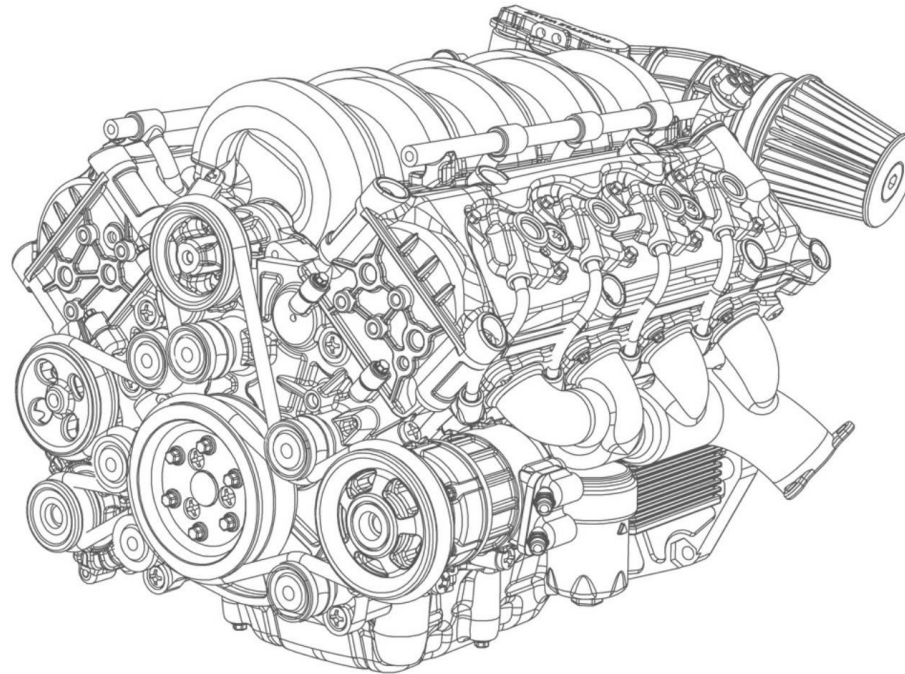


Welcome to the MAD Engine simulation world



Please follow the instructions before installation

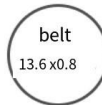
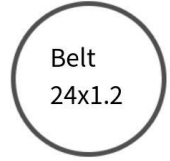
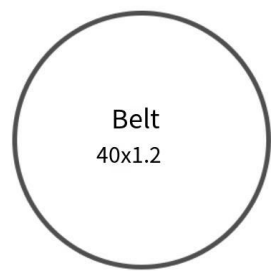
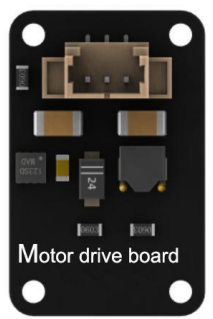
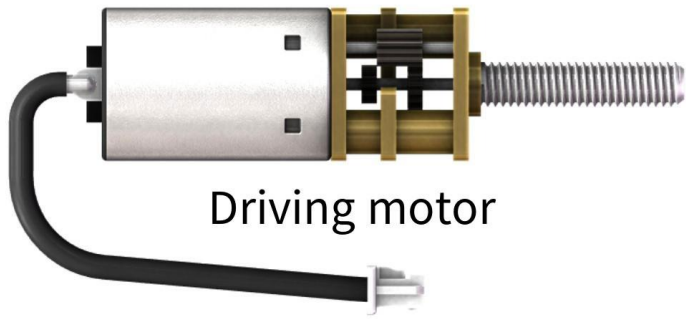
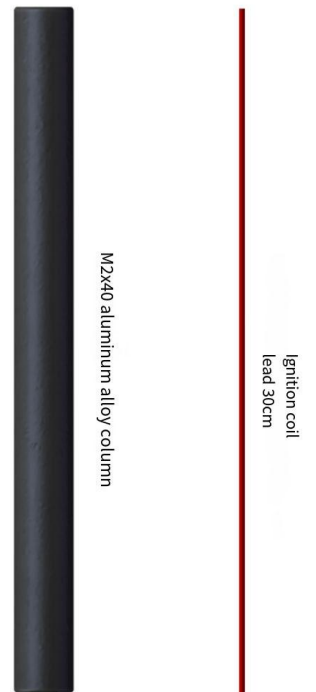
Follow the sequence of installation steps and installation precautions strictly

# Parts list

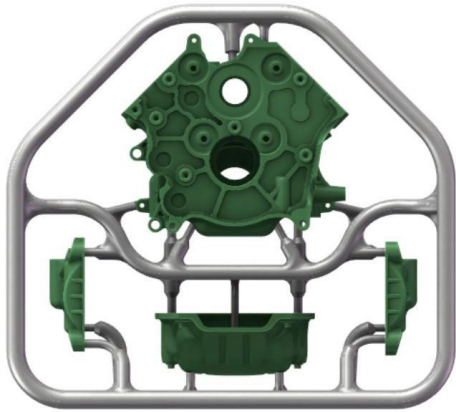
- PA1x3 - 39pcs  
4 or 5 extra
- PA1x4 - 46pcs  
4 or 5 extra
- PA1x6 - 7pcs
- PA1x8 - 4pcs
- PA1.4x5 - 6pcs
- PM1x6 - 7pcs
- PM1x8 - 4pcs
- Half round head hexagon M2x12 - 2pcs
- Countersunk head hexagon M2x12 - 4pcs
- Countersunk socket socket M2x14 - 2pcs

- bearing 5x8x2 - 2pcs
- bearing 3x8x4 - 1pcs
- bearing 2x5x1.5 - 6pcs
- bearing 1x3x1 - 14pcs

- Threaded bushing 4xM3x4 - 1pcs
- Threaded bushing 3xM2x3 - 5pcs
- Threaded bushing 3xM2x2.5 - 1pcs
- Threaded bushing 3xM2x2 - 2pcs
- Threaded bushing 2xM1x2 - 14pcs
- Threaded bushing 2xM1x0.8 - 1pcs



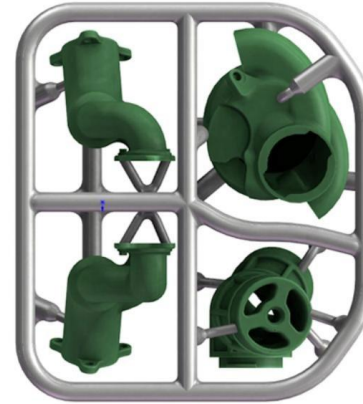
Panel introduction (green is part entity)



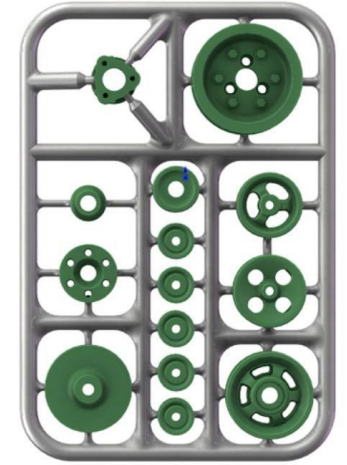
Part A (master cylinder block, oil pan, etc.)



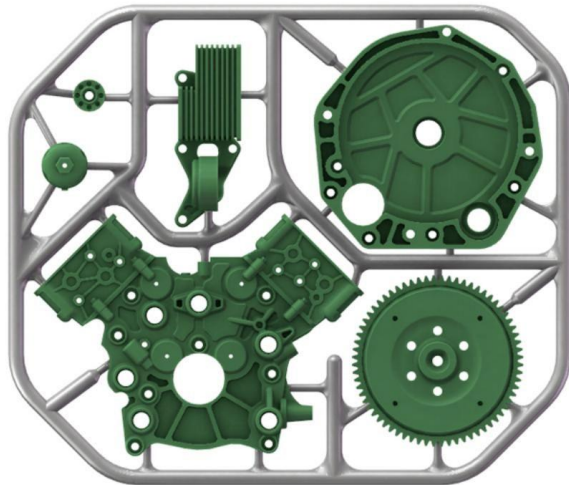
Part B (cylinder head, intake tank)



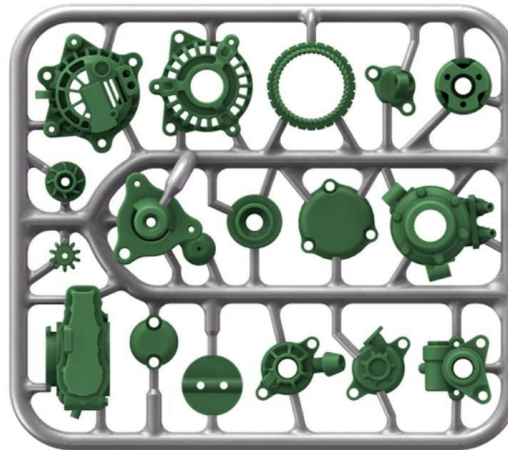
Part C (exhaust pipe, intake manifold, etc.)



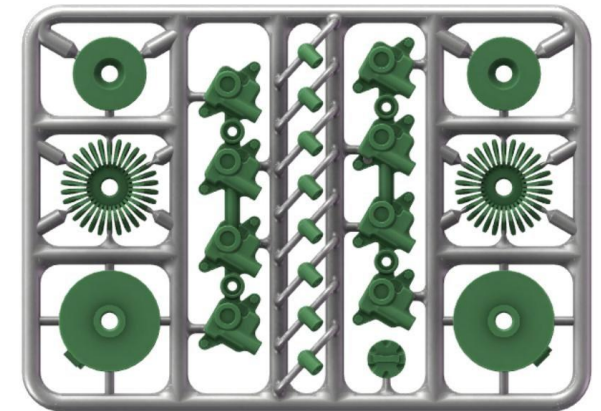
Part W (Drive wheel group)



Part D (cylinder front cover, flywheel panel, machine filter, etc.)

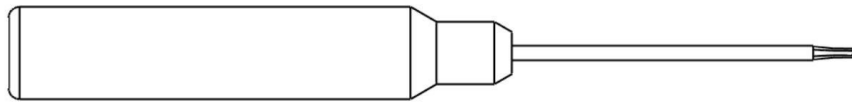


Part E (generator, water pump, compressor, etc.)

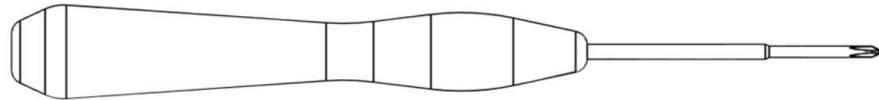


Part E (ignition coil, air filter, etc.)

## Prepare tools before installation



M1.5 hex head screwdriver



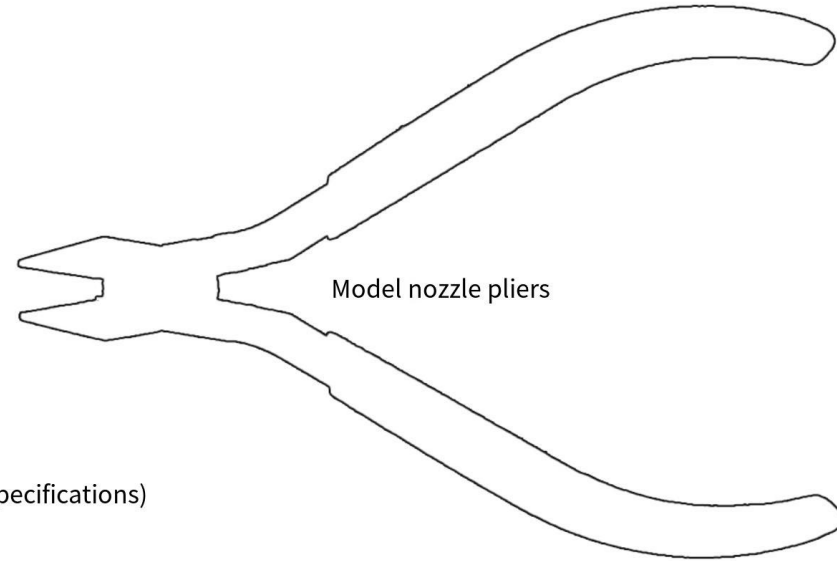
PH000 Phillips screwdriver (large amount, recommended to use better quality specifications)



Pen knife



Curved nose needle-nose tweezers

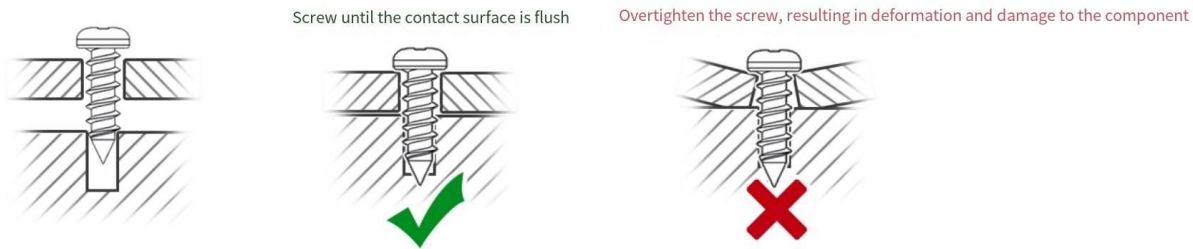


Model nozzle pliers

Sanding sandpaper  
(optional) for fine painting  
users

# Installation precautions

Because the relevant parts of this product are relatively fine, pay special attention to the strength when installing, so as not to damage (refer to the following figure)



The screws in the parts distinguish PA (coarse teeth tapping) and PM (fine teeth), please carefully identify the small specifications in the parts (screws, bearings, threaded bushings, etc.) Please take care to avoid losing the installation of several color system tips, please pay careful attention

Orange pay special attention to the installation strength

purple.

Screw glue to use

Please leave the screw glue to set initially for about 10 minutes after installation

blue.

Pay attention to operating instructions

Do not assemble on a workbench similar to a cutting mat

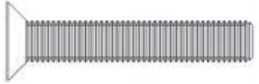
Hard cutting pads are easy to engine small parts

The bounce of the pad causes loss

It is recommended to use a soft solid color tablecloth for assembly



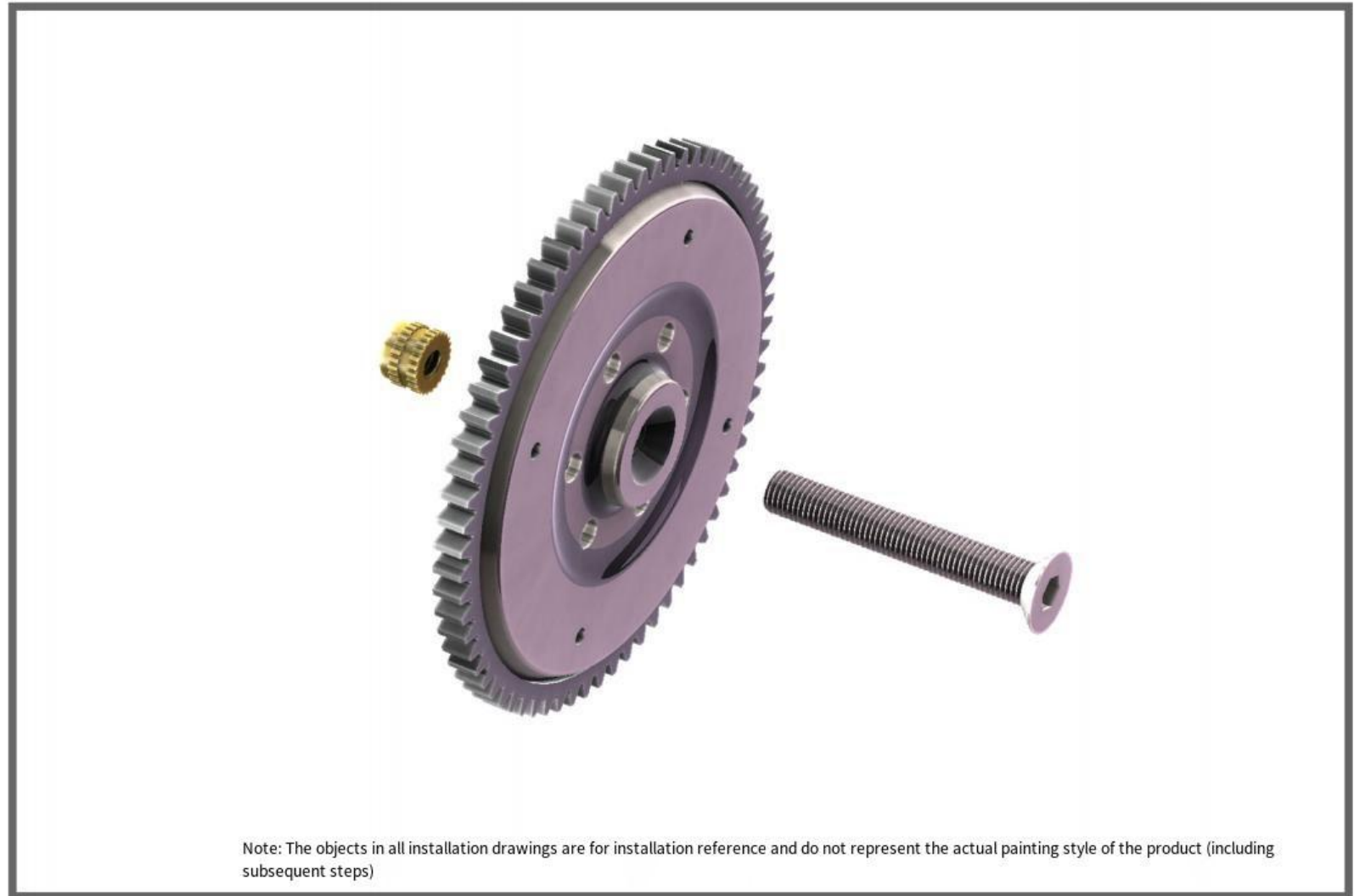
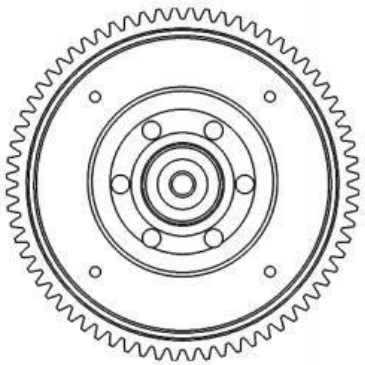
KM2x12



