圈。

Check the orifice of bearing block for chamfer and burr; apply a little lubricating oil onto side face of shaft Installation point; align the bearing and mount it to the final position; pressure is applied to the outer race of bearing.

(2) 轴承装入轴

Bearing into the shaft



Check the shaft end for chamfer and burr; apply a little lubricating oil onto side face of shaft Installation point; align the bearing and mount it to the final position; pressure is applied to the inner race of bearing.

检查轴端倒角及毛刺；
在轴安装部位侧面加
量润滑油；将轴承对
直装入到底，施压部
位为轴承内圈。

重要提示：组装前，先找到瓶装润滑油，务必在所有润滑油标识处涂上足够的润滑油，否则机器容易卡死。

Important note: before assembly, find the bottled grease first, and be sure to apply enough grease on all grease marks, otherwise the machine is easy to get stuck.

加润滑油的位置标识
Location identification
of grease

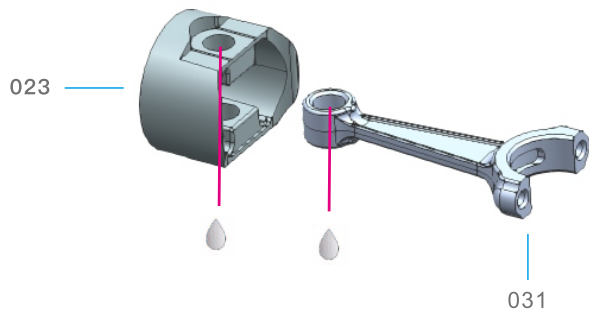
1 Instructions for assembly 组装说明

1 曲轴连杆总成

1Crankshaft joint assembly

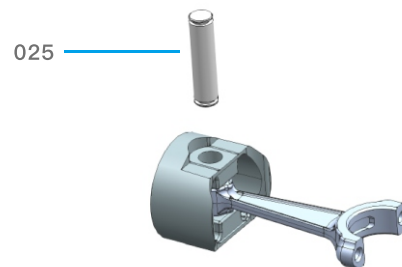
1.1 组装活塞机构

1.1 Assembling piston machinery



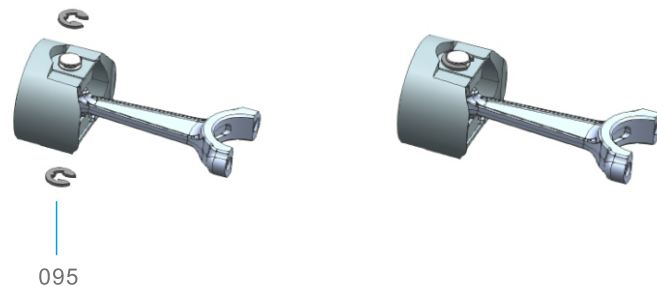
1.2 安装活塞销

1.2 Install piston solder



1.3 安装M3卡簧

1.3 Installing M3 Circlip

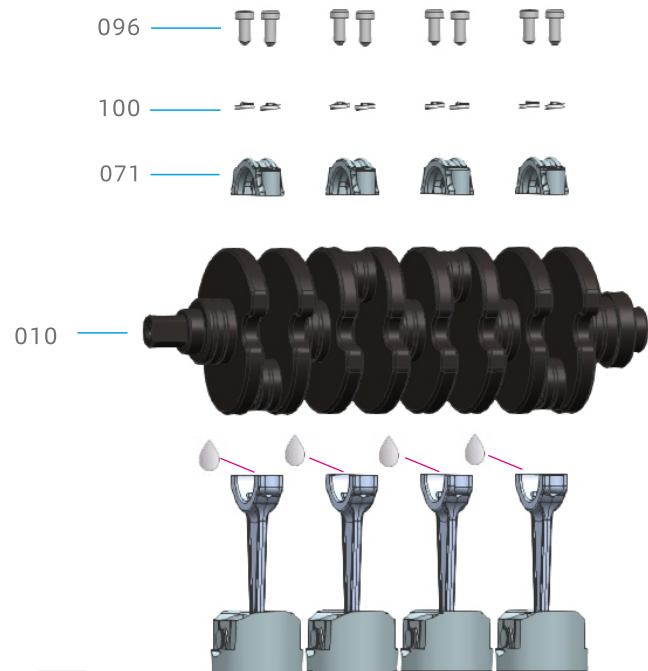


There are 4 sets in total

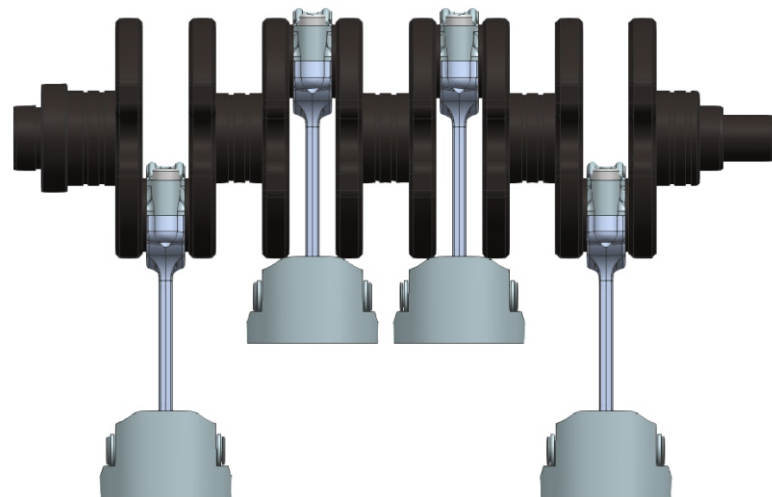
共 4 套

1.4 安装活塞连杆与曲轴

1.4 Install piston joints and crankshafts

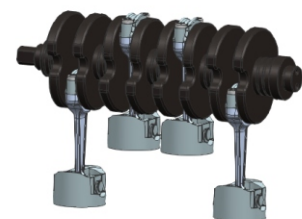


如果不方便安装时，
可以转动 010 使安
装位置朝上，方便
安装
If it is not
convenient to
install, you
can turn 010
so that the
installation
position is
up to facilitate
installation



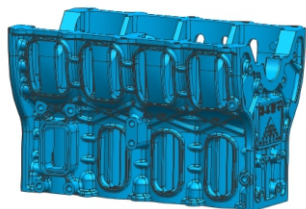
1.5 曲轴与缸体组接

1.5 The crankshaft joins the cylinder

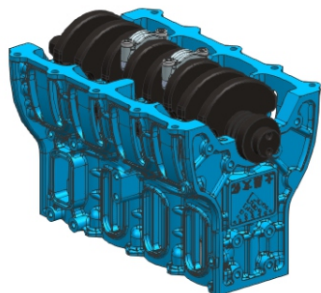


010 的大头 The big head of 010

010 的大头与 001
的商标同一方向
The big head
of the 010
goes in the
same direction
as the logo of
the 001



001



1.6 轴瓦与缸体组接

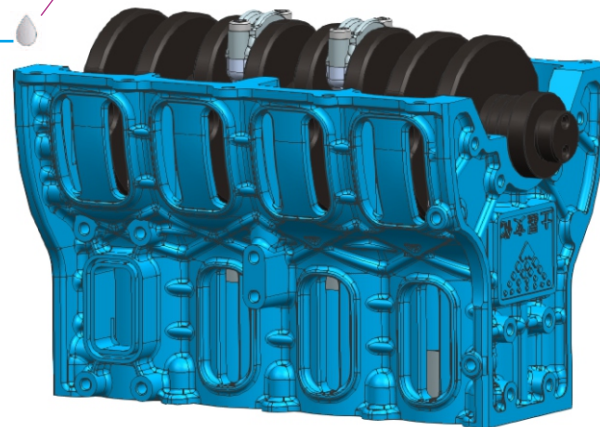
1.6 Bearing shell joins with cylinder



088

072

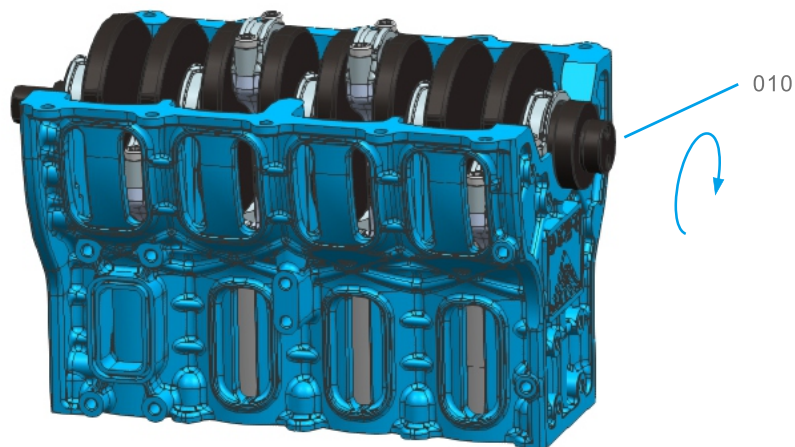
轴瓦底部加油共5处
There are five
refueling points
at the base of
the bearing shell



1.7 检查活塞与曲轴连接的传动

1.7 Check the transmission

where the piston is connected to the crankshaft



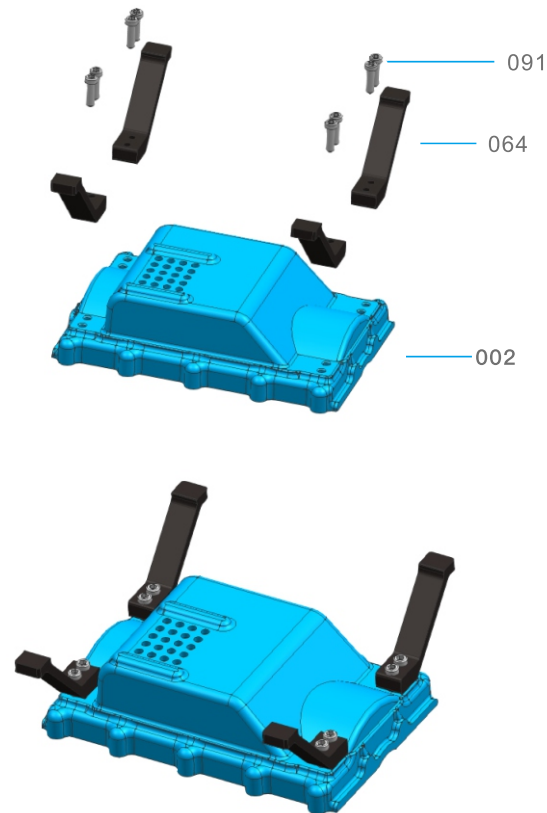
安装好活塞机构之后，转动 010，检查活塞与曲轴转动是否顺畅
After you have installed the piston mechanism, turn 010 to check that the piston and the crankshaft are moving smoothly

2 油底壳总成

2 Oil shell assembly

2.1 安装发动机支架

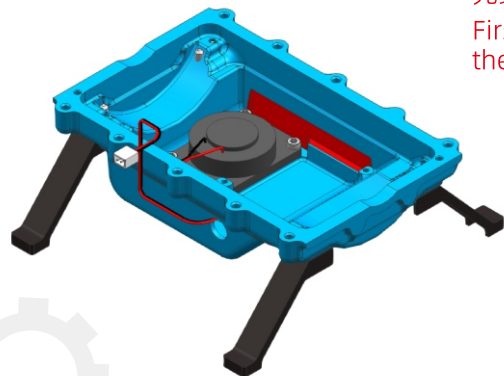
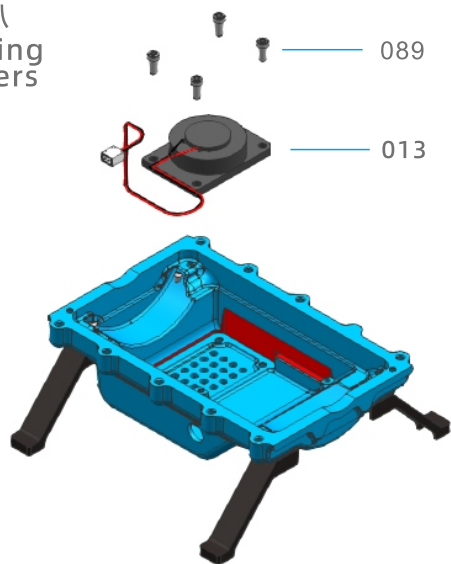
2.1 Installation of engine mount



3 油底板内部零件 3 Internal parts of the oil baseboard

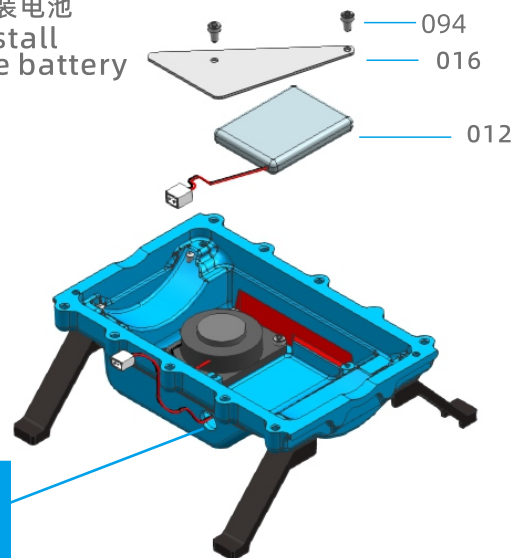
3.1 安装喇叭

3.1 Installing speakers



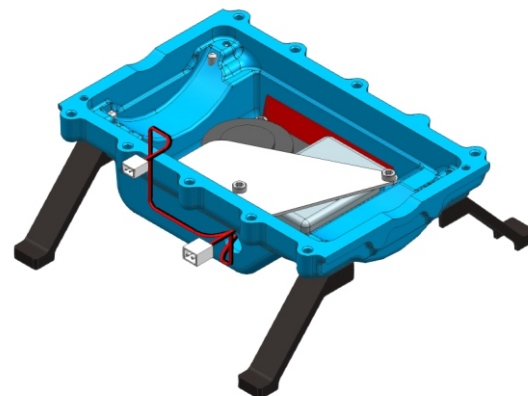
3.2 安装电池

3.2 Install the battery



喇叭线和电池线从底座线孔穿出
The horn wire and battery wire
are threaded out of the base
wire hole

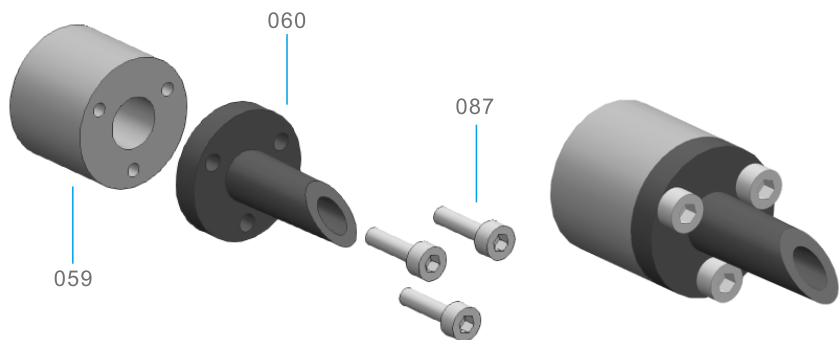
先穿电池线再穿喇叭线
First, thread the battery cable,
then the speaker cable



4 排气管总成 4 Exhaust pipe assembly

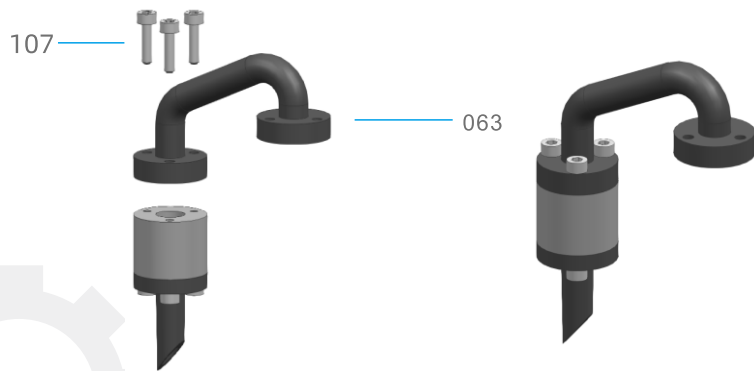
4.1 组装排气尾管、三元催化器

4.1 Composition of exhaust tailpipe, triad catalyst



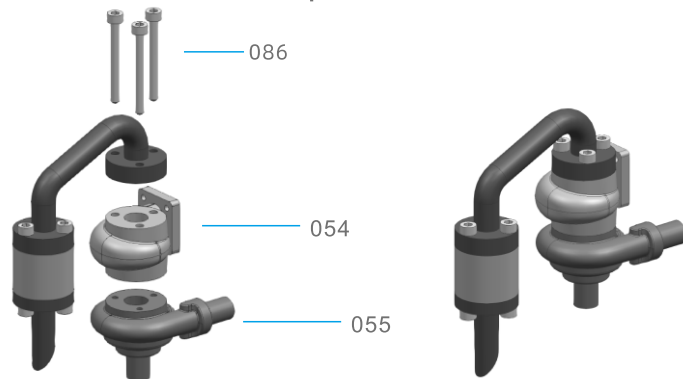
4.2 组装排气弯管、三元催化器

4.2 Composition of exhaust bending tubes, triad catalyst



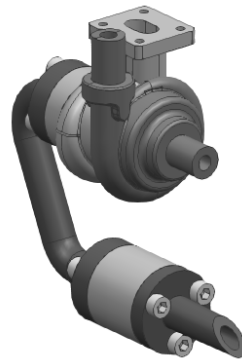
4.3 组装排气管组件、主动涡轮和被动涡轮

4.3 Assembly of exhaust pipe components, active turbines and passive turbines



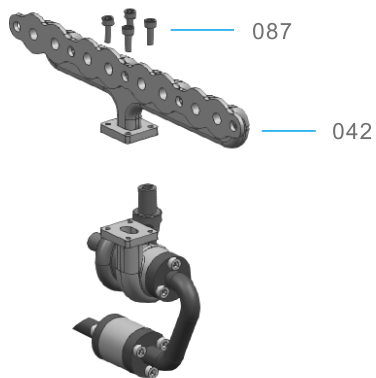
4.4 排气管组件

4.4 Exhaust pipe components



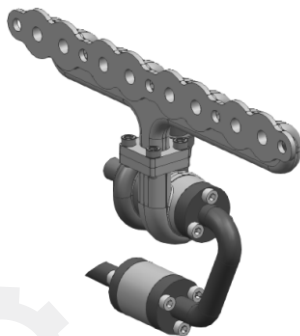
4.5 组装排气管组件

4.5 Assemble the exhaust pipe components



4.6 排气管总装

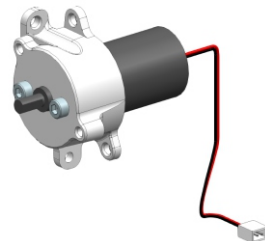
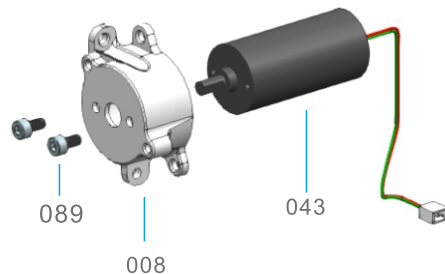
4.6 Exhaust pipe assembly



5 启动电机总成 5 starter motor assembly

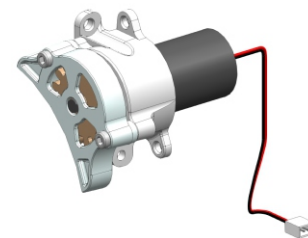
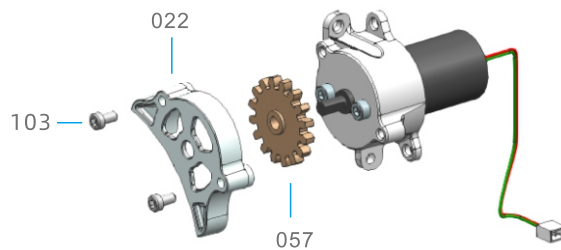
5.1 安装启动电机前盖

5.1 Install starter motor front cover



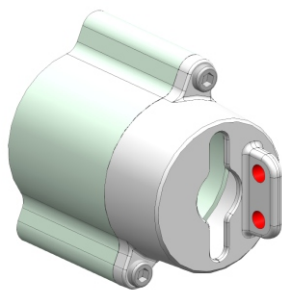
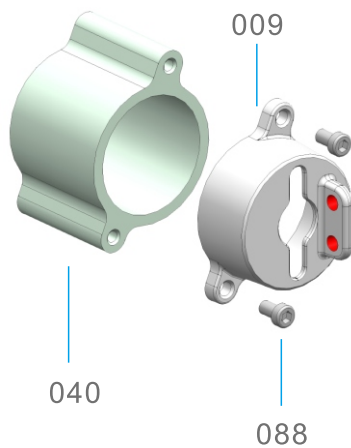
5.2 安装启动电机齿轮

