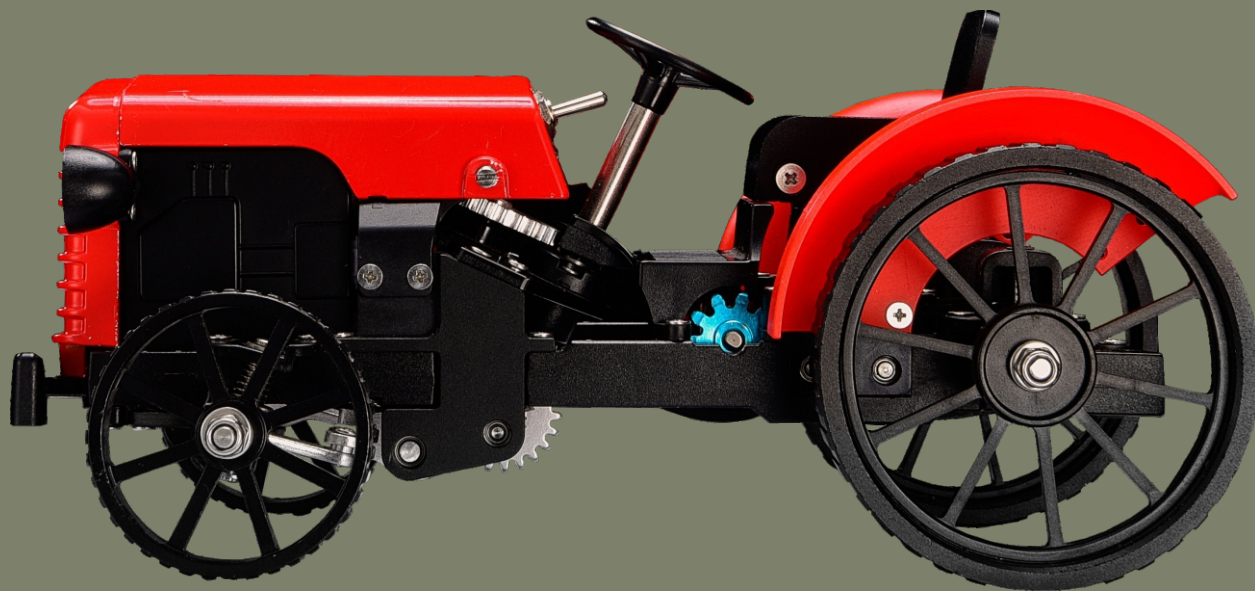


Metal Machinery

Assembly Model



Tractor
MODEL:DM616



Assembly Difficulty ★★★★★

Structural features:

1. Gear transmission structure
2. Screw drive steering system
3. Front and rear wheel suspension structure
4. Flip open structure for roof cover



Real Model Real World

General information about product

I. Product Data

Product name: Tractor

Product model: DM616

Main materials: anodic aluminum oxide + stainless steel
engineering plastics

Charging voltage: DC5V

Battery capacity: 2x450mAh

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.

Contents

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II: Product Assembly/P10–39

- 1. Assemble chassis system.....10
- 2. Drive system.....14
- 3. Steering system.....15
- 4. Battery system.....23
- 5. Hood assembly.....31
- 6. Seat assembly37
- 7. Assemble the wheels.....39

III: Fault Analysis and Troubleshooting/P42–45



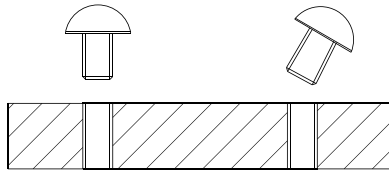
Basic knowledge of standard parts assembly

1. Screw installation

(1) Screw installation direction

Correct orientation

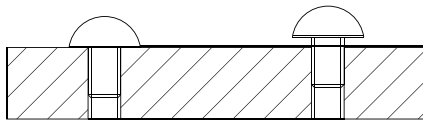
Wrong orientation



(2) Screw tightening depth

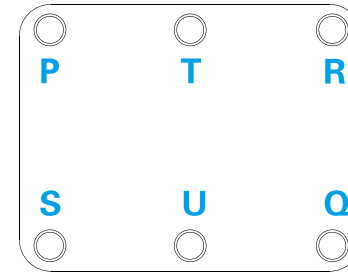
Correct position

Wrong position

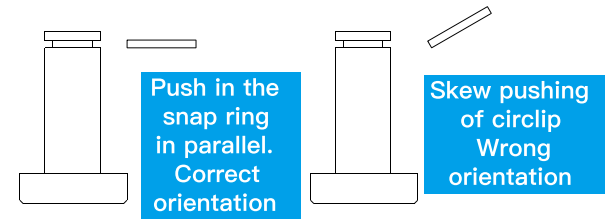


(3) Screw installation sequence

Mount the screws diagonally in order of number

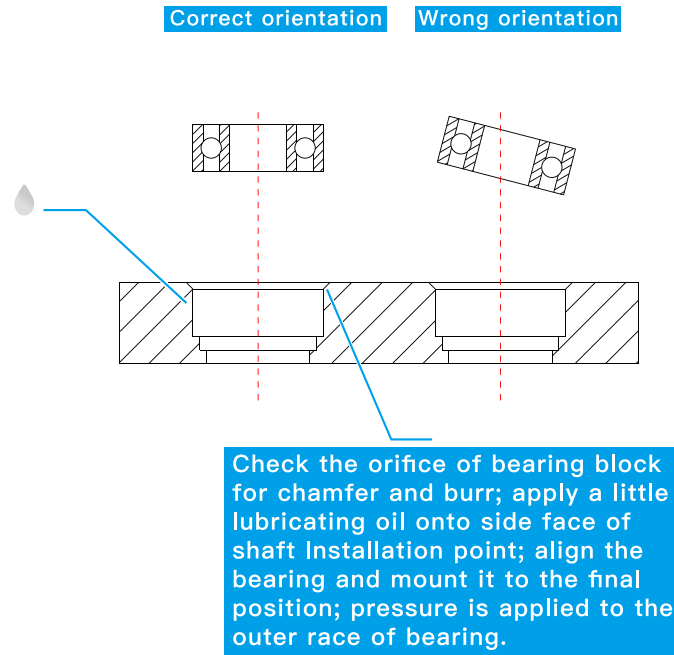


2. Circlip installation method

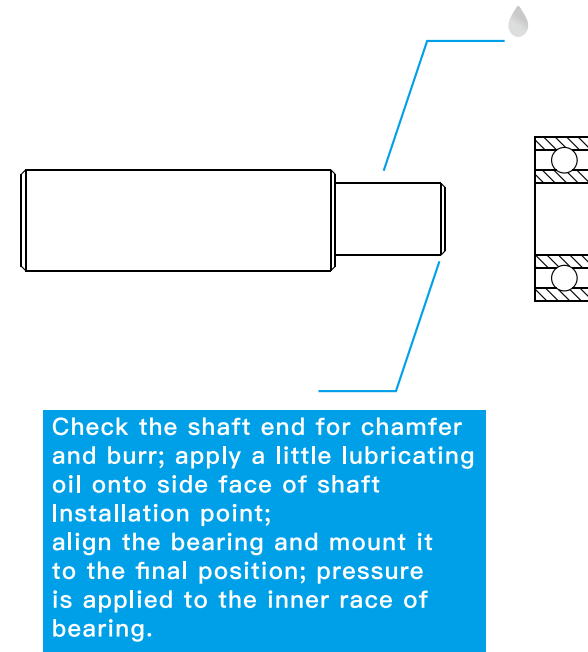


3 Bearing installation

(1) Insert the bearing into the bearing housing



(2) Bearing into the shaft



I: Parts List

No.	Product picture	Product name	Qty.
001		Steering wheel shaft	1
002		Clutch shaft	1
003		I shaft	1
004		M10 three-head screw	1
005		Bevel gear shaft	1
006		Support shaft	1

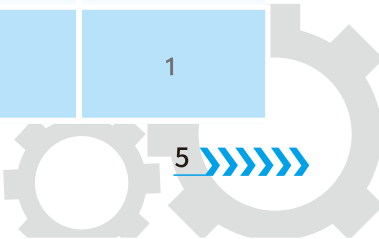
No.	Product picture	Product name	Qty.
007		Mudguard bracket	2
008		Front wheel	2
009		Steering slider	1
010		Seat bracket	2
011		Rear wheel	2
012		Front right control arm bracket	1
013		Front left control arm bracket	1
014		Rear control arm	2

No.	Product picture	Product name	Qty.
015		Rear axle	1
016		Bumper	1
017		steering engine bracket	1
018		Left bracket	1
019		Right bracket	1
020		Steering wheel	1
021		Steering wheel locating seat	1
022		Right knuckle	1

No.	Product picture	Product name	Qty.
023		Left knuckle	1
024		Front left control arm bracket	1
025		Front right control arm bracket	1
026		Duplex bearing seat	2
027		Left steering bracket	1
028		Right steering bracket	1
029		Seat left shield	1
030		Seat right shield	1

No.	Product picture	Product name	Qty.
031		Connecting rod	2
032		Front cover	1
033		Roof cover	1
034		Seat	1
035		Foot pedal	1
036		Frame	1
037		Upper cover	1
038		Left side cover	1

No.	Product picture	Product name	Qty.
039		Right side cover	1
040		Left box	1
041		Front cover	2
042		PCB	1
043		Battery	2
044		Switch	1
045		Steering engine	1
046		Motor	1



No.	Product picture	Product name	Qty.
047		Battery box	1
048		Light	2
049		3M timing belt	1
050		Fender	2
051		Steering shaft	2
052		Limit shaft sleeve	1
053		Motor bracket	1
054		Rear damping bushing	2

No.	Product picture	Product name	Qty.
055		Rear axle retaining bracket	2
056		Suction block	1
057		Front panel	1
058		Spring	1
059		Shaft sleeve	1
060		Gear – II	1
061		26-tooth gear	1
062		Synchronous pulley retainer ring	2

No.	Product picture	Product name	Qty.
063		Synchronous pulley	1
064		Starter gear	1
065		Gear -3	1
066		M2 * 0.5 washer	2
067		CM2.0 * 4 Screw	10
068		22-teeth gear	1
069		Front wheel bushing	2
070		Axis of rotation	1

No.	Product picture	Product name	Qty.
071		Rear axle sleeve	2
072		Rotating screw	2
073		Bevel gear	2
074		Switch sleeve	1
075		Gear -1	1
076		Front damping spring	2
077		Bearing Ø 4* Ø 7*2.5	4
078		Steering sleeve	2

No.	Product picture	Product name	Qty.
079		10-teeth gear	2
080		Washer	2
081		Rear damping spring	2
082		Bearing Ø 3*Ø 6*2.5	6
083		Bearing Ø 5*Ø 8*2.5	4
084		M4 Circlip	3
085		M2.5 Nut	1
086		M2.5 spring washer	5

No.	Product picture	Product name	Qty.
087		M4*0.8 washer	7
088		M2.5 hand screw	2
089		M3 Circlip	6
090		M4 nut	4
091		M6*1.6 washer	1
092		M1.6*4 screw	2
093		CM2.0*6 screw	12
094		CM2.0*14 screw	2

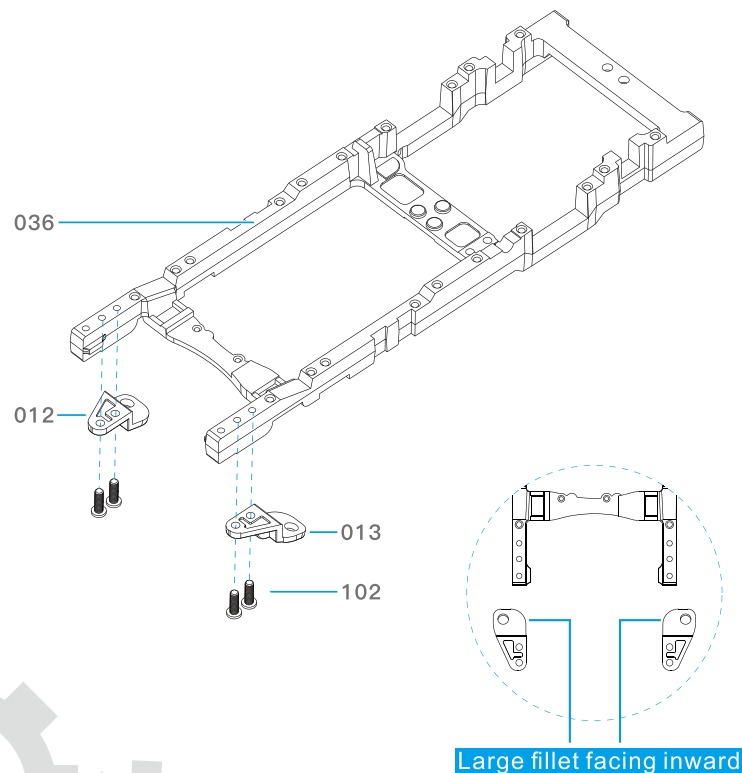
No.	Product picture	Product name	Qty.
095		CM3.0*6 screw	6
096		M5*0.8 washer	1
097		Set screw	1
098		CM2.5*14 screw	4
099		CM2.0*30 screw	4
100		Synchronous pulley II	1
101		Wire clip	1
102		CM2.5*8 screw	24

No.	Product picture	Product name	Qty.
103		CM2.5*12 screw	2
104		M3 gasket	3
105		Connecting seat	1
106		CM2.5*6 screw	24
107		Ø 6*Ø 2 O-ring	4

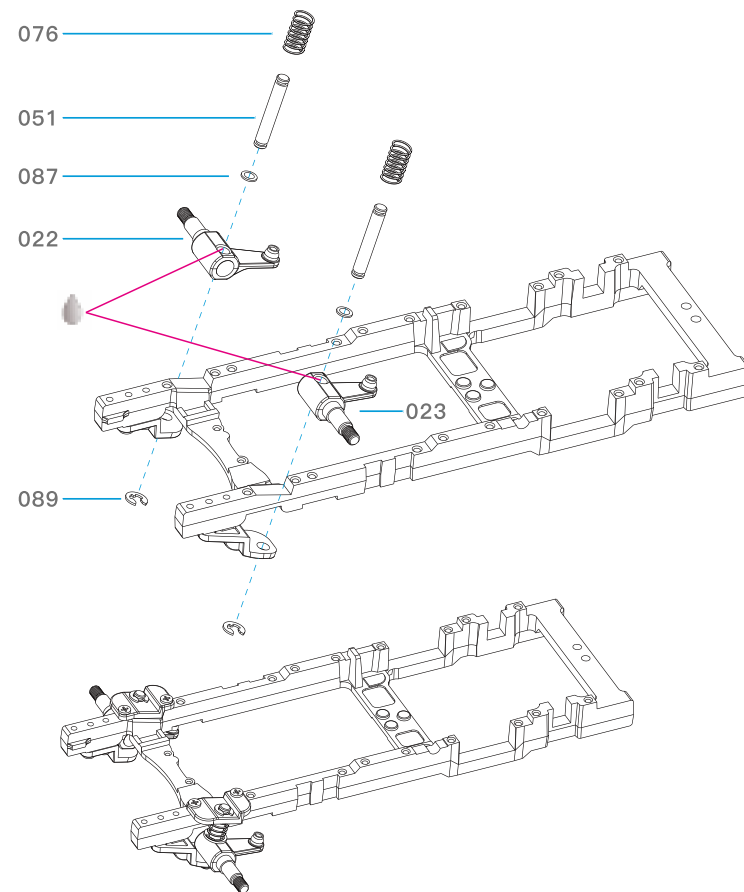
II: Product Assembly

1. Chassis System

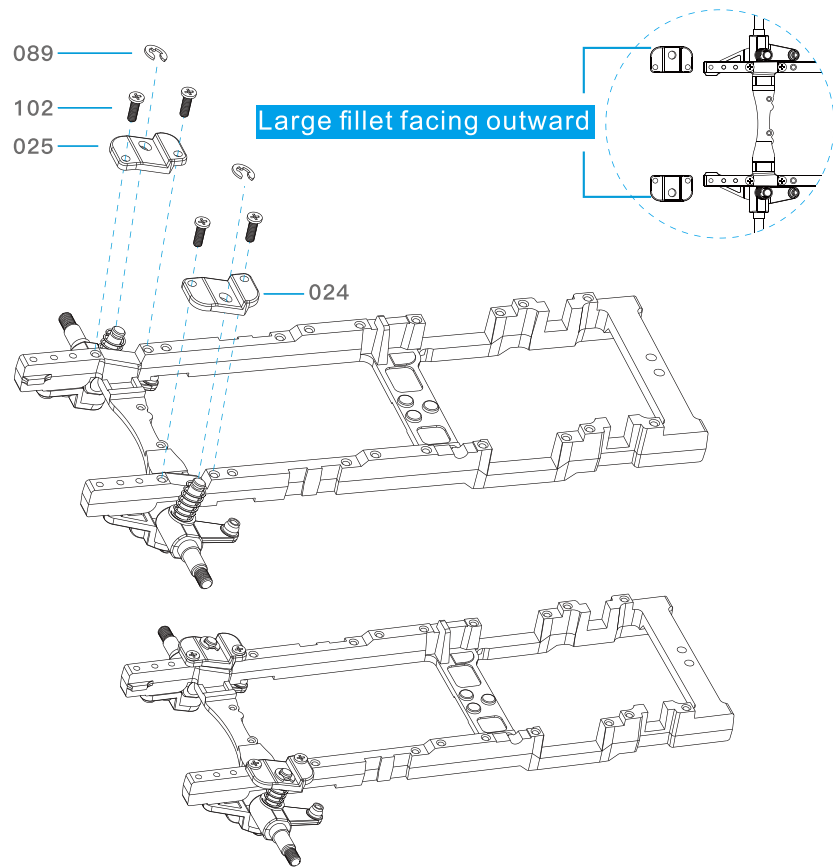
1.1 Install front left control arm and front right control arm