Shaft sleeve M2×2 thread



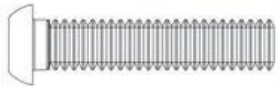
Flywheel disc



Note: The objects in all installation drawings are for installation reference and do not represent the actual painting style of the product (including subsequent steps)

Installation Step 01

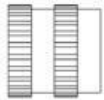
M2x12



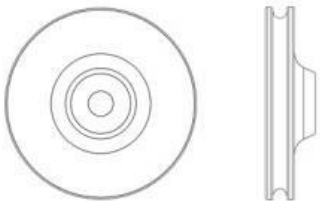
Bearing 2x5x1.5



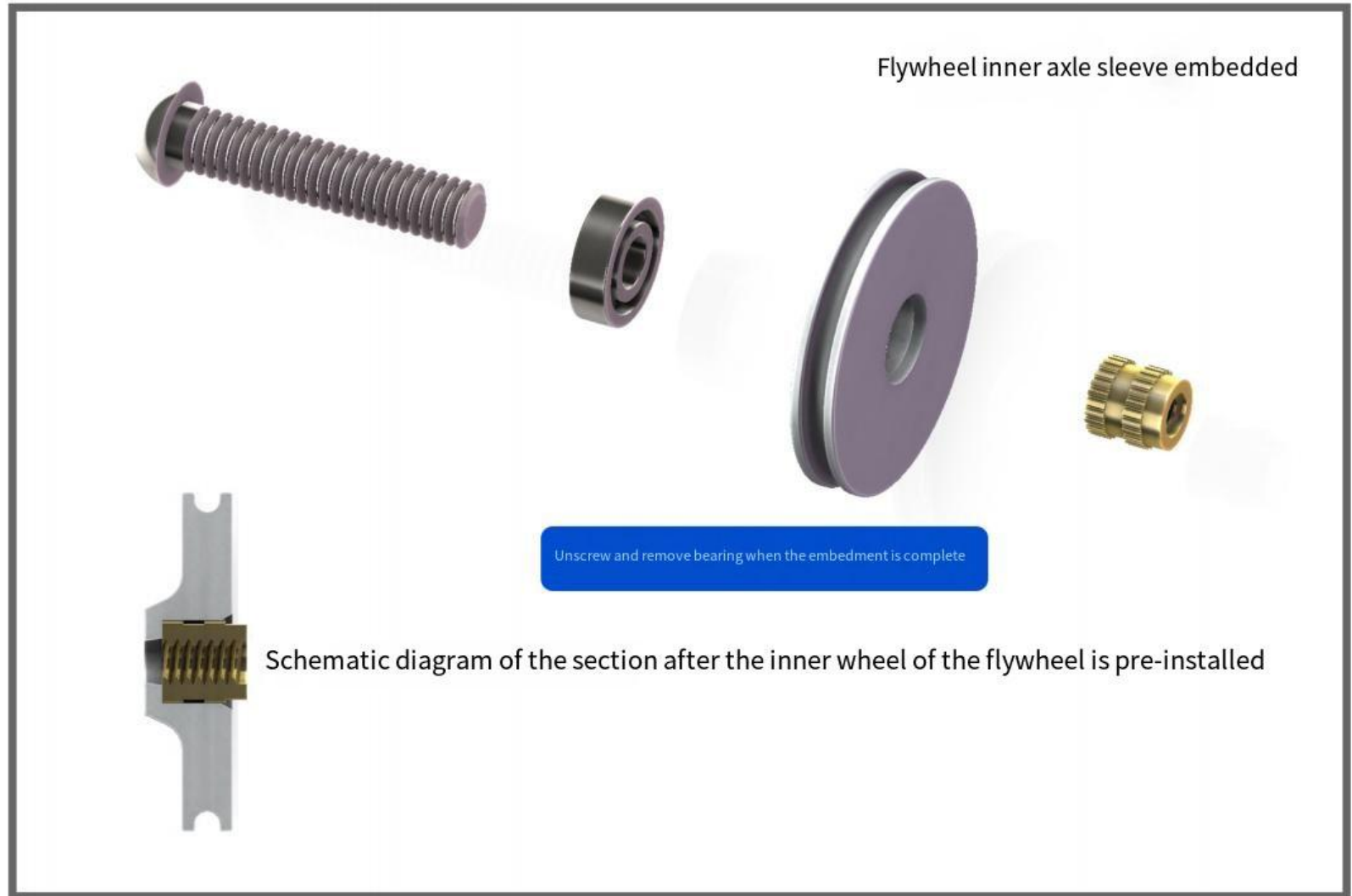
Threaded bushing 3xM2x3



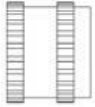
Flywheel inner wheel



Installation Step 02



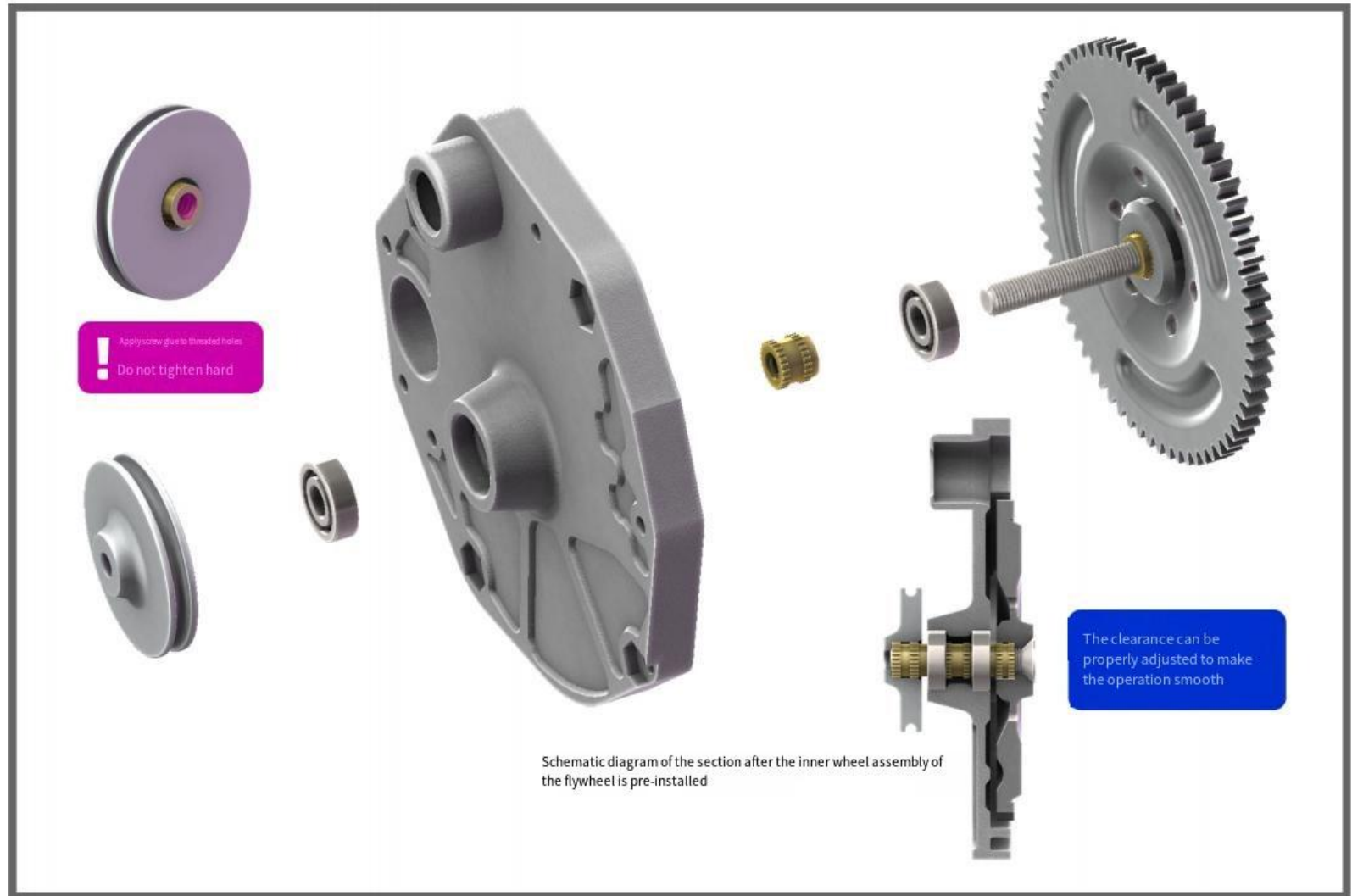
Threaded bushing M2x2.5



Bearing 2x5x1.5



2pcs

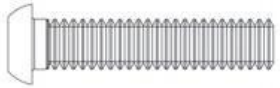


Schematic diagram of the section after the inner wheel assembly of the flywheel is pre-installed

Installation Step 03



M2x12



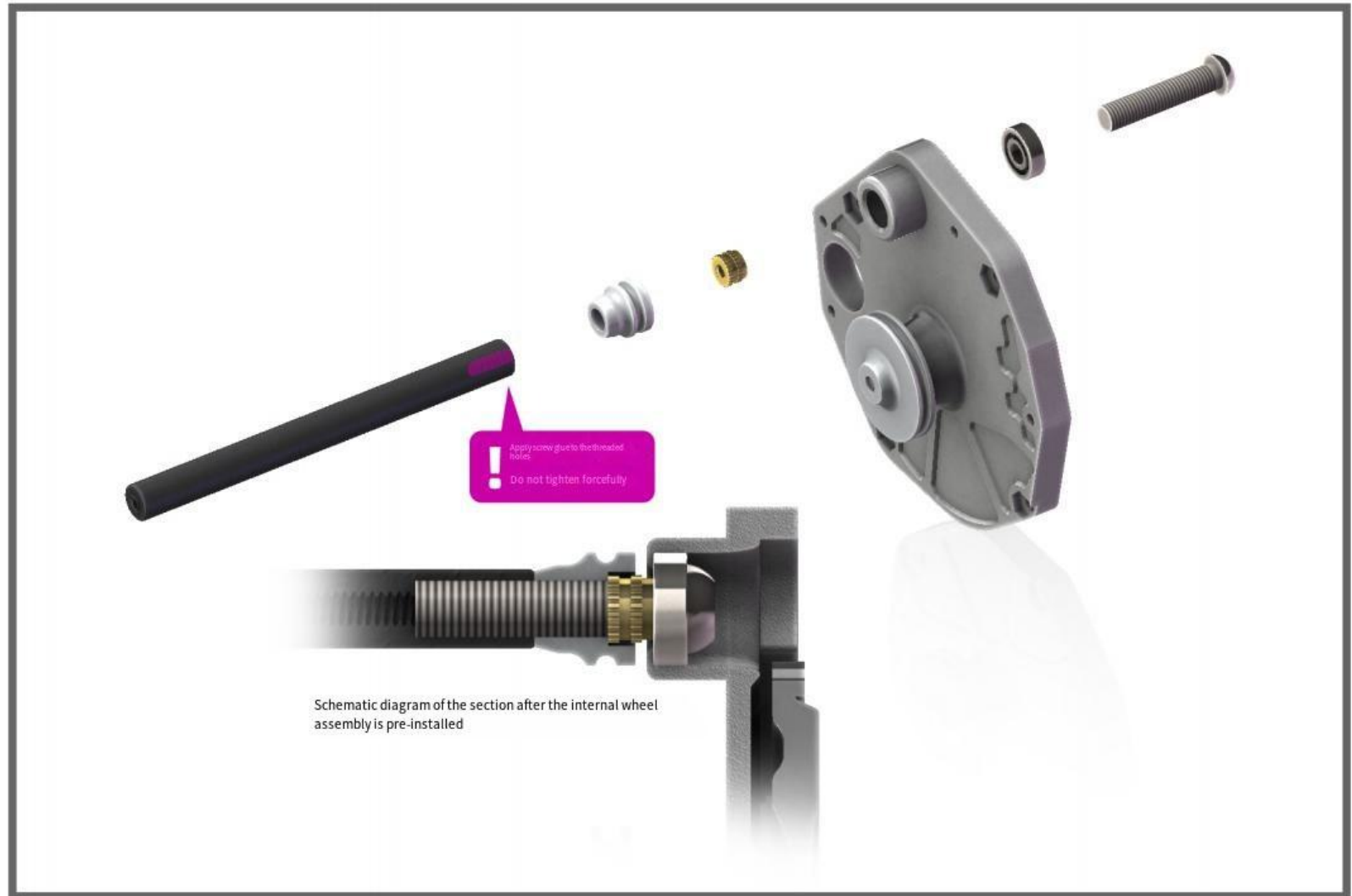
Shaft sleeve M2x2 thread



Bearing 2x5x1.5



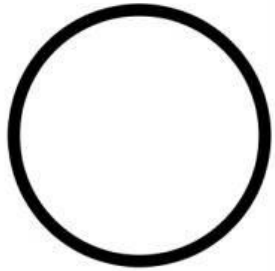
1pcs



Schematic diagram of the section after the internal wheel assembly is pre-installed

