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English

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Insgesamt mehr als 320 Teile

Baugruppen:

- 1) Motorblock
- 2) Ventilsteuerung
- 3) Steuerkette

Allgemeine Informationen:

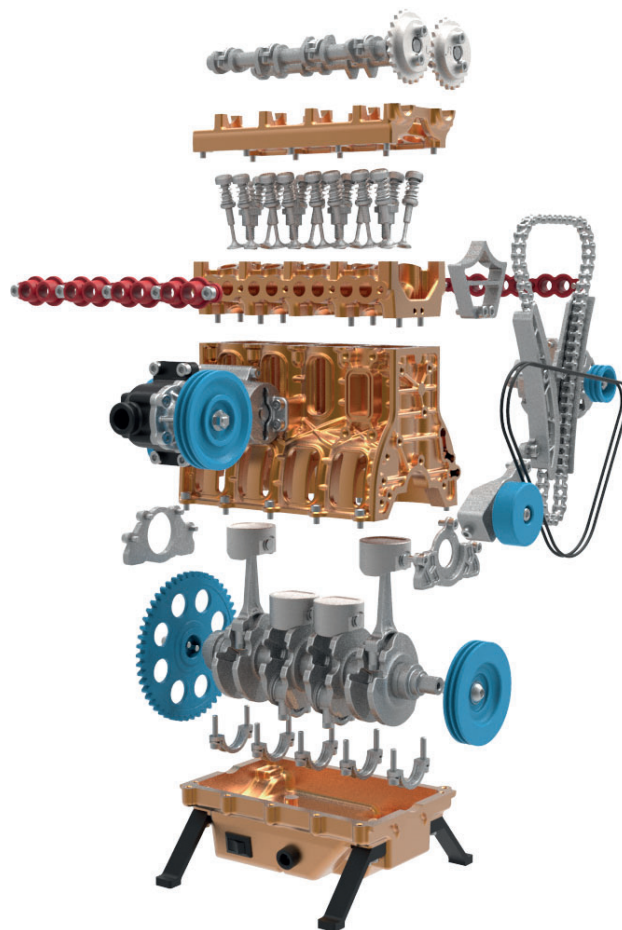
Vor dem Zusammenbau sollten Sie für eine freie Fläche sorgen auf der Sie die Einzelteile übersichtlich sortieren können.

Folgendes Werkzeug sollte zur Verfügung sein:

Eine scharfer Schaber um möglicherweise vorhandene Gußgrate zu entfernen.

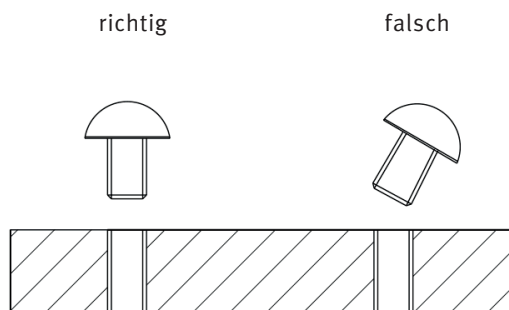
Eine Mechanikerpinzette oder feine Spitzzange um kleine Teile sicher zu greifen, eine Sprengringzange und ein Fläschchen Nähmaschinenöl sind ebenfalls nötig.

Die notwendigen kleinen Innensechskantschlüssel sind mitgeliefert.

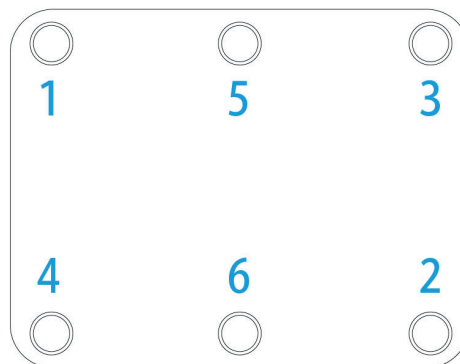


Grundsätzlich bei der Montage zu beachten:

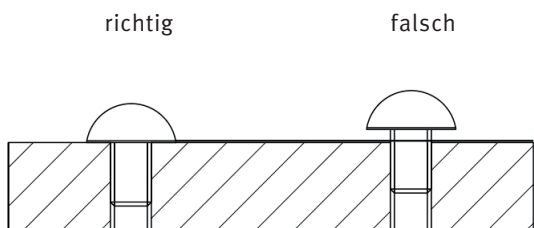
Schrauben immer senkrecht einsetzen, nicht verkanten



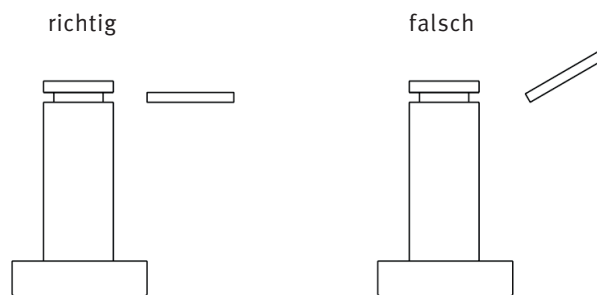
Schrauben immer in der unten beschriebenen Reihenfolge festziehen. Erst leicht und dann in einem 2. Durchgang handfest.



Schrauben immer handfest anziehen

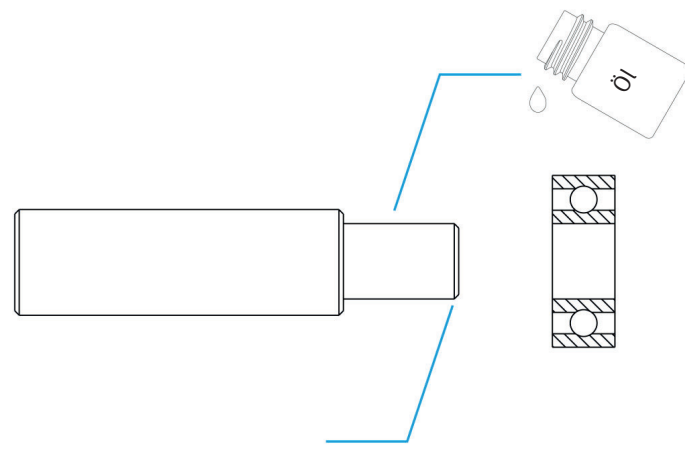
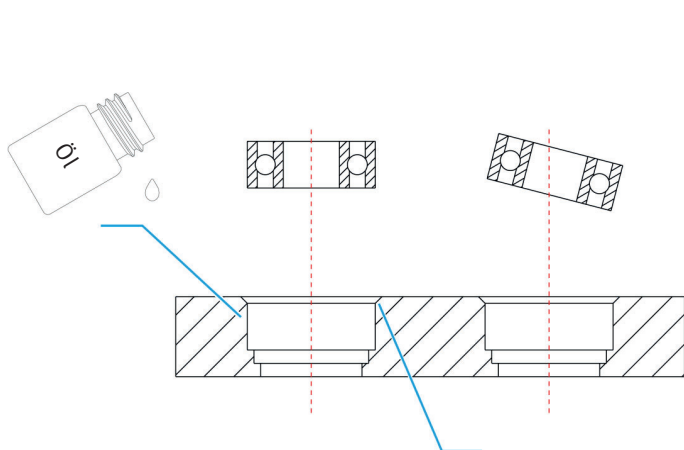


Sprengringe beim Einbau nicht verkanten



Kugellager beim Einbau nicht verkanten.

Kugellager nur auf sauber entgratete Wellen aufsetzen.

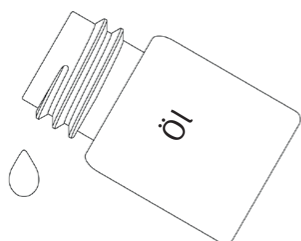


Die Aufnahmebohrung muß frei von Gußgraten sein. Vor dem Einpressen etwas Öl auf die Flächen geben und nur auf den äußeren Lagerring drücken.

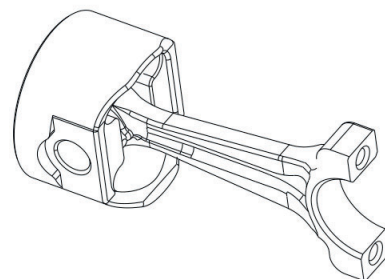
Vor dem Aufpressen etwas Öl auf die Flächen geben und nur auf den inneren Lagerring drücken.

1. Kurbelwelle montieren

1.2 Pleuelbolzen

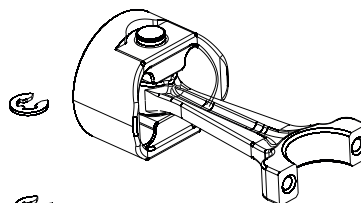
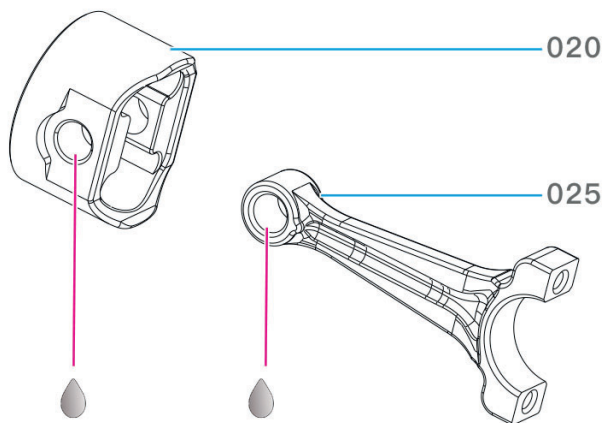


Dieses Symbol zeigt wo beim Zusammenbau geölt werden muss.

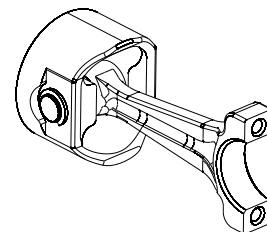


1.1 Kolben und Pleuel montieren

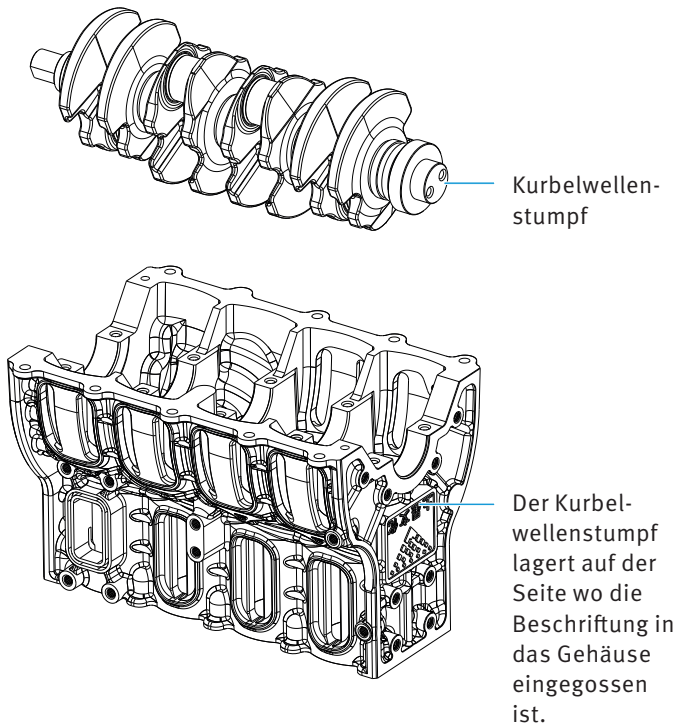
1.3 Sprengring



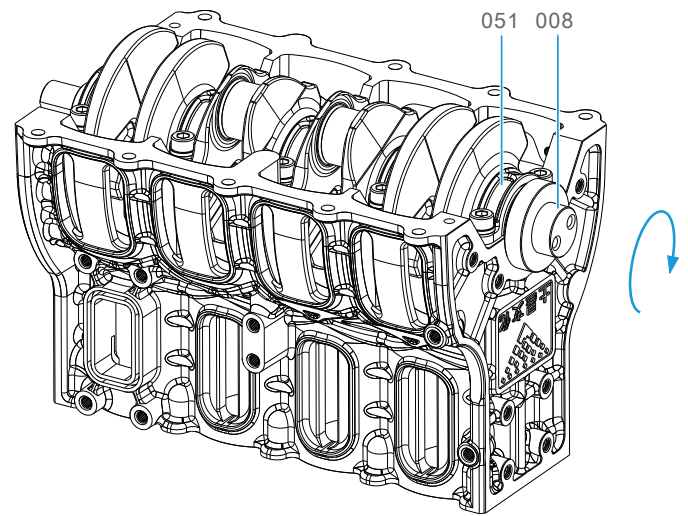
Insgesamt 4 x



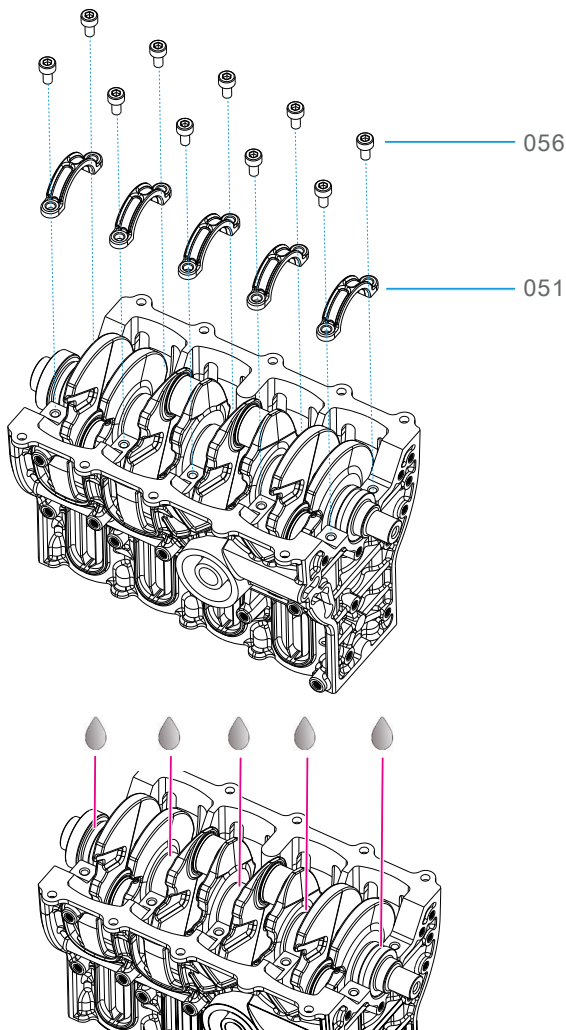
1.4 Kurbelwelle in Motorblock einsetzen



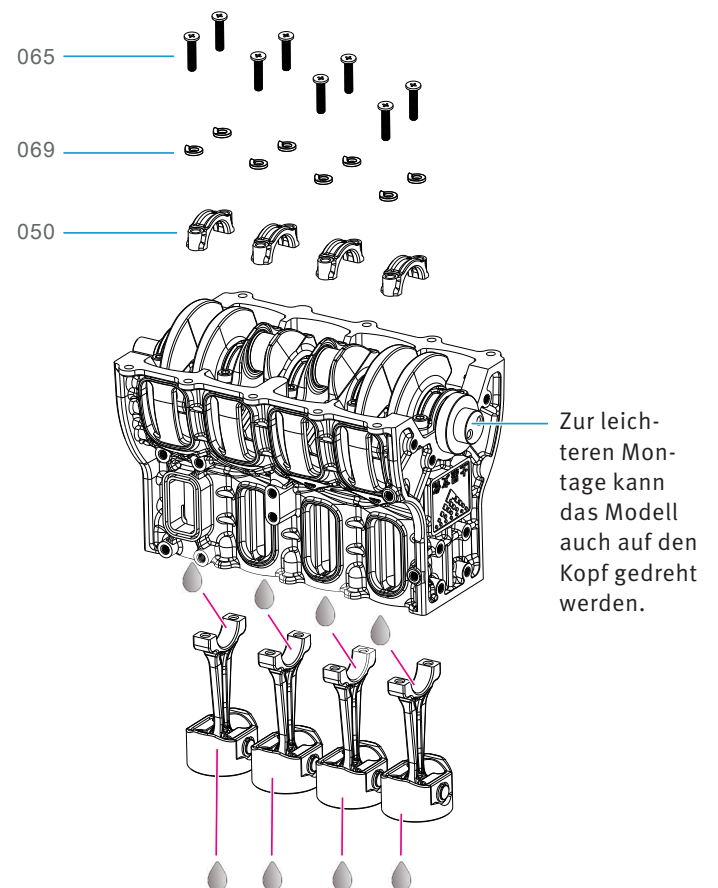
1.6 Nach der Montage der Lager prüfen ob sich die Kurbelwelle frei drehen lässt.