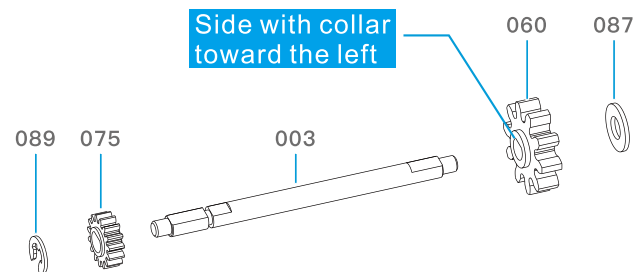
1.2 Install left and right knuckles



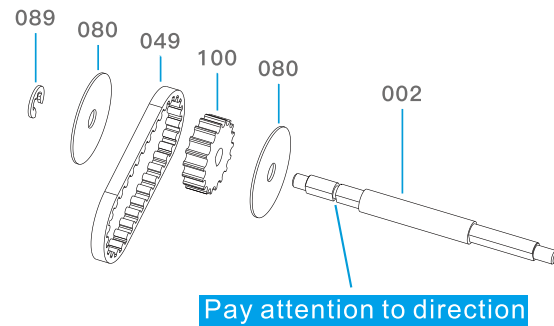
1.3 Install front left and right control arm brackets



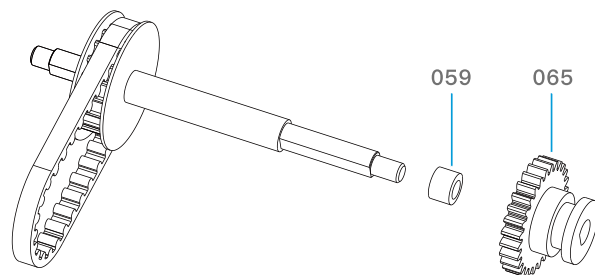
1.4 Assemble I shaft



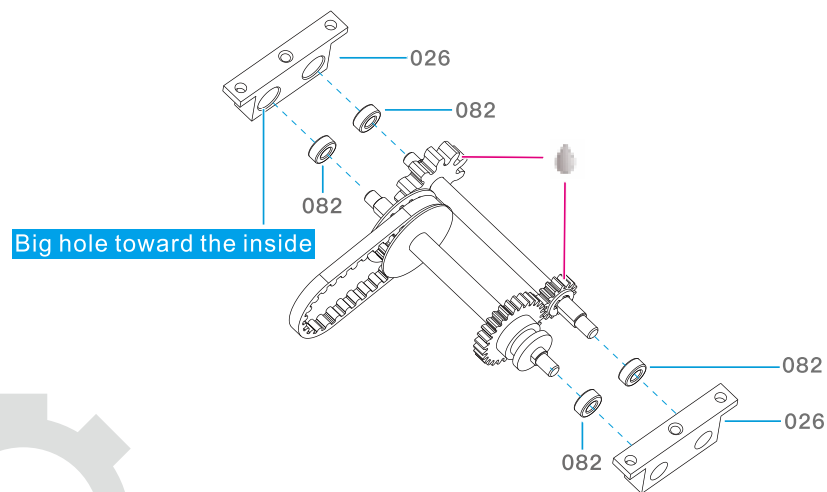
1.5 Assemble clutch shaft



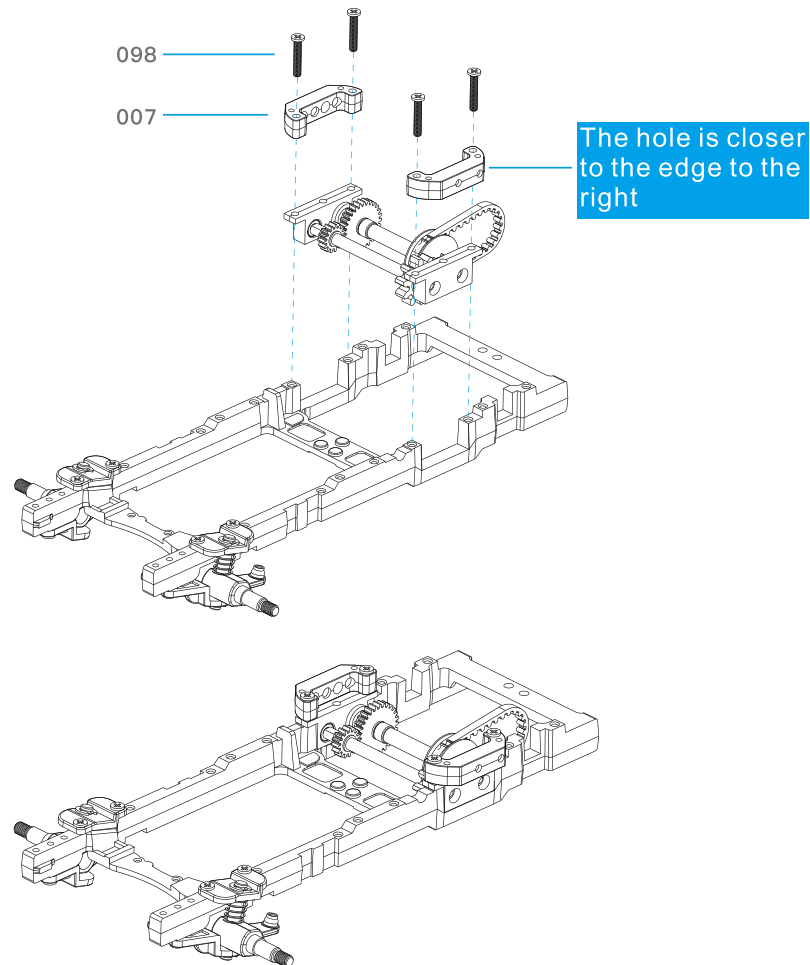
1.6 Install gear -3



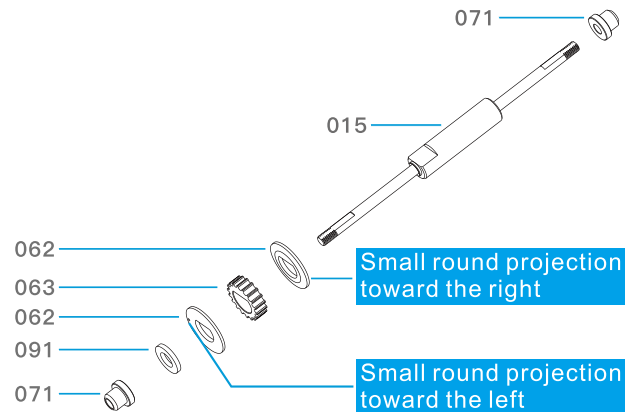
1.7 Assemble clutch shaft



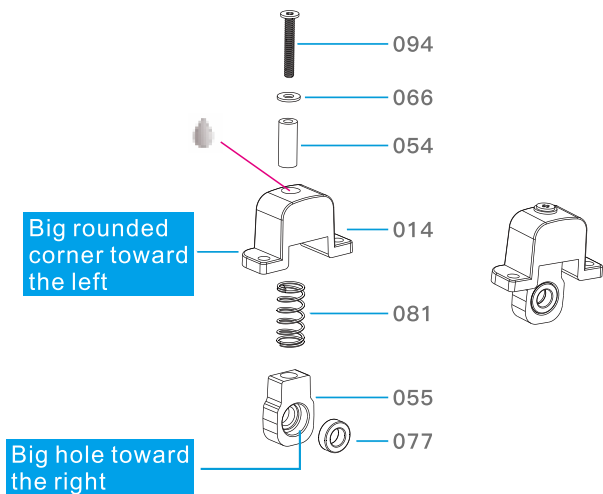
1.8 Install clutch shaft and I shaft



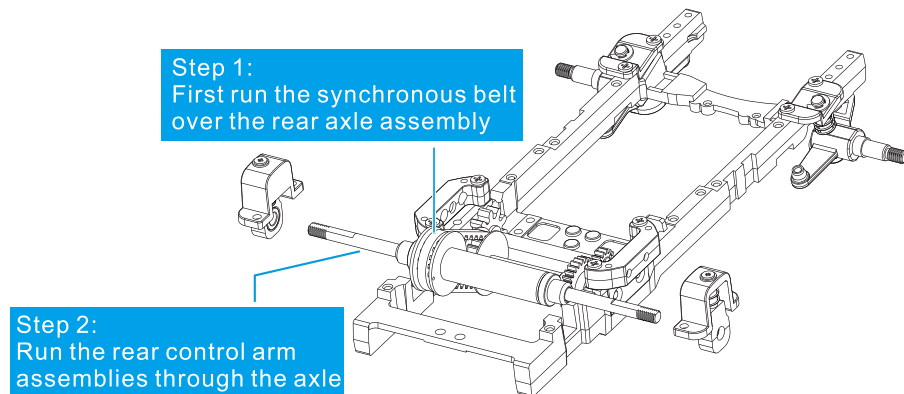
1.9 Assemble rear axle assembly



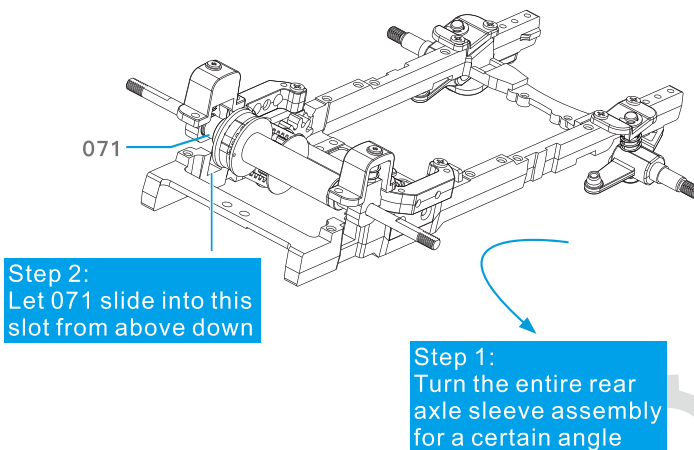
1.10 Assemble rear control arm assemblies



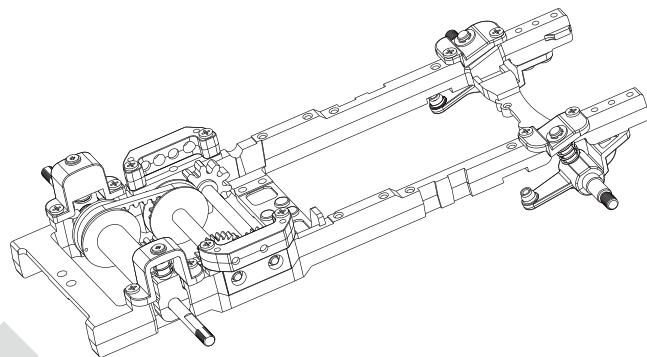
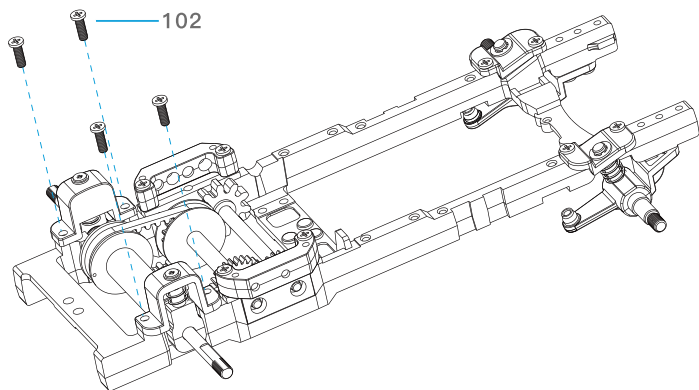
1.11 Install rear axle assembly



1.12 Assemble the piston

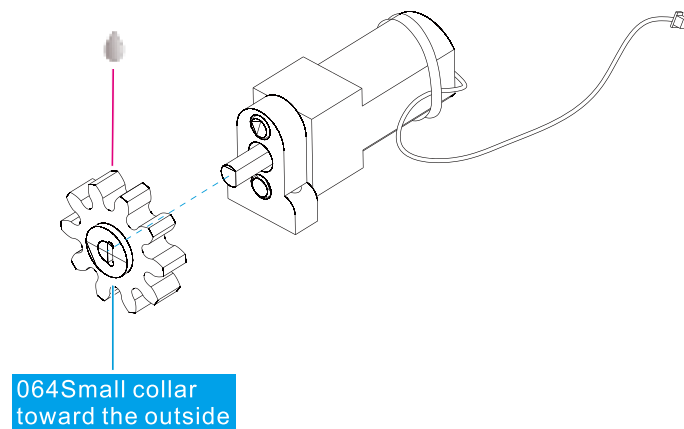
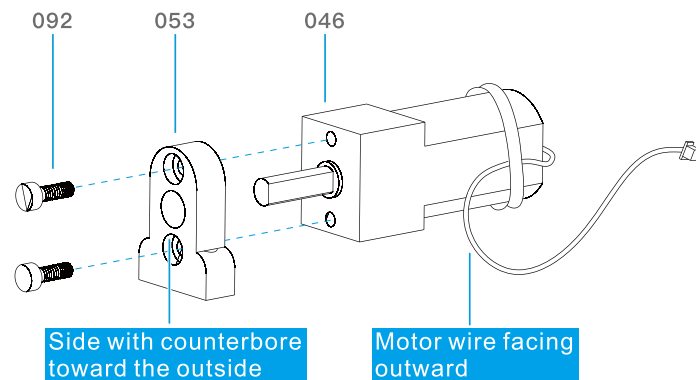