5.2 Install starter motor gear



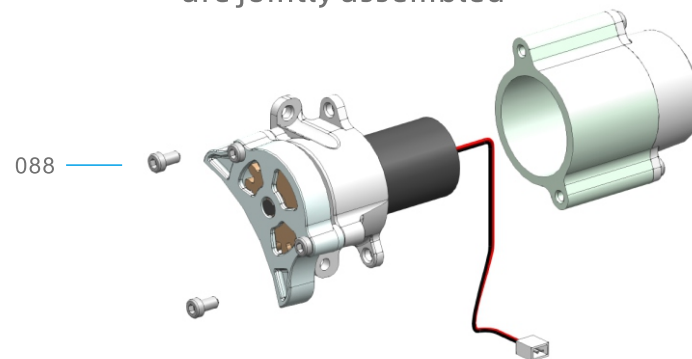
5.3 安装启动电机后盖和中盖

5.3 Install starter motor rear cover and middle cover

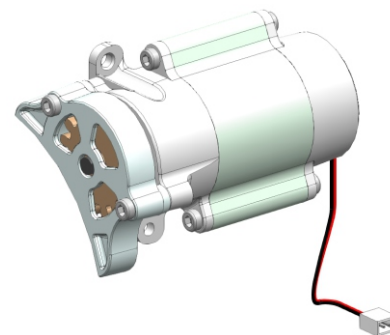


5.4 前、后组件对接组装

5.4 Front and rear components are jointly assembled

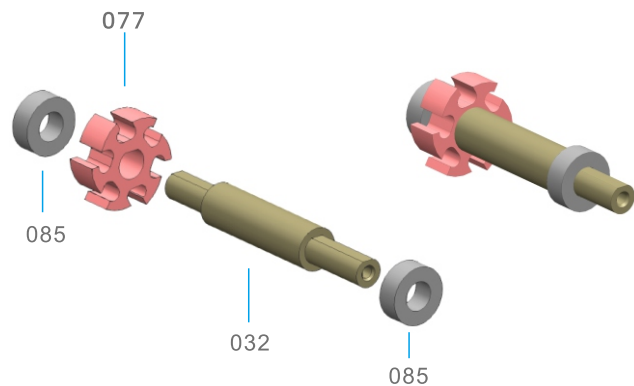


电机线穿过后盖
The motor wire passes through the back cover



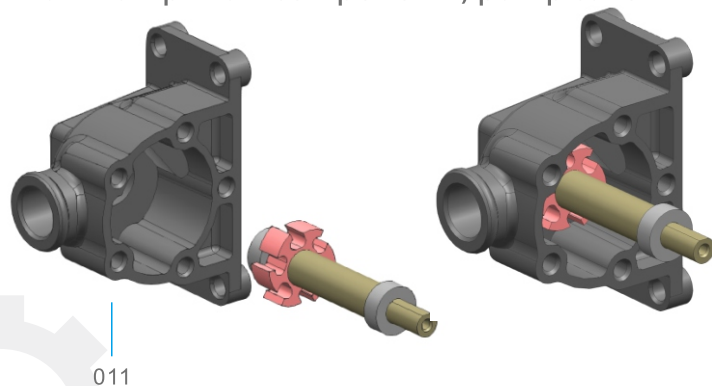
6 水泵总成 6 Pump assembly

6.1 叶轮、水泵轴对接 6.1 Wheel and pump shaft docking



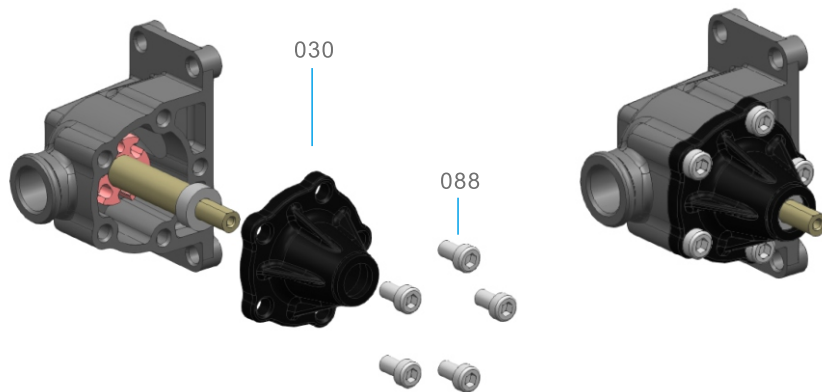
6.2 水泵轴组件、水泵箱

6.2 Pump shaft components, pump case



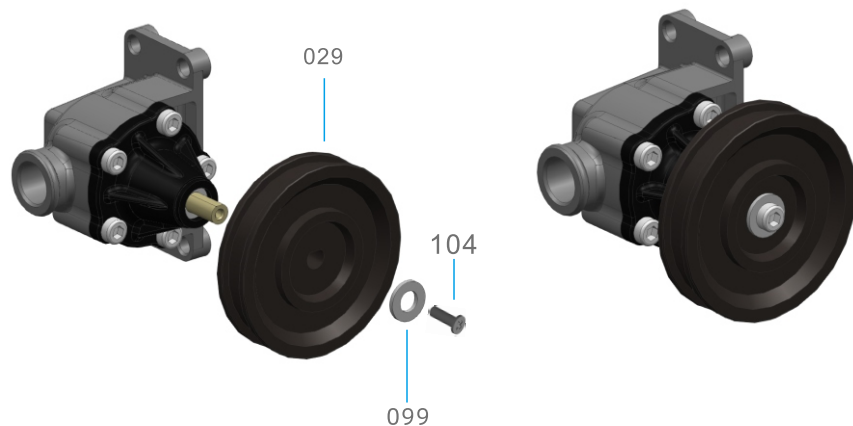
6.3 安装水泵端盖

6.3 Install a water pump end cover



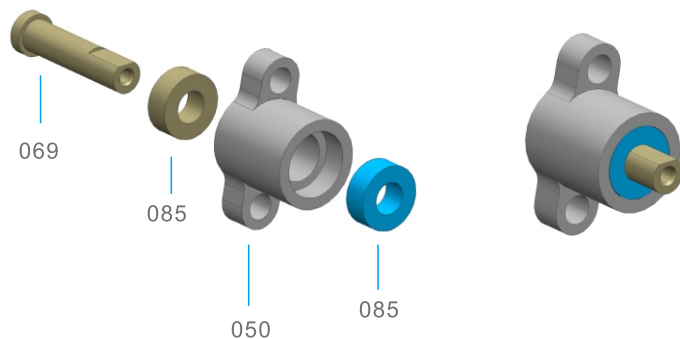
6.4 安装水泵皮带轮

6.4 Install the water pump pulley



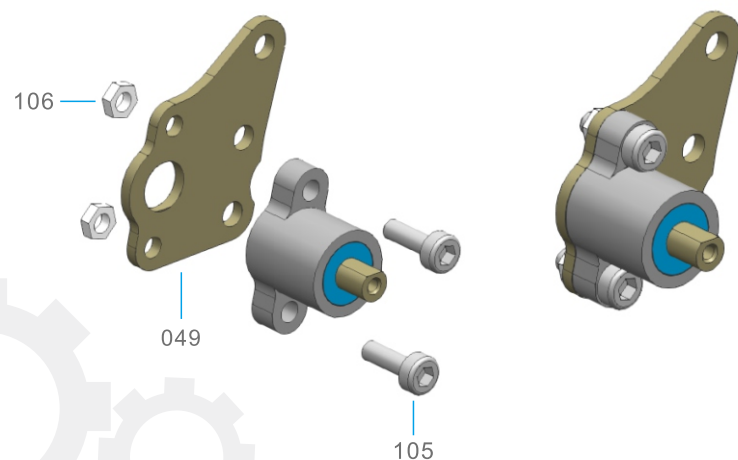
7 轴承座总成 7 Bearing seat assembly

7.1 组接张紧轴组件 7.1 Group of tensioning shaft components



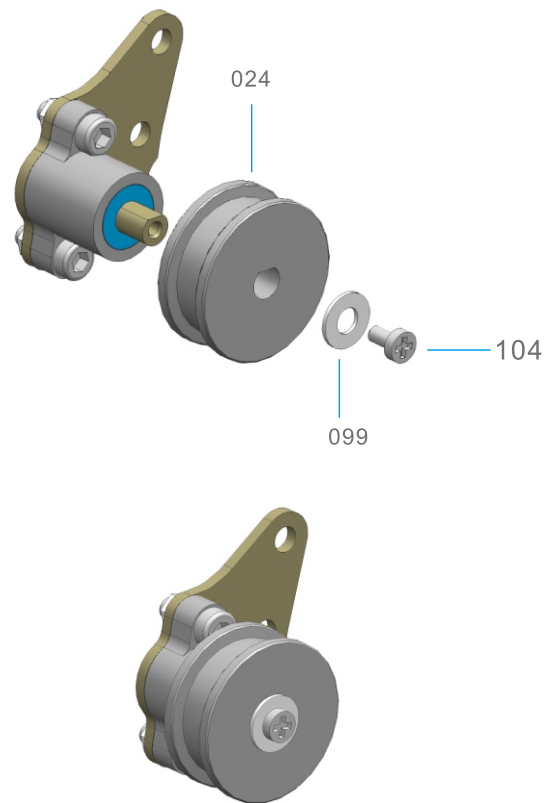
7.2 轴承座支架 7.2 Bearing seat brackets

7.2 Bearing seat brackets



7.3 安装张紧轴皮带轮 7.3 Install tight-shaft belt pulley

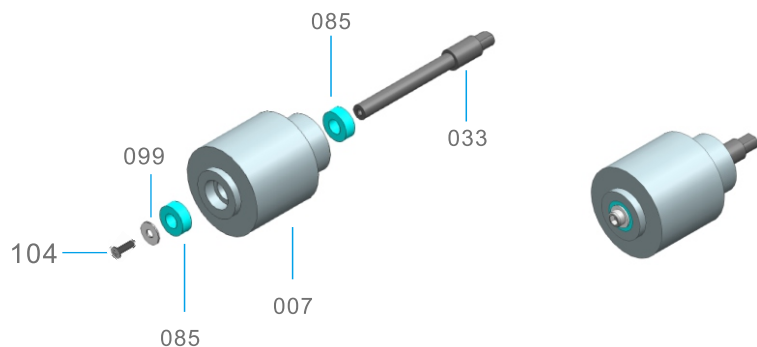
7.3 Install tight-shaft belt pulley



8 发电机总成 8 Generator assembly

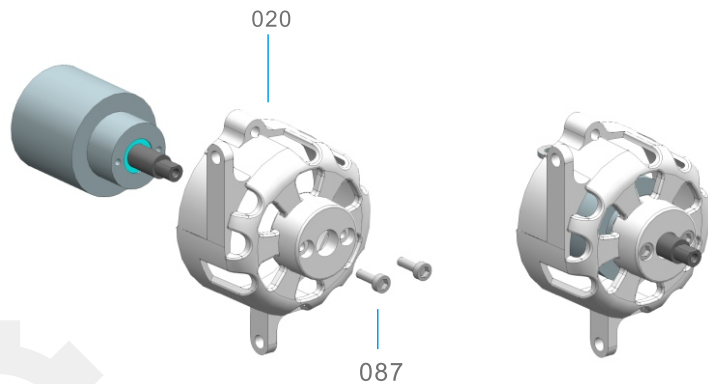
8.1 对接发电机轴、轴承

8.1 Docking generator shafts and bearings



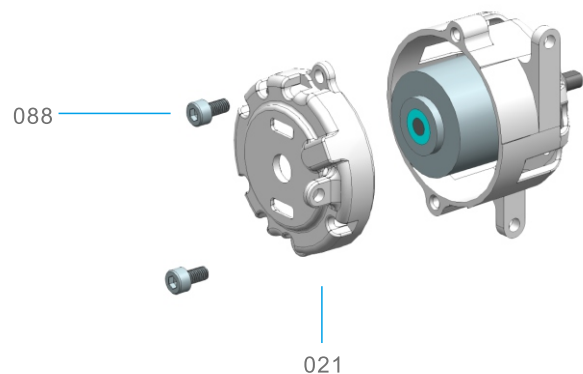
8.2 对接发电机与前盖

8.2 Docking generator and front cover

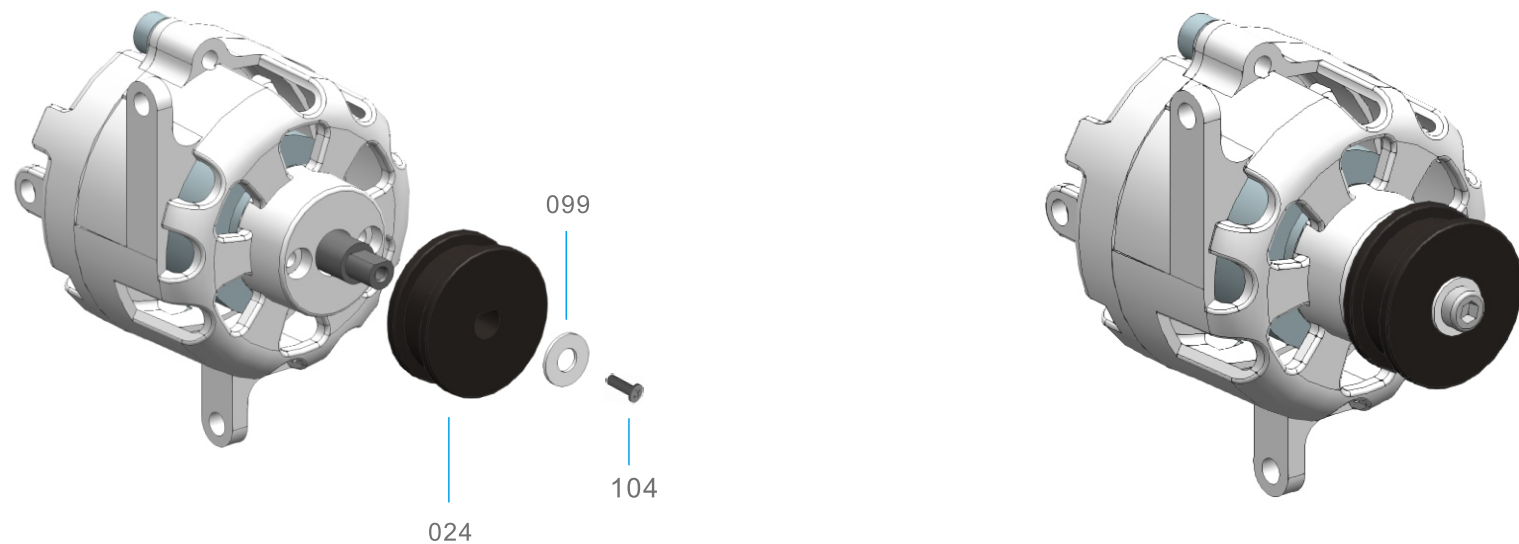


8.3 组装发电机前盖、发电机后盖

8.3 Assembled generator front cover and generator back cover



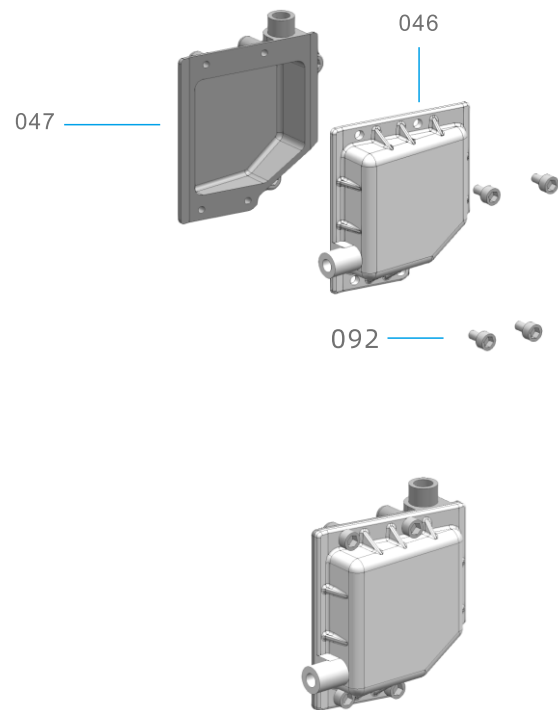
8.4 安装发动机皮带轮 8.4 Install engine pulley



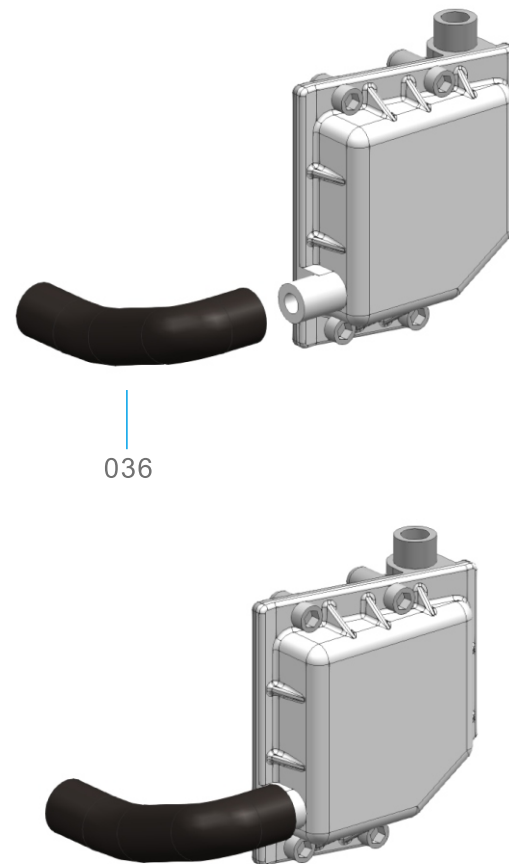
9 空气过滤器 9 Air filter

9.1 组装空气过滤器

9.1 Assembling air filter



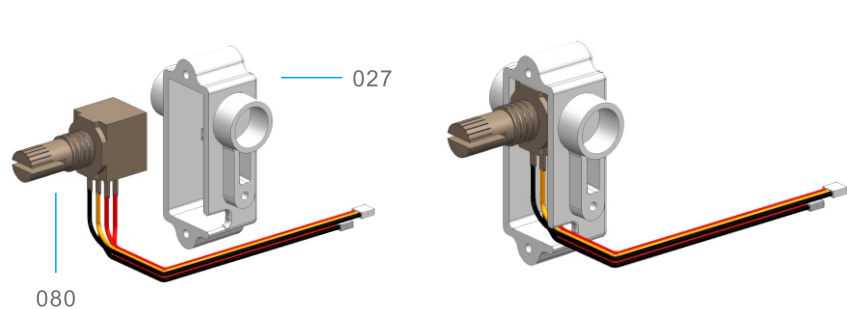
空气过滤器对接进气管1 Air filters connect to the air inlet 1



10 电位器总成 10 Potentiometer assembly

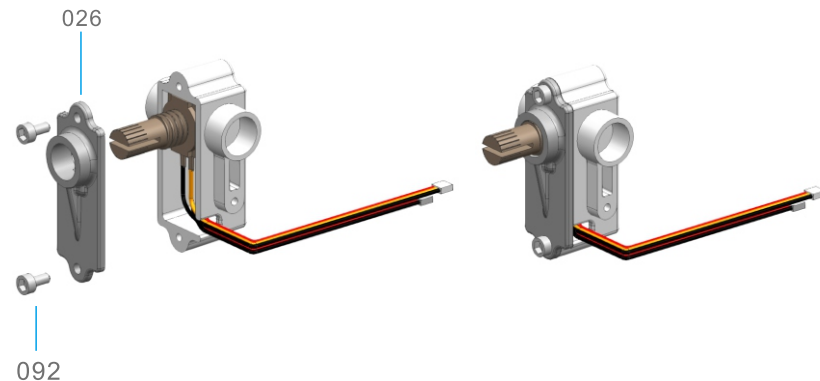
10.1 对接电位器与电位器下盖

10.1 Docking potentiometer and lower potentiometer cover



10.2 组装电位器上盖

10.2 Assembly the potentiometer upper cover



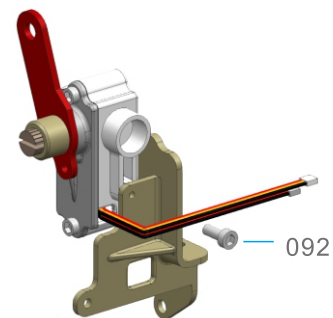
10.3 固定油门推杆

10.3 Fixed accelerator lever



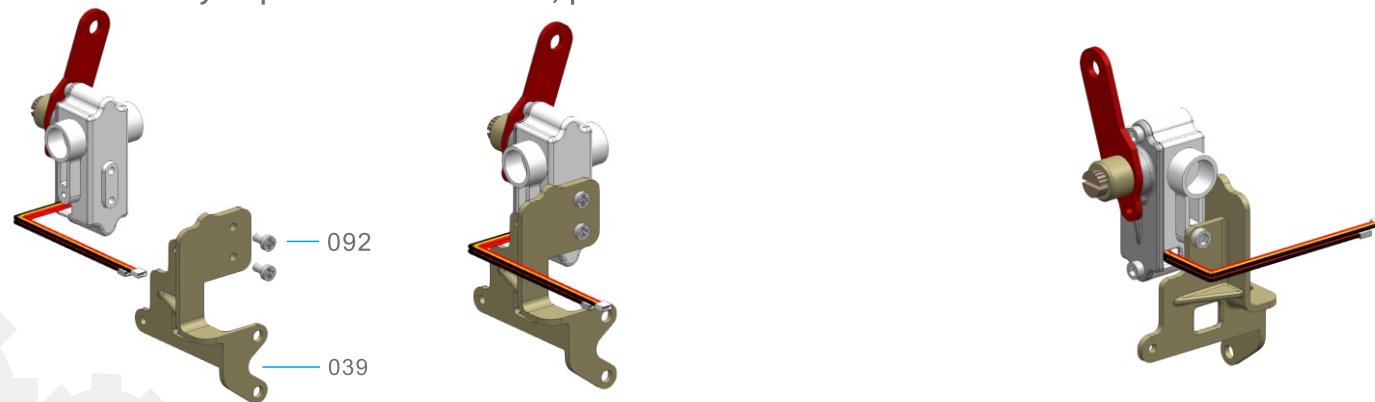
10.5 锁紧电位器

10.5 Lock potentiometer



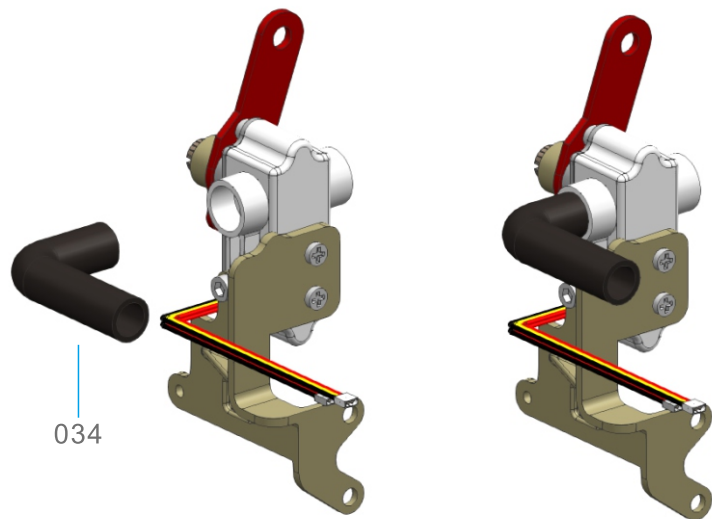
10.4 组装电位器支架、电位器

10.4 Assembly of potentiator bracket, potentiator



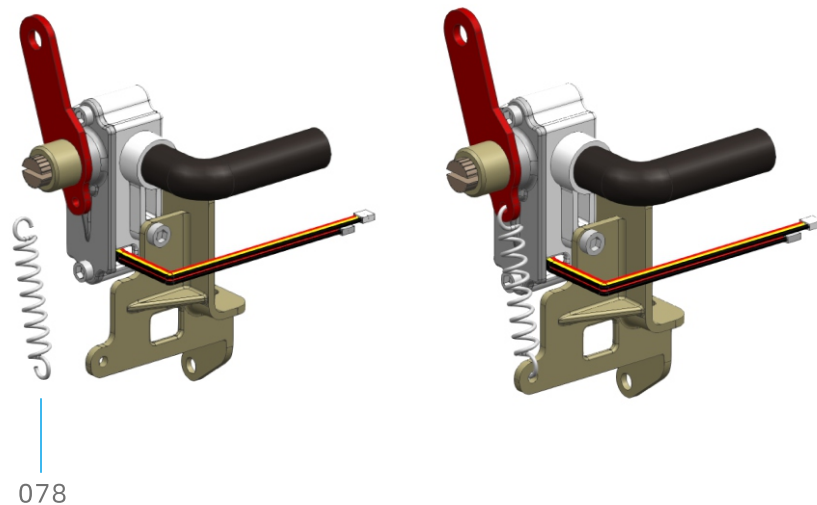
10.6 电位器对接进气管3

10.6 The potentiometer connects to the air inlet pipe 3



10.7 安装油门弹簧

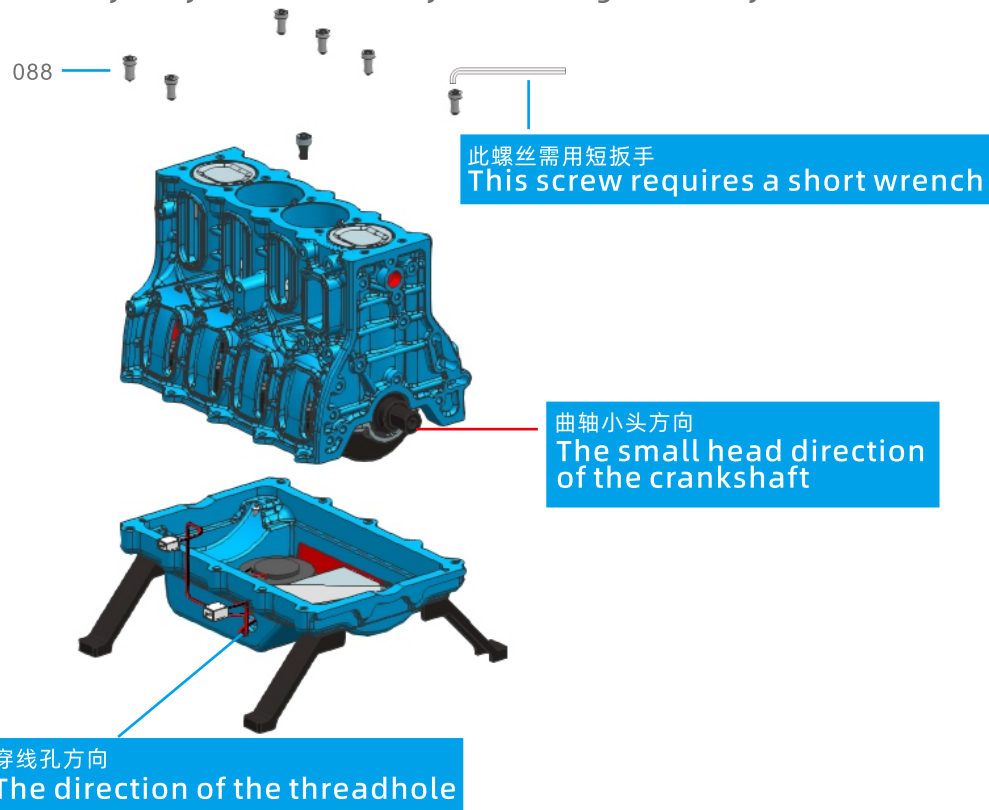
10.7 Install accelerator spring



11 组装总体 11 Overall assembly

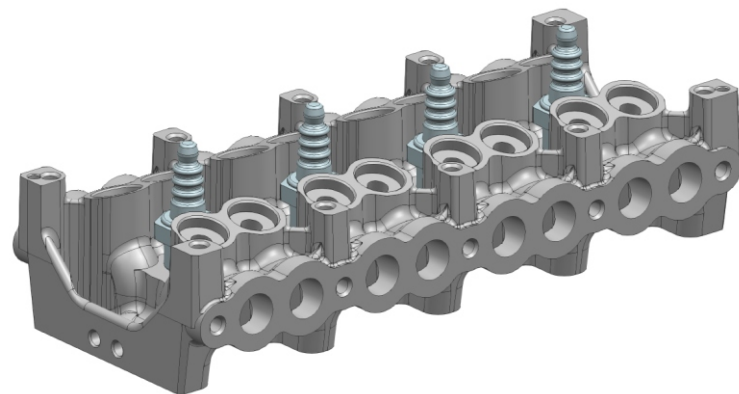
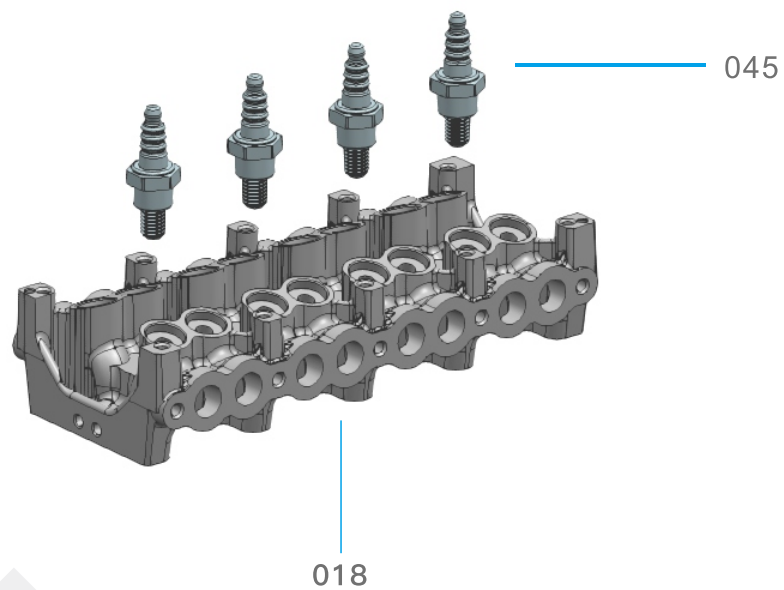
11.1 组装缸体总成、底壳总成