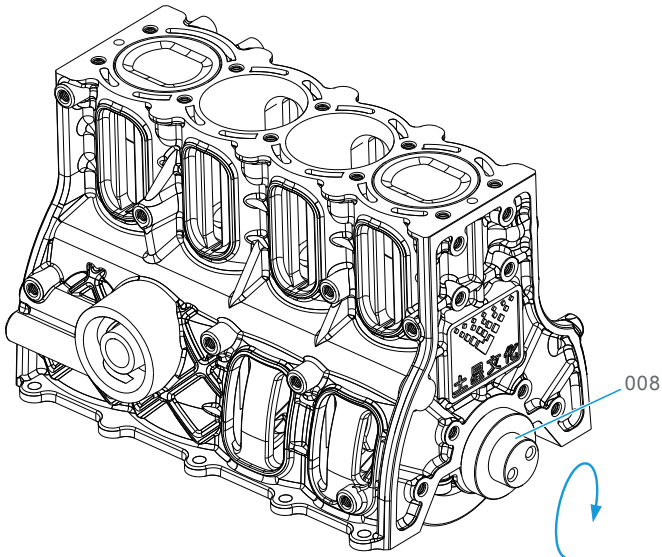
1.5 Kurbelwellenlager montieren



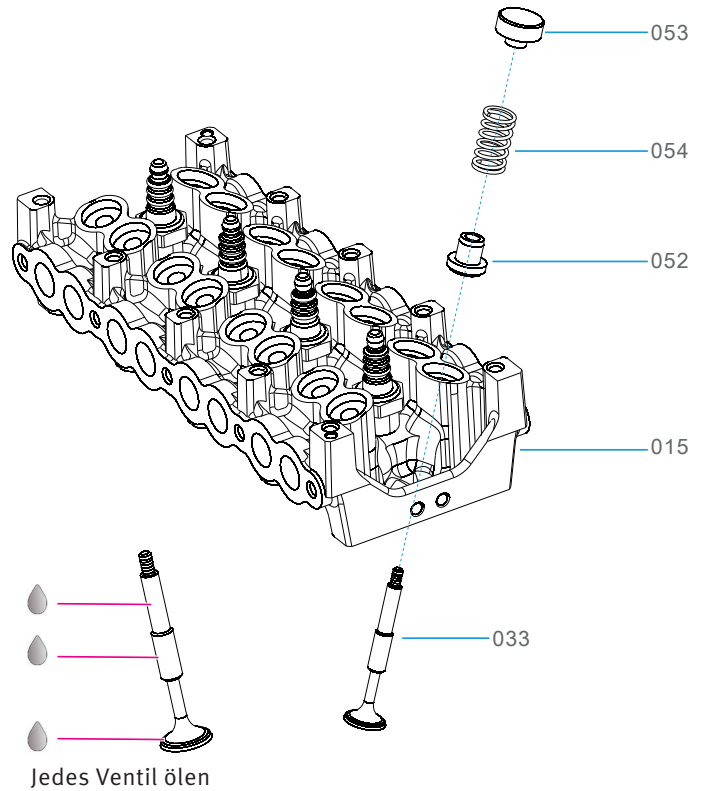
1.7 Pleuel montieren



1.8 Nach der Montage der Pleuel prüfen ob sich die Kurbelwelle frei drehen läßt.

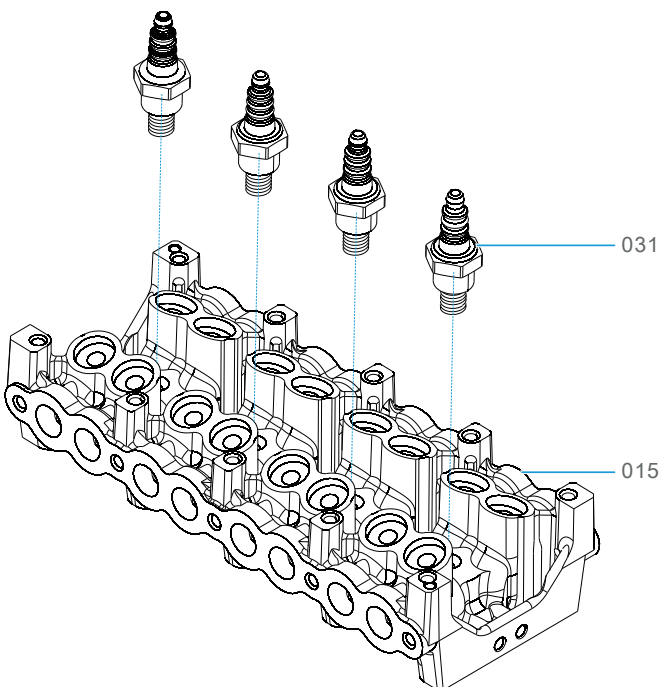


2.2 Ventile montieren (16 x)

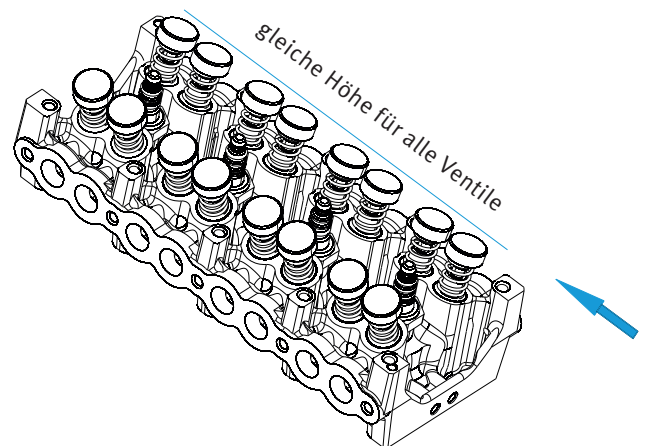


2. Zylinderkopf

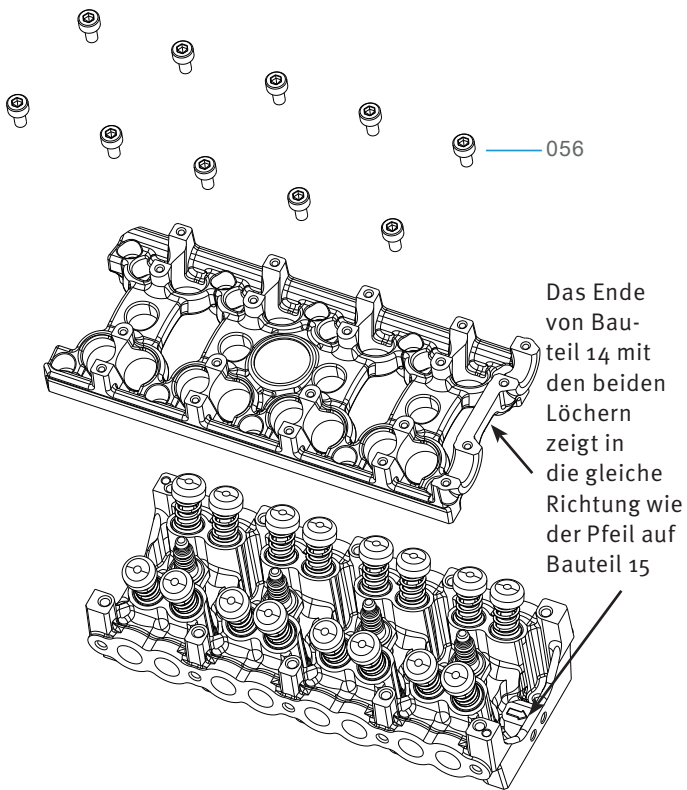
2.1 Zündkerzen einsetzen



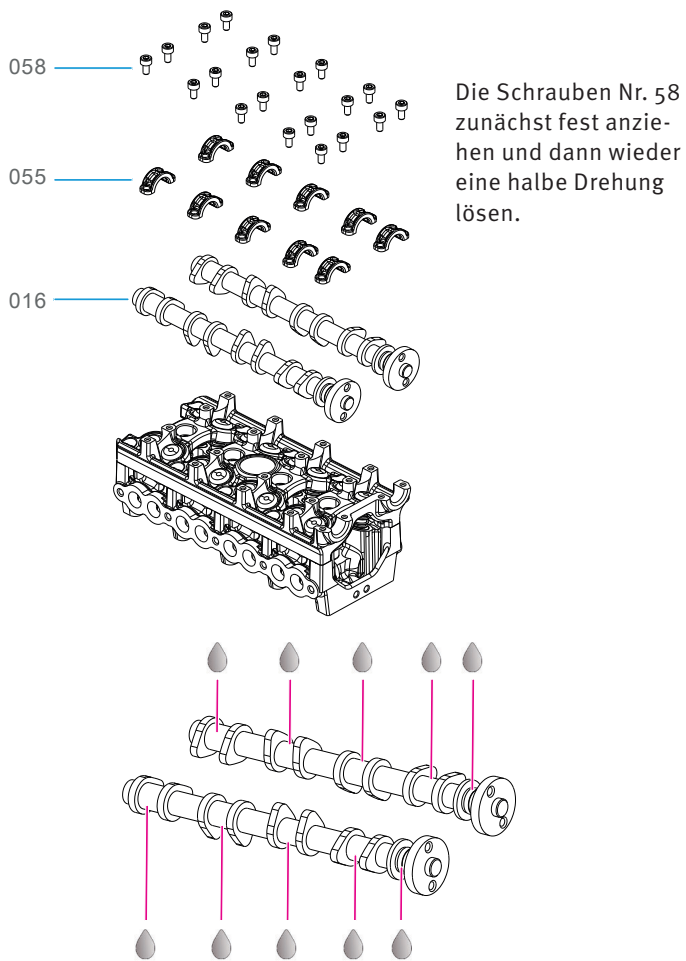
2.3 Nach der Montage prüfen ob alle Verschraubungen fest sitzen und alle Ventile auf einer Höhe stehen.



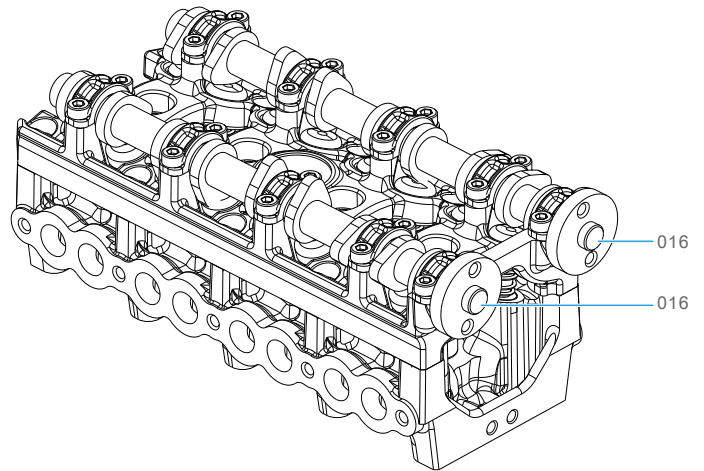
2.4 Tassenstößel montieren



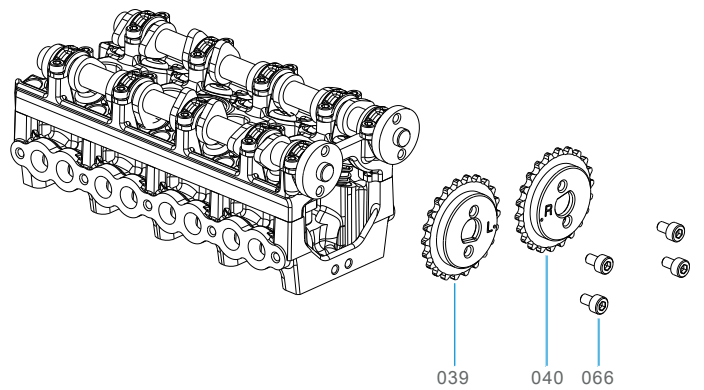
2.5 Nockenwelle montieren



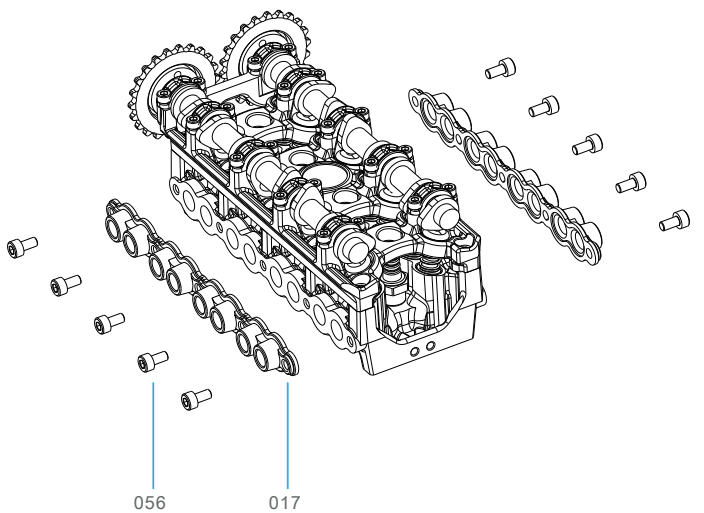
2.6 Nockenwelle drehen um den leichten Gang der Welle und der Ventile zu prüfen.



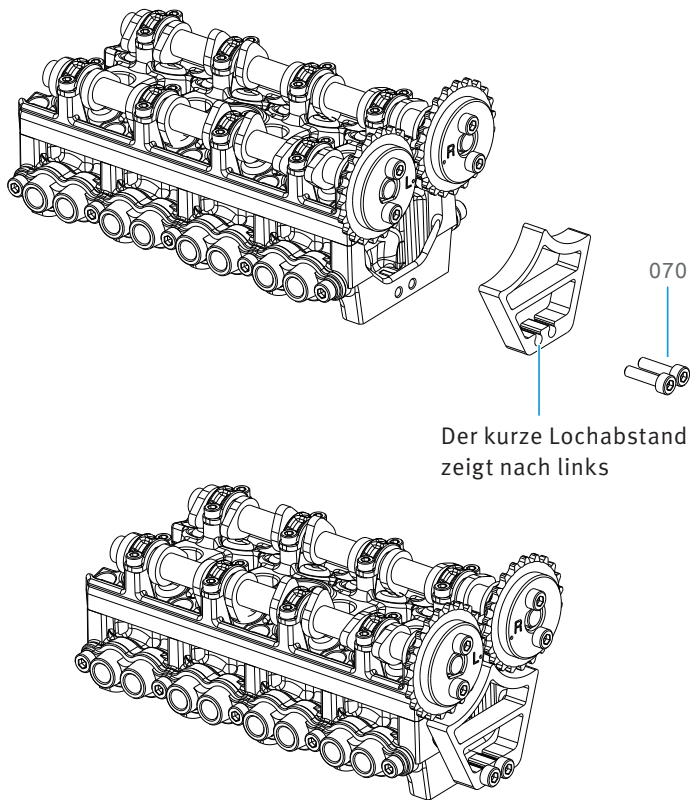
2.7 Kettenrad der Nockenwelle montieren



2.8 Ein- und Auslasskrümmer montieren

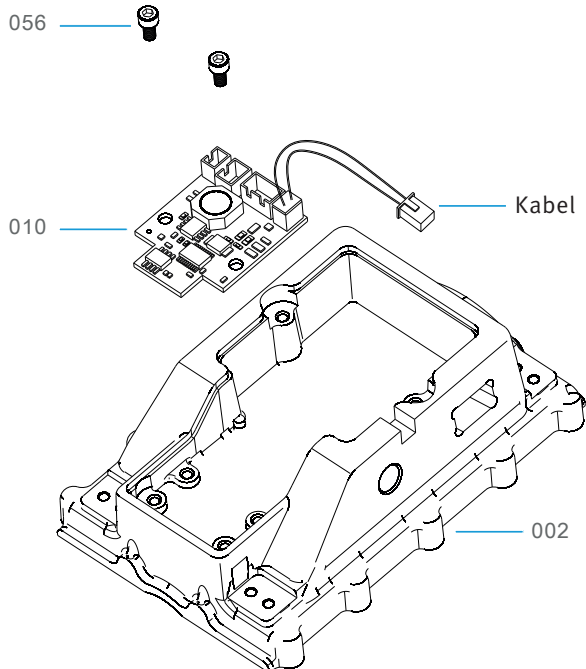


2.9 Steuerkettenführung montieren

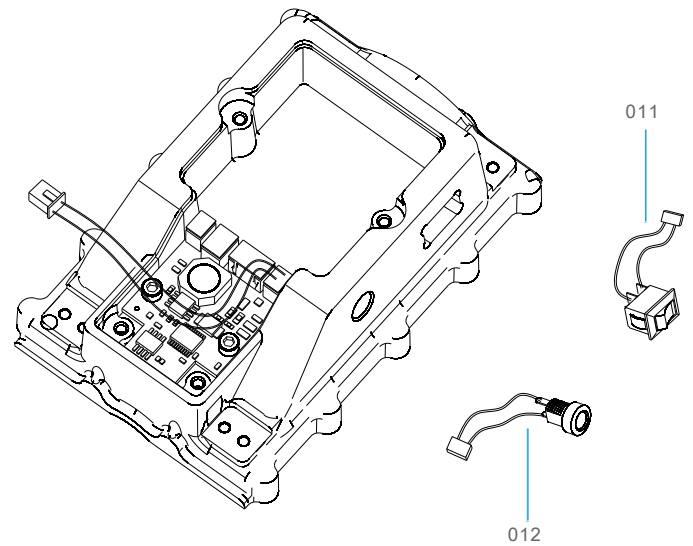


3. Elektrischer Antrieb

3.1 Platine montieren

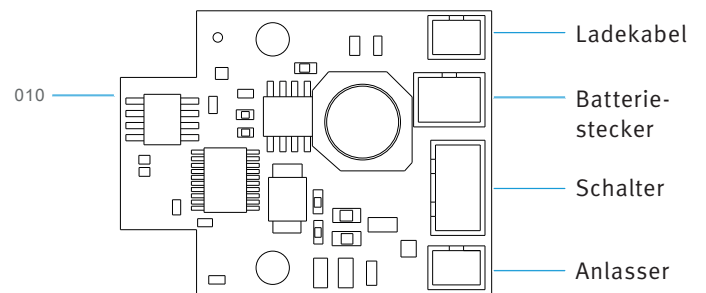


3.2 Schalter und Ladekabel montieren

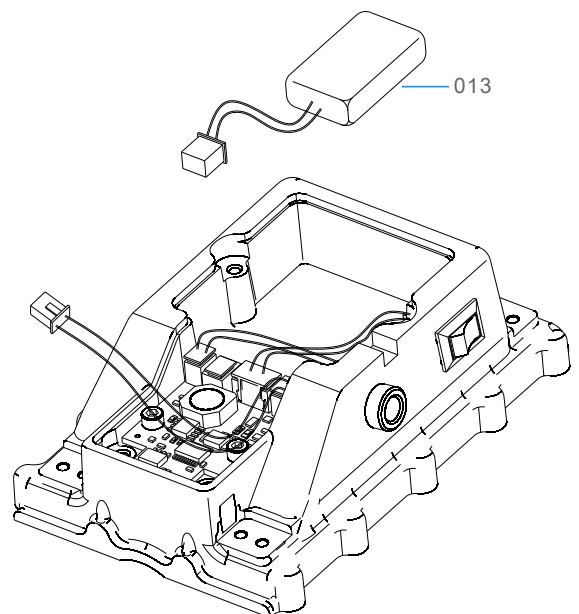


3.3 Der Reihe nach die einzelnen Kabel in der Platine einstecken:

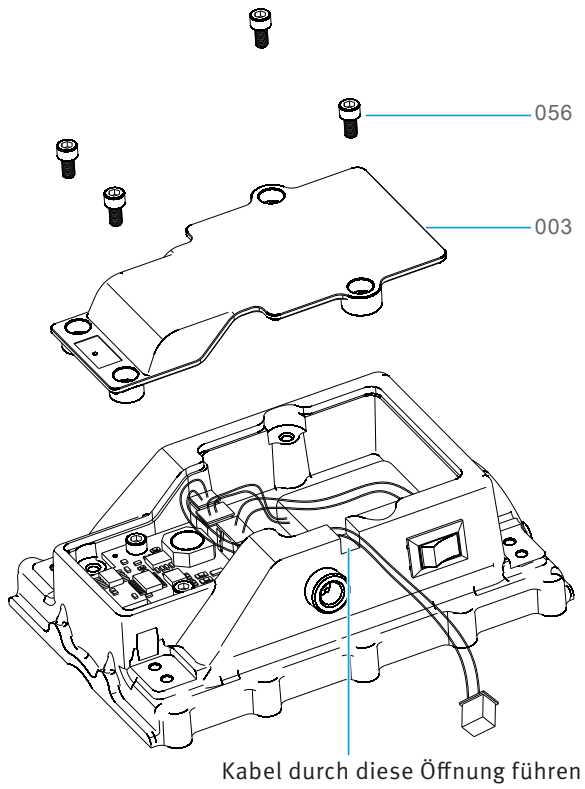
Ladekabel
 Batteriekabel
 Schalterkabel
 Motorkabel



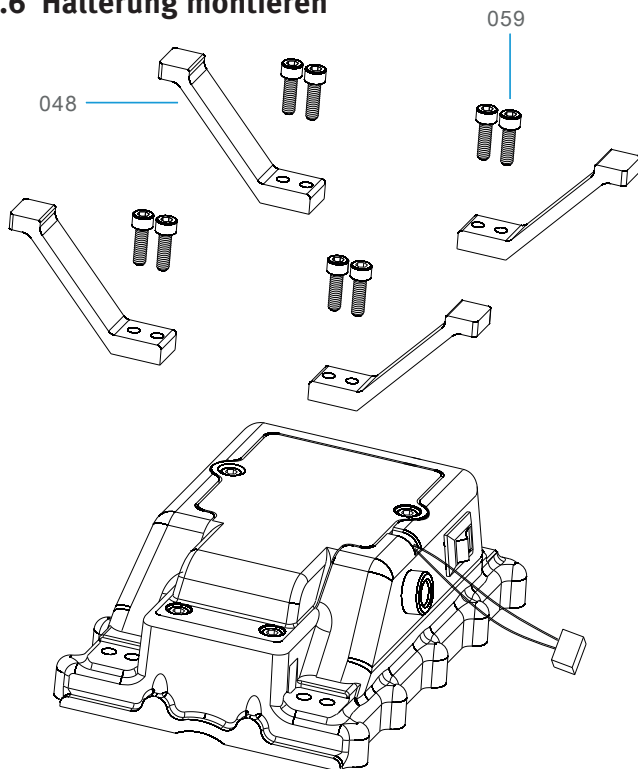
3.4 Batterie einlegen



3.5 Batterieabdeckung montieren

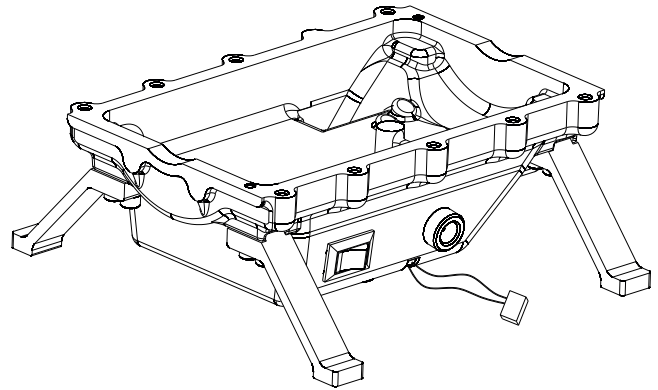


3.6 Halterung montieren

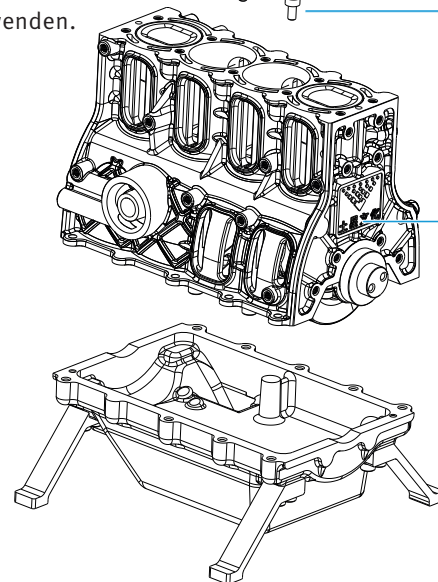
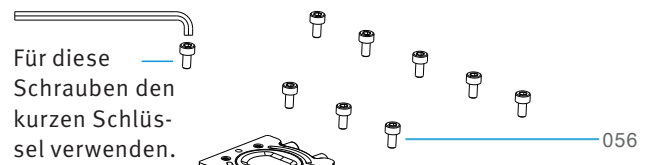


4. Motorblock

4.1 Motorblock auf Halterung montieren

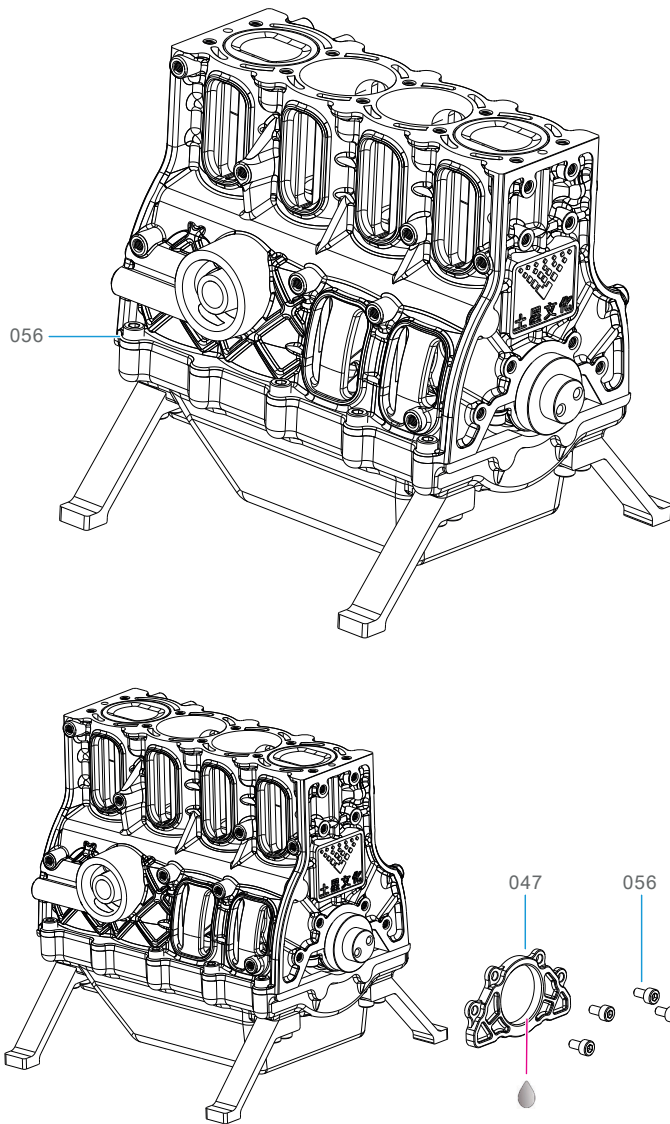


Halterung fertig montiert

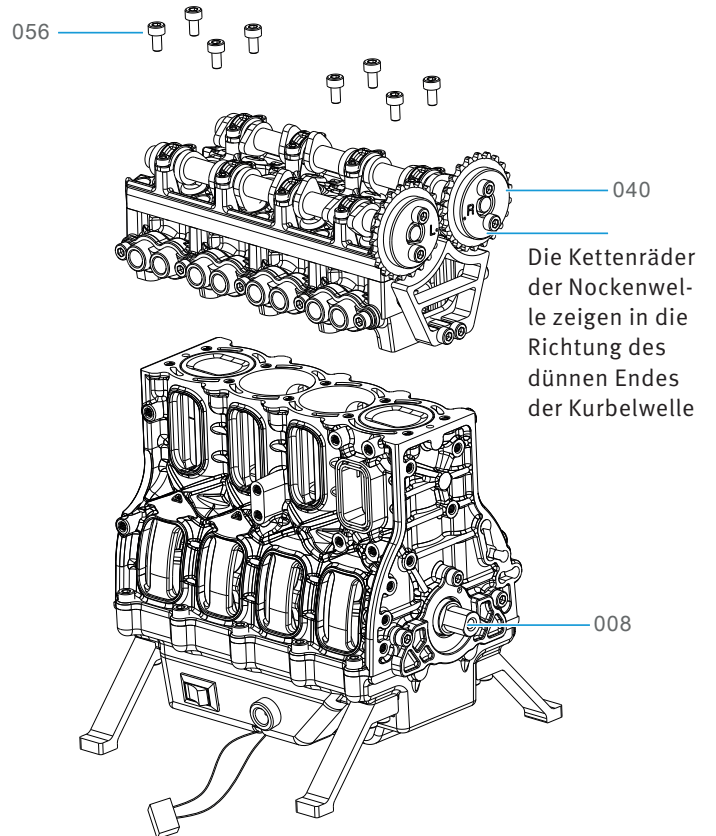


Die Seite, wo die Beschriftung in das Gehäuse eingegossen ist, zeigt in die Richtung des großen Bogens.