Installation Step 04

Belt 13.6x0.8

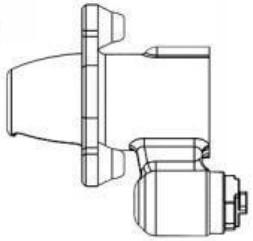


Install the inner wheel belt



Installation Step 05

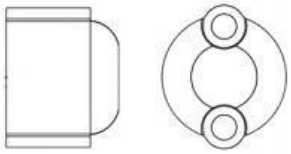
Starting machine



Starting engine ratchet



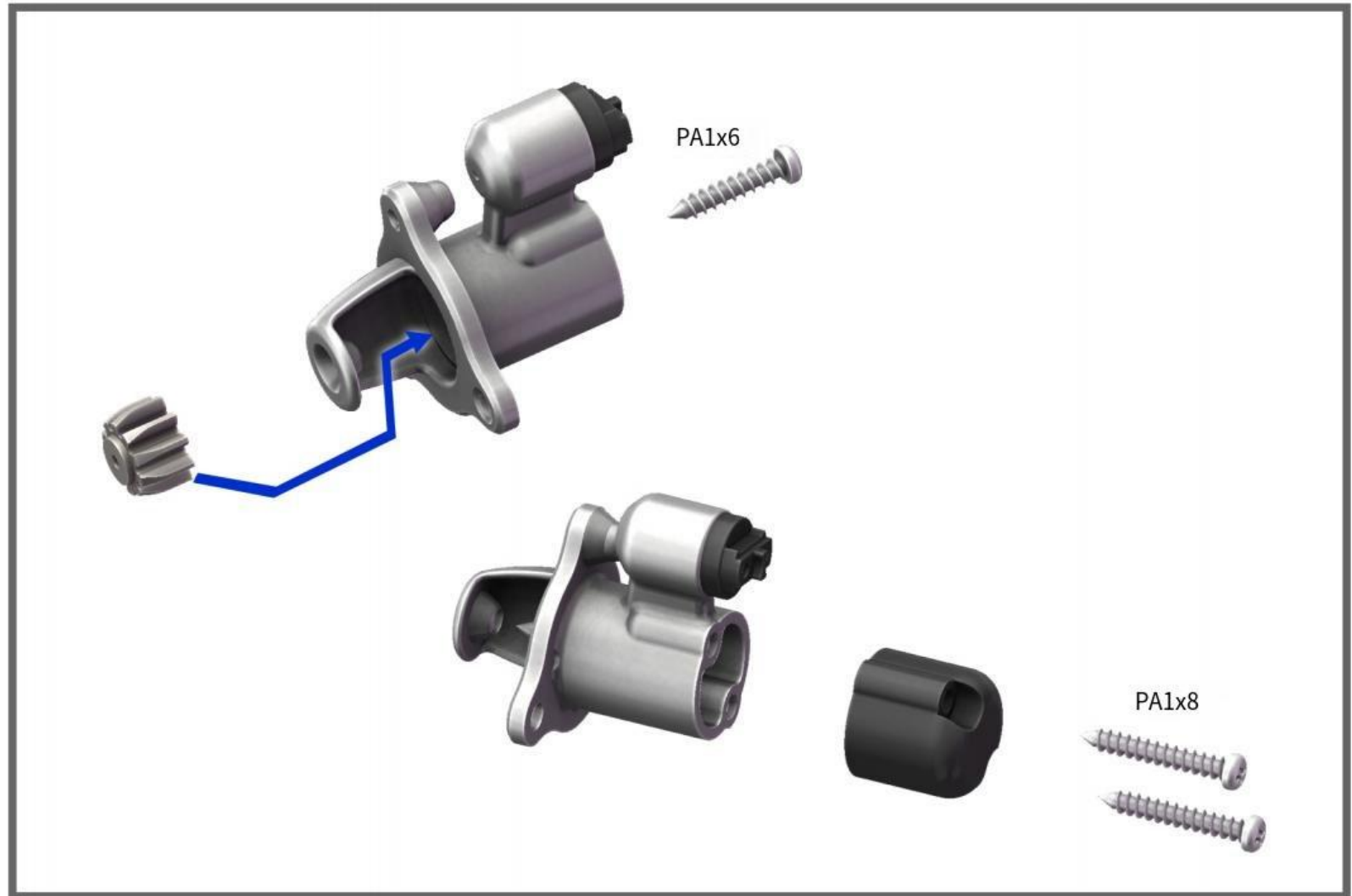
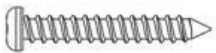
Start the tail cover



PA1x6



PA1x8 2pcs

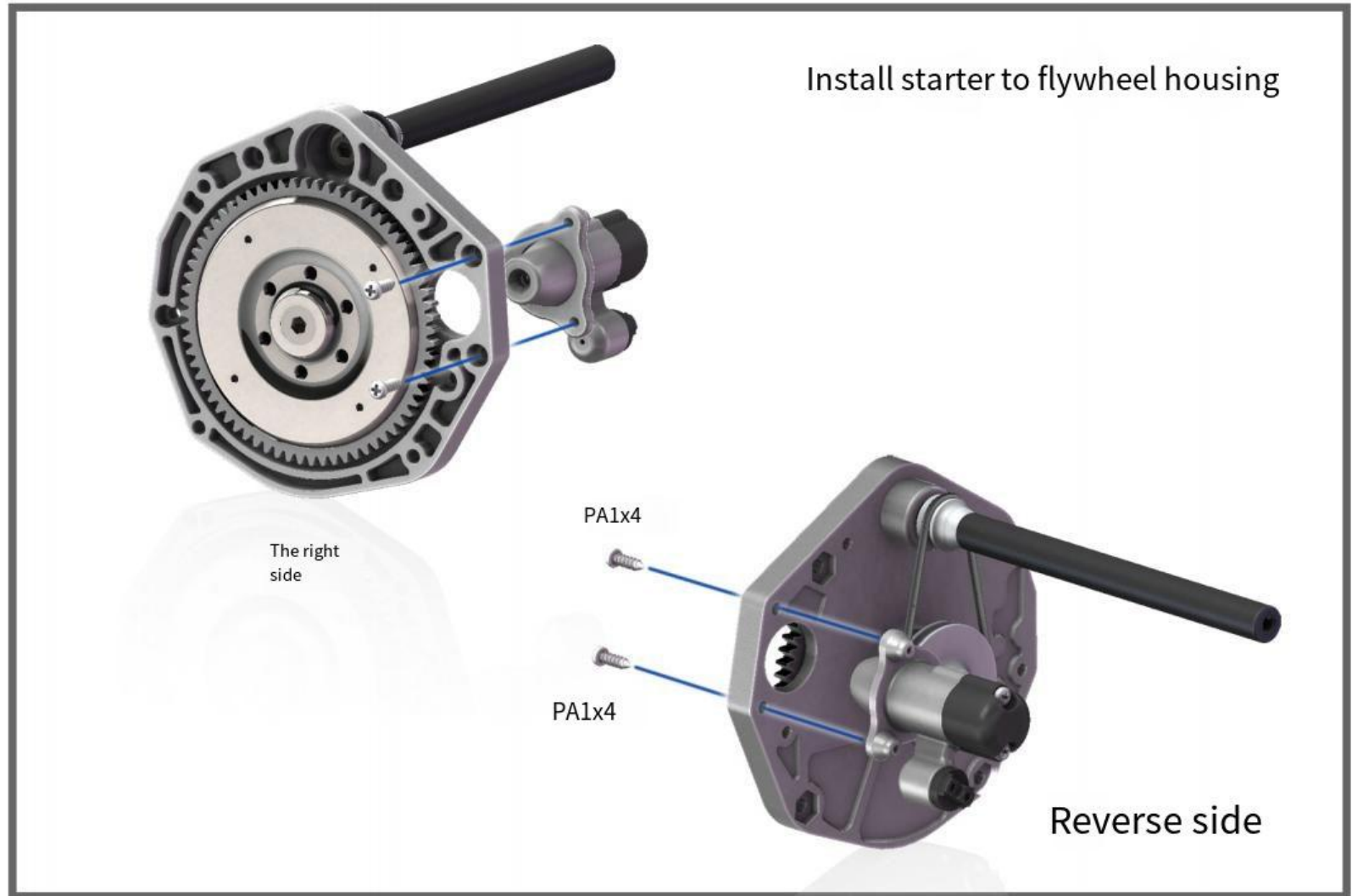
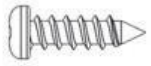


PA1x6

PA1x8

Installation Step 06

PA1x4 2pcs



Install starter to flywheel housing

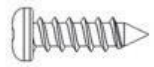
The right side

PA1x4

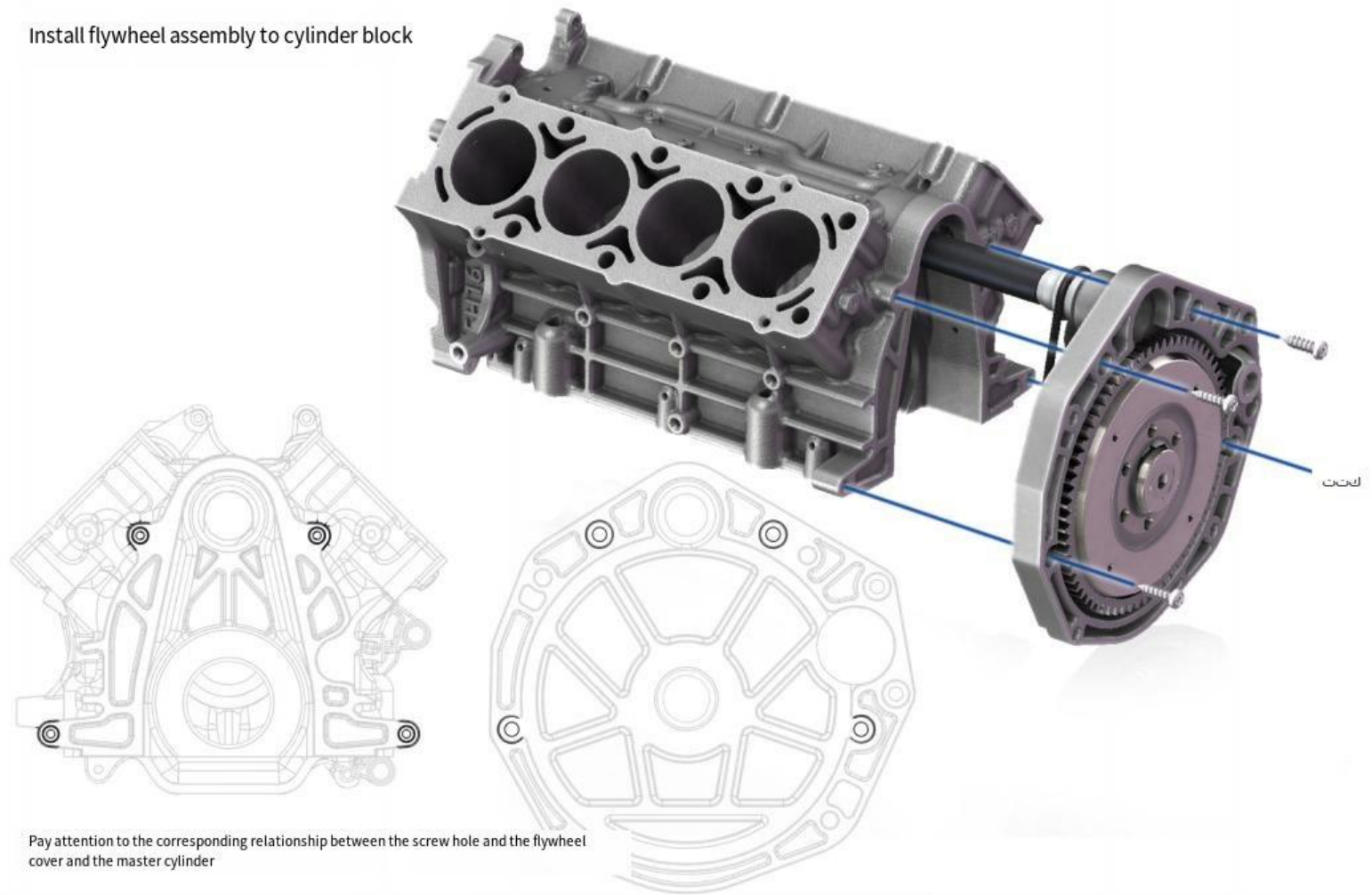
PA1x4

Reverse side

PA1x4 4pcs



Install flywheel assembly to cylinder block

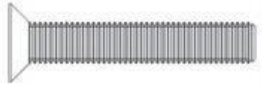


Pay attention to the corresponding relationship between the screw hole and the flywheel cover and the master cylinder

Installation Step 08



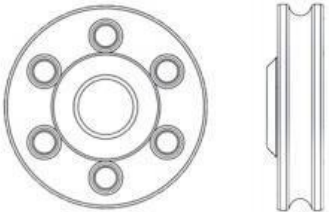
KM2x12



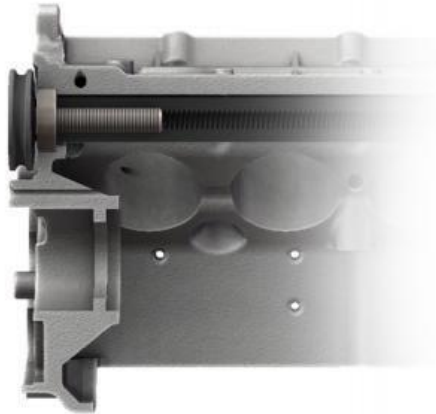
Bearing 2x5x1.5



Drive center wheel

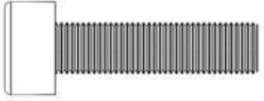


Install the front inner wheel

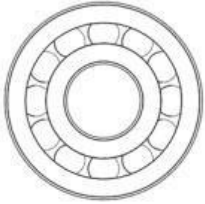


Installation completed section reference drawing

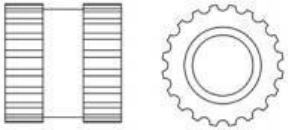
M3x12



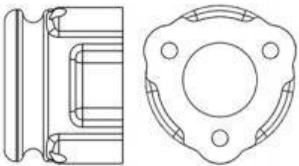
Bearing 3x8x4



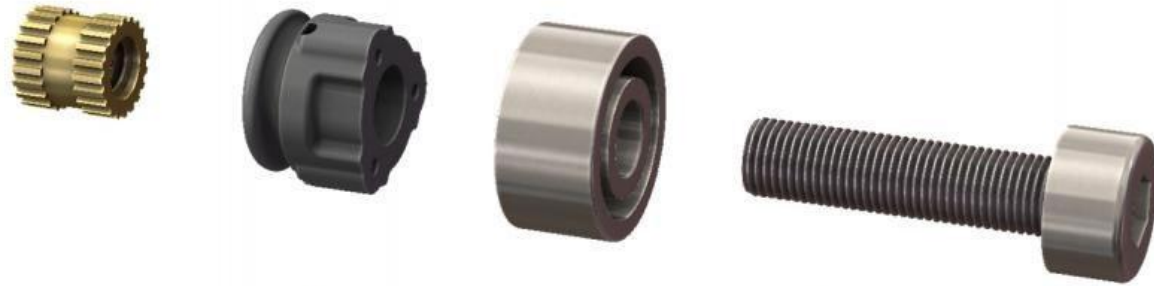
M3x4 threaded sleeve



Crankshaft sleeve

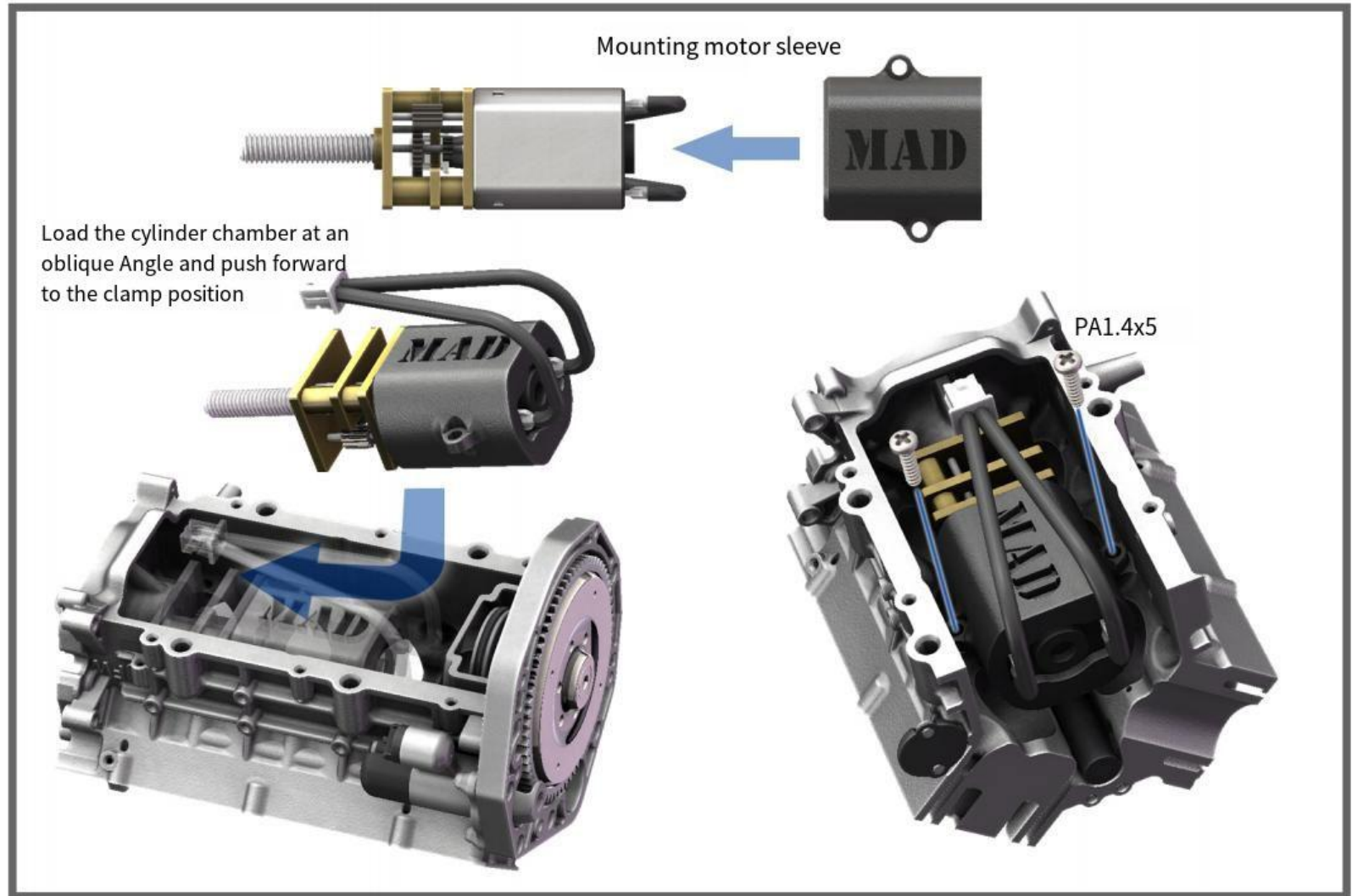
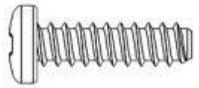


