

Metal Machinery

Assembly Model



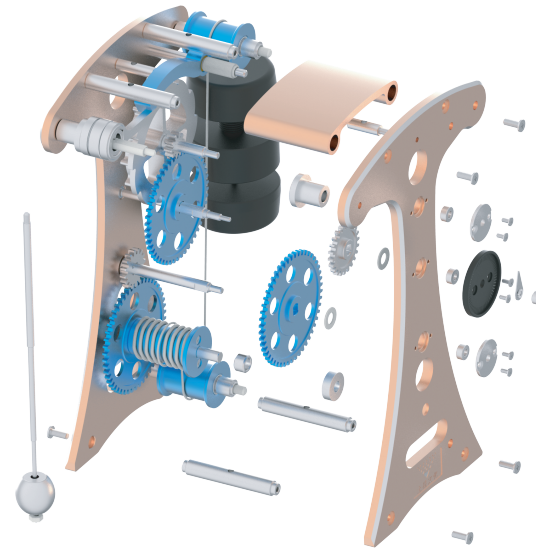
Galileo Pendulum Clock  
MODEL:DM35



Assembly Difficulty ★★★★★

## Structural features:

1. Double escapement mechanism
2. Gravitational potential conversion system
3. Gravity ratchet mechanism
4. More than 90 parts



**Real Model      Real World**

## Basic product information

### I. Product Data

Product name: Galileo pendulum clock

Product model: DM35

Main materials: anodic aluminum oxide + stainless steel

Assembly difficulty: Level II

Product standards: GB/T9254–2008

GB/T17626.2–2006

Quality level: A

### II. Product description

- ◆ Teaching 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. 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.

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Assembly of pendulum

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Troubleshooting

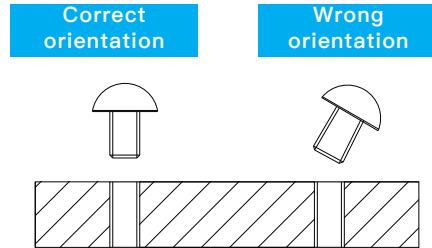
P21



# Basic knowledge on standard parts assembly

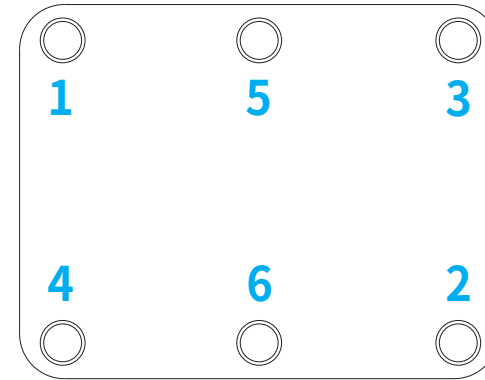
## 1.Installation of screws

### (1) Installation of screws

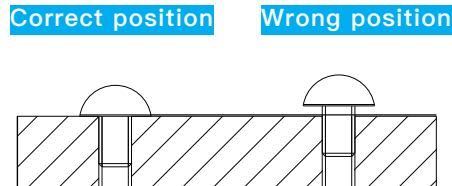


### (3)Screw installation order

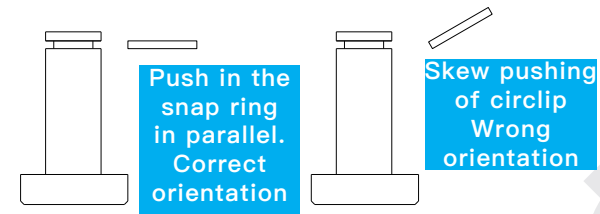
Mount the screws diagonally in order of number



### (2)Degree of screw tightening

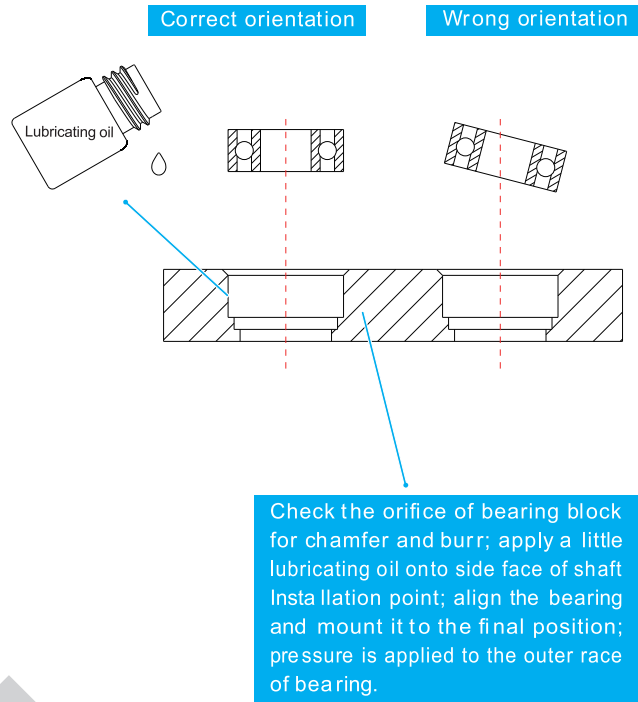


## 2.Installation of snap ring

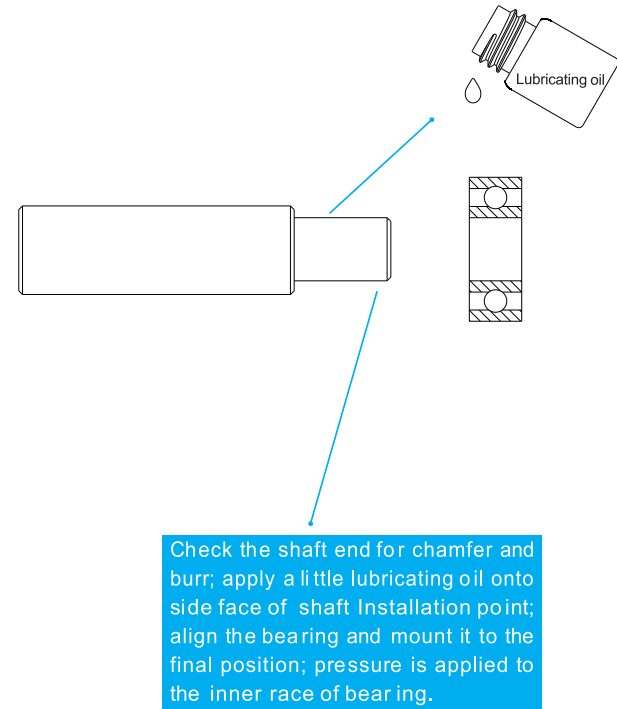


### 3. Installation of Bearing

(1) Install the bearing into the bearing seat hole

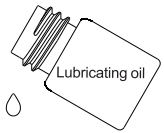


(2) Install the bearing onto the shaft



## Assemble the Galileo Pendulum Clock

Important note: before assembly, find the bottled lubricating oil, be sure to put enough oil in all the places that need to be lubricated, otherwise the machine is easy to get stuck.

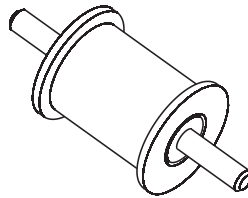
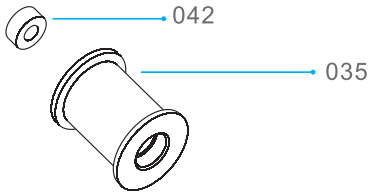


