



Lamborghini MIURA



Pack 03

BUILD INSTRUCTIONS

**STAGE 16: ASSEMBLING THE LEFT AIR FILTER
BOX AND FITTING PETROL PIPES**

STAGE 17: CONSTRUCTING THE ENGINE

STAGE 18: ATTACHING THE TRANSMISSION

**STAGE 19: FIXING THE CRANKCASE COVER
AND OIL SUMP**

STAGE 20: ATTACHING THE ALTERNATOR

STAGE 21: INSTALLING THE CLUTCH

STAGE 22: FITTING ESSENTIAL ENGINE PARTS

STAGE 23: OIL PUMP AND BREATHER SYSTEM

STAGE 24: THE REAR FRAME

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AGORA
MODELS

Advice from the experts

Spare screws are included with each part. Occasionally, you may be instructed to keep spare or unused screws for a later stage. Keep these spares in a safe place and label them correctly.

Please make sure you don't mix up the screws. They look quite similar, but the threads do vary slightly. Using the wrong screws may damage the parts.

When securing parts together using multiple screws, fit each screw loosely to ensure all the parts are correctly aligned before gently tightening them firmly, but not overtight, in the order in which you placed them.

The screwdriver can be magnetized by stroking it with a magnet (fridge magnet, etc.) enabling it to hold the screws and make assembly easier.

If a screw is tight going into a metal part, do not force it as you may shear the head off. Remove it and put a tiny smear of Vaseline, soap or light oil on the thread. That will lubricate it and make it easier to drive home.

During the course of this build, you will receive many pieces that you will assemble immediately – following the instructions in the corresponding stage – and other pieces that you should store safely to one side, for use in future assembly stages.

Left and Right! When building your Lamborghini, the left or right hand side refers to each side as you are sitting in the car.



WARNING: Some parts are assembled using magnets. These magnets can cause serious injury if they are swallowed. Keep away from children. If you suspect a magnet has been swallowed, seek medical help straight away.

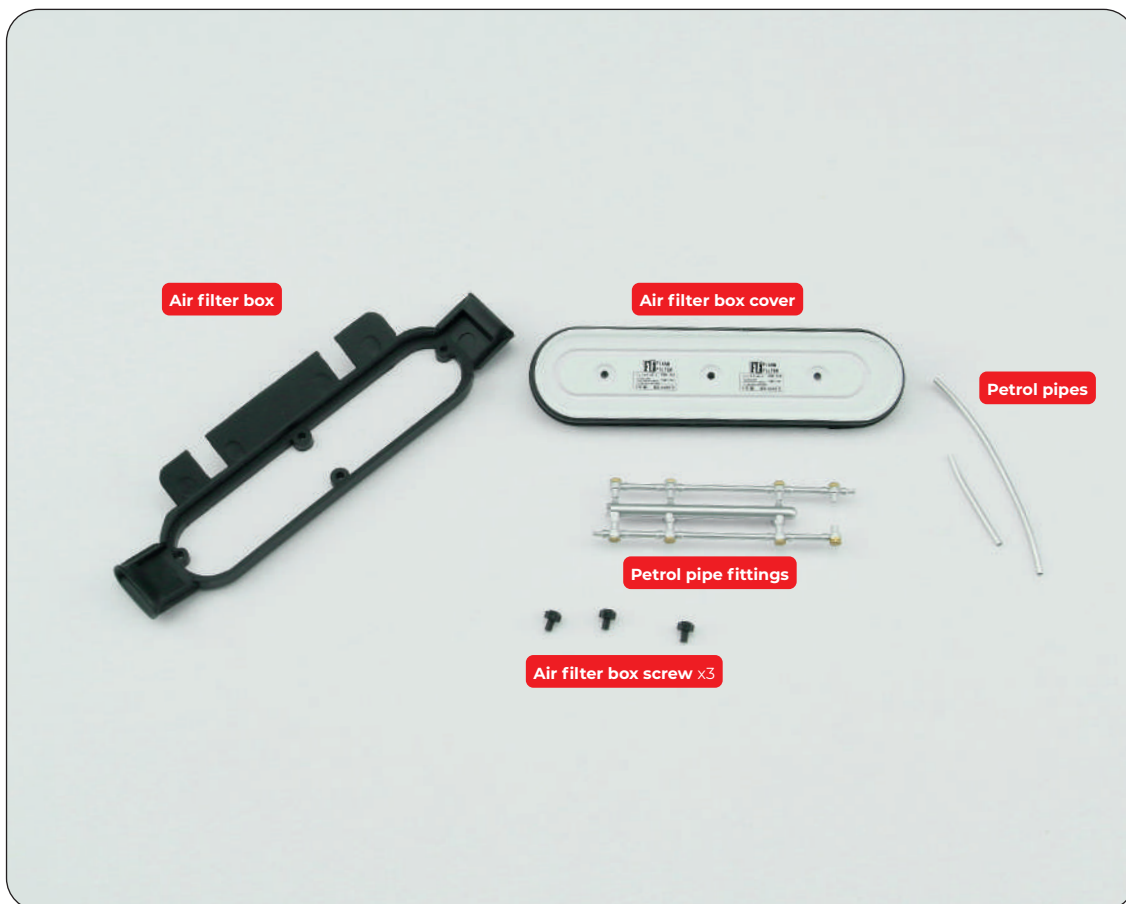
Stage 16: Assembling the Left Air Filter Box and Fitting Petrol Pipes

In this stage you'll assemble the left air filter box, then it's time to fit the carburettors from the last pack with petrol pipes.

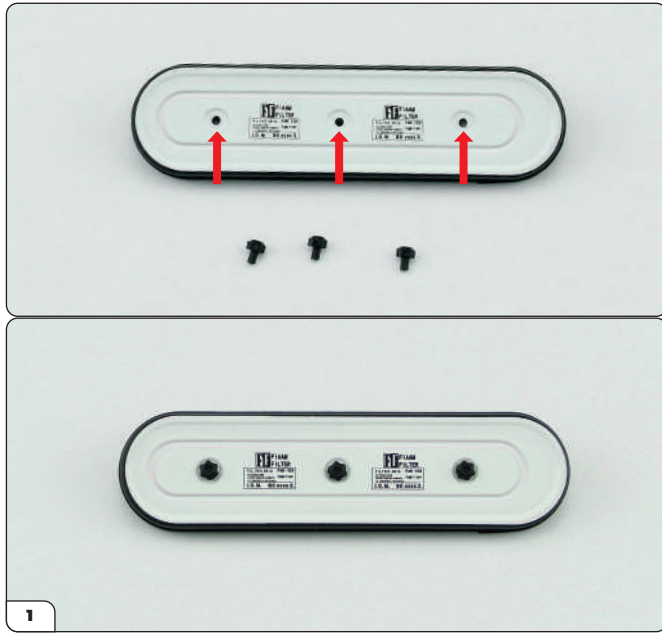


STAGE 16 PARTS LIST

Name
Air filter box
Air filter box cover
Petrol pipes
Petrol pipe fittings
Air filter box screw x3



Stage 16: Assembling the Left Air Filter Box and Fitting Petrol Pipes



First take the air filter box cover and the three air filter box screws. Carefully push the screws into the holes in the cover (arrows).

We recommend doing this by hand to avoid damaging the paint and print on the cover.



Turn the box cover over, then align the air filter box with it as shown. Use the holes on the air filter box and the pins on the cover as a guide (arrows).

Note the 'L' printed on the cover (inset). This will help when fitting the air filters at a later stage.

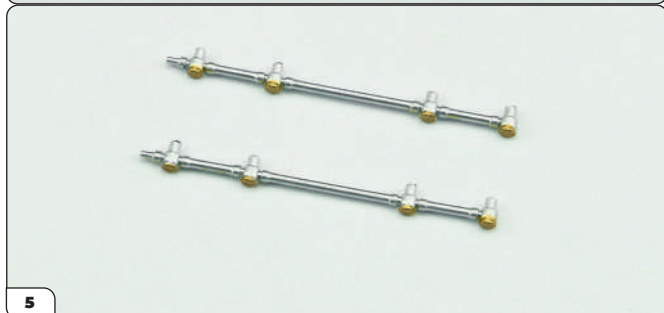
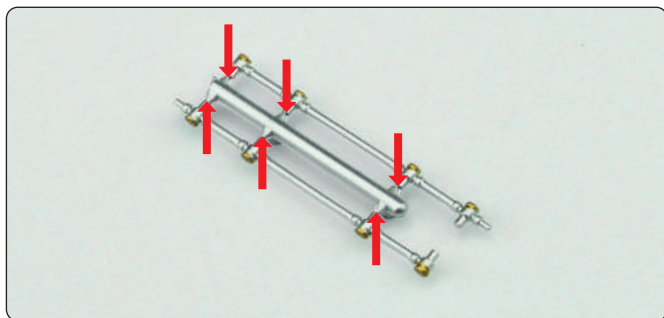


Push the parts firmly together until all four holes have fitted over the pins (circled).



The air filter box should now look like this. Check the fit is flush all the way round.

Stage 16: Assembling the Left Air Filter Box and Fitting Petrol Pipes



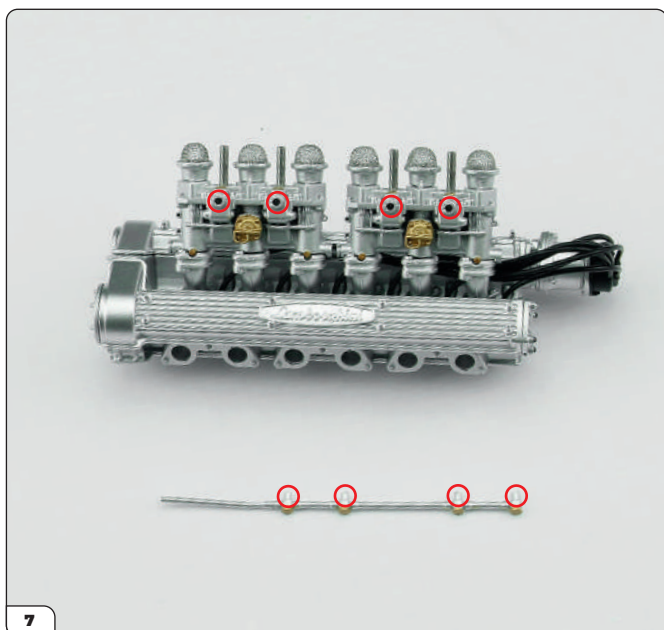
5

Cut the petrol pipe fittings from their sprue using sprue cutters by snipping at the points indicated by red arrows.



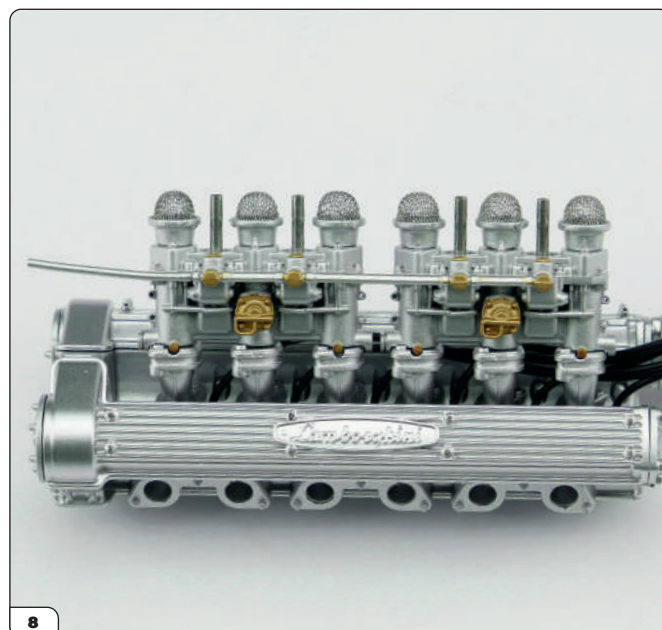
6

Fit the petrol pipes onto the ends of the fittings as shown. We recommend using a pair of tweezers to grip and twist the petrol pipe as you push it on.



7

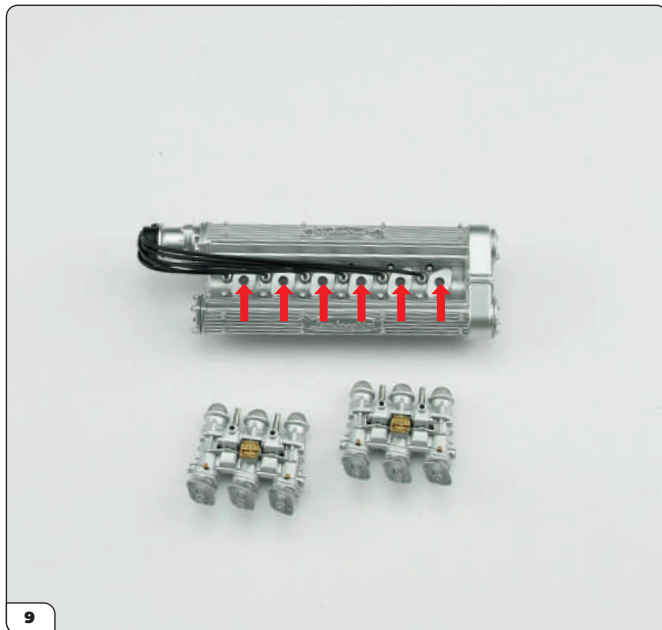
Take the right cylinder head from stage 15 and the shorter petrol pipe fitting, then align the two as shown. Note the four holes in the carburetors and the corresponding pins on the petrol pipe (circled).



8

Press the four pins of the petrol pipe into the four holes on the carburetors. We recommend pressing each one in partially before pushing all four firmly in place.

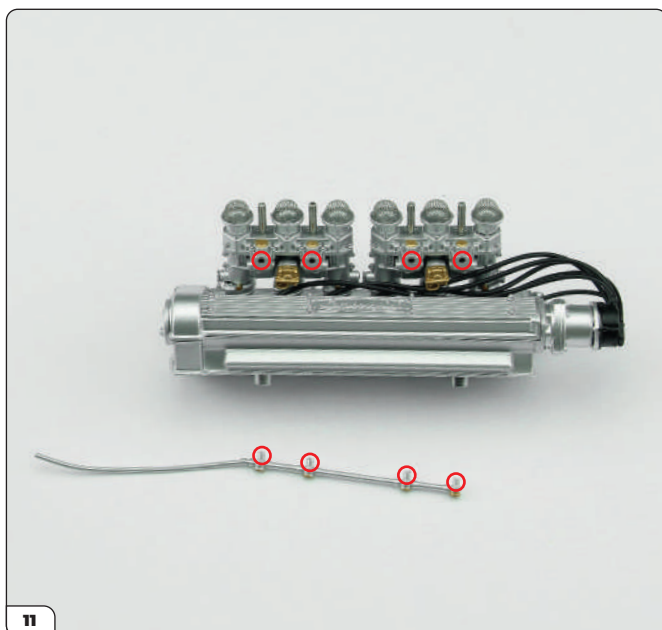
Stage 16: Assembling the Left Air Filter Box and Fitting Petrol Pipes



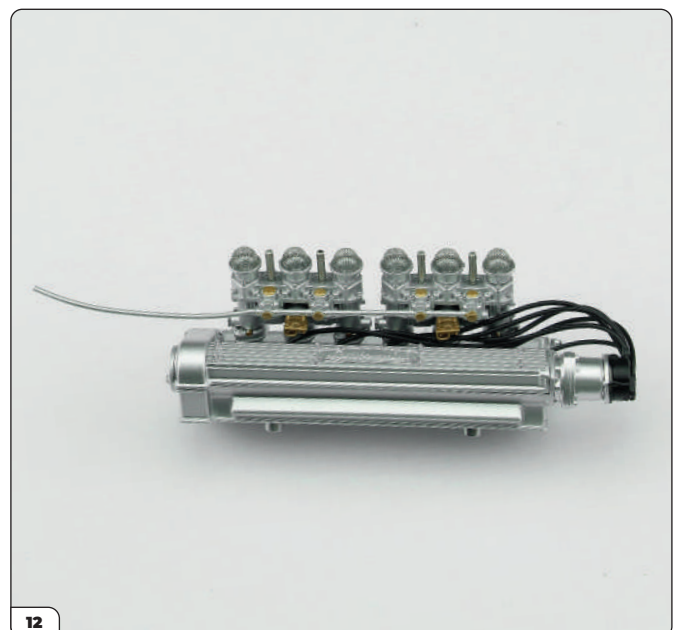
Now take the two carburetors assembled in stages 11 and 12 along with the left cylinder head from stage 13. Press the pins on the carburetors into the holes between the spark plugs simultaneously, as you did in stage 15 (arrows).



The carburetors should look like this once in place.