Crankshaft thread sleeve embedded



Unscrew and remove bearings when the embedment is complete

PA1.4x5 2pcs

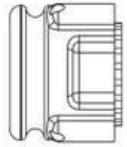


Mounting motor sleeve

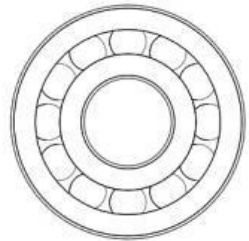
Load the cylinder chamber at an oblique Angle and push forward to the clamp position

PA1.4x5

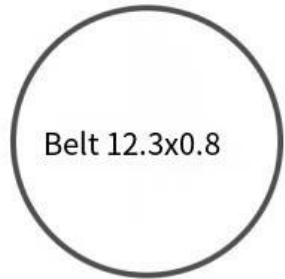
Crankshaft sleeve assembly



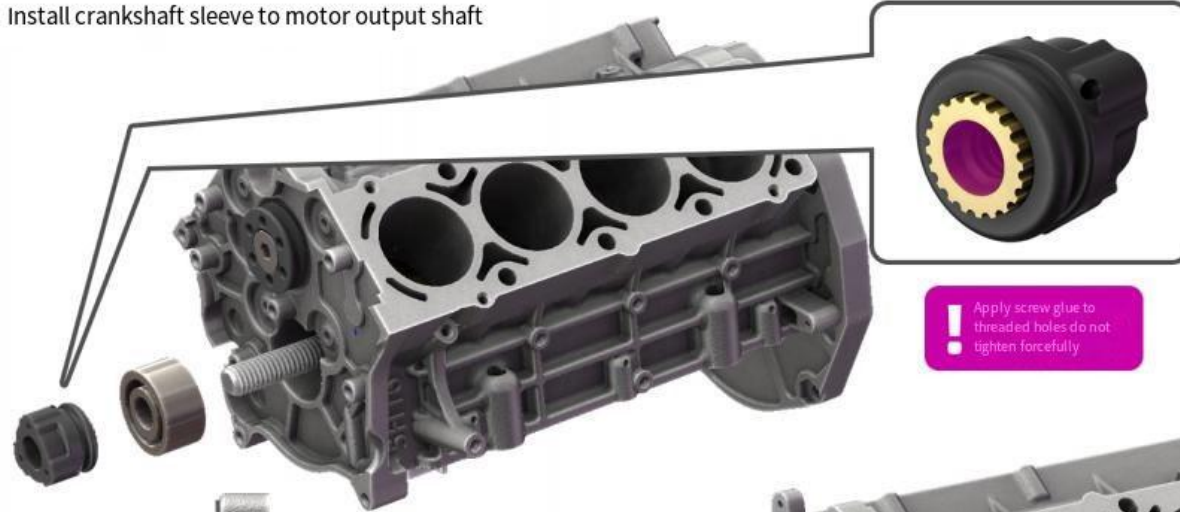
Bearing 3x8x4



Belt 12.3x0.8



Install crankshaft sleeve to motor output shaft



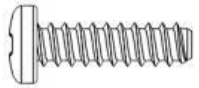
Pay attention to the adjustment position

Align the drive belt axis line

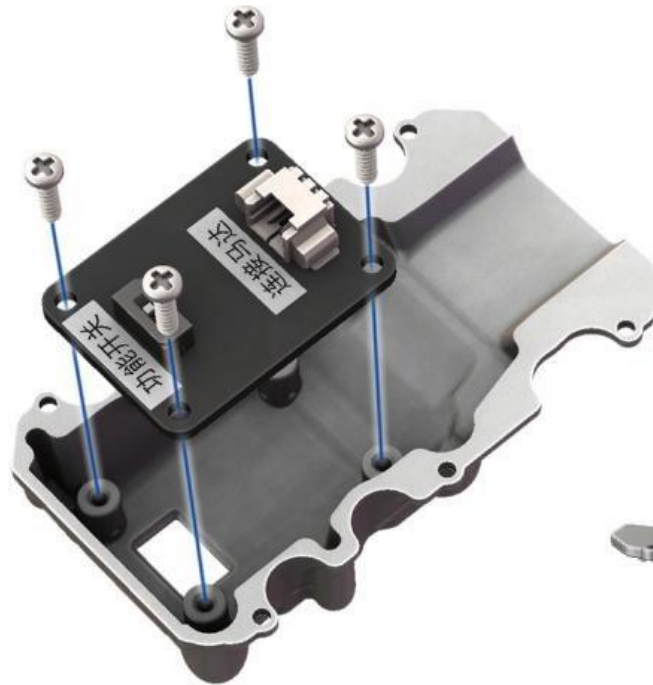


Install the drive belt

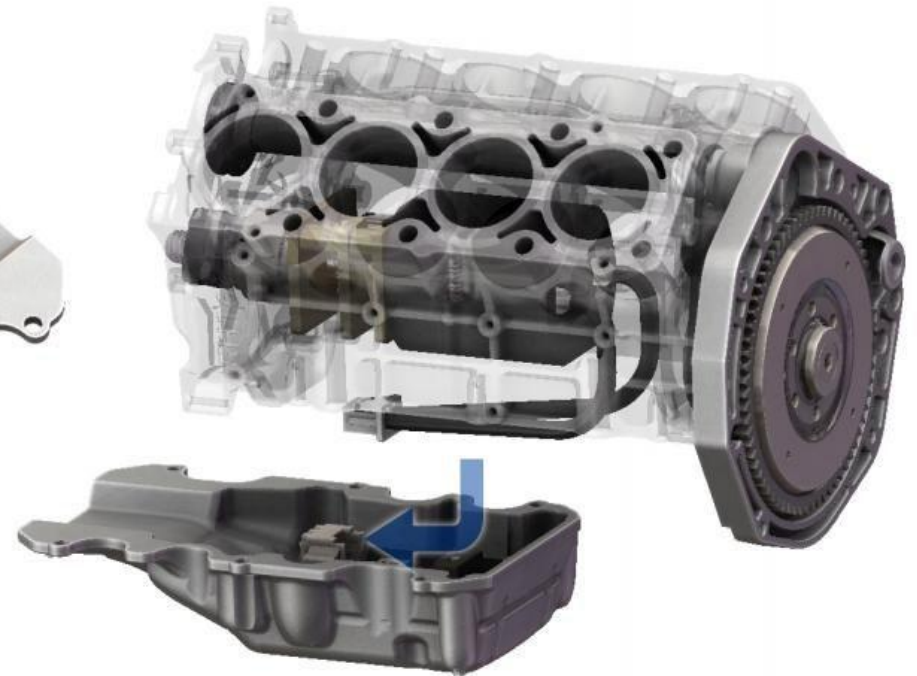
PA1.4x5 4pcs



Install drive plate to oil pan



Connect the motor plug to the drive plate



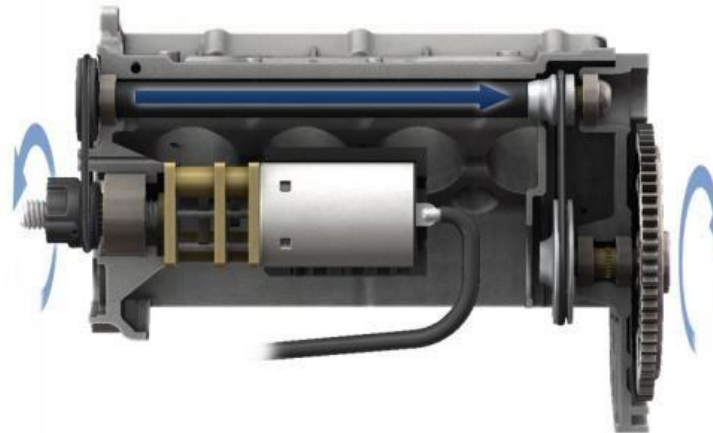


Please test the adjustment carefully

The module wire is connected to the driver board and receiver



Power test inner driving wheel normal operation



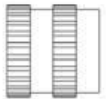
M2x12



Bearing 2x5x1.5



Threaded bushing 3xM2x3



2pcs

Generator drive wheel embedded threaded sleeve

Unscrew the screw and remove the bearing when the embedment is complete

Generator inner assembly mounting

rotor

Generator front housing

Assembly cross section reference drawing

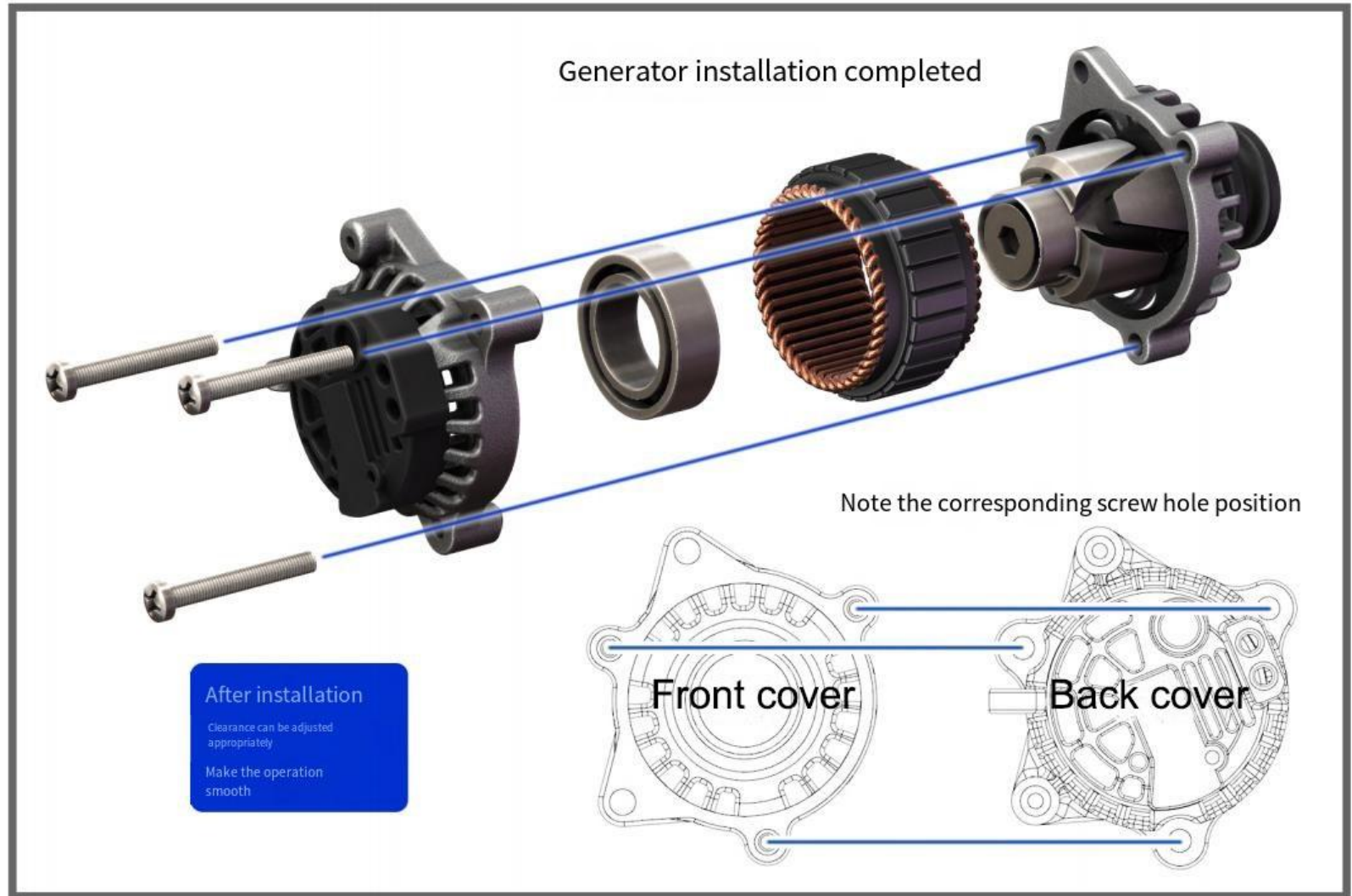
The clearance can be adjusted appropriately  
Make the operation smooth

Apply screw glue to the truncated holes  
Do not tighten with force

PM1x8



Bearing 5x8x2



Generator installation completed

Note the corresponding screw hole position

After installation

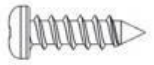
Clearance can be adjusted appropriately

Make the operation smooth

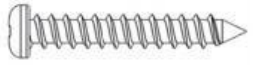
Front cover

Back cover

PA1x4

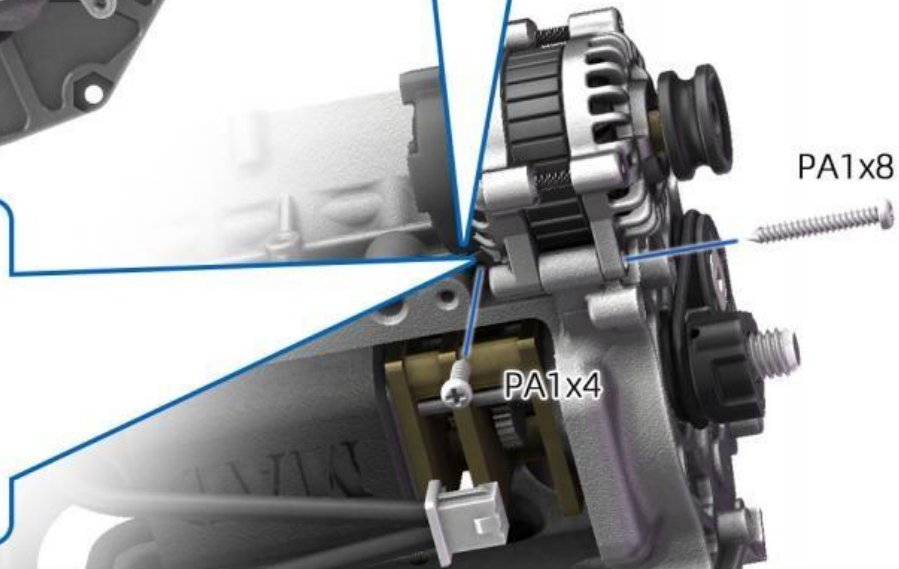
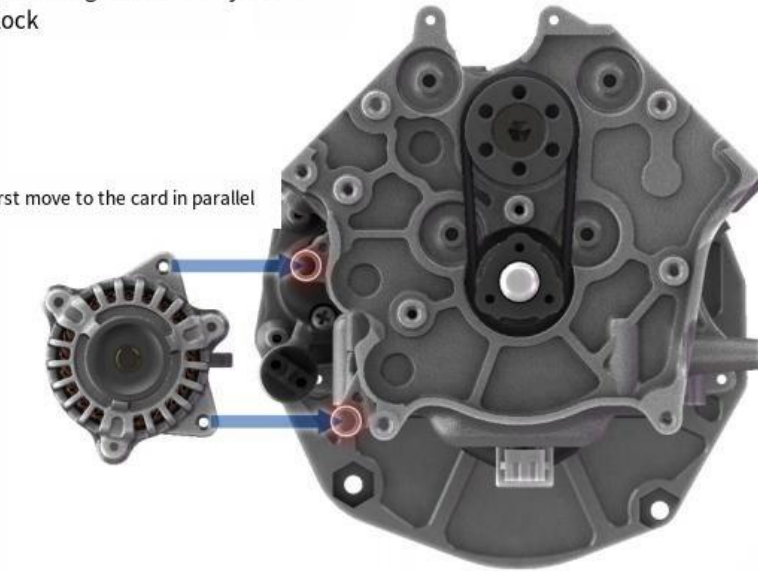