11.1 Assembly of cylinder assembly and casing assembly



11.2 安装火花塞

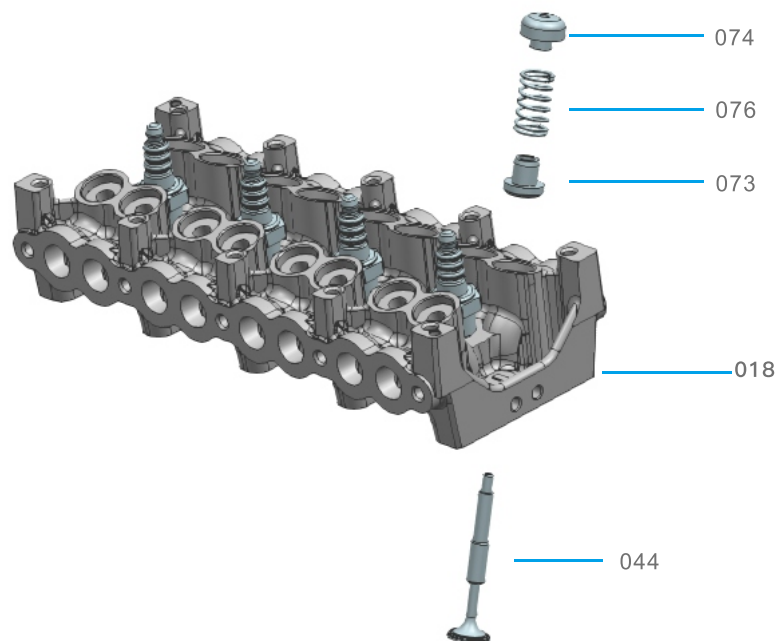
11.2 Install spark plugs



11.3 气缸总成 11.3 Cylinder assembly

11.3-1 安装气门

11.3-1 Installing a ventilation valve



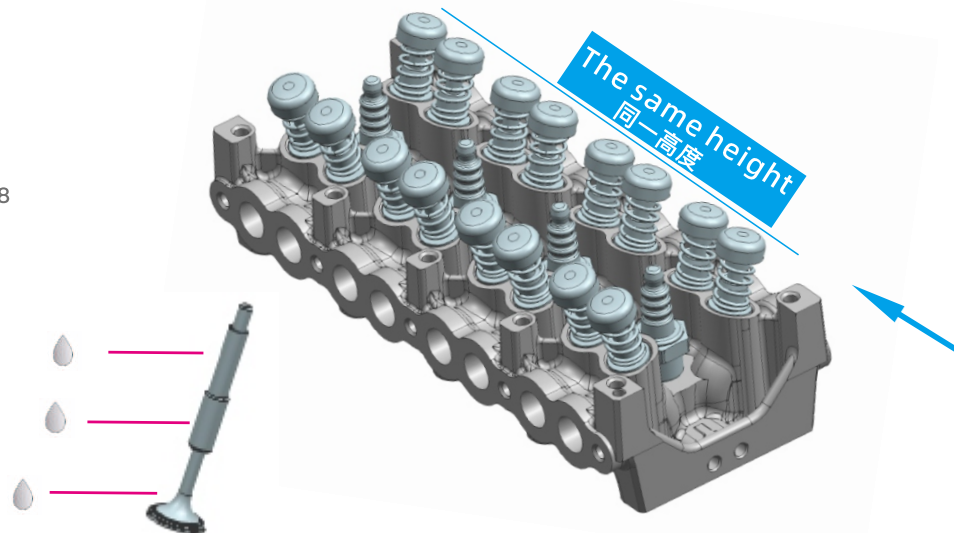
共 16 套
A total of 16 sets

11.3-2 检查气门安装是否到位

11.3-2 Check whether the valve installation is in place

气门安装好后，检查每个气门是否拧紧，
每个气门的高度是否都在同一高度上

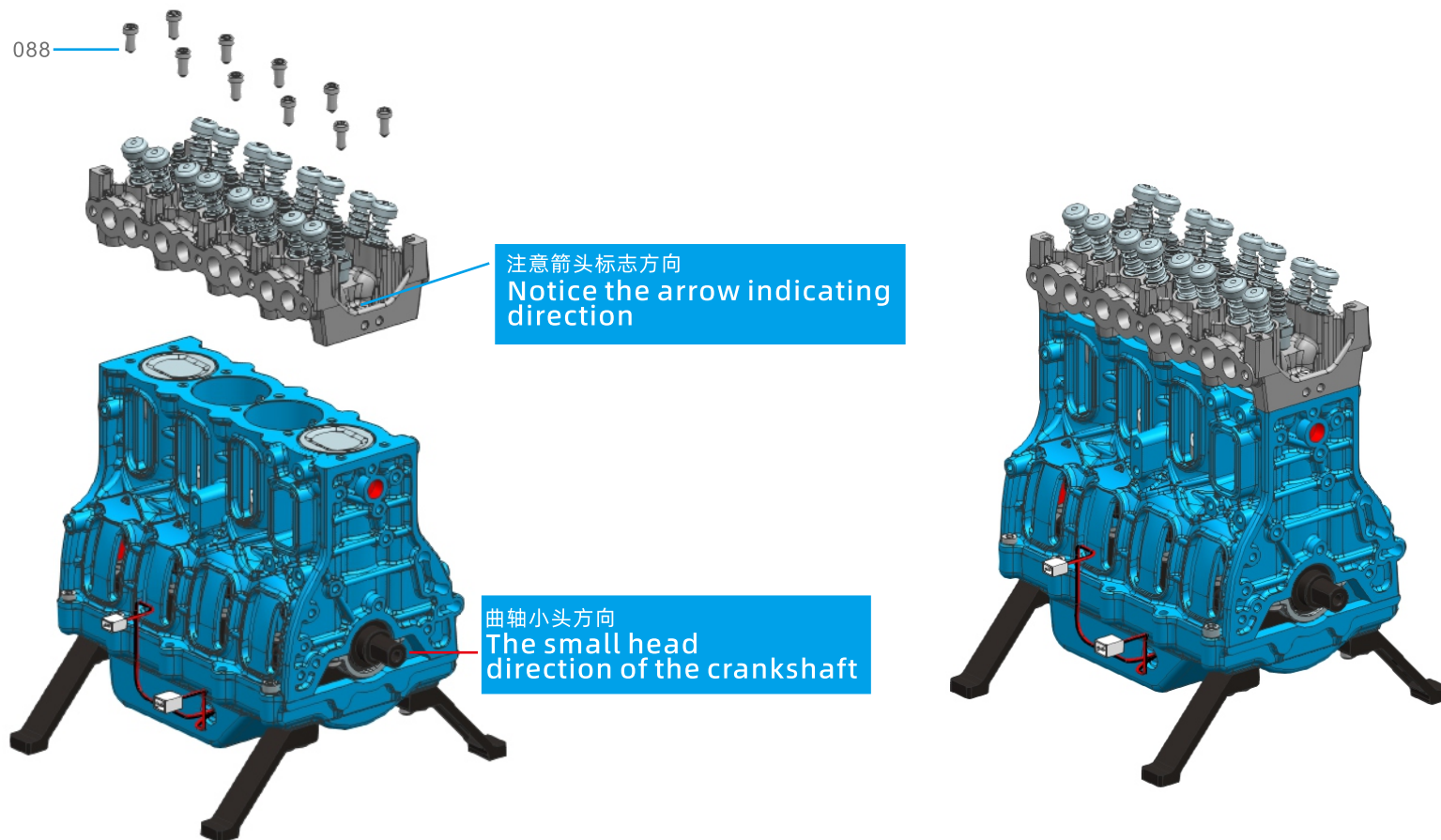
After the valve is installed, check whether each valve is tightened and whether the height of each valve remains at the same height



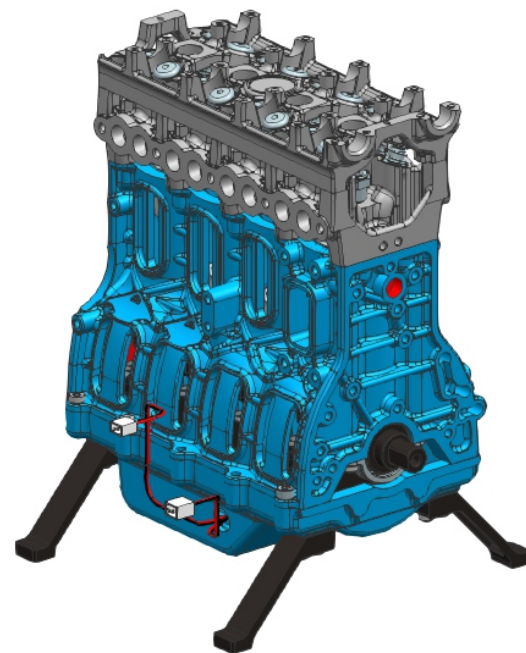
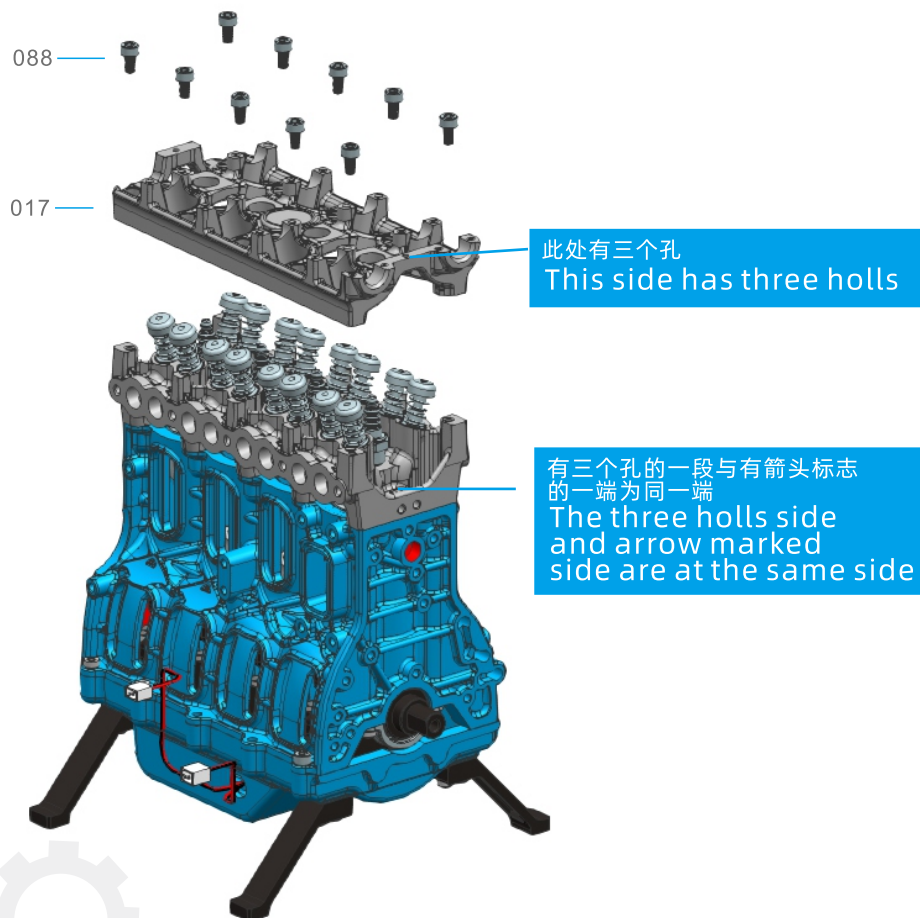
共三处 16 根

There are 16 pieces in three places.

11.3-3 固定气缸盖 11.3-3 Fixed cylinder head

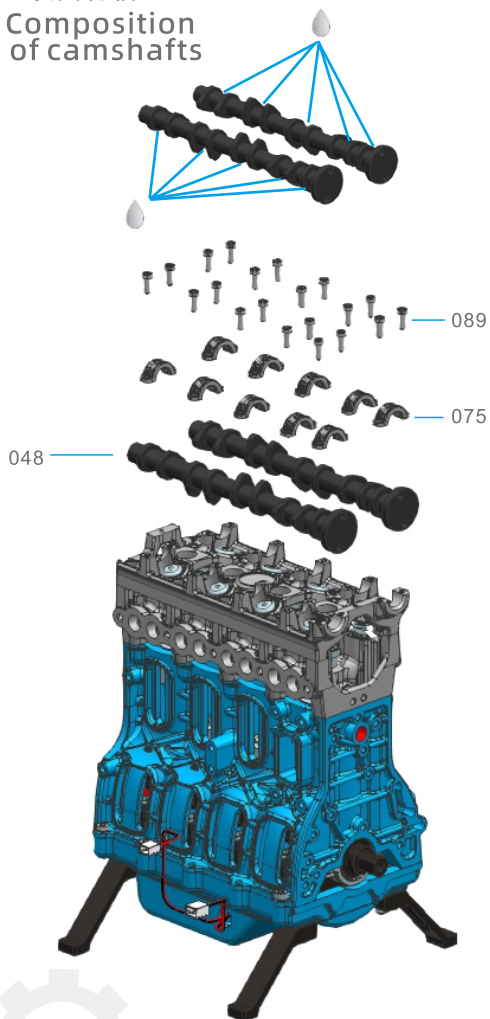


11.3-4 固定凸轮座 11.3-4 Fixed cam base

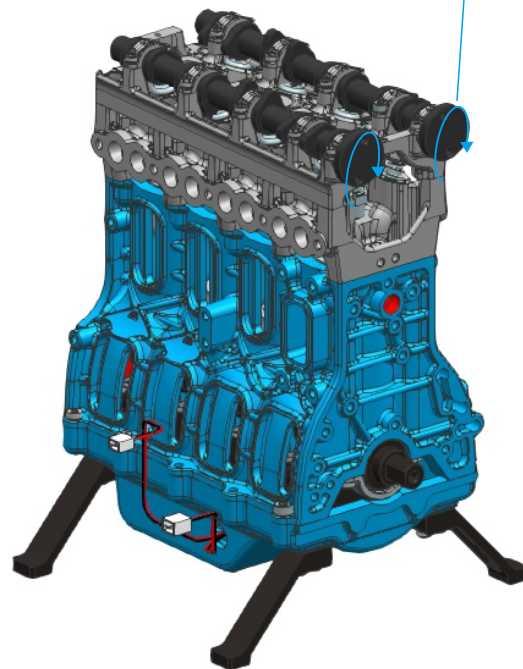


11.3-5 组装凸轮轴

11.3-5 Composition of camshafts

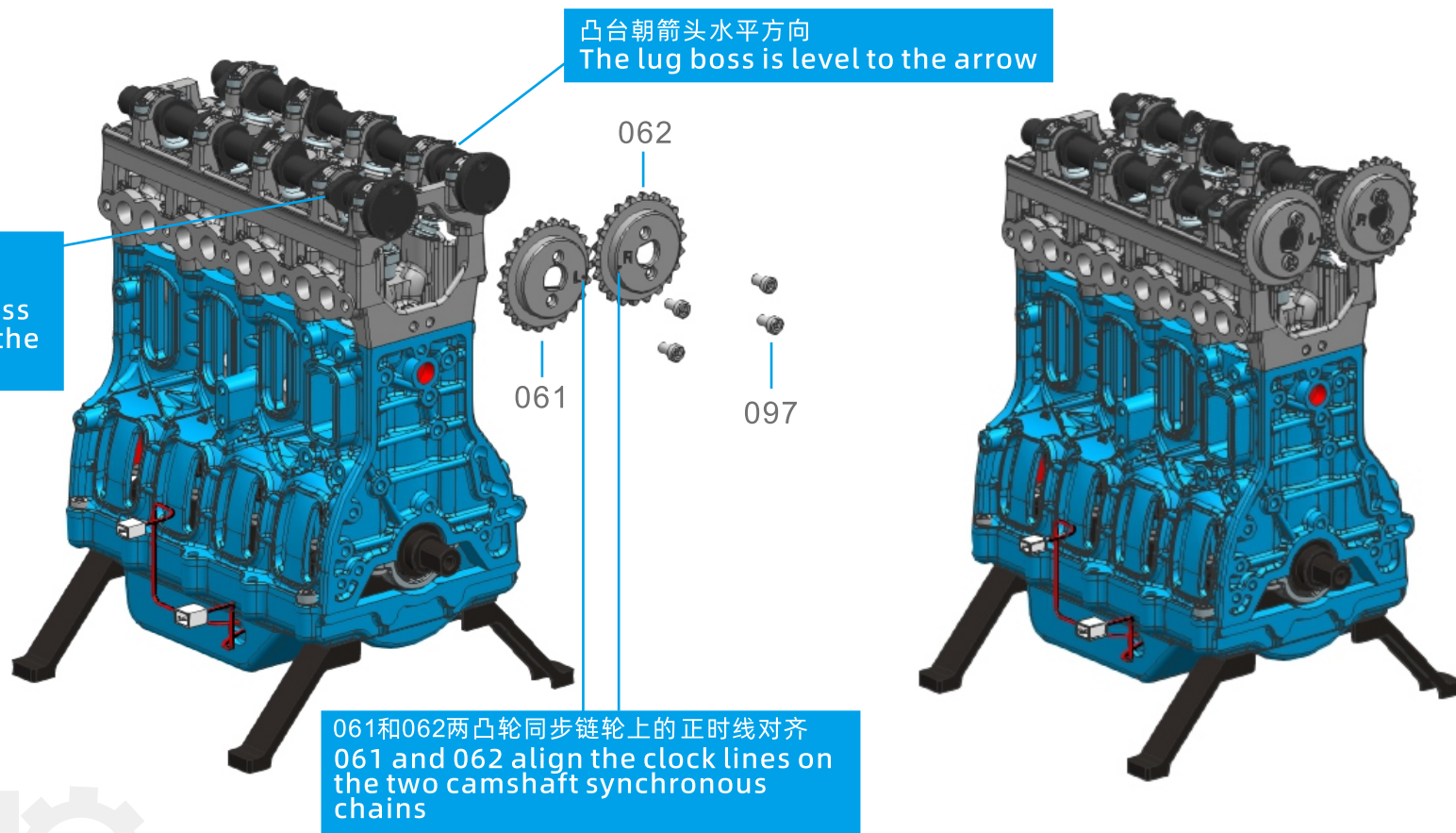


检查凸轮轴转动是否顺畅，
如偏紧可把螺丝反向扭松半圈即可解决
After installing the camshaft,
turn 048. Check whether the camshaft is moving
smoothly. If it is too tight, twist the screw in
half a circle in the opposite direction to solve it



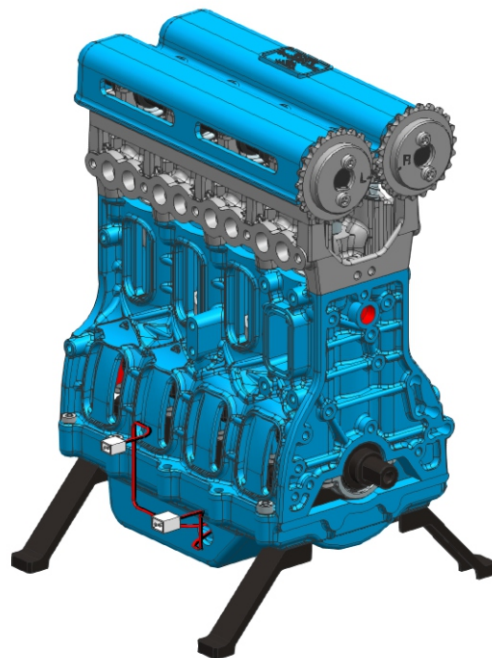
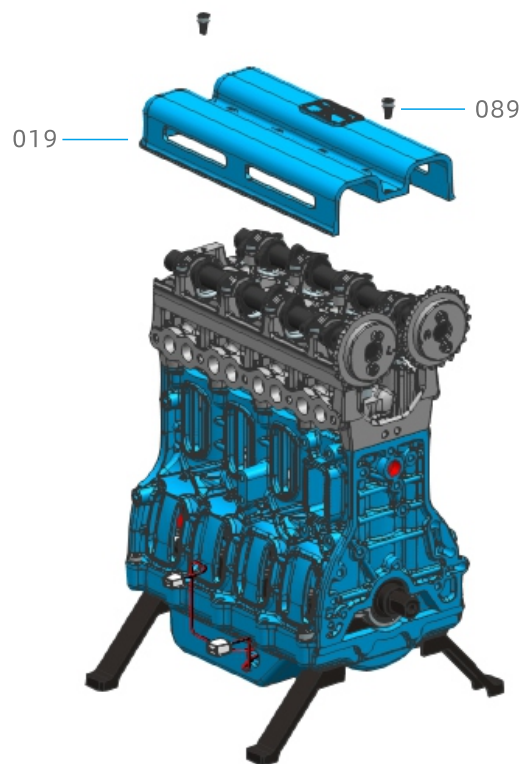
11.3-6 组装左、右凸轮链轮

11.3-6 Assemble the left and right camshaft sprocket



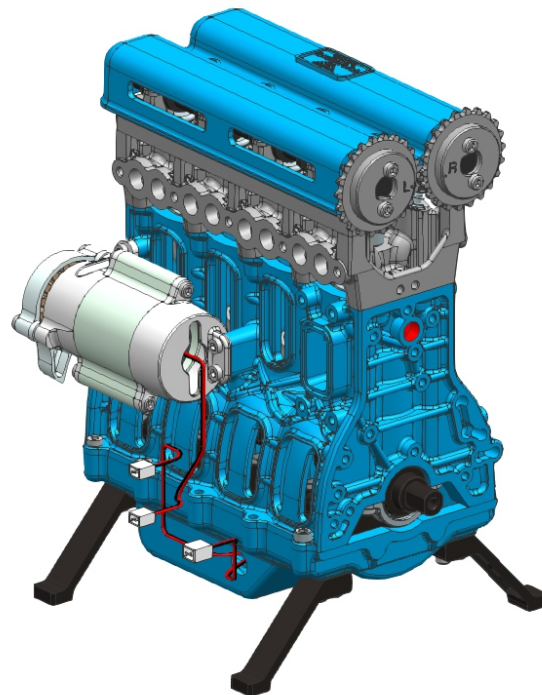
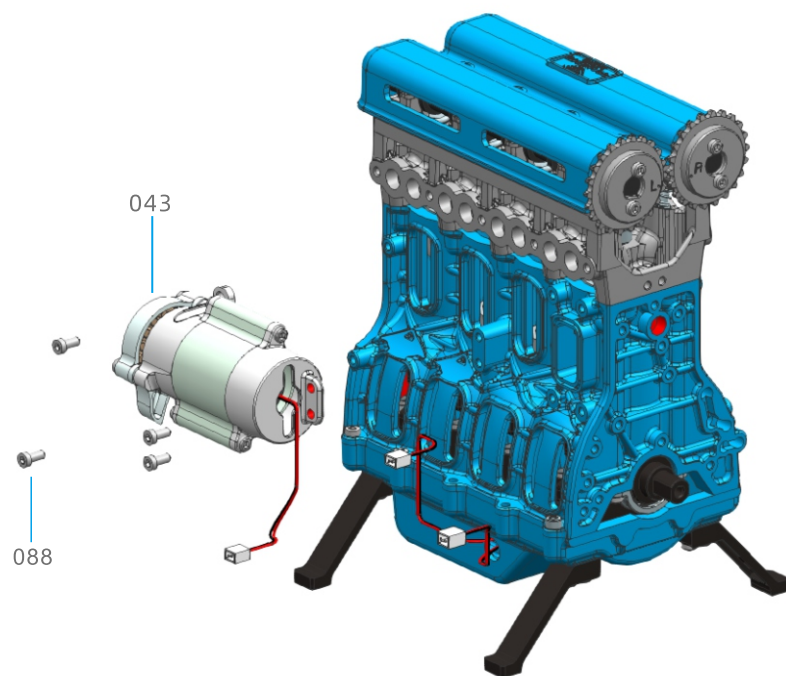
11.3-7 安装气门室盖