Position indicator  
for lubricating oil

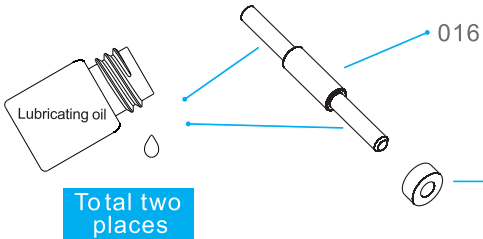
# 1

### Assembly of rear main board

#### 1.1 Installation of pulley

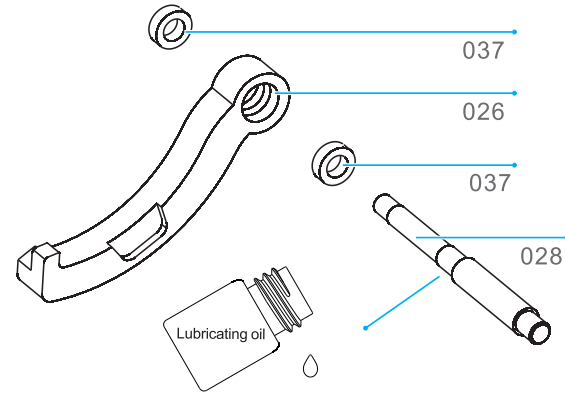


Total two sets

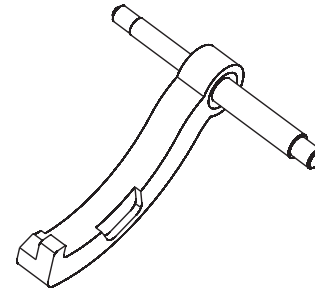


Total two  
places

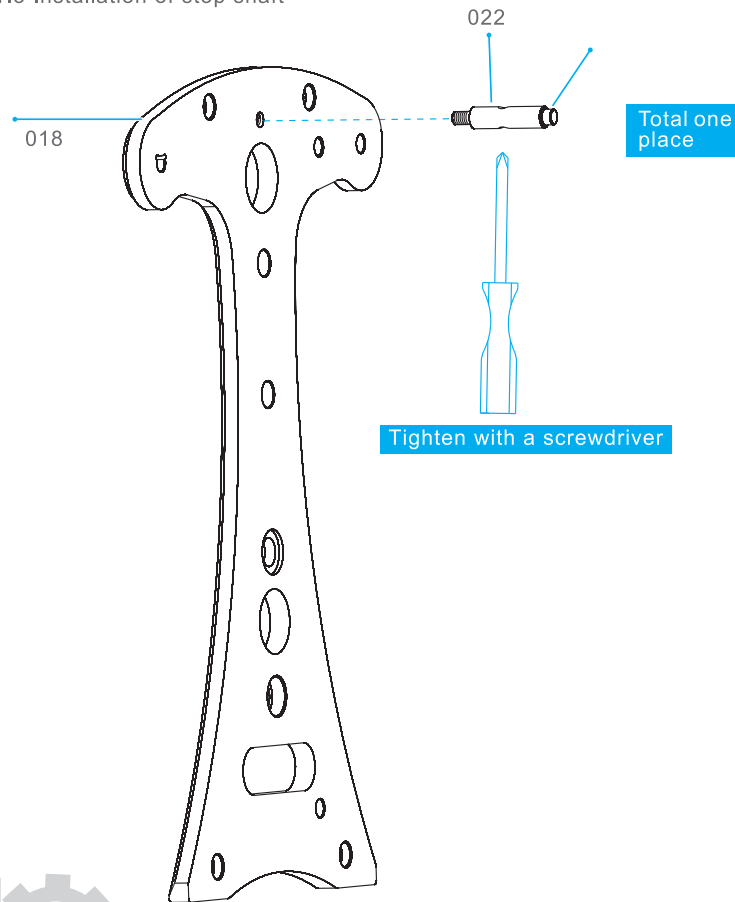
#### 1.2 Installation of ratchet pawl



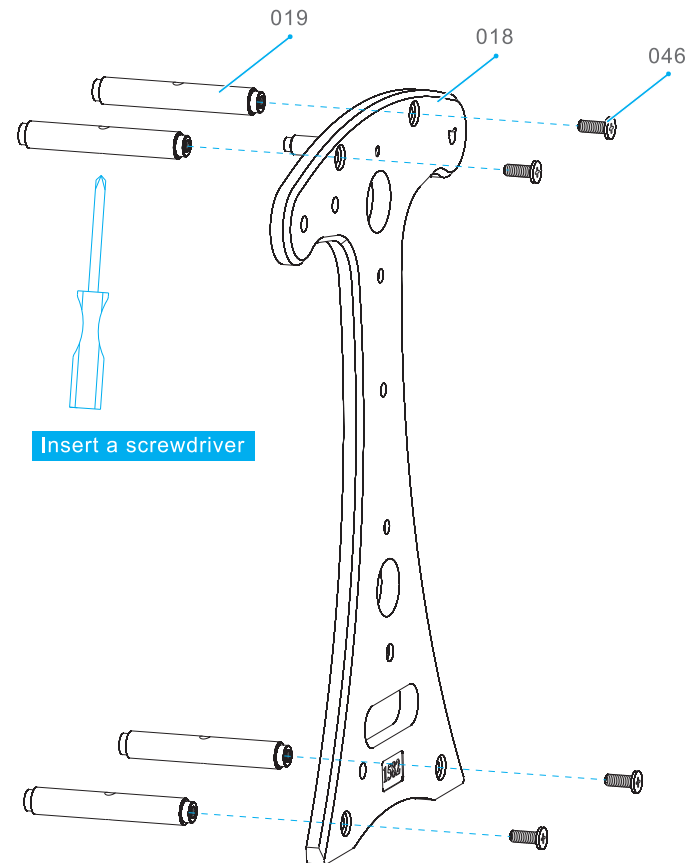
Total one places



## 1.3 Installation of stop shaft

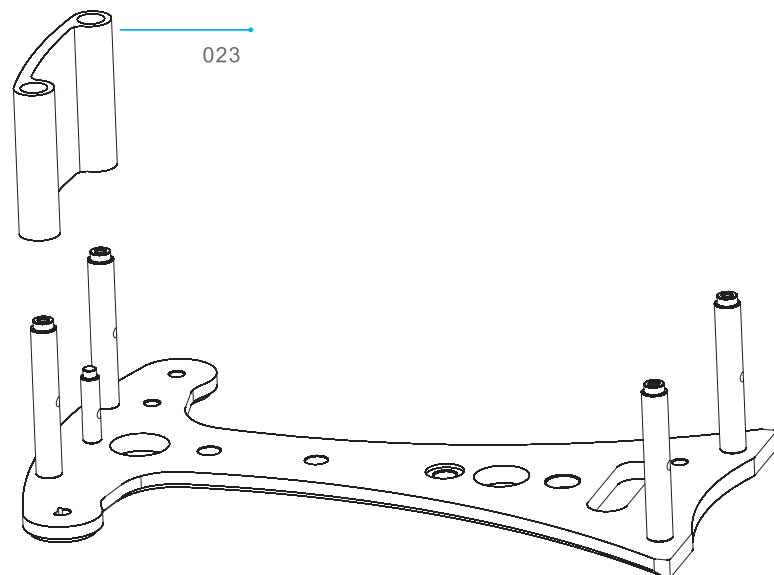


## 1.4 Installation of Support Shaft

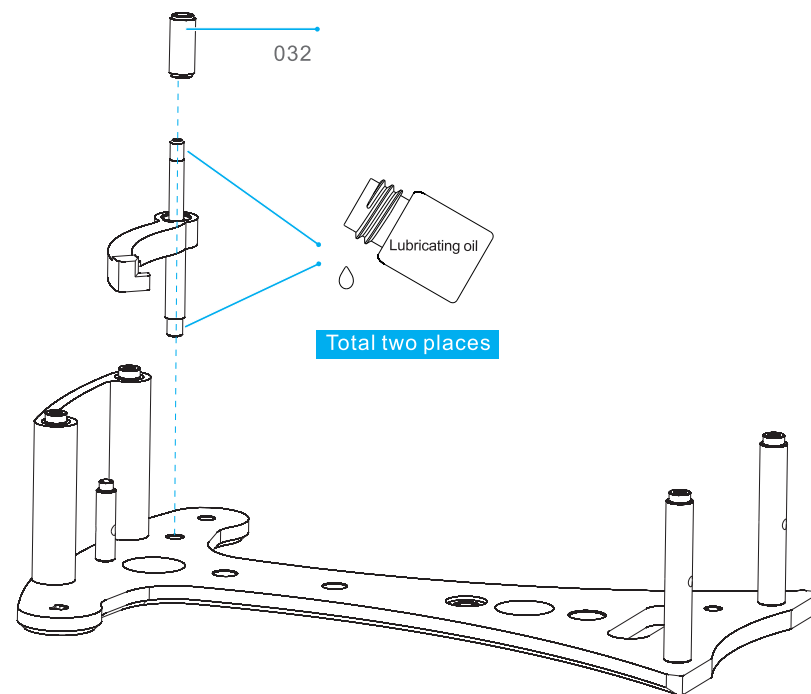




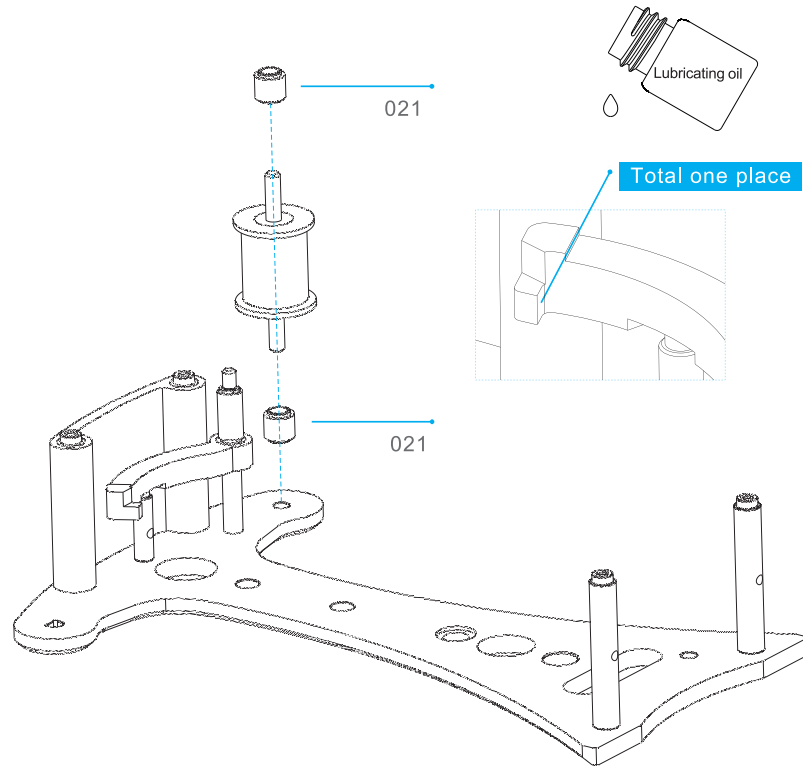
## 1.5 Installation of Support Board



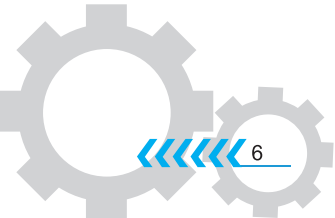
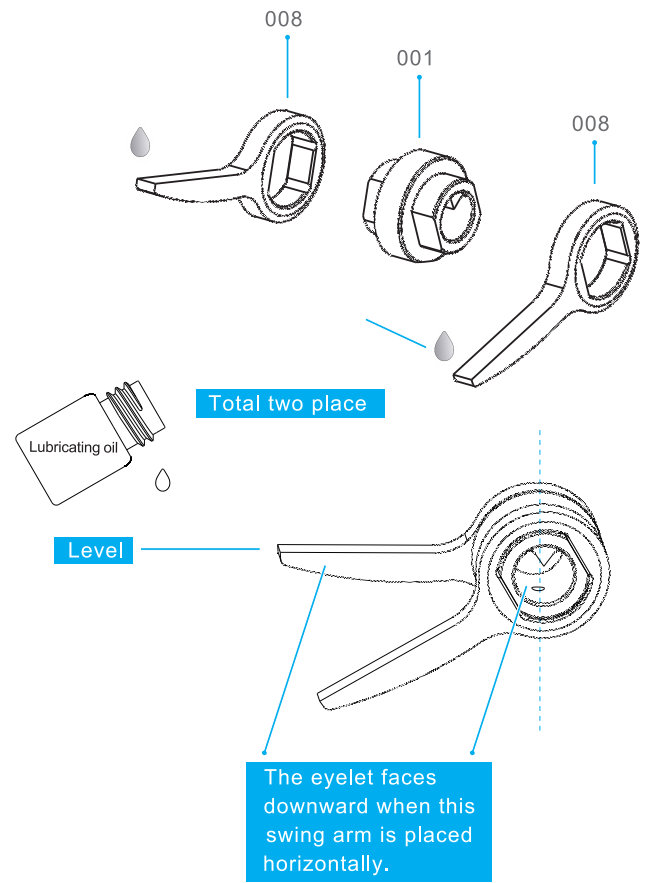
## 1.6 Installation of ratchet pawl