PA1x8



Assemble generator to cylinder  
block

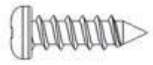
First move to the card in parallel



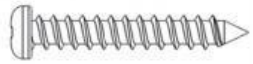
PA1x8

PA1x4

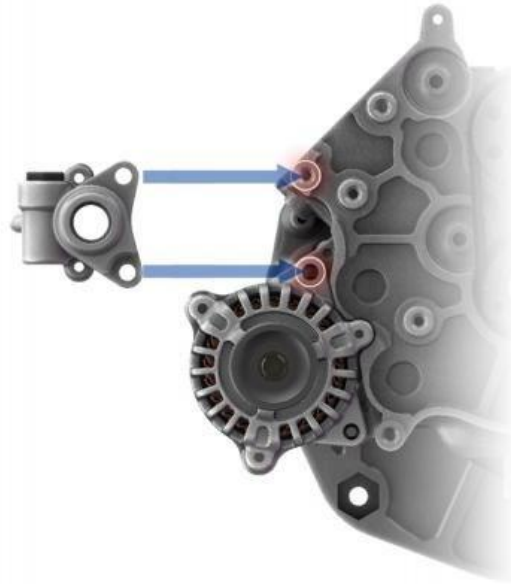
PA1x4



PA1x8



## Pre-install steering booster pump housing





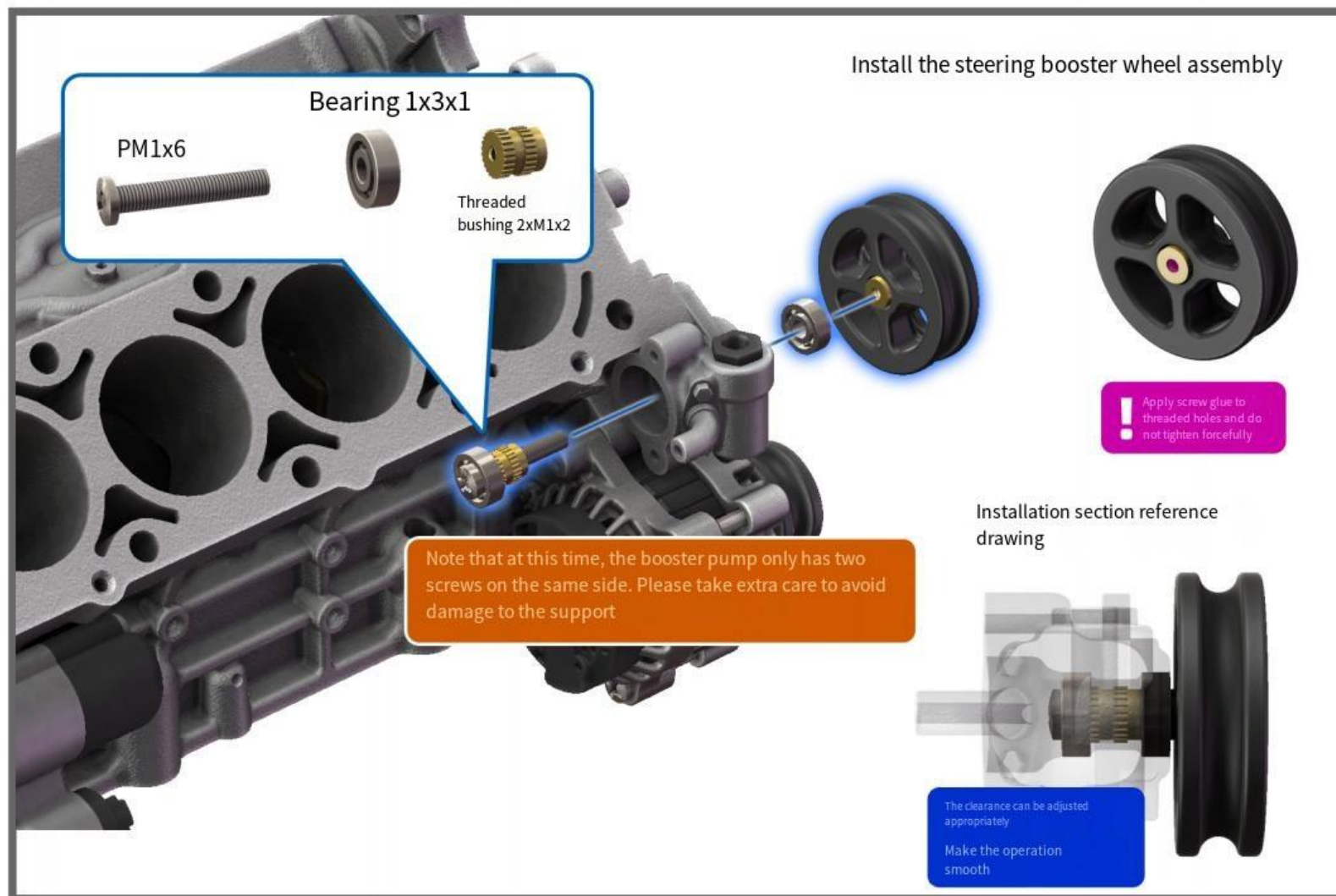
To be added

### Pre-bury steering booster pump wheel



Unscrew the screw and remove the bearing after the embedment is complete

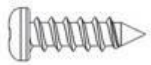
To be added



PA1x3 2pcs



PA1x4



## Install the rear cover of the steering pump



PM1x8



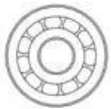
Threaded shaft sleeve 2xM1x2



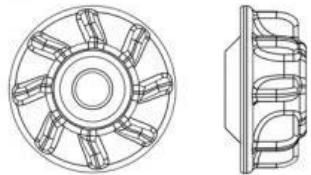
Threaded bushing 2xM1x0.8



Bearing 1 x 3x1



Pump impeller



## Embedded pump wheel thread sleeve

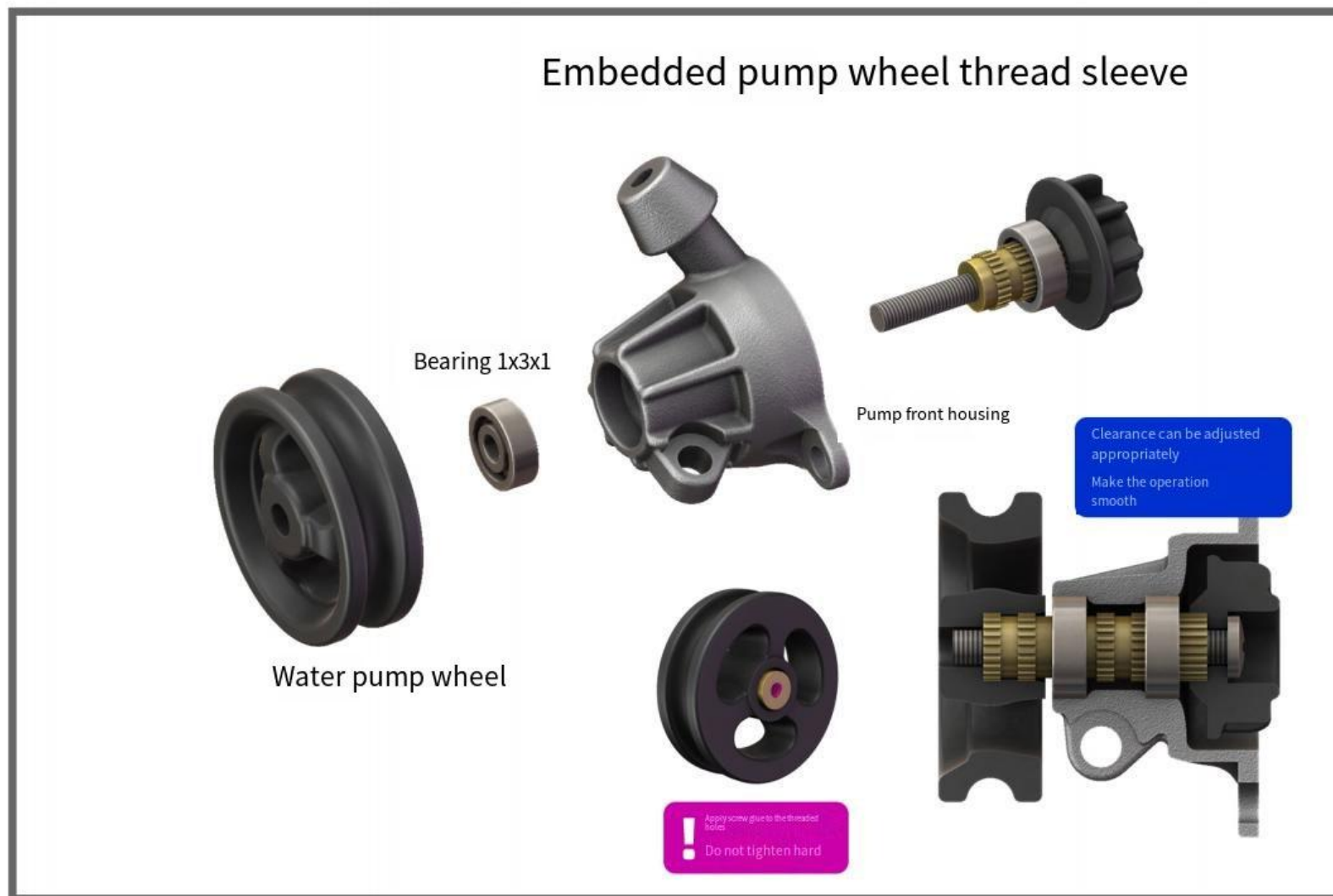


Water pump wheel

Preassemble the water pump inner assembly



To be added





PA1x4



## Embedded pump wheel thread sleeve



To be added

Tension wheel threaded bushing embedded (5 sets)

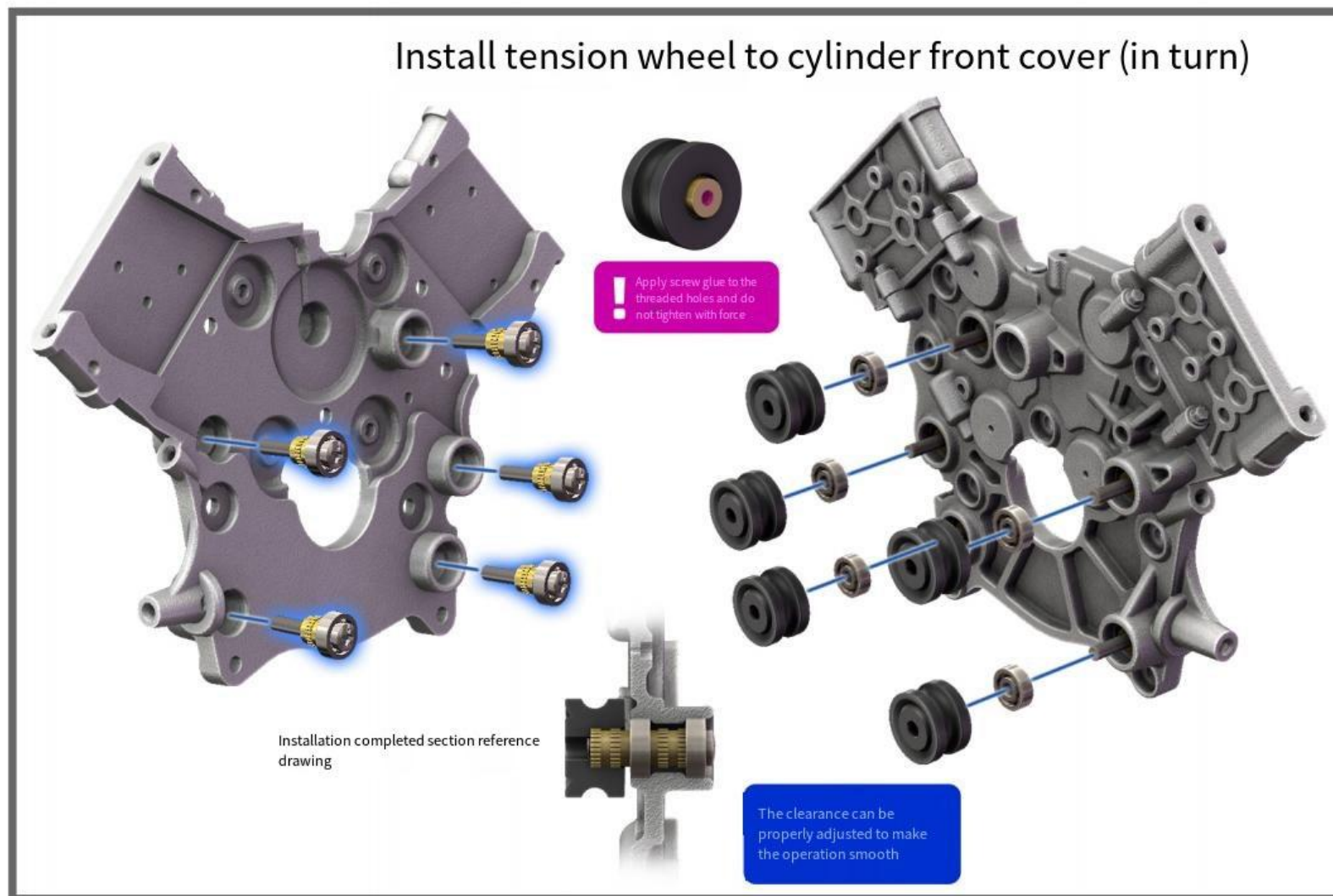


Unscrew the screw and remove the bearing after the embedment is complete

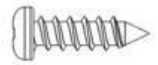
Tension wheel inner assembly pre-assembly (5 sets)



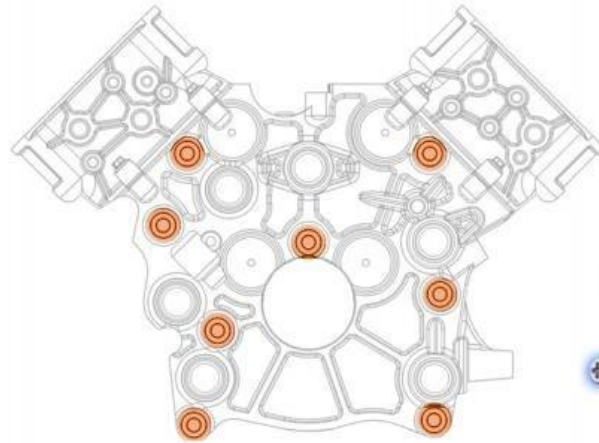
To be added



PA1x4



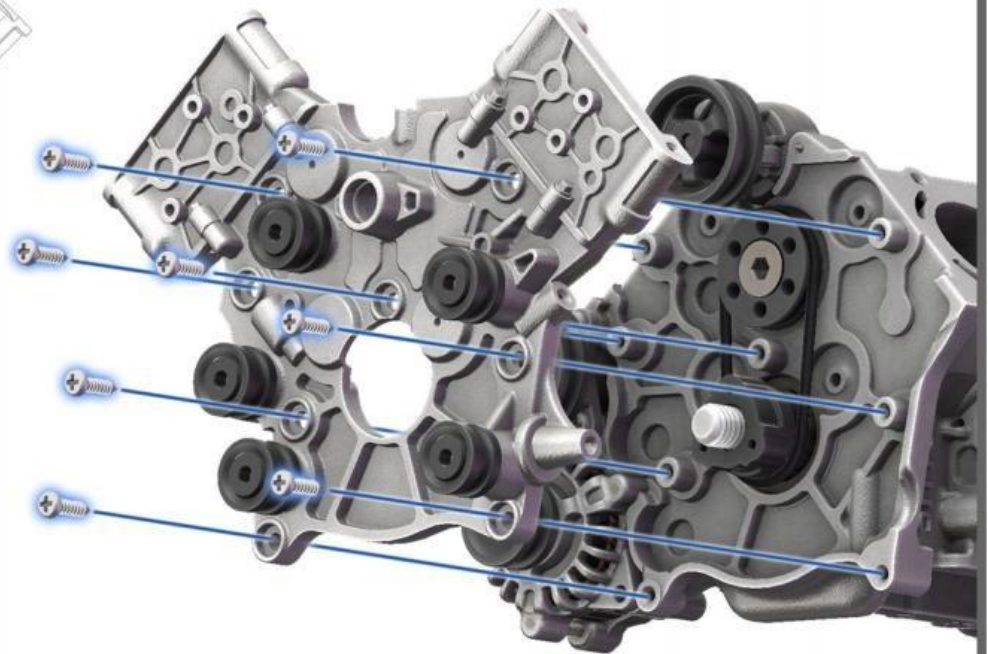
8pcs



The front cover of cylinder corresponds to the screw position of master cylinder



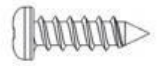
Assemble cylinder front cover to master cylinder