11.3-7 Install valve cover



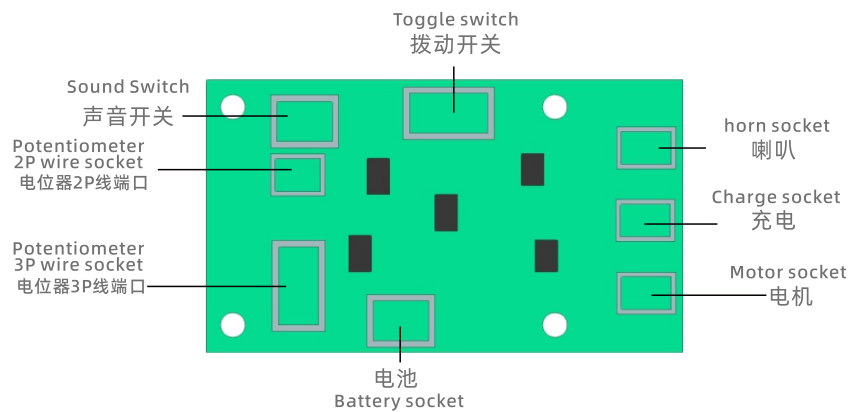
11.4 安装启动电机

11.4 Install the starter motor



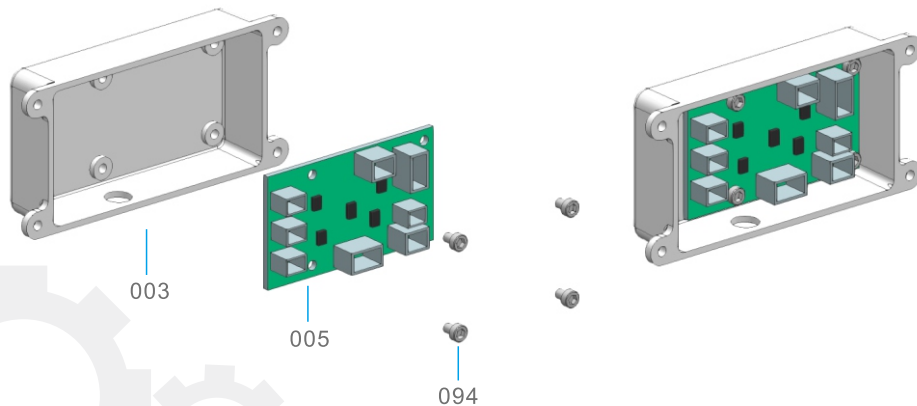
11.5 电路控制板

11.5 Circuit control board



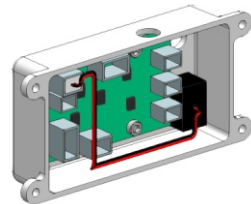
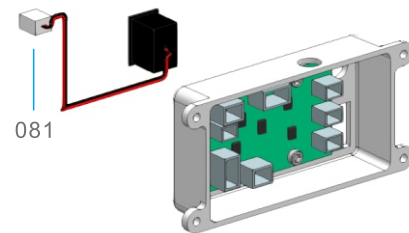
11.6 安装控制面板

11.6 Install the control panel

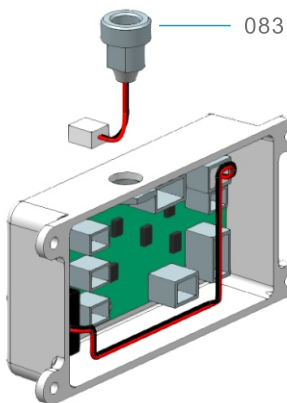
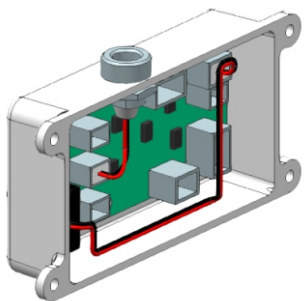


11.7 安装声音开关

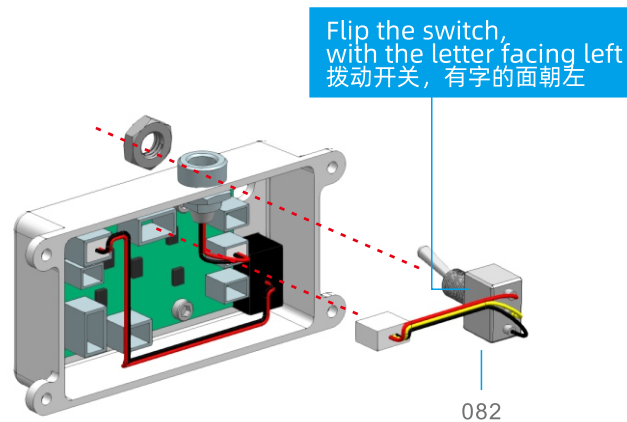
11.7 Install a sound switch



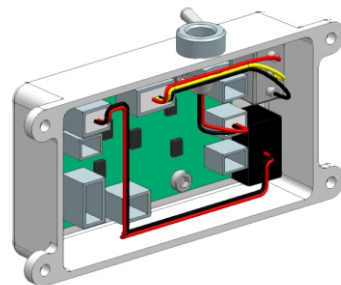
11.8 安装充电接口 11.8 Install a charging interface



11.9 安装拨动开关组件 11.9 Installation of dial switch components

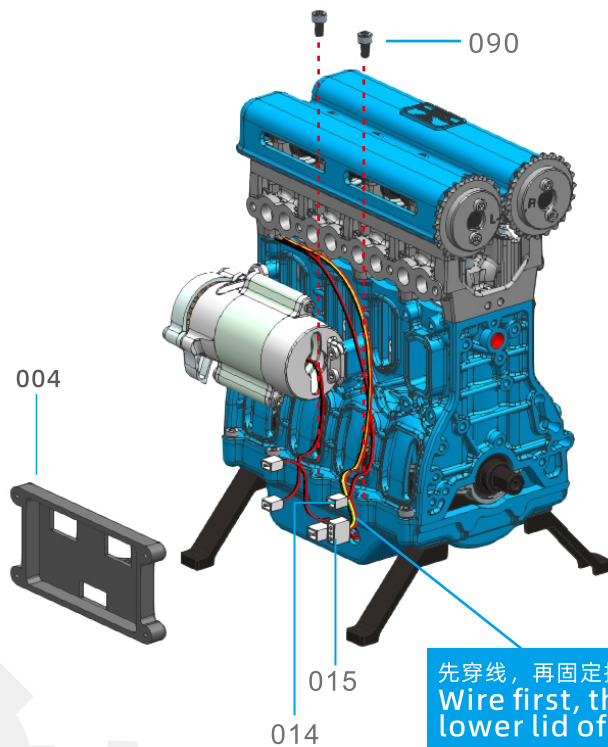


11.10 拨动开关线路对接示意图 11.10 Demonstration of dial switch diagram



11.11 安装控制盒下盖

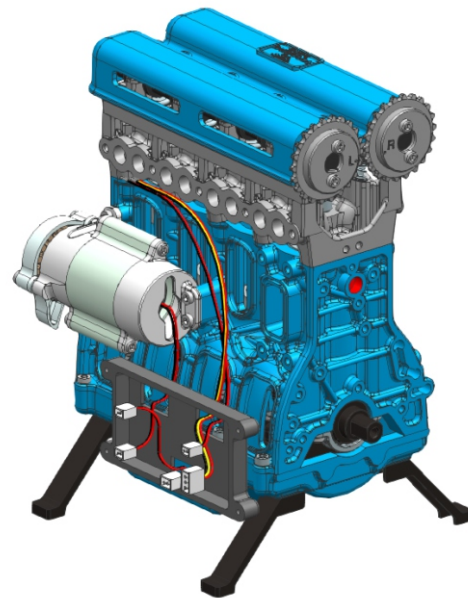
11.11 Install the lower lid of the control box