1.13 Fix rear control arm assemblies



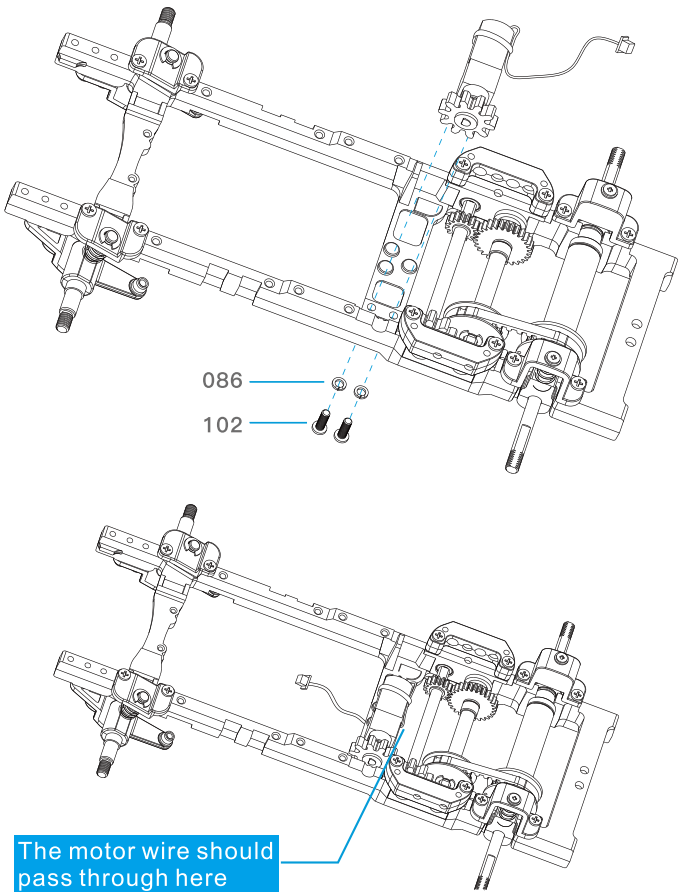
2. Drive system

2.1 Assemble motor assembly

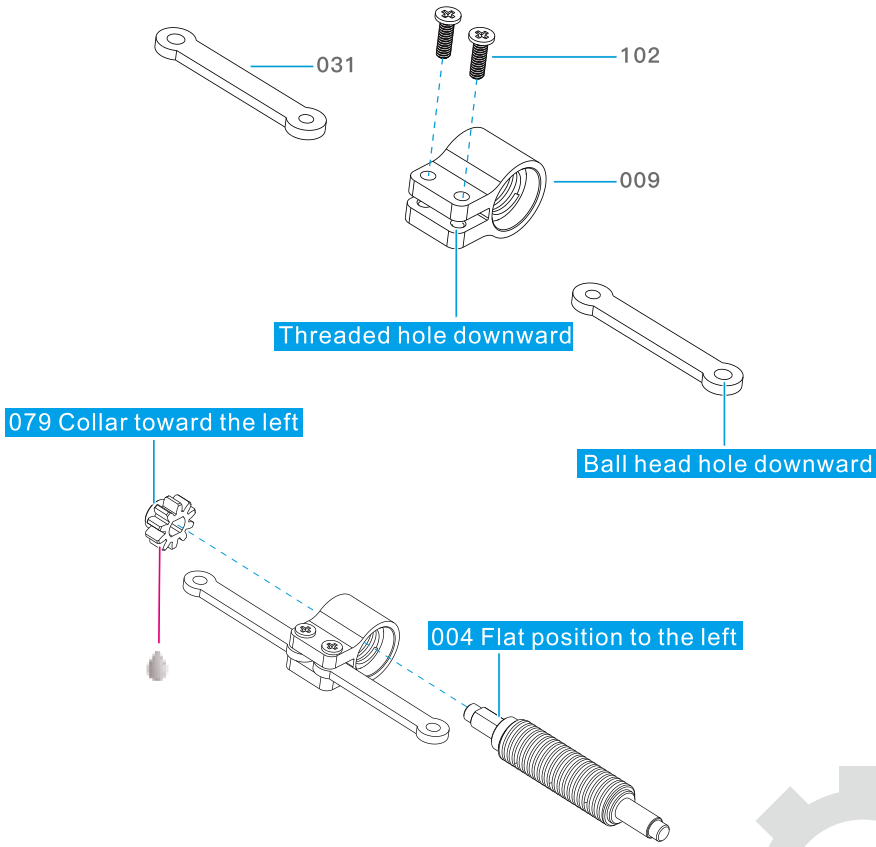


3. Steering System

2.2 Install motor

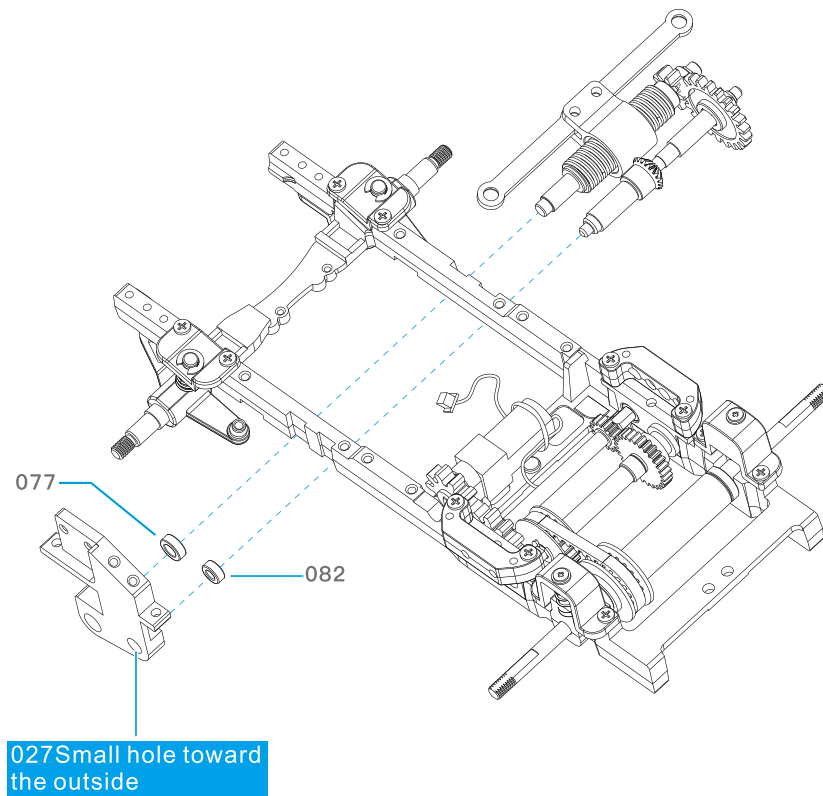
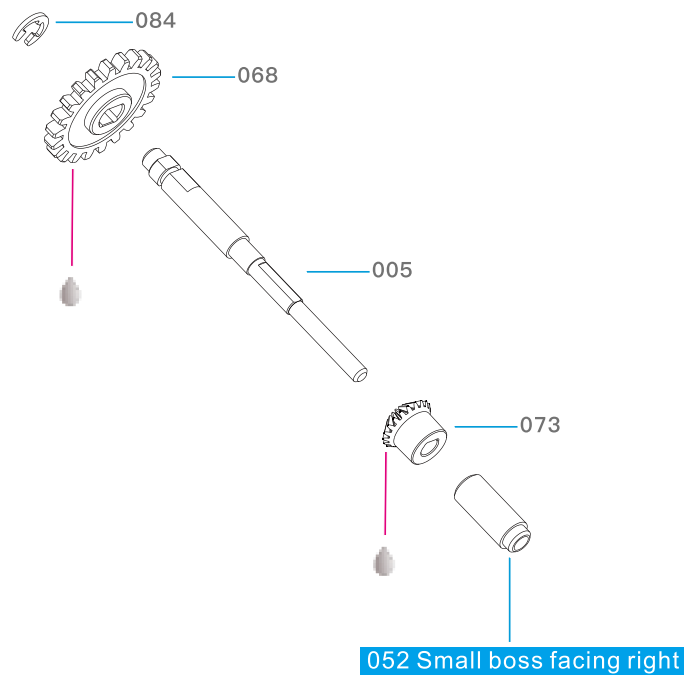


3.1 Assemble steering slider assembly

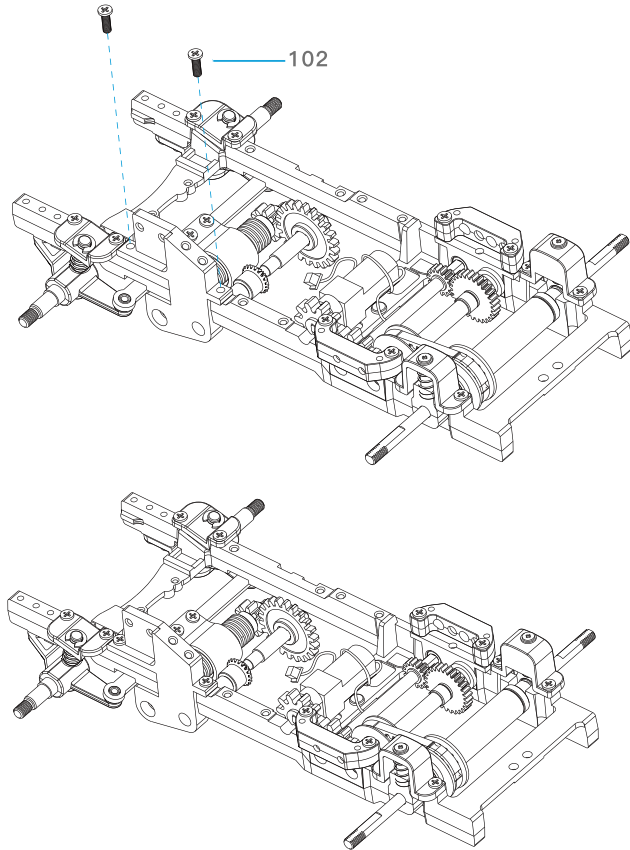


3.2 Assemble bevel gear shaft

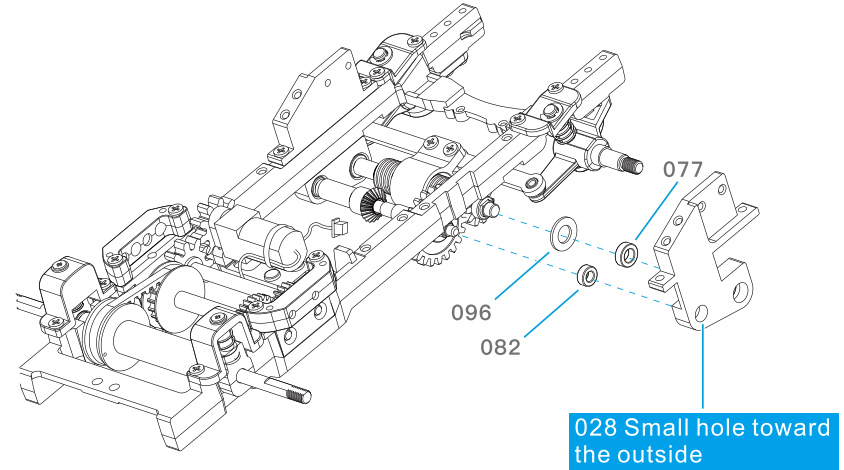
3.3 Install left steering bracket



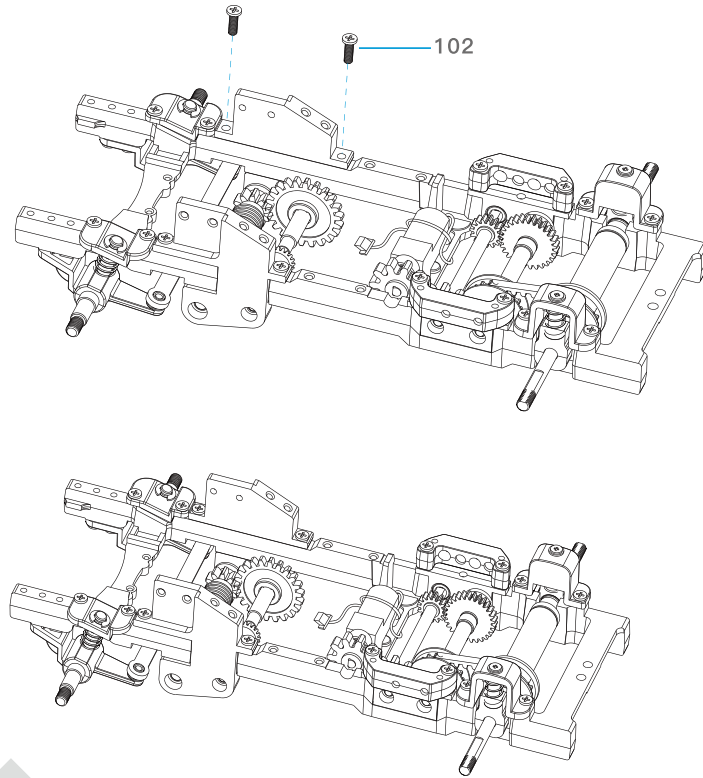
3.4 Fix left steering bracket



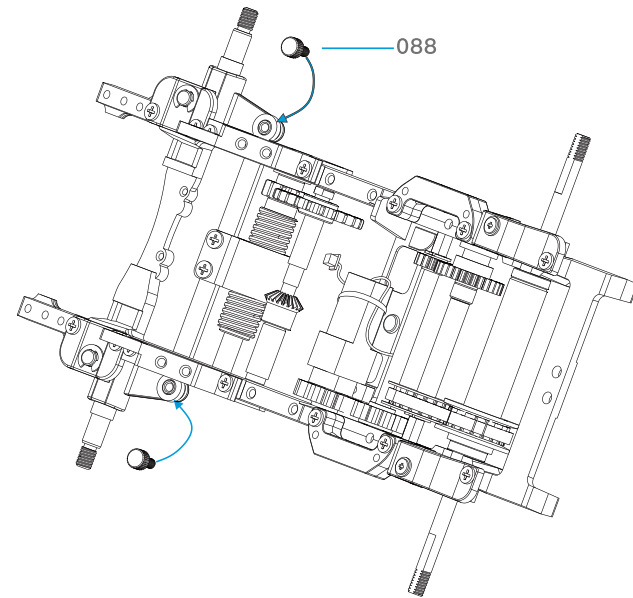
3.5 Install right steering bracket



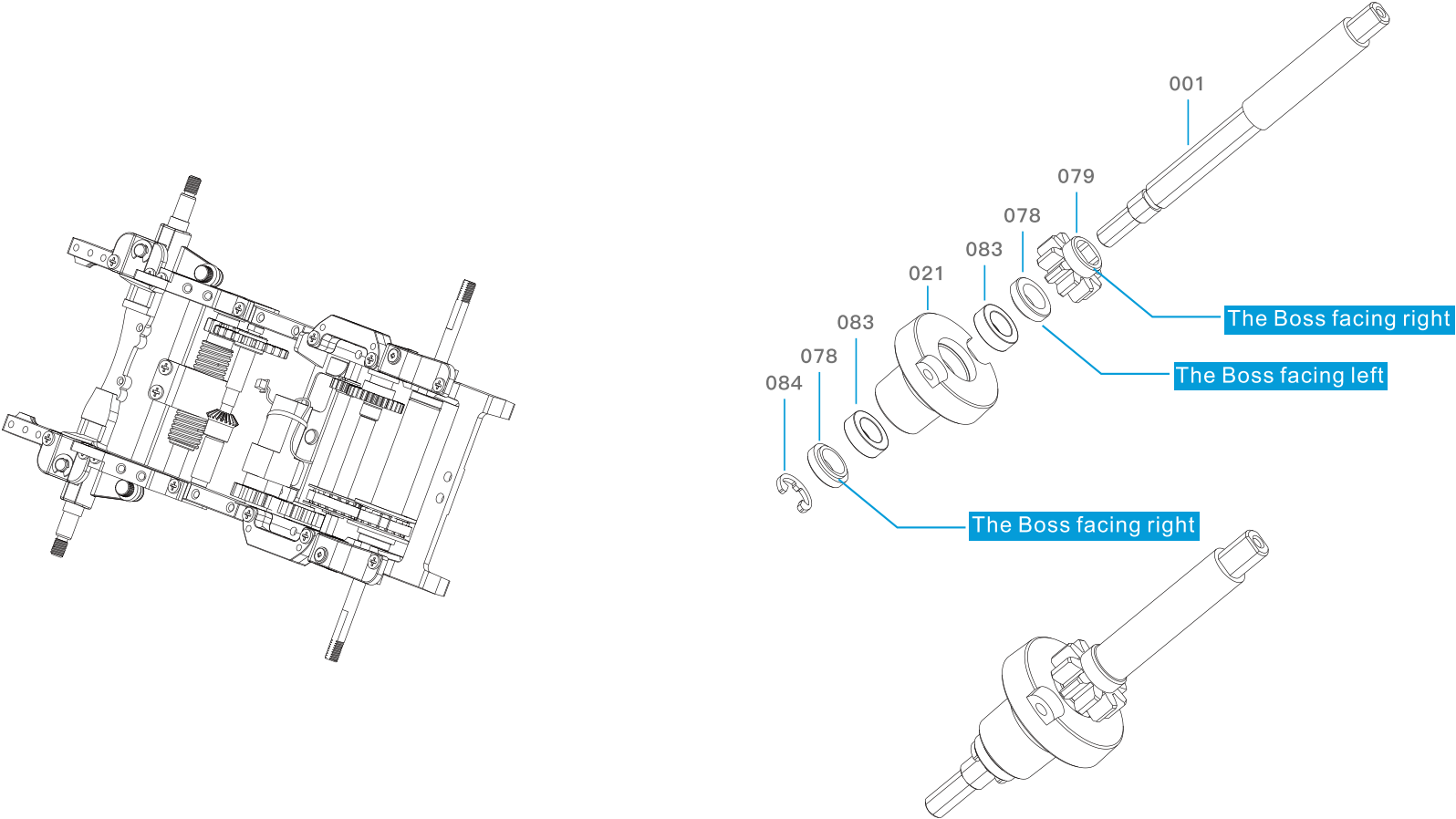
3.6 Fix right steering bracket



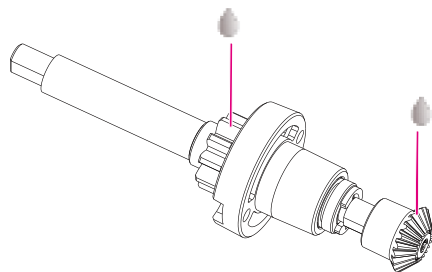
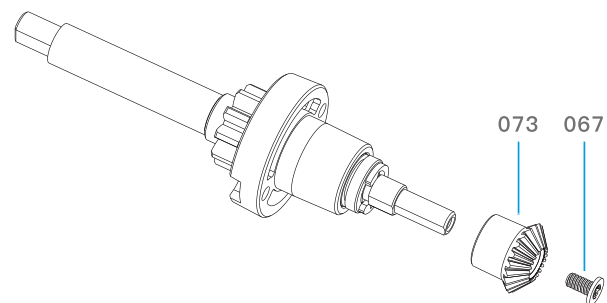
3.7 Install M2.5 hand screw