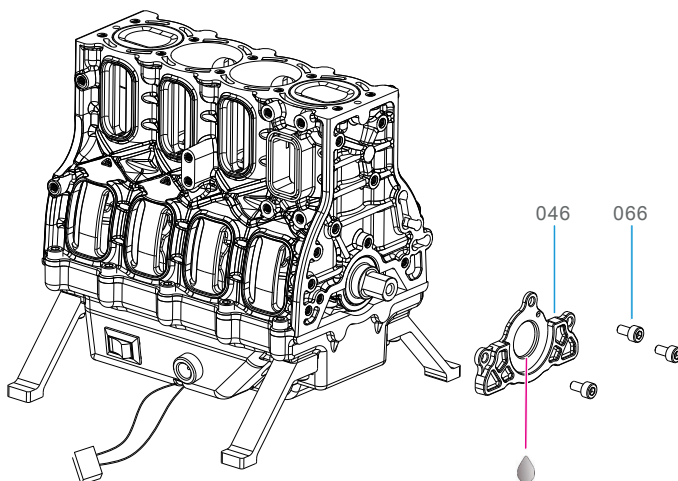
4.2 Vordere Abdeckung montieren



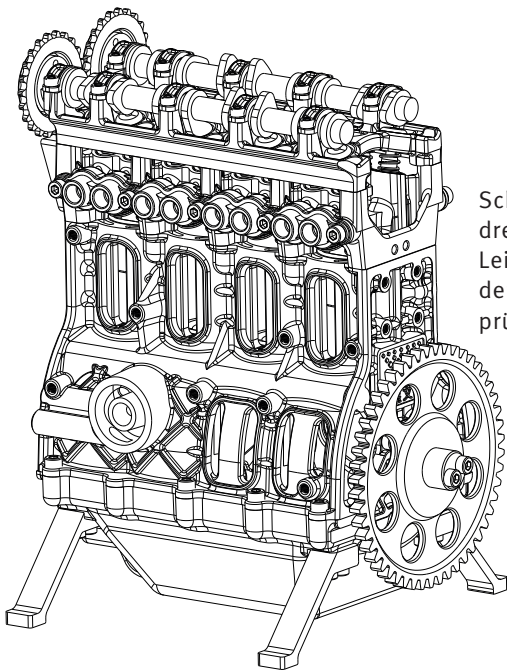
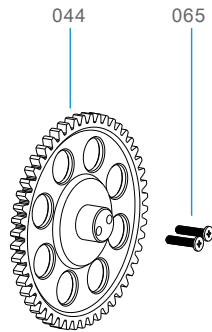
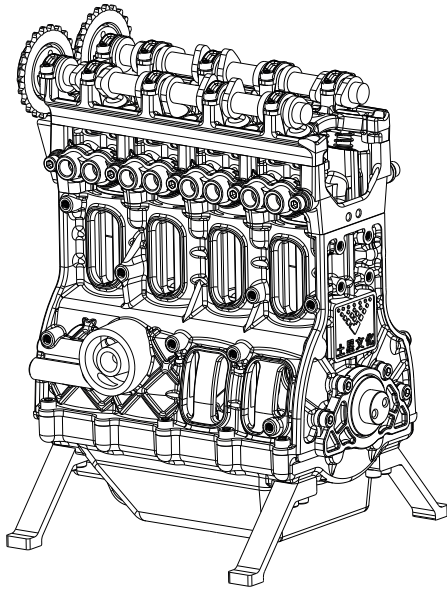
4.4 Zylinderkopf montieren



4.3 Hintere Abdeckung montieren



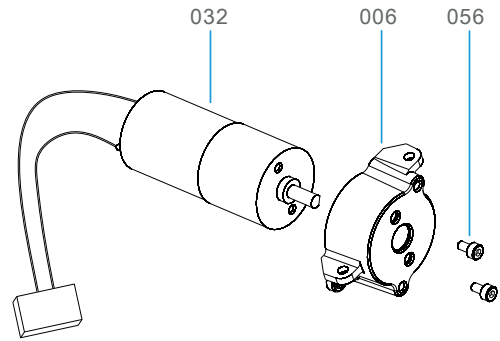
4.5 Schwungrad montieren



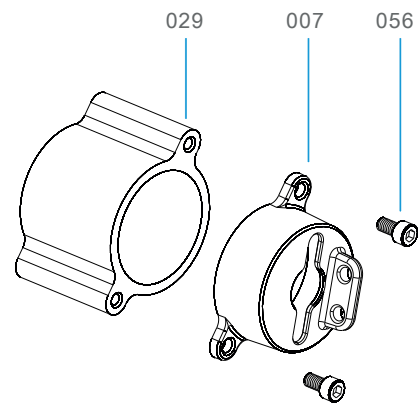
Schwungrad drehen um die Leichtgängigkeit der Kurbelwelle zu prüfen

5. Anlasser

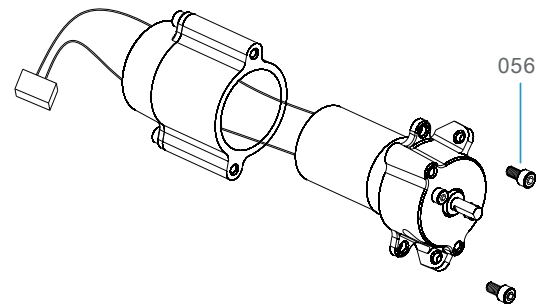
5.1 Frontabdeckung montieren



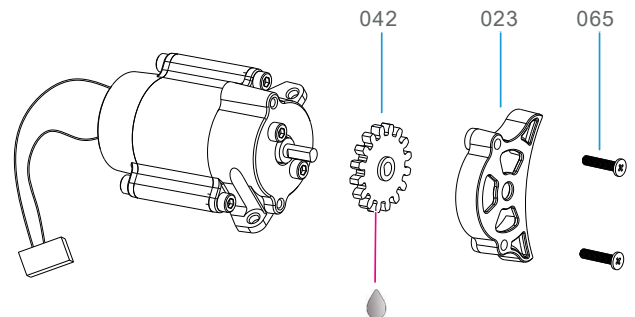
5.2 Hintere Abdeckung montieren



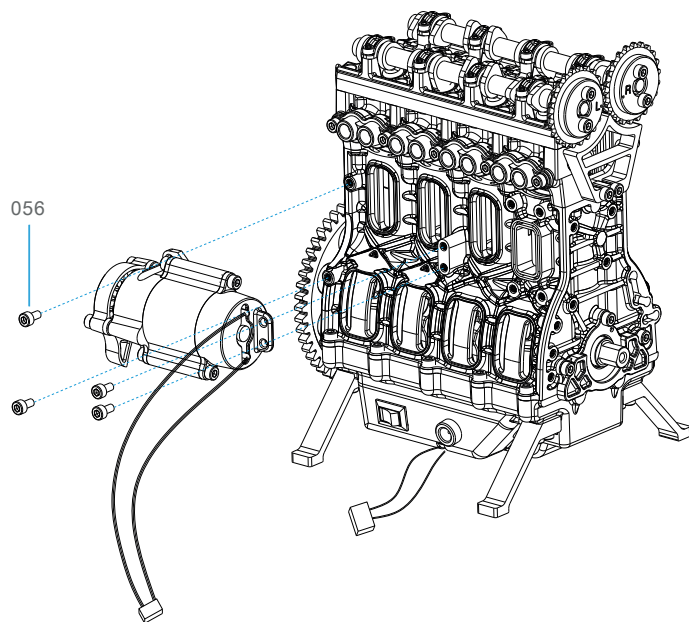
5.3 Front- und hintere Abdeckung verbinden



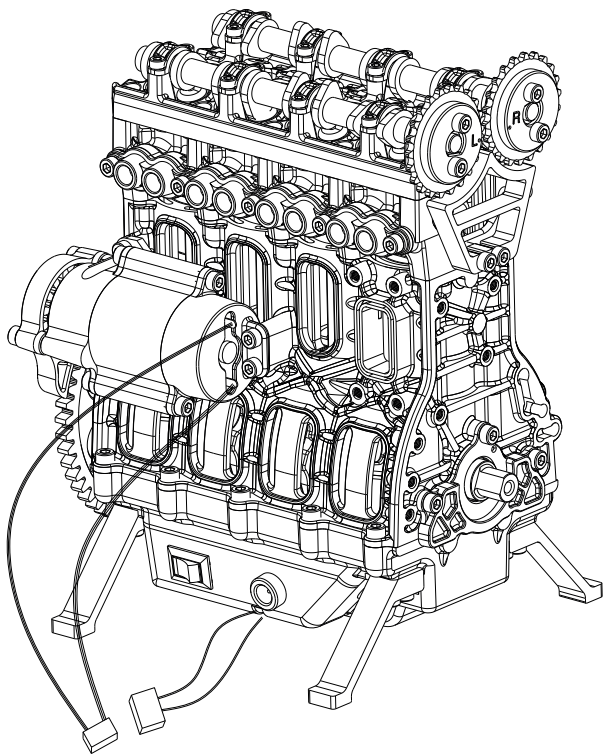
5.4 Anlasserritzel montieren



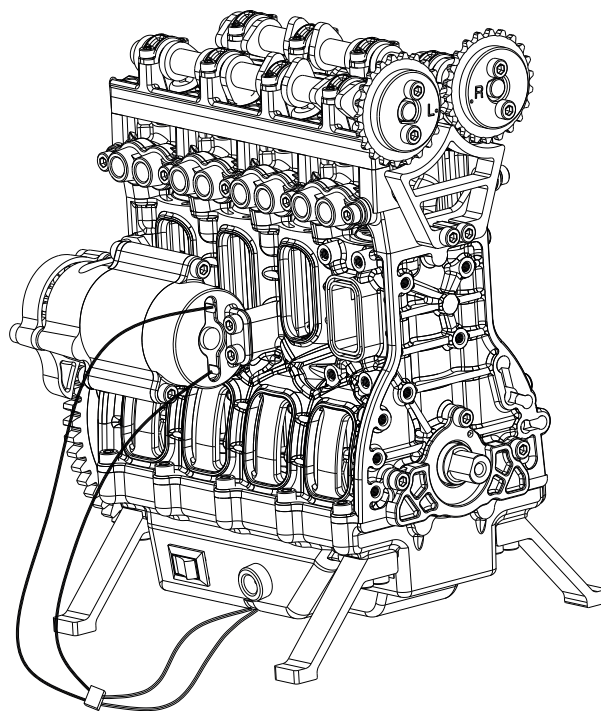
5.5 Montage des Anlassers an den Motorblock



5.6 Anlasser einstecken

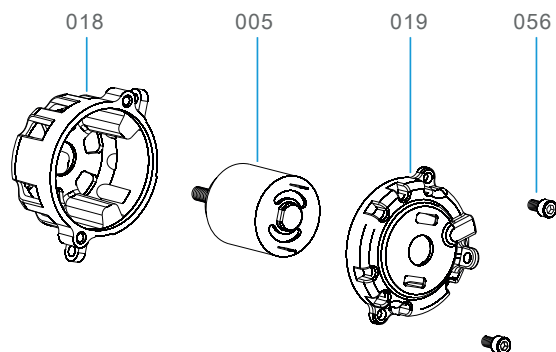


5.7 Prüfen ob der Anlasser den Motor glatt durchdreht

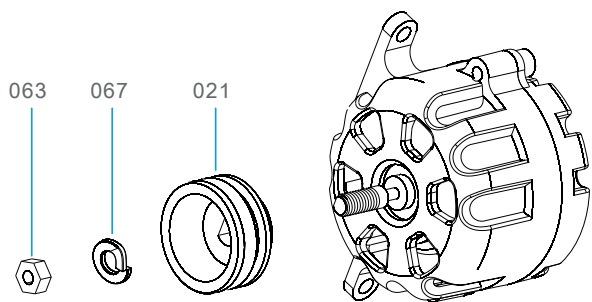


6. Lichtmaschine

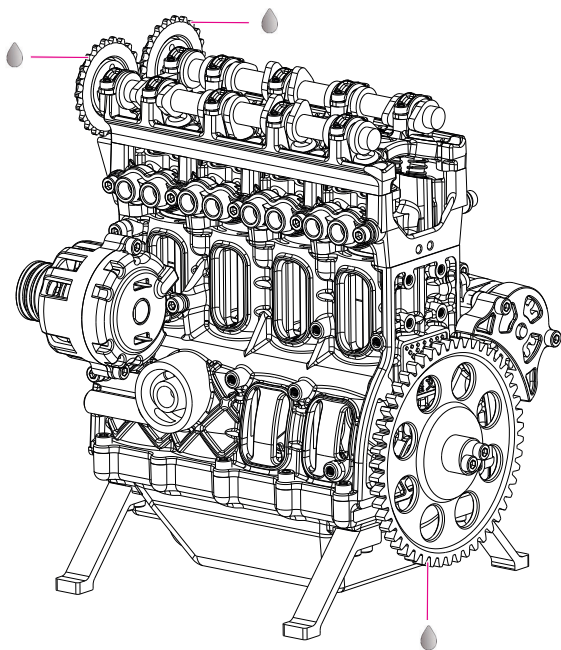
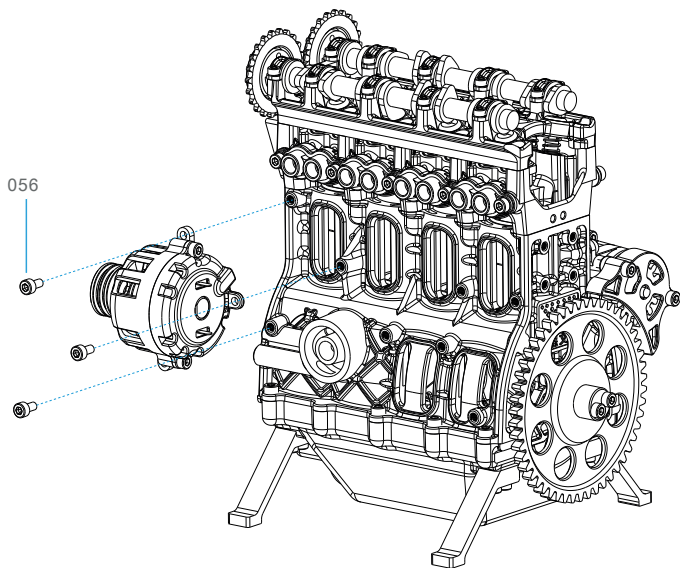
6.1 Frontabdeckung montieren



6.2 Hintere Abdeckung montieren

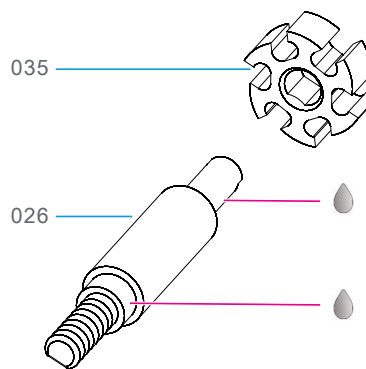


6.3 Lichtmaschine an den Motorblock montieren

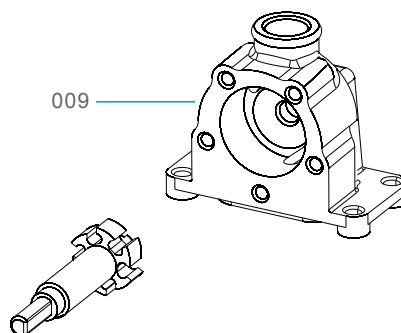


7. Wasserpumpe

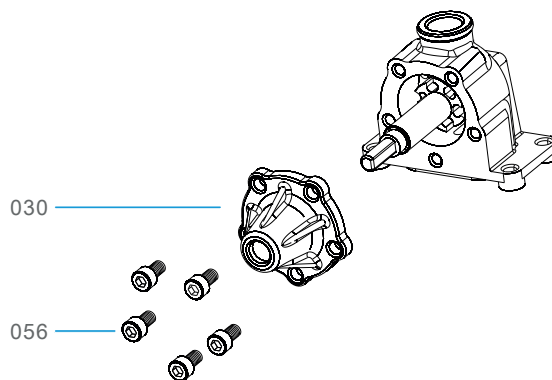
7.1 Flügelrad und Gehäuse montieren



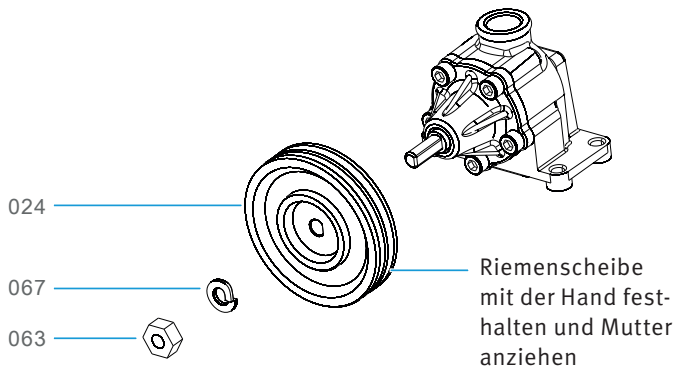
7.2 Welle der Wasserpumpe in das Pumpengehäuse



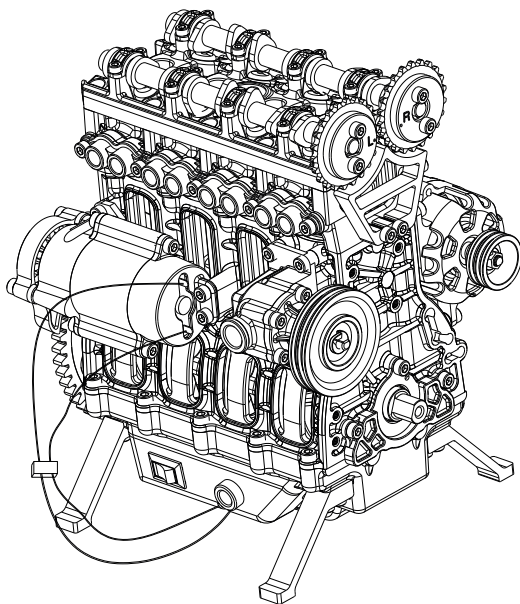
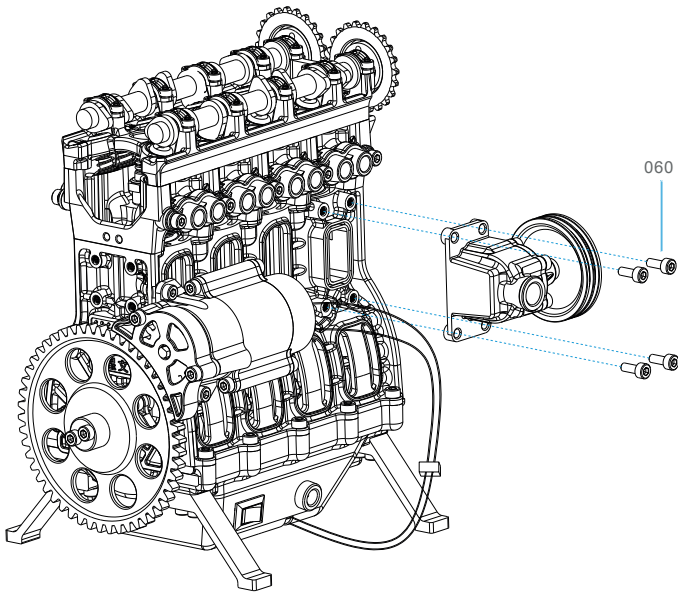
7.3 Gehäusedeckel montieren