先穿线，再固定控制盒下盖
Wire first, then fix the
lower lid of the control box

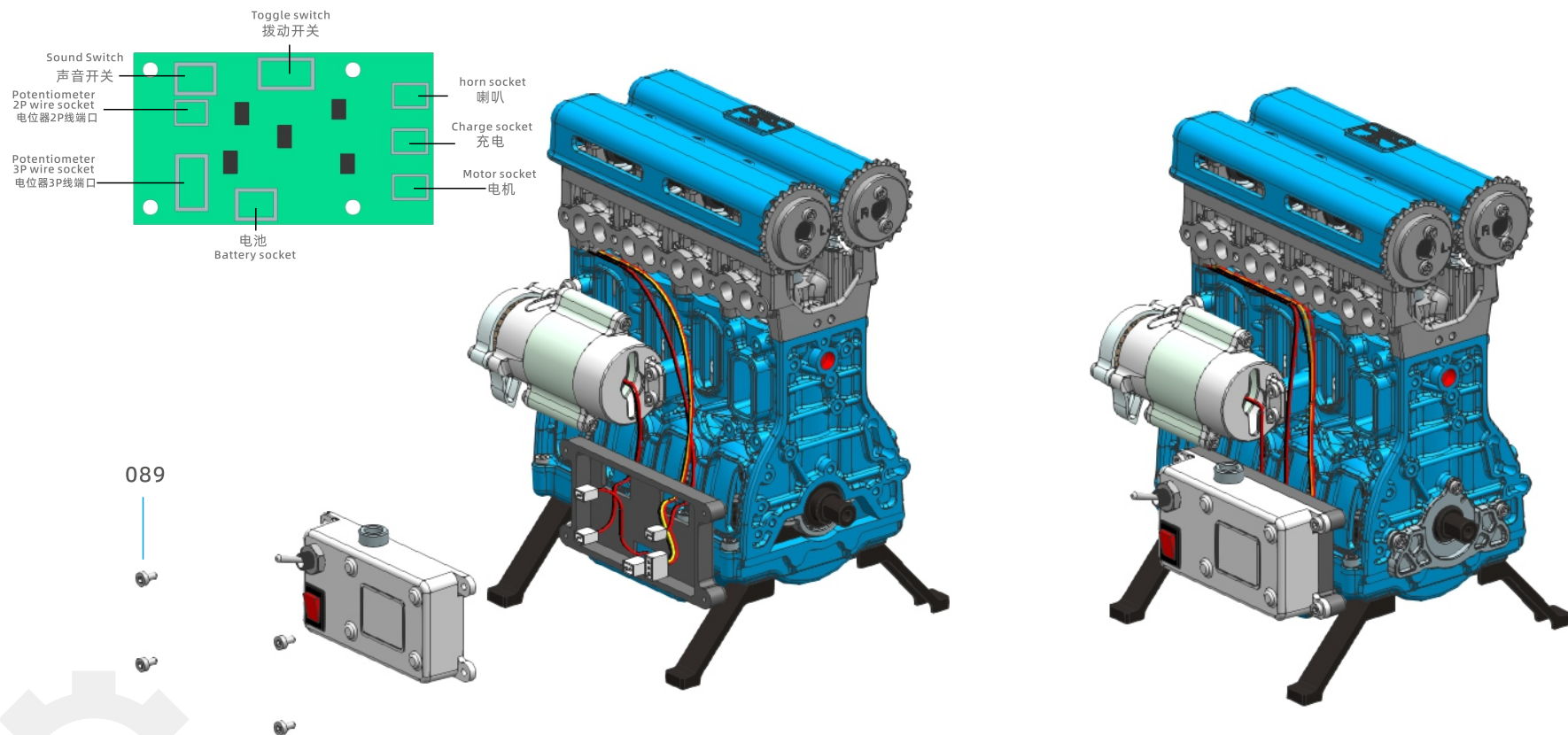
11.12 对接电位线2P、3P接口

11.12 Butting potential line 2P and 3P interfaces



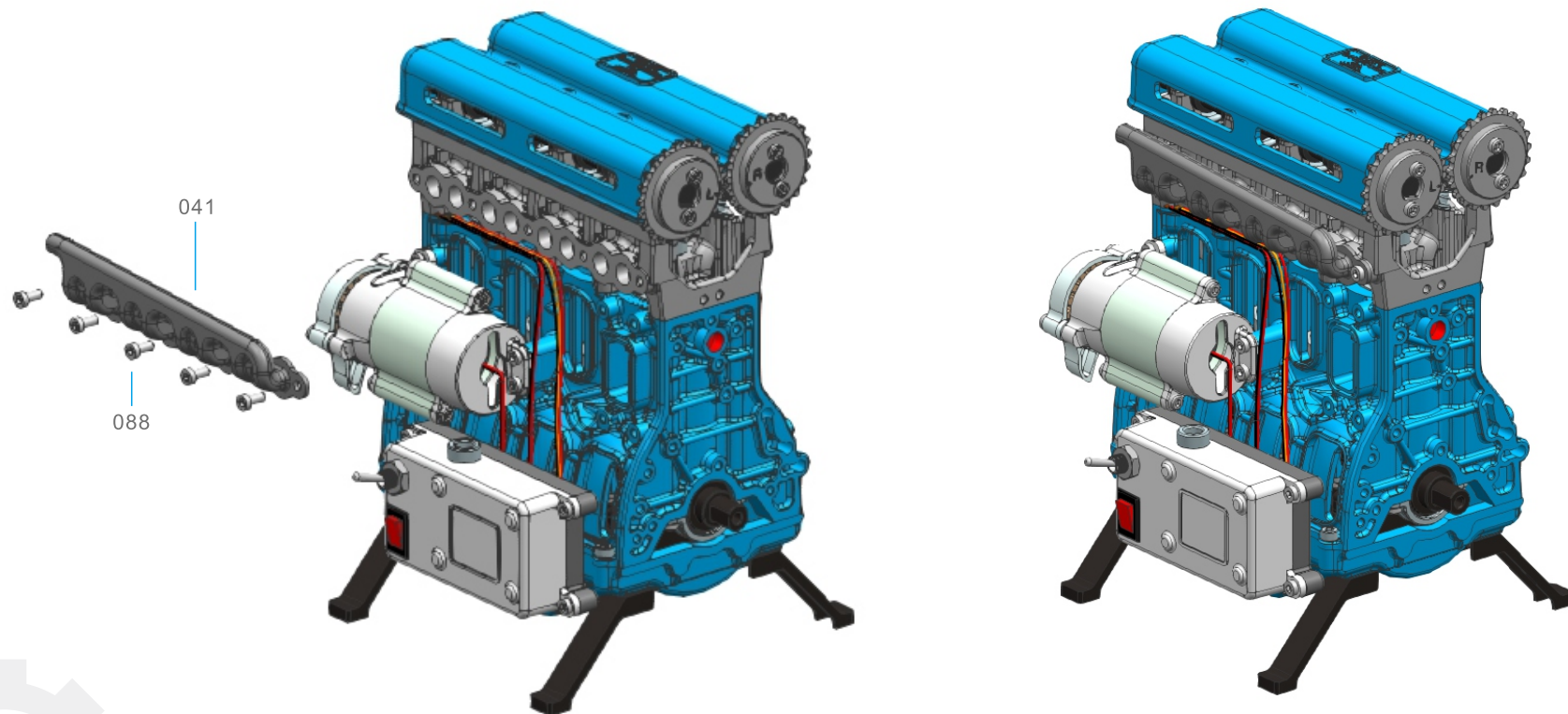
11.13 安装控制盒上盖

11.13 Install the upper lid of the control box



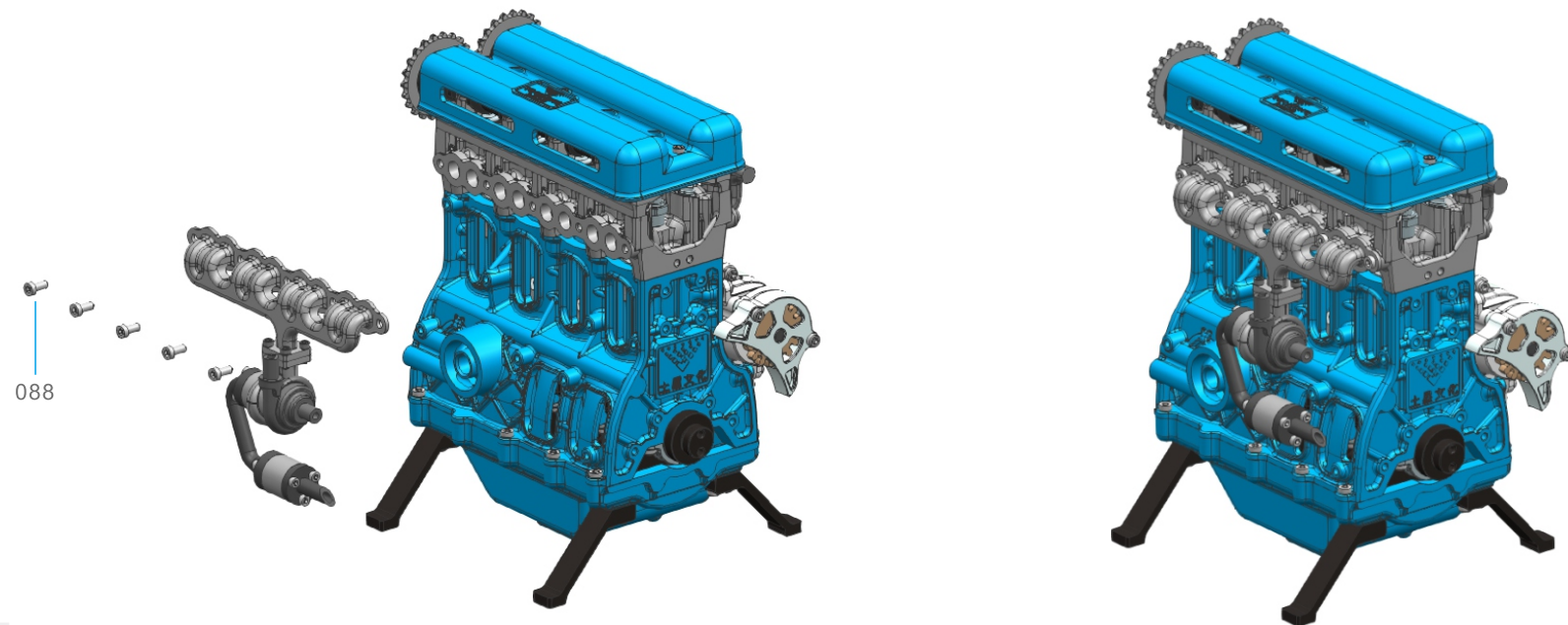
11.14 安装进气歧管

11.14 Install air inlet manifold



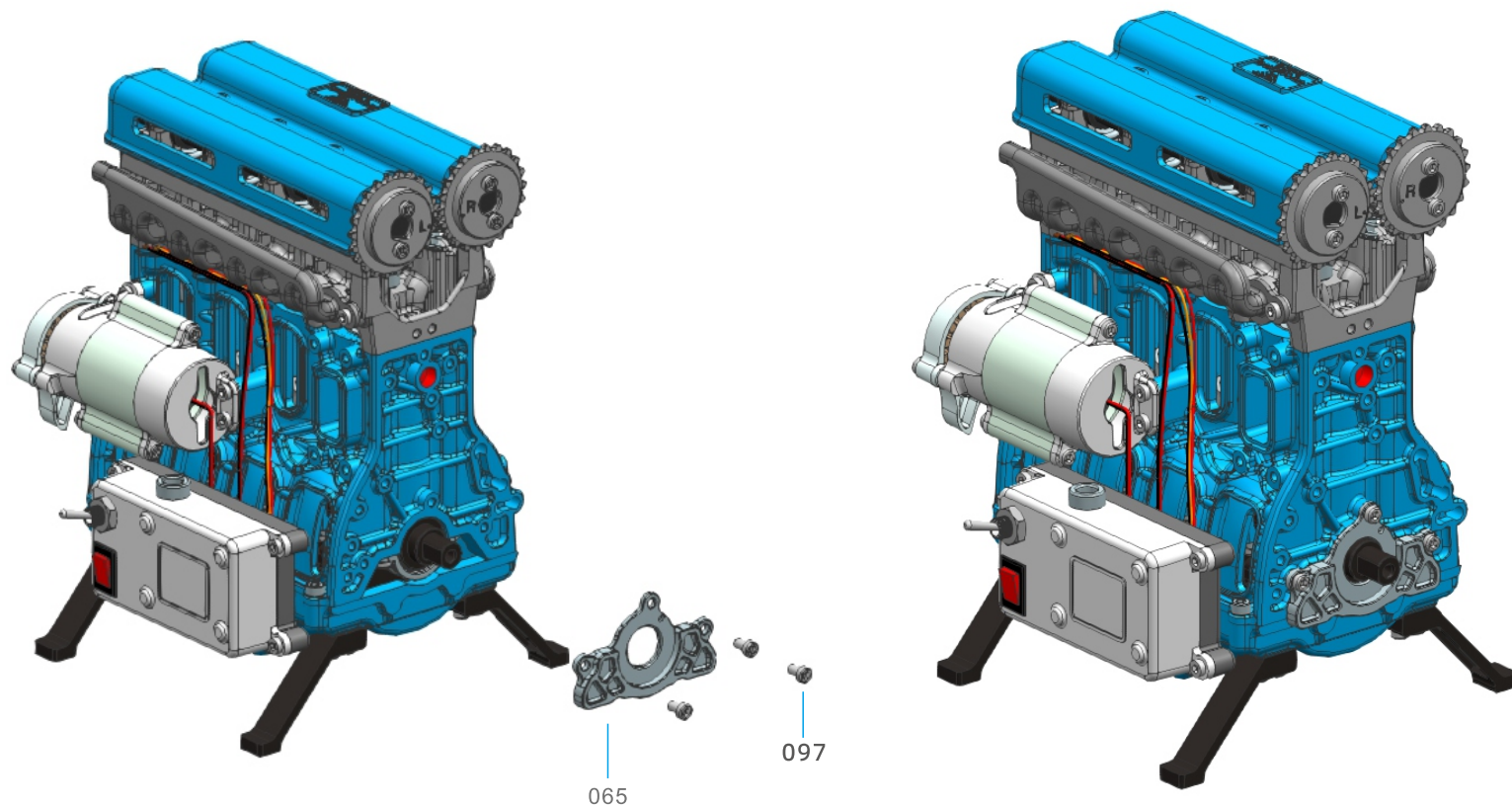
11.15 安装排气管组件

11.15 Installation of exhaust pipe components



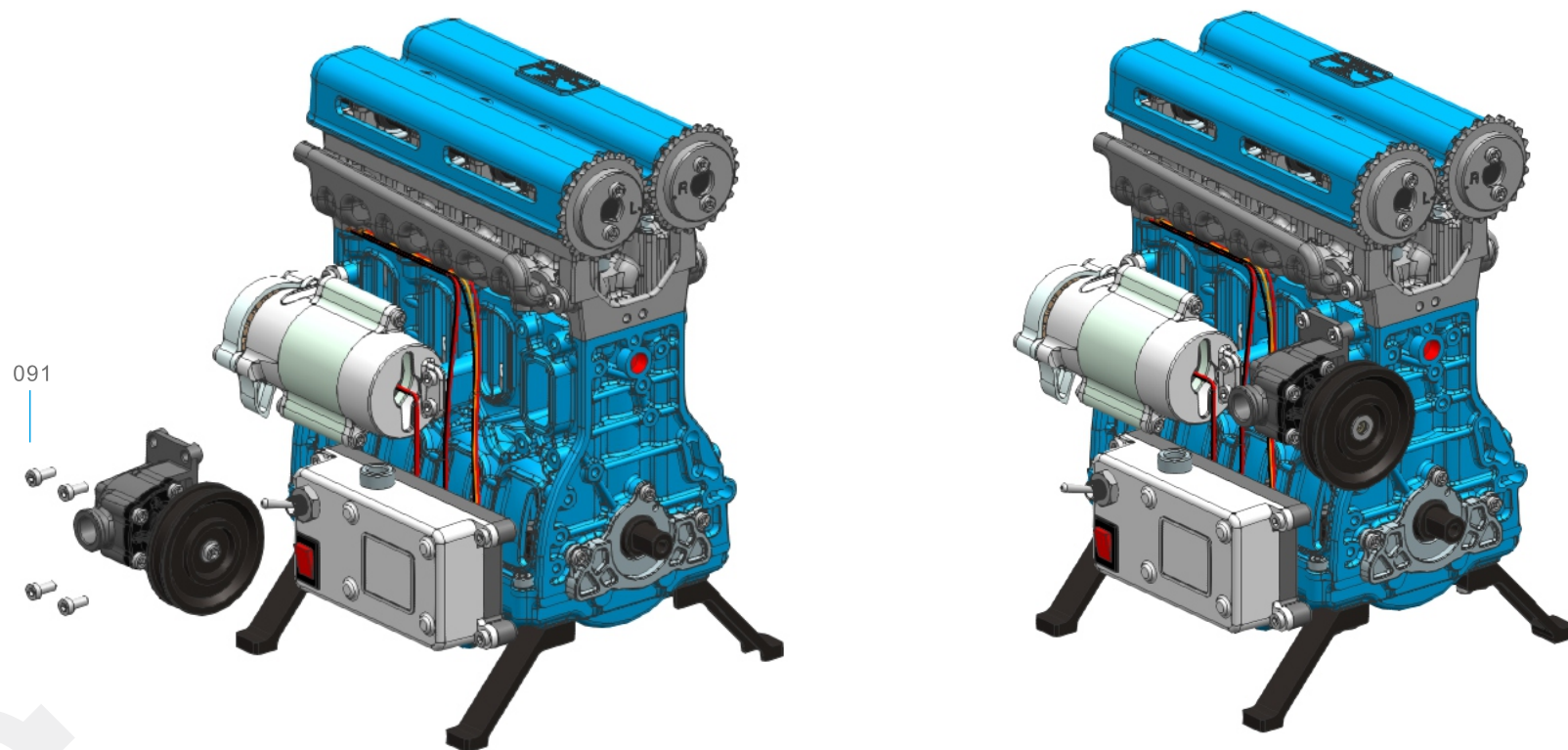
11.16 安装后端盖

11.16 Install the back end covers



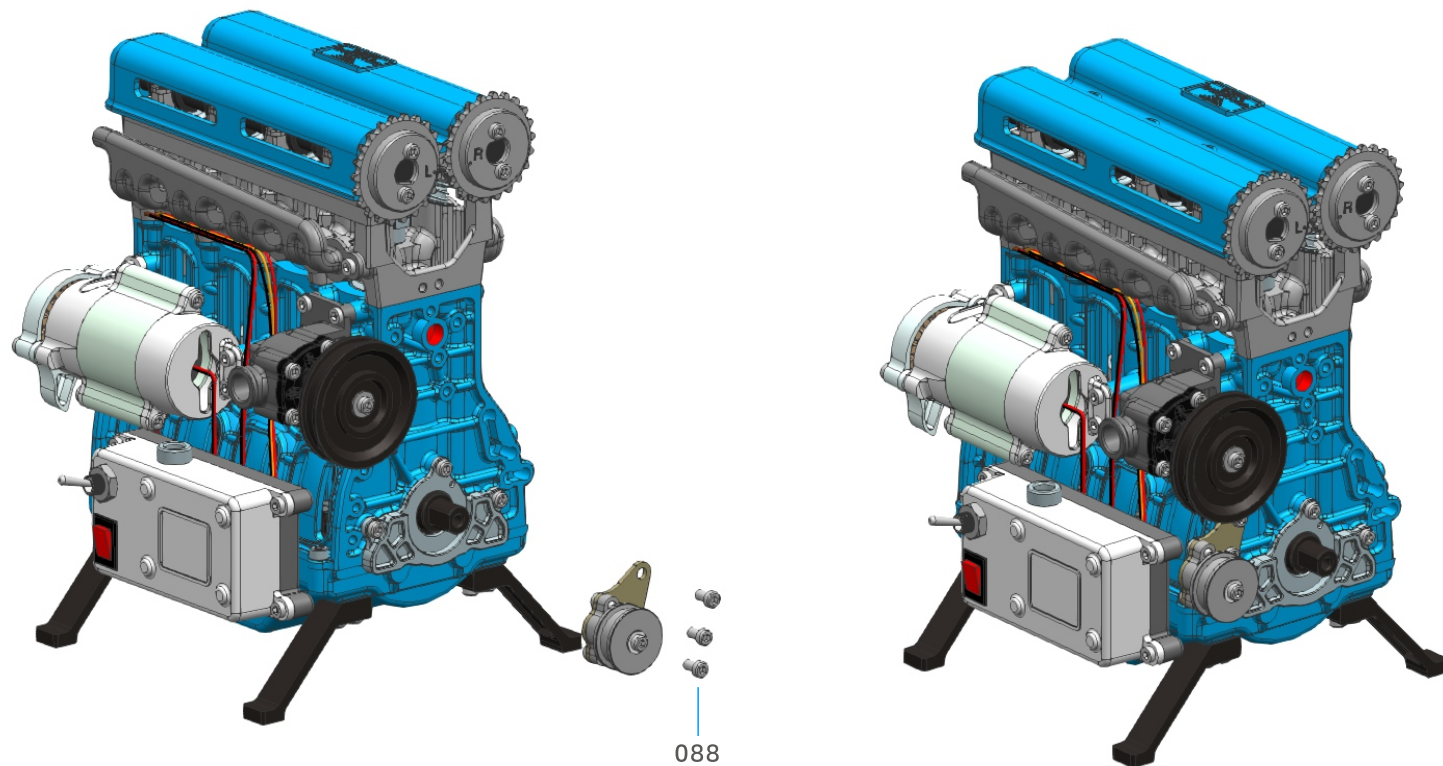
11.17 安装水泵总成

11.17 Installation of a pump assembly



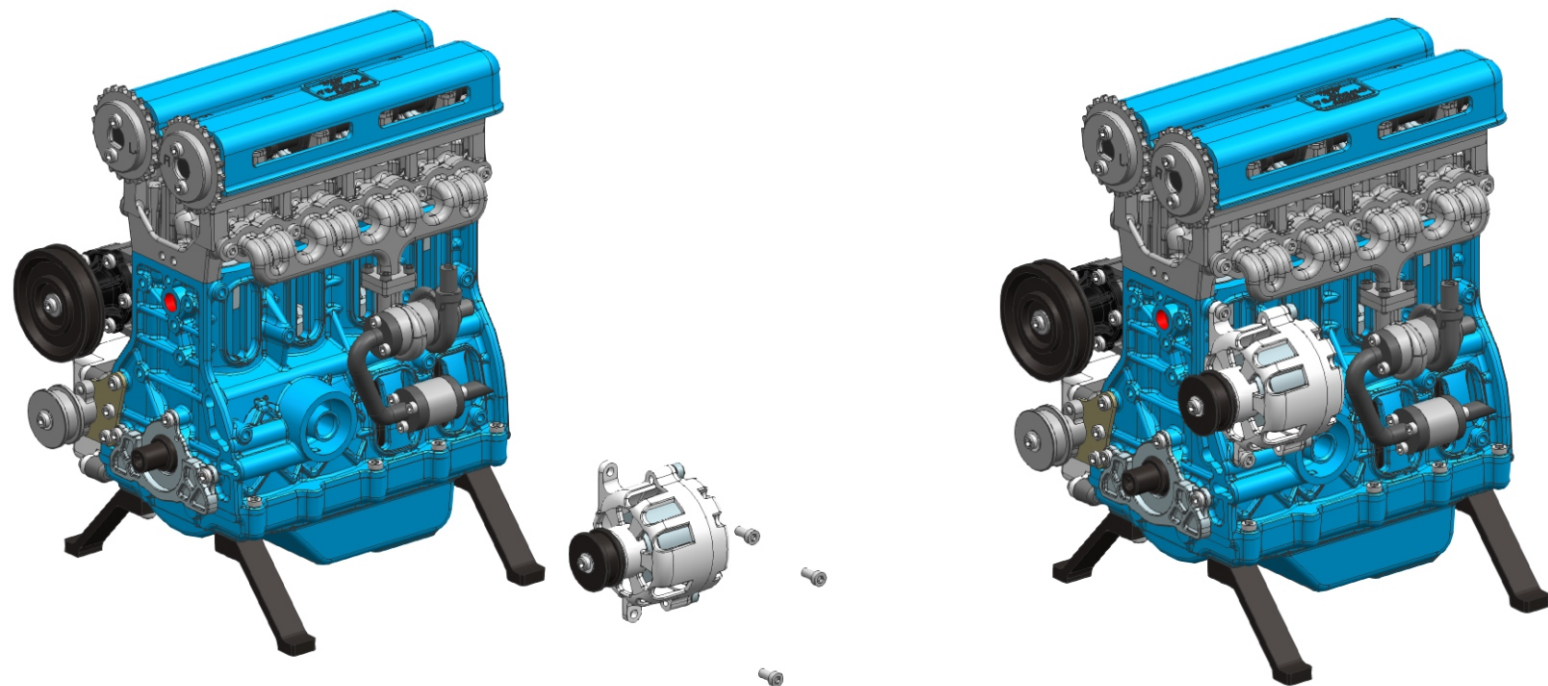
11.18 安装张紧轴总成

11.18 Installing tensioning shaft assemblies



11.19 安装发电机总成

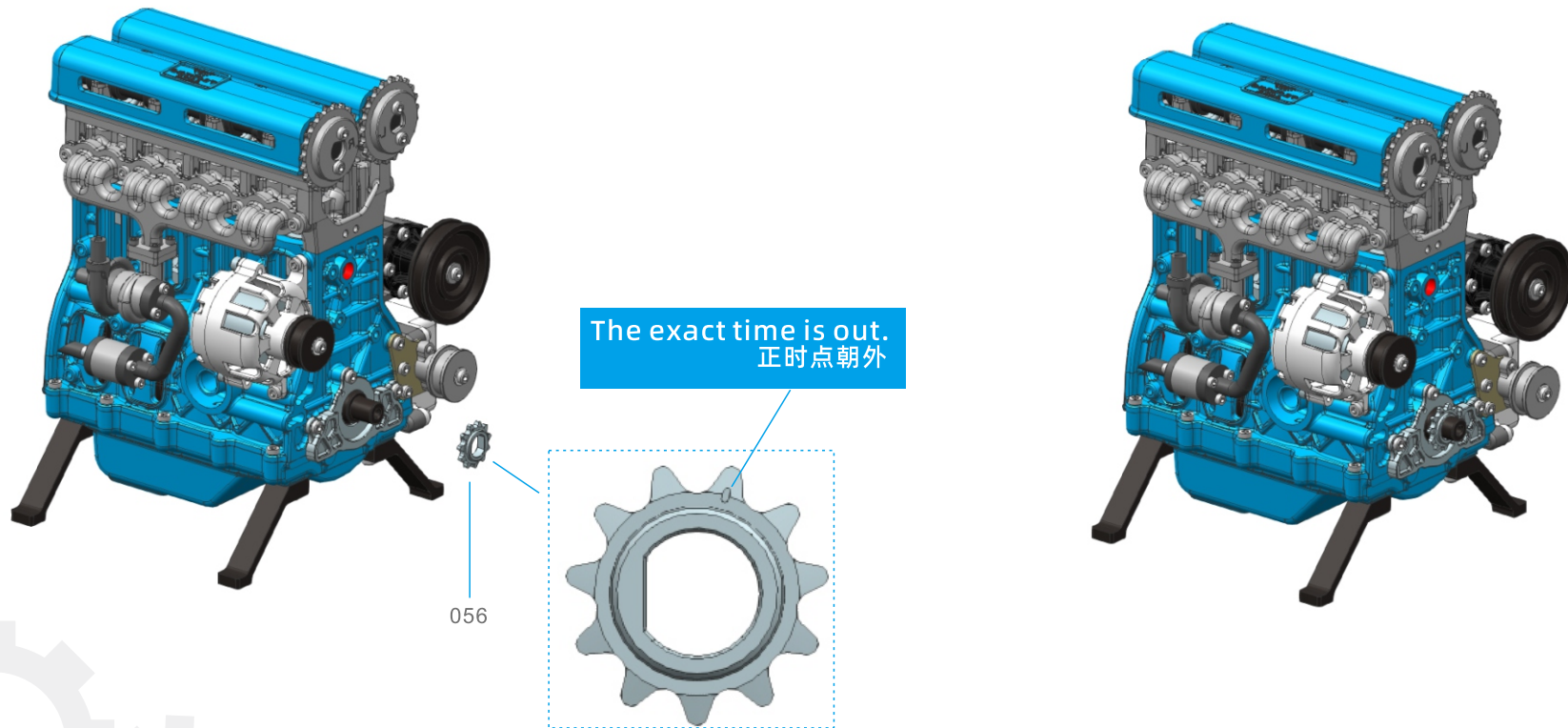
11.19 Installation of generator assembly



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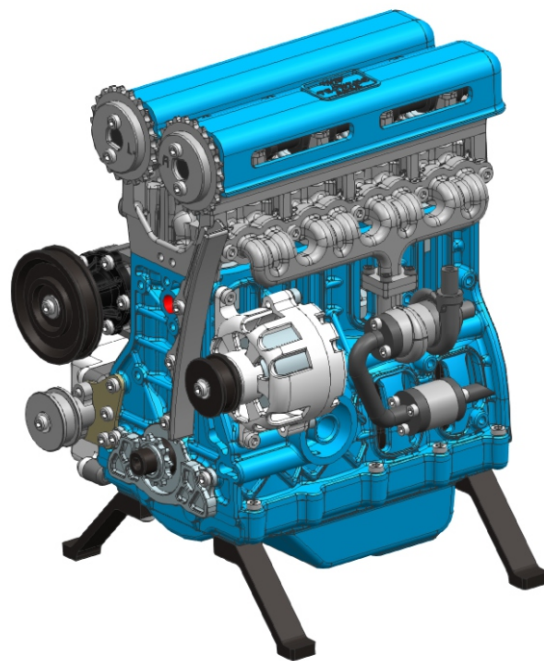
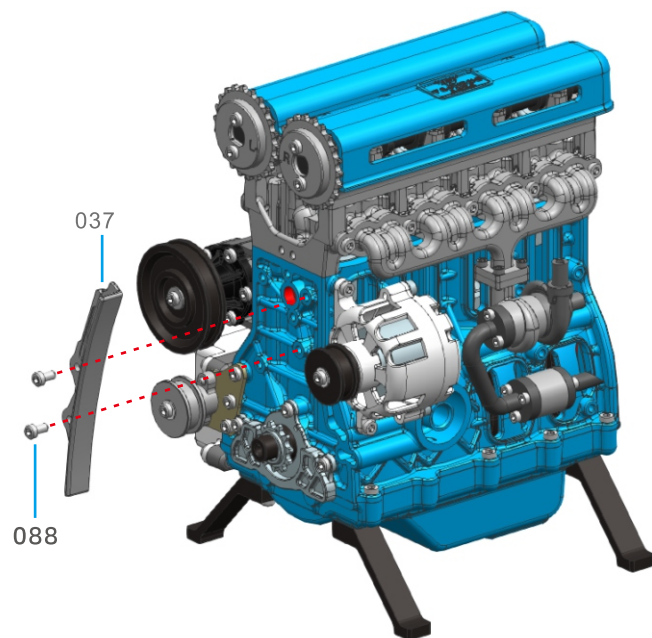
11.20 对接曲轴同步链轮

11.20 Docking crankshaft synchronous chain



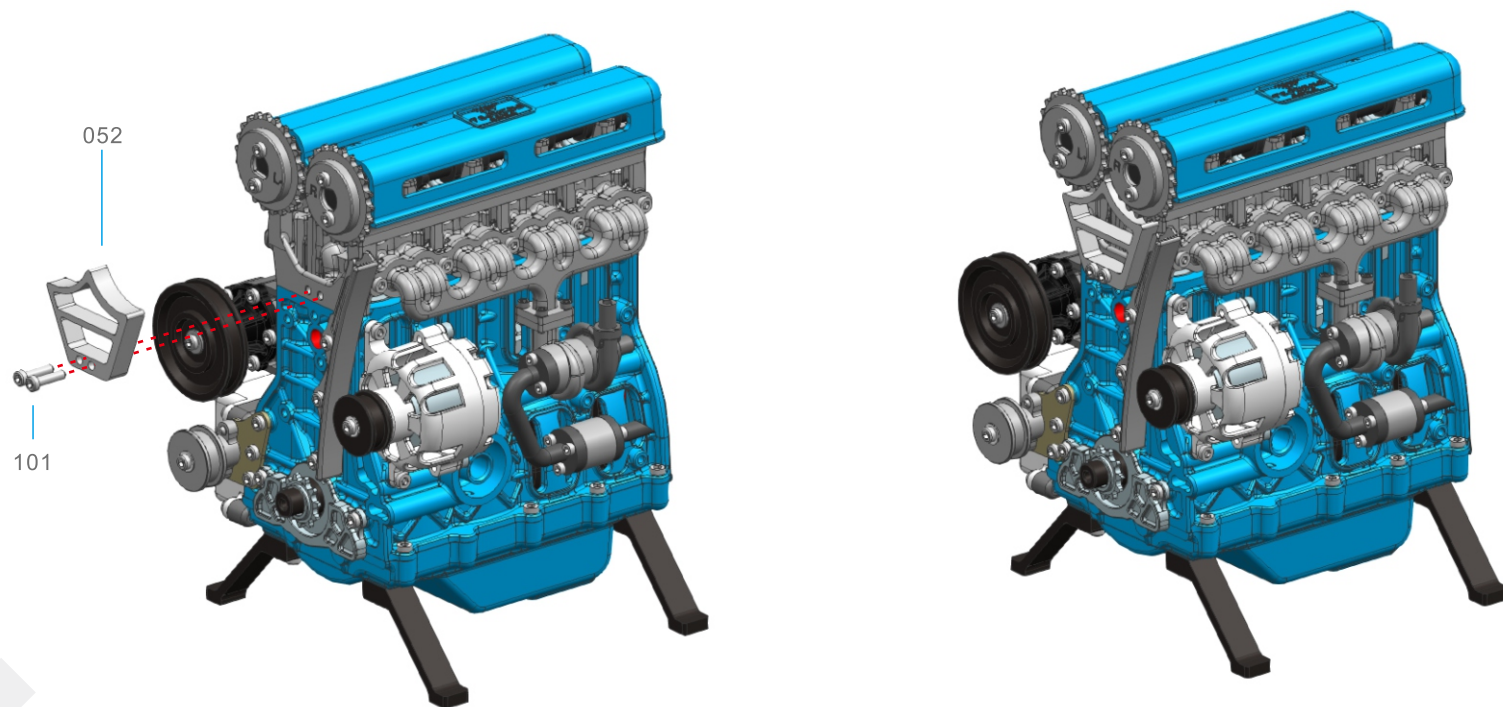
11.21 安装链条导向块

11.21 Install chain guide block



11.22 安装同步链轮挡块

11.22 Install synchronous chain gear block

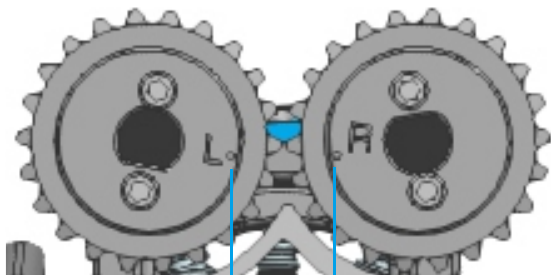


11.23 安装曲轴同步链轮

11.23 Installing crankshaft synchronization gear

将左、右凸轮同步链轮上的正时线 对齐曲轴同步链轮上的正时点要与后端盖上的正时线对齐三处正时位置对齐，然后套好链条

Align the timing line on the left and right cranks on the synchronous chain wheel Align the crankshaft The timing point on the synchronously chain wheel should be aligned with the timingline on the back end cover The three timing positions should be adjusted, then the chain should be fastened



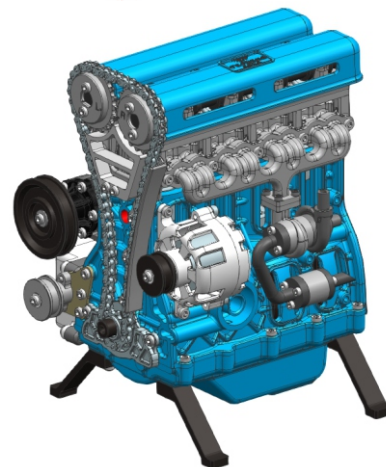
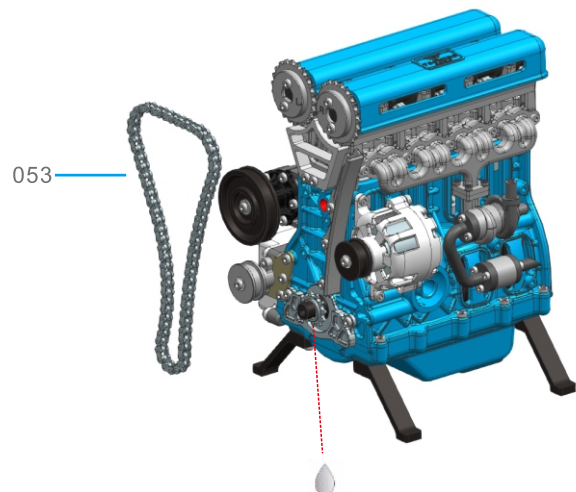
凸轮同步链轮正时线
Camshaft synchronous chain clock line

曲轴同步链轮正时点 (如图)
Crankshaft synchronization gear timing
(As shown in the picture)

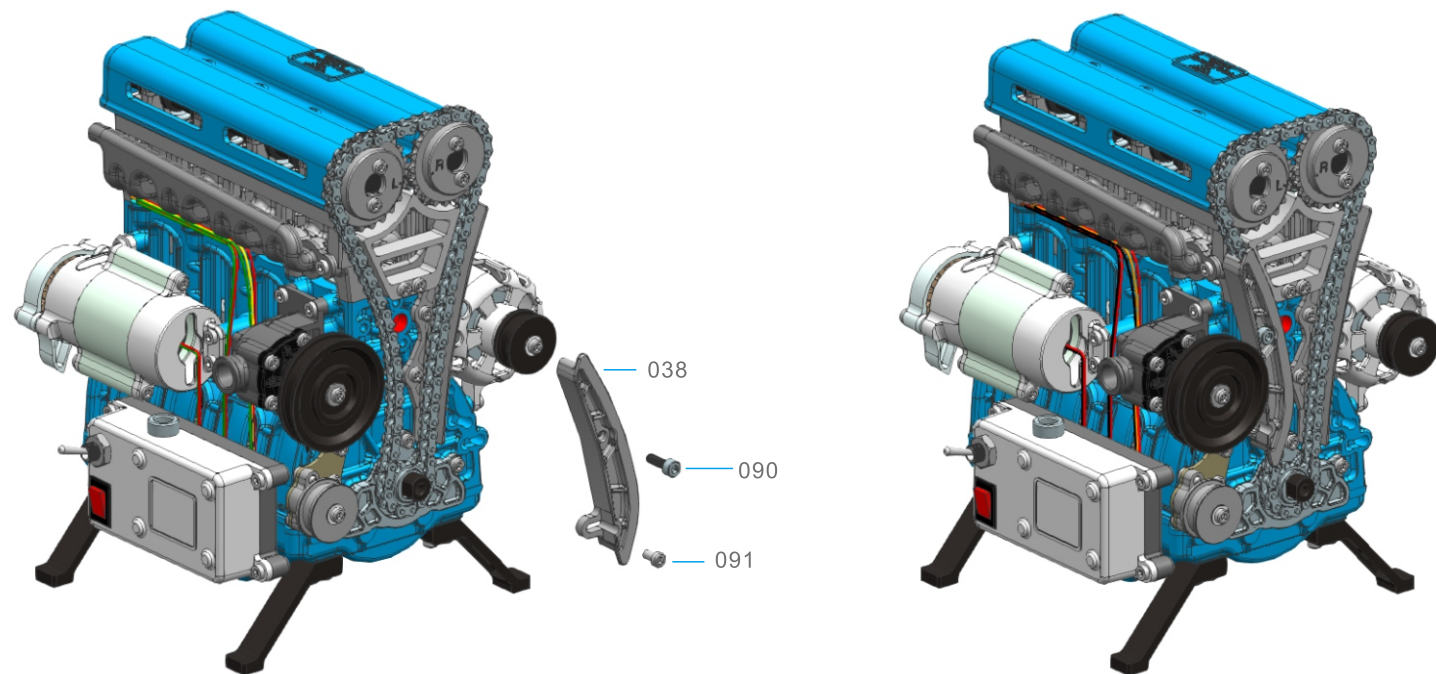


11.24 安装正时链条

11.24 Install timing chain

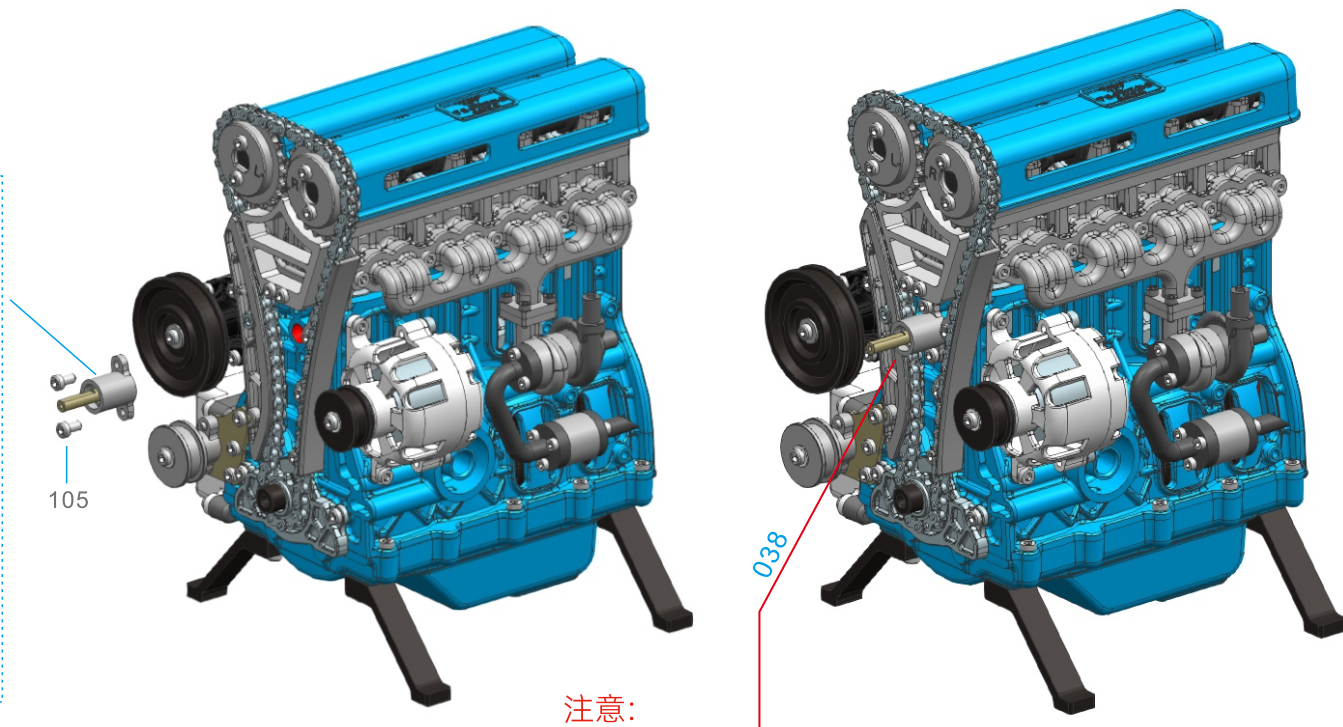
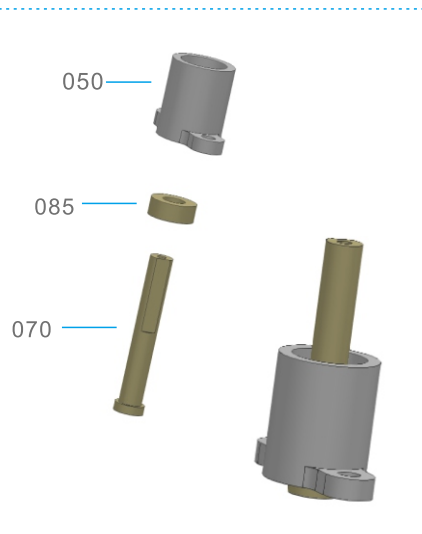


11.25 安装链条张紧块 11.25 Install chain tensioner



11.26 安装轴承座 11.26 Installing bearing seats

Assemble fan shaft 组装风扇轴



注意:

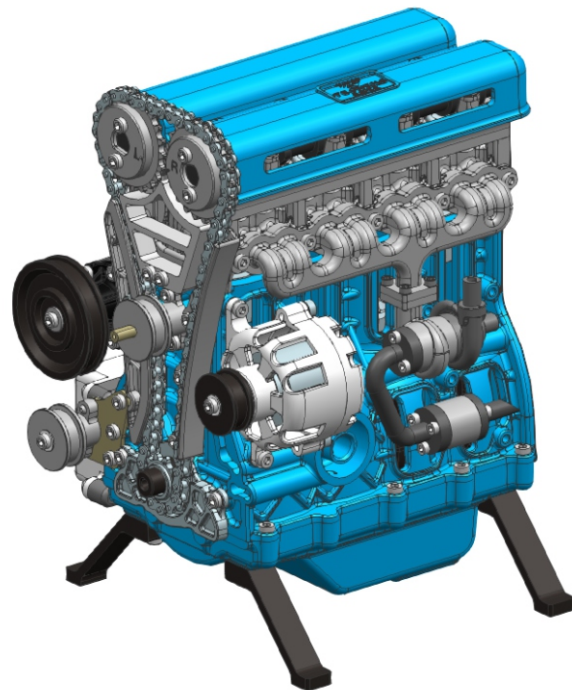
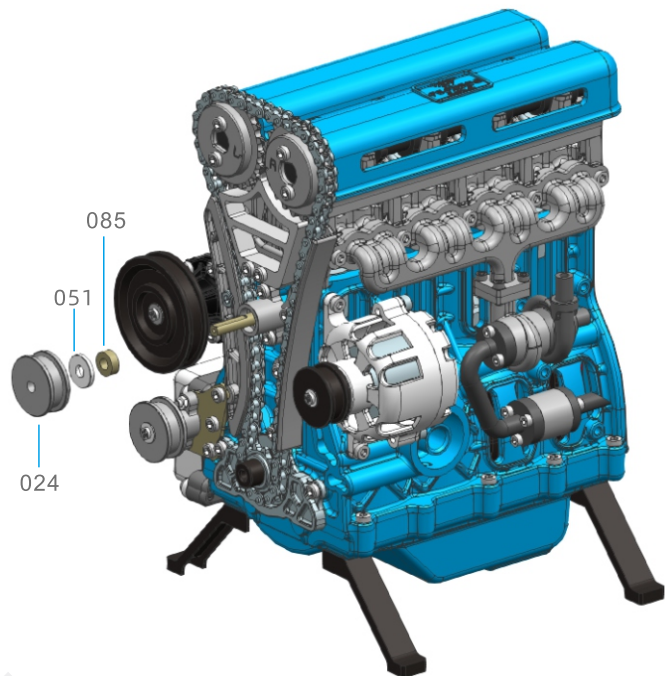
避免轴承座 (050) 与链条摩擦, 要松开链条张紧块 (038) 的张紧螺丝, 调整 (038) 的安装位置.