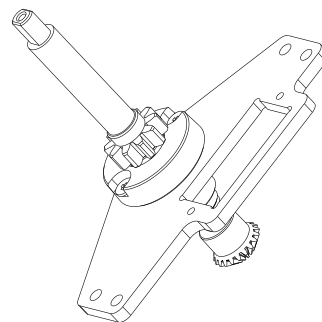
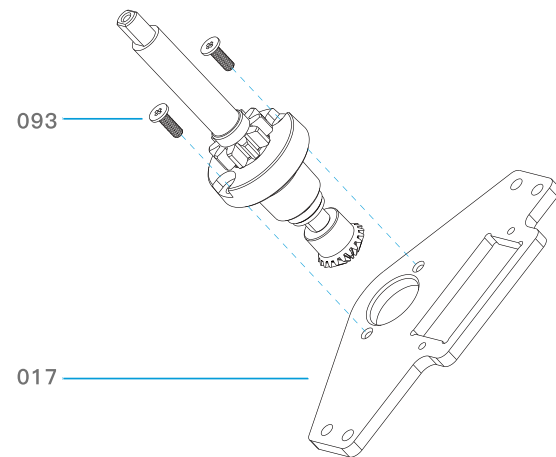
3.8 Assemble Steering wheel shaft



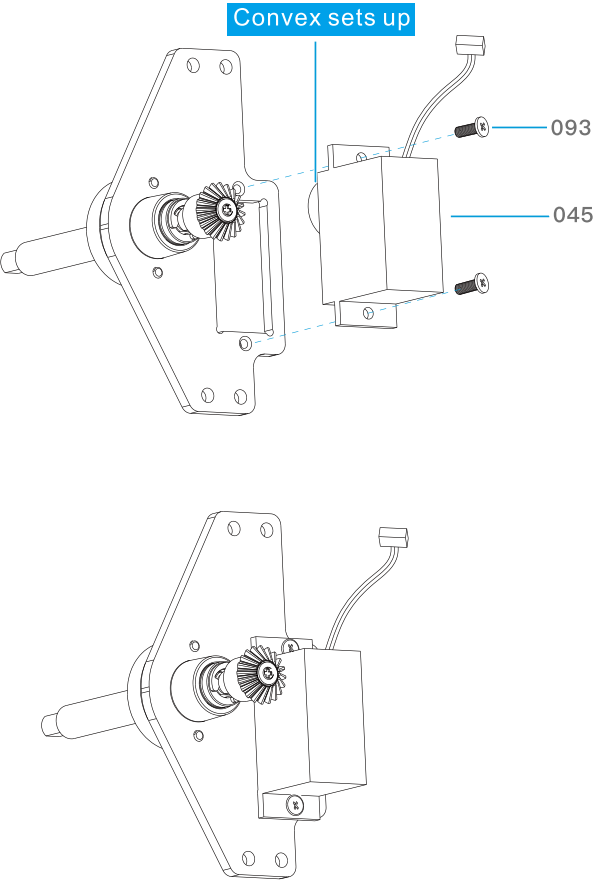
3.9 Assemble bevel gear



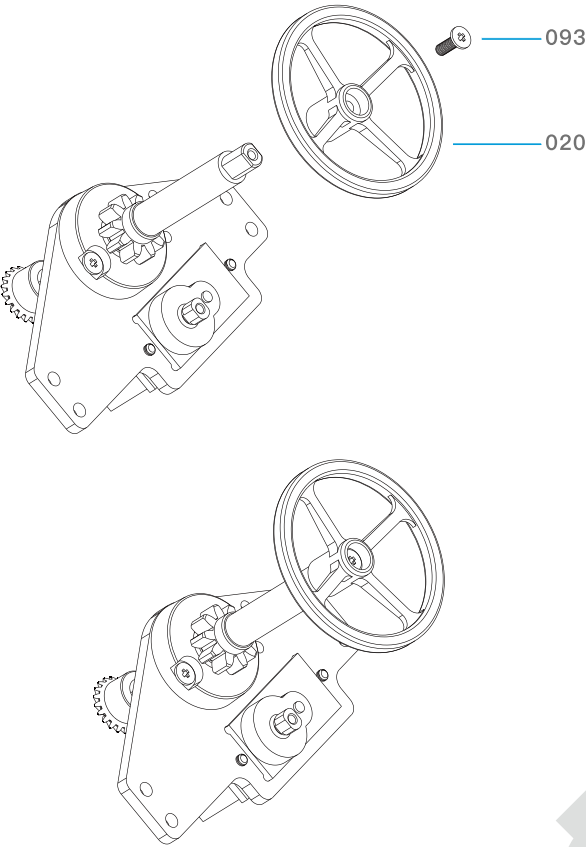
3.10 Assemble steering engine bracket



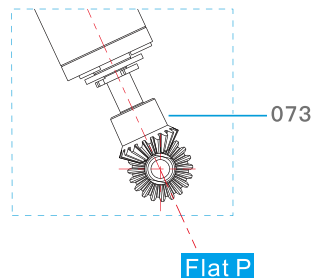
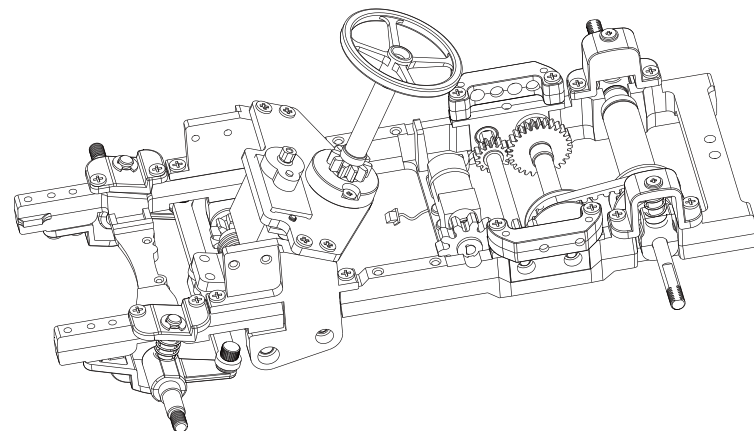
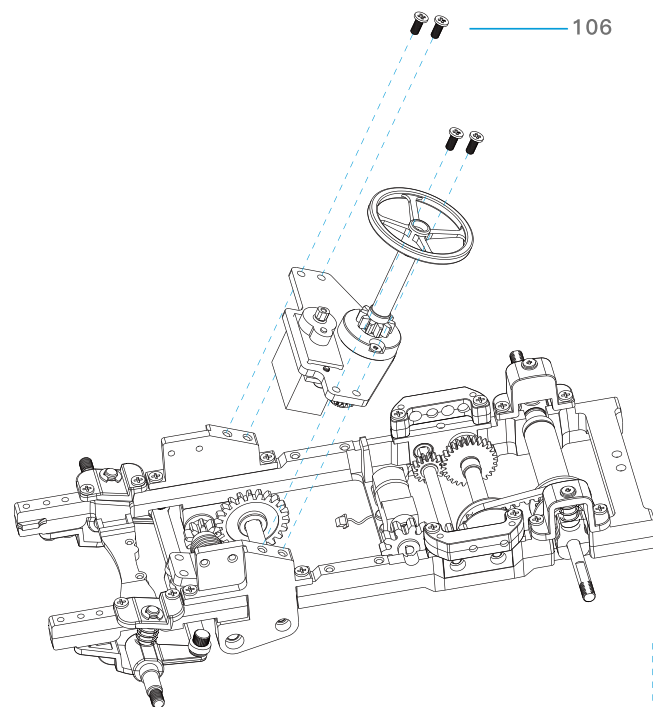
3.11 Assemble steering gear



3.12 Assemble steering wheel



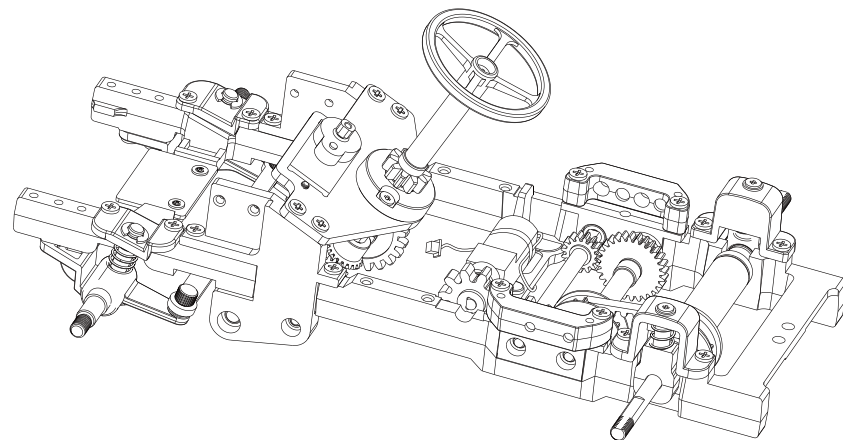
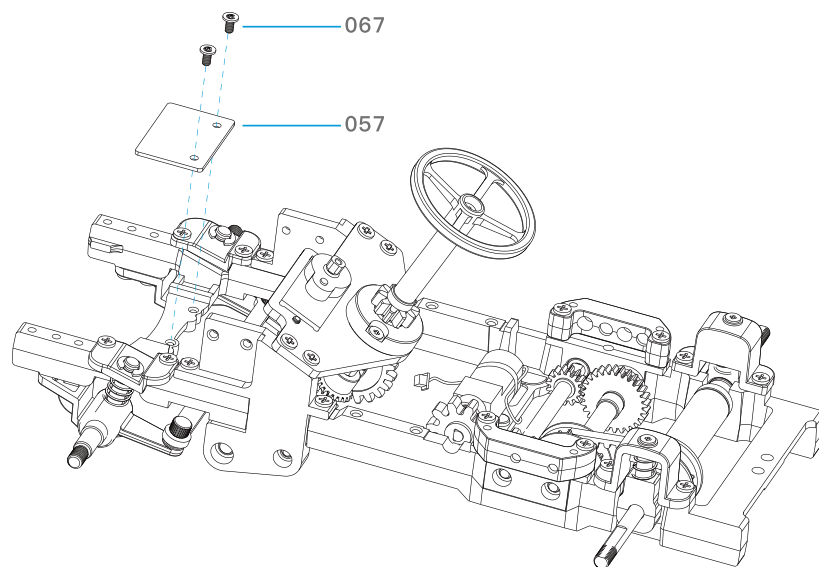
3.13 Install steering wheel assembly



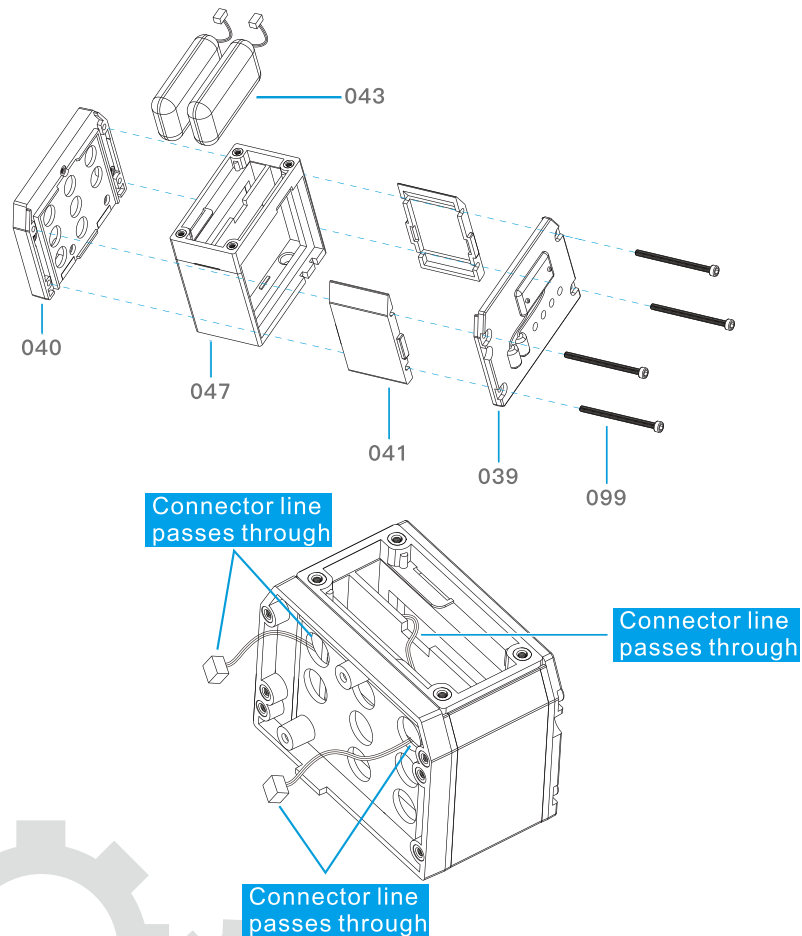
With the screws (106) tightened, loosen them by a half turn. Manually turn the steering wheel (020) and if it turns flexibly, tighten the screws (106); otherwise, adjust the steering wheel locating bracket (017), to ensure the bevel gears (073) engage properly. As shown in the figure, ensure the center lines of both bevel gears are in the same plane P.