7.4 Riemenscheibe montieren

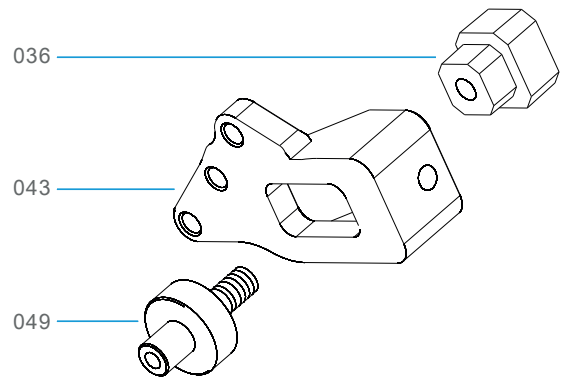


7.5 Montage der Wasserpumpe an den Motorblock

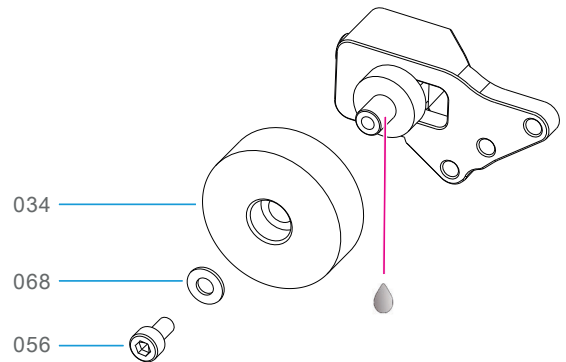


8. Kettenspanner

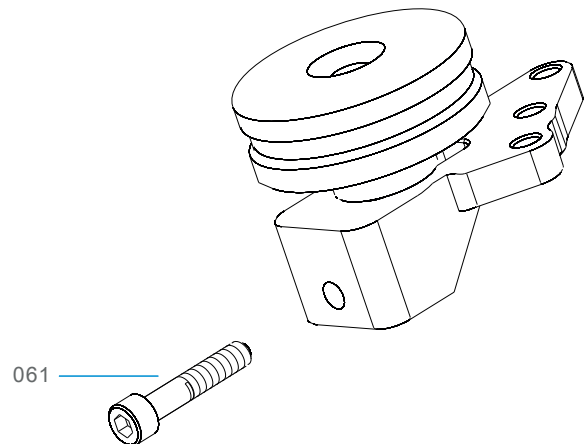
8.1 Einzelteile montieren



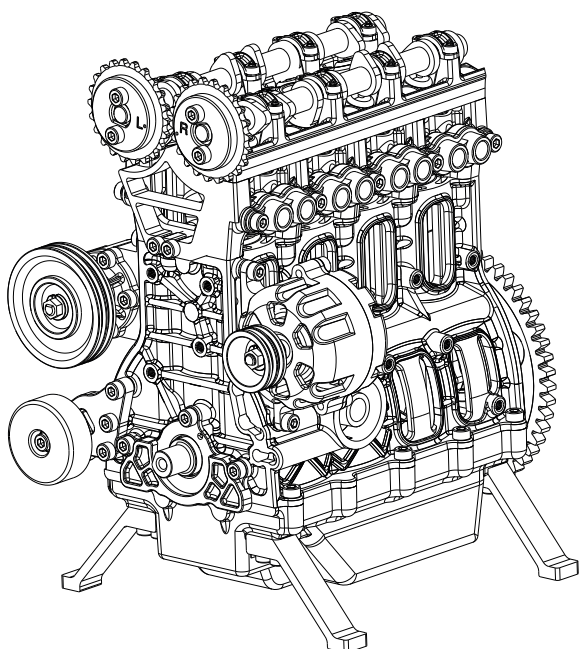
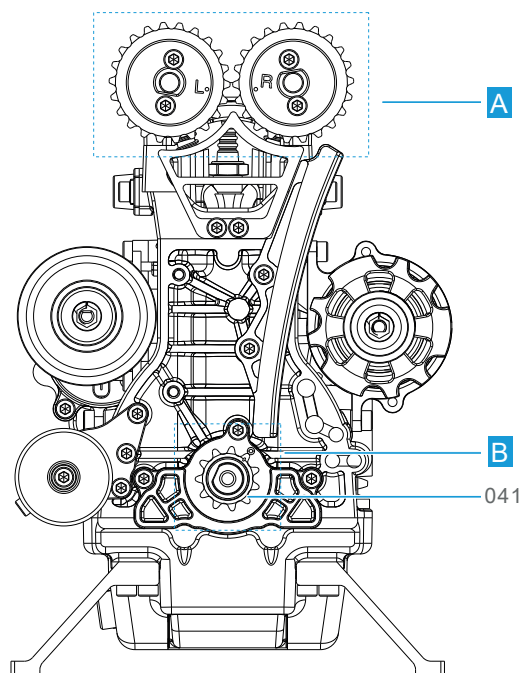
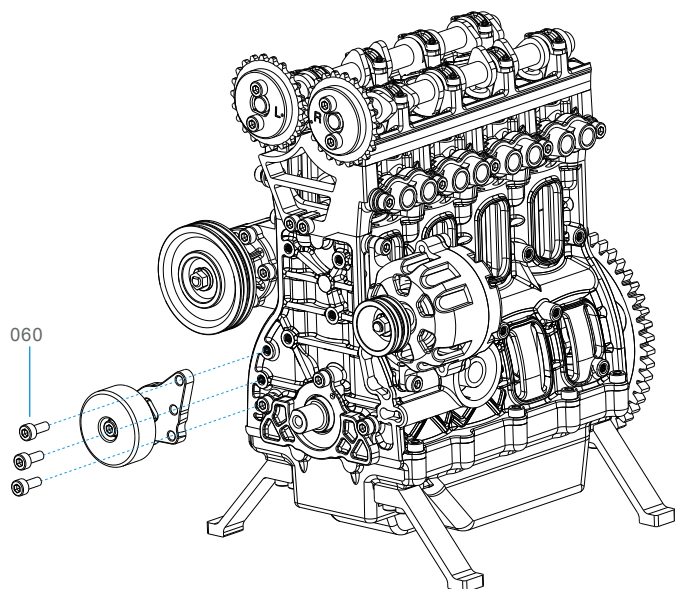
8.2 Spannrolle montieren



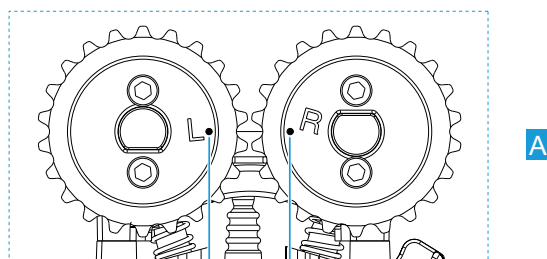
8.3 Einstellschraube eindrehen



8.4 Kettenspanner an den Motorblock montieren 9.2 Kettenräder ausrichten

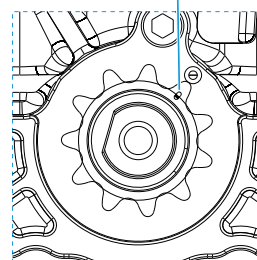


Die Kettenräder tragen einen Markierungspunkt der gemäß Zeichnung ausgerichtet wird. Danach die Steuerkette auflegen.



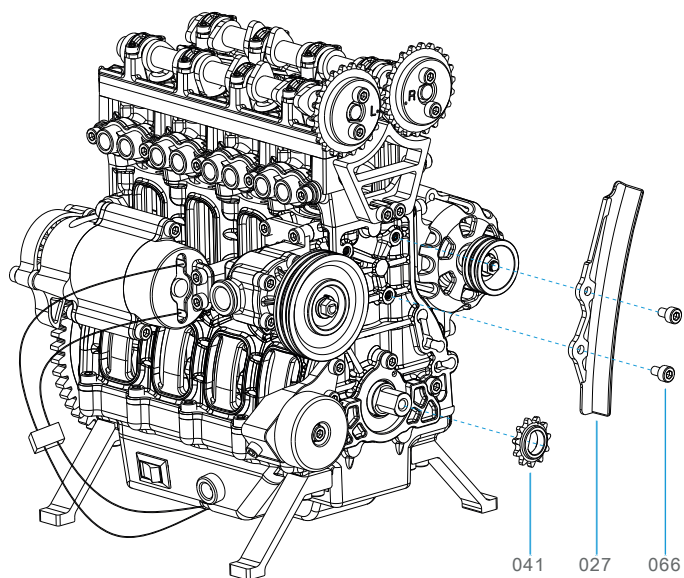
Markierungspunkte auf den Kettenrädern der Nockenwelle

Markierungspunkt auf dem Kettenrad der Kurbelwelle

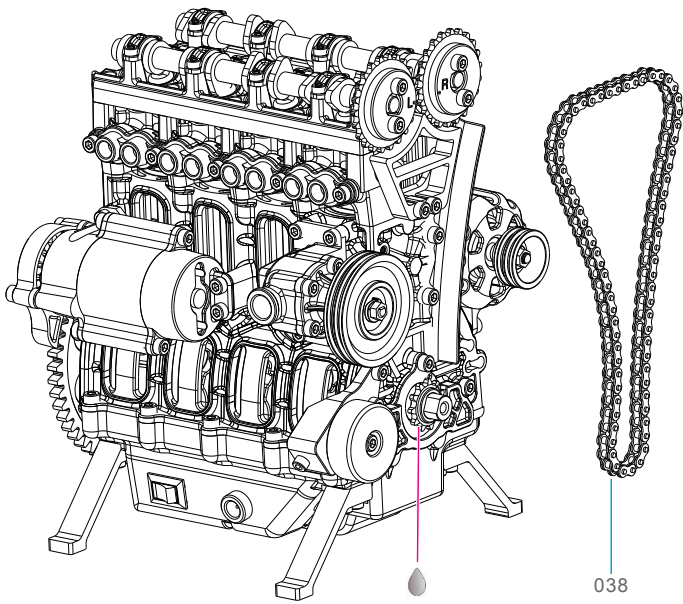


9. Steuerkette

9.1 Kettenspanner montieren

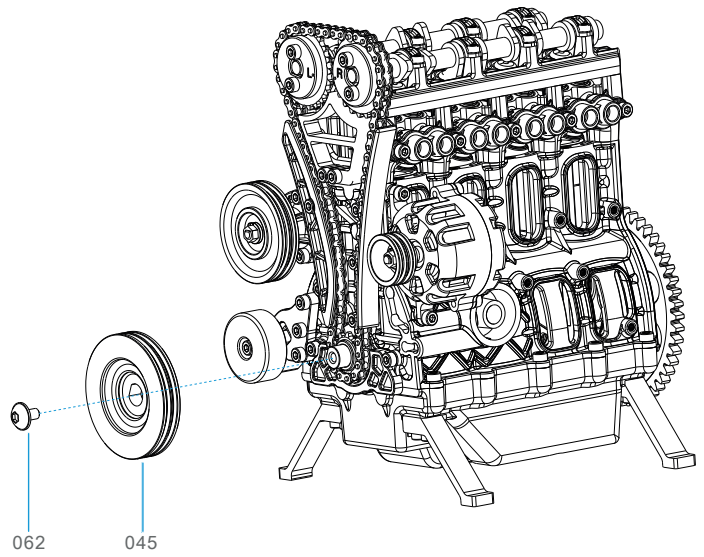


9.3 Steuerkette auflegen

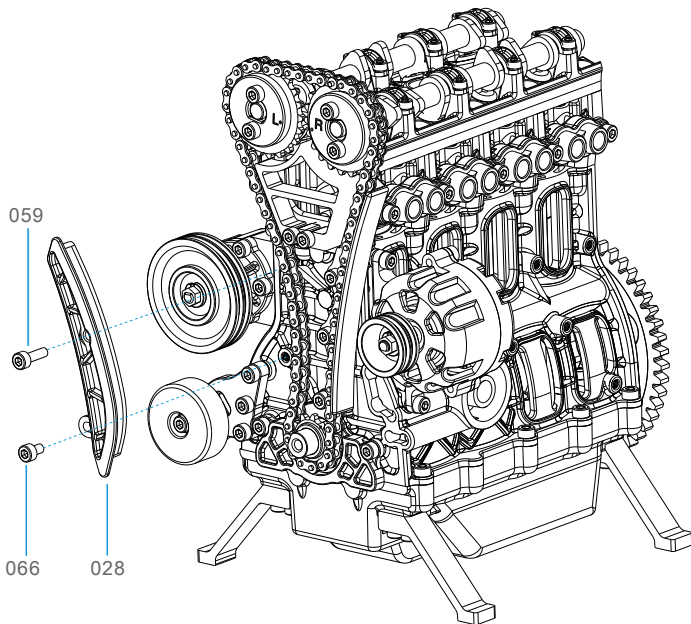


10. weitere Anbauteile

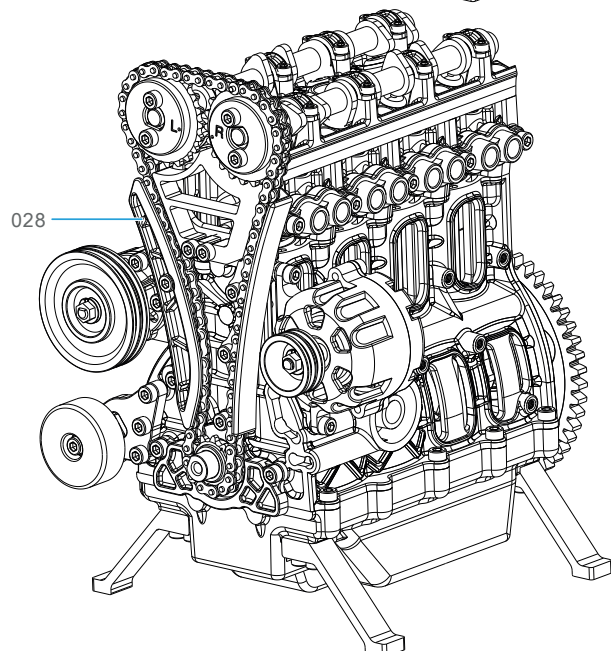
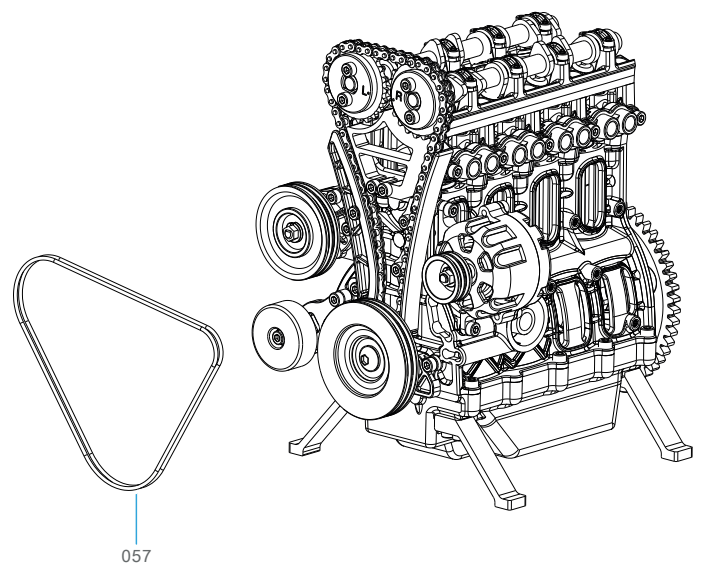
10.1 Riemenscheibe auf der Kurbelwelle



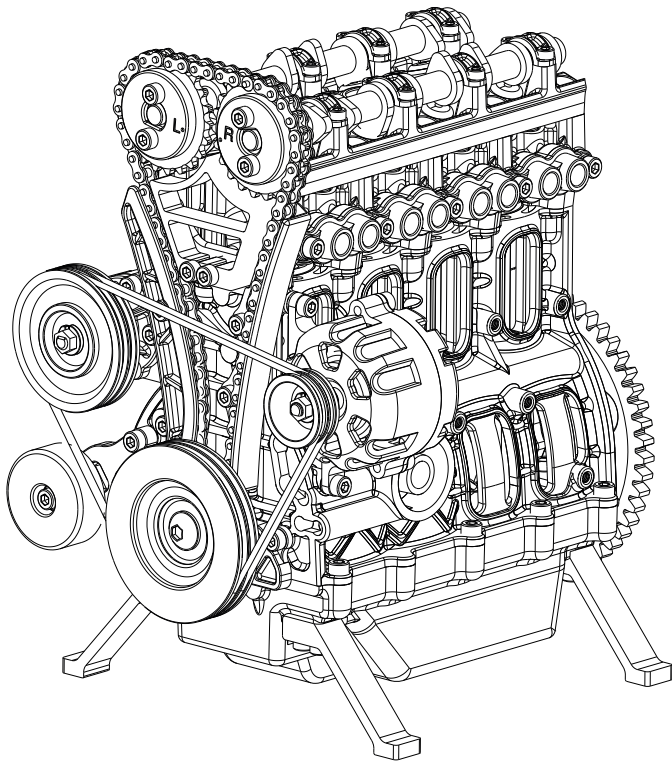
9.4 Steuerkettenspanner montieren



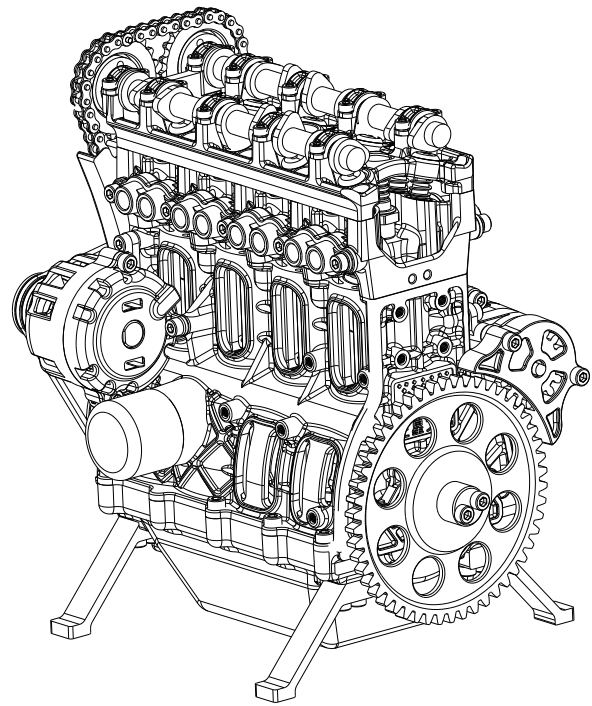
10.2 Keilriemen aufziehen



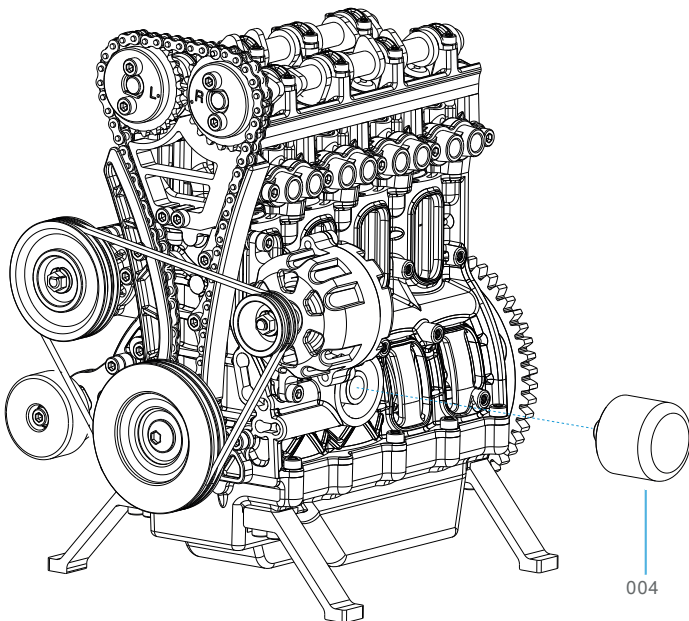
10.3 Ölfilter montieren



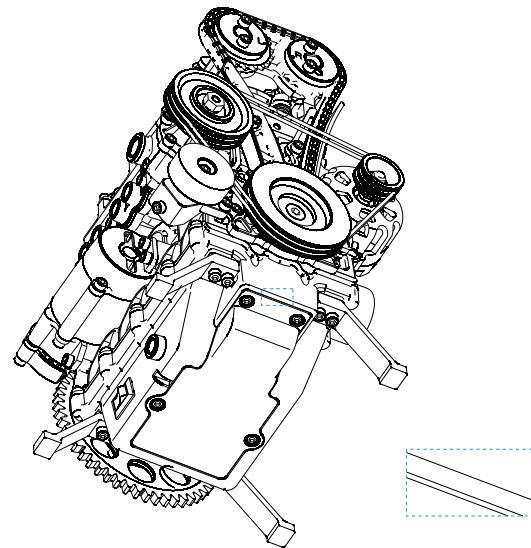
10.4 Stromkabel anschließen



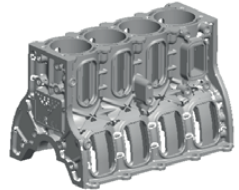

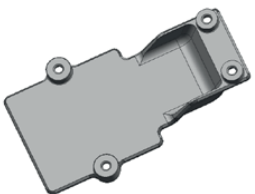
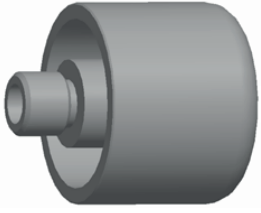




Vollständiger Motor mit allen Anbauteilen



004



Das Ladekabel an einem USB-Anschluß einstecken. Ein USB-Anschluß liefert Standardmäßig 5Volt, diese Spannung darf auch nicht überschritten werden.

Nummer	Bild	Bezeichnung	Anzahl
001		Motorblock	1
002		Ölwanne	1
003		Batterieabdeckung	1
004		Ölfilter	1
005		Lichtmaschine	1
006		Frontabdeckung Anlasser	1
007		Hintere Abdeckung Anlasser	1
008		Kurbelwelle	1

Nummer	Bild	Bezeichnung	Anzahl
009		Wasserpumpengehäuse	1
010		Platine	1
011		Schalter	1
012		Ladekabel	1
013		Batterie	1
014		Nockenwellenträger	1
015		Zylinderkopf	1
016		Nockenwelle	2

Nummer	Bild	Bezeichnung	Anzahl
017		Einlass- und Auslasskrümmer	2
018		Frontabdeckung Lichtmaschine	1
019		Hintere Abdeckung Lichtmaschine	1
020		Kolben	4
021		Riemenscheibe Lichtmaschine	1
022		Kolbenbolzen	4
023		Frontabdeckung Anlasser	1
024		Riemenscheibe Wasserpumpe	1

Nummer	Bild	Bezeichnung	Anzahl
025		Pleuel	4
026		Welle Wasserpumpe	1
027		Führung Steuerkette	1
028		Kettenspanner	1
029		mittleres Gehäuseteil Anlasser	1
030		Hinteres Gehäuse Wasserpumpe	1
031		Zündkerze	4
032		Anlasser	1

Nummer	Bild	Bezeichnung	Anzahl
033		Ventil	16
034		Kettenspanner	1
035		Flügelrad Wasserpumpe	1
036		Kettenspanner	1
037		Kettenführung	1
038		Steuerkette	1
039		Kettenrad linke Nockenwelle	1
040		Kettenrad rechte Nockenwelle	1

Nummer	Bild	Bezeichnung	Anzahl
041		Kettenrad	1
042		Anlasserritzel	1
043		Kettenspanner	1
044		Schwungrad	1
045		Riemenscheibe Kurbelwelle	1
046		Endkappe hinten	1
047		Endkappe vorne	1
048		Stützfuß	4

Nummer	Bild	Bezeichnung	Anzahl
049		Kettenspanner	1
050		Lagerschale	4
051		Lagerschale Kurbelwelle	5
052		Ventilführung	16
053		Tassenstößel	16
054		Ventilfeder	16
055		Lagerschale Nockenwelle	10
056		Schraube M3 x 6	85

Nummer	Bild	Bezeichnung	Anzahl
057		Keilriemen	2
058		Schraube M2,5 x 5	22
059		Schraube M3 x 10	9
060		Schraube M3 x 8	8
061		Schraube M4 x 16	1
062		Schraube mit Flansch M4 x 6	1
063		Mutter M4	2
064		Sprengtring 3,0	8

Nummer	Bild	Bezeichnung	Anzahl
065		Schraube M3 x 14	16
066		Schraube M3 x 5	10
067		Federscheibe 4 mm	2
068		Dichtscheibe 3 mm	1
069		Federscheibe 3 mm	8
070		Schraube M3 x 12	2



Best.-Nr. 532665



Best.-Nr. 532669



Best.-Nr. 532666

Content	
Crankshaft assembly	30
Cylinder assembly	32
Circuit system	34
Engine body	35
Starter motor	37
Generator assembly	38
Water pump assembly	39
Tensio set assembly	40
Timing gear	41
other accessories	42
parts list	44

More than 320 parts

assemblies:

- 1) Four cylinder in line engine structure
- 2) Overhead camshaft valve control structure
- 3) Cam chain transmission gear

General Information:

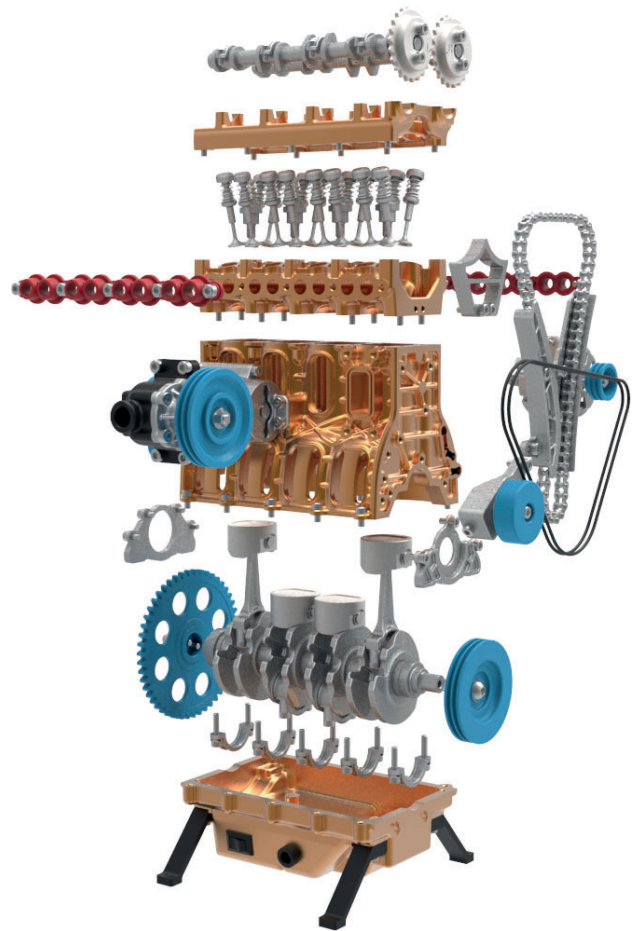
Before assembling, you should make sure that there is a free area on which you can clearly sort the individual parts.