Be careful:

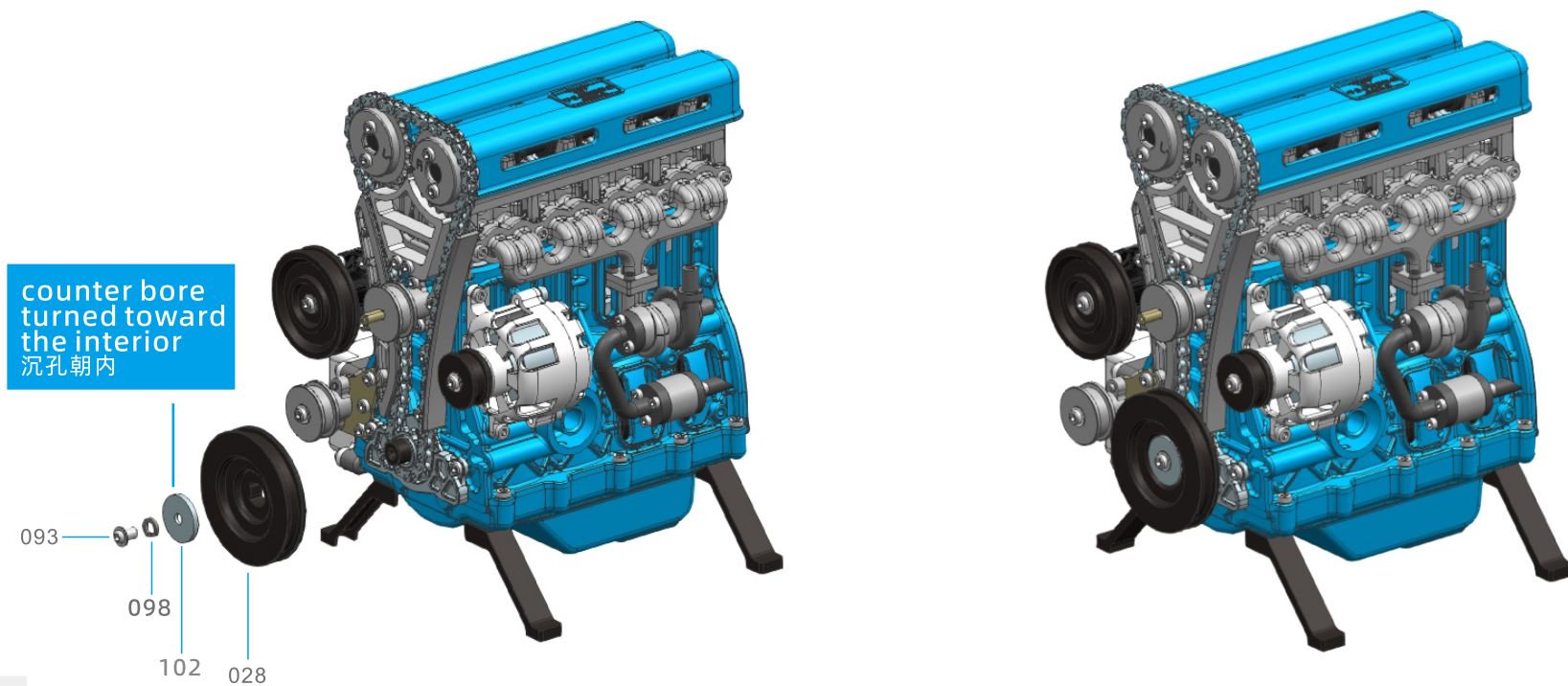
To avoid friction between the fan base (050) and the chain, loosen the tension screw of the chain tension block (038) and adjust the installation position of (038).

11.27 对接轴承、通用皮带轮

11.27 Docking bearings, universal pulley

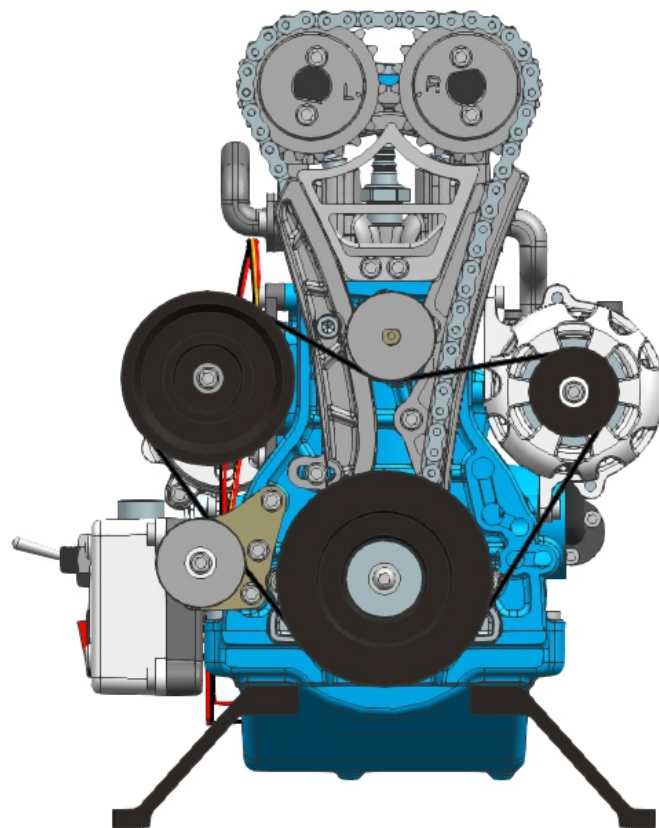
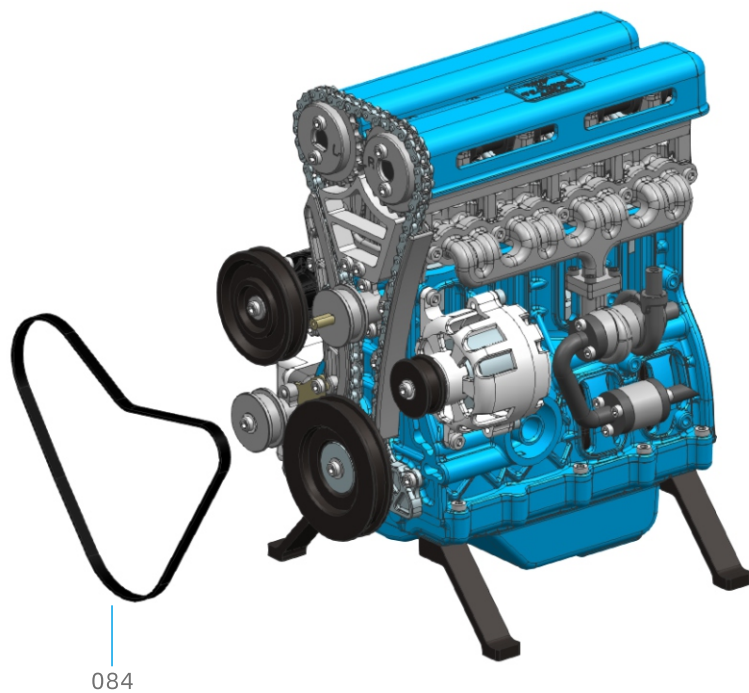