After installation, power on to test whether the inner drive is working normally. If there is a clamp, try to gently turn back some screws to ensure that the inner space is running gap

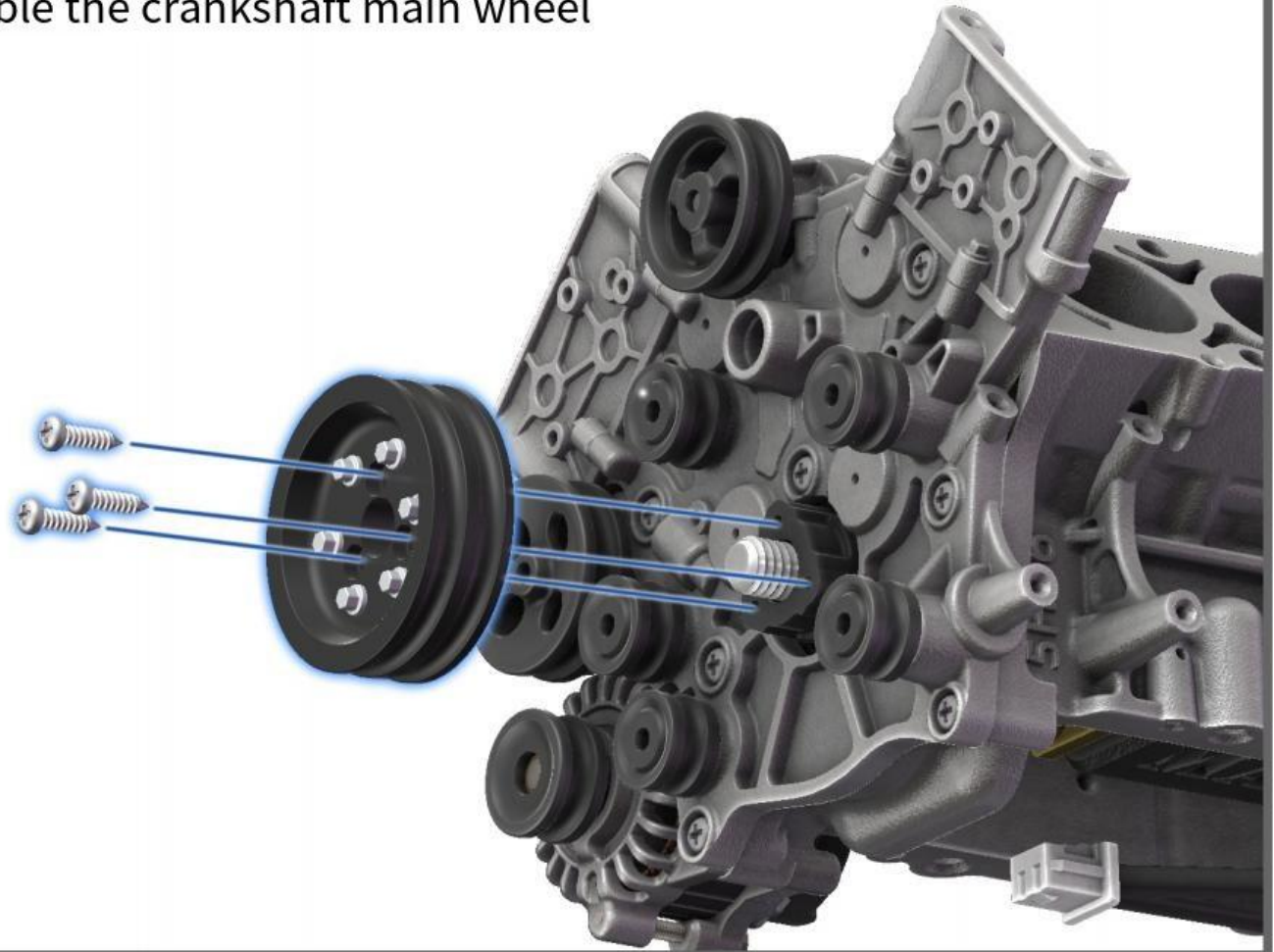


PA1x4



3pcs

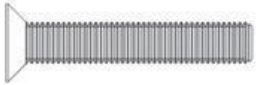
Assemble the crankshaft main wheel



Installation Step 28



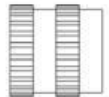
KM2x14



Bearing 2x5x1.5



Threaded sleeve 3xM2x3



2pcs

Embedded compressor wheel threaded bushing



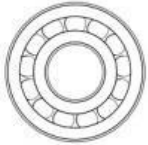
Preinstalled compressor inner assembly



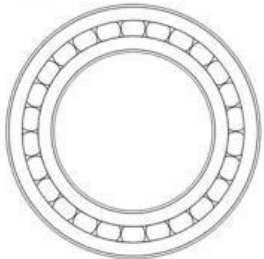
PA1x3 3pcs



Bearing 2x5x1.5



Bearing 5x8x2



## Install compressor



! Apply screw glue to the threaded holes.  
Do not tighten hard

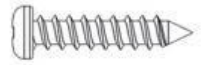
The clearance can be adjusted appropriately.  
Make the operation smooth



Installation section reference drawing

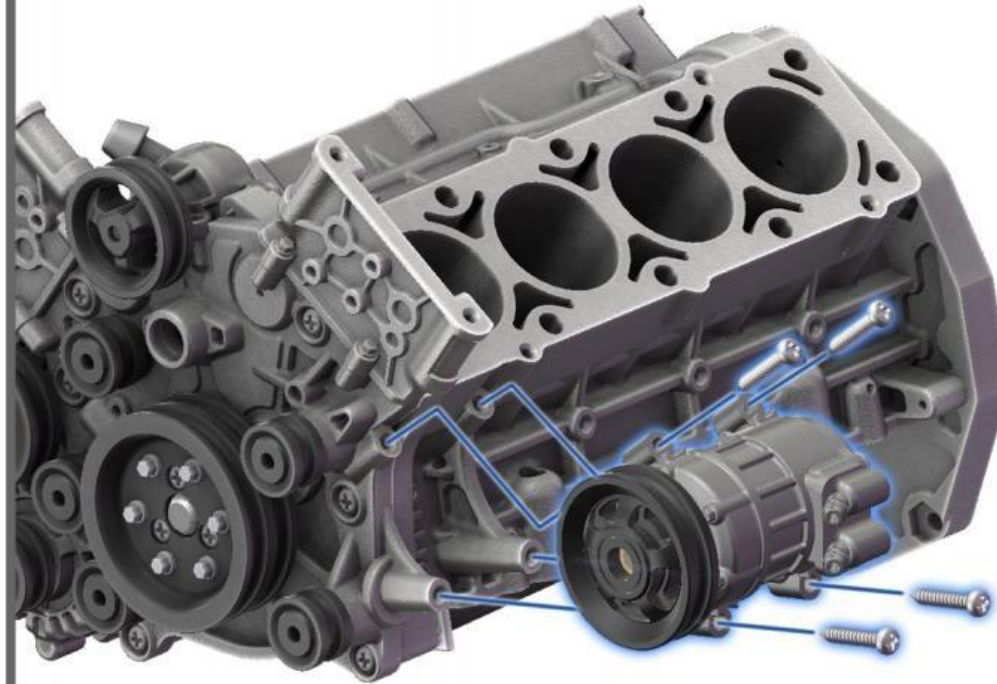


PA1x6

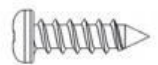


4pcs

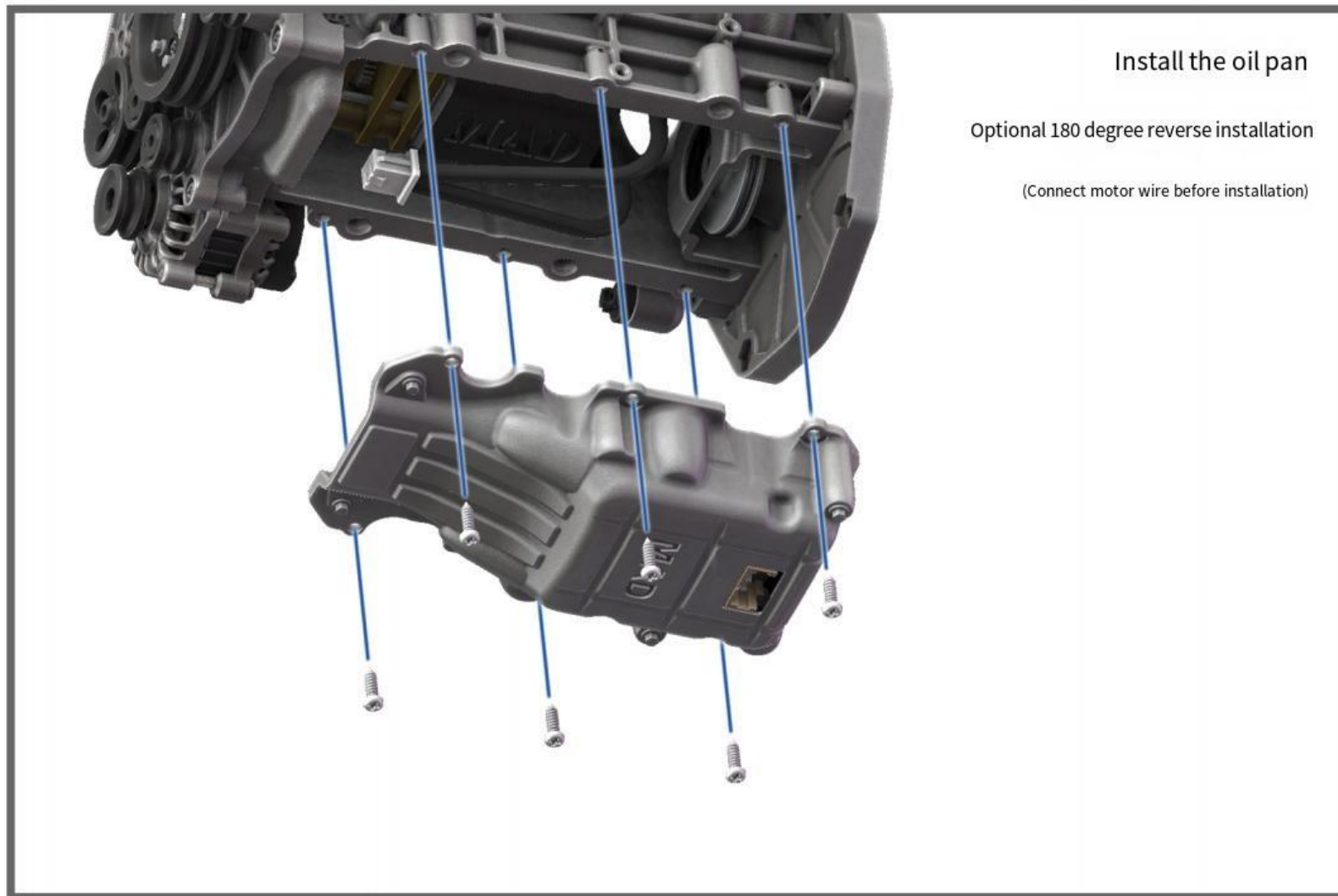
Install compressor to master cylinder



PA1x4



6pcs

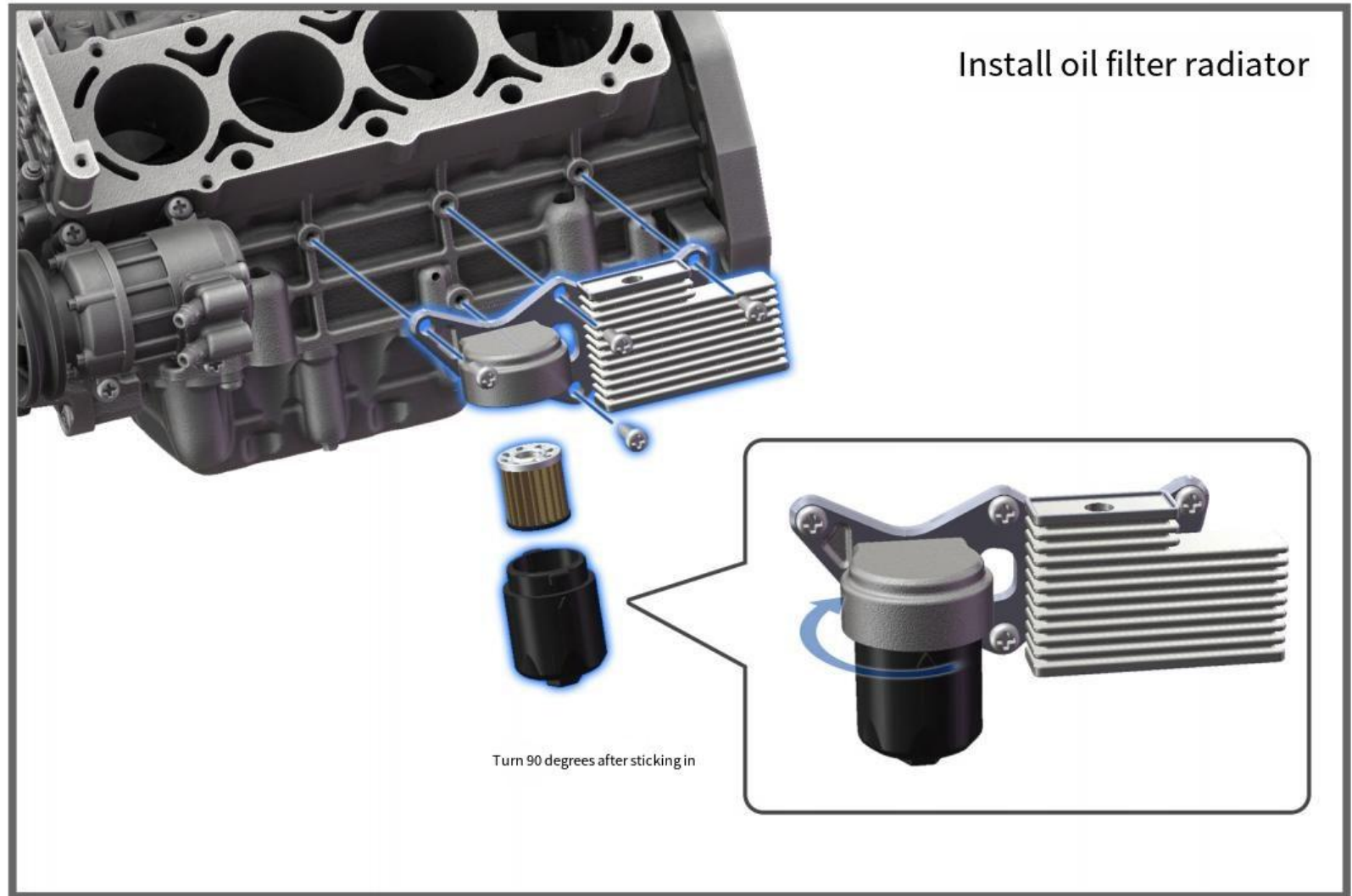


Install the oil pan

Optional 180 degree reverse installation

(Connect motor wire before installation)