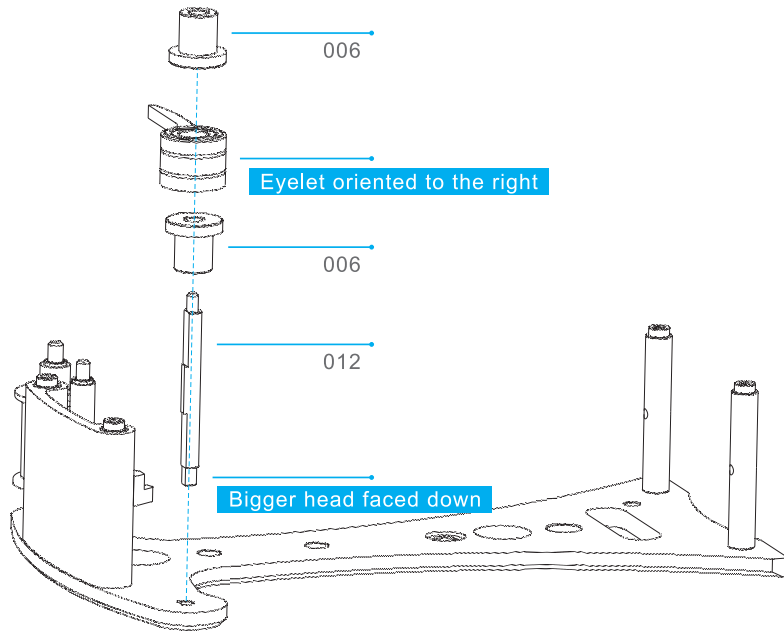
1.7 Installation of pulley assembly



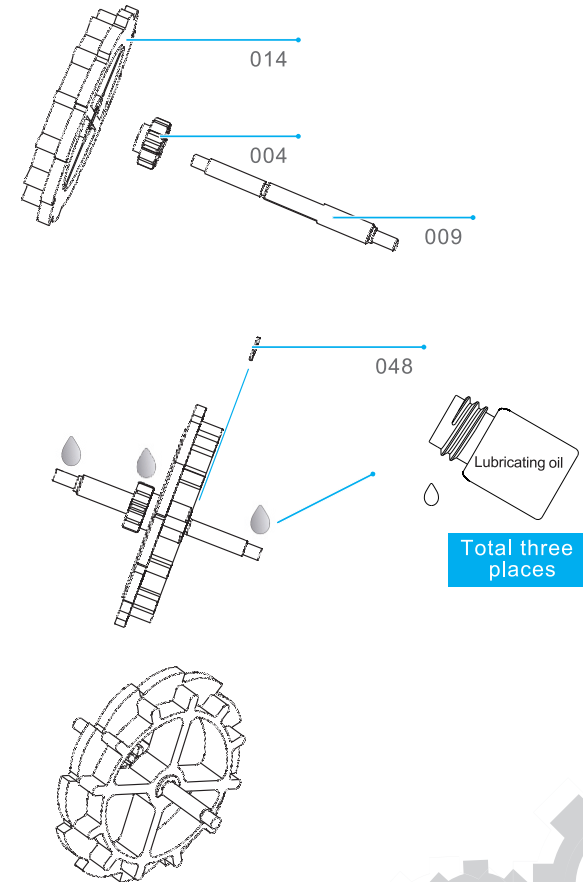
1.8 Installation of swing arm



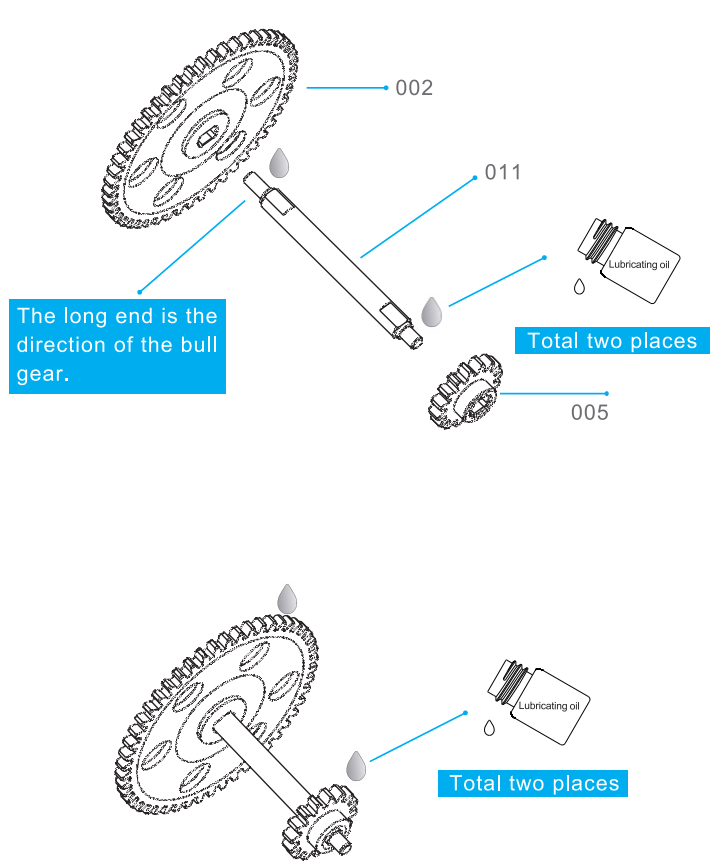
## 1.9 Installation of swing arm



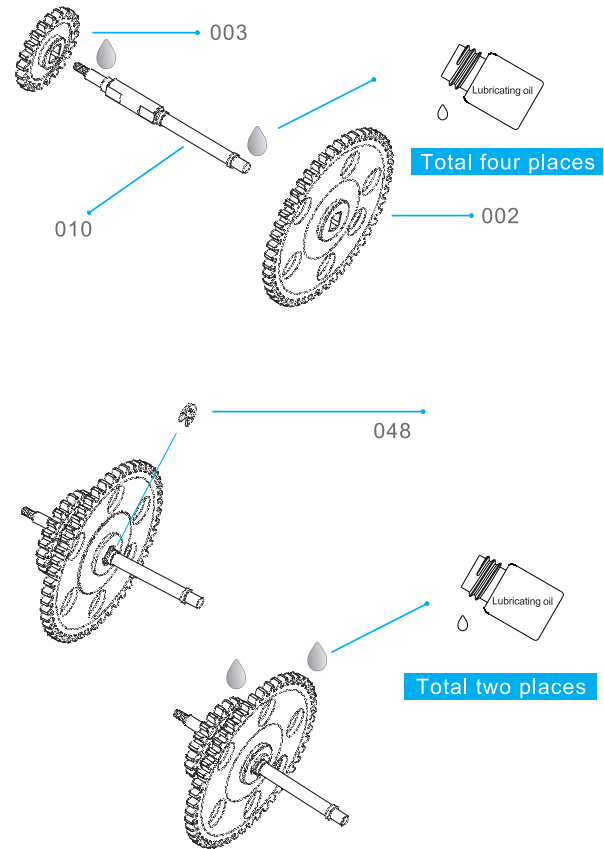
## 1.10 Installation of ratchet



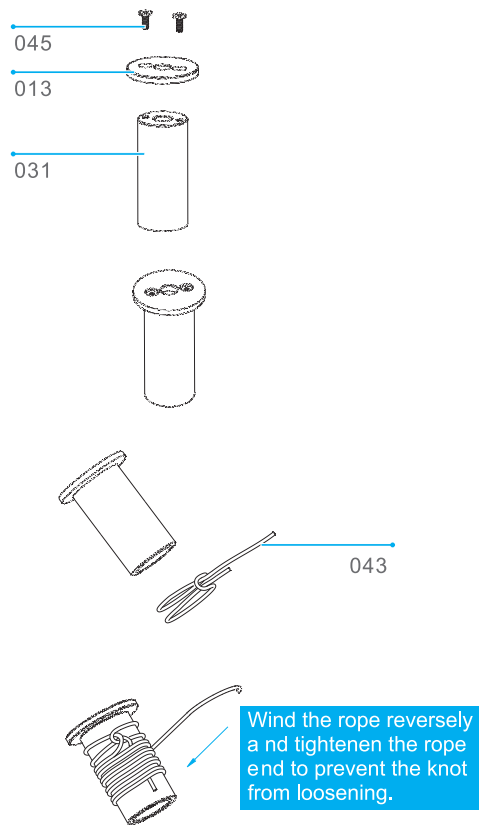
1.11 Installation of Shaft I and gear



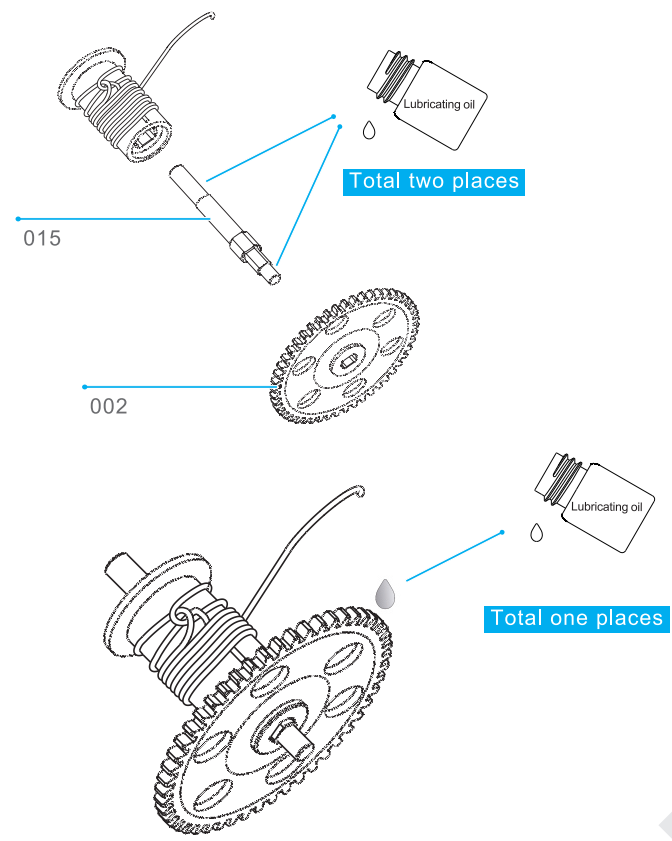
1.12 Installation of Shaft II and gear



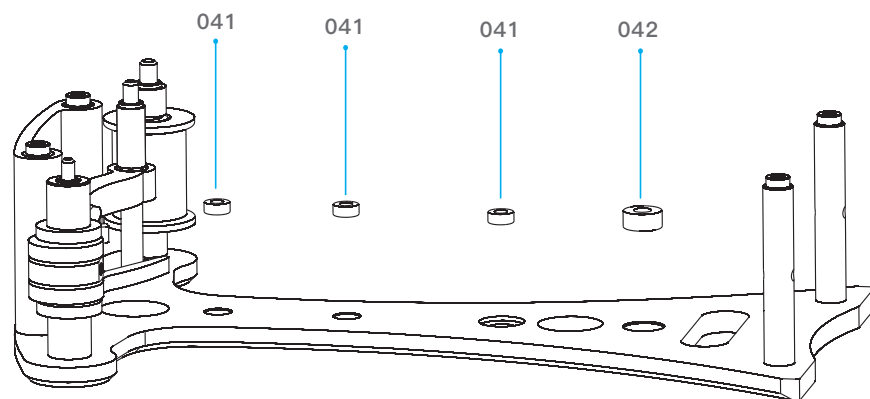
### 1.13 Installation of rope pulley (I)



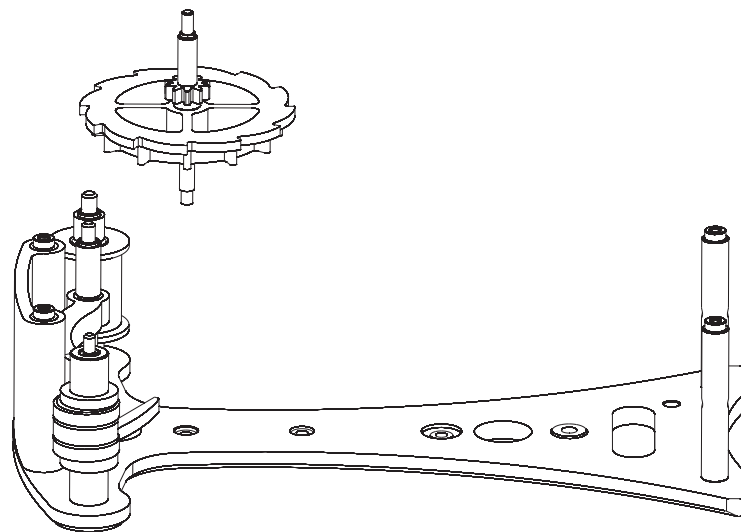
### 1.14 Installation of rope pulley (II)