The following tools should be at hand:

A sharp scraper to remove any burrs.

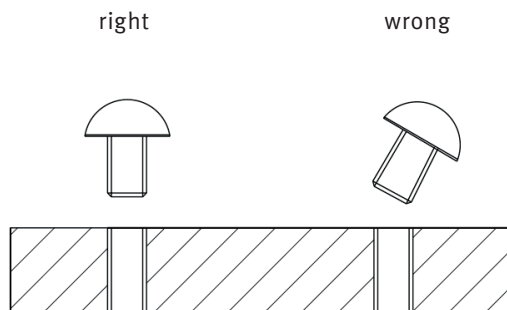
Mechanical tweezers or fine pointed pliers to grip small parts securely, circlip pliers and a bottle of sewing machine oil are also necessary.

The necessary small Allen spanners are included.

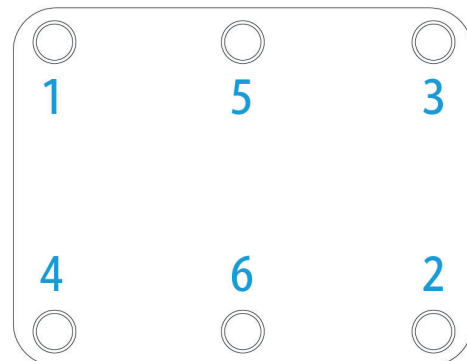


Basic knowledge as standard:

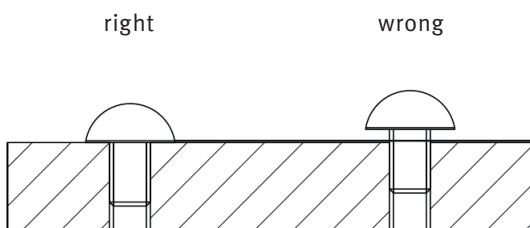
Always insert screws vertically



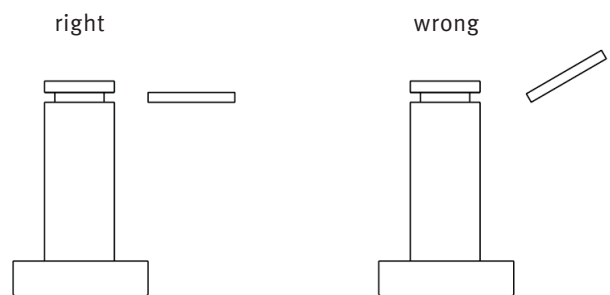
Mount the screw diagonally in order of numbers



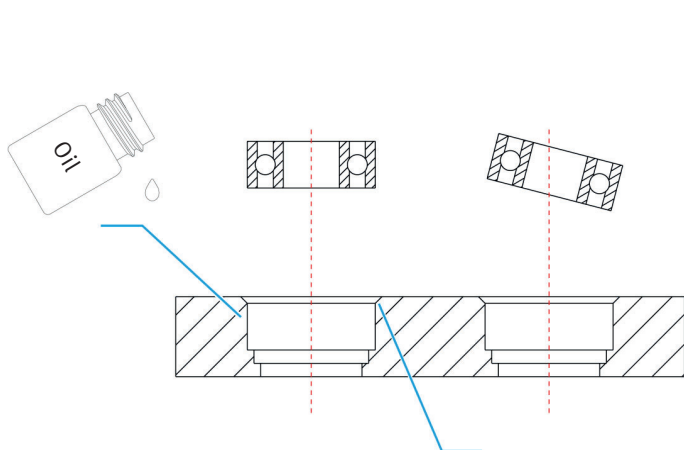
Degree of screw tightening



Push in the snap ring in parallel



Install the bearing into the bearing seat hole

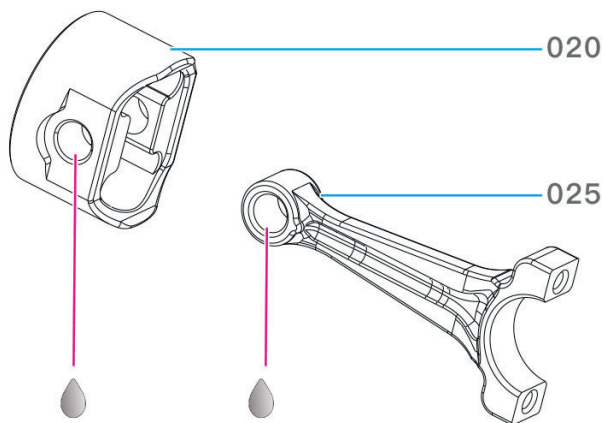


Do not tilt the ball bearing during installation. The locating bore must be free of casting burrs. Before pressing in, apply a little oil to the surfaces and press only on the outer bearing ring.

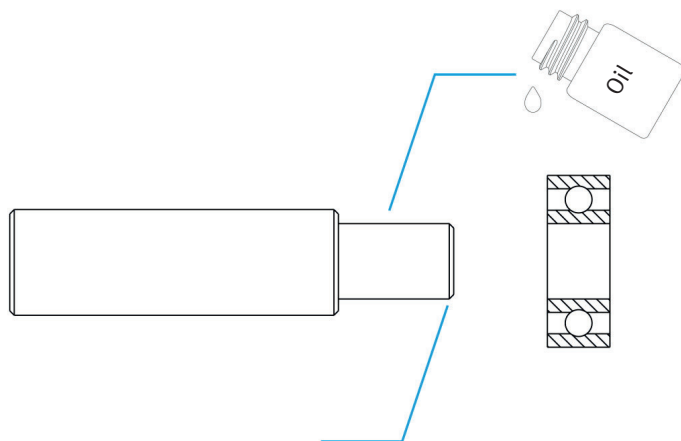
1. Assemble the crankshaft



1.1 Assemble piston mechanism

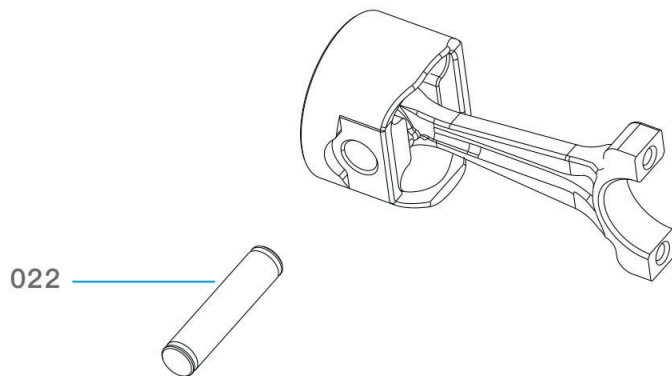


Place ball bearings only on cleanly deburred shafts.

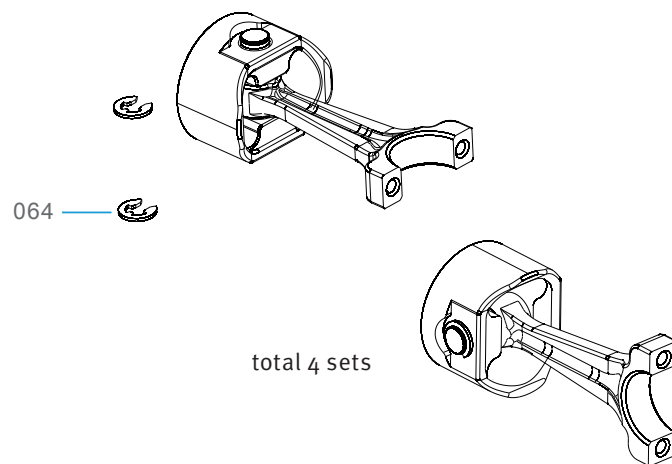


Before pressing on, apply some oil to the surfaces and press only on the inner bearing ring.

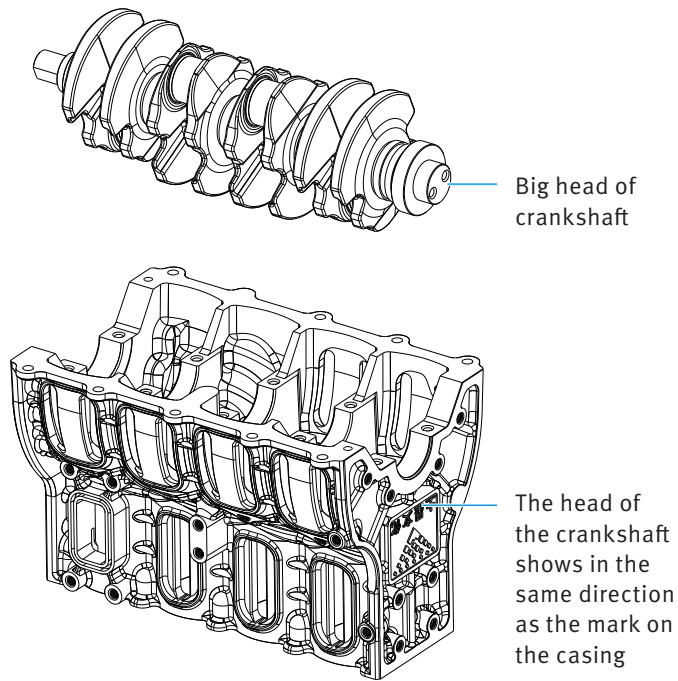
1.2 Mounting piston pin



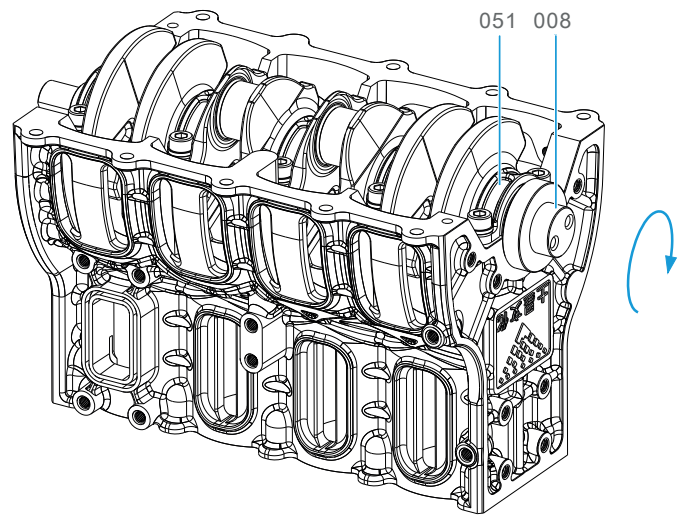
1.3 Mounting circlip



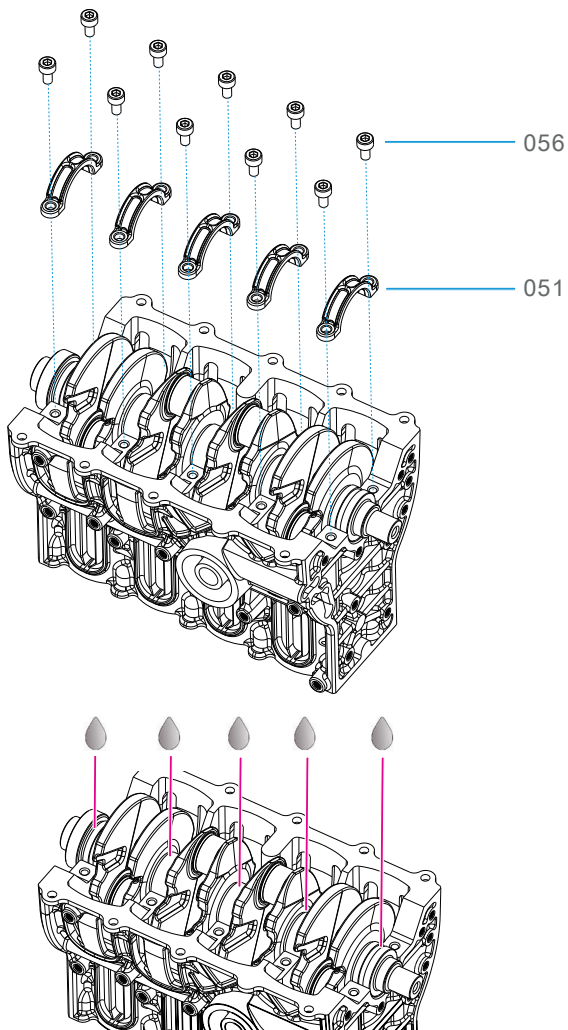
1.4 Assembly and connection between crankshaft and cylinder block



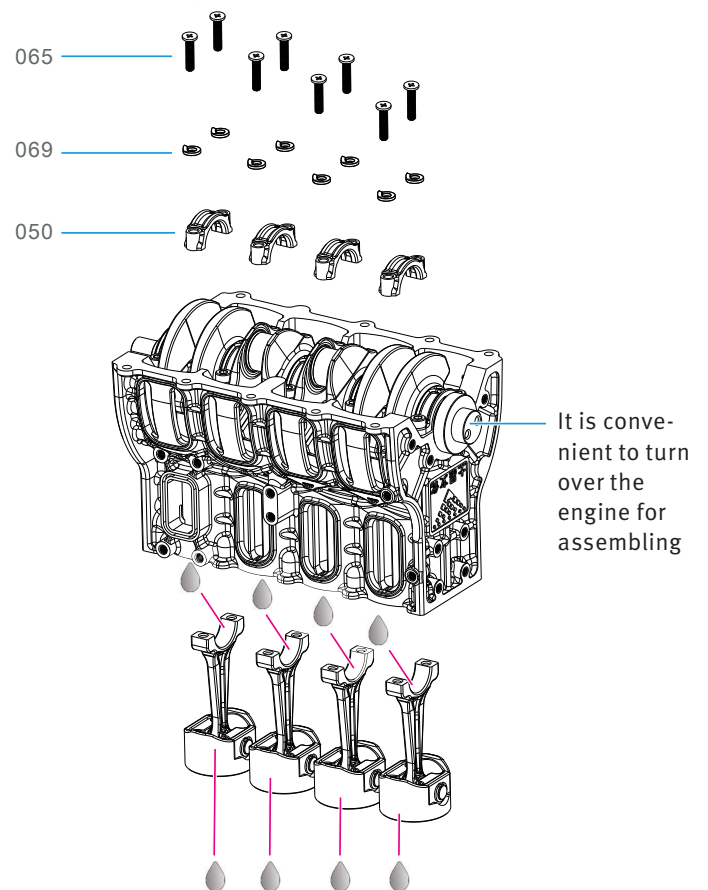
1.6 After installing turn the crankshaft to check if the rotation is smooth



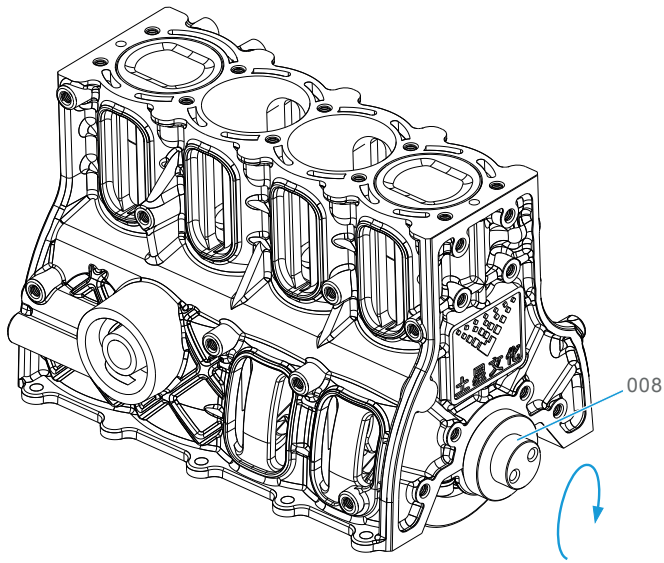
1.5 Mounting crankshaft bearing



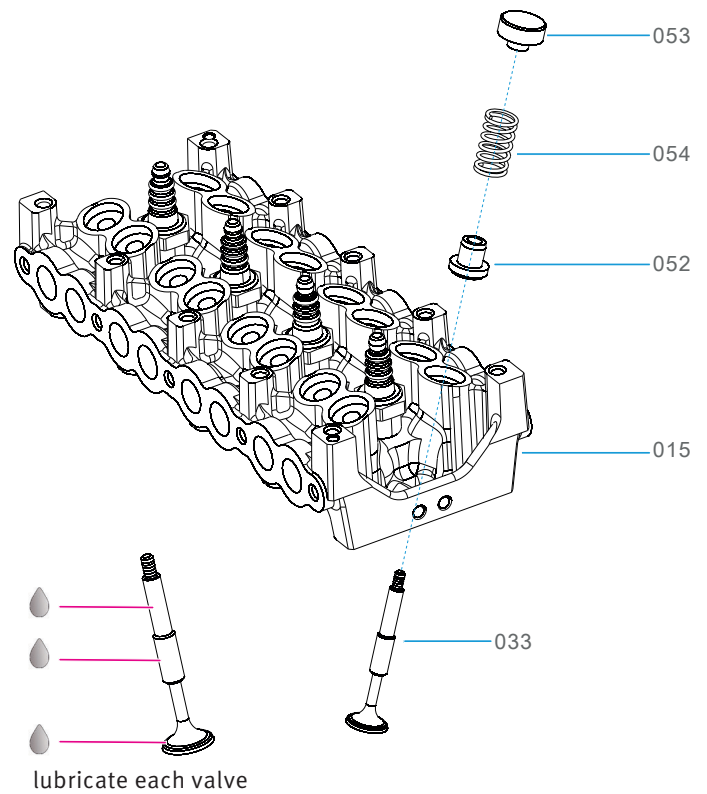
1.7 Piston connecting rod and crankshaft assembly