PA1x4



Install oil filter radiator

Turn 90 degrees after sticking in

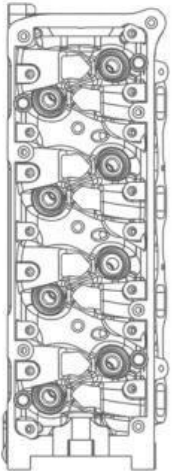




PA1x4 4pcs



Note that the left and right cylinder heads distinguish the left cylinder head



Right cylinder head

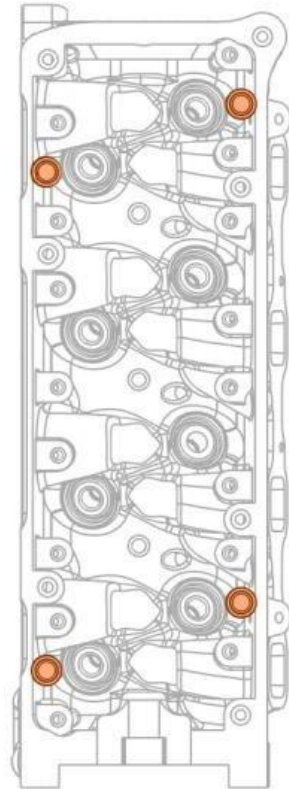
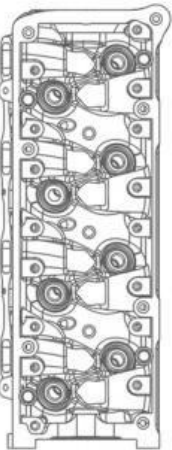
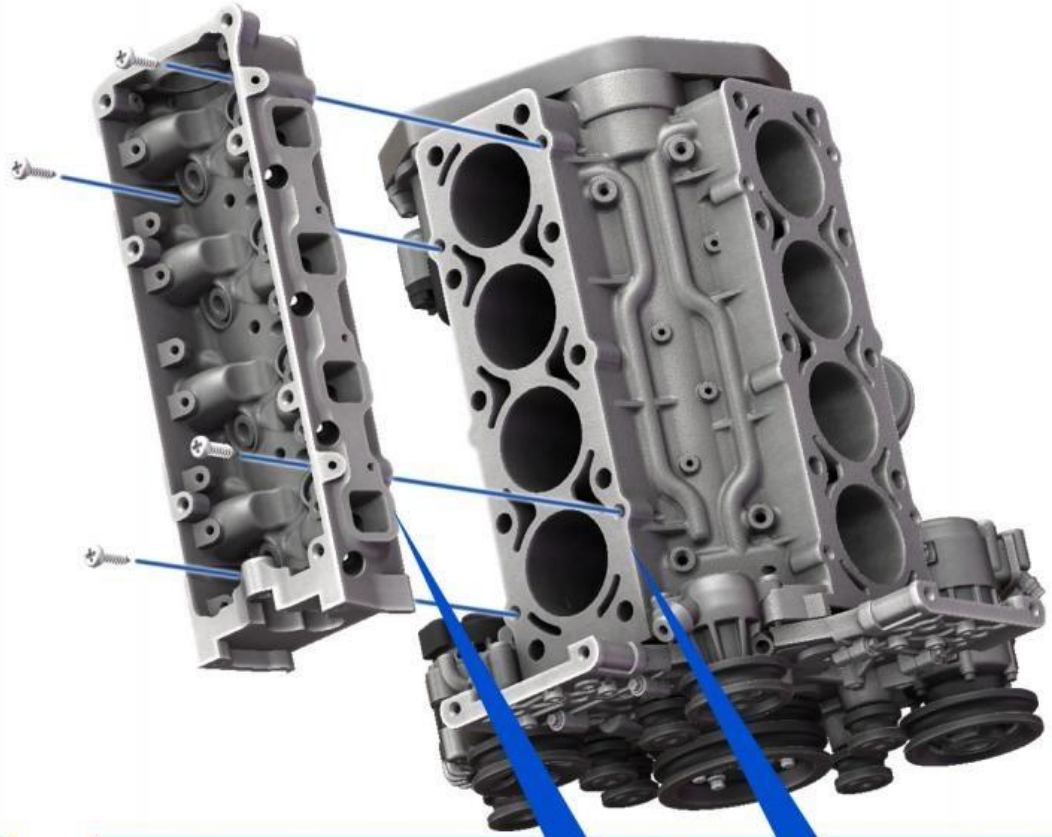


Diagram of screw hole location of left cylinder head

Install left cylinder head to cylinder block

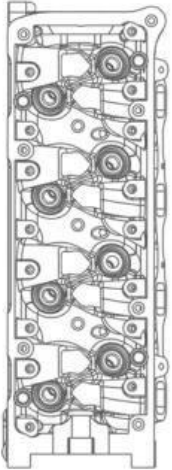


Note that when the screws are in place, observe the bottom surface of the cylinder head and the top surface of the master cylinder, and the contact can be done after the contact

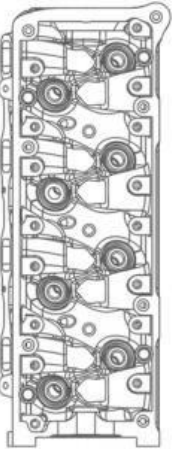
PA1x4 4pcs



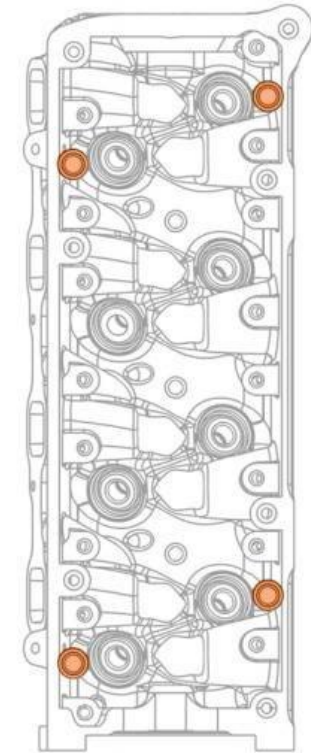
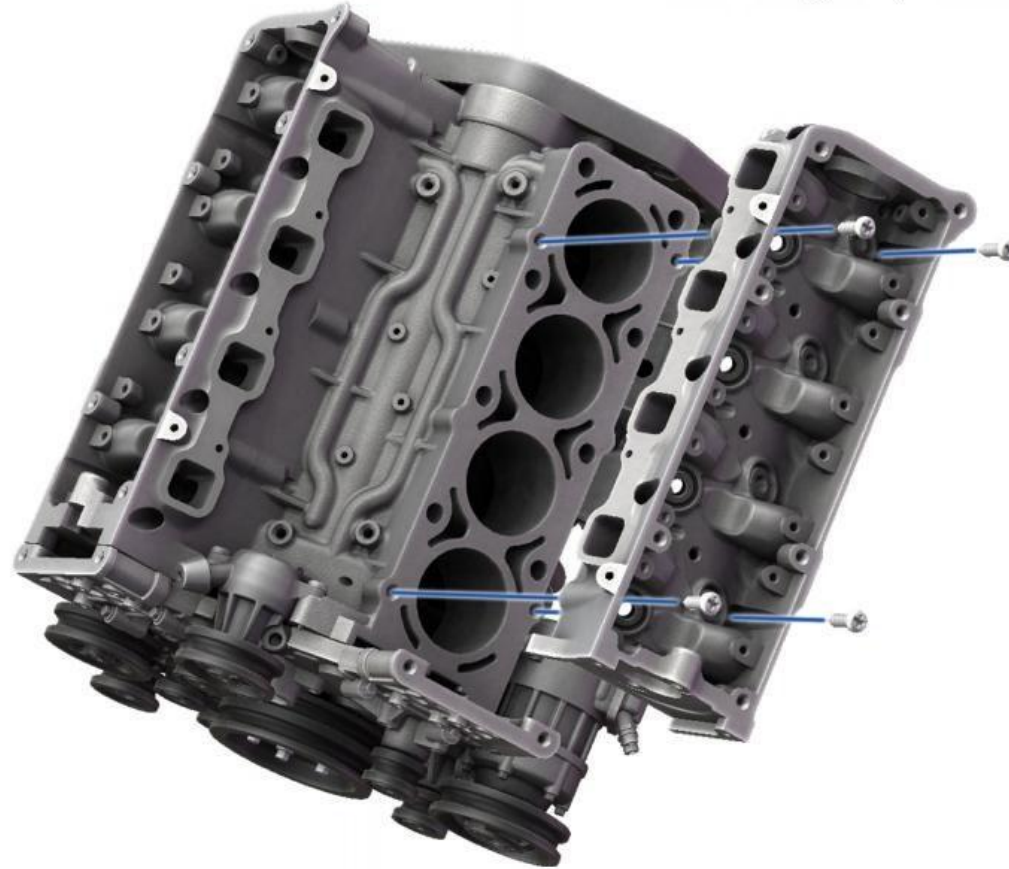
Note that the right and left cylinder heads distinguish the left cylinder head



Right cylinder head



Install right cylinder head to cylinder block

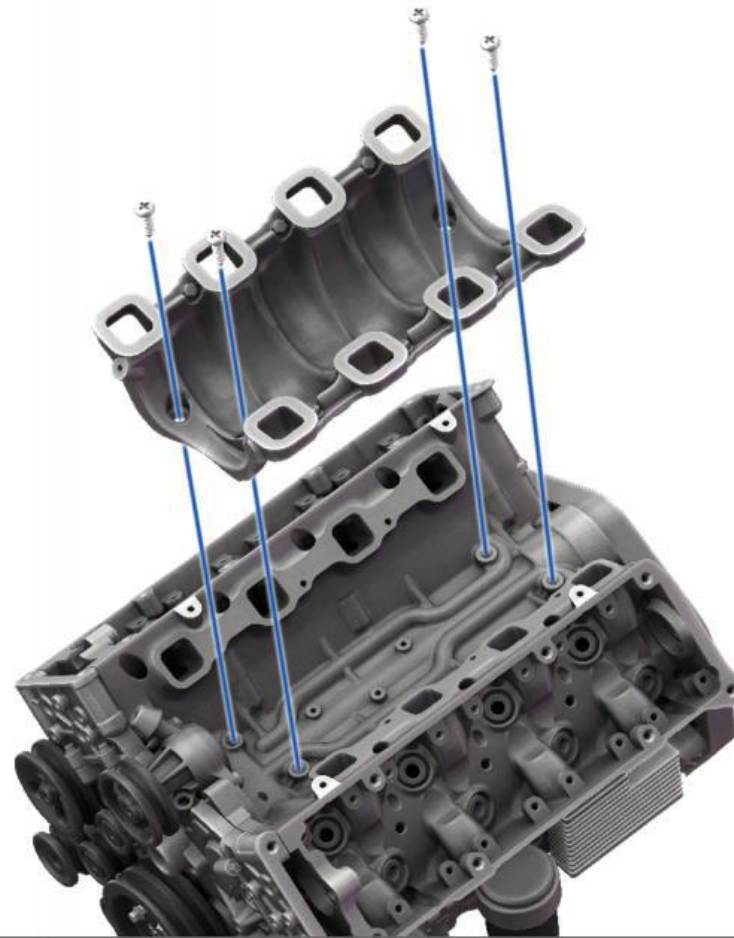


Right cylinder head screw hole location diagram

PA1x4



Install the intake chamber



To be added

### Assemble throttle with intake manifold



The intake duct is fitted with the air filter element



You can skip this step without installing the intake duct



Optional installation

Assemble the intake duct with the intake manifold





PA1x4



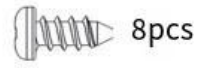
Install the intake assembly to the cylinder block