11.28 固定曲轴皮带轮
11.28 Fixed crankshaft pulley

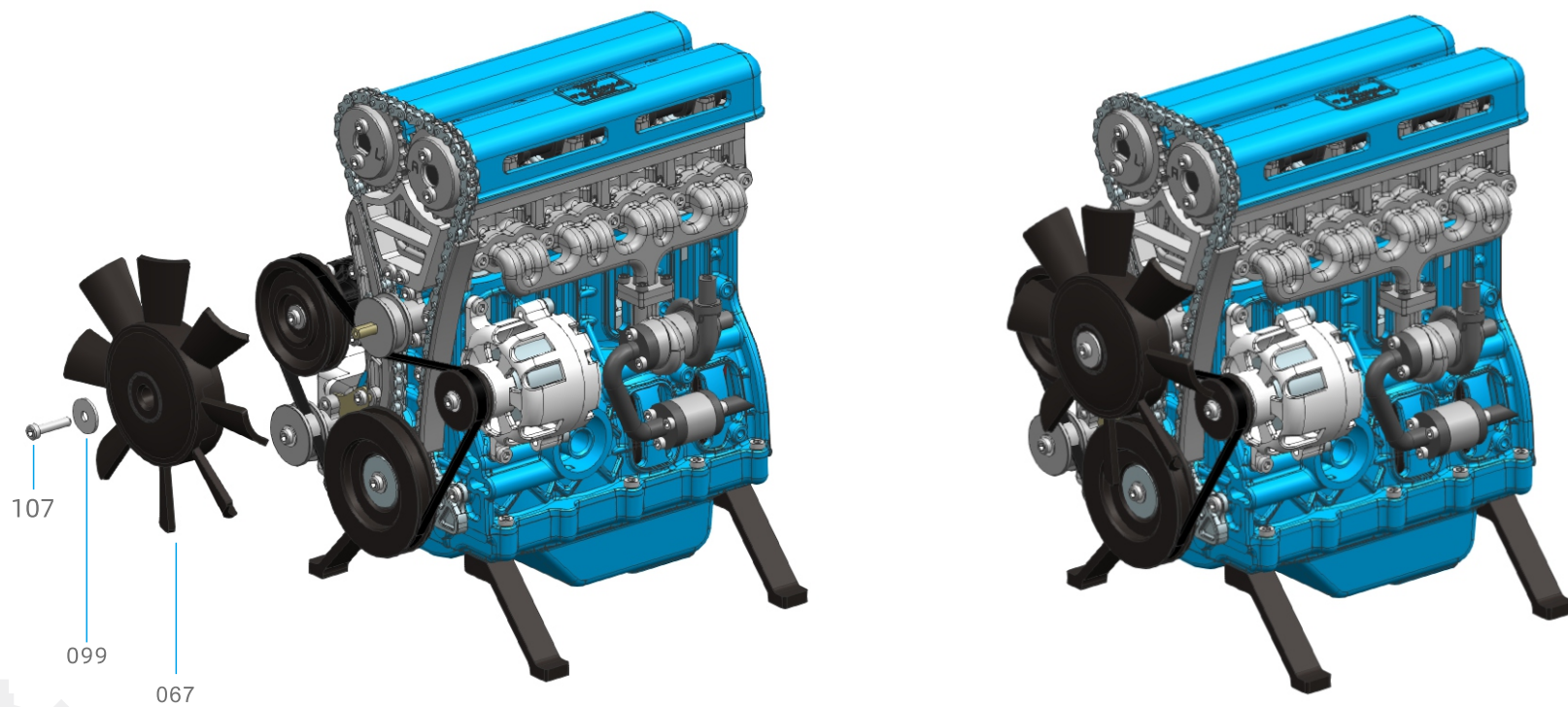


11.29 安装皮带

11.29 Install belt

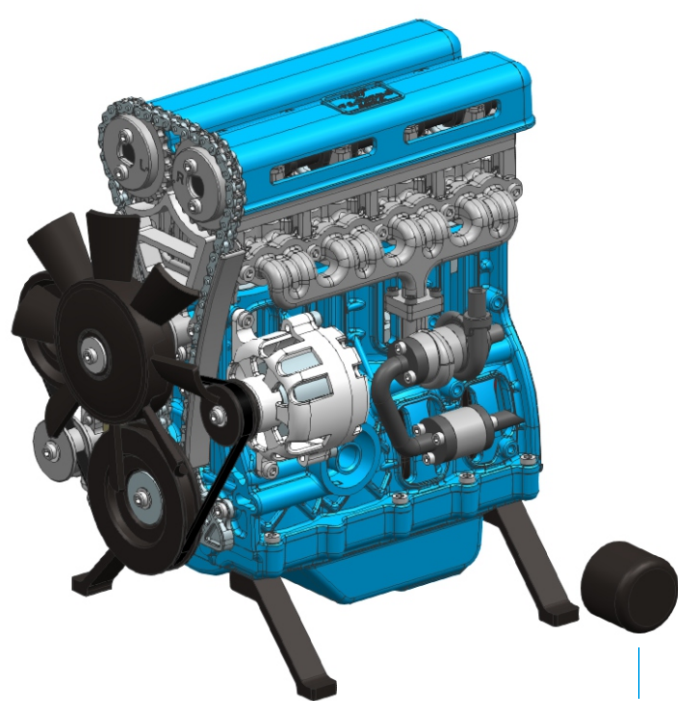


11.30 固定风扇
11.30 Fixed fan

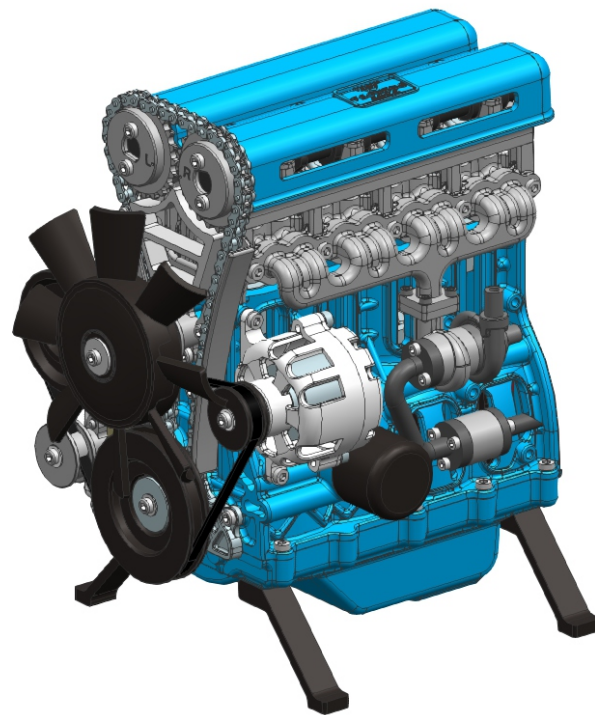


11.31 安装机油格

11.31 Installation of oil filter

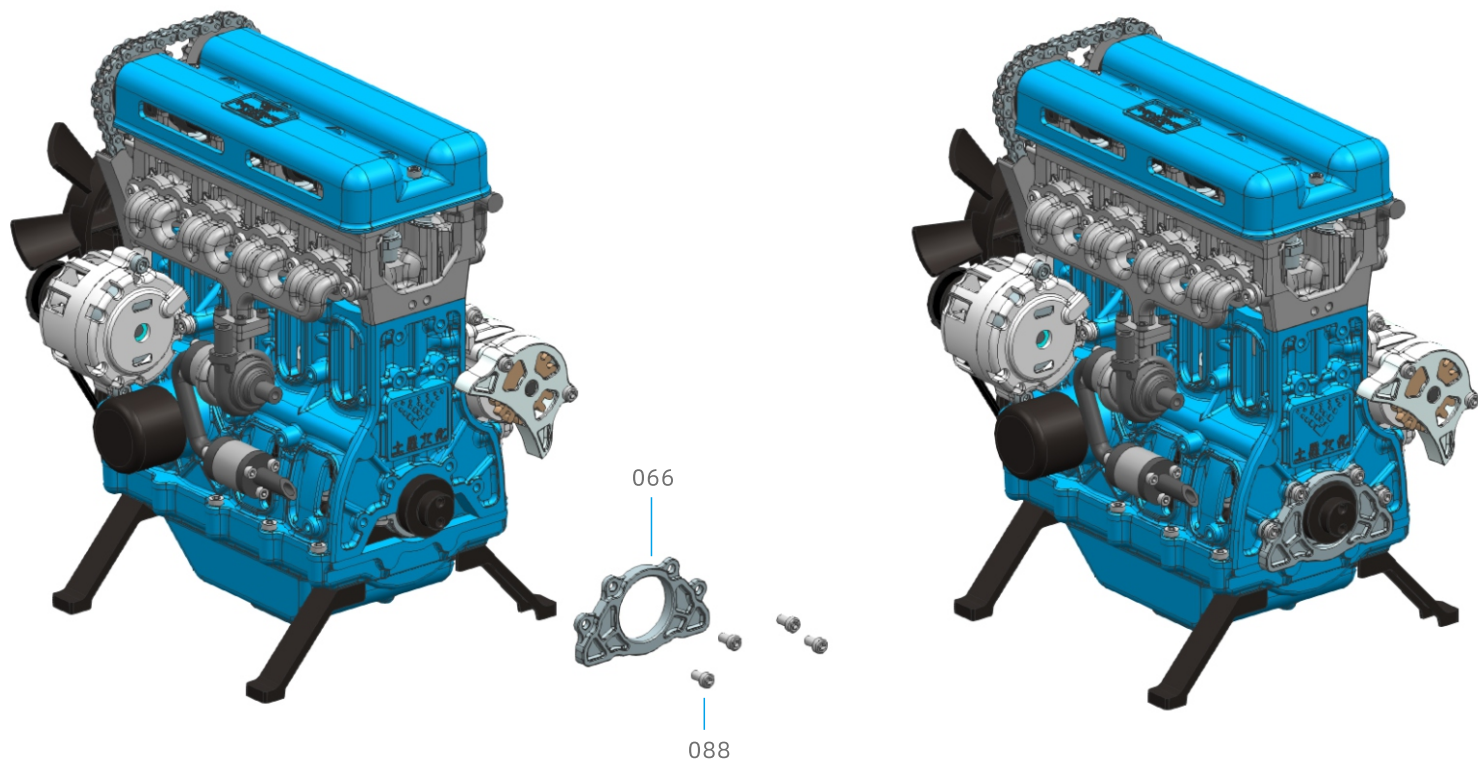


006



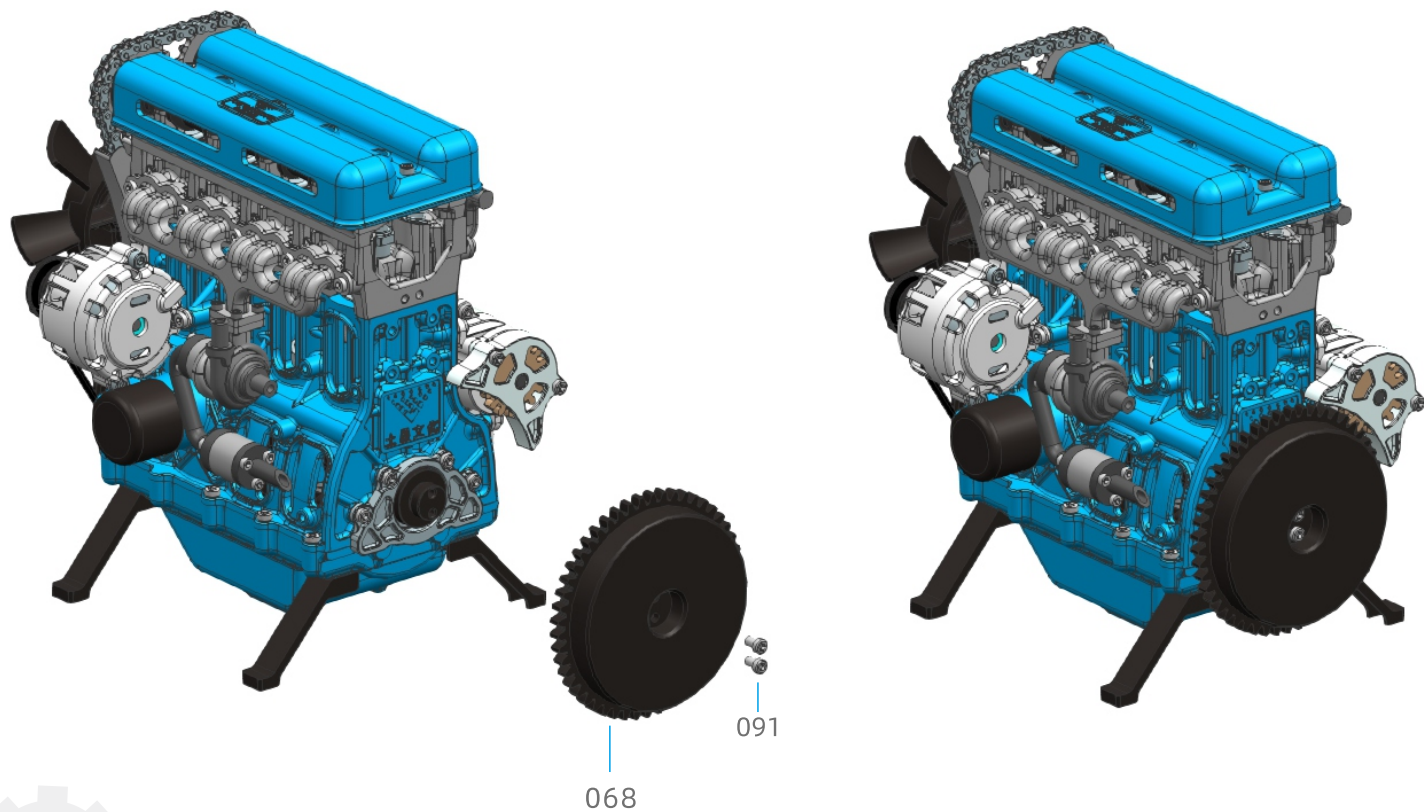
11.32 安装前端盖

11.32 Install the front end cover

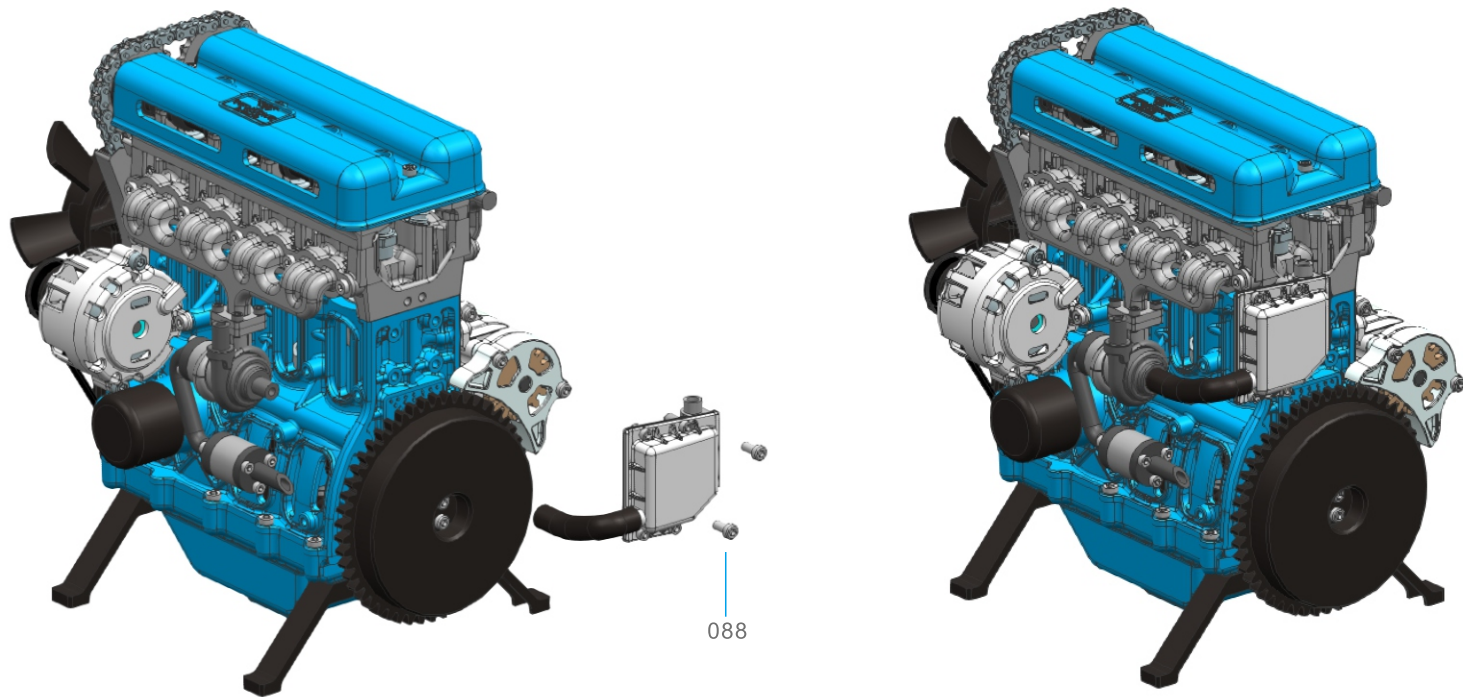


11.33 安装飞轮

11.33 Install the flywheel

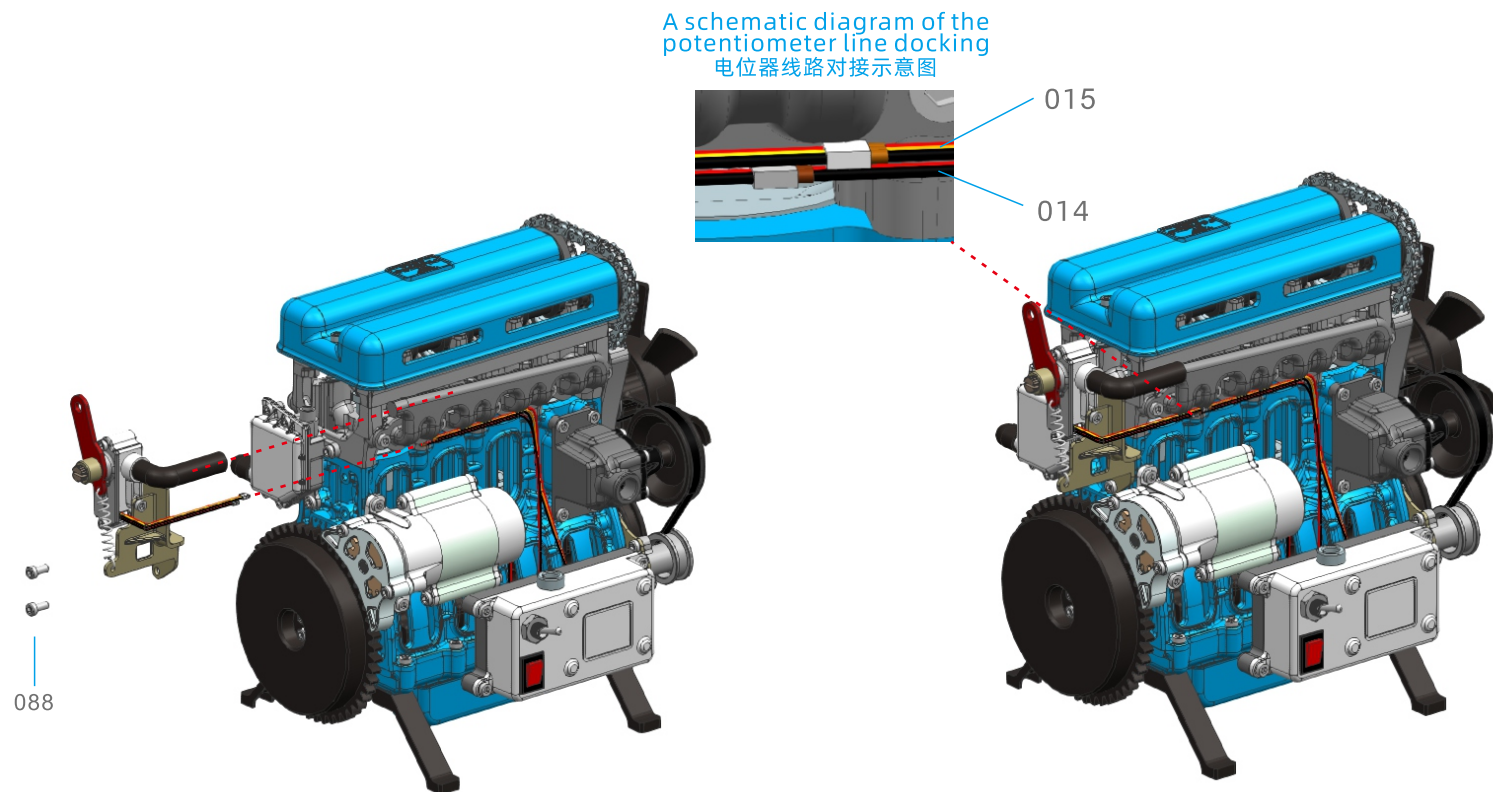


11.34 安装空气过滤器
11.34 Install air filter



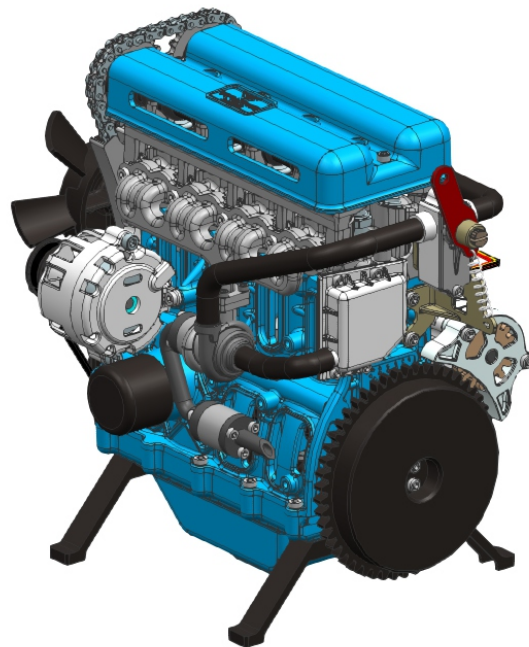
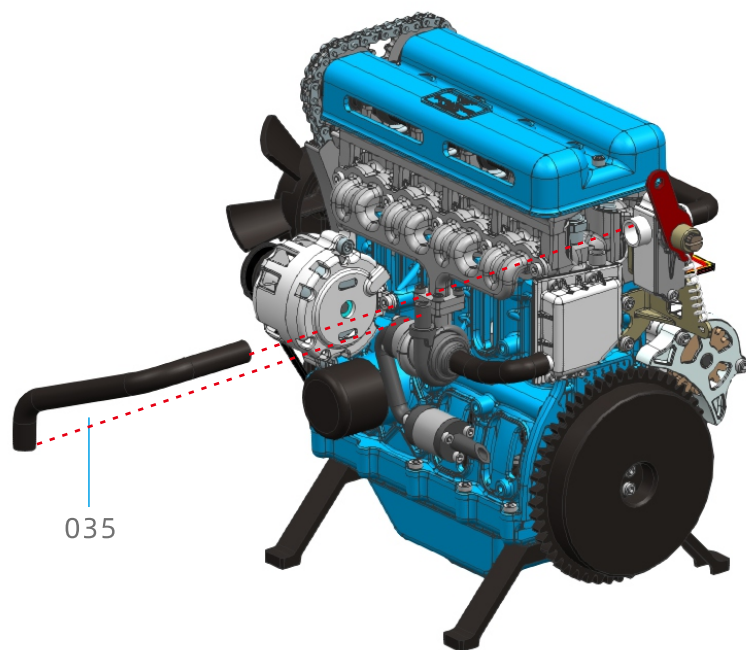
11.35 安装电位器

11.35 Install potentiometer

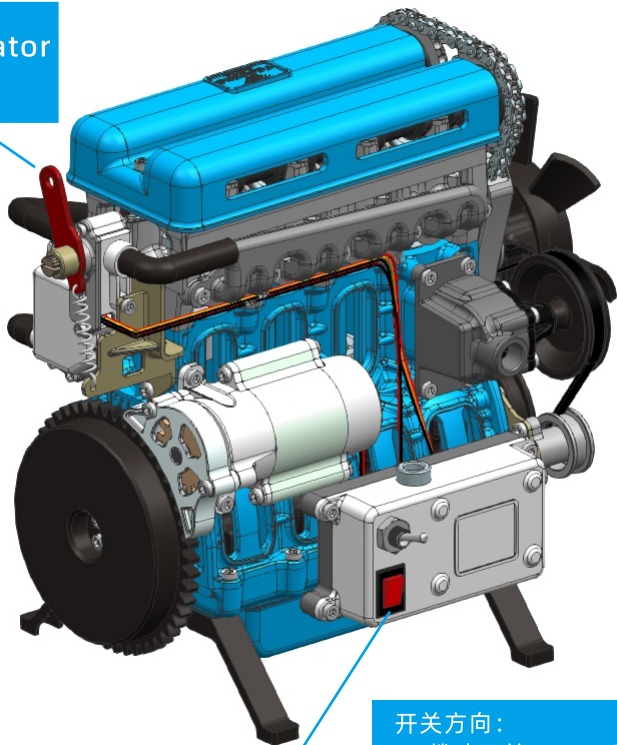


11.36 对接进气管2

11.36. Docking of air inlet pipe 2



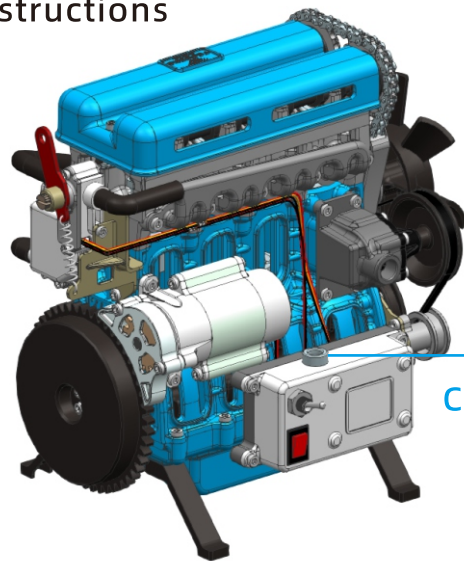
The
accelerator
pedal
油门推杆



声音开关
Sound Switch

开关方向:
a: 拨动开关ON1、采用电源适配器,
b: 拨动开关至ON2, 采用电池供电
Switch direction:
a: toggle switch ON1,
using power source
adapter
b: toggle switch to
ON2, using battery power

充电说明 Charge instructions



充电口
Charge Port

1 > this product is equipped with a special charging line. User provided power adapter DC voltage needs 5V and its output is DC. The current shall not be less than 1000mA. Do not use adapters higher than 6V Product charging;

2 > see the description for other precautions Book "precautions" column II. The contents of this article;

3 > normal charging state:

- ◇ when charging, the red light is on for a long time;
- ◇ when fully charged, the blue light is on for a long time;
- ◇ the maximum charging time is 2 hours.

1 > 本产品配备专用充电线。用户自备电源适配器, 其DC电压需5V, 其输出DC电流不小于1000mA。禁止使用高于6V的适配器给产品充电;

2 > 其他注意事项详见本说明书《注意事项》栏目第二项内容;

3 > 正常充电状态:

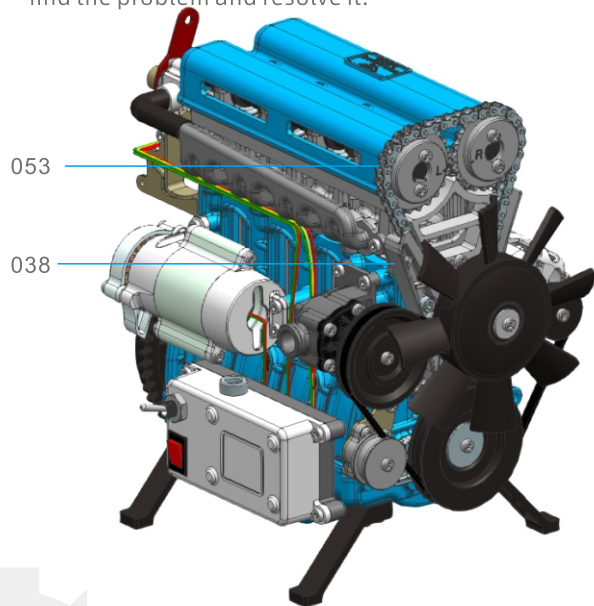
- ◇ 正在充电时, 红灯长亮;
- ◇ 充满电时, 蓝灯长亮;
- ◇ 最长充电时间为2小时。

故障分析及排除 Fault analysis and Troubleshooting

一. 机械故障排除表:

组装完成后, 请对照相应部位, 按说明书再检查一遍, 运动若存在异常。请按照以下步骤查找问题并解决。

Mechanical troubleshooting table: After the assembly is complete, check the appropriate parts against the corresponding parts and follow the instructions again to see if there are any abnormalities in motion. Follow the steps below to find the problem and resolve it.



1. 零件安装方向是否正确。

1. Are the parts being installed in the correct direction

2. 螺钉固定是否旋紧, 有松动。

2. Whether the screw is fixed tightly or not is loose.

3. 检查相似零件是否有反装。

3. Check whether similar parts are counter-assembled,

4. 若存在异常, 可以拧松 038

链条张紧块的螺钉进行调整松紧使运动正常

4. If there is an abnormality, the screw on the tightening of the 038 chain can be loosened to adjust the tightness to make the motion normal.

5. 检查 043 启动电机轴运动时是否摩擦到 022

启动电机前盖中心孔若摩擦到可以拧松启动电机前盖螺钉进行微调位置。

5. Check 043 Whether the shaft of the starter motor is frictionless when moving 022 If the central hole of the starter engine front cover is frictional, you can loose the screw on the starter motor front cover to fine-tune the position.

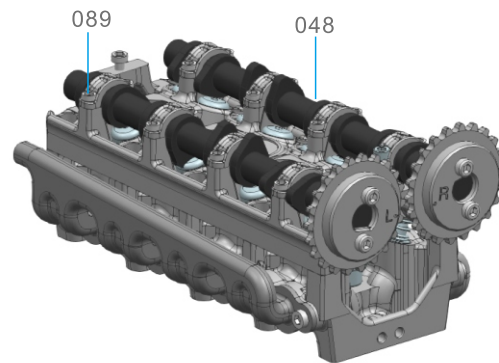
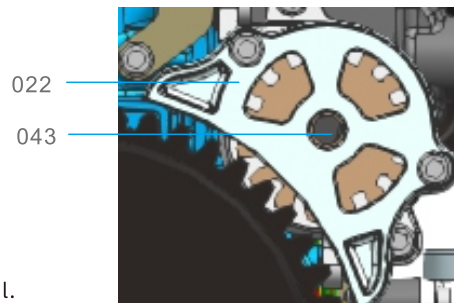
6. 若 048 凸轮轴旋转不顺, 请

拆除 053 链条, 用手旋转 048

凸轮轴是否转动顺畅, 若不顺,

把 089 螺钉反向拧松半圈。

6. If the 048 shaft is not spinning properly, remove the 053 chain and rotate the 048 wheel by hand whether it is spinning proper. If it is not, loose the 089 screw halfway in the opposite direction.



2 电子故障排除表 Electronic troubleshooting table

1) 不充电 No charging

① 充电器不匹配 Charger mismatch

解决方法:

用标准USB充电器给产品充电，充电器要求是输出直流5V1A
(含) 以上，操作方法：用土星专用充电线的USB头插入手机
充电器的USB孔，圆形插头插入产品的充电口，充电即可。

如图1-1

Resolvent:

Use a standard USB charger to charge the product. The charger is required to output DC 5V1A. Operation method: insert the USB head of TCHING special charging cable into the mobile phone. The USB hole of the charger and the round plug are inserted into the charging port of the product to charge.

As shown in Figure 1-1

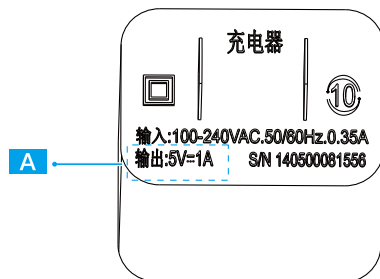


图1-1

Figure 1-1

输出: 5V=1A

A

② 充电线圆形插头没有插到底

The round plug of the charging line is not fully inserted

解决办法:

检查土星专用充电线的圆形插头与产品的充电口圆孔
是否插到底; 如图1-2

Resolvent:

Check the round plug of teching special charging line and the round hole of charging port of the product
Whether it is inserted to the bottom;

As shown in Figure 1-2

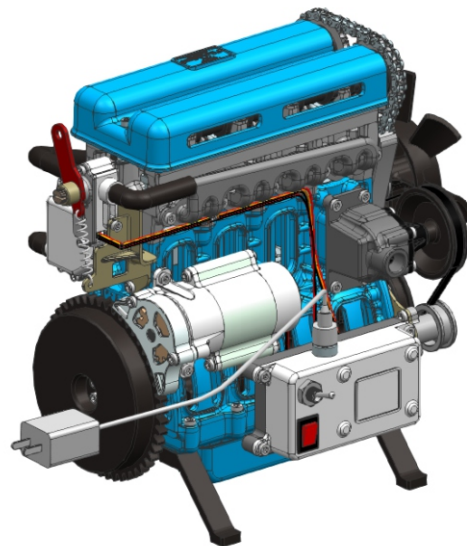


图 1-2

3) 充电插头插错位置

解决方法:

把电路板拆出来, 充电插头正确插在电路板的充电接口位置 DC 5V, 再给产品充电, 观察电路板上的充电灯指示, 正在充电时红灯长亮, 充满电时蓝灯长亮。如图1-3

3) Wrong Position of Charging Plug Solution:

Remove the circuit board, then insert the charging plug into the charging interface of the circuit board correctly DC 5V, then charge the product, observe the charging lamp indication on the circuit board, the red light will be on when charging, the blue light will be on when full charge.

Figures 1-3 show

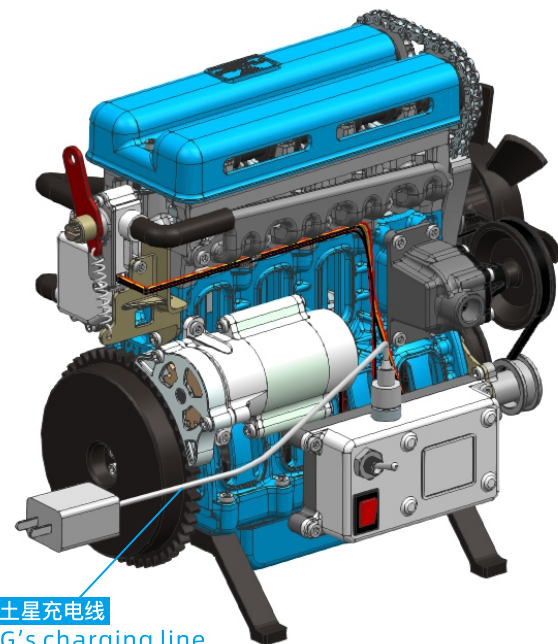
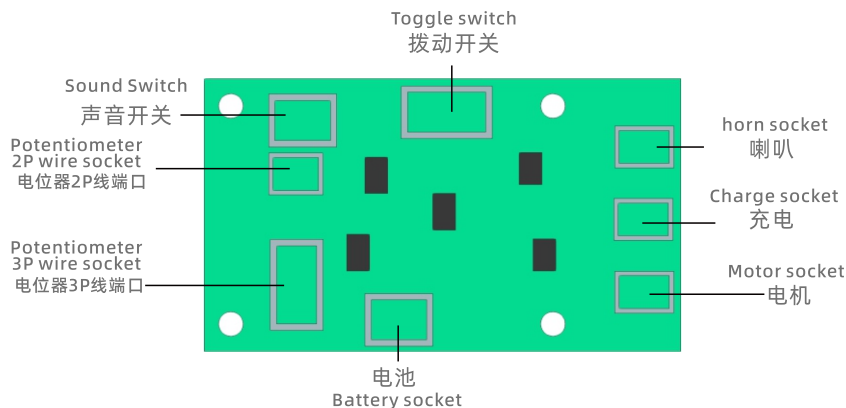


图 1-3

Figures 1-3

2) 电机不转 Motor does not rotate

① 电池没电 The battery is dead

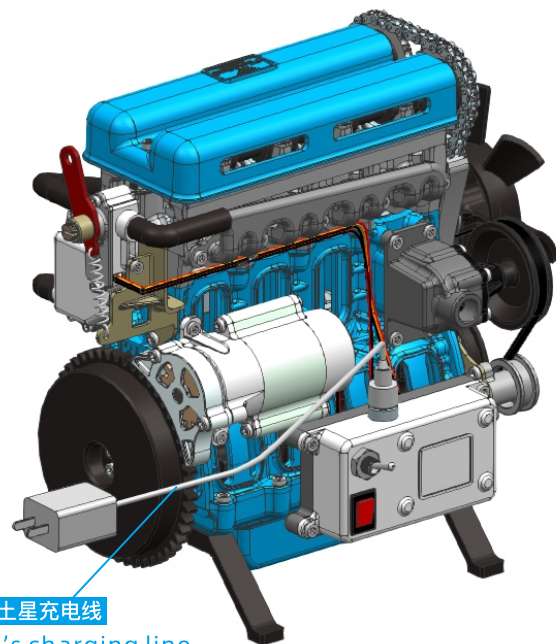
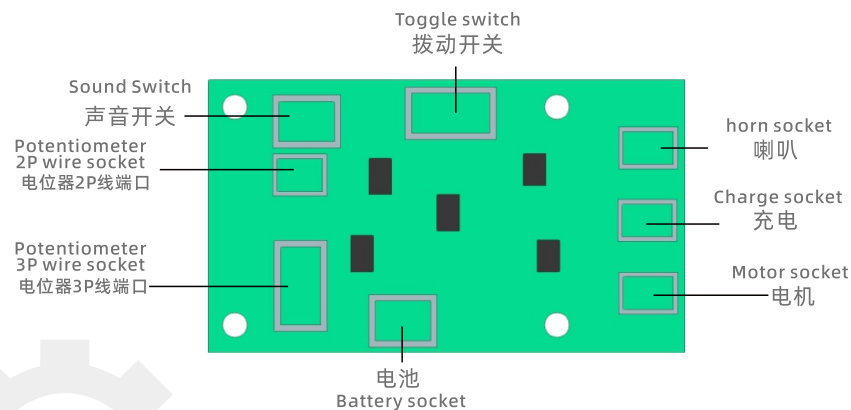
解决方法:

用土星专用充电线插入电脑的USB孔及手机充电器的USB端口，给产品充电，正在充电时红灯长亮，充满电时，蓝灯长亮。充满电后再把电源开关打在一的位置，看电机是否能正常运转。如图2-1

Resolvent:

Plug the teching special charging cable into the USB hole of the computer and the USB port of the mobile phone charger to charge the product, When charging, the red light is on for a long time, and when fully charged, the blue light is on for a long time. When fully charged, turn the power switch to one Check the position of the motor to see whether the motor can operate normally.

As shown in Figure 2-1



TECHING's charging line

图 2-1

Figures 2-1

2 > 机械原因引起电机不转

解决方法:

把电机的启动齿轮拆出来, 再测试电机是否可以顺畅运转。

如图2-2。注: 如果能顺畅运转, 则要根据机械故障排除法检查机械部分原因, 如果还是不能运转, 请咨询我司售后支持或者返厂维修。

2 > Mechanical causes the motor not to turn.

Solution:

Remove the starter motor gear(057) and test whether the motor can run smoothly. Figure 2-2. Note: If it can run smoothly, please check the mechanical part according to the method of exclusion. If it still can't work, please consult our after-sales support or return to the factory.