4. Battery system

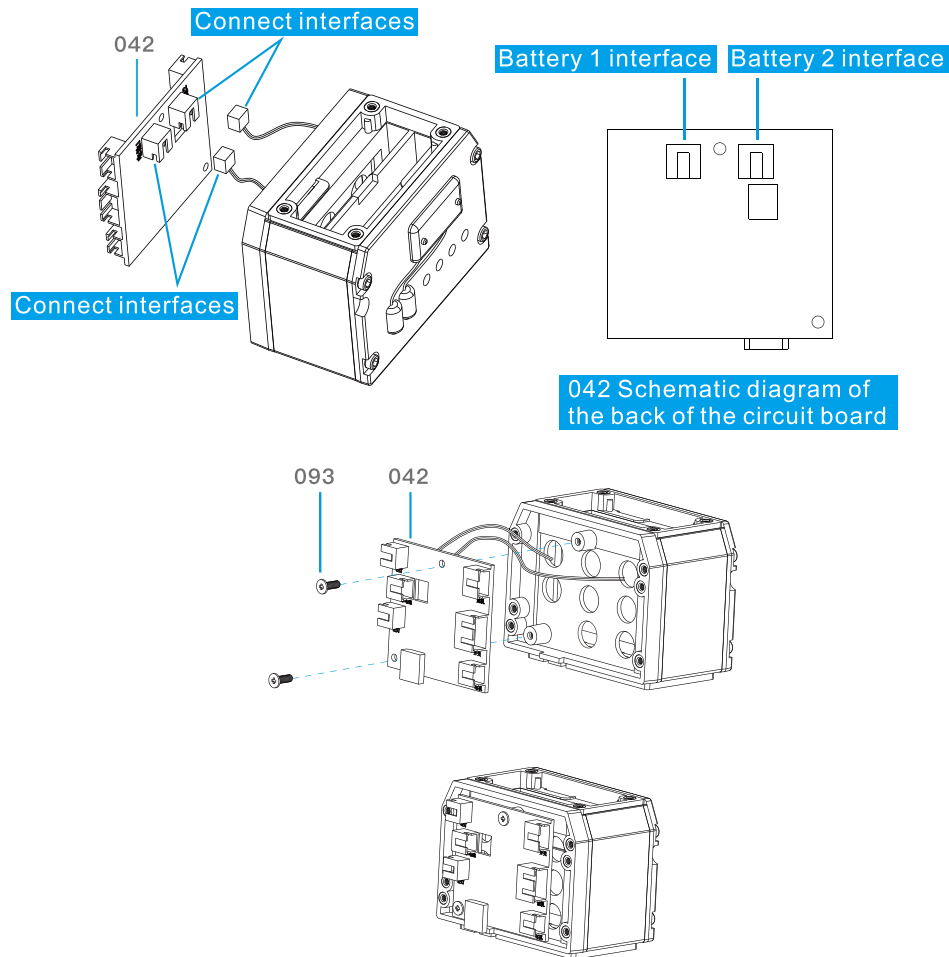
4.1 Install front panel



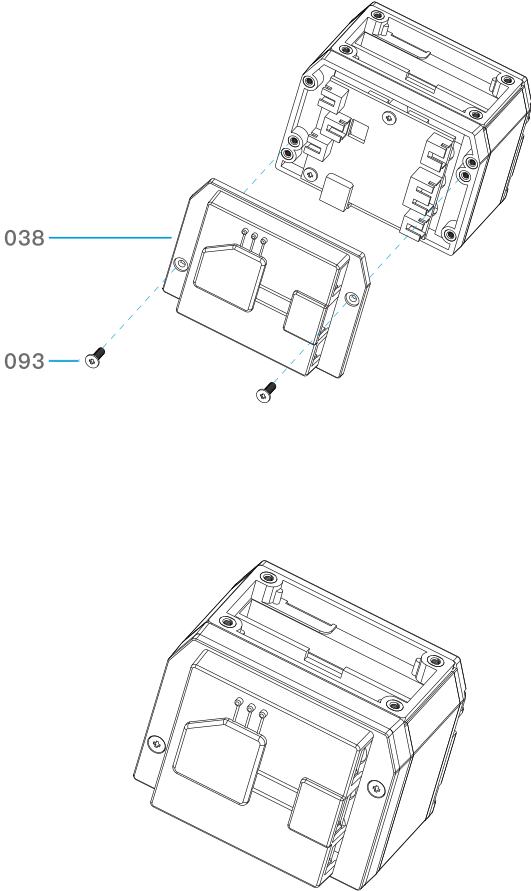
4.2 Assemble battery box



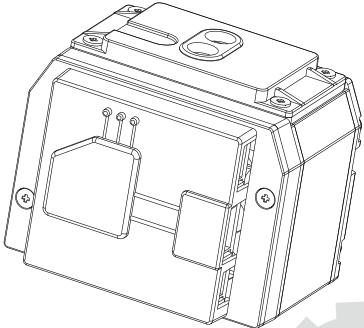
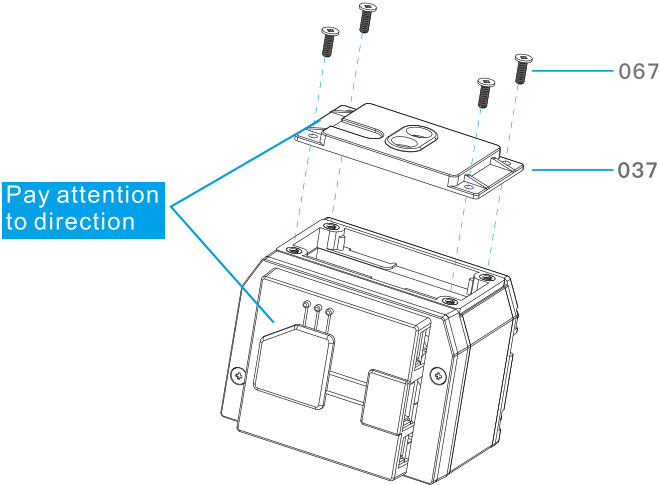
4.3 Assemble the circuit board



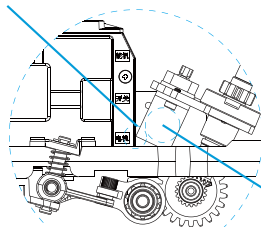
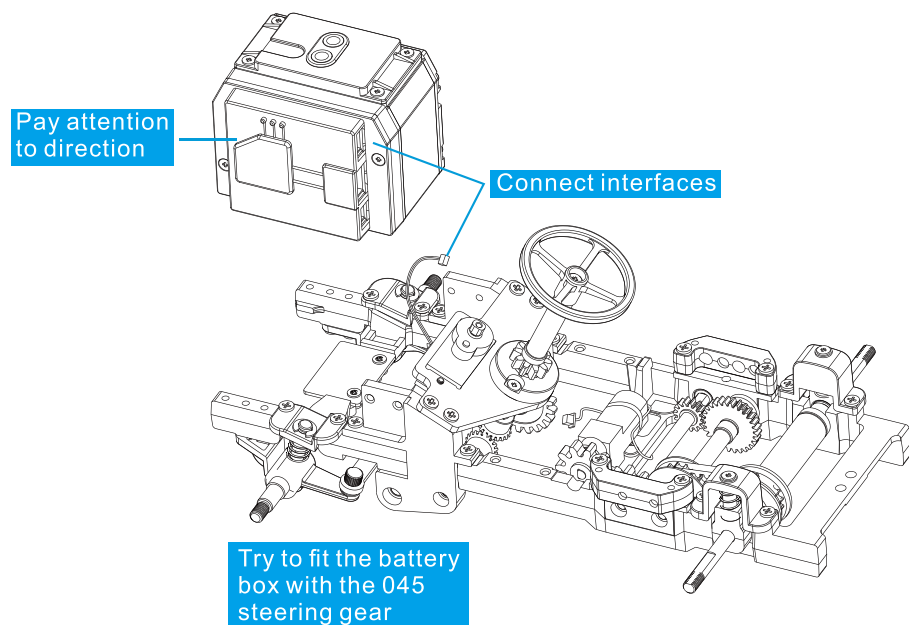
4.4 Assemble right side panel



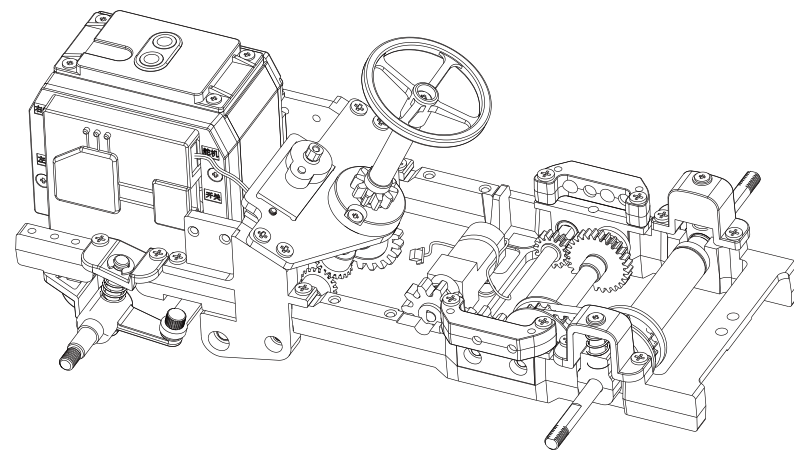
4.5 Assemble upper cover



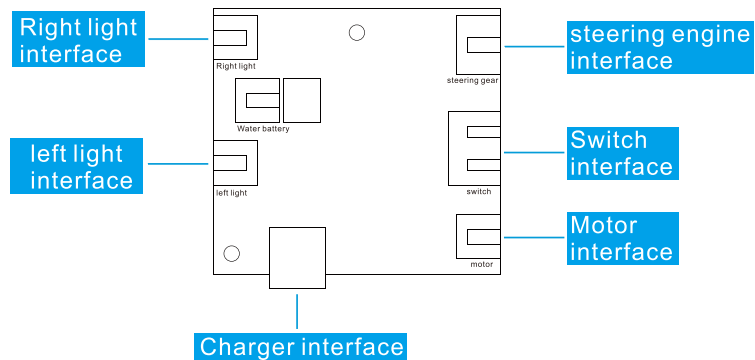
4.6 Install battery box



Note: to hidden in the steering gear line here



042 circuit board schematic diagram

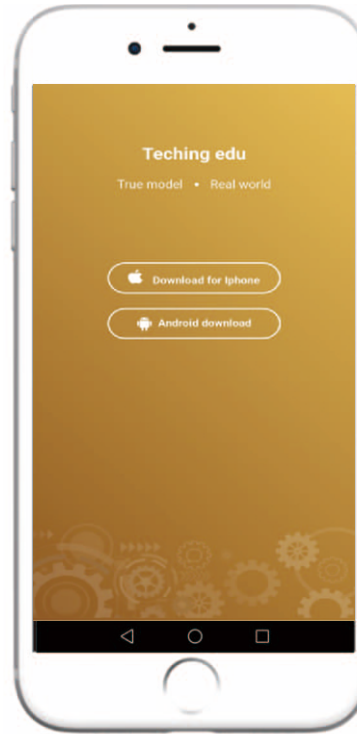


4.7.1 Connect APP

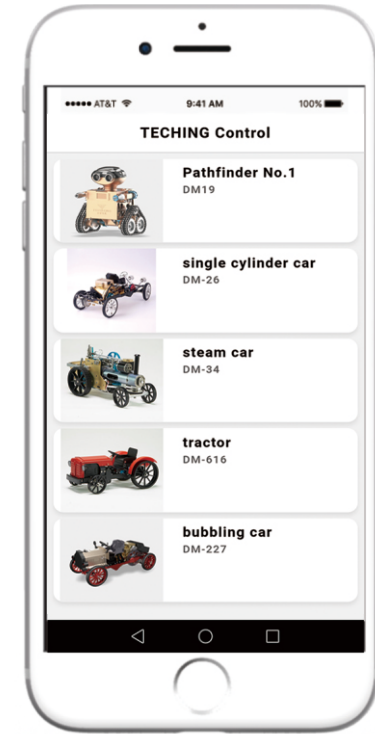
1) Scan “Teching ”App;



2) Pop up the next interface;



3) Enter the Teching Control interface and select the corresponding model to enter the control interface.



Notes on equipment:

1. First open the phone positioning
2. Pay attention to whether the power of the device is sufficient. When the power is insufficient, the light may be on, but there is no wifi signal, and the device will not be found;
3. The distance between the mobile phone and the device should not be too far, try to reduce obstructions;
4. When operating multiple devices, pay attention to whether there are other mobile phones connected to the device, the connected device will not be searched.

4.7.2 Remote control operation guidance:



①Key introduction

 N is the neutral key  R is the reverse key  D is the forward button

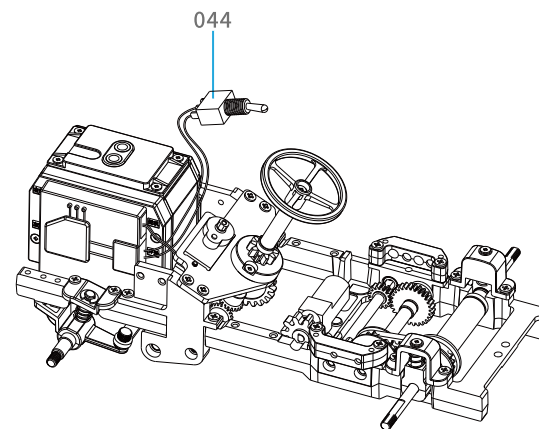
 Fuel button  Brake button   Left/right steering key

b: First connect the 044 power switch to the 042 circuit board switch interface, then turn on the power switch and observe whether the indicator light on the tractor circuit board is on.

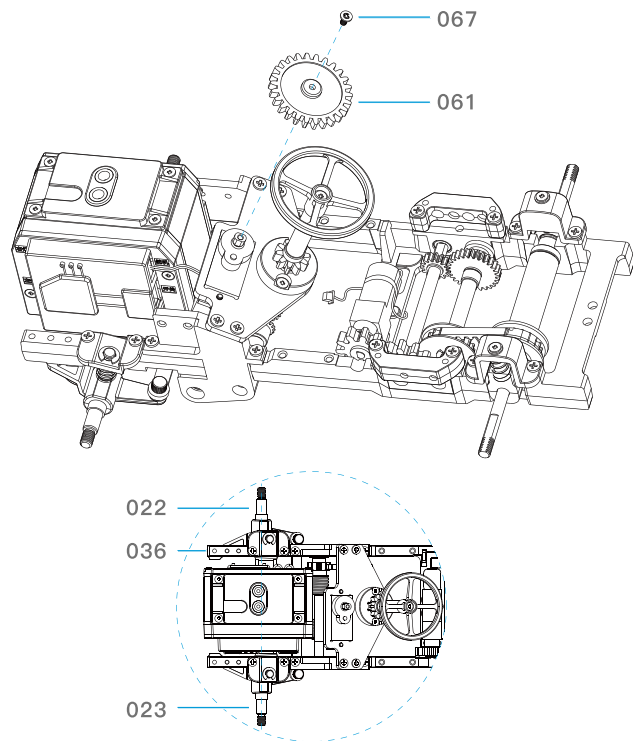
c: Click the  Bluetooth icon, search for "JDY-16" and connect after finding the device (the system will prompt that Bluetooth is connected after the connection is successful)

Tip: When the Bluetooth device cannot be searched, it means to search again after rebooting.

d: After clicking the   left/right steering button, the steering engine returns to the center.



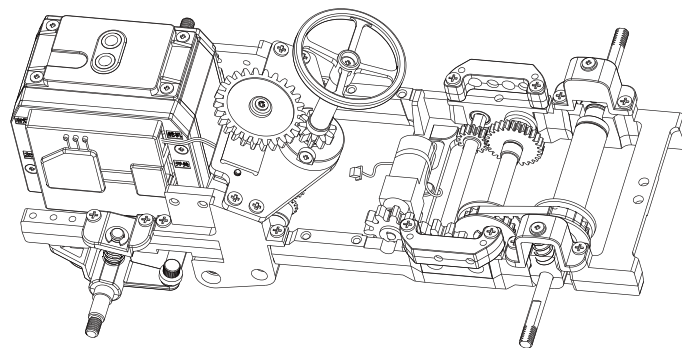
4.8 Install 26-teeth gear



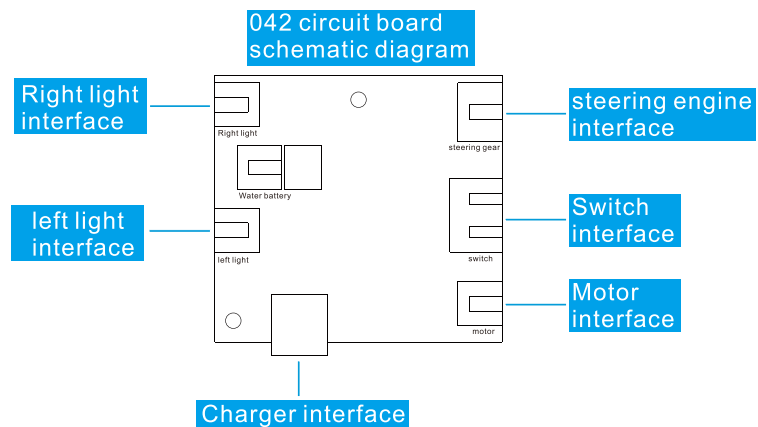
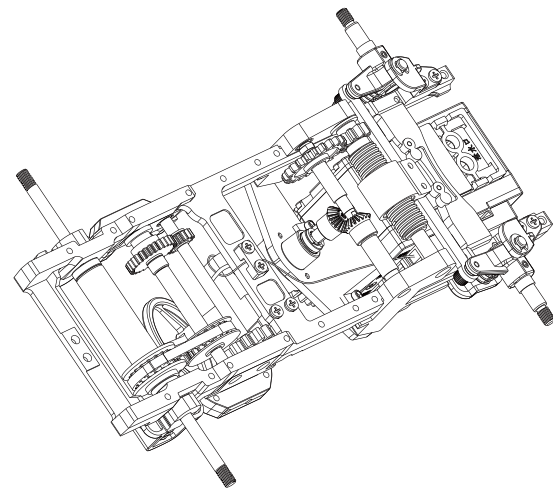
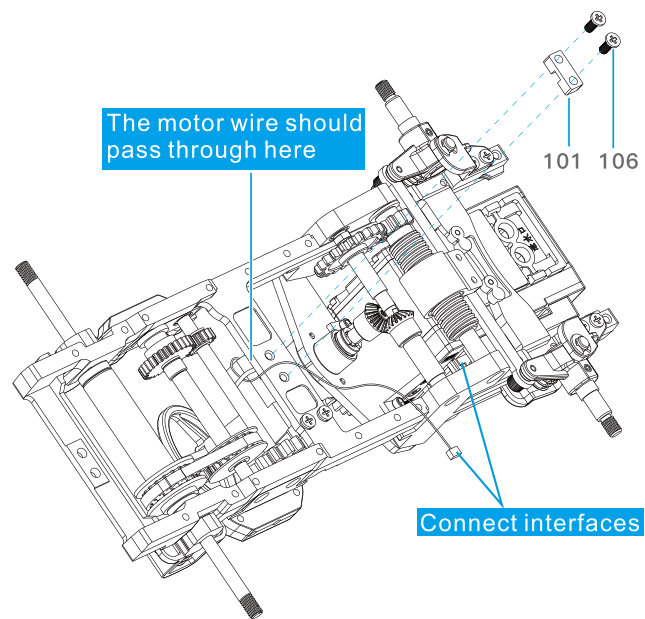
Turn the steering wheel, keep the 023 left direction section and 022 right direction section perpendicular to the 036 frame first, and then install 061 (26-tooth gear)



Turn off the power switch before turning the steering wheel by hand;
After turning on the power switch, turning the steering wheel by hand is prohibited.