1.8 After installing the piston mechanism, turn the crankshaft to check if the piston and crankshaft rotate smoothly.

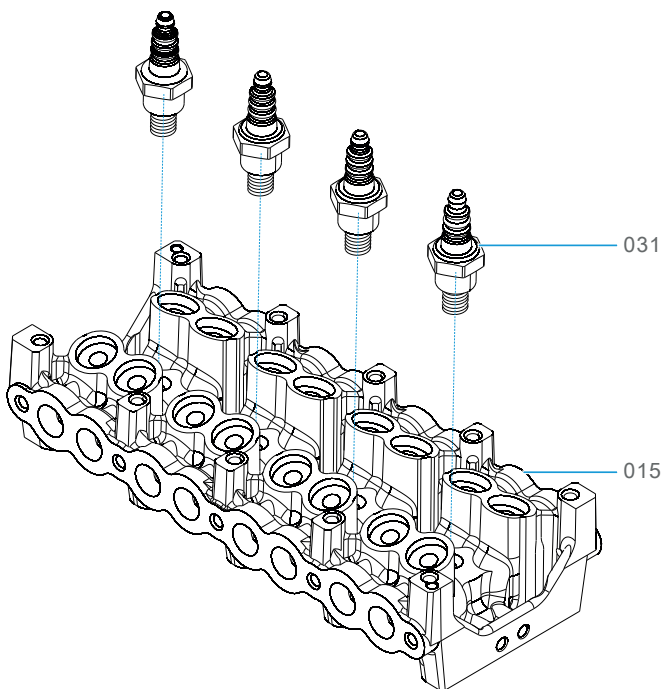


2.2 Installing the valves (16 x)

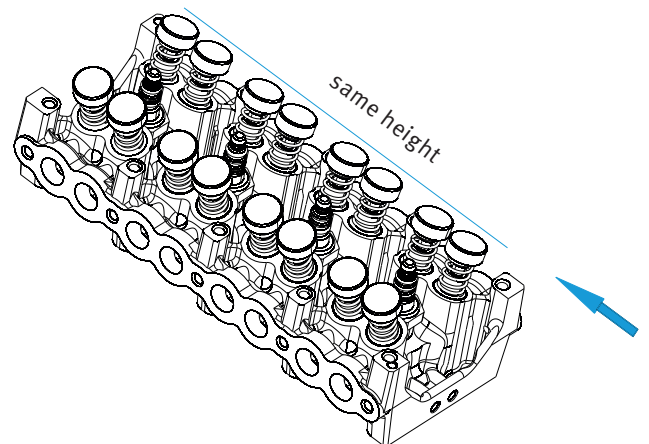


2. Cylinder assembly

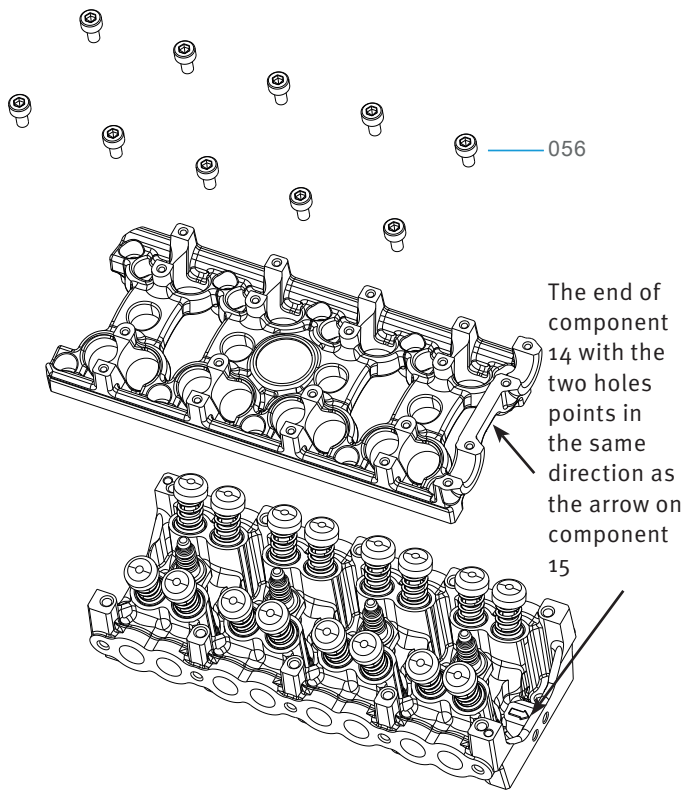
2.1 Installing the spark plug



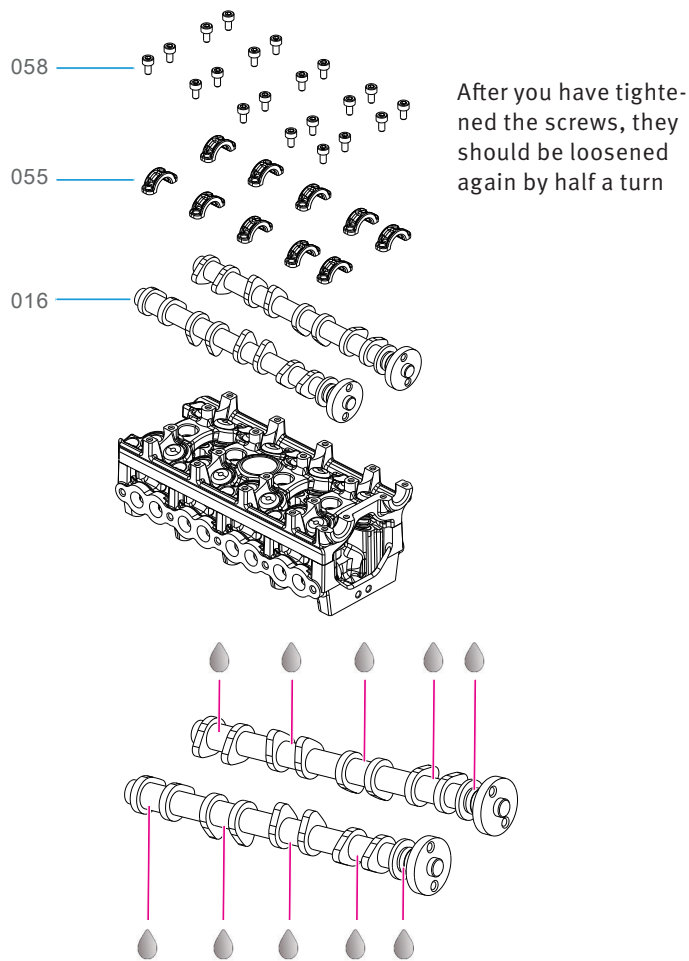
2.3 After the valve is installed, check whether each valve is tightened and the height of each valve is the same



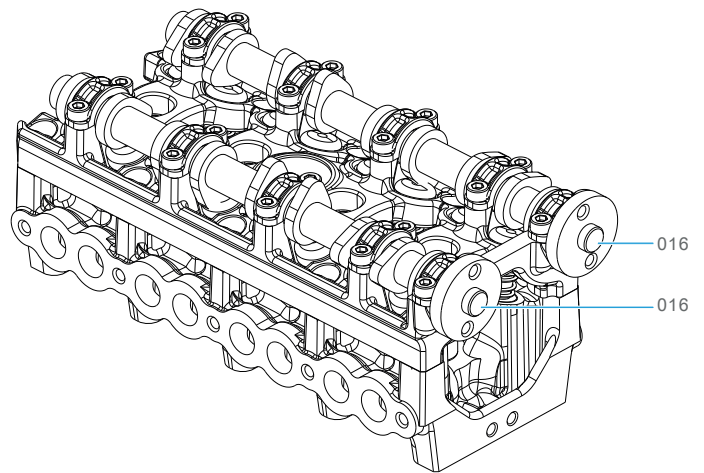
2.4 Mounting cam seat



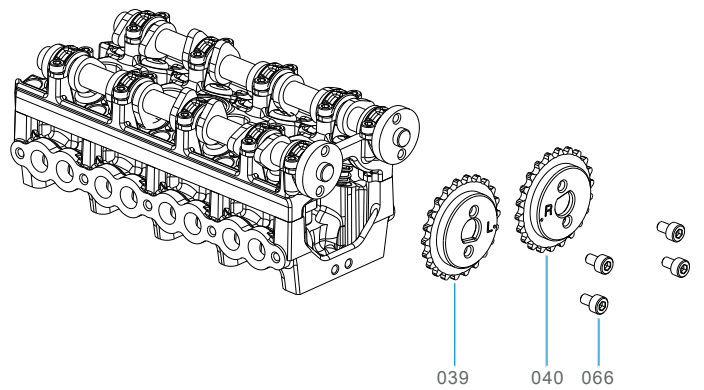
2.5 Mounting camshaft



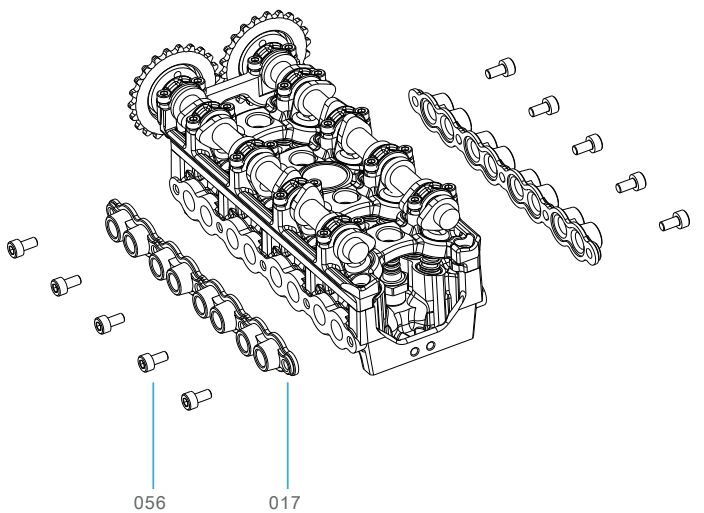
2.6 Check the drive of the camshaft.



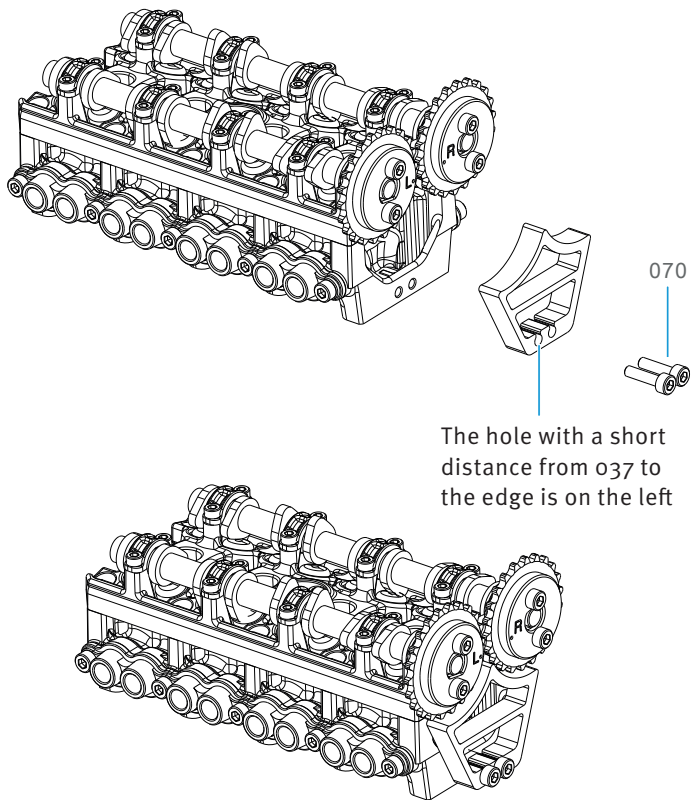
2.7 Install the cam synchro sprocket



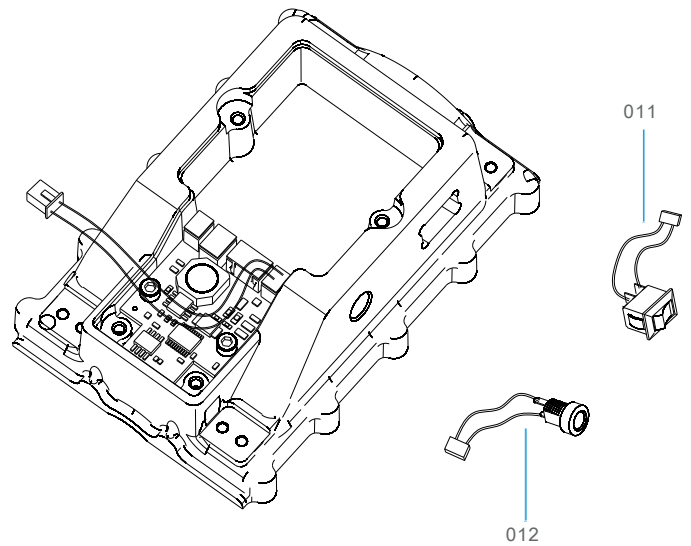
2.8 Install inlet and outlet manifold



2.9 Install the synchro sprocket stop

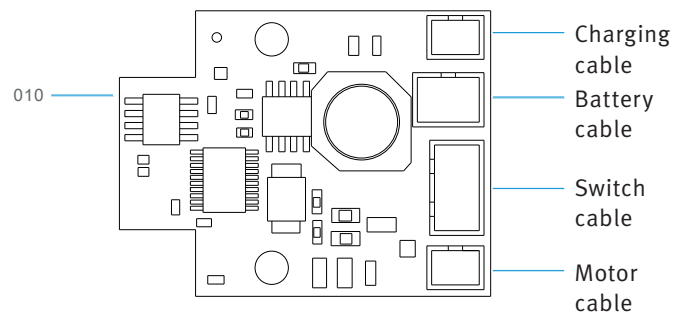


3.2 Installation switch charging plug



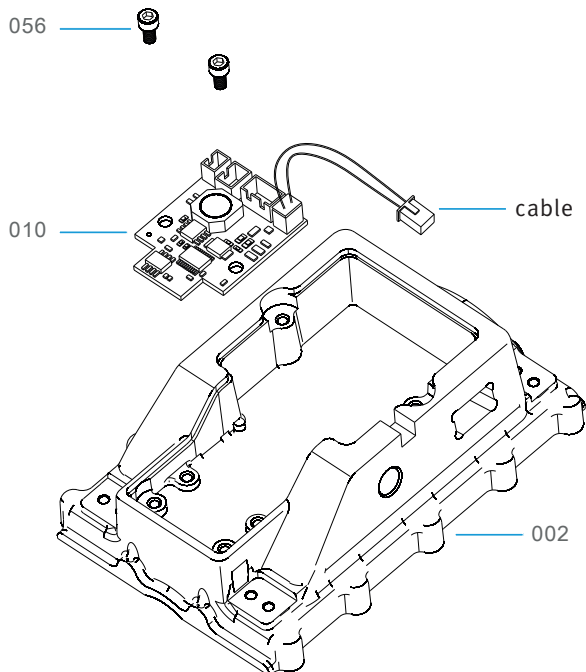
3.3 Plug the individual cables into the board one after the other:

- Charging cable
- Battery cable
- Switch cable
- Motor cable

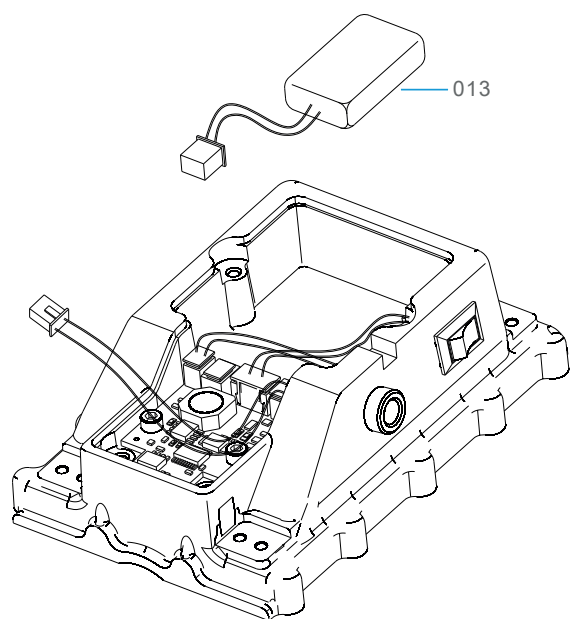


3. Circuit system

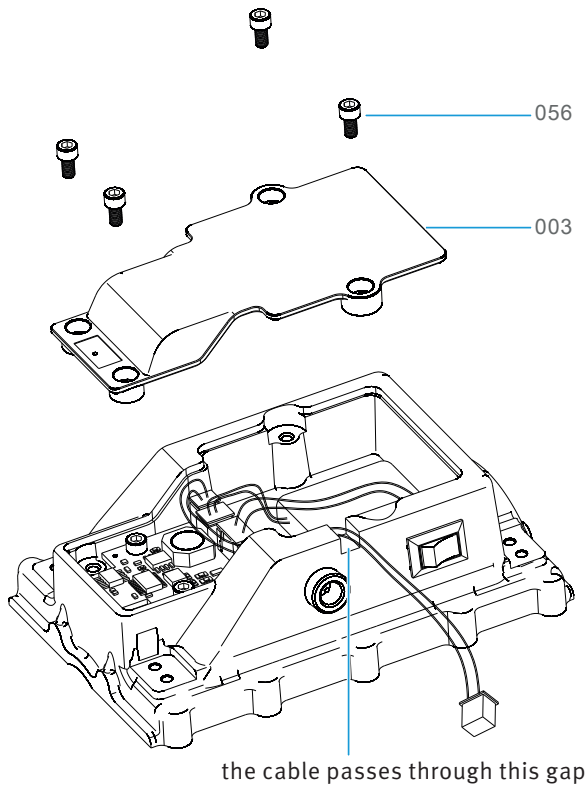
3.1 Installing the circuit board



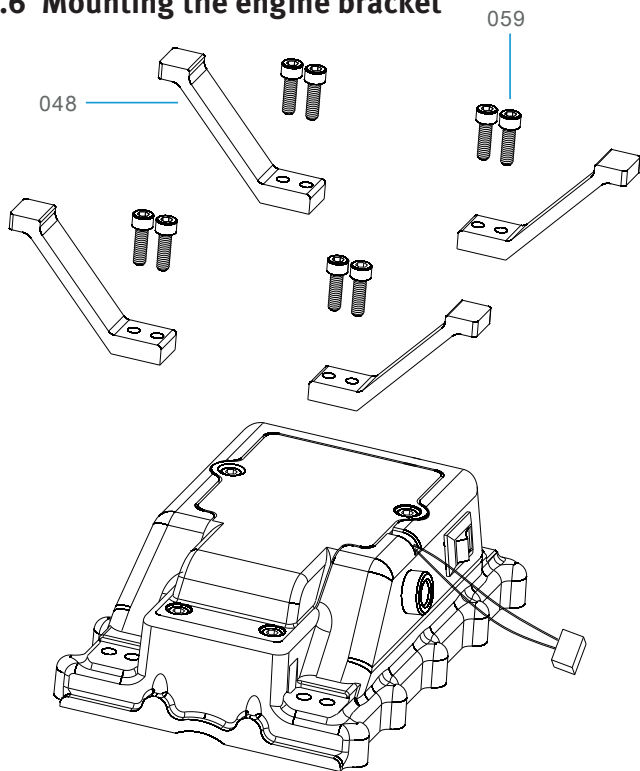
3.4 Installing the battery pack



3.5 Installing the battery cover

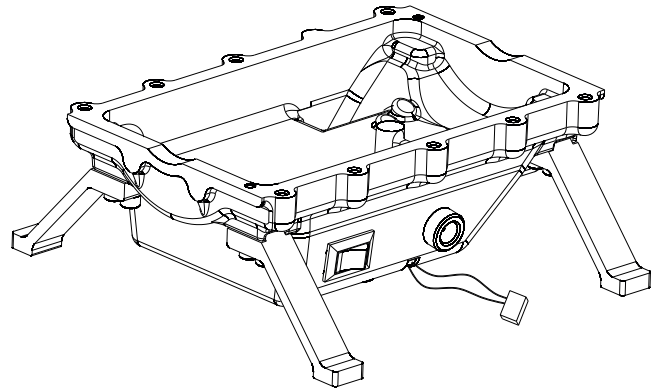


3.6 Mounting the engine bracket

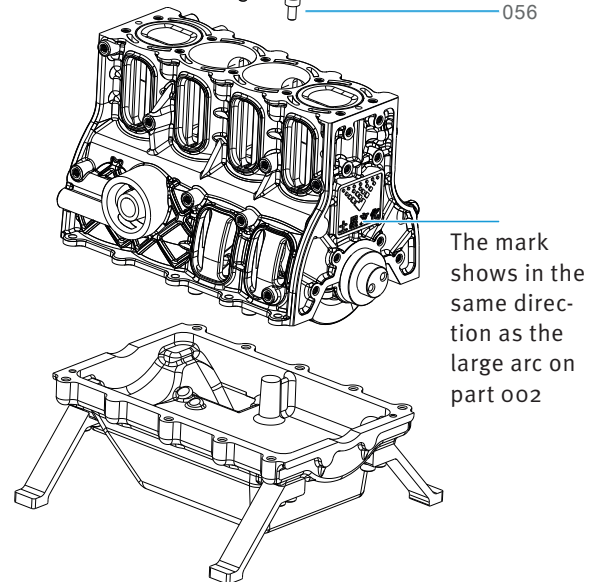


4. Engine body

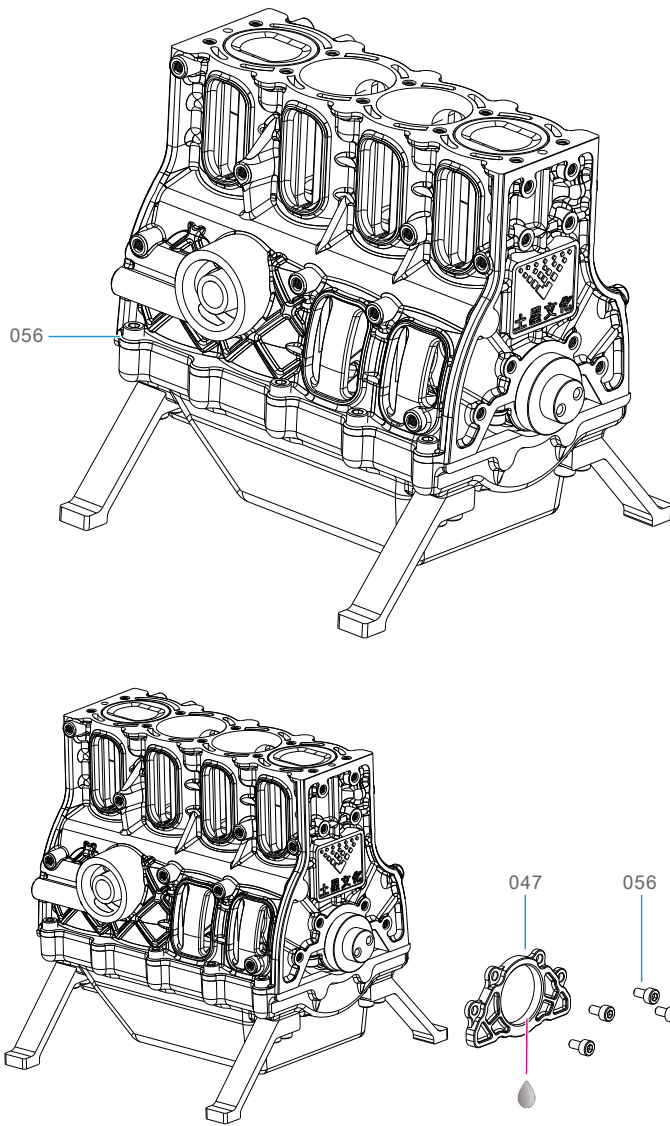
4.1 Cylinder block and base combination



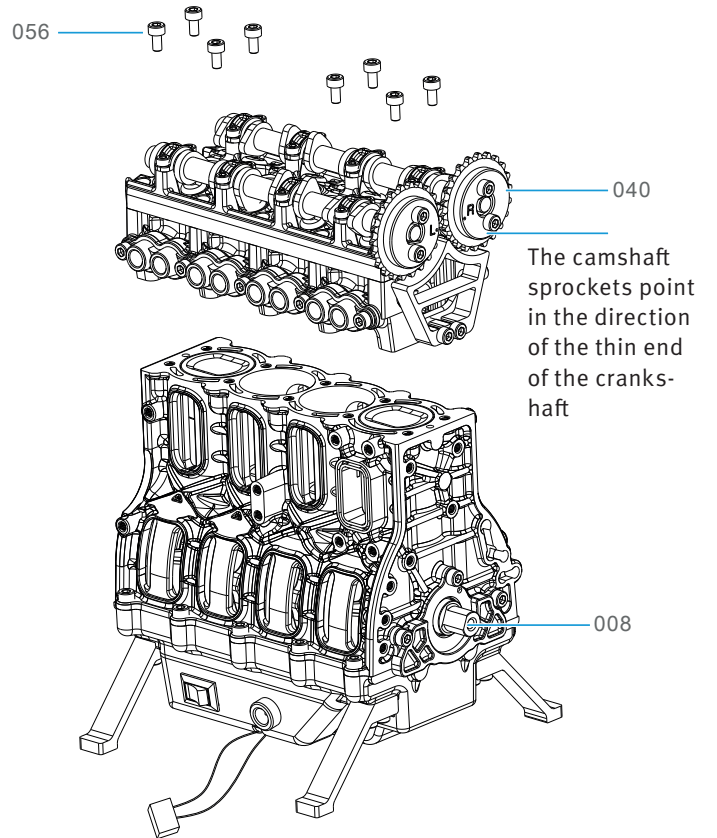
Engine bracket assembly completet



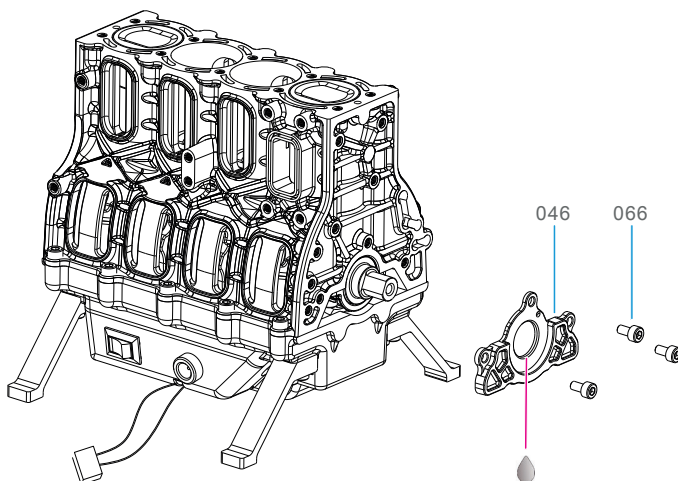
4.2 Installing the front end cover



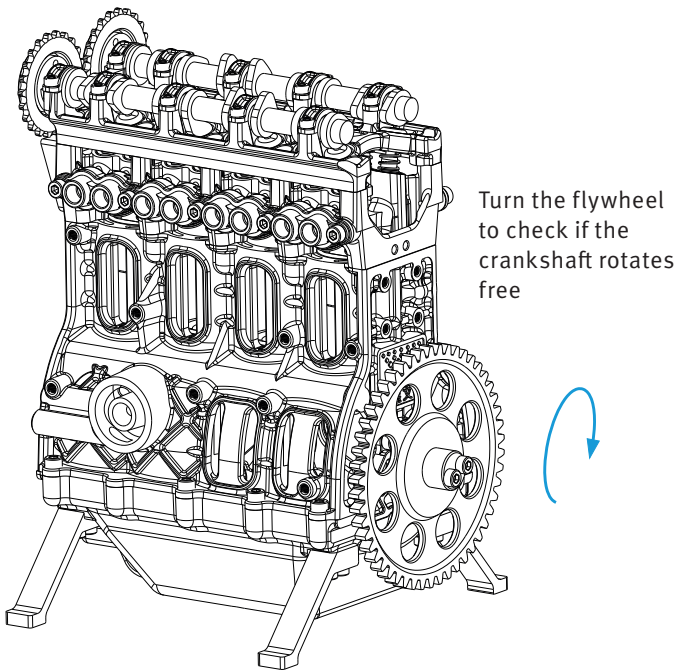
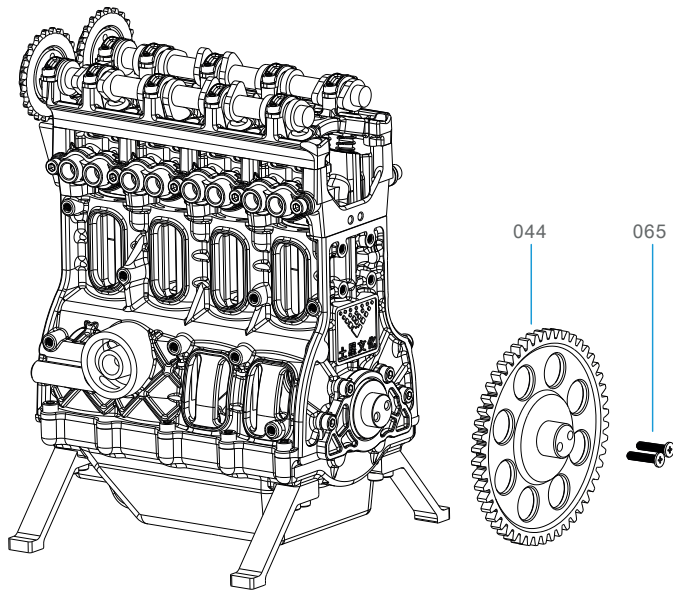
4.4 Cylinder assembly



4.3 Installing the rear end cover

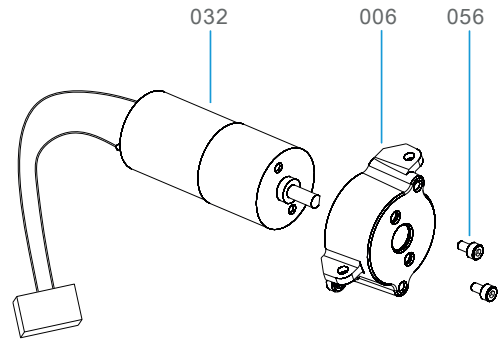


4.5 Installation of the flywheel

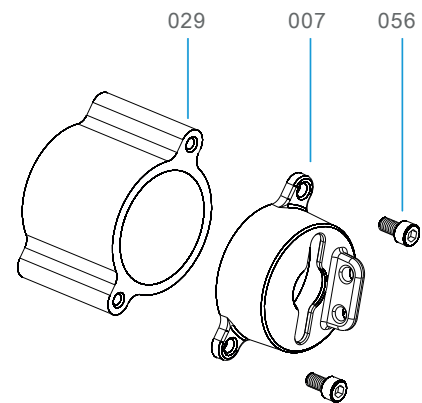


5. Starter motor

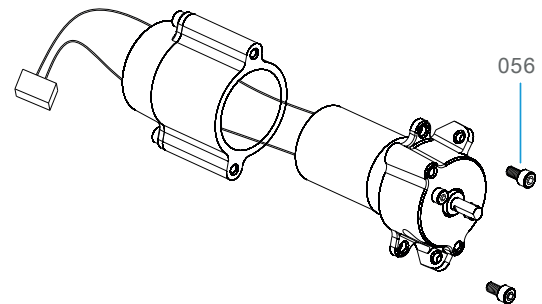
5.1 Install the starter motor front cover



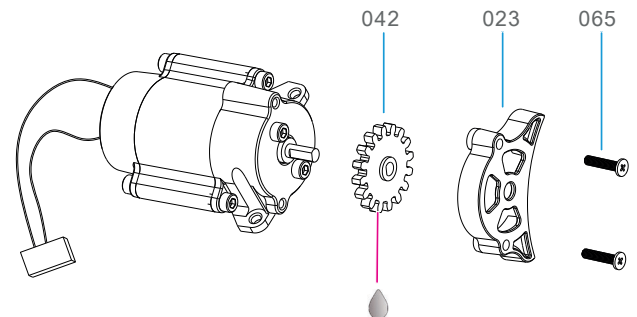
5.2 Install the rear cover of the starter motor



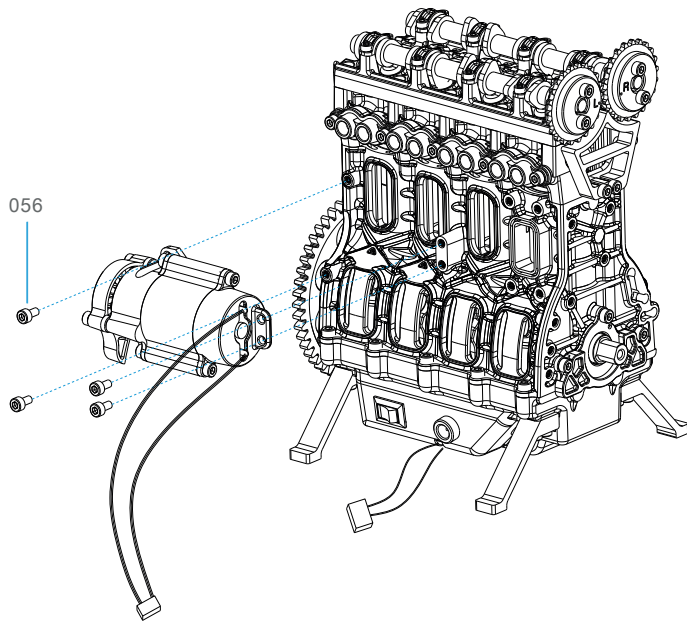
5.3 Front and rear cover docking



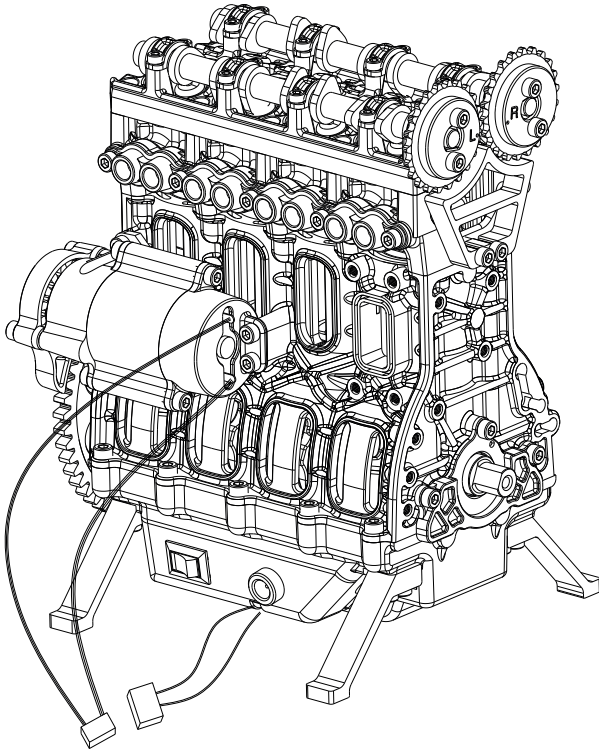
5.4 Install the starter motor gear



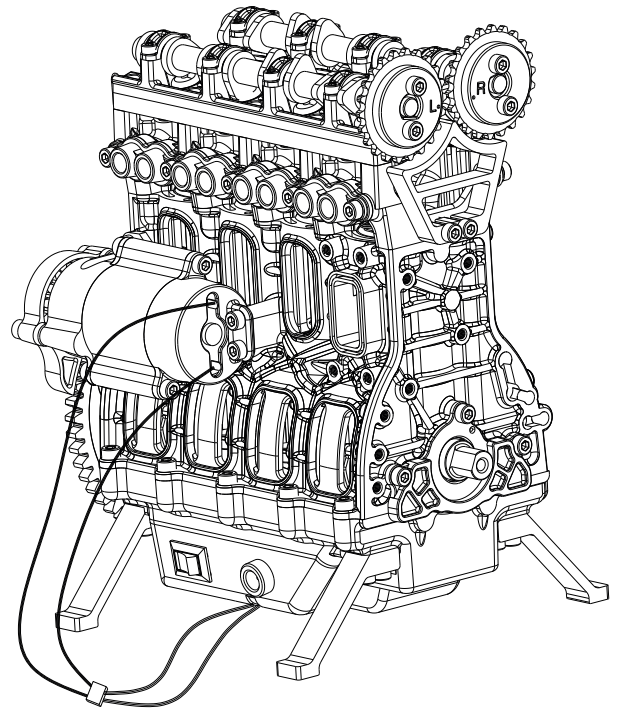
5.5 Starter motor and engine combination



5.6 Link starter motor connector

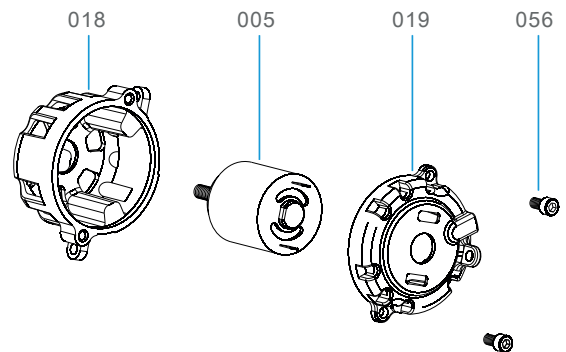


5.7 Check the rotation of the starter motor and the flywheel

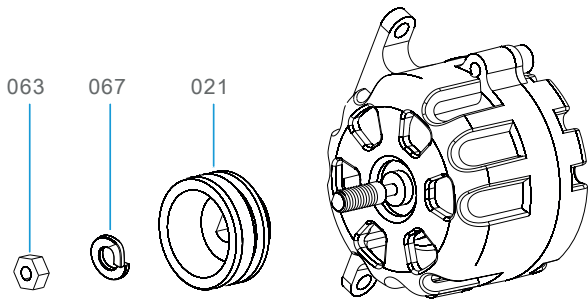


6. Generator assembly

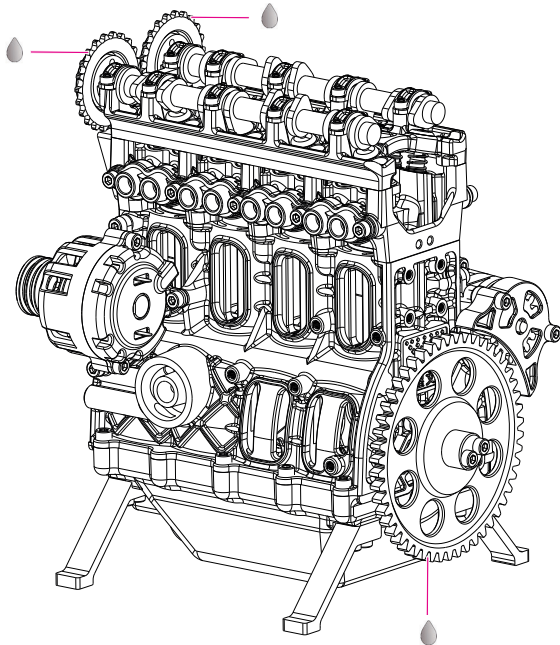
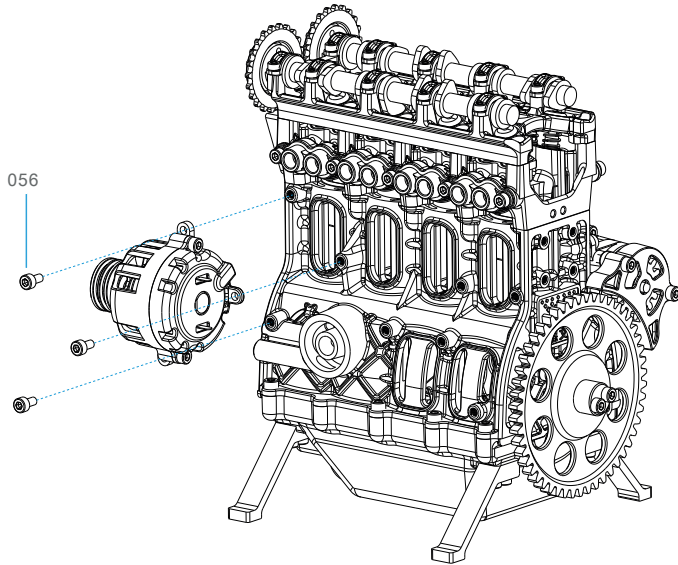
6.1 Combination of generator and generator front cover



6.2 Installing the generator back cover

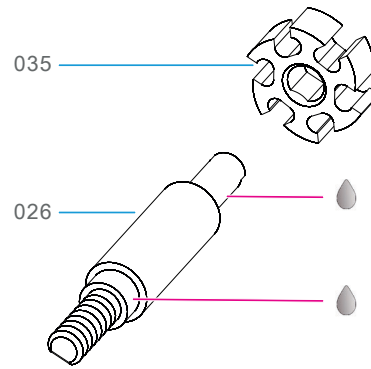


6.3 Generator and cylinder assembly

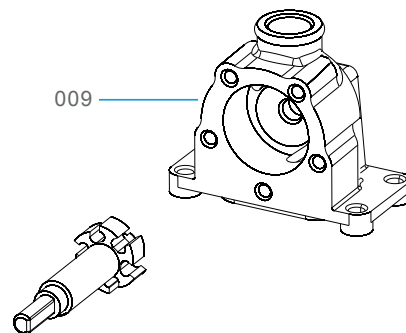


7. Water pump assembly

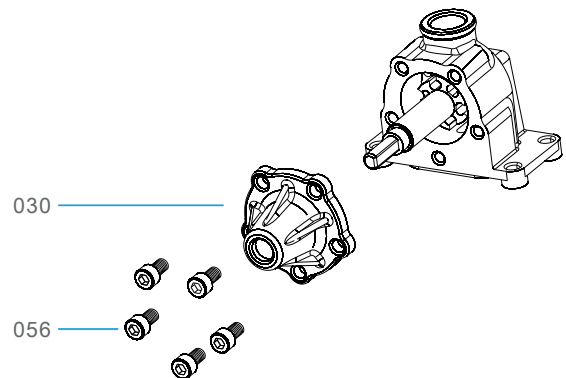
7.1 Impeller, water pump docking



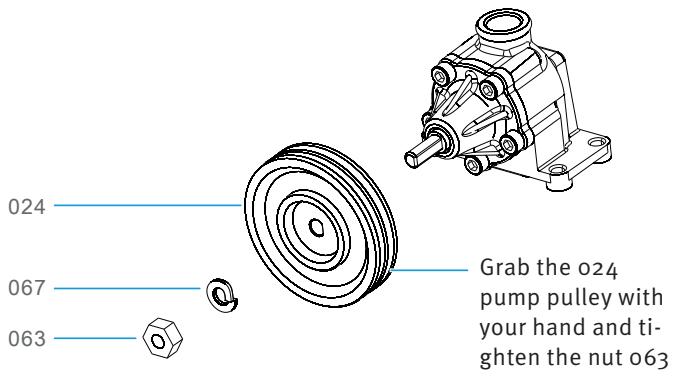
7.2 Water pump shaft, pump box docking



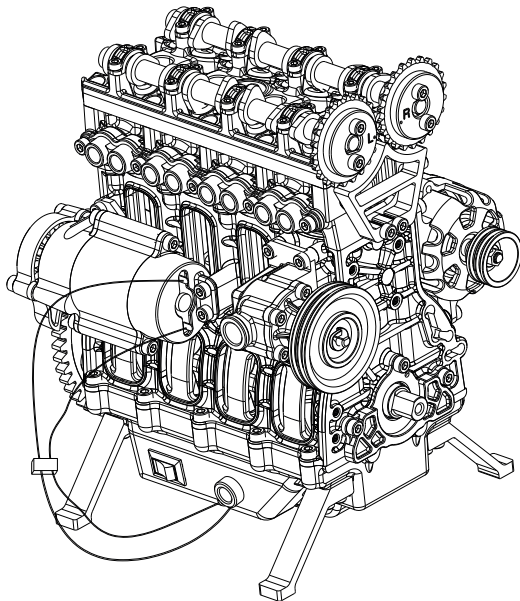
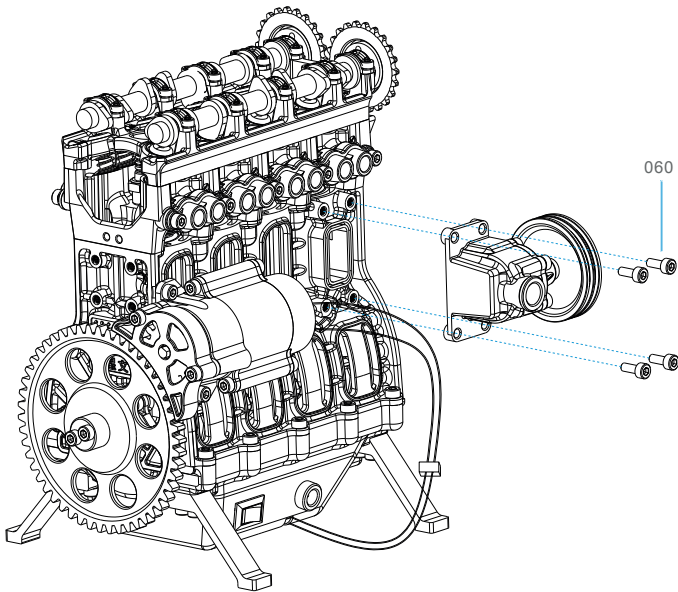
7.3 Installation of the water pump end cover



7.4 Install the water pump pulley

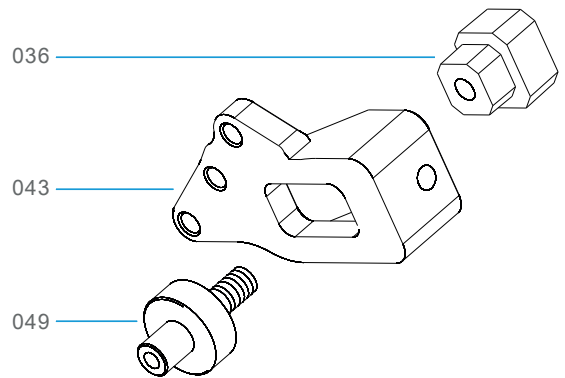


7.5 Water pump and cylinder combination

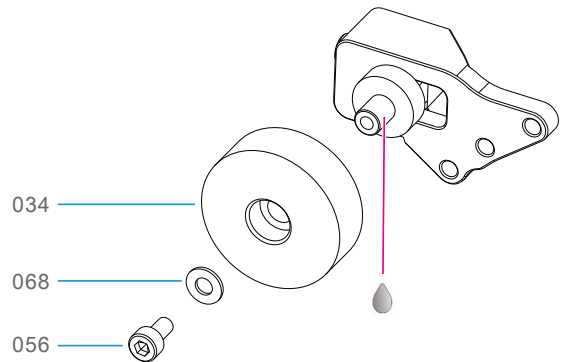


8. Tension set assembly

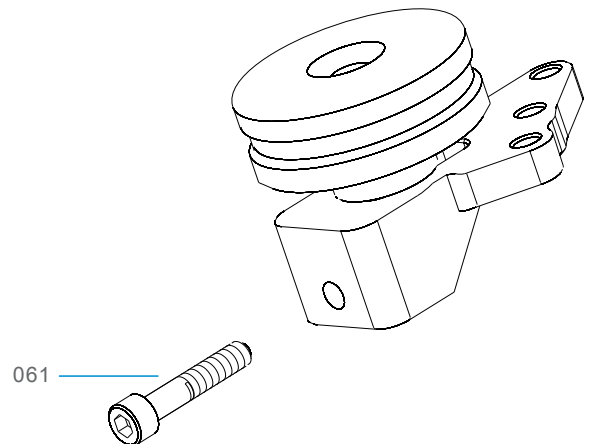
8.1 Tensioning shaft and tensioning block assembly