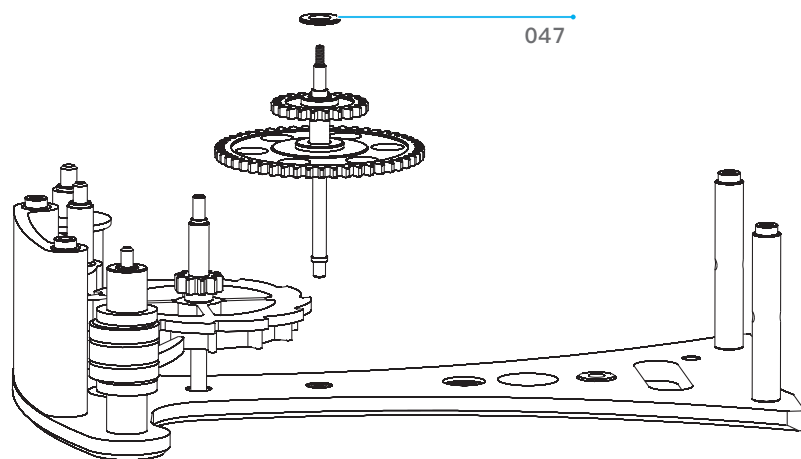
## 1.15 Installation of bearing



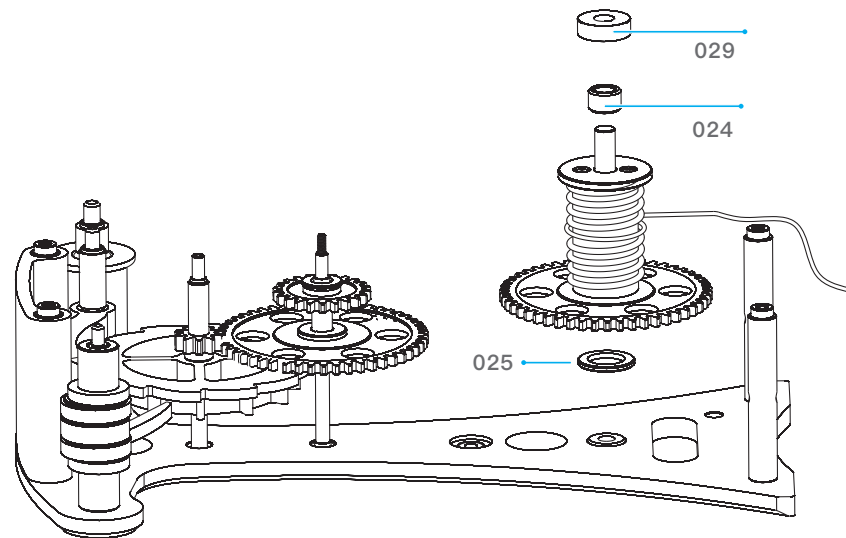
## 1.16 Installation of ratchet pawl



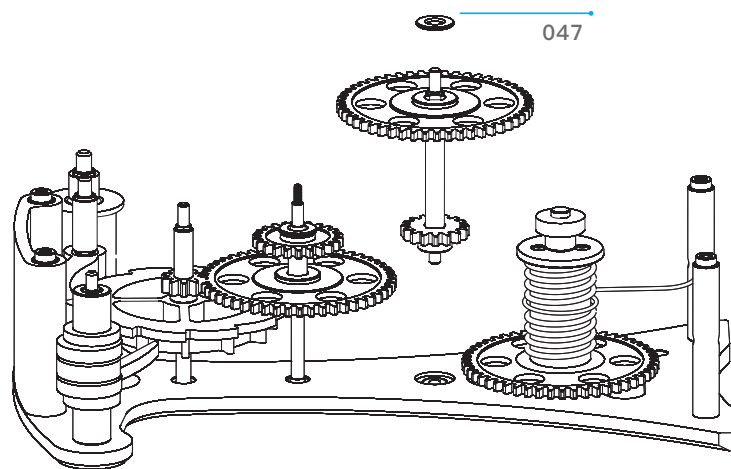
1.17 Installation of shaft II and gear



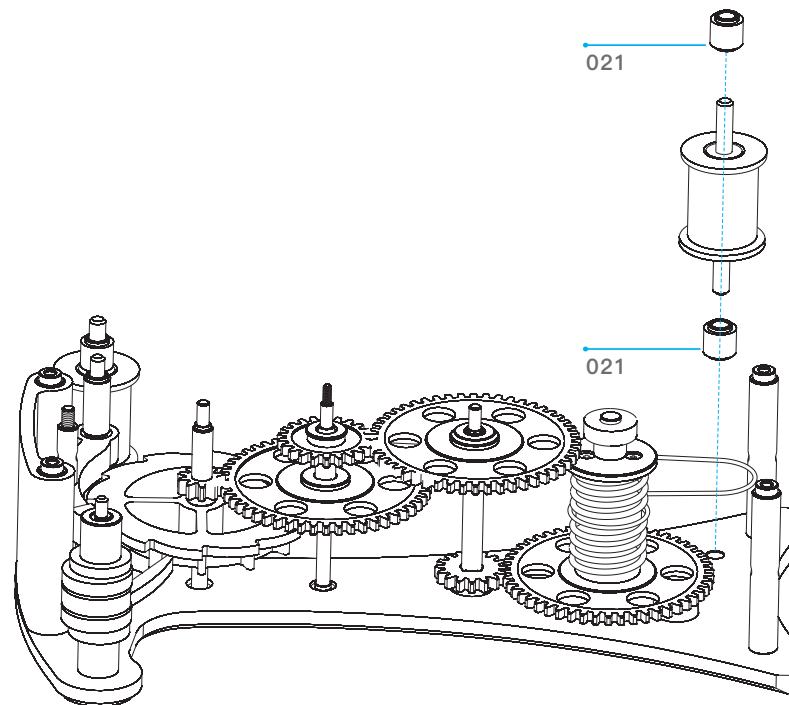
1.18 Installation of rope pulley



## 1.19 Installation of shaft I and gear



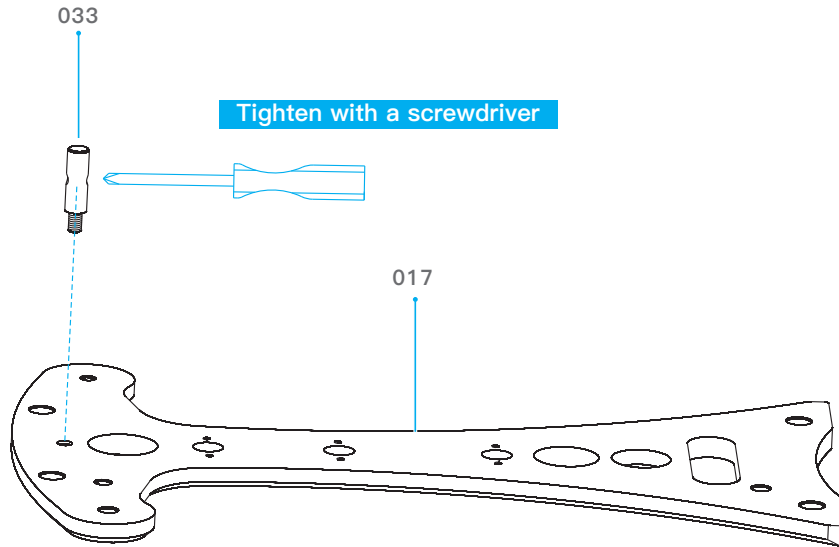
## 1.20 Installation of pulley



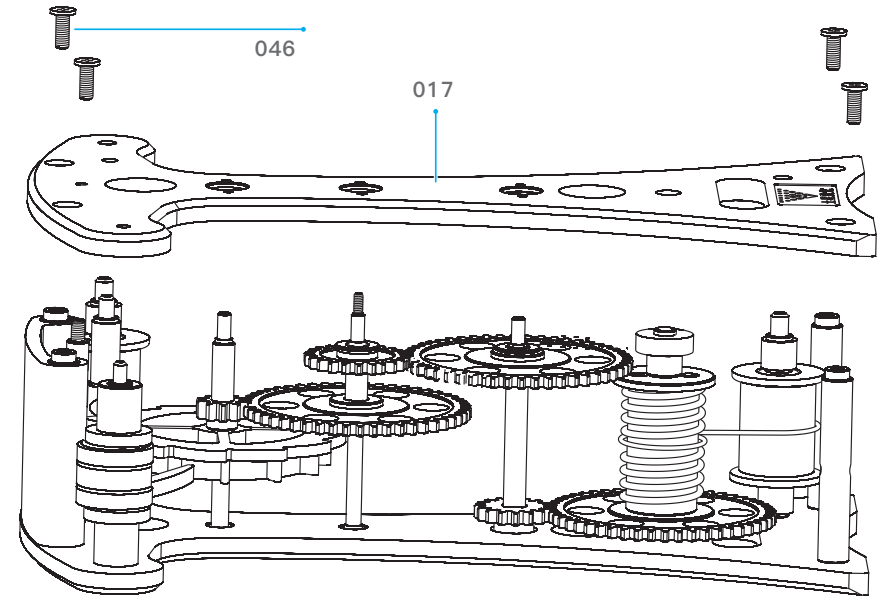


## 2 Assembly of front main board

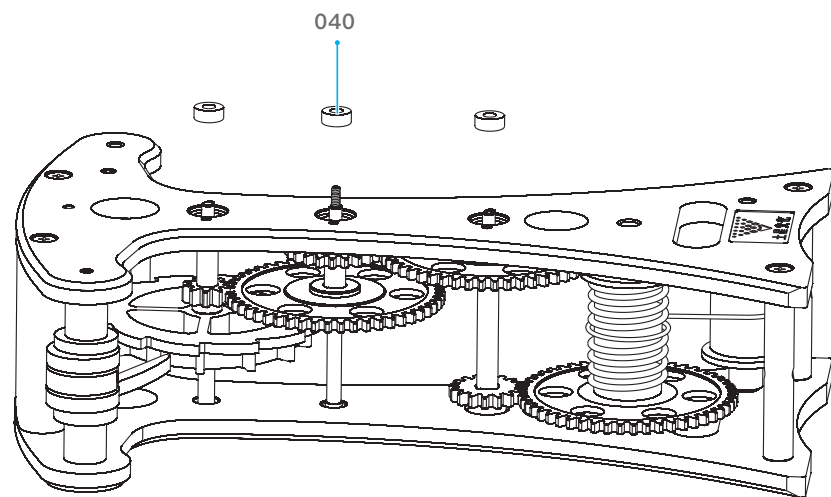
### 2.1 Installation of stop shaft



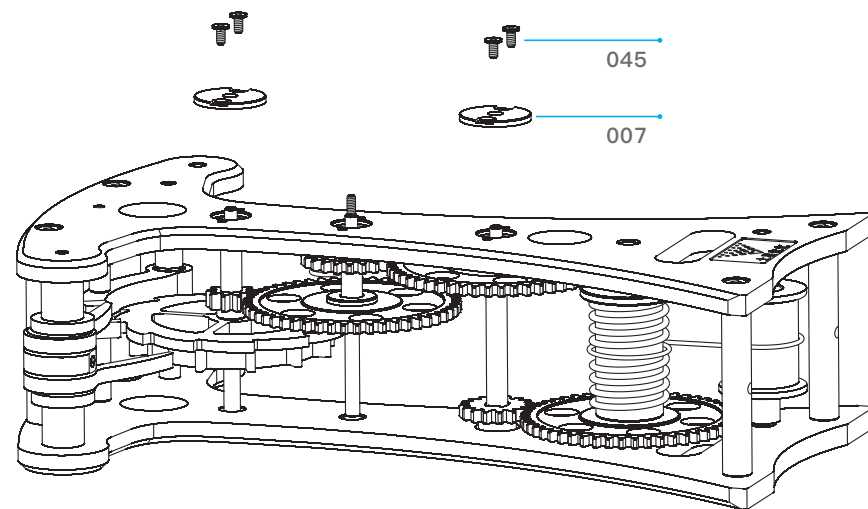