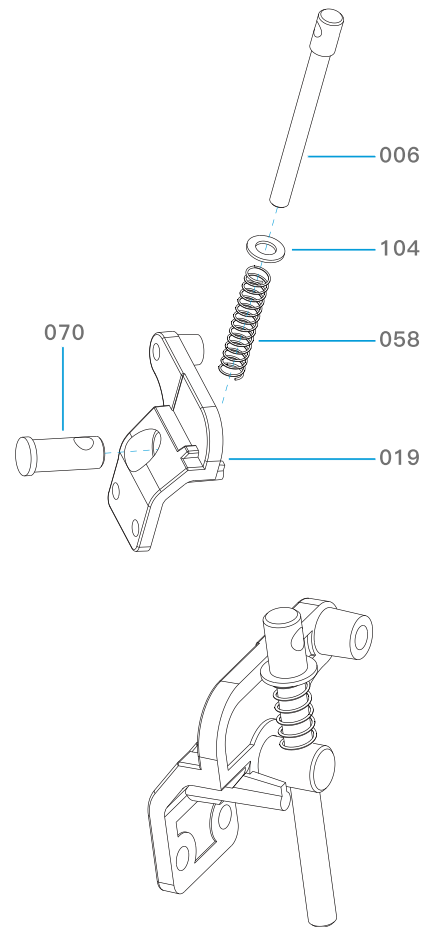


4.9 Install the clamp

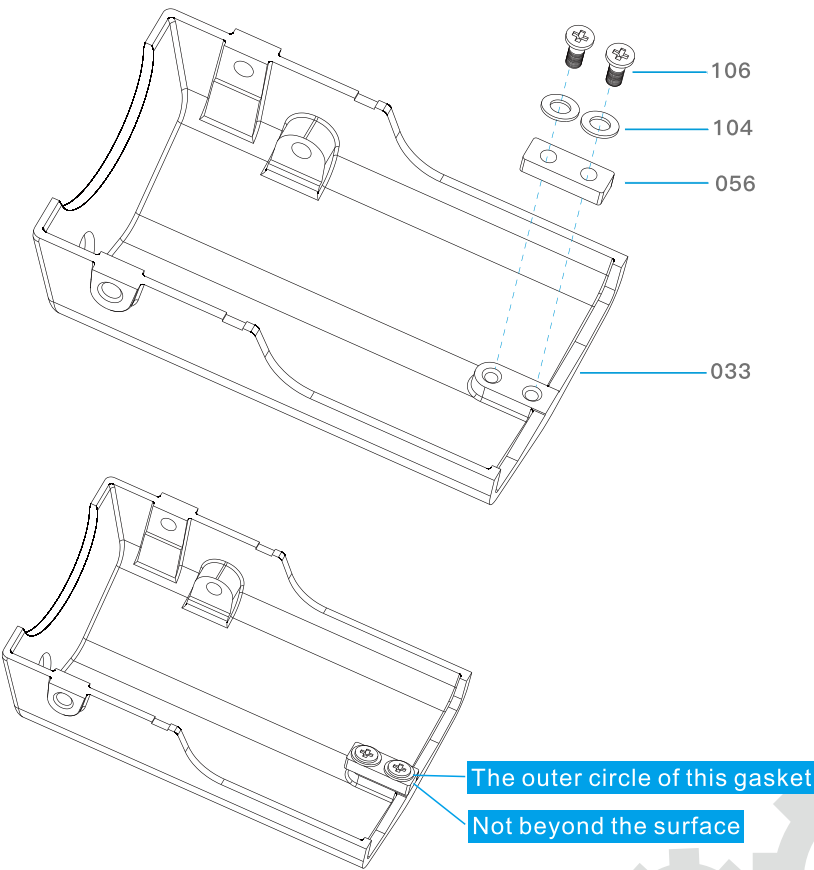


5. Hood assembly

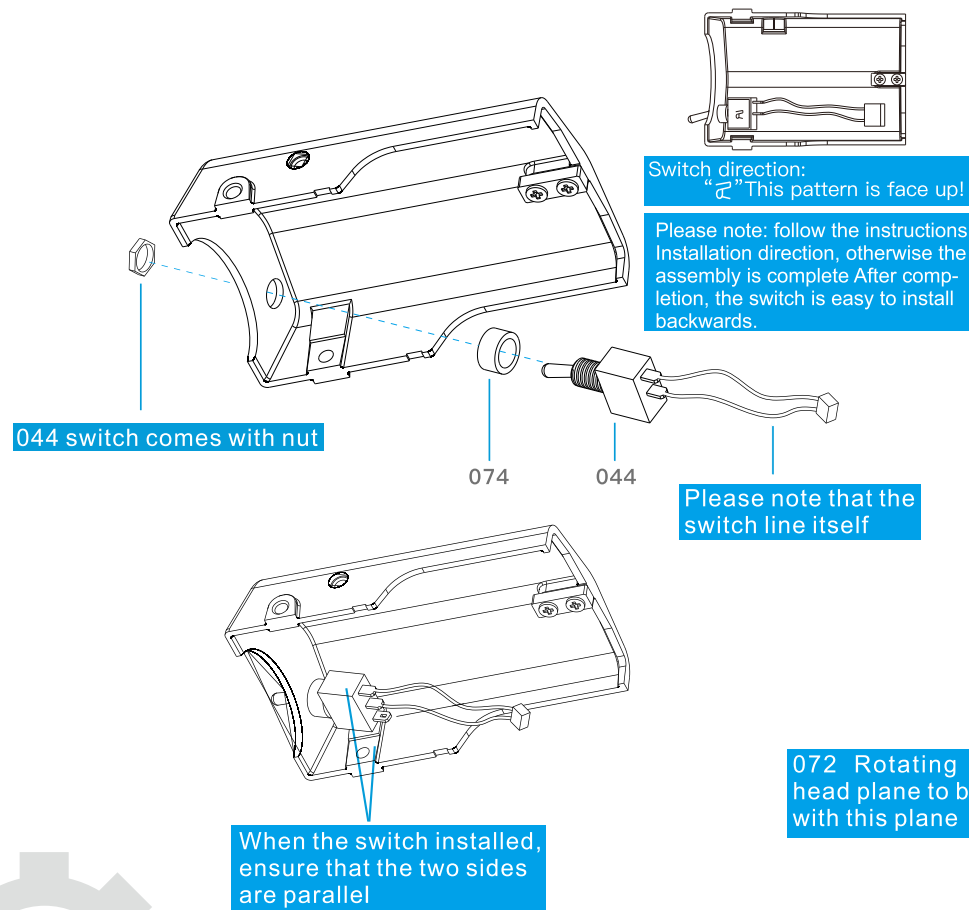
5.1 Assemble right bracket



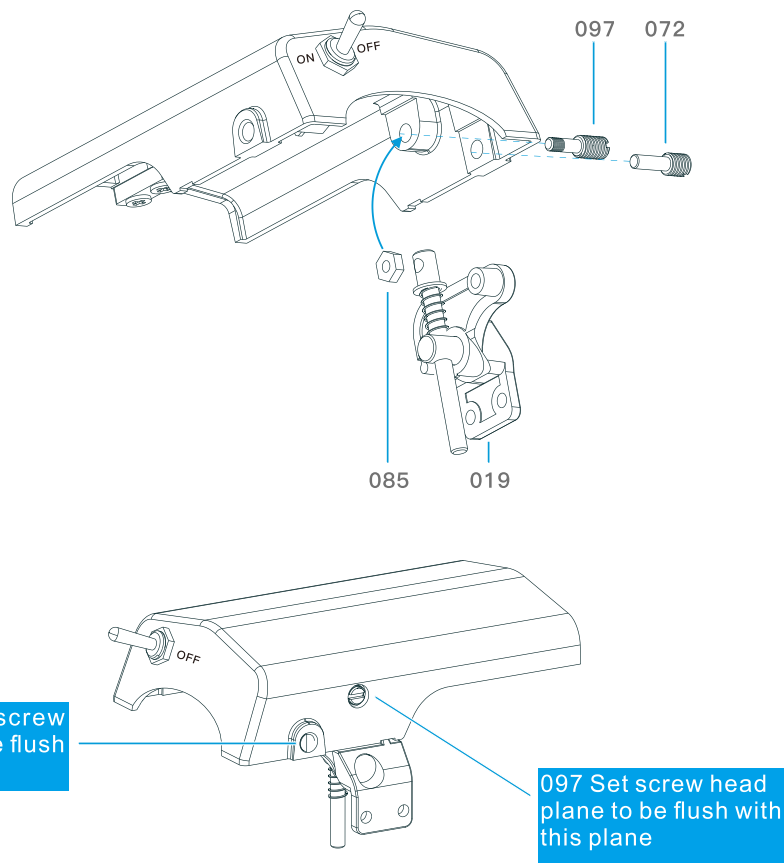
5.2 Install suction block



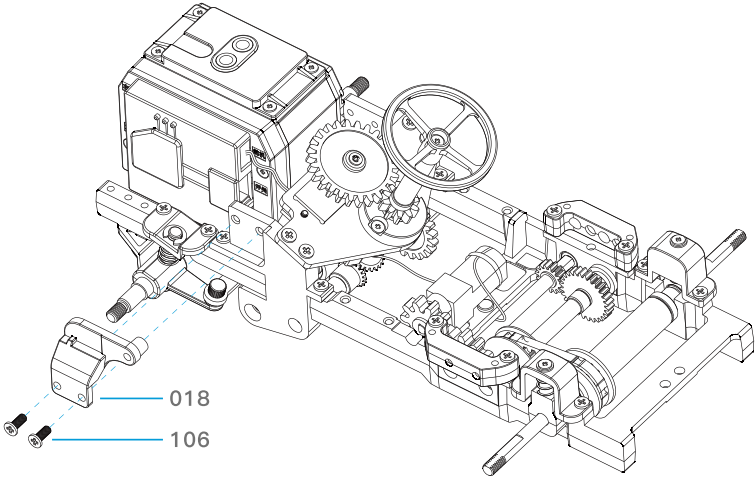
5.3 Install switch



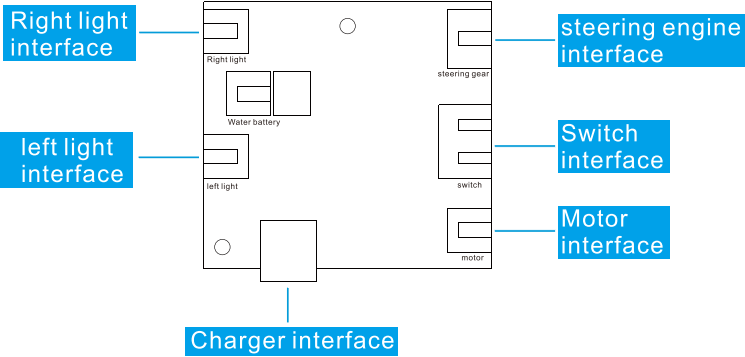
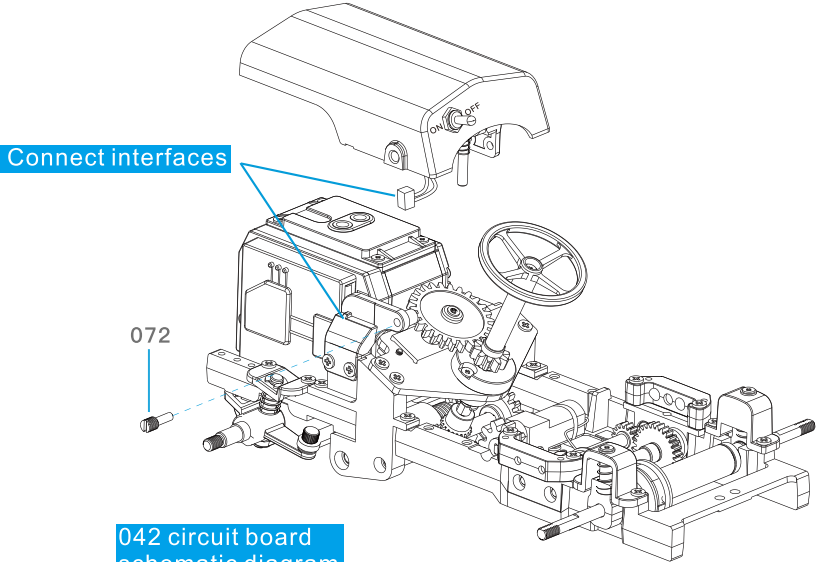
5.4 Install right bracket



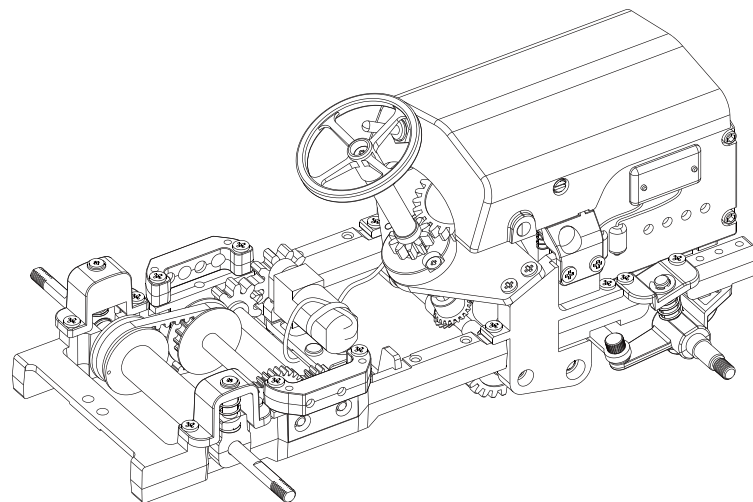
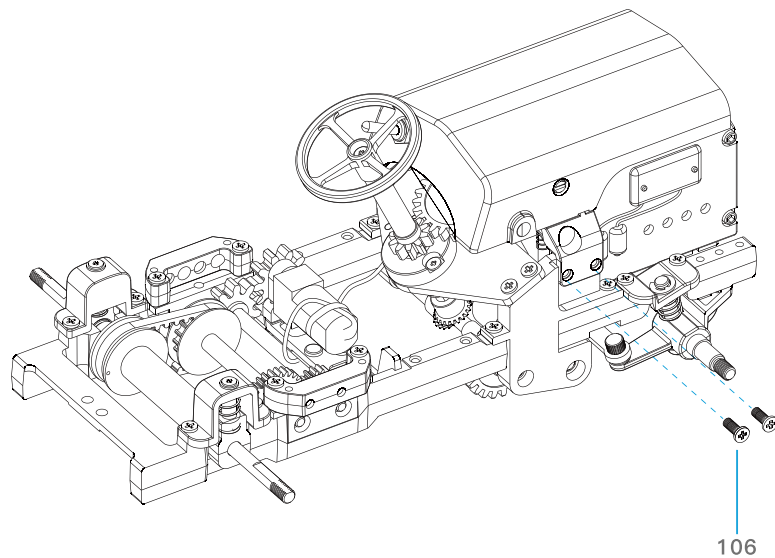
5.5 Install left bracket