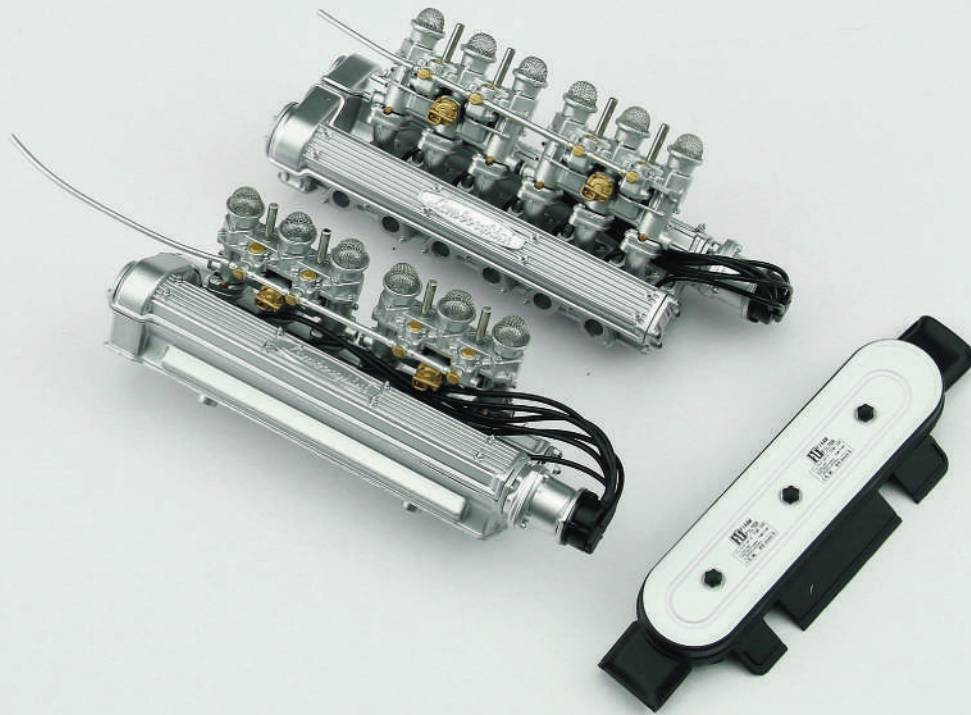
Take the longer petrol pipe and align it with the holes in the carburetors as shown. Note that you may need to move the spark plug wires out of the way before fitting the petrol pipe, as shown in the photo.



Press the pins of the petrol pipe into the carburettor holes, in the same manner as step 8.

Stage 16: Assembling the Left Air Filter Box and Fitting Petrol Pipes

STAGE COMPLETE



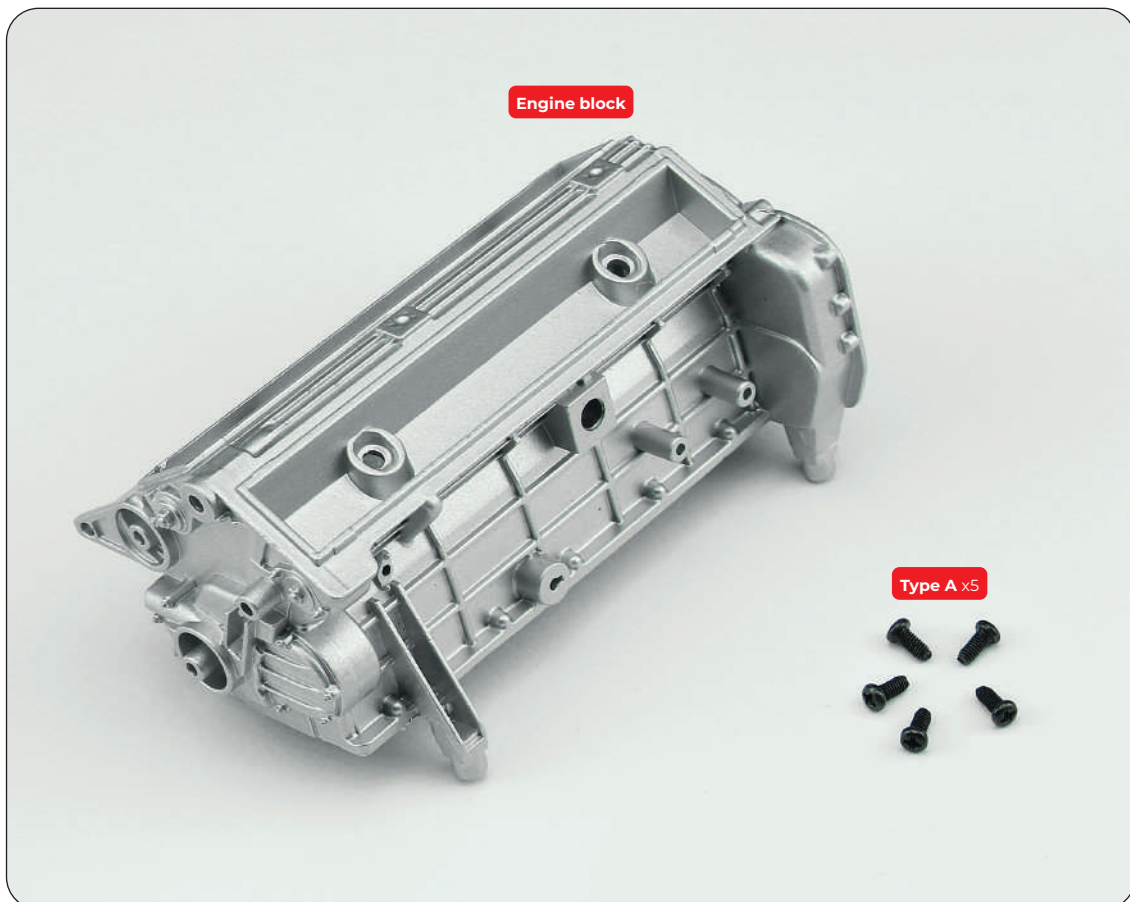
Stage 17: Constructing the Engine

Now the engine starts to take shape! After attaching the cylinder heads to the base, you'll begin to add detail to the engine, starting with fitting the two air filter boxes over the velocity stacks.

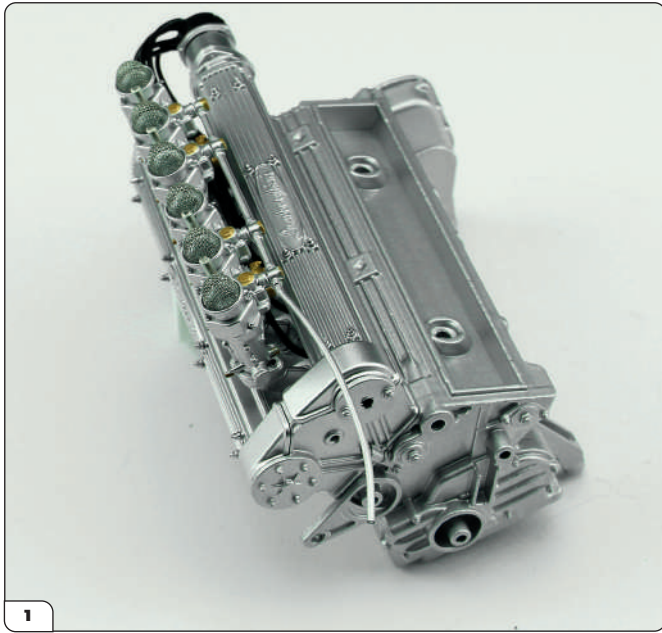


STAGE 17 PARTS LIST

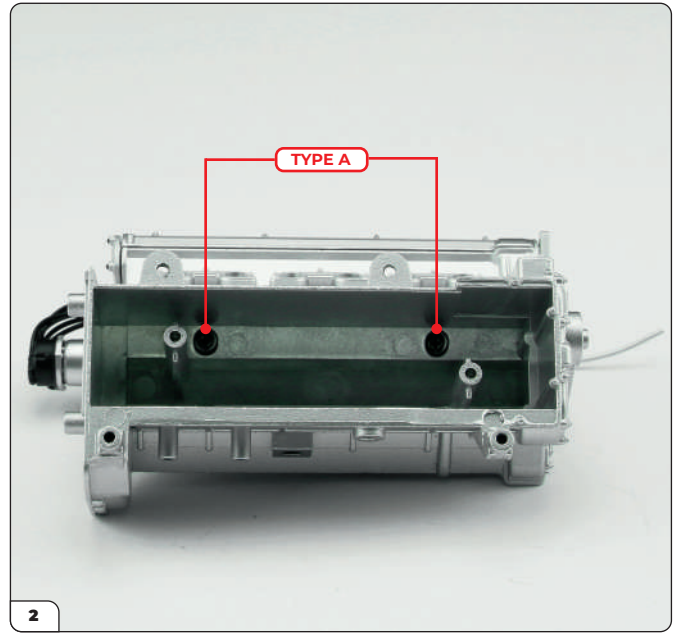
Name
Engine block
Type A screws x5



Stage 17: Constructing the Engine



First place the engine block on your work surface, then fit the left cylinder head onto the engine base as shown.

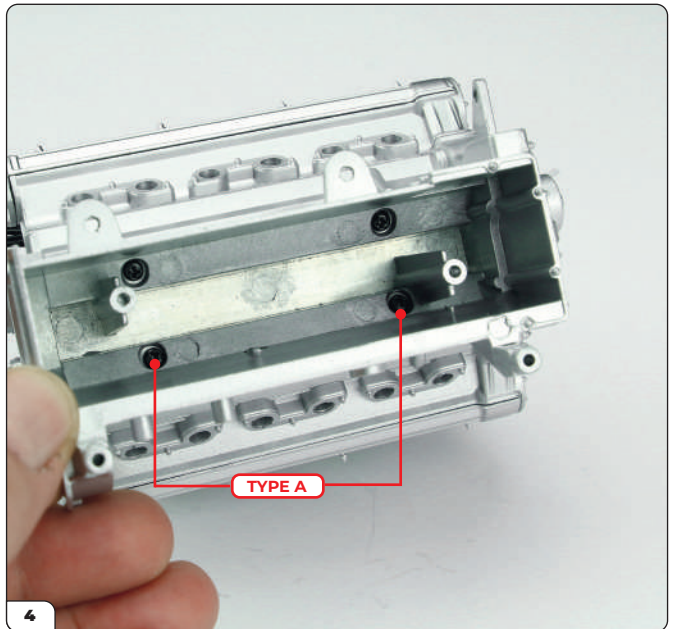


While holding everything in place, turn the assembly over and secure the cylinder head to the engine block using 2x Type A screws. We recommend removing the carburetors from the cylinder head before driving the screws in to avoid damaging the velocity stacks.

Tip: try adding a drop of oil to the thread of the screw if it's difficult to drive in.

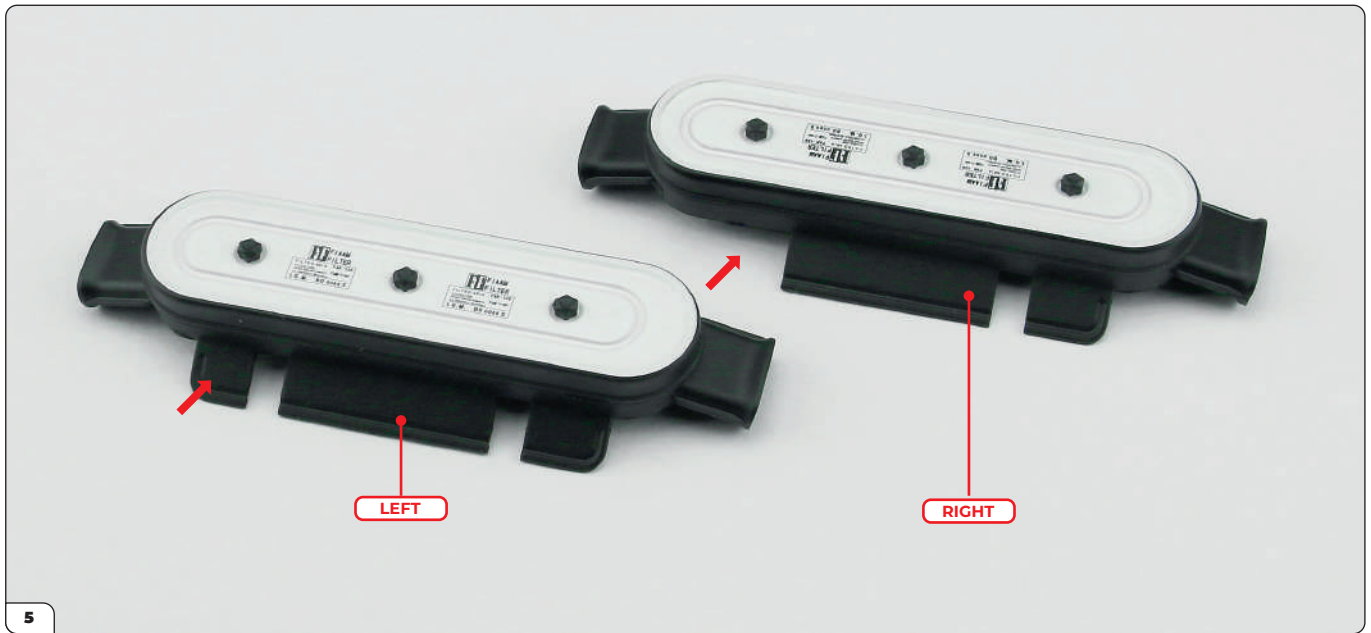


Then place the right cylinder head onto the engine block.



Secure the right cylinder head using 2x Type A screws.

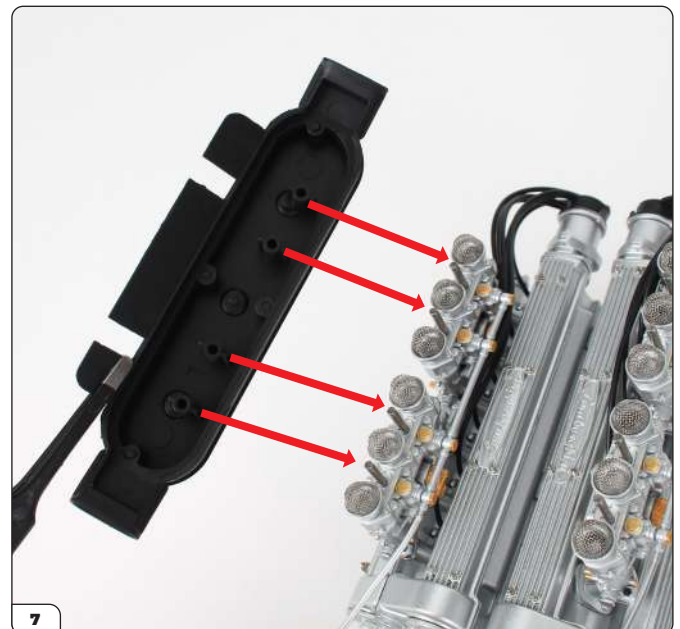
Stage 17: Constructing the Engine



Now take the two air filter boxes, one from the previous stage and the other from stage 10. Note the difference between the air filter boxes on the left and right air filters (arrows), as well as the 'L' and 'R' printed on the underside of them to help differentiate the two.

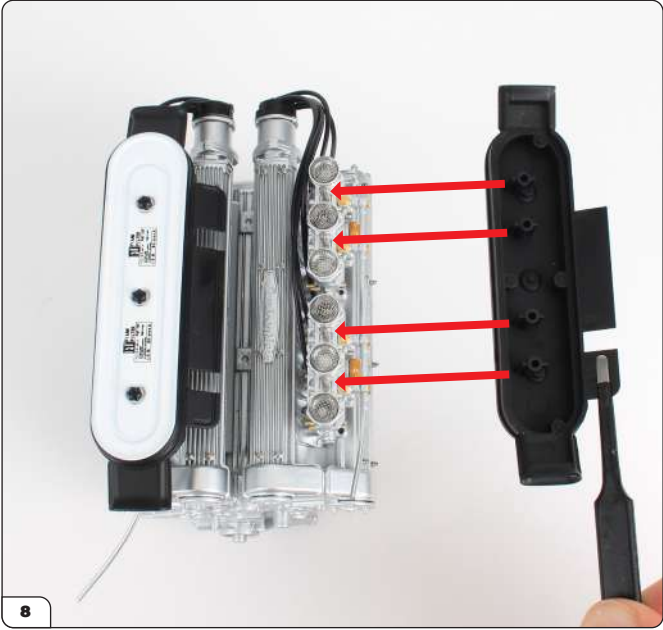


Once you've identified the air filter boxes, align them with the engine block as shown.