### 2.2 Installation of front and rear main board



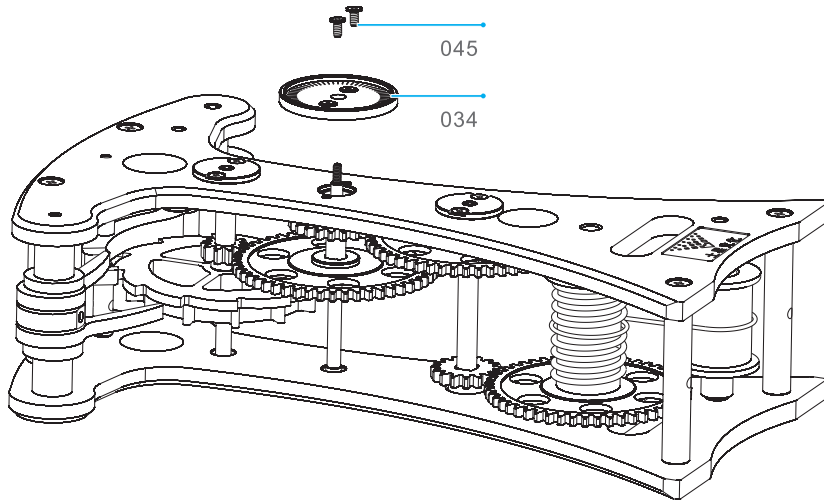
### 2.3 Installation of bearing



### 2.4 Installation of shaft cap



## 2.5 Installation of clock dial



# 3 Assembly of rope

## 3.1 Installation of rope

Step 2: Wind the rope from inside the pulley.

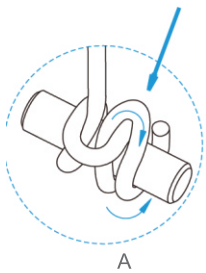
036-1

Step 3: Run the rope through the center hole of the drop hammer.

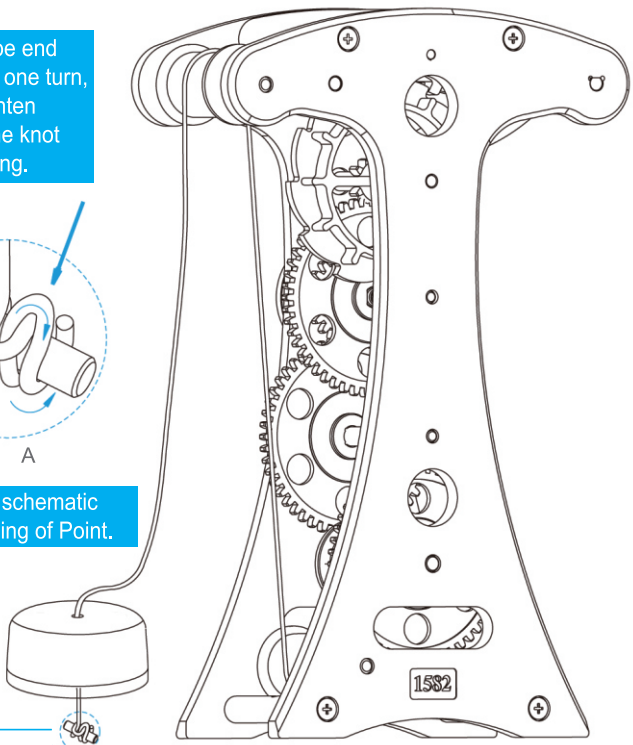
Step 1: Wind the rope up from the bottom of the pulley.

3.2 Installation of rope in drop hammer cap

Wind the rope end reversely by one turn, and then tighten to prevent the knot from loosening.