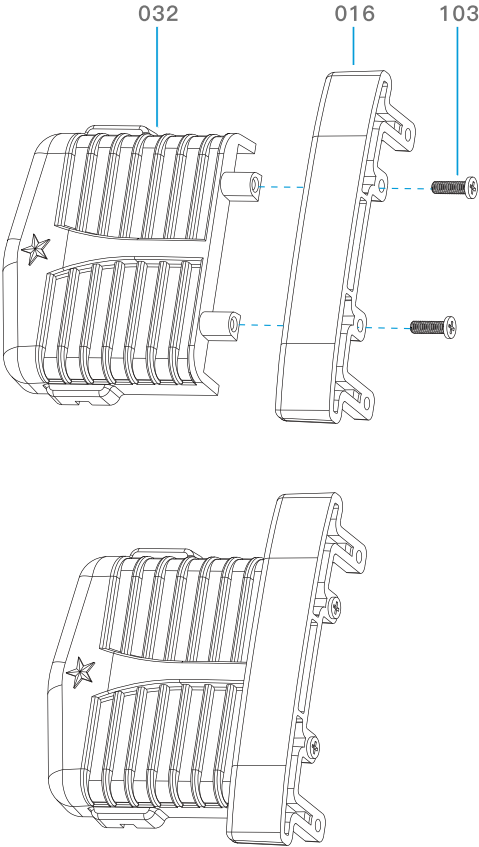
5.6 Install roof cover



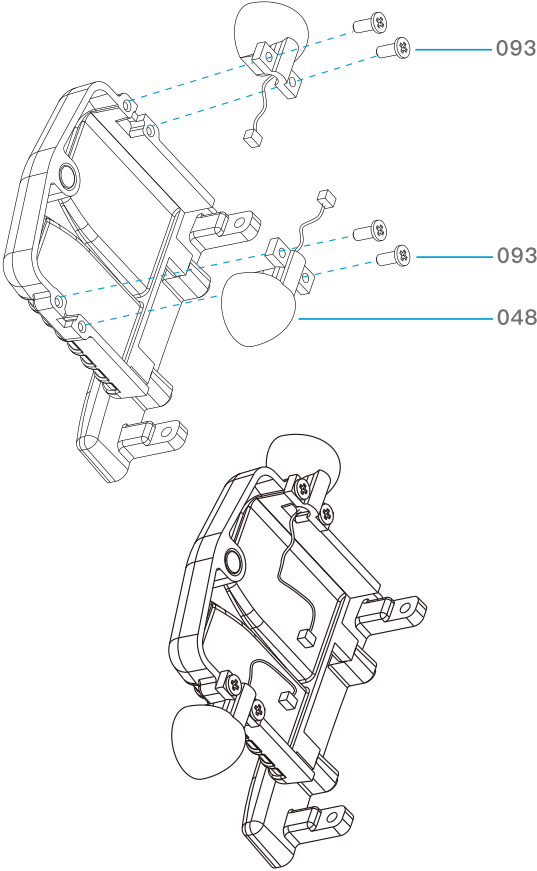
5.7 Fix the roof cover



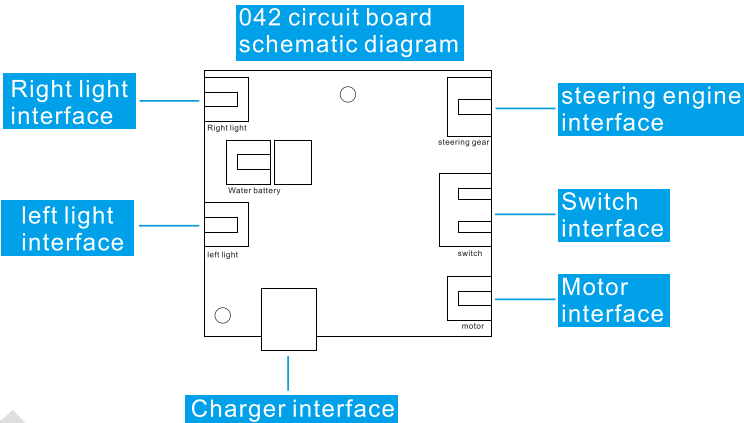
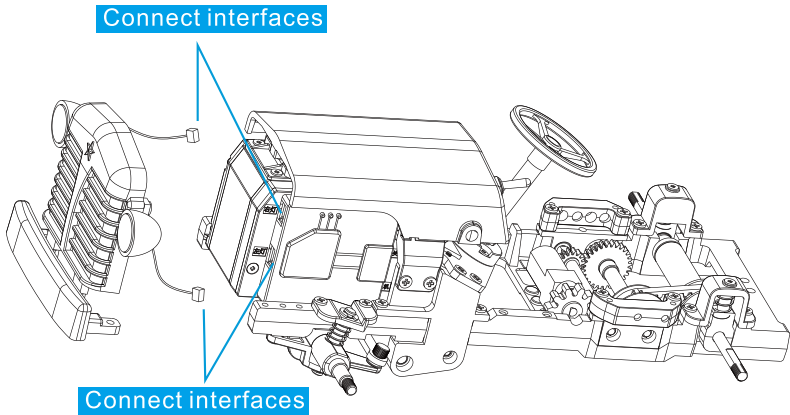
5.8 Install bumper



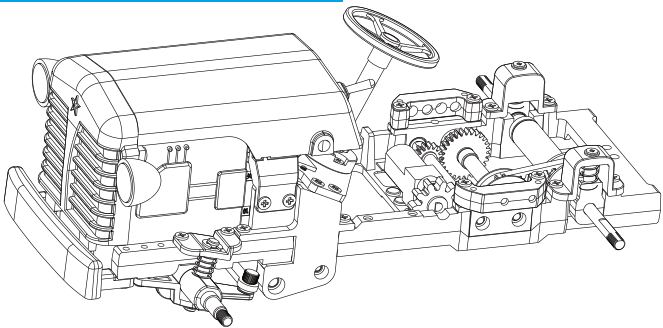
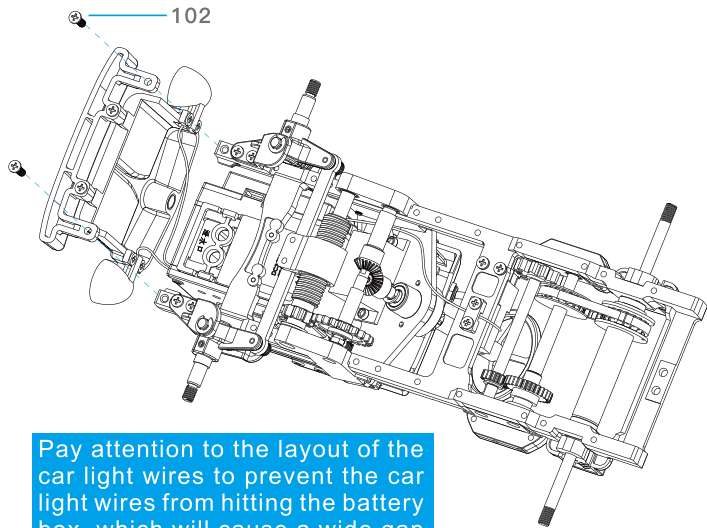
5.9 Install the light



5.10 Connect light wires

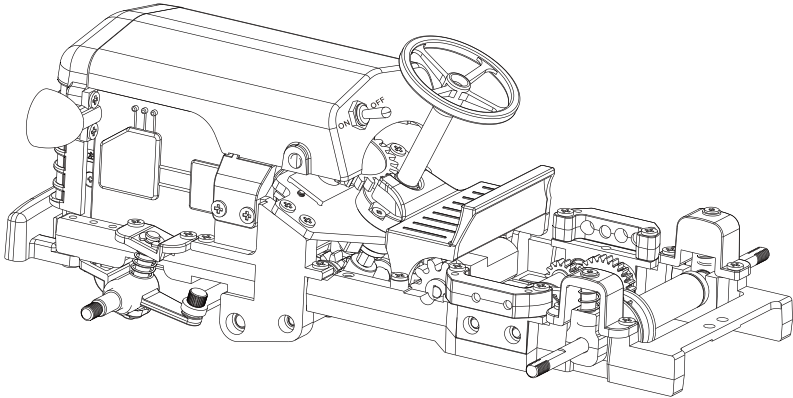
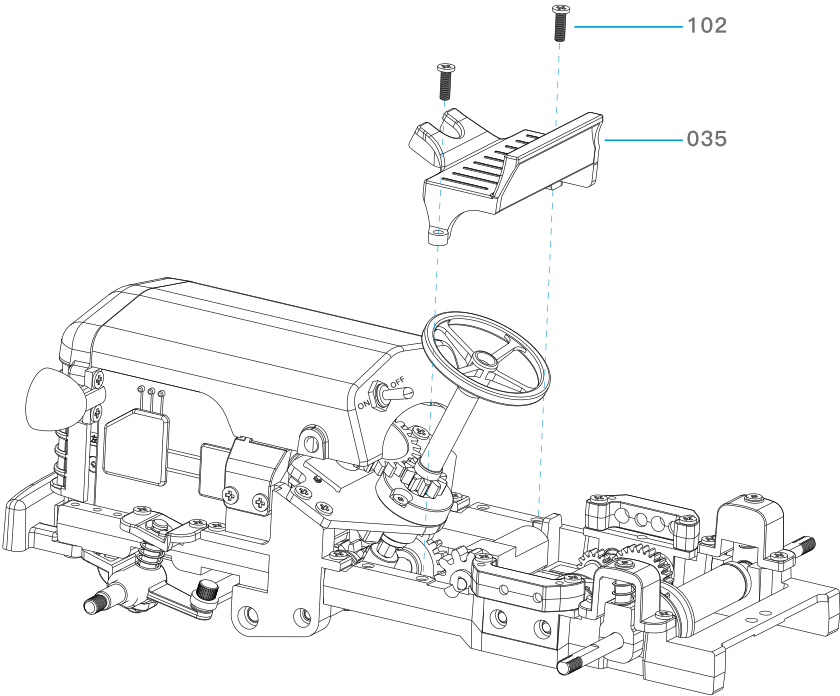


5.11 Install front cover

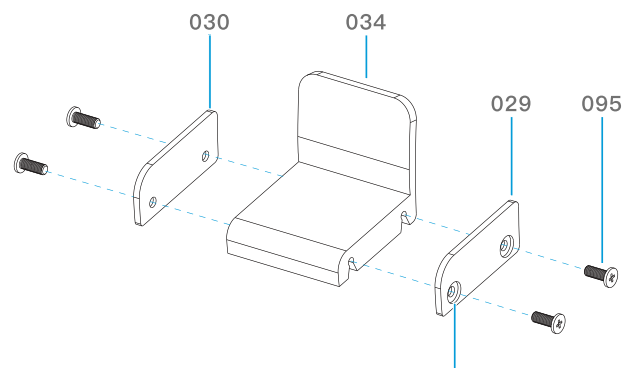


6. Seat assembly

6.1 Install foot pedal

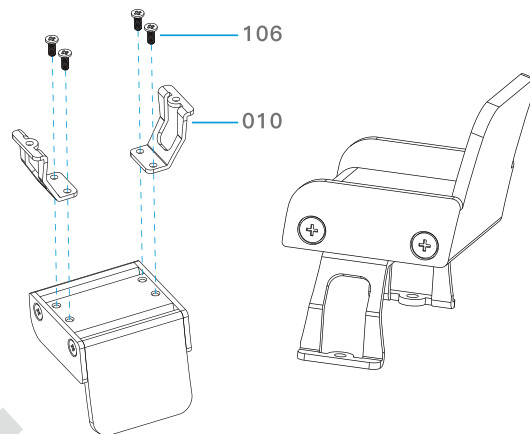


6.2 Install seat left and right shields

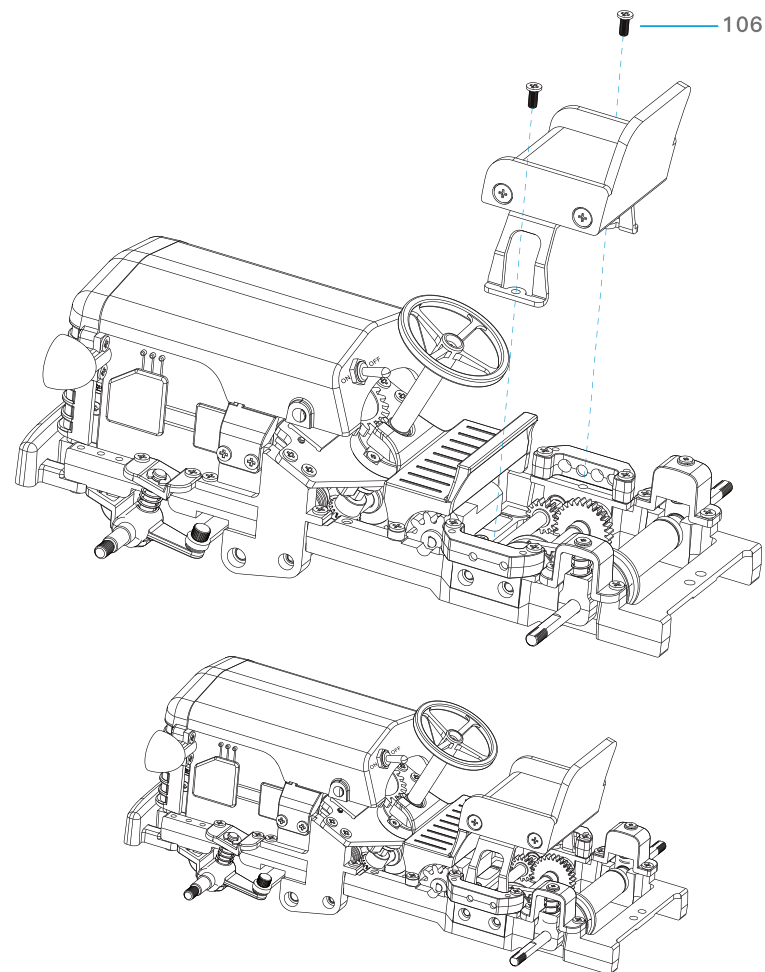


Counterbores of 029,030
toward the outside

6.3 Install seat brackets

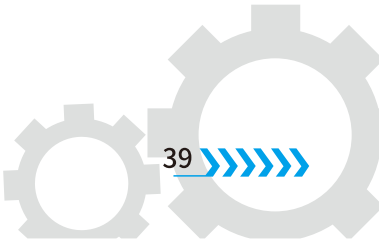
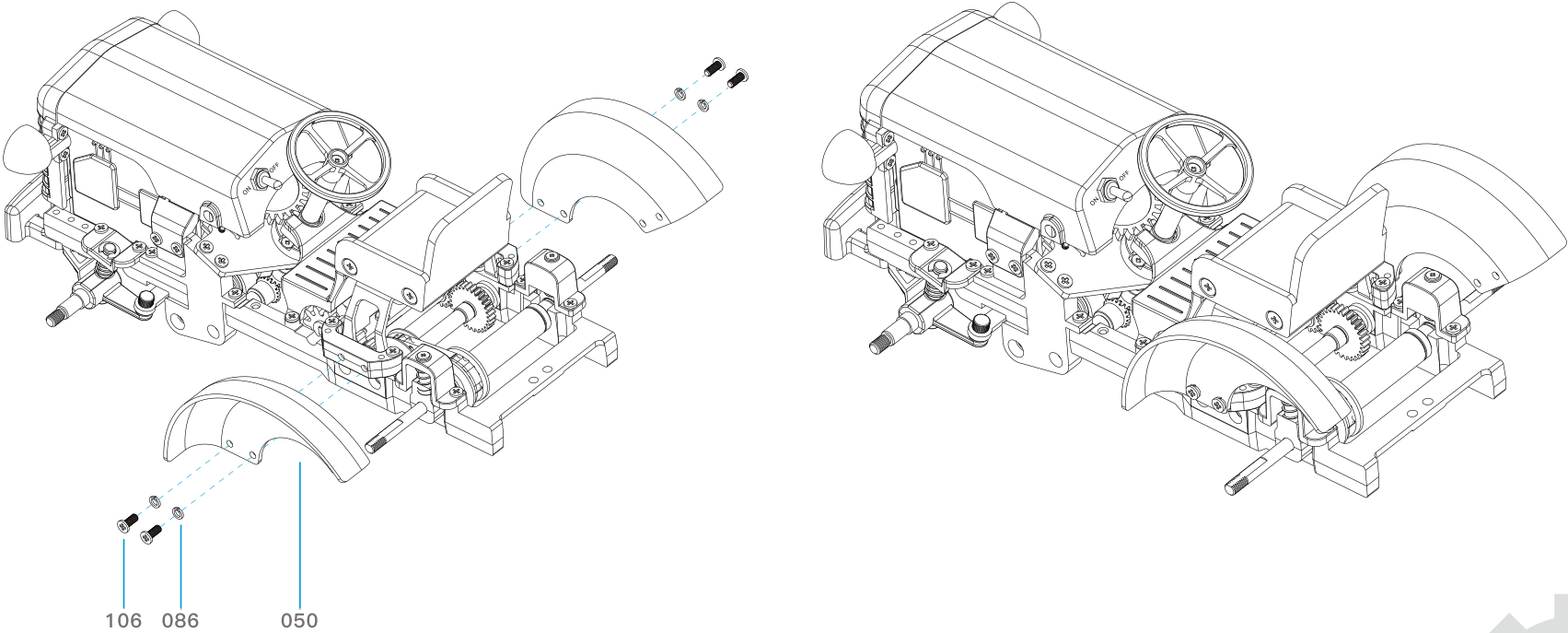