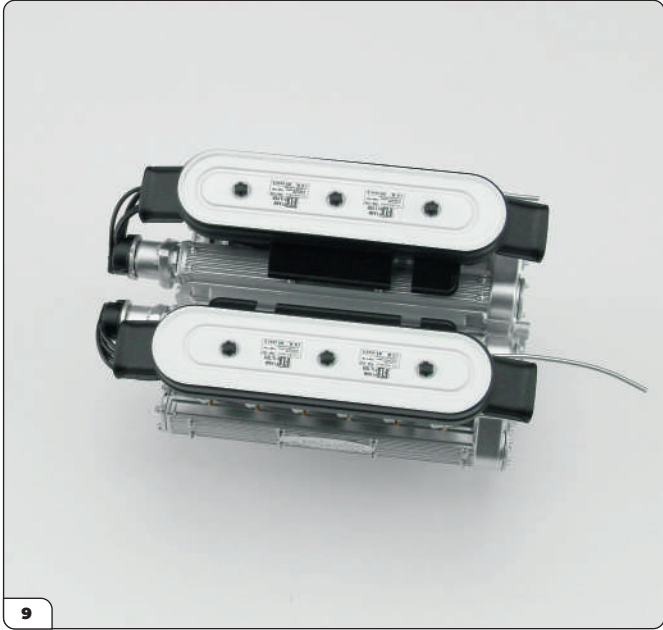


Fit the left air filter box onto the left cylinder head using the support pins in the carburettors (arrows). Take care not to scratch the paint of the air filter box cover.

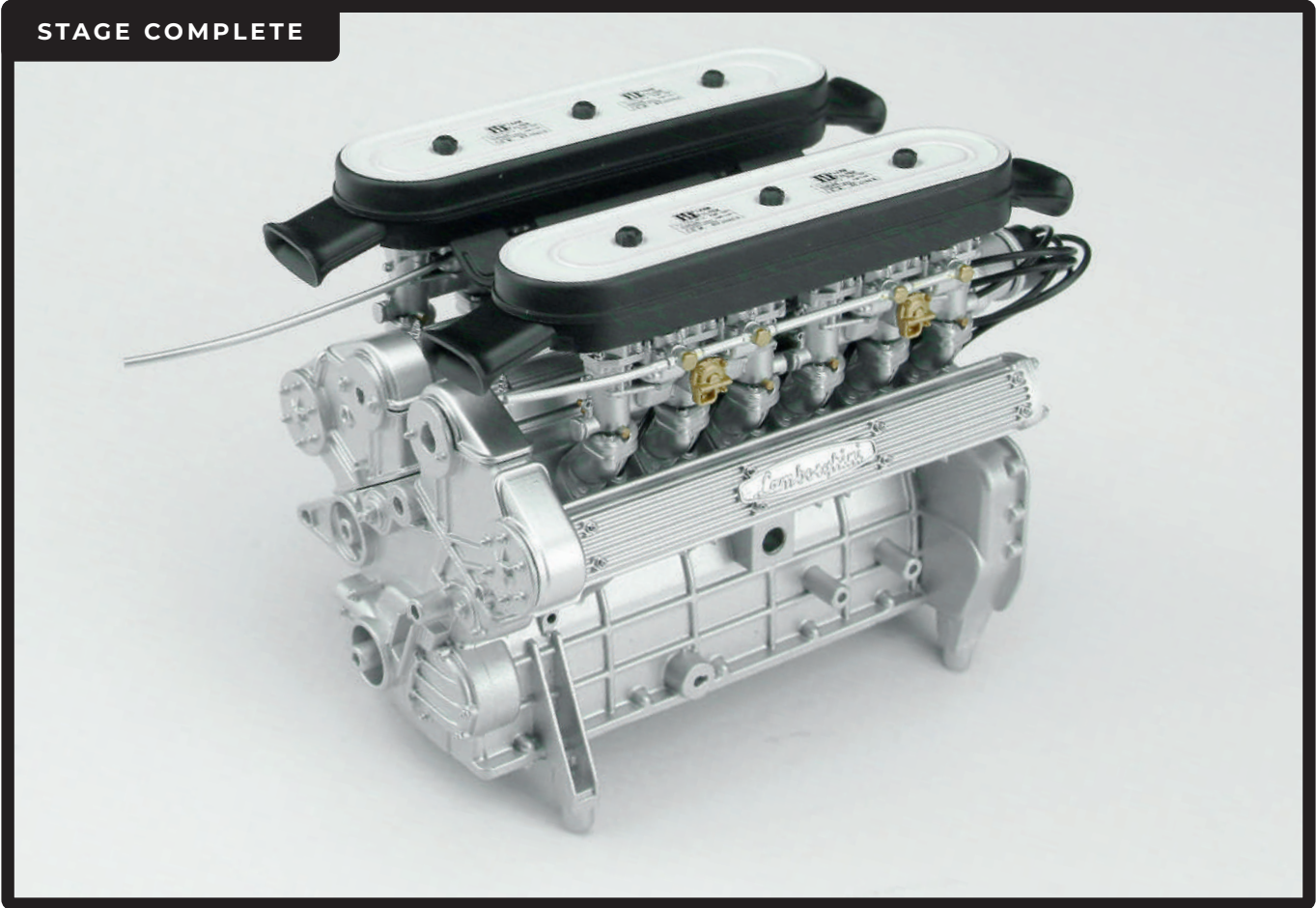
Stage 17: Constructing the Engine



Push the right air filter box onto the other side.



The air filter boxes should look like this when in place.



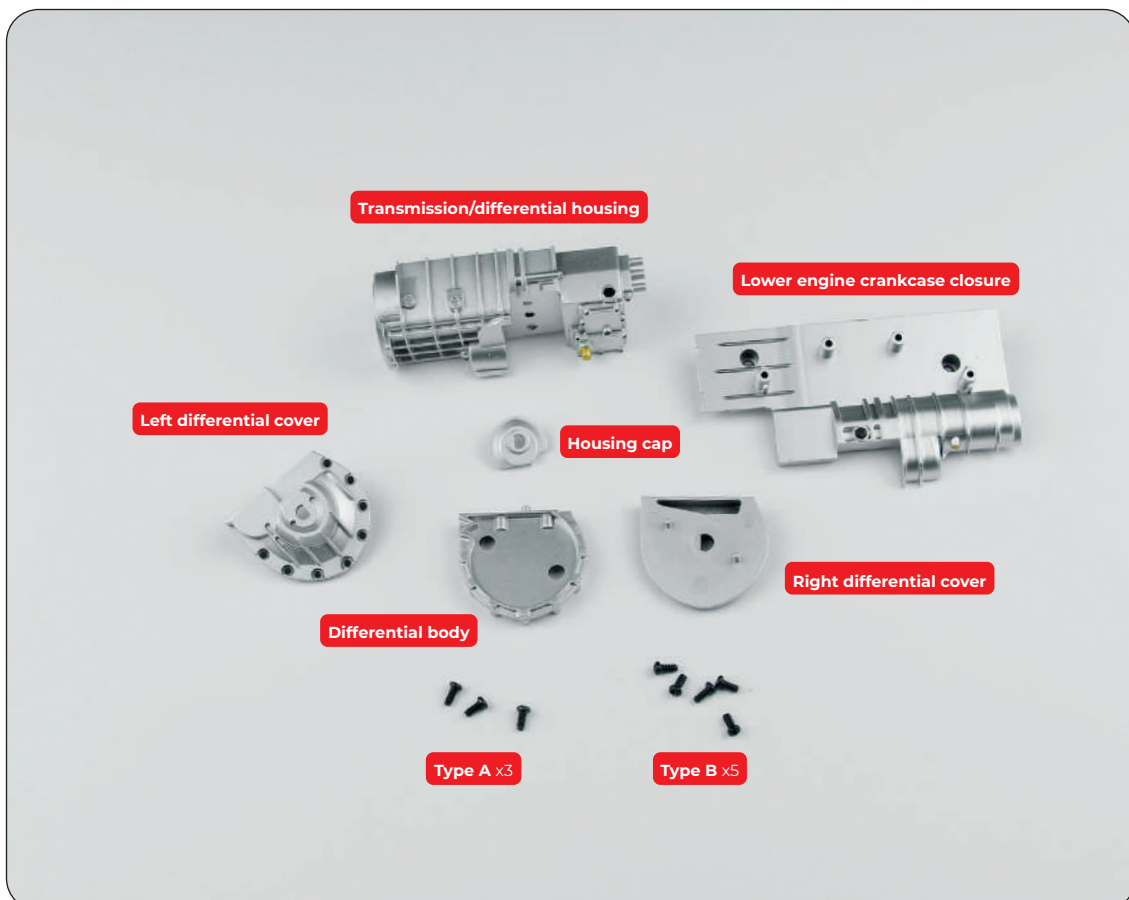
Stage 18: Attaching the Gearbox

Next you'll build the gearbox and install it on your engine, then cover the lower engine up by adding the crankcase closure.



STAGE 18 PARTS LIST

Name
Transmission/differential housing
Lower engine crankcase closure
Left differential cover
Housing cap
Differential body
Right differential cover
Type A screws x3
Type B screws x5



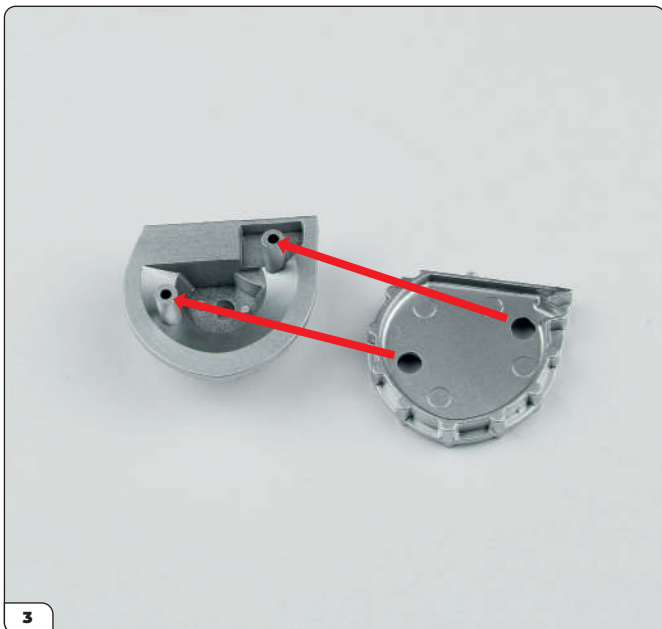
Stage 18: Attaching the Gearbox



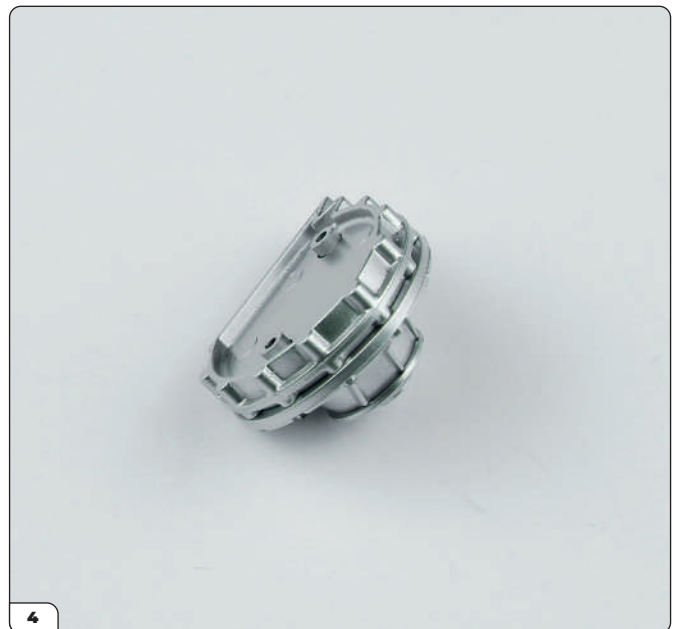
Take the housing cap and the left differential cover. Note the pins on the cap (circled) and the corresponding holes on the cover (arrows).



Fit the cap into the cover so that the D-shaped holes in both parts align as shown.

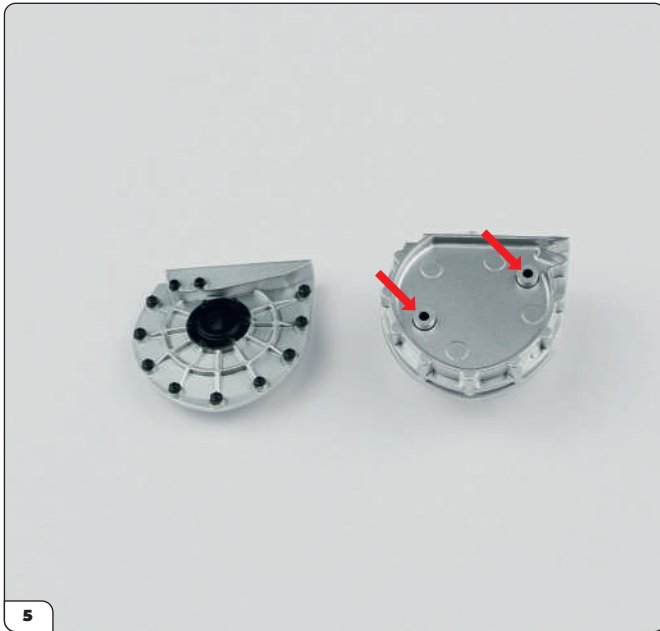


Turn the cover over and align the differential body with it as shown.



Fit the holes over the pins and press the parts together firmly until the fit is flush all the way round.

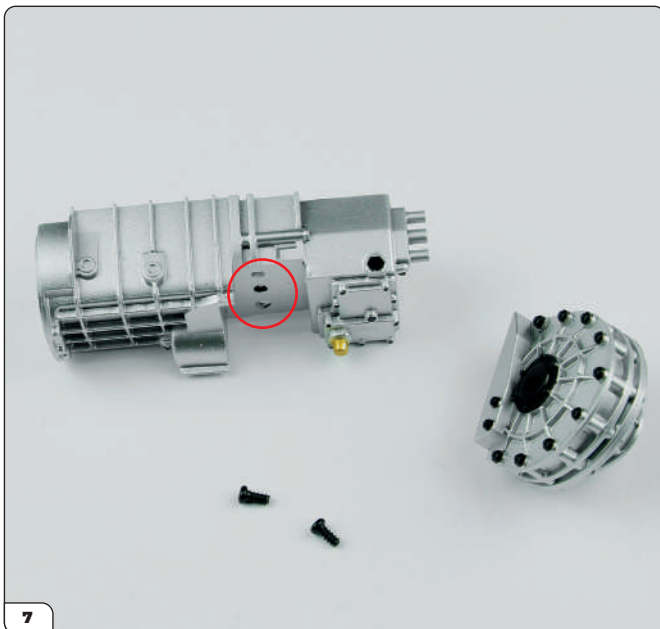
Stage 18: Attaching the Gearbox



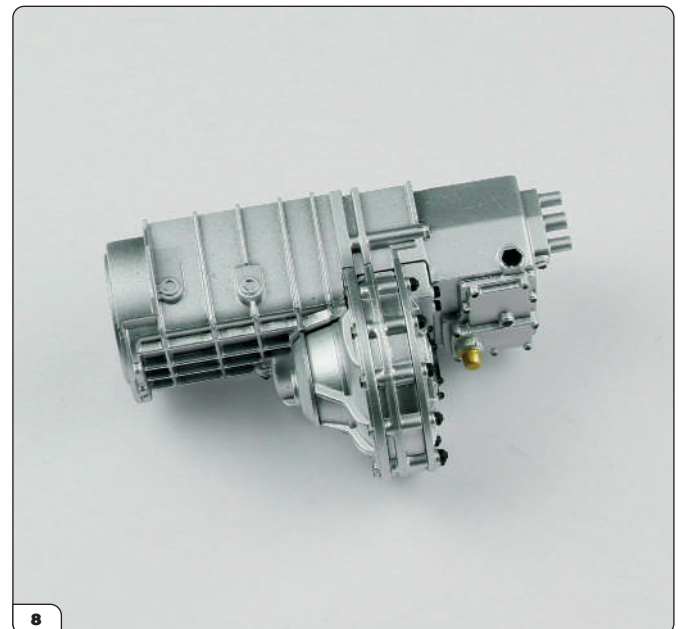
Now align the right differential cover with the assembly. Press the pins on the back of the right cover into the holes of the left cover (arrows).



The differential assembly should now look like this.

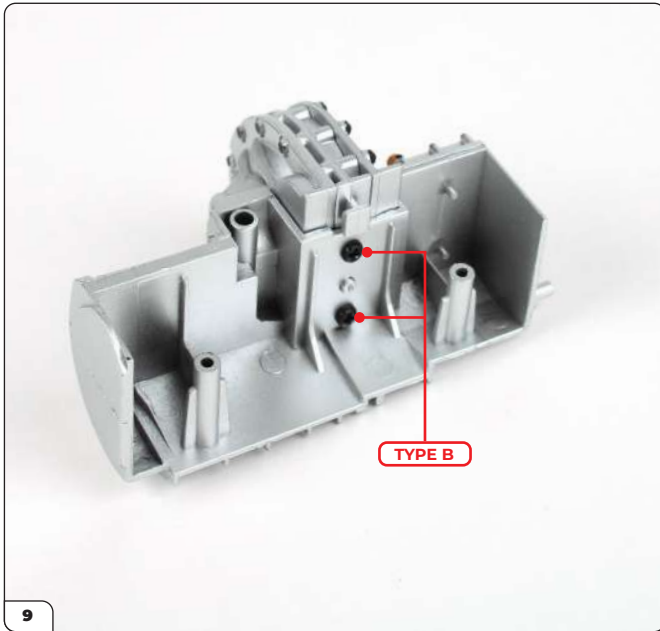


Take the transmission/differential housing and 2x Type B screws. Note the holes in the housing (circled).