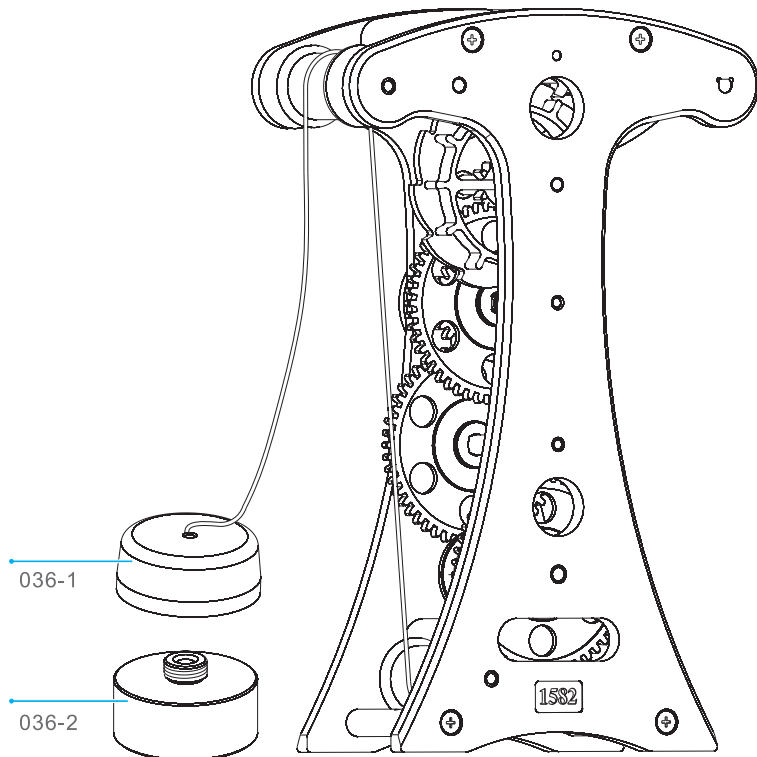
This is a X5 schematic view of winding of Point.



030

A

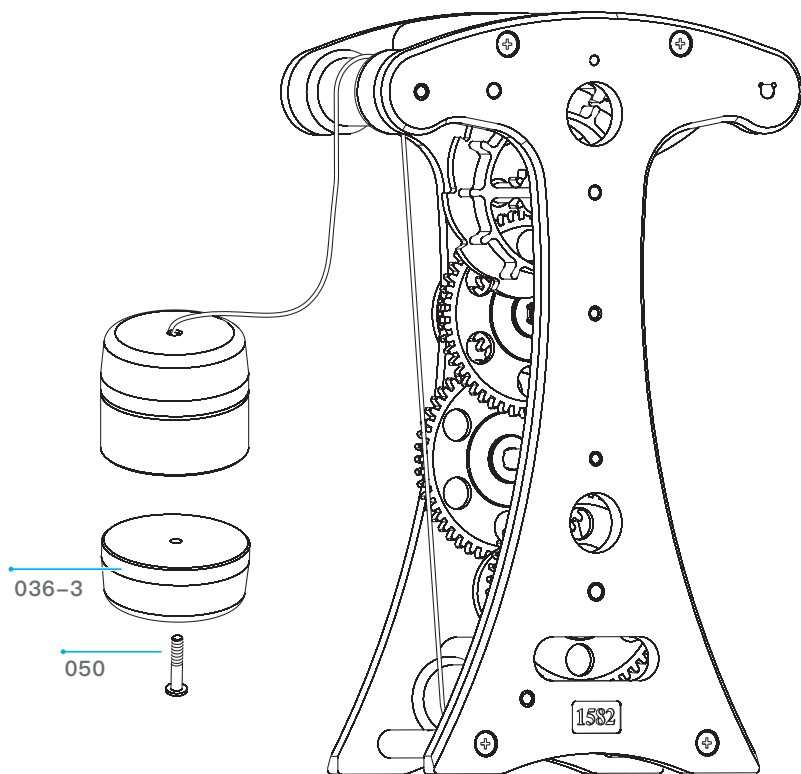
3.3 Assembly of drop hammer(I)



036-1

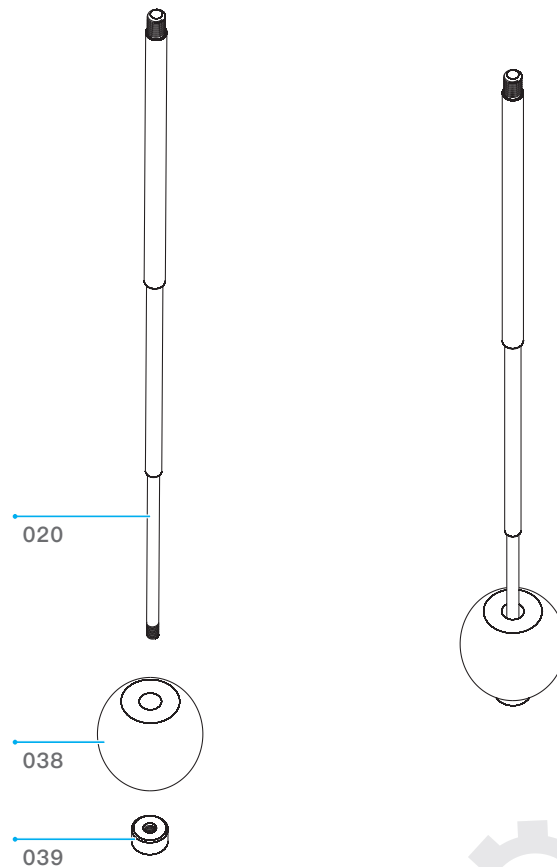
036-2

### 3.4 Installation of drop hammer

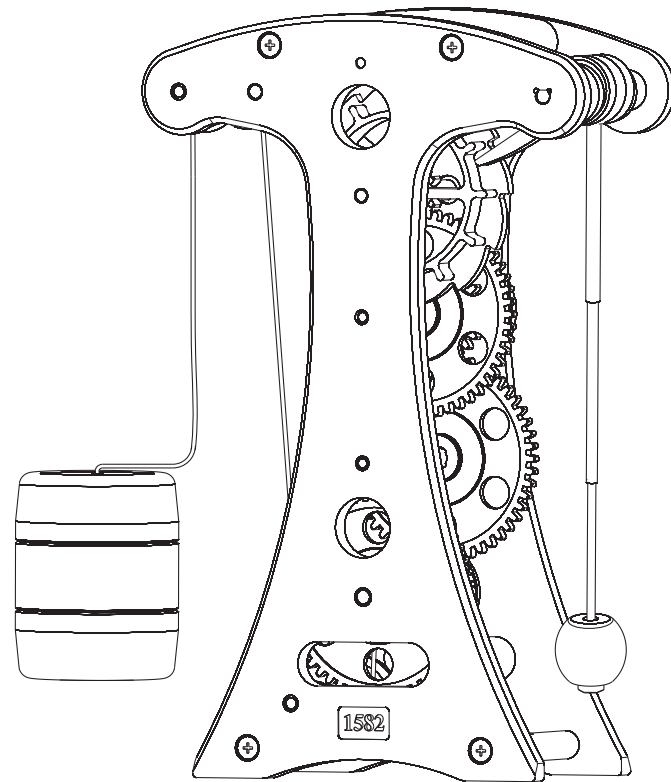
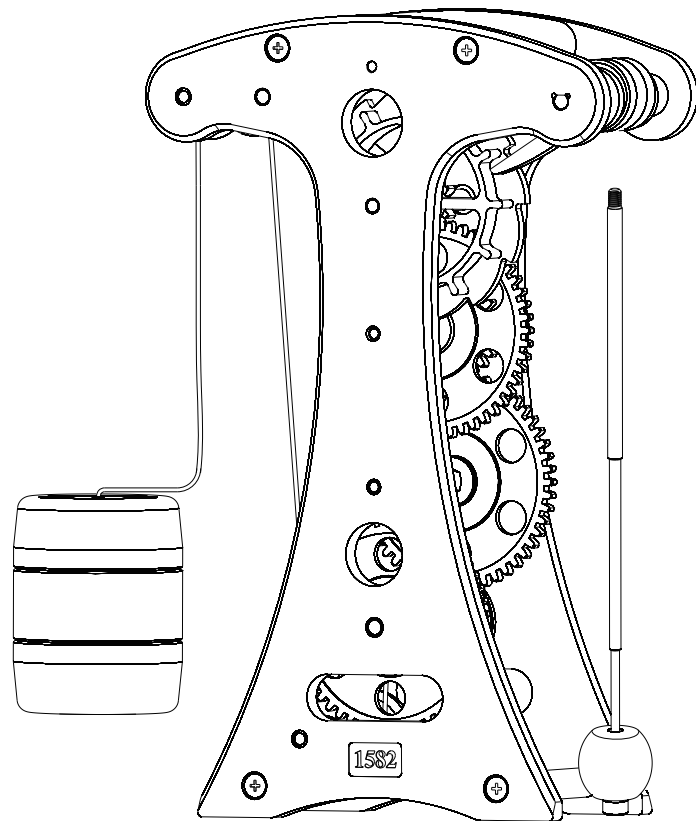


## 4 Assembly of pendulum

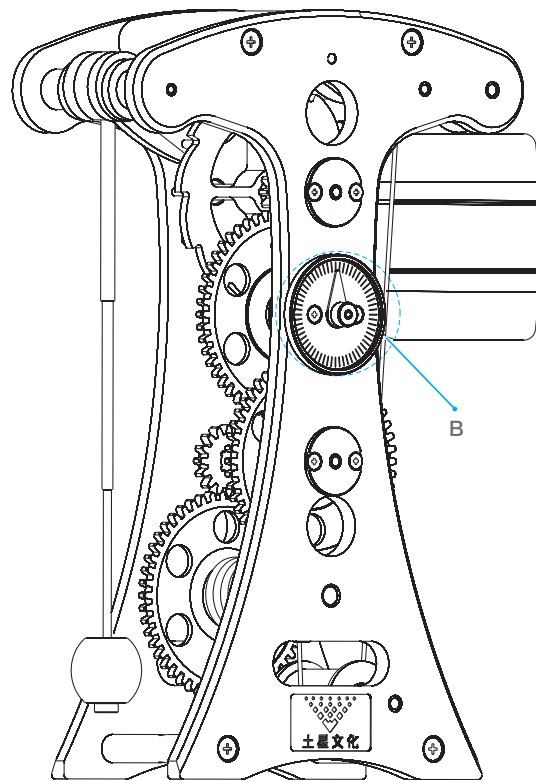
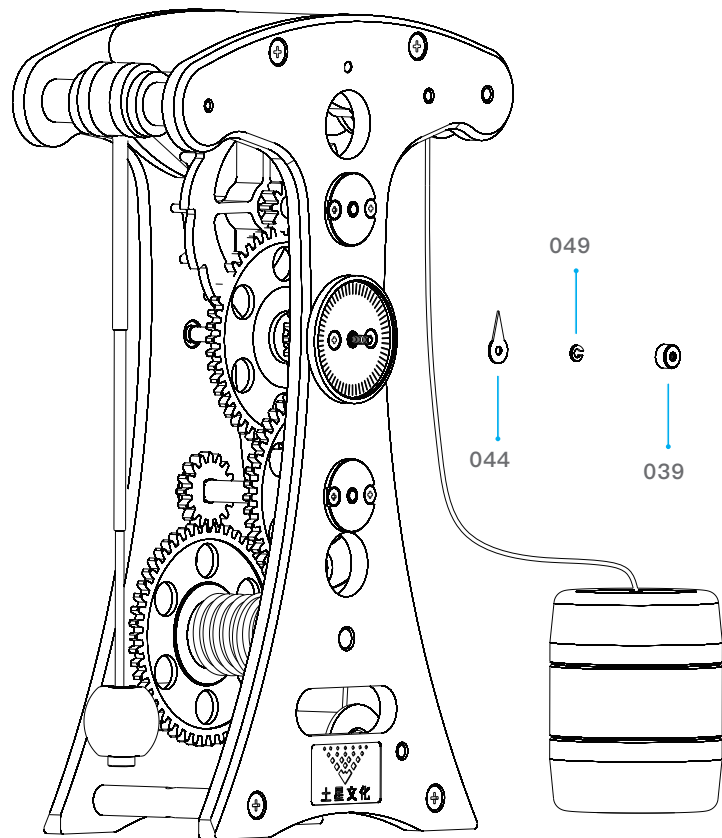
### 3.4 Assembly of drop hammer(II)