6.4 Install the seat



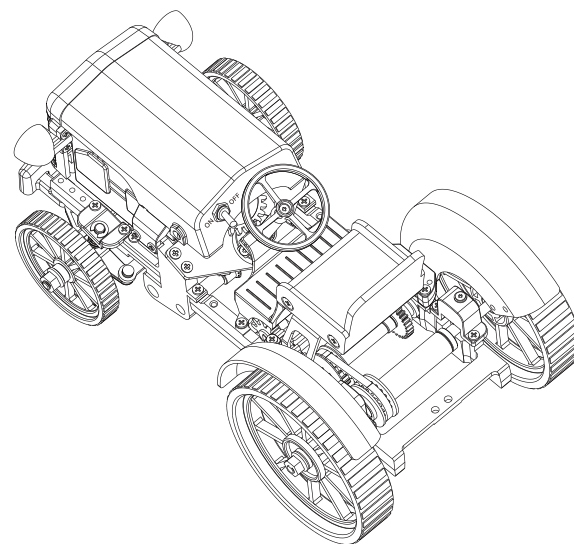
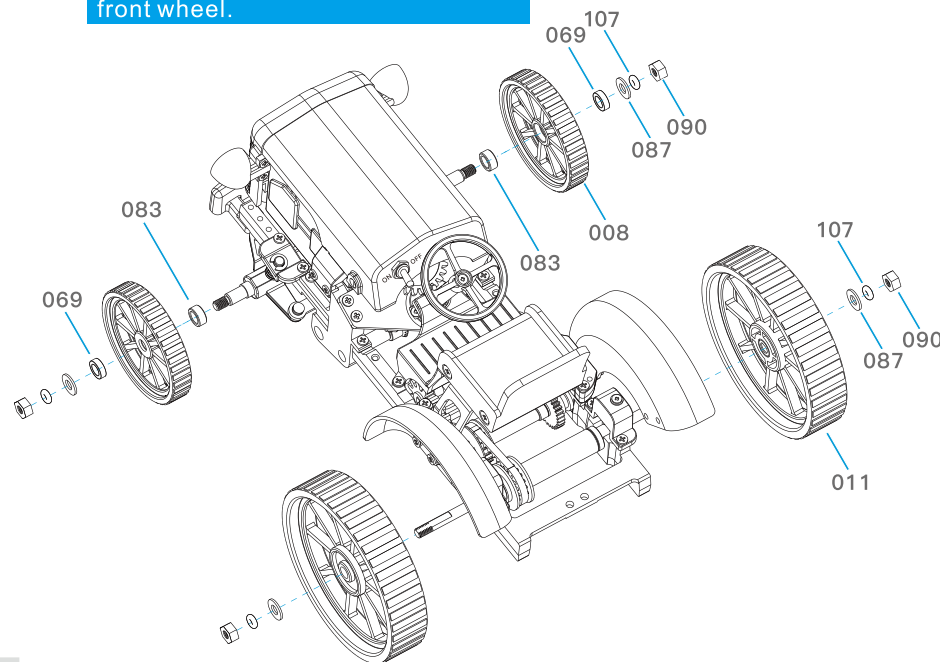
7. Assemble the wheels

7.1 Install the fenders

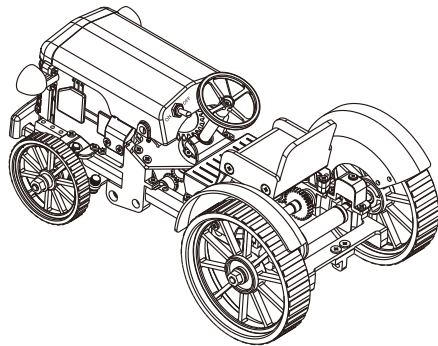
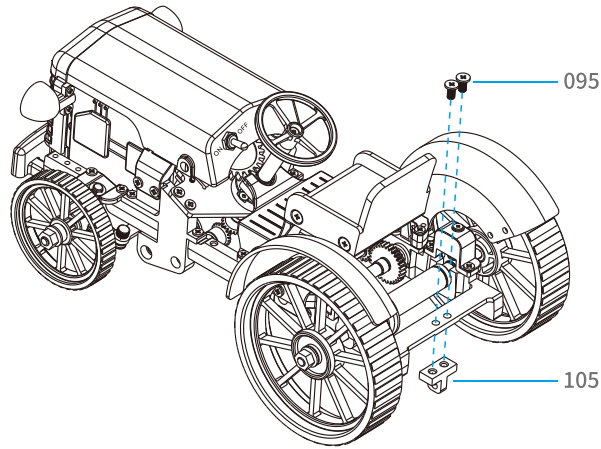


7.2 Install the wheels

The 090 nut does not need a wrench, it can be tightened gently by hand to ensure the normal operation of the front wheel.

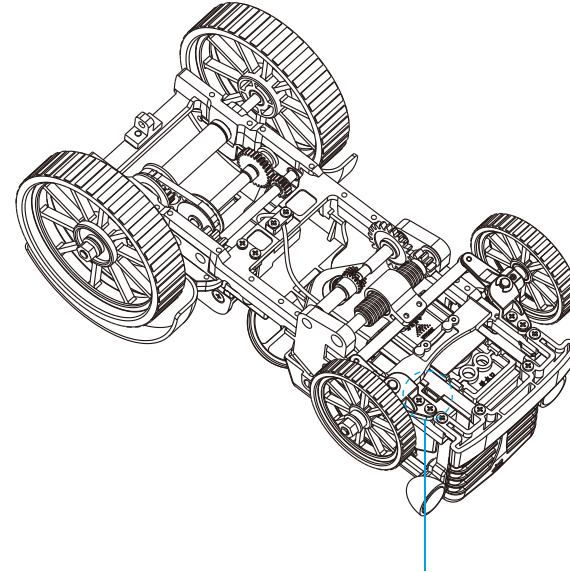


7.3 Install tail hook



Product assembly finished

Precautions for charging:



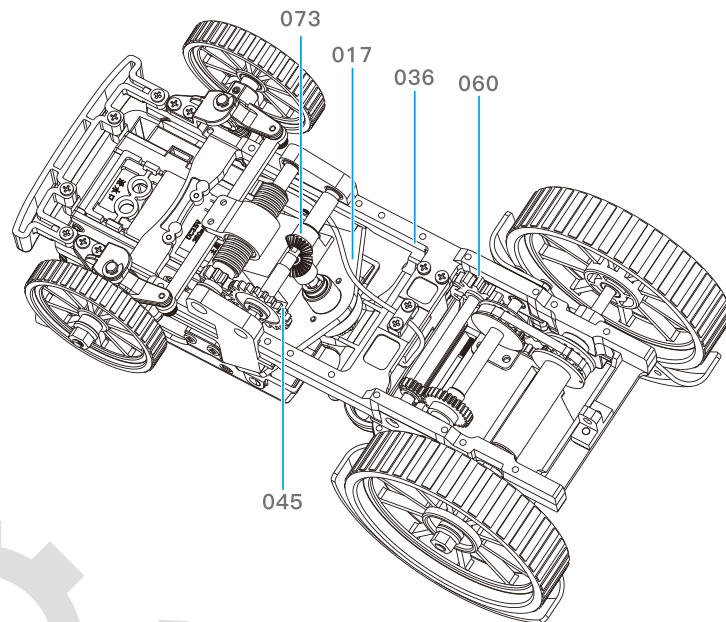
The charging status observation point

- 1> This product is provided with a special charging cable. Users should provide the power adapter with an output voltage of 5 VDC and an output current no lower than 1000 mA DC. Do not charge the product with an adapter having an output exceeding 6 V.
- 2> For other precautions, see the second clause of the "Precautions" section of this manual.
- 3> Normal charging status:
 - ◇ The red light is normally on during charging;
 - ◇ The blue light is normally on when it is fully charged;
 - ◇ The maximum charging time is 2 h.

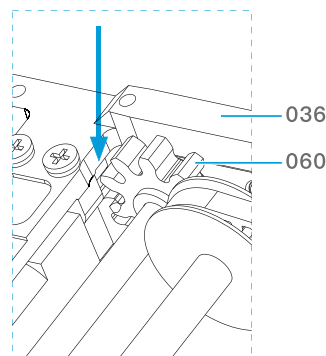
IV. Fault Analysis and Troubleshooting

I> Mechanical fault analysis and troubleshooting:

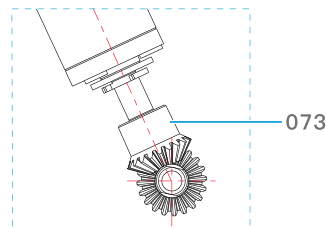
With assembly finished, turn on the switch; if there is abnormal movement, first check whether lubricating oil is applied to related moving parts as shown in the figures; then, check the assembly sequences against the manual one by one; if no problem is found, locate and eliminate the problem by following the procedure below:



- 1> Check whether the orientation of the parts is correct.
- 2> Check for loose screws.
- 3> Check whether similar parts are reversely installed.



4> If the motor does not rotate, check whether the 060 gear has burrs first; check whether the surface indicated by the arrow of the 036 frame is in contact with the 060 gear, as shown in the figure. If so, please scrape the burrs with a knife and clean up the garbage.



5> If the steering wheel is not flexible, loosen the 106 screw first, adjust the 017 steering gear bracket to ensure that the 073 bevel gear is normally engaged. As shown in the figure, ensure that the center lines of the two bevel gears are in the same plane. Then check whether the 045 (Steering gear) can work normally. "

II. Electronic troubleshooting

1) Can't charge

- Check whether the charger matches, and output DC: 5V/1A (Figure 1-1).
 - Whether the USB plug is inserted firmly in place.
 - Whether the charging indicator light is red when charging.
 - Whether the indicator light is blue after fully charged.
- Tip: Do not operate the mobile phone remote control when the product is charging to avoid danger.

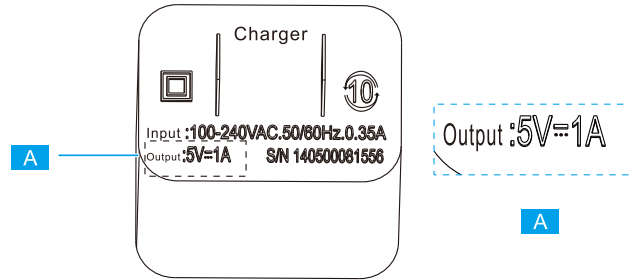
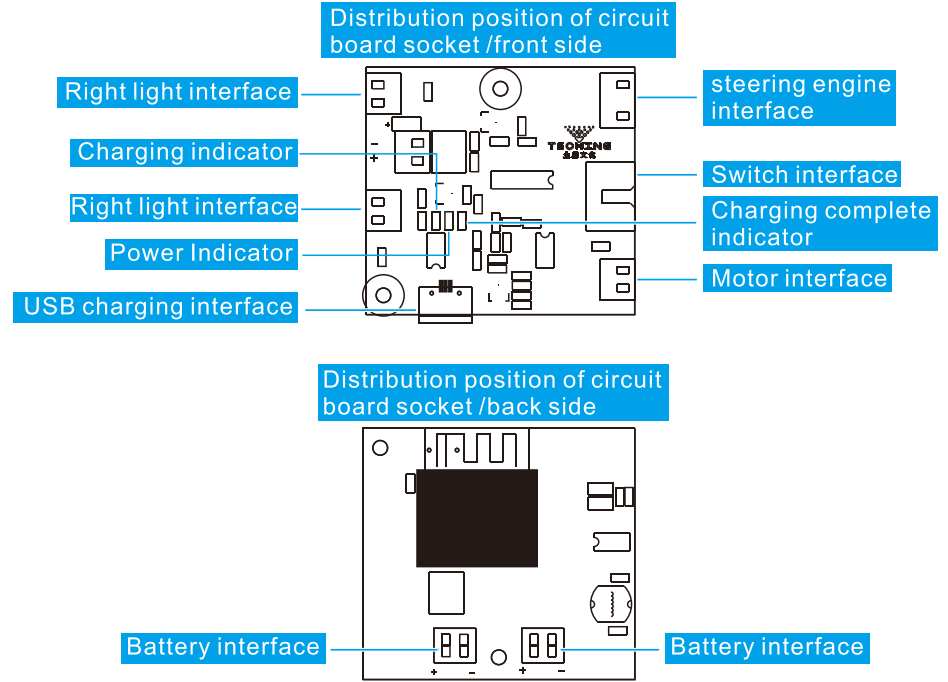


Figure1-1

2) The machine does not work and the motor does not rotate

- Check whether the power indicator of the circuit board is red.
- Check whether the battery plug is inserted in the wrong position
- Check whether the motor cable is inserted in the wrong position
- Check if the battery is charged, it is recommended to charge it with USB for 1 hour and try again.



2) Connect APP:

Click the  Bluetooth icon, search for "JDY-16" and connect after finding the device (the system will prompt that Bluetooth is connected after the connection is successful. When the Bluetooth device cannot be searched, it means to search again after rebooting.

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.

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.



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

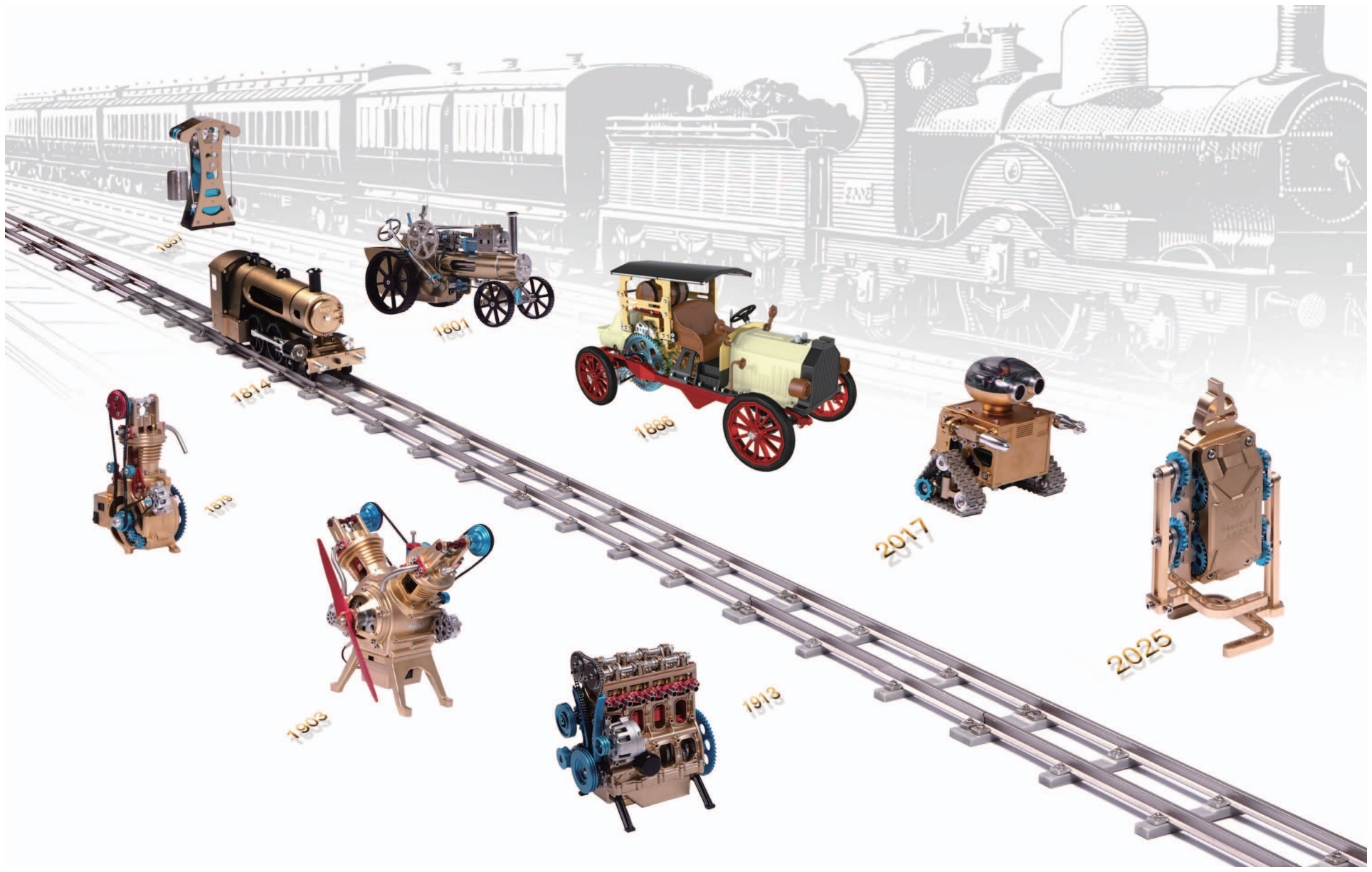
Sales unit: _____

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





Educational • Original design • Patented



Company: Guangzhou Teching Cultural
Development Co.Ltd

Address: Bao sheng Building, Hong ming Road,
Huangpu District, Guangzhou City, China.

Service Tel: 0086-13924277386 4001-020-019

After-sales email: sales@techingedu.com.cn

<http://www.techingedu.com>



TECHING
APP



Official Website