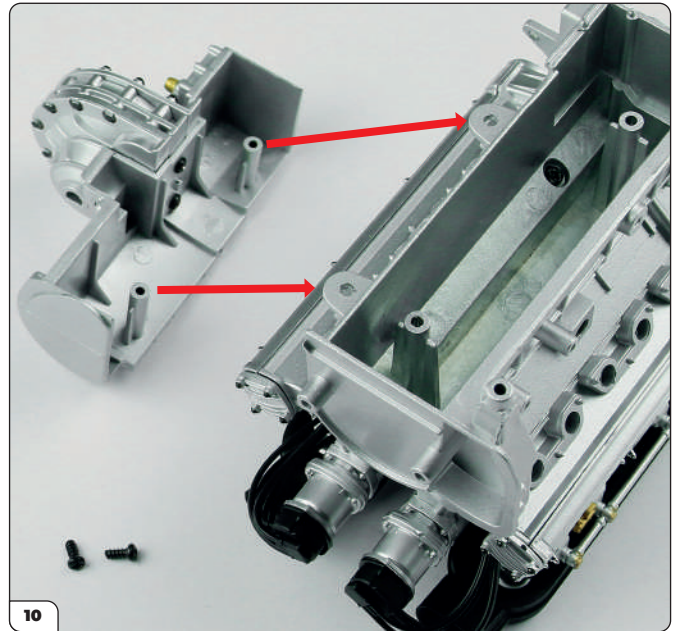


Fit the differential assembly onto the housing as shown.

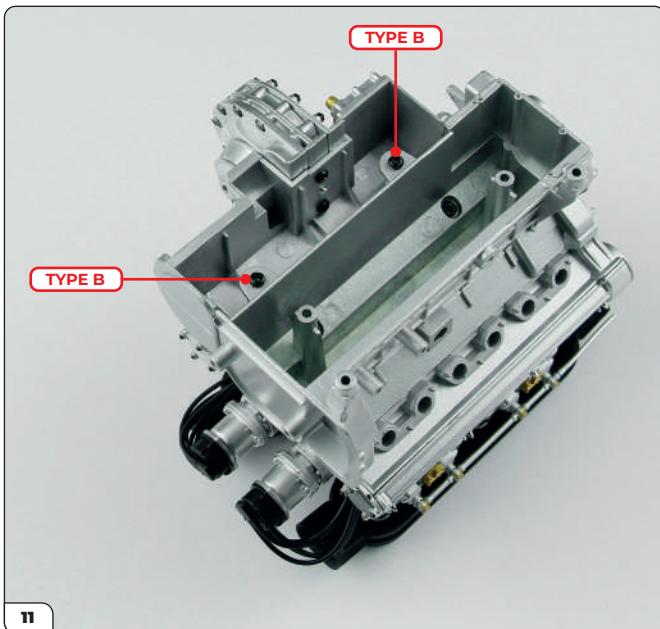
Stage 18: Attaching the Gearbox



Secure in place using 2x Type B screws.

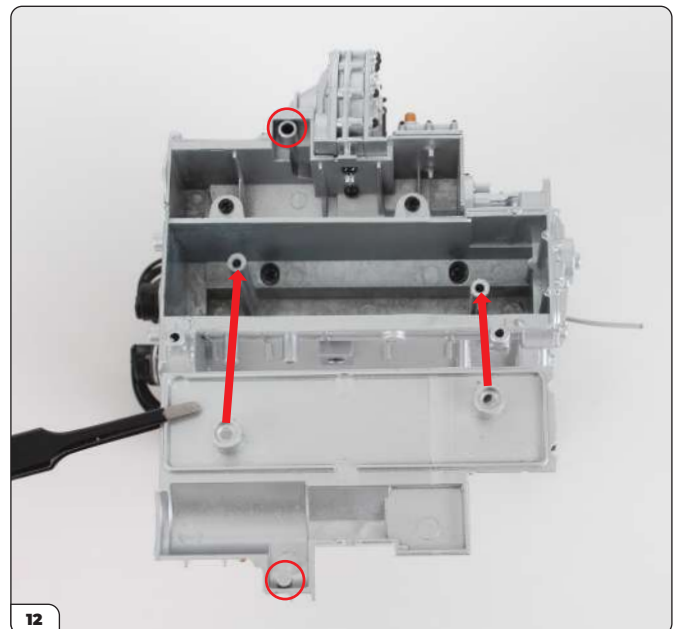


Align the assembly with the engine block as shown. The two columns fit under the protruding tabs from the engine block (arrows).



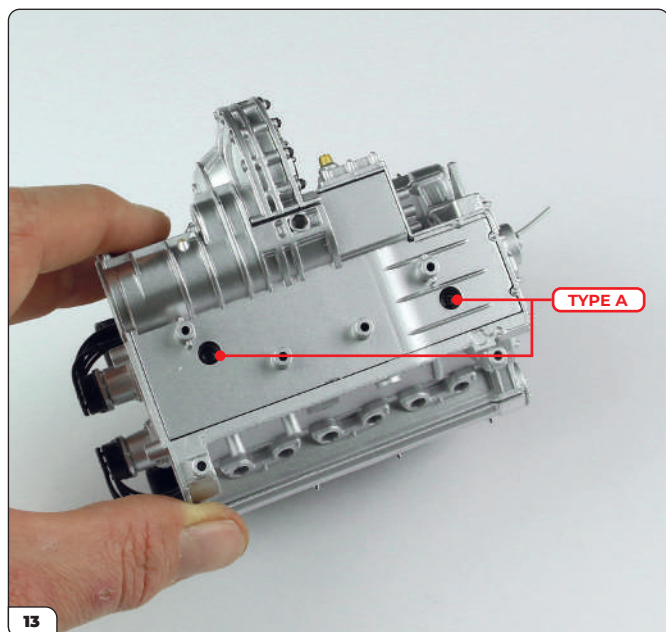
Push the assembly into place, then secure with 2x Type B screws.

Note: you may need to file away excess paint around the transmission/differential housing to get a good fit.

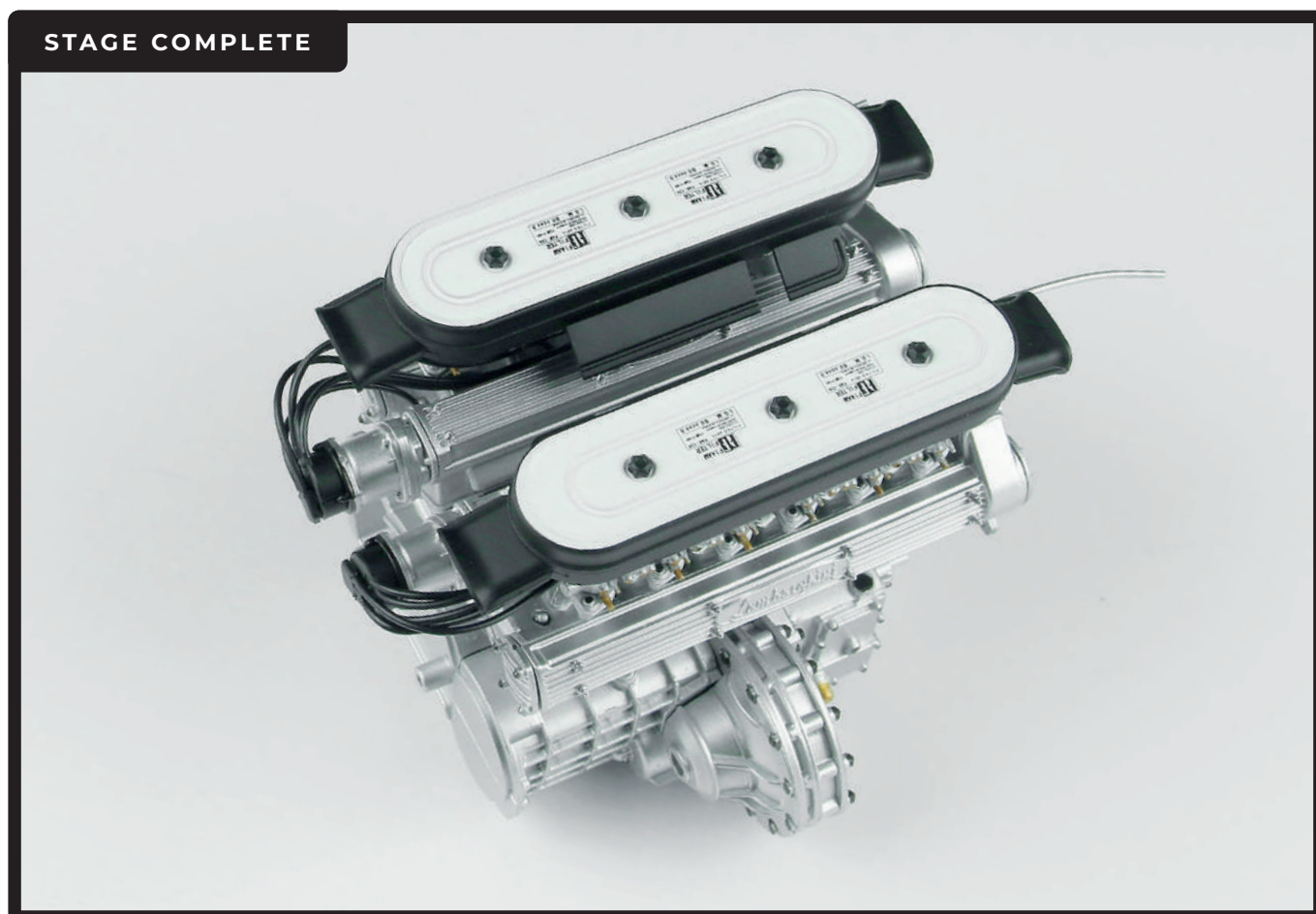


Finally, take the lower engine crankcase cover. Locate the corresponding screw holes (arrows) and the pin and plug (circled) for fitting the parts together.

Stage 18: Attaching the Gearbox



Fit the cover onto the engine base, then drive 2x Type A screws through the holes to secure everything together.



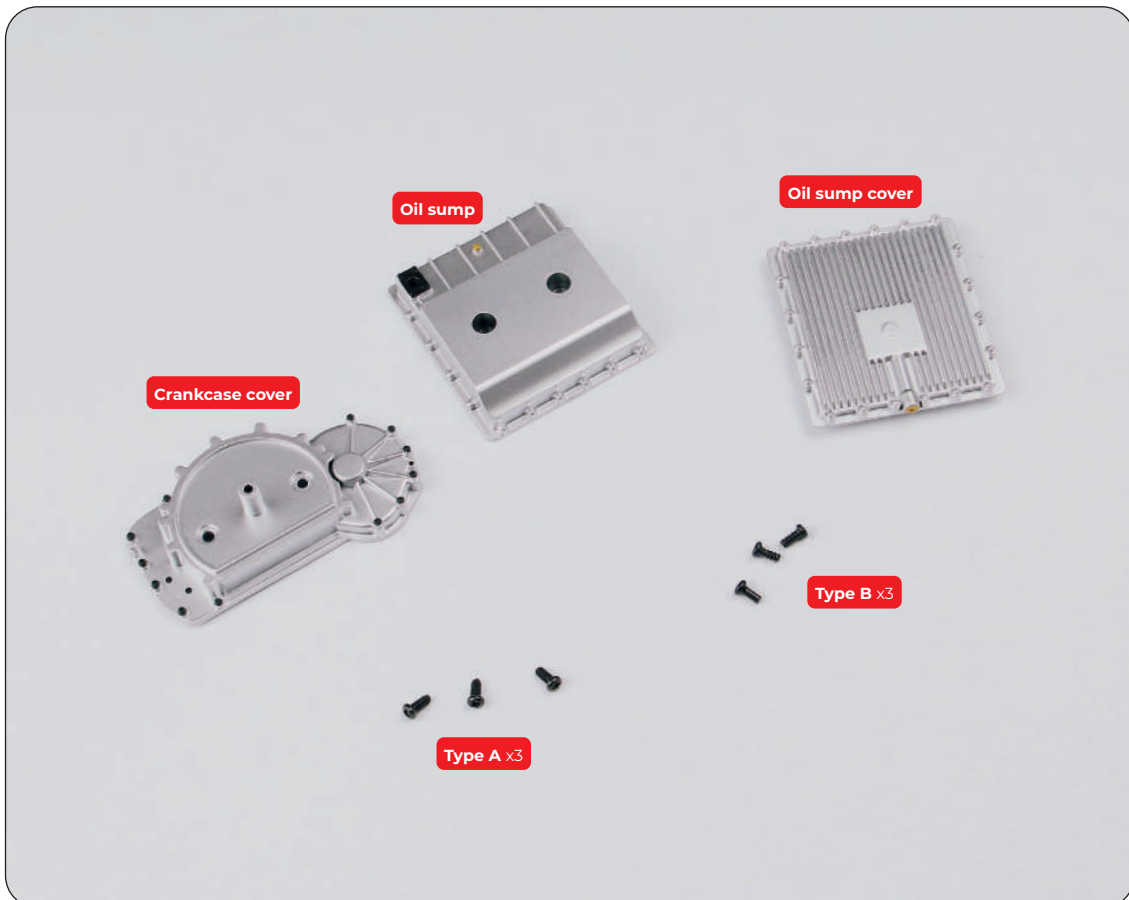
Stage 19: Fixing the Crankcase Cover and Oil Sump

The impressive engine continues to take shape as you add the crankcase cover to the side and oil sump cover underneath.

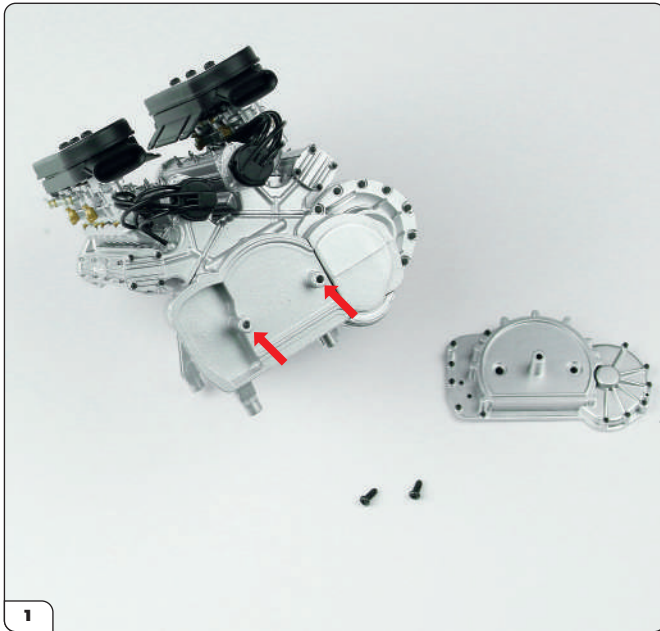


STAGE 19 PARTS LIST

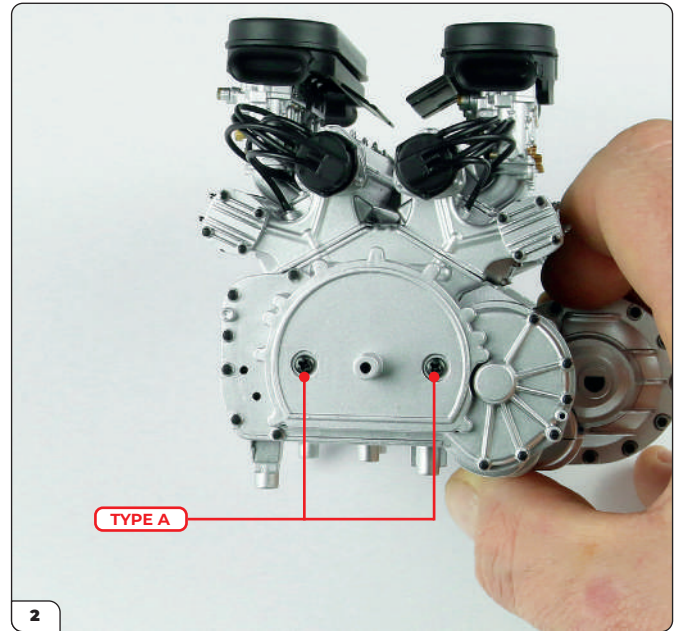
Name
Crankcase cover
Oil sump
Oil sump cover
Type A screws x3
Type B screws x3