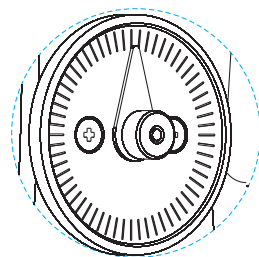
## 4.2 Installation of pendulum and swing arm



## 5 Assembly of pointer

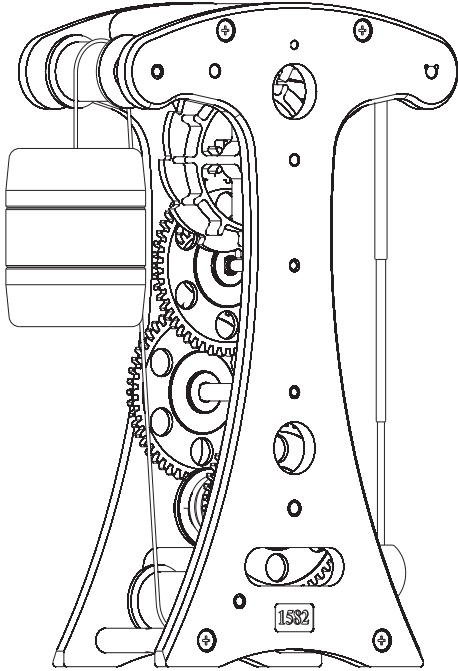


Raise the drop hammer to the highest point, and align the tip of the pointer with the center mark, then tighten the pointer.

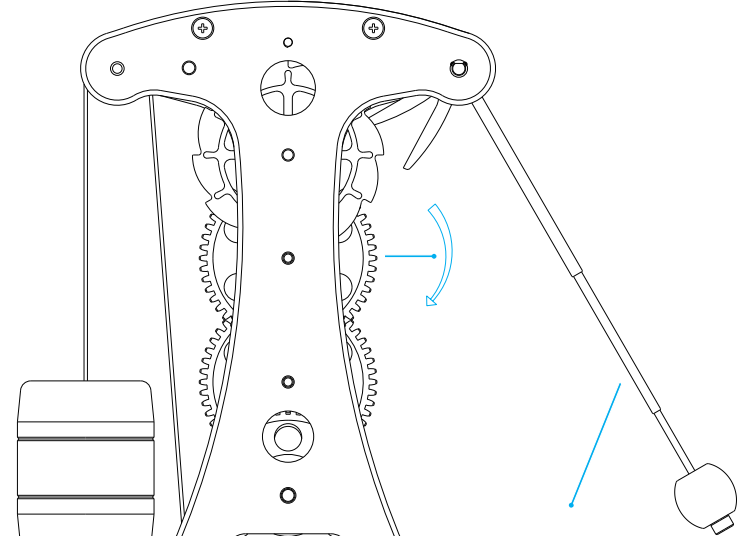


B  
2:1

## Hammer lifting method:



Assembly completed



Open the swing lever by the ring finger, and move the gear by the index finger clockwise to lift the hammer.



# 6 Troubleshooting

After assembly, if the motion is abnormal, please check whether the relevant moving parts are coated with lubricating oil and the parts are missing or misplaced according to the instructions. If not, please follow the steps below to find the problem and solve it.

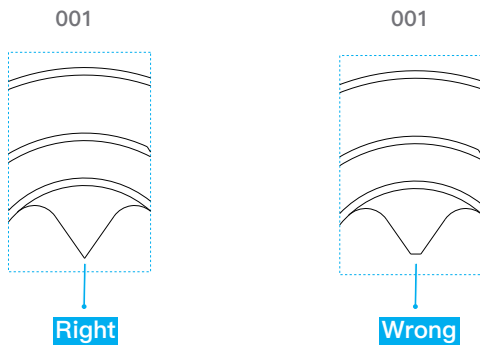
1>whether the installation direction of the parts is correct.

2>Whether the screw is tightened or not, is it loose?

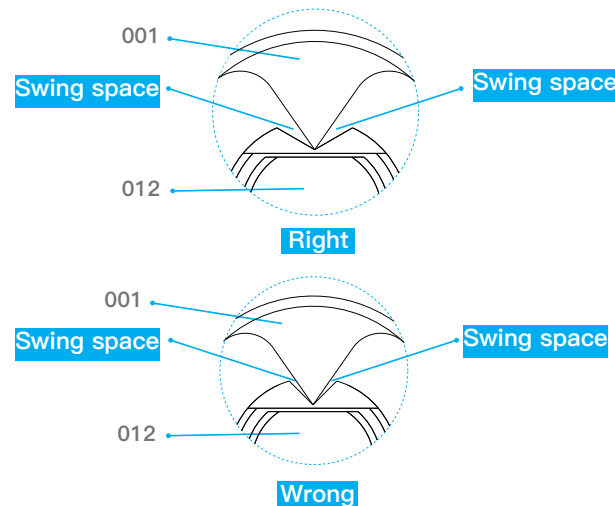
3>check similar parts for reverse assembly

4>Gently swing the pendulum and check whether the positioning plate (001) swings smoothly. If not, please remove the positioning plate.

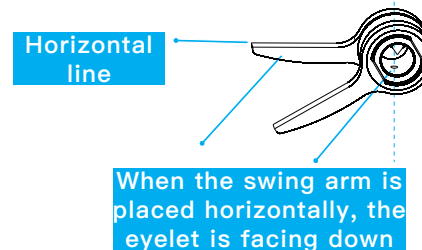
4-1 As shown in the figure, please check whether the 001 positioning panel is correct.



4-2 please check the swing space of the swing arm axis is same as shown in figure or not.

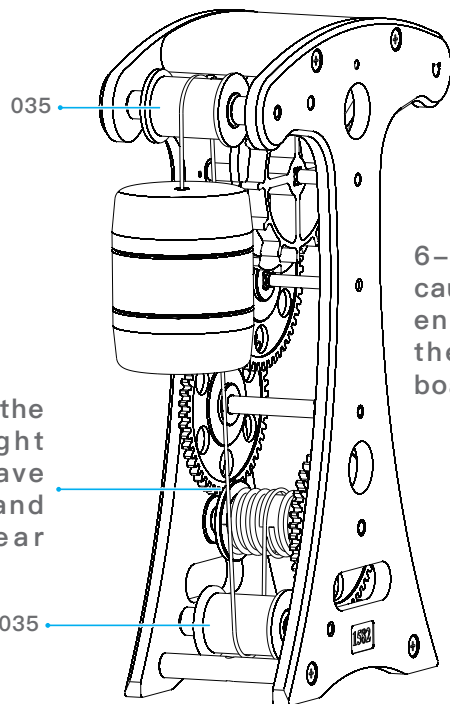


4-3: Please follow the instructions to assemble the 008 swing arm and the 001 positioning plate.



5>Please check whether the sling is wrapped correctly

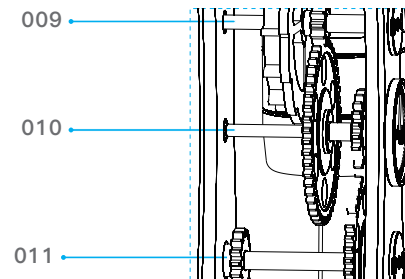
6>Please check whether the rope is stuck.



6-2:Check if the rope is caught between sheave cover (013) and 50-tooth gear (002)

6-1:Check if the rope is caught in the gaps at both ends of pulley (035) and the front and rear main boards

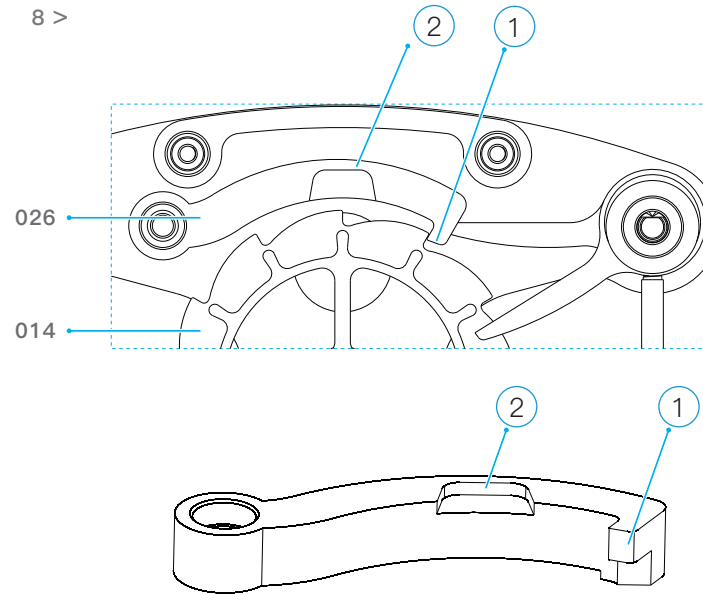
7 >

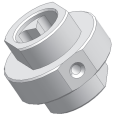
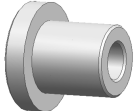


Check whether the front and rear main boards Installation holes corresponding to ratchet shaft (009), shaft I (011) and shaft II (010) have burrs; if yes, remove the burrs using appropriate tools.Reassemble.