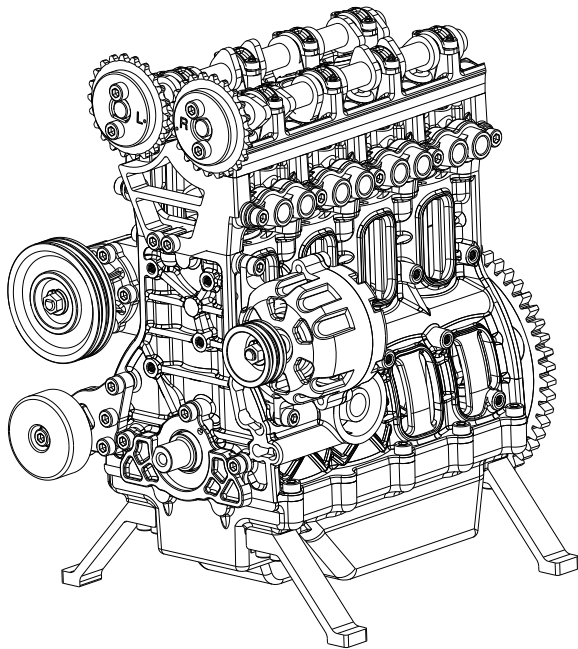
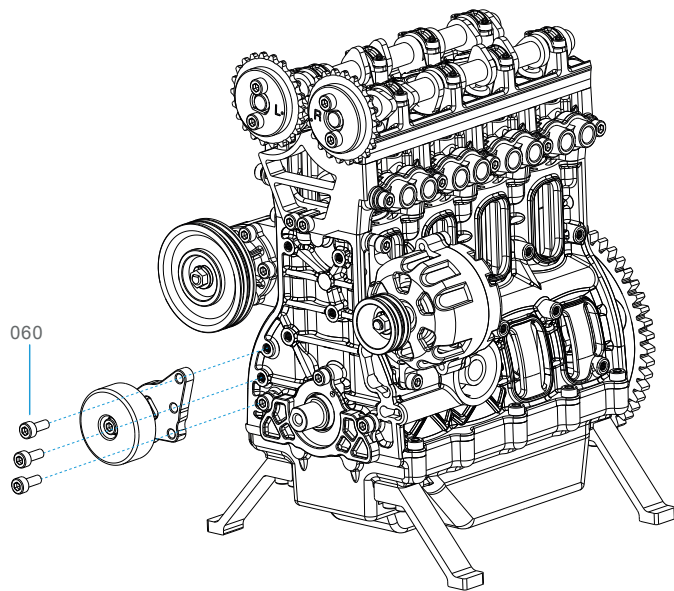
8.2 Installing the tensioner



8.3 Installing the adjusting screw

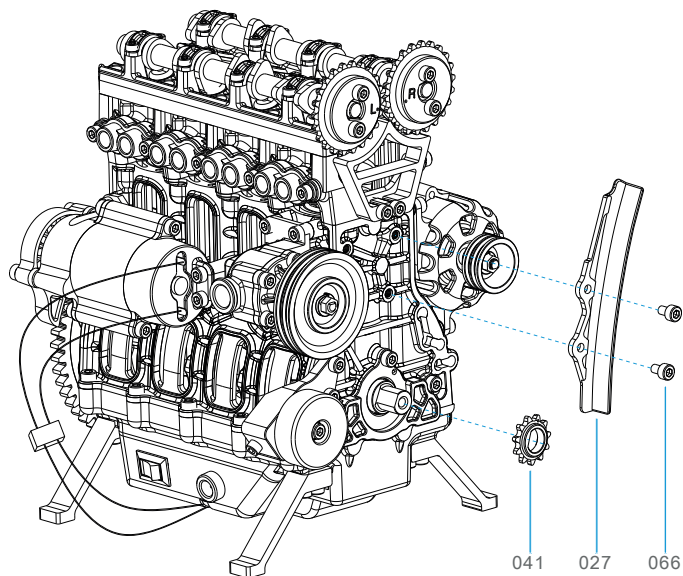


8.4 Tensioning block and cylinder block

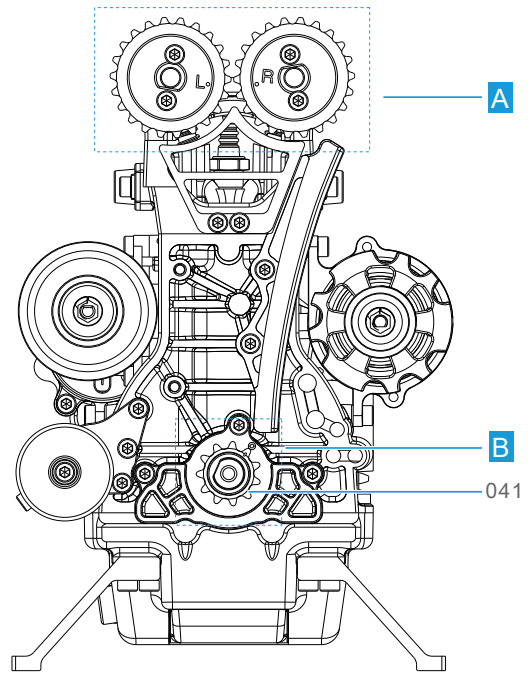


9. Timing gear

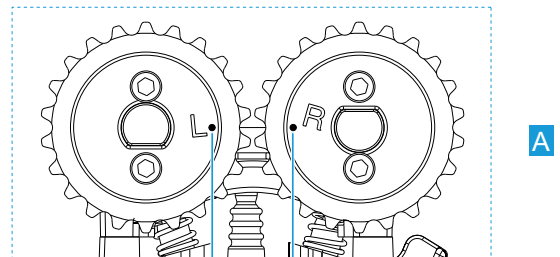
9.1 Installing the chain guide block



9.2 Connecting the gear engagement

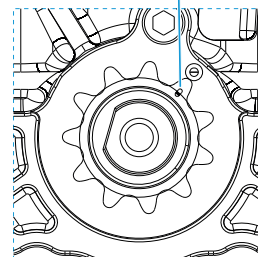


As shown in the figure, align the timing points on the chain of the left and right cam synchronous wheel. Align the crankshaft synchronous wheel with the timing points on the back end cover. Align the three timing points at the same time, and then set the chain.



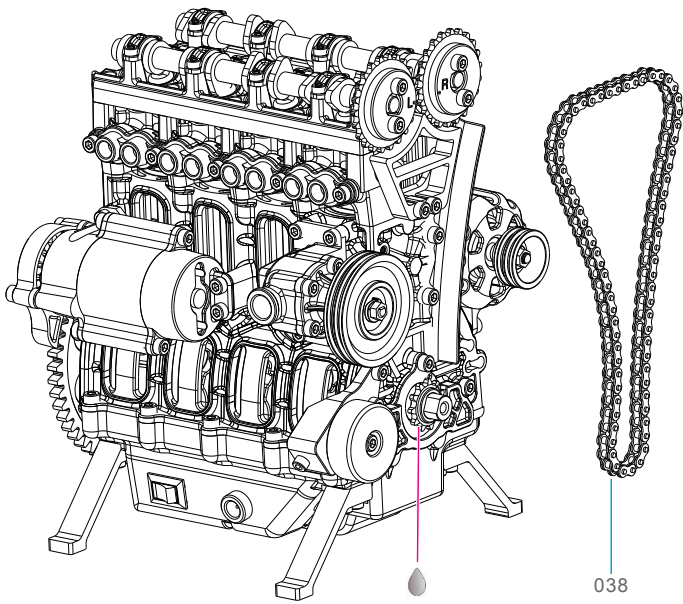
Timing point of cam synchronizing sprocket

Timing point of crankshaft synchronous sprocket



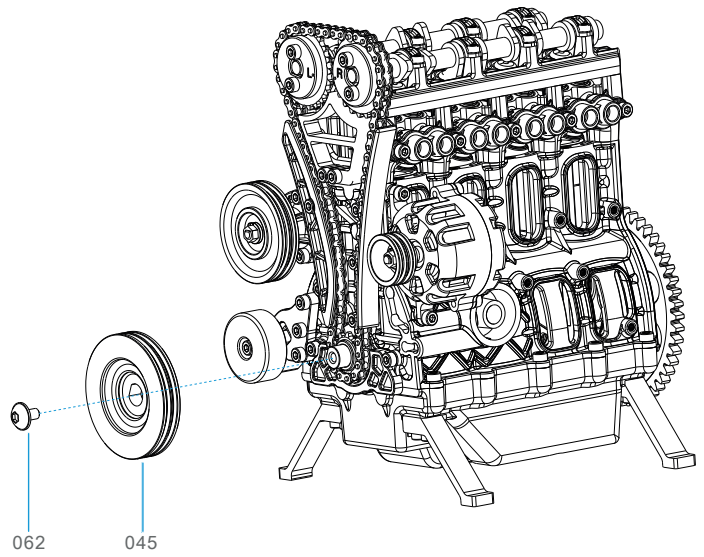
B

9.3 Installing the timing chain

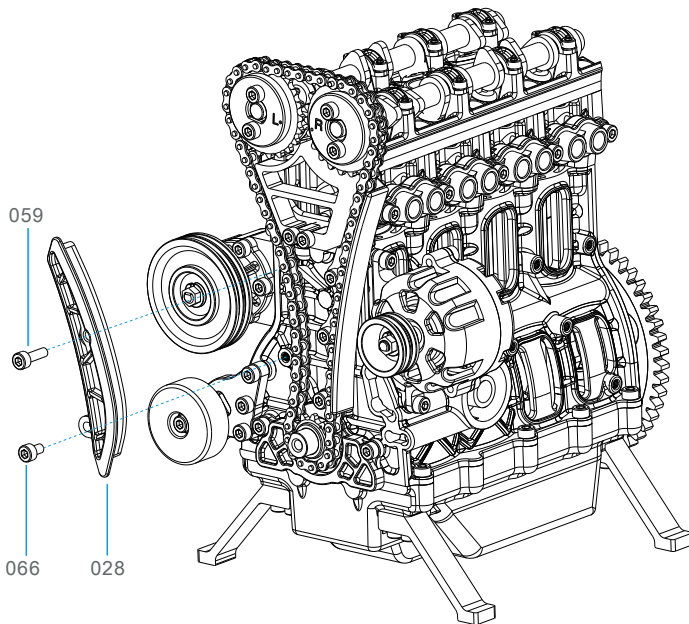


10. Other accessories

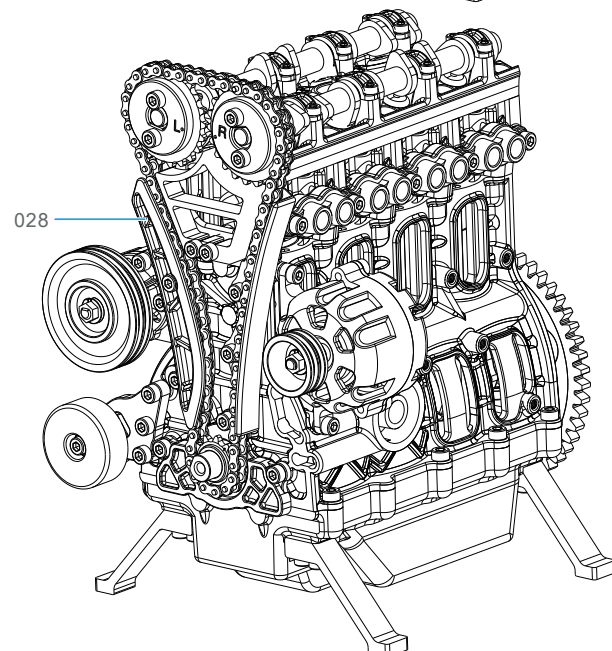
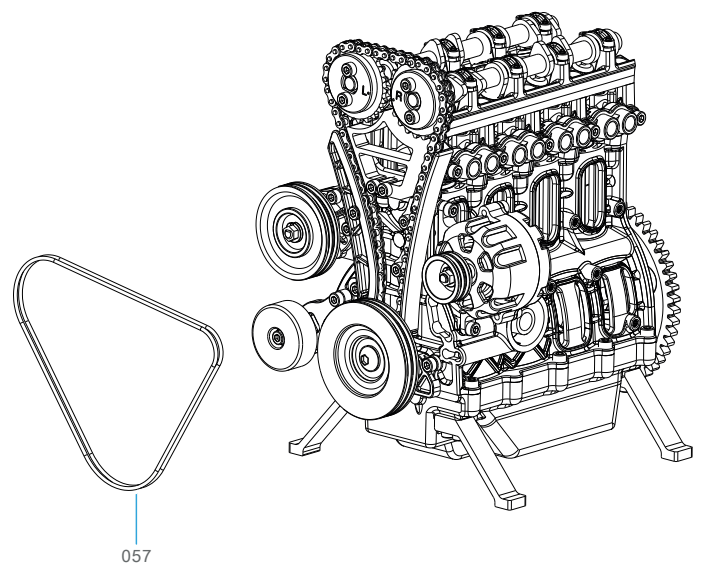
10.1 Installing the crankshaft pulley



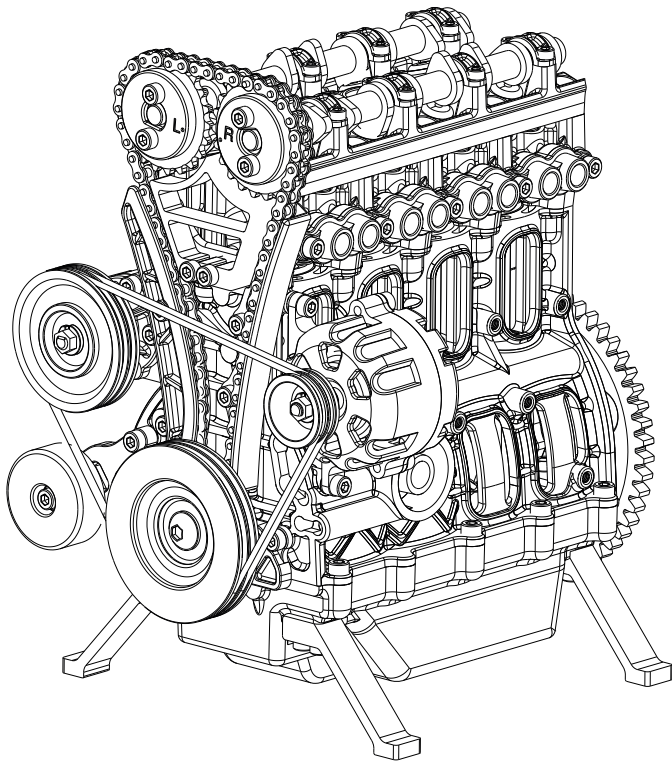
9.4 Mounting chain tensioning set



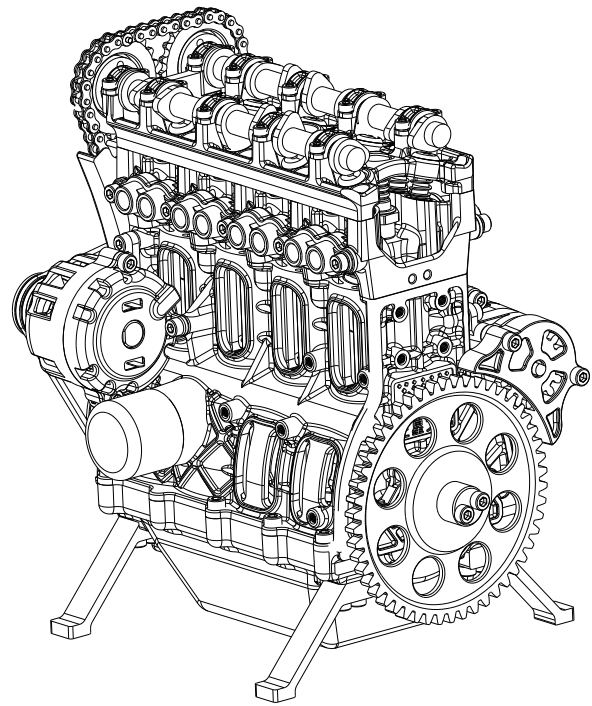
10.2 Installing the belt



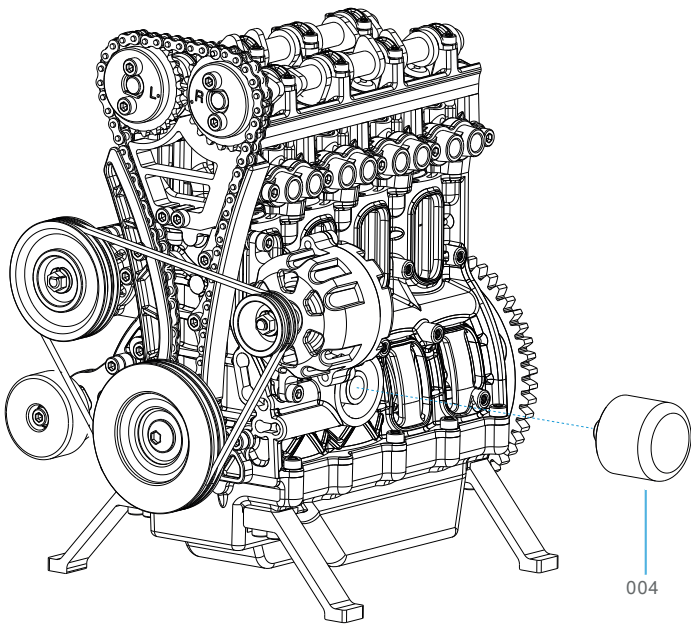
10.3 Installing the oil filter



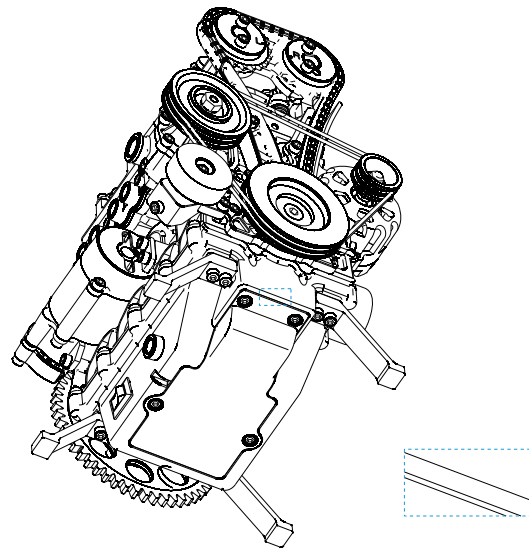
10.4 Connecting power cable





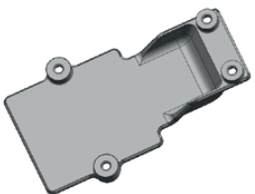
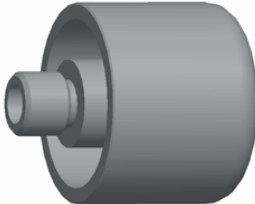




The engine assembly is complete

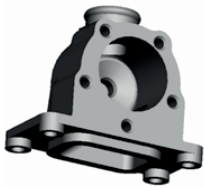
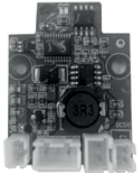








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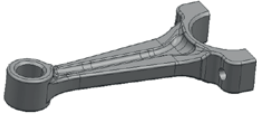










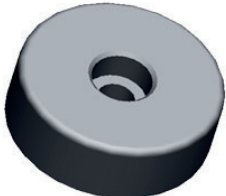

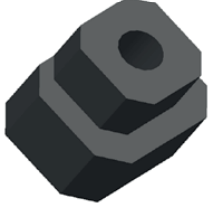




Plug the charging cable into a USB port. A USB connection supplies 5 volts as standard, this voltage must not be exceeded.



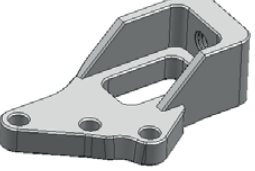
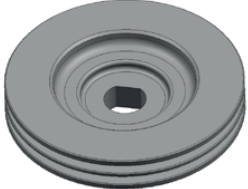
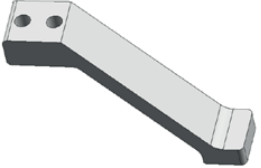
No.	Picture	Part name	Qty.
001		Cylinder block	1
002		Oil sump	1
003		Battery cover	1
004		Oil filter	1
005		Generator	1
006		Front cover of starting motor	1
007		Rear cover of starting motor	1
008		Crankshaft	1

No.	Picture	Part name	Qty.
009		Water pump housing	1
010		Circuit board	1
011		Power switch	1
012		Charging plug	1
013		Battery plug	1
014		Cam seat	1
015		Cylinder head	1
016		Camshaft	2

No.	Picture	Part name	Qty.
017		Mounting bracket of air pipe	2
018		Generator front cover	1
019		Generator rear cover	1
020		Piston	4
021		Generator pulley	1
022		Piston pin	4
023		Front cover of starting motor	1
024		Water pump pulley	1

No.	Picture	Part name	Qty.
025		Piston rod	4
026		Water pump shaft	1
027		Chain guide block	1
028		Chain tension block	1
029		Middle cover of start motor	1
030		End cover of water pump	1
031		Spark plug	4
032		Starter motor	1

No.	Picture	Part name	Qty.
033		Valve	16
034		Tension pulley	1
035		Water pump impeller	1
036		Tension block	1
037		Synchro chain block	1
038		Timing chain	1
039		Left camshaft sprocket	1
040		Right camshaft sprocket	1

No.	Picture	Part name	Qty.
041		Crankshaft synchro sprocket	1
042		Starting motor gear	1
043		Tension base	1
044		Flywheel	1
045		Crankshaft pulley	1
046		Rear end cap	1
047		Front end cap	1
048		Engine mount	4

No.	Picture	Part name	Qty.
049		Tension shaft lever	1
050		Connecing rod bearing shell	4
051		Crankshaft bearing	5
052		Valve cover	16
053		Valve cap	16
054		Valve spring	16
055		Camshaft bearing	10
056		M3X6 screw	85

No.	Picture	Part name	Qty.
057		Belt	2
058		M2.5X5 screw	22
059		M3X10 screw	9
060		M3X8 screw	8
061		M4X16 screw	1
062		M4X6 screw with pad	1
063		M4 nut	2
064		3.0 snap ring	8

No.	Picture	Part name	Qty.
065		M3X14 screw	16
066		M3X5 screw	10
067		M4 spring washer	2
068		M3 gasket	1
069		M3 spring washer	8
070		M3X12 screw	2



Part no. 532665



Part no. 532669



Part no. 532666

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