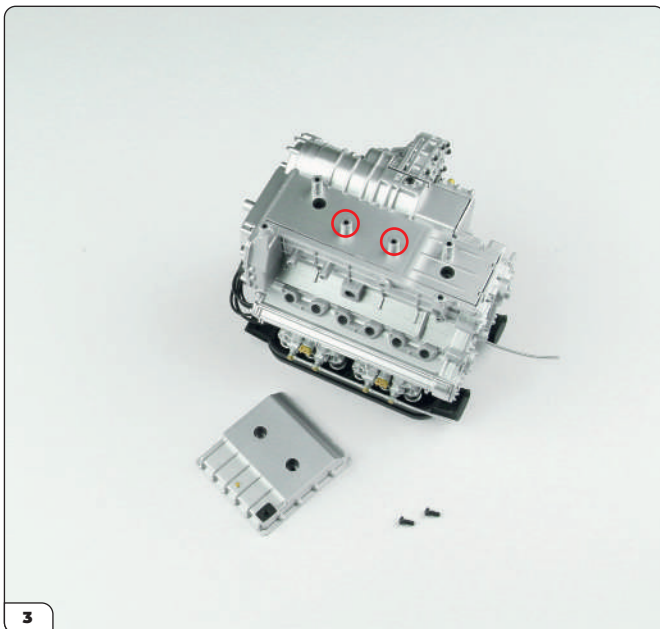
Stage 19: Fixing the Crankcase Cover and Oil Sump



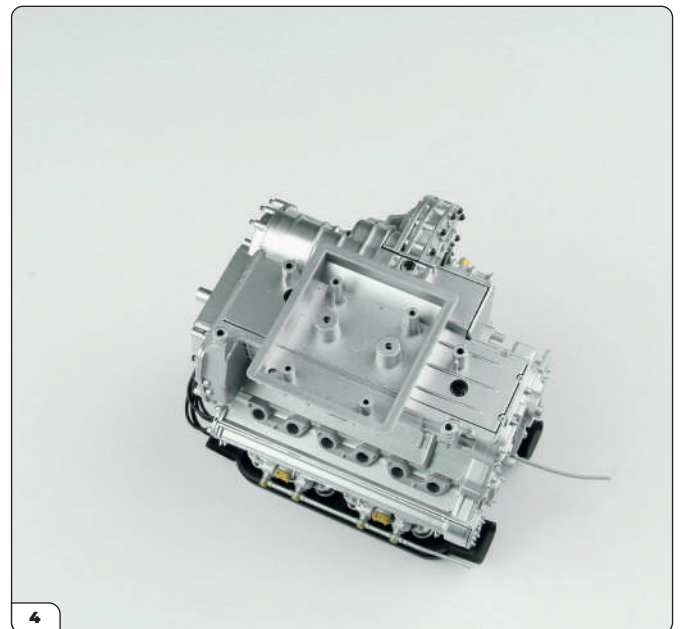
Take the crankcase cover and two Type A screws. The cover fits over the protruding screw holes on the engine block (arrows).



Press the cover onto the engine block as shown, then secure with 2x Type A screws.

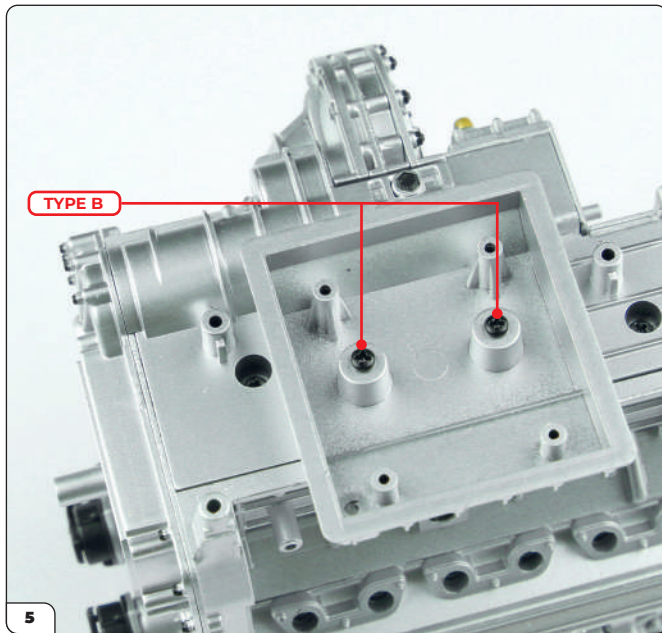


Next take the oil sump and two Type B screws. Place the engine block upside down on your work surface as shown. Note the two pins in the middle of the engine block (circled).

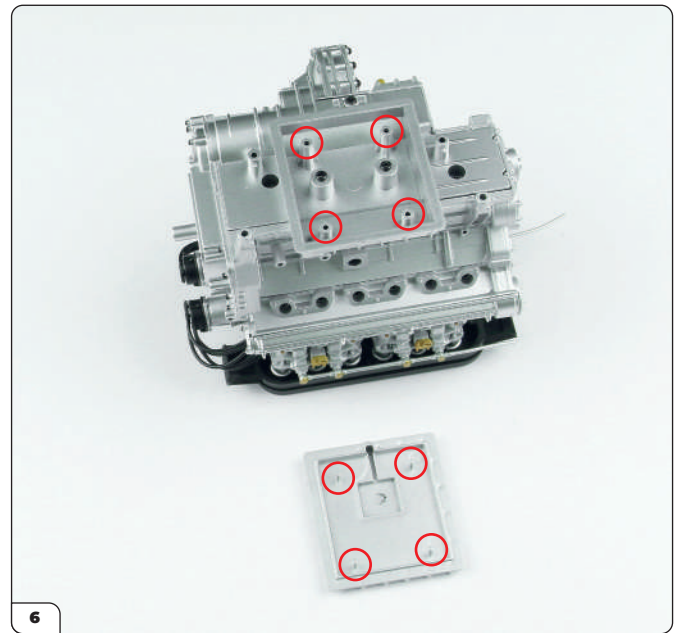


Turn the oil sump over and position it on the pins of the engine block as shown.

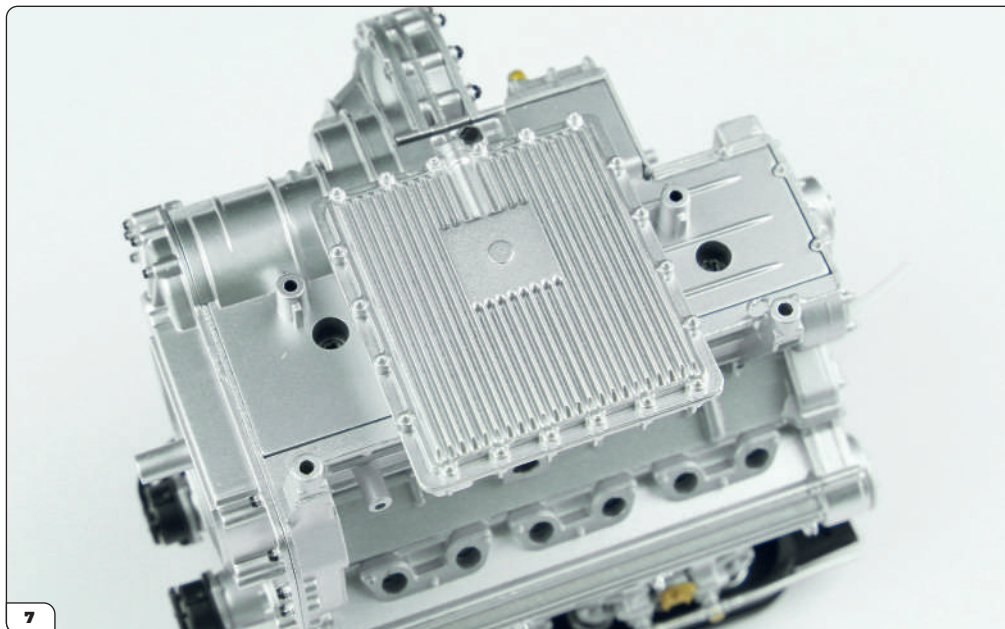
Stage 19: Fixing the Crankcase Cover and Oil Sump



Secure the oil sump using 2x Type B screws.



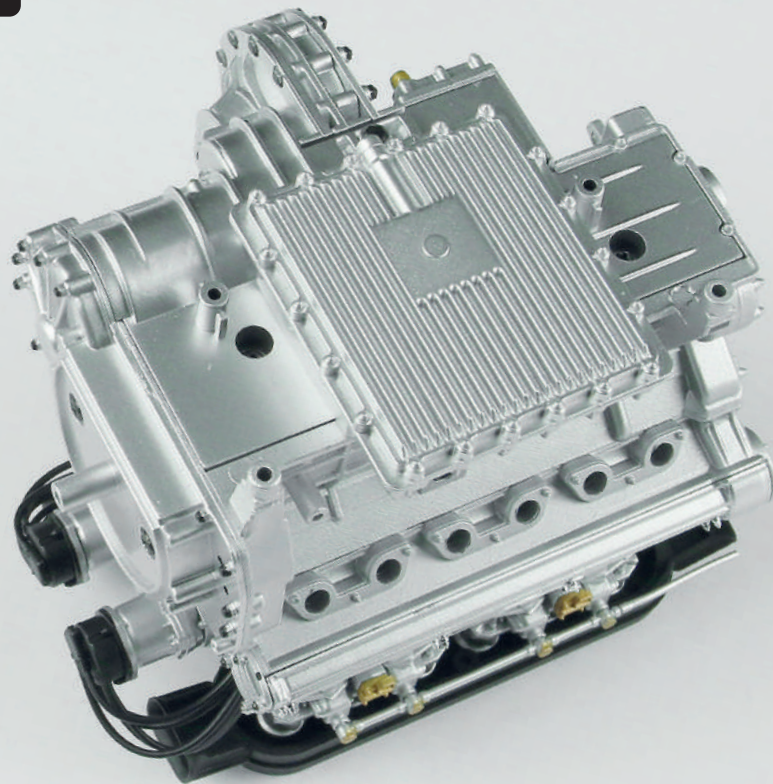
Finally take the oil sump cover. Note the four pins on the cover and the corresponding holes (circled).



Press the cover firmly onto the oil sump as shown, until the fit is flush all the way round the edges.

Stage 19: Fixing the Crankcase Cover and Oil Sump

STAGE COMPLETE



Stage 20: Attaching the Alternator

This stage is all about the alternator, which converts mechanical energy into electrical energy to charge the car's battery. Take care when assembling it as some of the parts can be fragile!

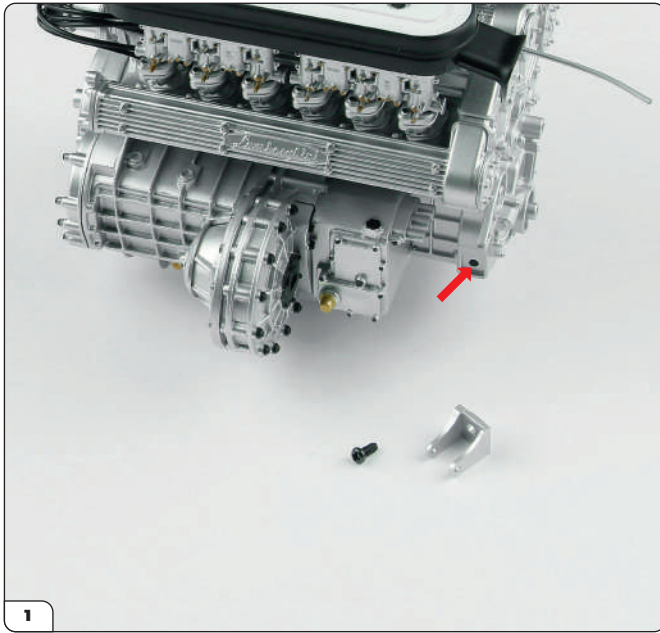


STAGE 20 PARTS LIST

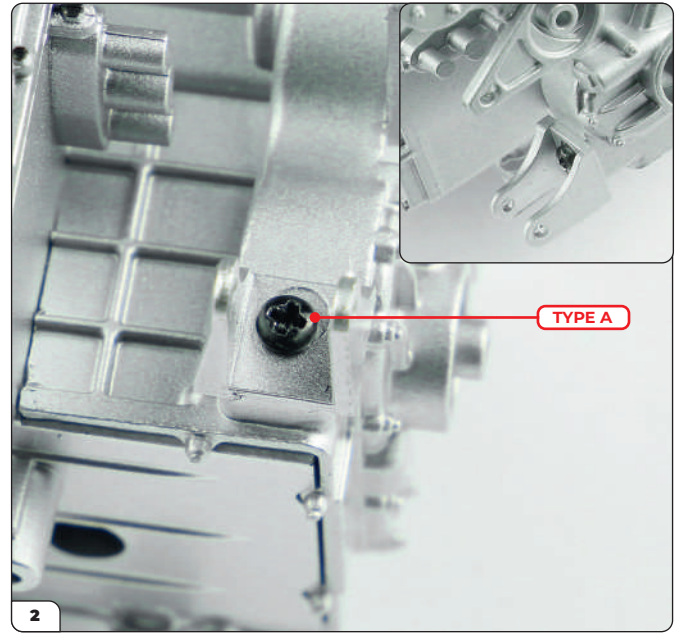
Name
Alternator cover
Alternator bracket
Alternator base
Alternator drive belt
Alternator fan
Engine support
Type A screws x2



Stage 20: Attaching the Alternator



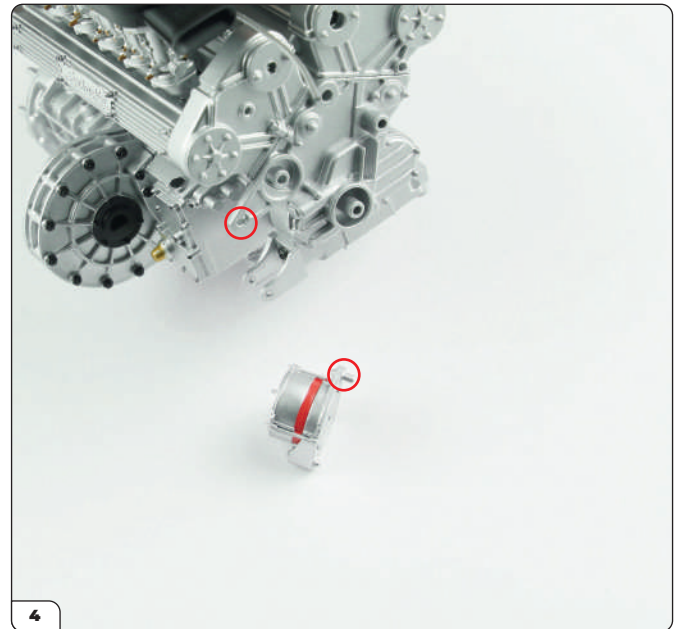
First take the alternator bracket and locate its mounting on the corner of the engine block (arrow).



Fit the bracket in place and secure with 1x Type A screw. The inset shows the correct orientation for the bracket.

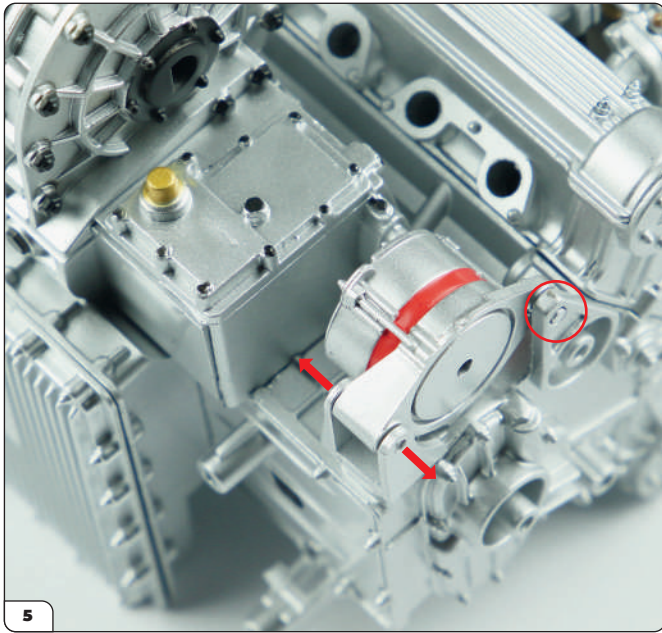


Next fit the alternator cover and base together by pressing the pin into the hole. Test fit the part to make sure the thin rods on the side of the cover align with the recesses on the base (inset, circled).