8 > Jumping teeth appear anywhere in the process of swinging the pendulum hammer to the lowest point. It's necessary to remove ratchet pawl 026, and scrape point 8> ② in working diagram with a knife to ensure the fit length between ratchet pawl 026 and ratchet 014 is large enough.

In the swinging pendulum state, the slinger stops falling before reaching the lowest point. It needs to remove the 026 ratchet pawl and scrape it with a knife (026 ratchet claw material is aluminum alloy, softer). Reduce the mating length of the 026 ratchet and the 014 ratchet (normal fit length is 0.8–1.0MM)

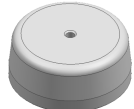
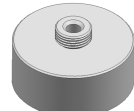
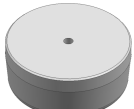


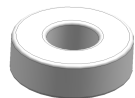
| No. | Product picture                                                                     | Product name           | Qty. |
|-----|-------------------------------------------------------------------------------------|------------------------|------|
| 001 |    | Positioning disc       | 1    |
| 002 |    | 50-tooth gear          | 3    |
| 003 |    | 22-tooth gear          | 1    |
| 004 |    | 10-tooth gear          | 1    |
| 005 |    | 16-tooth gear          | 1    |
| 006 |    | Swing arm shaft sleeve | 2    |
| 007 |    | Shaft cap              | 2    |
| 008 |  | Swing arm              | 2    |

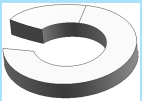
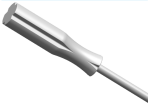
| No. | Product picture                                                                       | Product name      | Qty. |
|-----|---------------------------------------------------------------------------------------|-------------------|------|
| 009 |    | Ratchet shaft     | 1    |
| 010 |    | Shaft II          | 1    |
| 011 |    | Shaft I           | 1    |
| 012 |    | Swing arm shaft   | 1    |
| 013 |    | Rope pulley cap   | 1    |
| 014 |    | Ratchet           | 1    |
| 015 |   | Rope pulley shaft | 1    |
| 016 |  | Pulley shaft      | 2    |

| No. | Product picture                                                                     | Product name           | Qty. |
|-----|-------------------------------------------------------------------------------------|------------------------|------|
| 017 |    | Front main board       | 1    |
| 018 |    | Rear main board        | 1    |
| 019 |    | Support shaft          | 4    |
| 020 |    | Telescopic swing lever | 1    |
| 021 |    | Pulley sleeve          | 4    |
| 022 |    | Limiting shaft         | 1    |
| 023 |   | Support board          | 1    |
| 024 |  | Rope pulley sleeve II  | 1    |

| No. | Product picture                                                                       | Product name            | Qty. |
|-----|---------------------------------------------------------------------------------------|-------------------------|------|
| 025 |    | Rope pulley sleeve 1.3  | 1    |
| 026 |    | Ratchet pawl            | 1    |
| 028 |    | Pawl shaft              | 1    |
| 029 |    | Bearing Ø13*Ø5*4        | 1    |
| 030 |    | Cylindrical pin Ø2.5*10 | 1    |
| 031 |    | Rope pulley             | 1    |
| 032 |    | Pawl shaft sleeve       | 1    |
| 033 |  | Stop shaft              | 1    |

| No.   | Product picture                                                                     | Product name      | Qty. |
|-------|-------------------------------------------------------------------------------------|-------------------|------|
| 034   |    | Clock dial        | 1    |
| 035   |    | Pulley            | 2    |
| 036-1 |    | Drop hammer-1     | 1    |
| 036-2 |    | Drop hammer-2     | 1    |
| 036-3 |    | Drop hammer-3     | 1    |
| 037   |    | Bearing Ø7*Ø4*2.5 | 2    |
| 038   |   | Pendulum          | 1    |
| 039   |  | Hand nut          | 2    |

| No. | Product picture                                                                       | Product name                  | Qty. |
|-----|---------------------------------------------------------------------------------------|-------------------------------|------|
| 040 |    | Bearing Ø7*Ø3*3               | 3    |
| 041 |    | Bearing Ø6*Ø3*2.5             | 3    |
| 042 |    | Bearing Ø9*Ø4*4               | 5    |
| 043 |    | Non-elastic rope Ø 1.5MM*1.1M | 1    |
| 044 |    | Pointer                       | 1    |
| 045 |    | Screw CM2.0*4*4               | 8    |
| 046 |   | Screw CM3.0*8*6               | 10   |
| 047 |  | φ 5.3/φ 10X0.8 washer         | 2    |

| No. | Product picture                                                                   | Product name                    | Qty. |
|-----|-----------------------------------------------------------------------------------|---------------------------------|------|
| 048 |  | E-shaped snap ring<br>Ø7*Ø3*0.6 | 2    |
| 049 |  | M2.0 spring washer              | 2    |
| 050 |  | Screw CM3.0*16*6                | 1    |
|     |  | Screwdriver                     | 2    |
|     |                                                                                   |                                 |      |
|     |                                                                                   |                                 |      |
|     |                                                                                   |                                 |      |
|     |                                                                                   |                                 |      |
|     |                                                                                   |                                 |      |



# Warranty instruction

## 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 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;

2. 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;
3. We and our authorized agencies provide free technical advice or instruction for users who encounter any product problem;
4. 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.

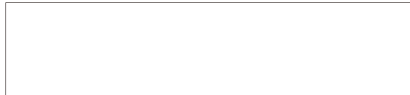
## III. Items outside Scope of Warranty

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.

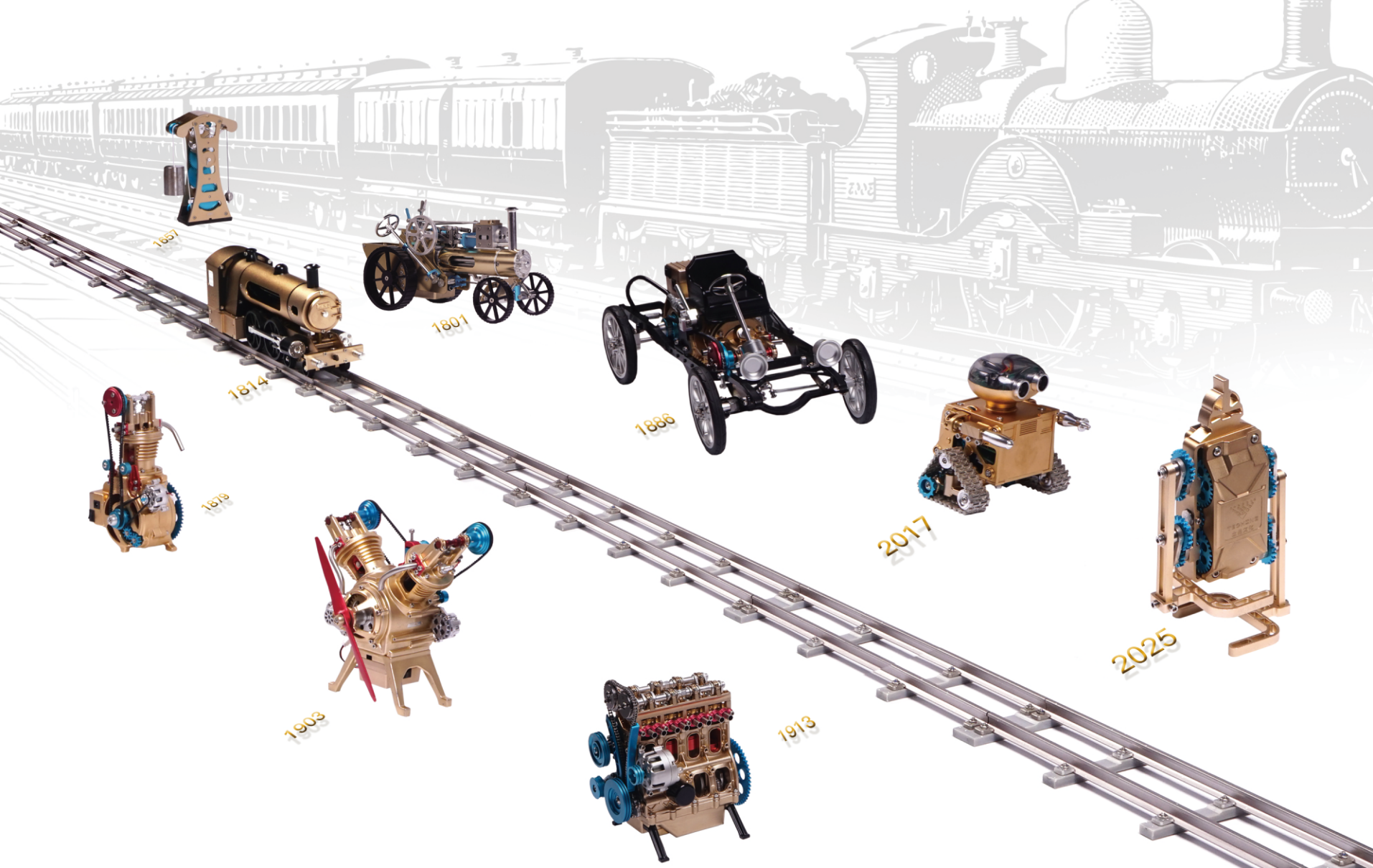
Address:

Baosheng Building, Hongming Road,  
Huangpu District, Guangzhou City, China

After-sales email: [sales@techingedu.com.cn](mailto:sales@techingedu.com.cn)

Hotline: 0086-13924277386 4001-020-019





1851

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2017

2025



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](mailto:sales@techingedu.com.cn)

<http://www.techingedu.com>



Official Website