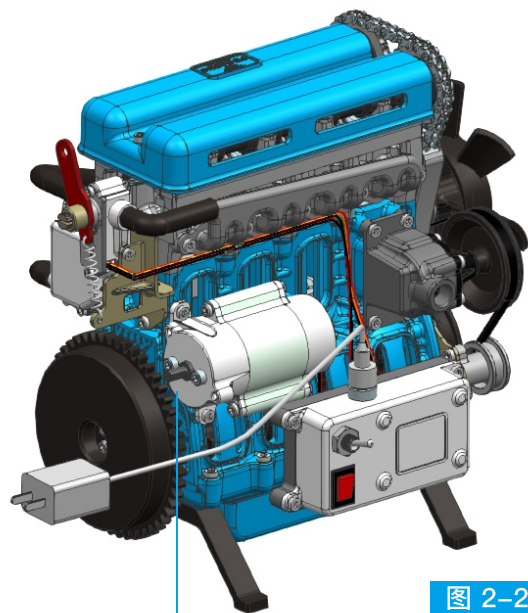


图 2-2
Figures 2-2



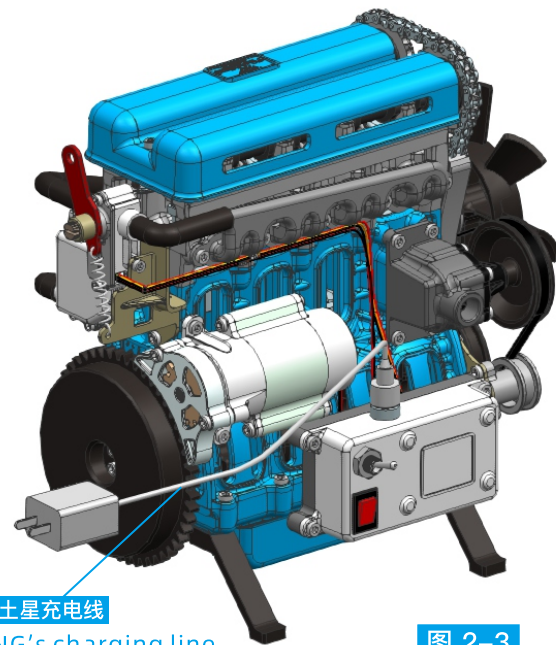
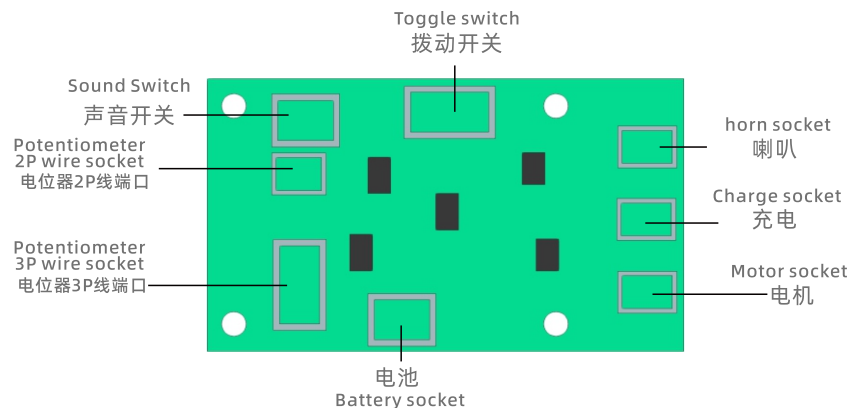
A

3 > 电机插头插错位置

解决方法:

检查电机插头位置是否正确, 如图2-3

3> The wrong position of the motor plug
Solution: Check whether the motor plug is in the correct position, as shown in Figure 2-3



TECHING's charging line

图 2-3

Figures 2-3

3 其他

如果以上解决办法都不能排除故障, 请咨询我司售后支持或者返厂维修

3 Other :

If the above solutions do not resolve the problem, please consult our aftersales support or return to factory repair

2 Inline four cylinder engine debugging 直四发动机调试

1. 配合间隙 1. Coordinate gaps

注意各运动零件之间的配合间隙，鼓励用户根据自己的观察与判断，对零件的运动间隙进行少量调整，包括使用砂纸、卡尺。Attention is paid to the matching gap between the moving parts, and the user is urged to make a small adjustment to the moving gap of the parts based on his own observation and judgment, including the use of sandpaper and card meters.

主要部位如下:

1.1 曲轴及相关运动件

1.2 凸轮轴及相关运动件

1.3 启动电机相关运动件

1.4 活塞连杆及相关运动件

2. 润滑 2. lubrication

由于本产品为金属机械模型，轴类运动没有润滑油，可能会导致各个零件运动时摩擦力偏大，甚至导致卡死。鼓励用户在轴类装配部位适当的增加润滑膏，观察加入润滑膏后的效果。

Since this product is a model of metal machinery, the shaft motion does not have oil, which may cause excessive friction when the various parts move, or even cause stuck death. The user is encouraged to increase the lubrication cream appropriately at the axle assembly site and observe the effect of the lubricated cream after it is added.

3. 降噪 3. noise reduction

轴类运动件为铝合金材质且是阳极氧化表面，及部分零件间隙较松，因此新组装的产品噪音会偏大。鼓励用户观察及分析噪音的产生部位也可以采用砂纸、锉刀等工具进行修善、并加上润滑膏，观察降噪效果。

The axial moving parts are aluminum alloy and have anode oxidized surfaces, and some parts have loose gaps, so the newly assembled product will have a lot of noise. Encourage users to observe and analyze the noise-producing area, and also use tools such as sandpaper, erasers, and polishes to clean and observe the noise reduction effect.

The main sites are as follows:

1.1 Crankshafts and related moving parts

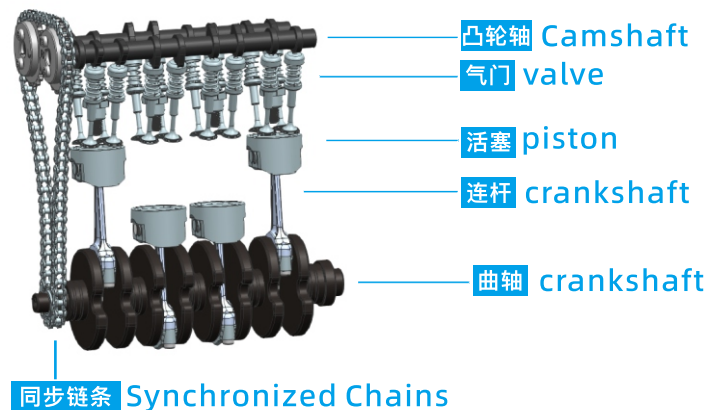
1.2 Crankshaft and related parts

1.3 Start motor related parts

1.4 piston joints and associated parts

3 The basic structure and characteristics of a inline four cylinder engine

直四发动机基本结构及特点



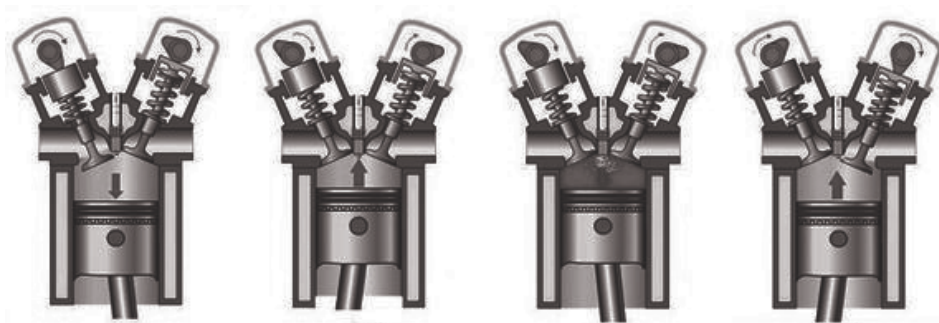
直列四缸，是内燃机的汽缸排列型式之一。因为它的四个气缸成直线排列，所以又叫同轴四缸。该四缸发动机组装模型中，每个气缸有两个进气门，两个排气门。气门采用同步链条驱动，大部分排量小于2.5升的小汽车发动机，都是采用这种直列四缸发动机。一般来说，在同等缸径下，缸数越多，排量越大功率越高；在同等排量下，缸数越多，缸径越小，转速可以提高从而获得较大的提升功率。

Inline four cylinders, is one of the internal combustion engine cylinder arrangement. Because its four cylinders are arranged in straight lines, it is also called coaxial four cylinder. In this assembly model of a four-cylinder engine, each cylinder has two inlet doors and two exhaust doors. The valve is driven by a synchronous chain, and most car engines with a displacement of less than 2.5 liters use this straight-line four-cylinder engine. Generally, under the same cylinder diameter, the more cylinders, the larger the displacement, and the higher the power. At the same displacement, the more cylinders there are, the smaller the bore is, and the higher the rotational speed is, thus the larger the power per liter is.

4 活塞发动机基本原理

1. 活塞向下运动→吸入空气及汽油;
Piston moves downward → inhale air and gasoline;
2. 活塞向上运动→压缩混合气体;
The piston moves upward → compresses the mixed gas;
3. 活塞向下运动→点燃压缩气体; 气体燃烧膨胀推动活塞;
The piston moves downward → ignites the compressed gas; Gas combustion expands to push the piston;
4. 活塞向上运动→排出废气。
Piston moves upward → exhaust gas.

如图: As shown:



吸入
to breathe in

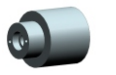
压缩
compress

做功
Doing work

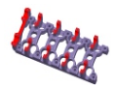
排气
exhaust

直四发动机工作时，曲轴每转两圈，活塞在气缸中直线往复做四次运动完成一塞个工作程序(四冲程)，气缸内的混合气点火燃烧一次，爆发的气体推动活塞通过曲轴连杆机构使曲轴做旋转运动实现活塞在气缸中作往复直线运动，活连续的上下运动变为曲轴的连续旋转运动，将动力不断的输出，使发动机正常运转工作

When a straight four engine is operating, the shaft rotates every two times, the piston moves in a straight line in the cylinder four times to complete a piston working procedure (four strokes), and the mixture inside the cylinder is ignited and burned once. The explosive gas pushes the live piston through the crankshaft joining mechanism to make the crank shaft rotate and achieve the repeated straight motion of the piston in the cylinder, the continuous up-and-down movement of the live cylinder turns into the continuous rotation of the crank, and the power is constantly exported to make the engine work normally.

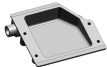
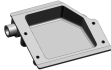
序号 Serial number	零部件图片 Parts Photo	零部件名称 Component Name	数量 Number
001		缸体 Cylinder block	1
002		油底壳 Oil pan	1
003		控制盒上盖 Control Box upper Cove	1
004		控制盒下盖 Control box lower cover	1
005		电路板 Circuit board	1
006		机油格 Oil filter	1
007		发电机 Generator	1
008		启动中心电机前盖 Starter motor front cover	1

序号 Serial number	零部件图片 Parts Photo	零部件名称 Component Name	数量 Number
009		启动中心电机后盖 Starter motor rear cover	1
010		曲轴 Crankshaft	1
011		水泵箱 Water pump case	1
012		电池 Battery	1
013		喇叭 Horn	1
014		电位器2P线 Potentiometer 2P wire	1
015		电位器3P线 Potentiometer 3P wire	1
016		电池盖板 Battery cover plate	1

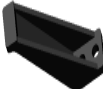
序号 Serial number	零部件图片 Parts Photo	零部件名称 Component Name	数量 Number
017		凸轮座 Cam base	1
018		气缸盖 Cylinder head	1
019		气门室盖 Valve cover	1
020		发电机前盖 Generator front cover	1
021		发电机后盖 Generator back cover	1
022		启动电机前端盖 Starter motor front end cover	1
023		活塞 Piston	4
024		通用皮带轮 Universal pulley	3

序号 Serial number	零部件图片 Parts Photo	零部件名称 Component Name	数量 Number
025		活塞销 Piston pin	4
026		电位器上盖 Potentiometer upper cover	1
027		电位器下盖 Potentiometer lower cover	1
028		曲轴皮带轮 Crankshaft pulley	1
029		水泵皮带轮 Water pump pulley	1
030		水泵端盖 Water pump end cover	1
031		连杆 Connecting rod	4
032		水泵轴 Water pump shaft	1

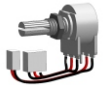
序号 Serial number	零部件图片 Parts Photo	零部件名称 Component Name	数量 Number
033		发电机轴 Generator shaft	1
034		进气管1 Air inlet pipe 1	1
035		进气管2 Air inlet pipe 2	1
036		进气管3 Air inlet pipe 3	1
037		链条导向块 Chain guide block	1
038		链条张紧块 Chain tensioner	1
039		电位器支架 Potentiator brocket	1
040		启动电机中盖 Starter motor middle cover	1

序号 Serial number	零部件图片 Parts Photo	零部件名称 Component Name	数量 Number
041		进气歧管 Inlet manifold	1
042		排气歧管 Exhaust manifold	1
043		启动电机 Starter motor	1
044		气门 Valve	16
045		火花塞 Spark plug	4
046		空滤器上盖 Air filter upper cover	1
047		空滤器下盖 Air filter lower cover	1
048		凸轮轴 Camshaft	2

序号 Serial number	零部件图片 Parts Photo	零部件名称 Component Name	数量 Number
049		张紧轴支架 Tensioning shaft bracket	1
050		轴承座 bearing seat	2
051		轴承垫片 Bearing pads	1
052		同步链轮挡块 Synchronized chain gear block	1
053		正时链条 Timing chain	1
054		主动涡轮 Active turbine	1
055		被动涡轮 Passive turbine	1
056		曲轴同步链轮 Crankshaft synchronous chain	1

序号 Serial number	零部件图片 Parts Photo	零部件名称 Component Name	数量 Number
057		启动电机齿轮 Start motor gear	1
058		油门推杆 The accelerator lever	1
059		三元催化器 Triad catalyst	1
060		排气尾管 Exhaust tailpipe	1
061		凸轮链轮左 Left camshaft sprocket	1
062		凸轮链轮右 Right camshaft sprocket	1
063		排气弯管 Exhaust bending pipe	1
064		发动机支架 Engine mount	4

序号 Serial number	零部件图片 Parts Photo	零部件名称 Component Name	数量 Number
065		后端盖 Back end cover	1
066		前端盖 Front end cover	1
067		风扇 Fan	1
068		飞轮 Fly wheel	1
069		张紧轴 Tensioning shaft	1
070		风扇轴 Fan shaft	1
071		连杆轴瓦 Connecting rod bearing shell	4
072		曲轴轴瓦 Crankshaft bearing shell	5

序号 Serial number	零部件图片 Parts Photo	零部件名称 Component Name	数量 Number
073		气门套 Valve sleeve	16+3
074		气门帽 Valve cap	16+3
075		凸轮轴盖 Camshaft cover	10
076		气门弹簧 Valve spring	16+4
077		水泵叶轮 Water pump impeller	1
078		油门弹簧 Accelerator spring	1
079		推杆堵头 Push bar plug	1
080		电位器 Potentiometer	1

序号 Serial number	零部件图片 Parts Photo	零部件名称 Component Name	数量 Number
81		声音开关 Sound Switch	1
82		开关 Switch	1
83		充电插头 Charge plug	1
84		皮带 Belt	1
85		轴承 4X8X3 Bearing 4 X8X3	8
86		内六角螺丝 M2X22 Hexagon socket screw M2X22	3+2
87		内六角螺丝 M2X6 Hexagon socket screw M2X6	10+2
88		内六角螺丝 M3X6 Hexagon socket screw M3X6	72+10

序号 Serial number	零部件图片 Parts Photo	零部件名称 Component Name	数量 Number
89		内六角螺丝 M2.5X6 Hexagon socket screw M2.5X6	34+5
90		内六角螺丝 M3X10 Hexagon socket screw M3X10	5+1
91		内六角螺丝 M3X8 Hexagon socket screw M3X8	16+4
92		内六角螺丝 M2X4 Hexagon socket screw M2X4	14+2
93		带垫M4X6螺丝 M4X6 screw with pad	1+1
94		平头螺丝 CM2.5X4 Flathead screw CM2.5X4	6+2
95		M3卡簧 M3 circlip	8+6
96		平头螺丝 CM3X14 Flathead screw CM3X14	8+2

序号 Serial number	零部件图片 Parts Photo	零部件名称 Component Name	数量 Number
97		内六角螺丝 M3X5 Hexagon socket screw M3X5	7+2
98		M4弹垫 M4 cushion	1+1
99		M2*0.4垫片 M2 * 0.4 gasket	4+2
100		M3弹垫 M3 cushion	8+2
101		内六角螺丝 M3X12 Hexagon socket screw M3X12	2+1
102		曲轴垫片 Crankshaft pads	1
103		内六角螺丝 M3X14 Hexagon socket screw M3X14	2+1
104		平头螺丝 CM2X4 Flathead screw CM2X4	4+2

序号 Serial number	零部件图片 Parts Photo	零部件名称 Component Name	数量 Number
105		内六角螺丝 M2.5X8 Internal hexagon screw M2.5X8	4+2
106		M2.5螺帽 M2.5 Nut	2+1
107		内六角螺丝 M2X10 Internal hexagon screw M2X8	5



保修说明

一> 保修须知

购买本产品，请仔细阅读以下保修条款，以确保产品得到有效保修

1. 本产品为组装体验式产品，拆包装后无质量问题不支持7天无理由退换货。不拆包装的情况下从购买之日起7天可以退换货；
2. 购买本产品时，由销售商协助在保修卡上完整、真实的填写您的相关信息，并索要有效发票或购买凭证，且妥善保管；
3. 用户需要保修时，必须出具购机发票或有效三包凭证。如果用户丢失有效发票或三包凭证且不能提供复印件的，根据机器的生产日期后延60日为保修的起始日期，提供一年的保修服务；
4. 保修对象为用户购机后及使用前有质量问题的零件。对于用户不合理使用而损坏的零件，本公司提供收费服务；
5. 本公司保留对售后服务条款的最终解释权及修改权限。

二> 售后服务及保修内容

1. 自产品签收日起，电机、电池、电路板三个月保修，其它零件提供一年保修；
2. 购新机时如发现零件缺失，凭保修卡的购买日期30天内厂家予以免费补发缺失的零件，超过30天则需要用户到土星官方网站购买

3. 用户组装完成后产品出现无法运转或不良的情况，可向厂家咨询原因，也可寄回厂家免费检测或调试；
4. 用户碰到任何产品问题，本公司或授权机构免费提供技术咨询或指导；
5. 所有在保修范围内被更换下来的零件，零件和附件归本公司所有。用户必须提供有质量问题的零件，向本公司换取新零件。

三> 非保修内容

1. 超过三包有效期的；
2. 未按产品使用说明书要求使用、维护、保管不当造成损坏的；
3. 非本公司或授权销售网点销售的产品；
4. 无有效发票或三包凭证的，或擅自涂改售后服务卡的（能够证明在三包有限期的产品除外）
5. 售后服务卡上的产品型号或编号与商品不相符的；
6. 因不可抗力力（如：水灾、火灾、地震、雷击等）造成伤害的；
7. 产品使用中的自然磨损，如：产品间隙变大、润滑油干涩、电池长期老化等造成的问题；
8. 对于非产品本身品质原因造成的故障（如：进水、受潮、摔坏、外力挤压、变形、使用不当等）
9. 经销商对保修内容作出的约定，凡超出本保修协议的，不在保修范围内。

Warranty description

I. Warranty Instruction

Please carefully read the following warranty terms when purchasing this product so as to assure effective warranty for the product:

1. Since this product is for assembly experience, "7-day no-hassle return/change policy" is not available if no quality defect is found after unpacking. "7-day no-hassle return policy" is available if the package is not removed;
2. When this product is purchased, your dealer will assist you to write down your complete real information on the warranty card, when you should ask the dealer for effective invoice or purchase voucher; then, the invoice and voucher shall be properly kept;
3. Users who apply for warranty have to show their purchase invoices or effective "three guarantees" certificate. For users who lost their effective voices or "three guarantees" certificate and fail to provide their copies, the warranty period is one year from the 60th day after the manufacturing of machine;
4. The warranty object is the parts that are found with defects after purchase and before use. We provide paid services for parts damaged by improper use by users;
5. We reserve the right to interpret and modify the terms & conditions of after-sales service.

II. Items of After-sales Service and Warranty

1. The warranty period for motor, battery and circuit board is three months from the day on which they are received and accepted; the warranty period for other parts is one year from the day on which they are received and accepted;
2. The user who finds some part missed when purchasing a new machine could request the manufacturer to supply the missed part within 30 days after the purchase date on warranty card; the user has to purchase that

part at Teching's official website after the said 30 days;

3. If the assembled product fails to run or run properly, the user could either consult the manufacturer for possible causes, or send the product back to the manufacturer for free testing or debugging;
4. We and our authorized agencies provide free technical advice or instruction for users who encounter any product problem;
5. All parts and accessories replaced within the scope of the warranty belong to our company. Users have to provide defective parts so that we can exchange them with new ones.

III. Items outside Scope of Warranty

1. Beyond the "three guarantees" period;
2. Damage is caused by failure to use, maintain and keep the product as per instruction manual;
3. Products that are not sold by us or our authorized sales outlets;
4. Those who hold no valid invoice or "three guarantees" certificate, or those who modify the after-sales service card without permission (except the case where the product is confirmed to be within the "three guarantees" period);
5. The product model or serial number on after-sales service card fail to match the commodity;
6. Damage caused by force majeure (e.g. flood, fire, earthquake, lightning strike, etc.);
7. Natural wear during the use of product, e.g. the problems arising from product gaps expansion, lubricating oil shortage, and battery aging, etc.;
8. For the faults (e.g. moisture invasion, dampness, breakage, external force extrusion, deformation and improper use, etc.) caused by other factors than product quality;
9. Dealers shall make agreement on warranty coverage; the situations outside this warranty agreement are not covered by the warranty.

售后服务

- 1.可以扫描土星小助手二维码，进行技术咨询；
- 2.可以进入土星文化公众号，获得相关技术咨询；
- 3.可以直接拨打本公司400电话，咨询本公司技术人员；
- 4.可以用邮件的形式向本公司进行技术咨询；
- 5.可以向附近的授权机构提出技术咨询；
- 6.可以以各种方式对本公司产品提出意见、建议和新产品期望。



售后服务卡

用 户 名：_____ 联系电话：_____

产品名称：_____ 产品编号：_____

产品流水号：_____

问题描述：_____

服务内容：

☐ 零件补缺 ☐ 零件更换 ☐ 检测服务 ☐ 需退换货

销售单位：_____

销售地点：_____

经 办 人：_____ 售后完成时间：_____

公 司：广州市土星文化发展有限公司

地 址：广州市黄埔区宏明路宝盛大厦

售后邮箱：sales@techingedu.com.cn

热线电话：4001-020-019



土星公众号



土星小助手



Sales service card

Account name: _____ Tel: _____

Product name: _____ Product No.: _____

Serial number of product: _____

Problem description: _____

Service content:

- ☐ Part replenishment ☐ Testing service
☐ Part replacement ☐ Return and change of goods needed

Sales unit: _____

Place of sale: _____

Operator: _____ After-sales completion time: _____

Company:
Guangzhou Teching Cultural Development Co., Ltd.
Address:
Baosheng Building, Hongming Road,
Huangpu District, Guangzhou City, China
After-sales email: sales@techingedu.com.cn
Hotline: 0086-13924277386 4001-020-019



Sales Service

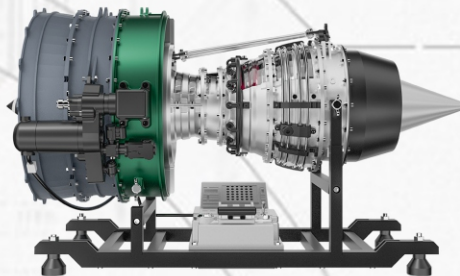
1. Scan the Teching Assistant QR code for technical consultation;
2. Relevant technical information is available at Teching's official account;
3. You can call our hotline directly and consult our technician;
4. Technical consultation can be sent to us by mail;
5. Technical advice can be obtained from nearby authorized agencies;
6. You are encouraged to bring forward your comments and suggestions on our products and your expectations for new products in various manners.

Inspection No.:



Super Products

超人气产品



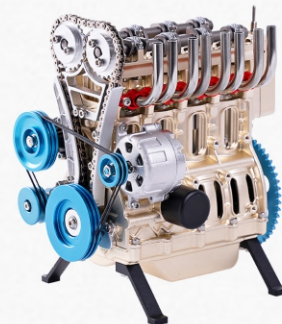
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DM 118



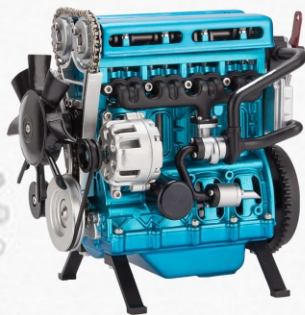
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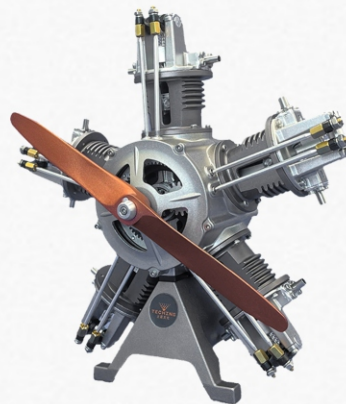
DM 113



DM 135



DM 111



DM 116



DM 601

传承 · 探索 · 创新

Heritage · Discovery · Discovery



公 司 广州市土星文化发展有限公司
Company Guangzhou Teching Culture Development Co., Ltd

地 址 广州市黄埔区宏明路宝盛大厦
Address Baosheng building, Hongming Road, Huangpu District, Guangzhou City, China.

热线电话 0086-13924277386 4001-020-019
Service Tel

售后邮箱 sales@techingedu.com.cn
After-sales email

网 址 http://www.techingedu.com
website



土星APP
TECHING



土星官网
OFFICIAL WEBSITE