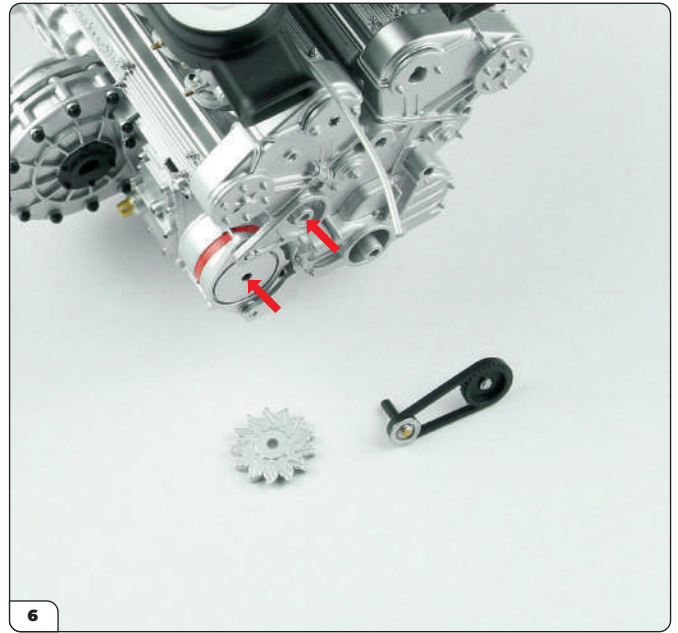


Align the alternator with the bracket on the engine block as shown. The large pin on the alternator fits into the hole (circled).

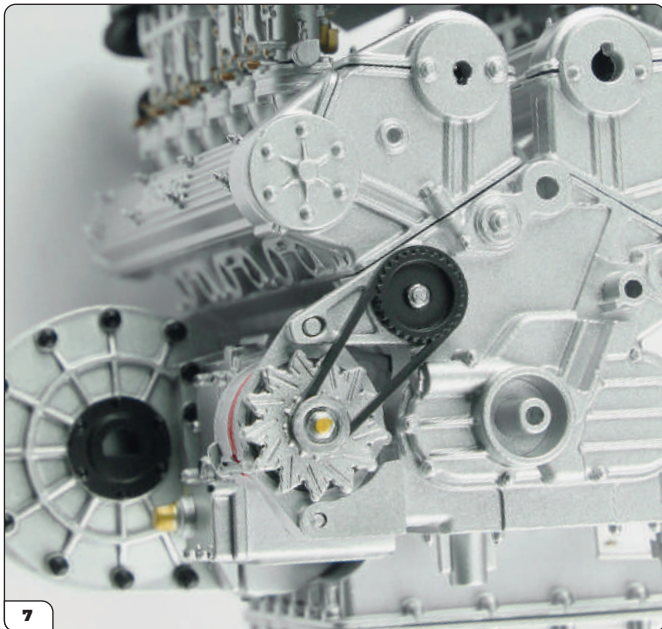
Stage 20: Attaching the Alternator



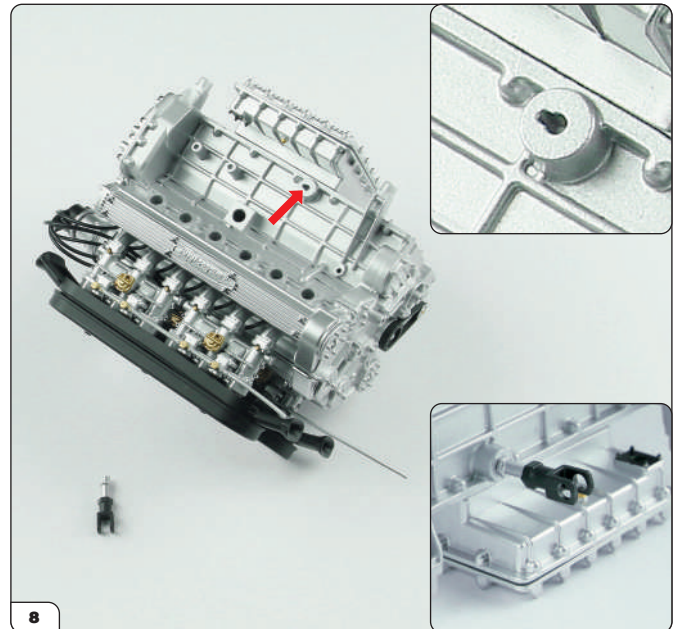
Push the large pin in place (circled), then lower the alternator into the bracket you fitted earlier. Gently spread the bracket's arms apart (arrows) to allow the two smaller pins of the alternator to fit in place.



Take the fan and drive belt. Fit the pin on the drive belt through the fan, then press into place on the alternator (arrows).

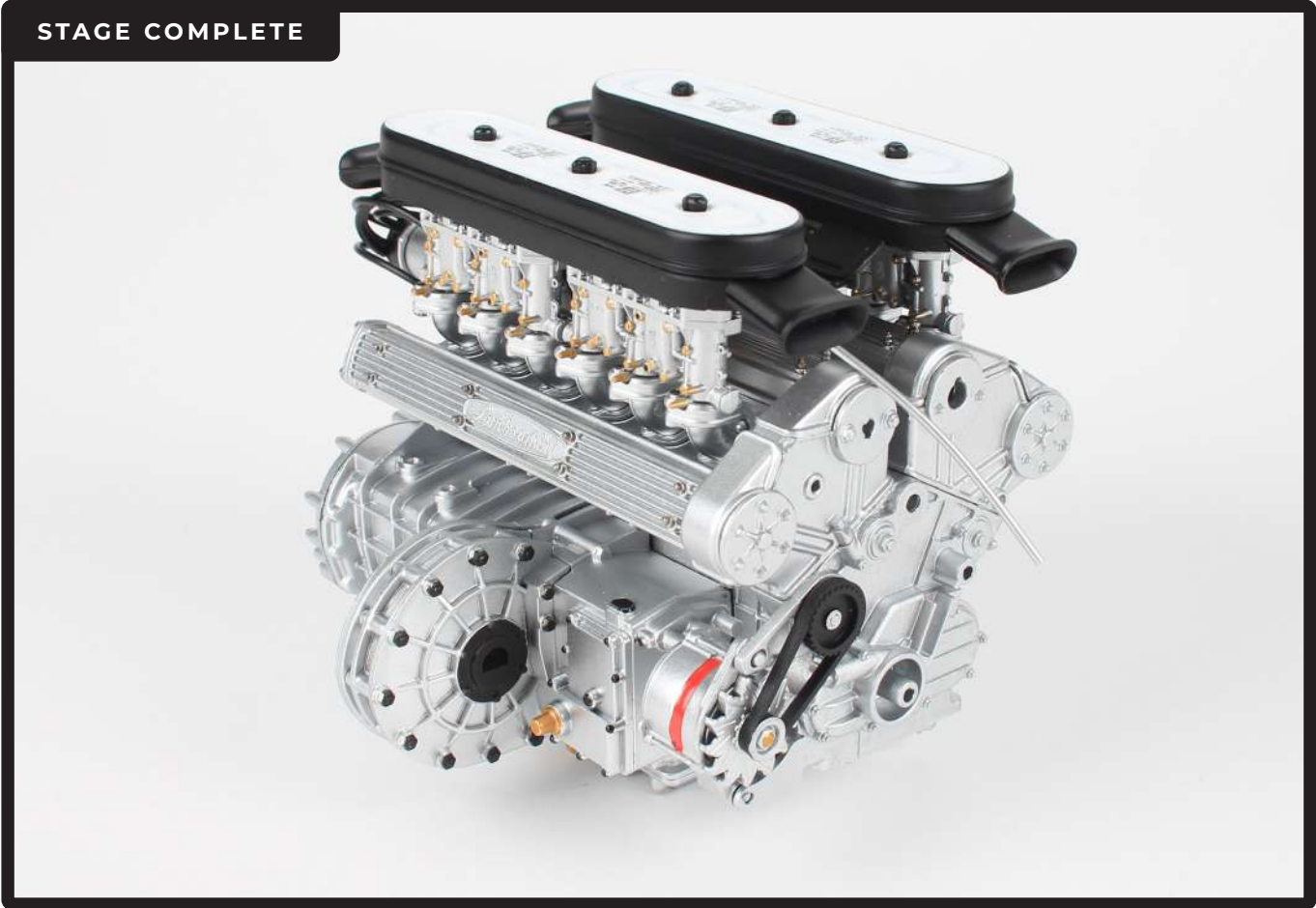


The fan and drive belt should look like this once in place.



Finally, fit the engine support into the shaped hole (inset, above). The lower inset photo shows the support fitted to the engine.

Stage 20: Attaching the Alternator



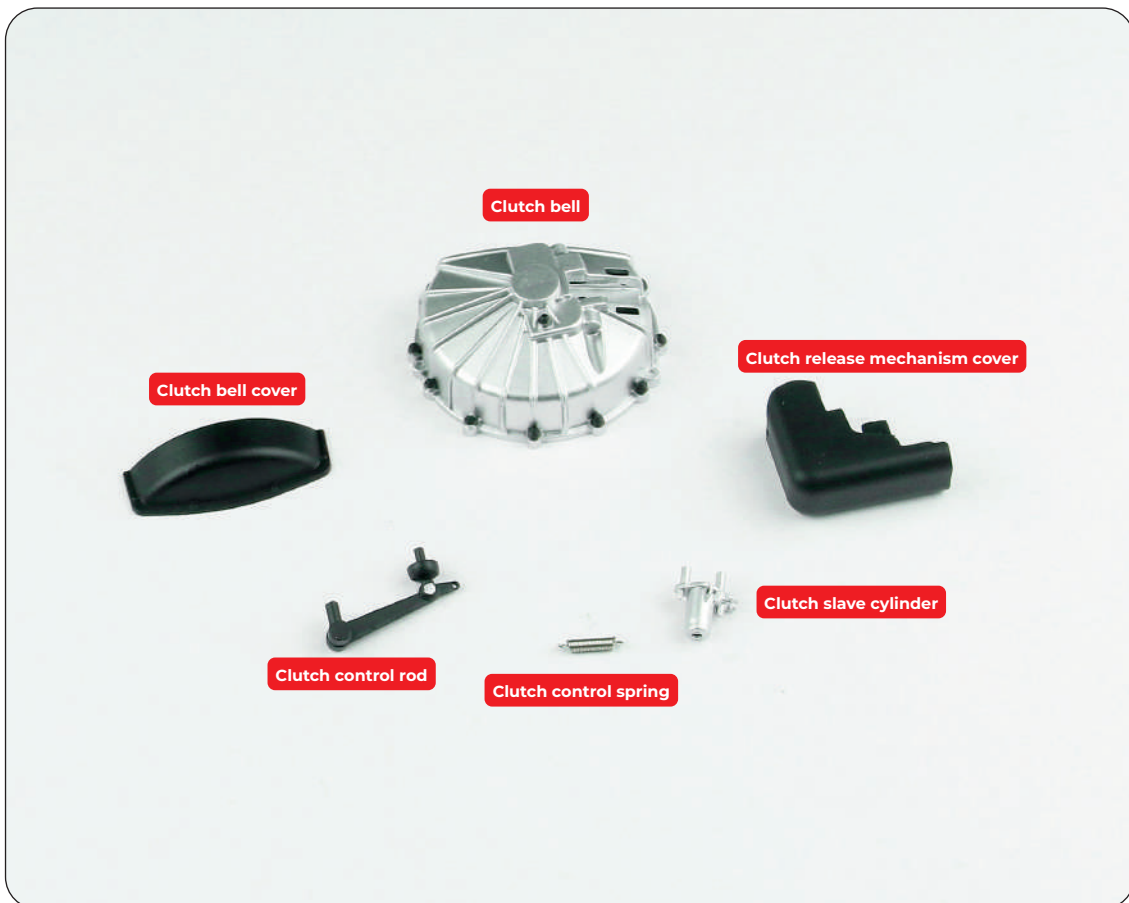
Stage 21: Installing the Clutch

Next you'll add the clutch onto your engine. The control spring in this stage can be difficult to attach, take your time to connect it!

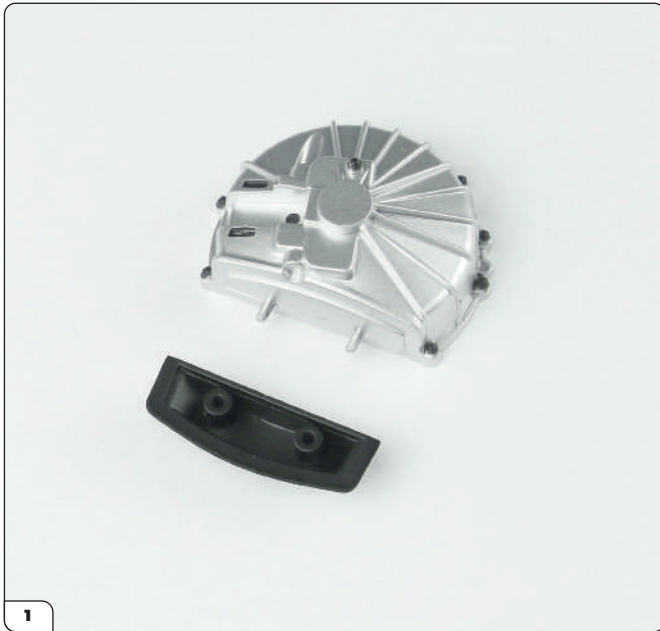


STAGE 21 PARTS LIST

Name
Clutch bell
Clutch bell cover
Clutch release mechanism cover
Clutch control rod
Clutch control spring
Clutch slave cylinder



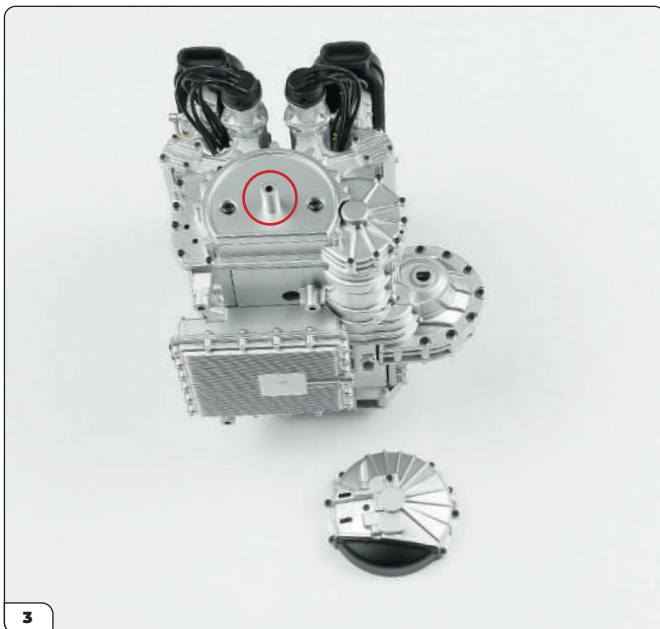
Stage 21: Installing the Clutch



Align the holes on the clutch bell cover with the pins on the clutch bell as shown (arrows).



Push the cover onto the clutch bell until the fit is flush.

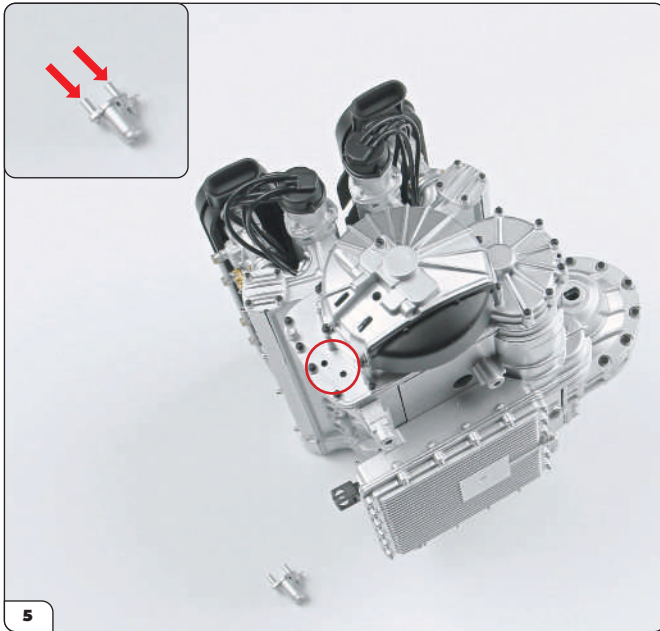


Place the engine assembly onto your work surface as shown, and locate the pin for attaching the clutch bell (circled).

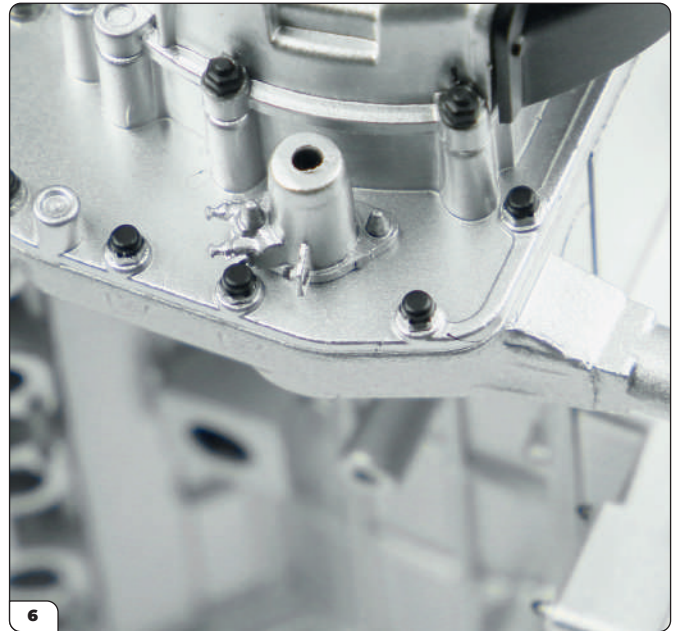


Gently press the clutch bell onto the engine so that the cover is oriented downwards as shown.