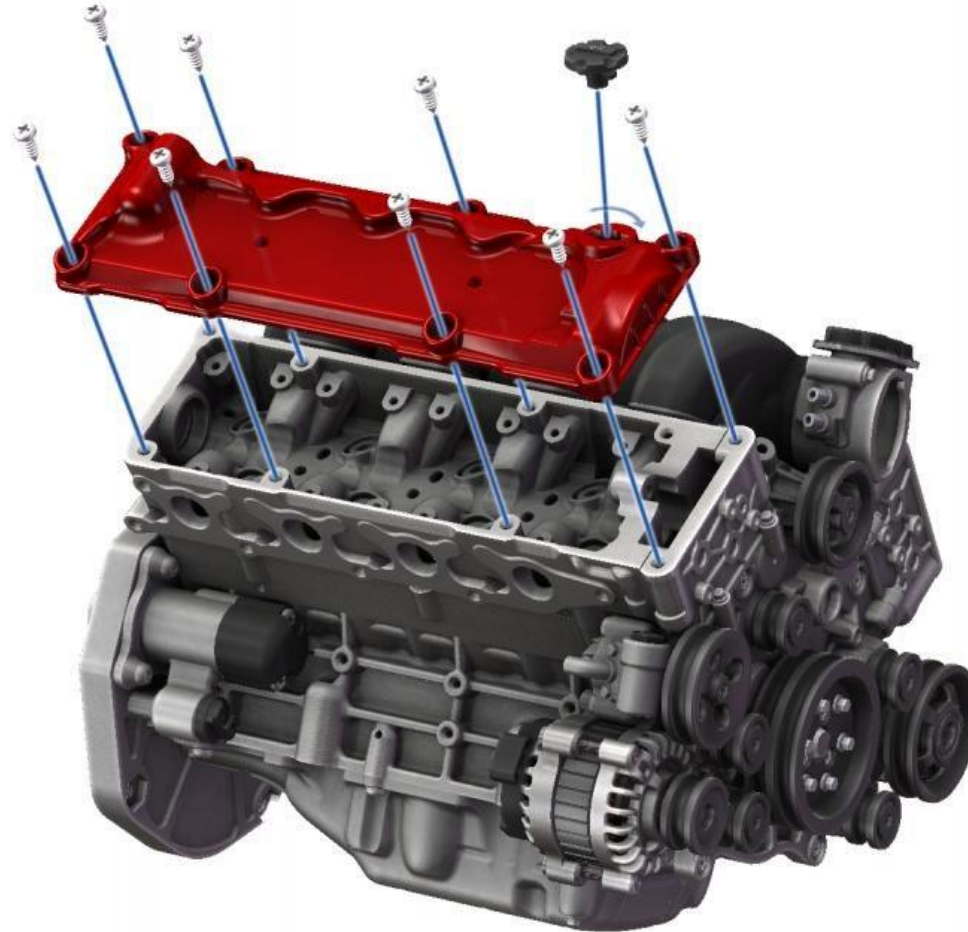
Keep an eye on the screw positions



PA1x3

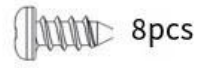


Install left cylinder head cover

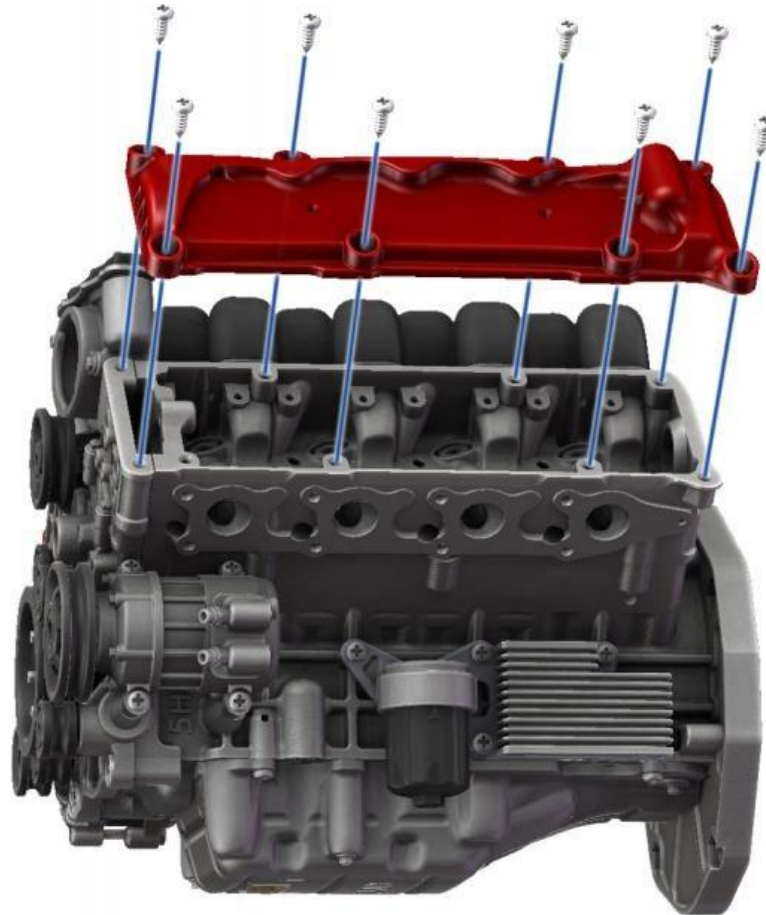


Installation Step 40

PA1x3

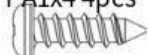


Install right cylinder head cover



Installation Step 41

PA1x4 4pcs



## Fuel rail installation



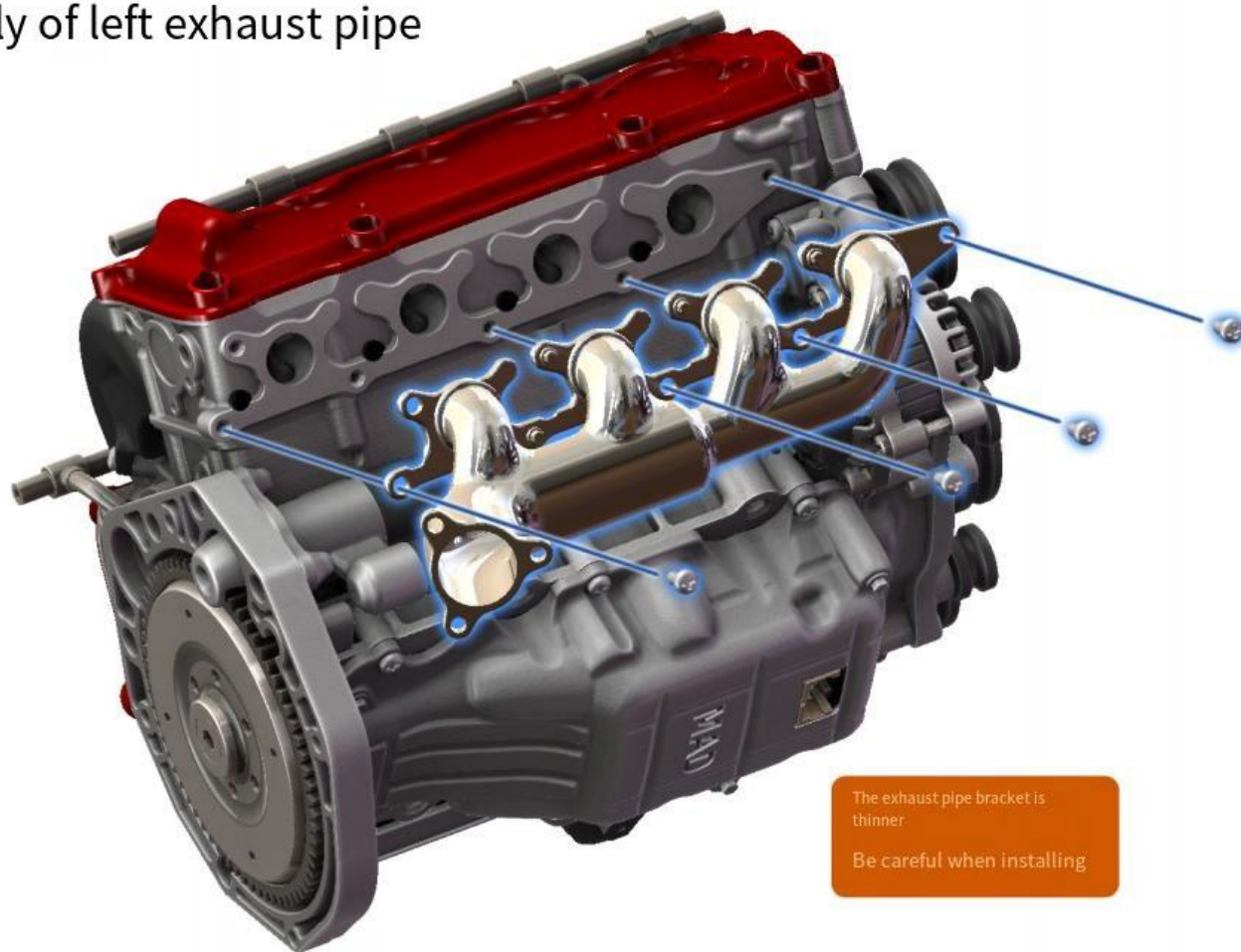
Note that the fuel line branch joints are inserted into the corresponding nozzle holes on the cylinder head side



PA1x3 4pcs



## Assembly of left exhaust pipe



The exhaust pipe bracket is thinner  
Be careful when installing



PA1x3



## Right exhaust pipe assembly

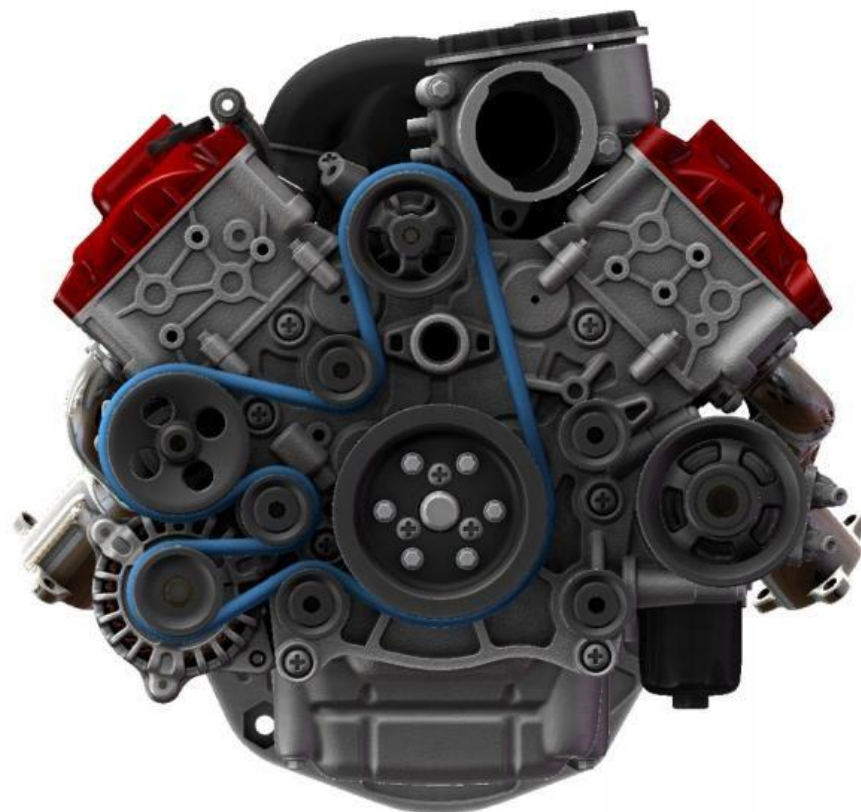


Belt  
40x1.2

Install the first layer of drive belt

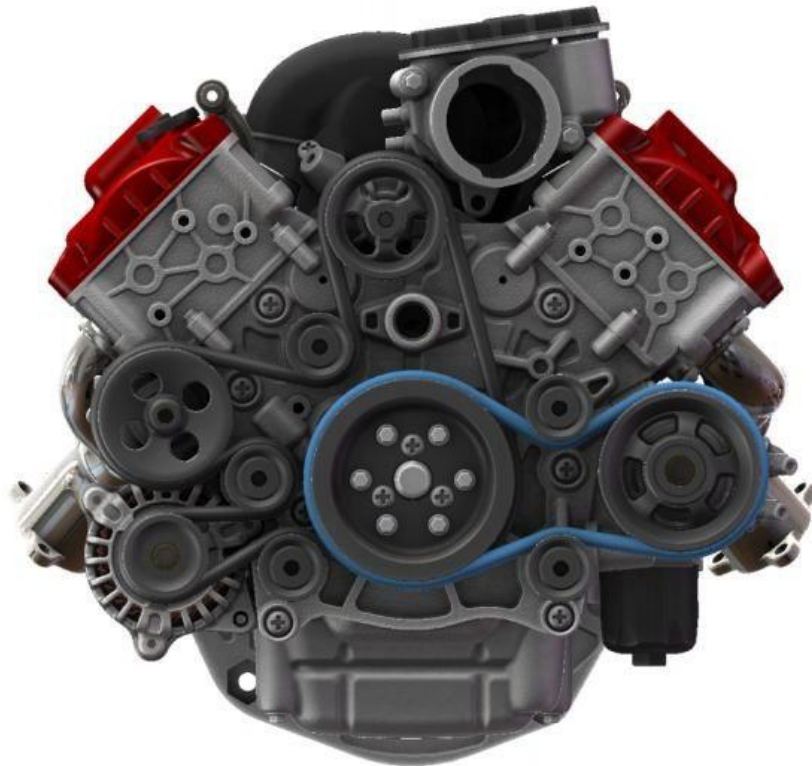


Side reference



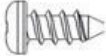
belt  
24 x 1.2

Install a second layer of drive belt

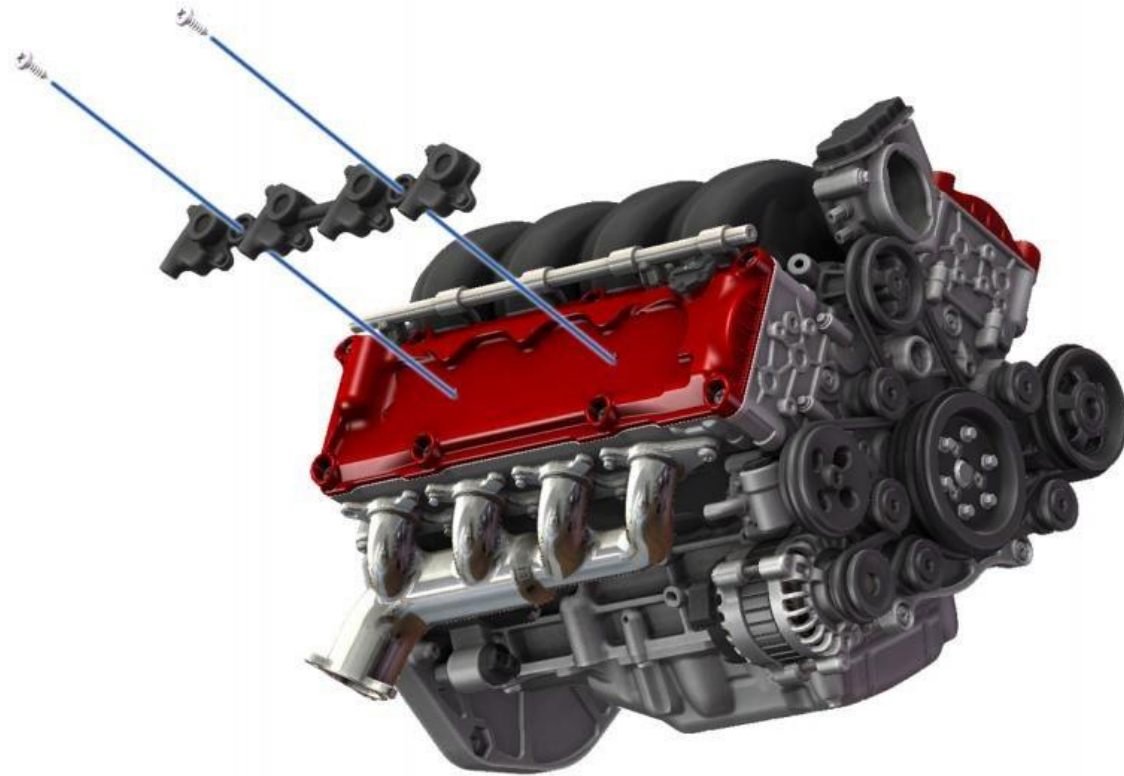


Side reference drawing

PA1x3

 2pcs

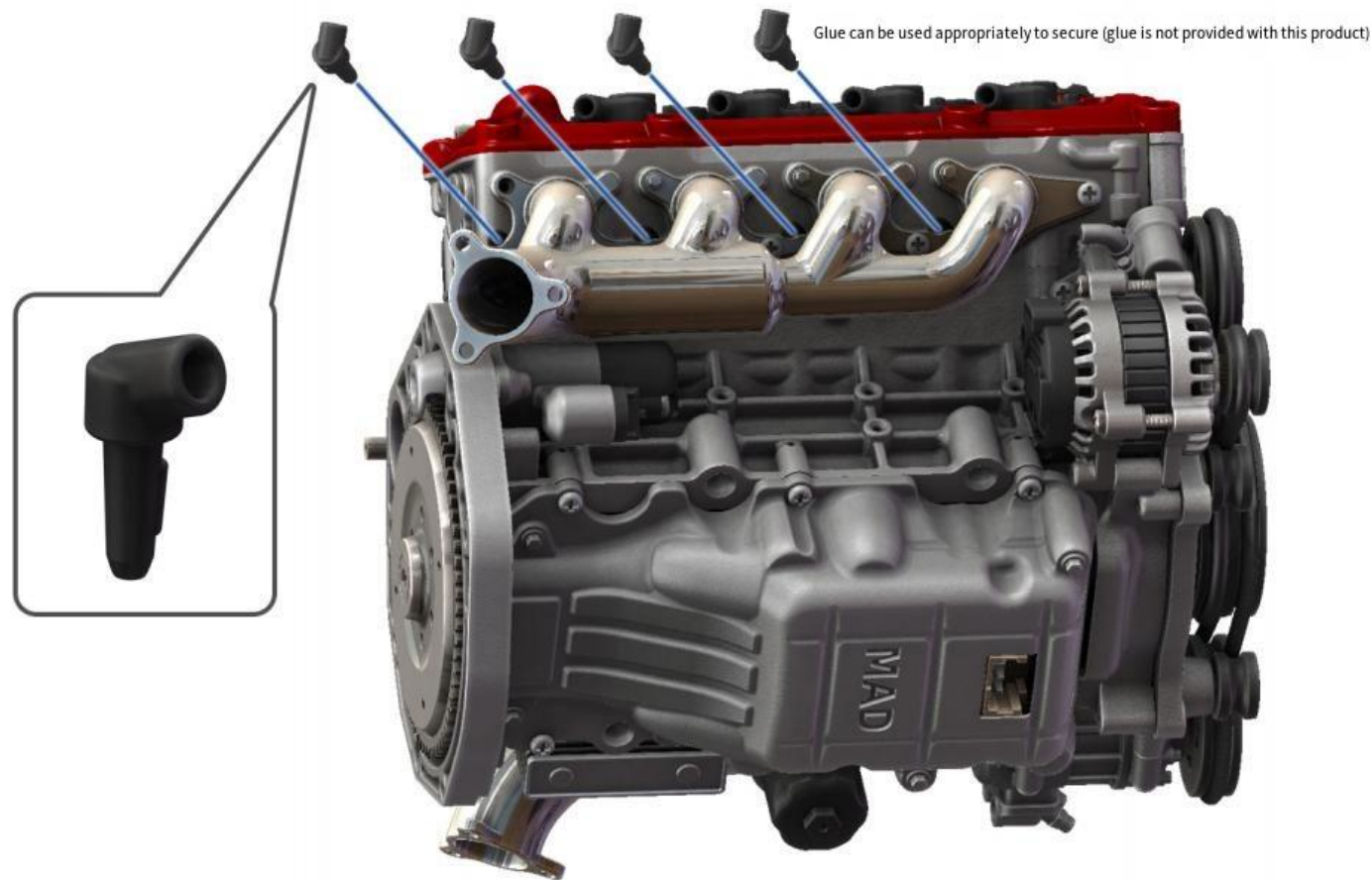
Install the left ignition coil





To be added

## Install left cylinder point spark plug connector

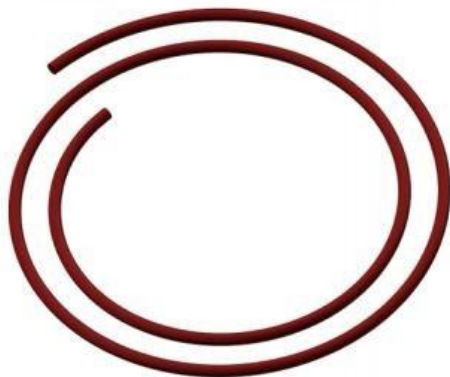




To be added

Wire the ignition coil to the spark plug connector

Cut the wire to about 30mm  
and trim it according to the  
actual length



To be added

Same method Install right cylinder ignition coil with spark plug connector and wire



In the end, you win!



All done