Stage 21: Installing the Clutch



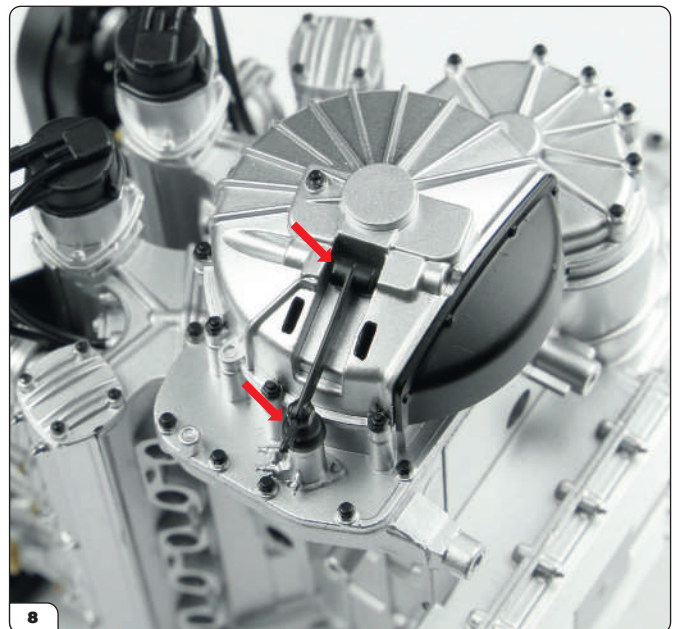
Next take the clutch slave cylinder. The two pins on the cylinder (inset, arrows) will be inserted into the holes in the engine, next to the clutch bell (circled).



Press the cylinder into the holes, orienting it as shown.

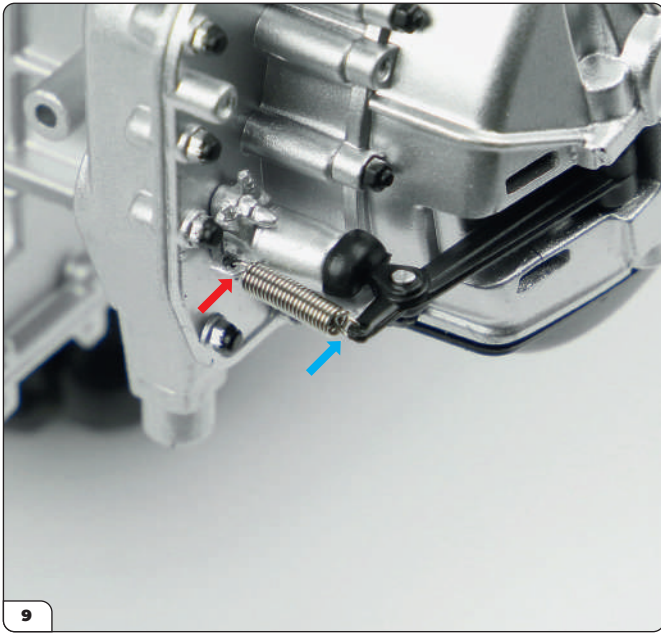


Next take the clutch control rod. Note that one of the pins on the rod is larger than the other (arrows).

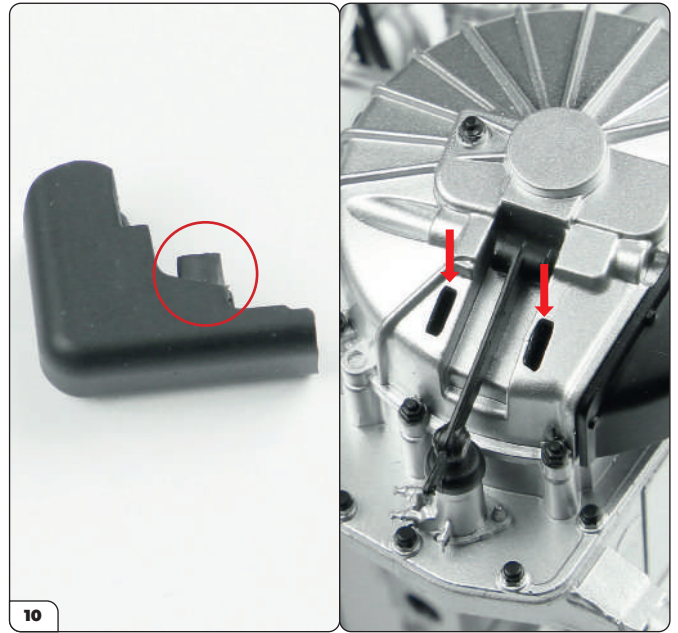


Press the larger pin into the corresponding hole in the clutch bell and the smaller pin into the hole in clutch slave cylinder.

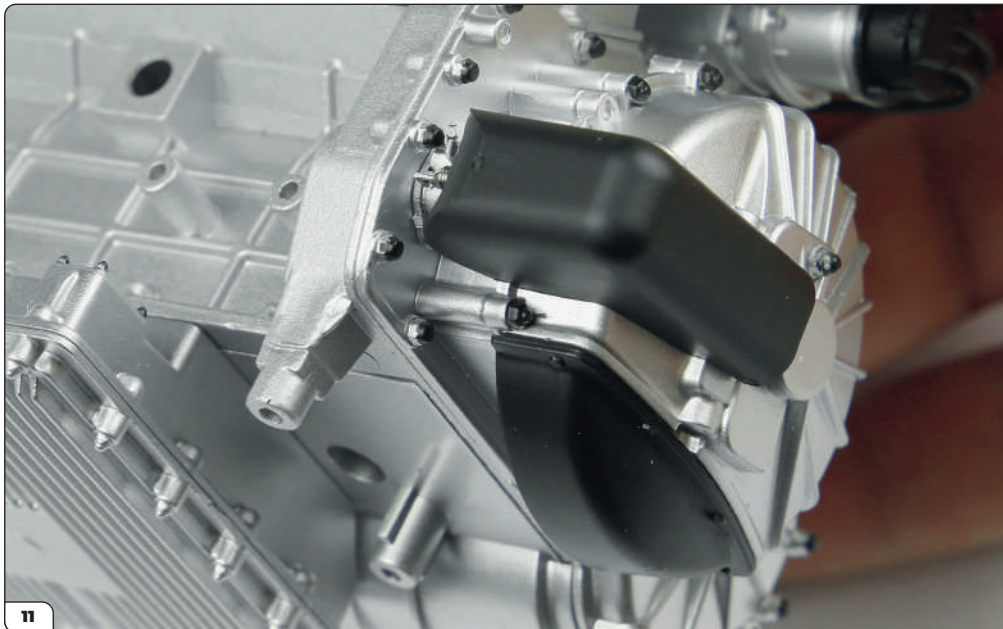
Stage 21: Installing the Clutch



The clutch spring has two hooks at each end, one faces up and the other down. Using tweezers, first connect the end facing downwards to the cylinder (red arrow). Then carefully hook the end facing upwards to the control rod (blue arrow) as shown.



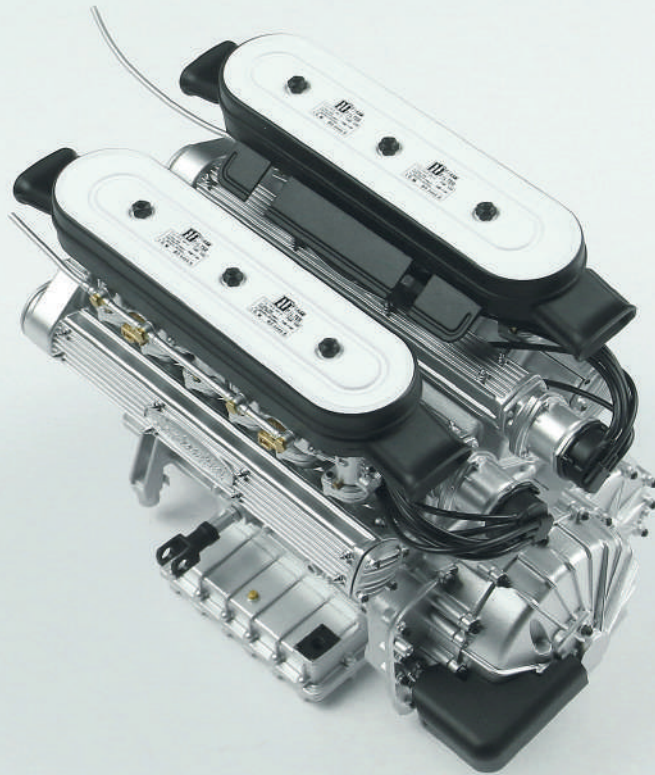
The clutch release mechanism cover has two protruding tabs (circled) which will be inserted into the rectangular holes on the clutch bell (arrows).



Carefully press the cover into the clutch bell so that it covers the control rod as shown.

Stage 21: Installing the Clutch

STAGE COMPLETE



Stage 22: Fitting Essential Engine Parts

You'll install various parts that feed the oil and petrol needed by the engine to operate, as well as the water pump which keeps it from overheating and the starter motor that ignites it.

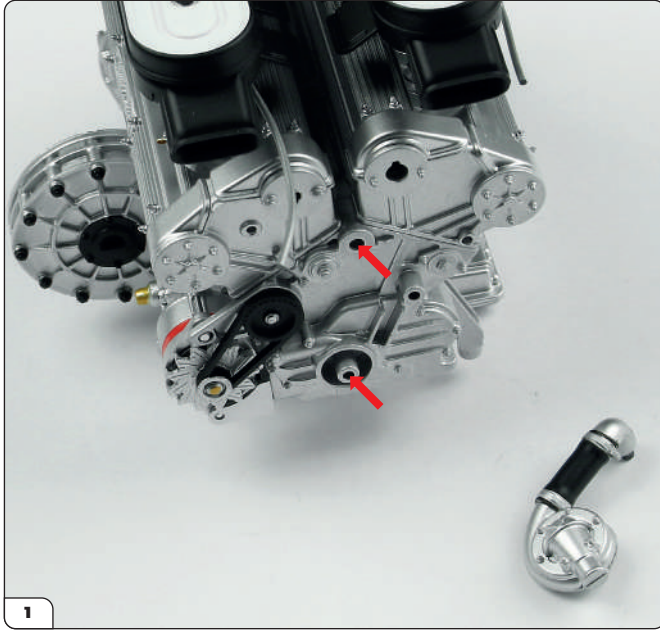


STAGE 22 PARTS LIST

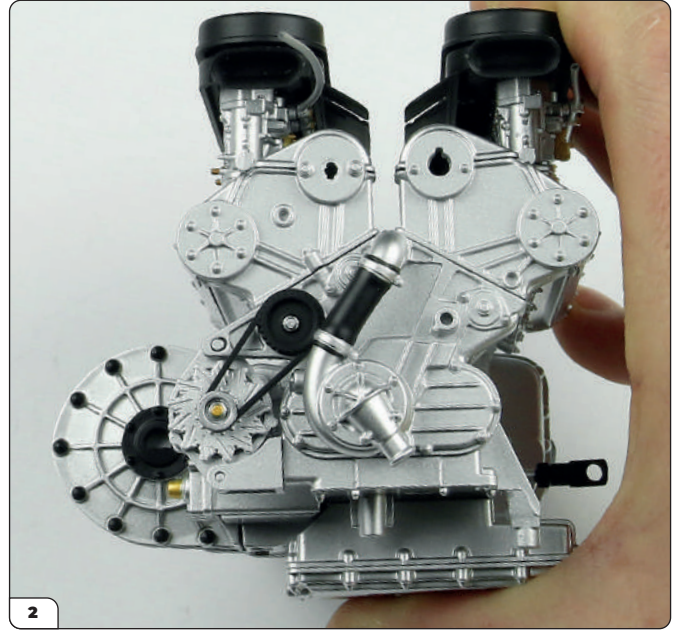
Name
Engine support
Starter Motor
Oil filter
Dipstick
Water pump
Engine oil connector pipe
Carburettor petrol pipe
Carburettor petrol pipe connector



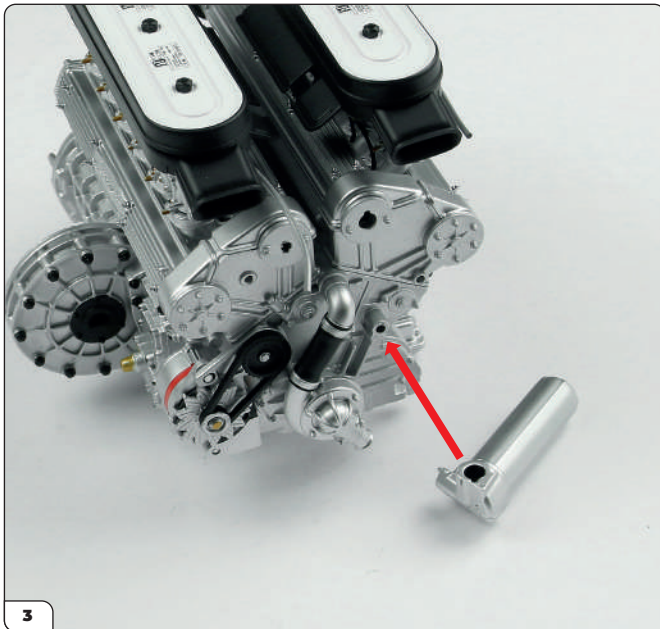
Stage 22: Fitting Essential Engine Parts



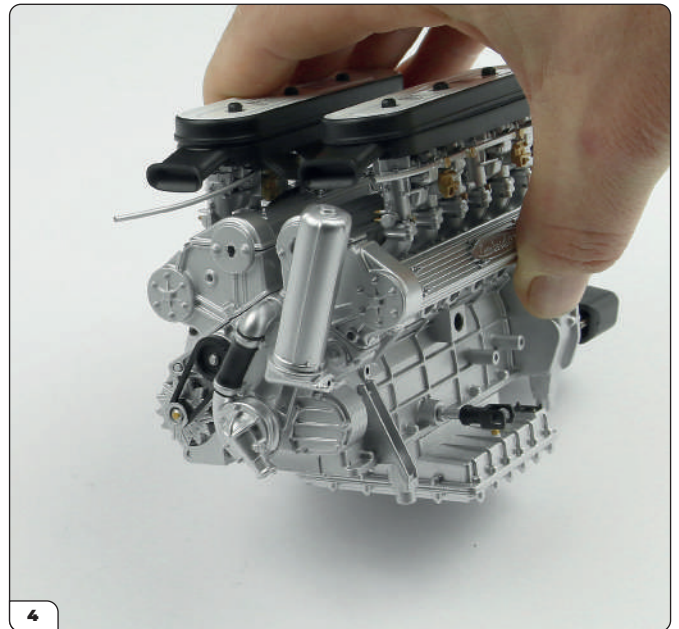
First take the water pump which fits onto the side of the engine where the alternator is located. Note the two holes for mounting the water pump (arrows).



Press the water pump into the engine block as shown.

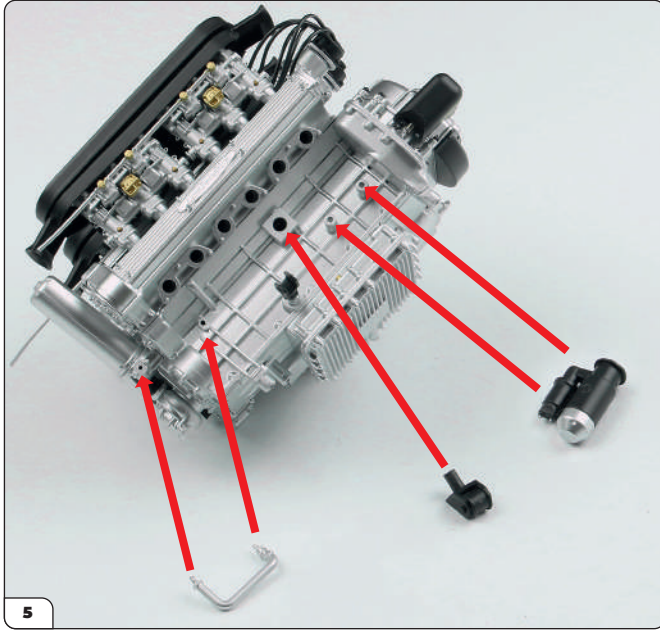


Next take the oil filter, which fits onto the lug next to the water pump (arrow). The lug on the engine and hole on the oil filter are shaped to ensure the positioning is correct when fitted.



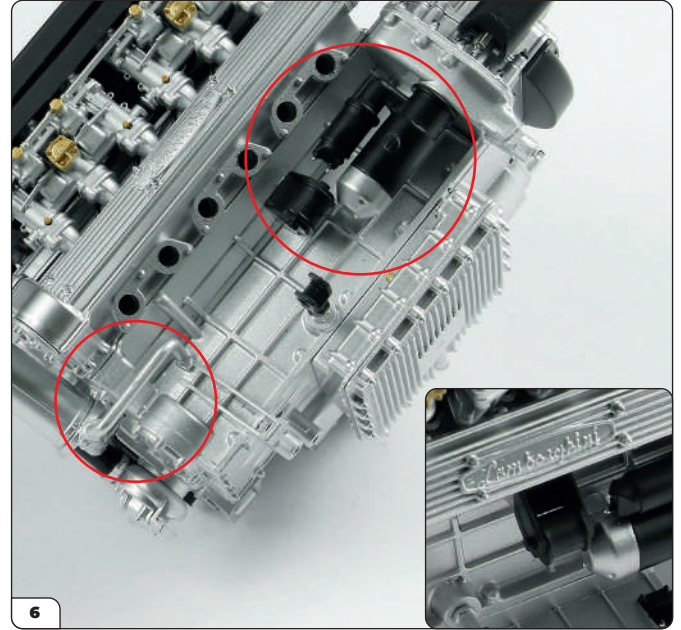
Push firmly to fit the oil filter onto the engine as shown.

Stage 22: Fitting Essential Engine Parts



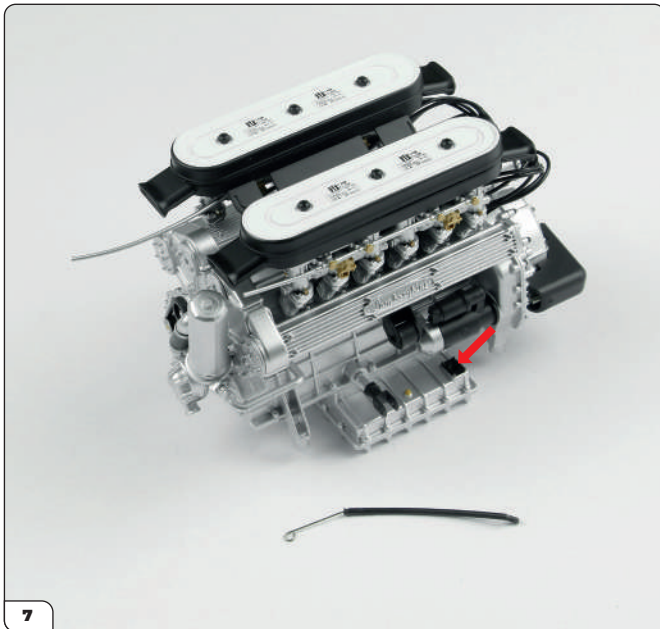
Now turn the engine assembly around as shown. Take the engine oil connector pipe, the engine support and the starter motor. Locate the holes for each part on the side of the engine as shown (arrows).

Tip: You may need to file some paint off the pins on the parts to get a good fit.

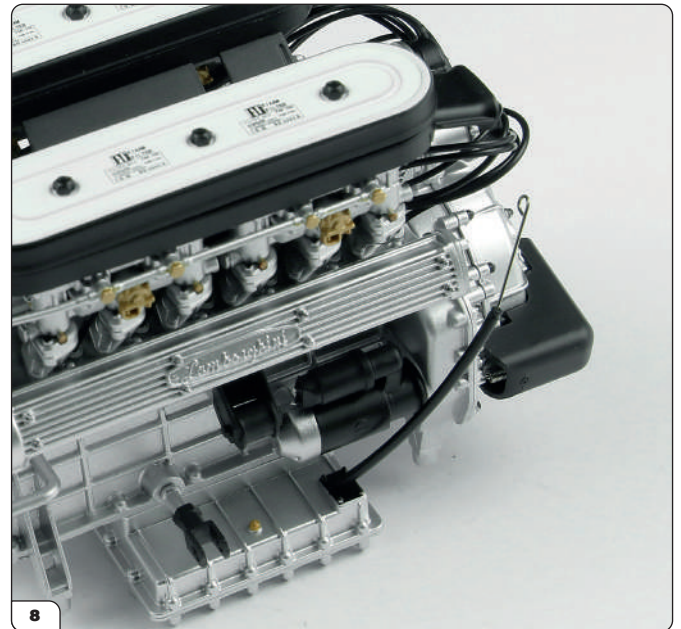


Push the parts into place (circled). Note the orientation of the engine support in the photo, with its cylinder close to the starter motor (inset).

Tip: You may find it easier to fit the dipstick (step 7-8) before attaching the starter motor.

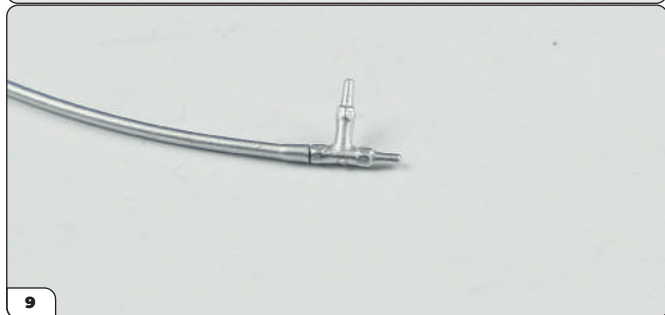
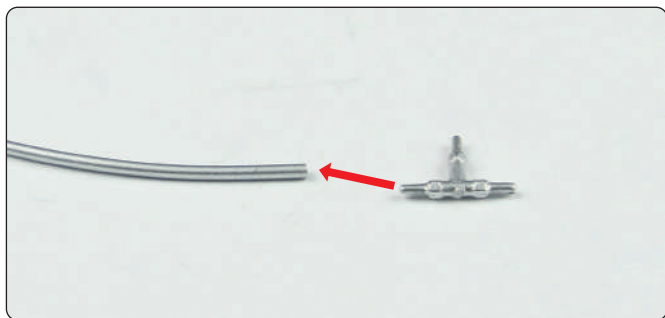


Now take the dipstick, which fits into the hole in the oil sump underneath the starter motor (arrow).



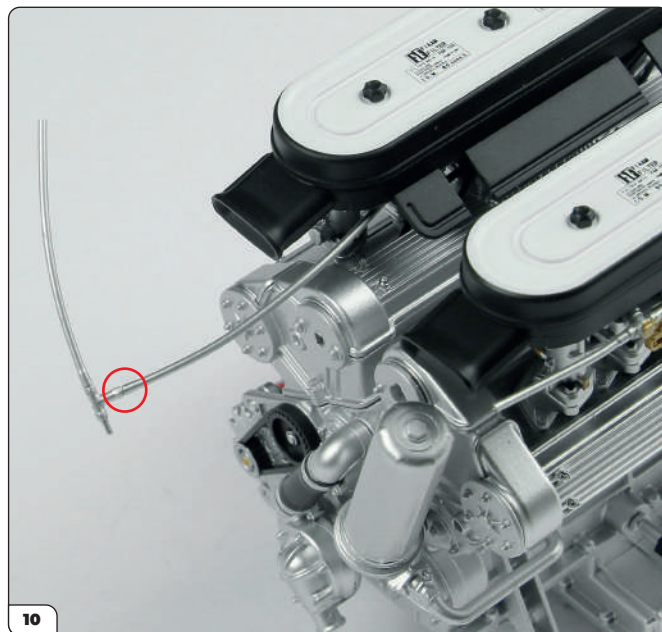
Fit the dipstick onto the oil sump as shown.

Stage 22: Fitting Essential Engine Parts



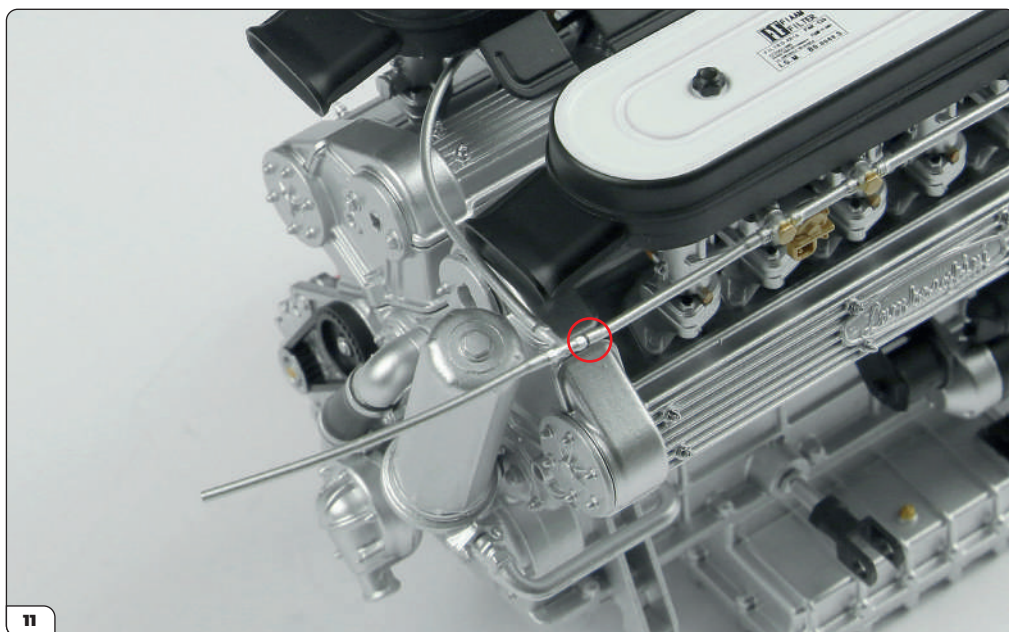
9

Take the carburettor petrol pipe and the T-shaped connector. Fit the pin of the connector into one end of the pipe as shown (arrow).



10

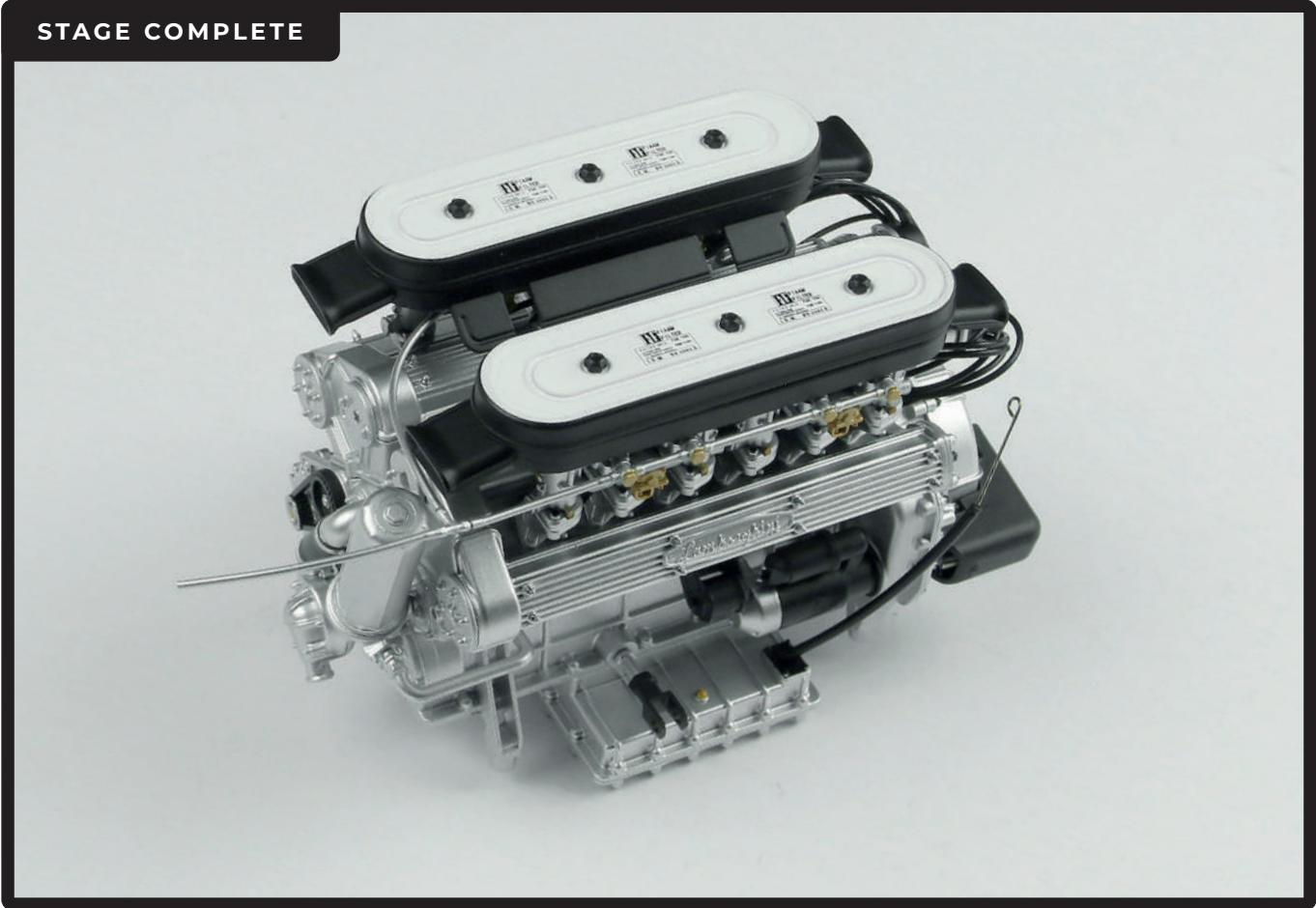
Then fit the connector onto the end of the longer petrol pipe fitted in stage 16 (circled).



11

Finally, fit the remaining pin of the connector onto the smaller petrol pipe as shown (circled).

Stage 22: Fitting Essential Engine Parts



Stage 23: Oil Pump and Breather System

Next you'll install the oil pump and breather, along with the filler cap. The pump feeds fuel from the sump to the engine, while the oil breather system catches oil suspended in the gases and stops pressure building up.

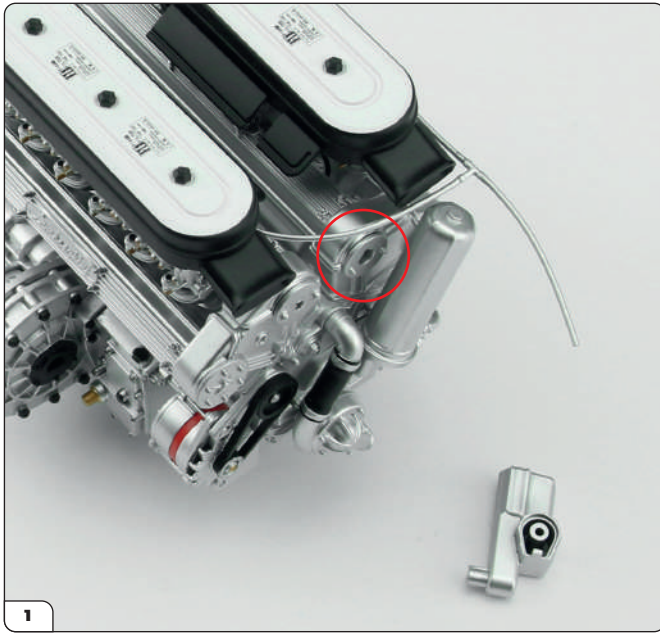


STAGE 23 PARTS LIST

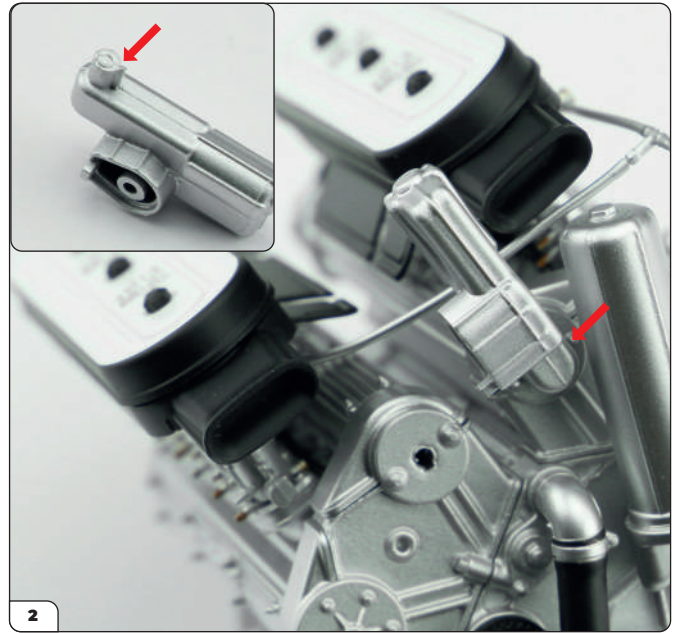
Name
Oil filler cap
Oil breather pipe
Oil pump
Oil breather separator box



Stage 23: Oil Pump and Breather System



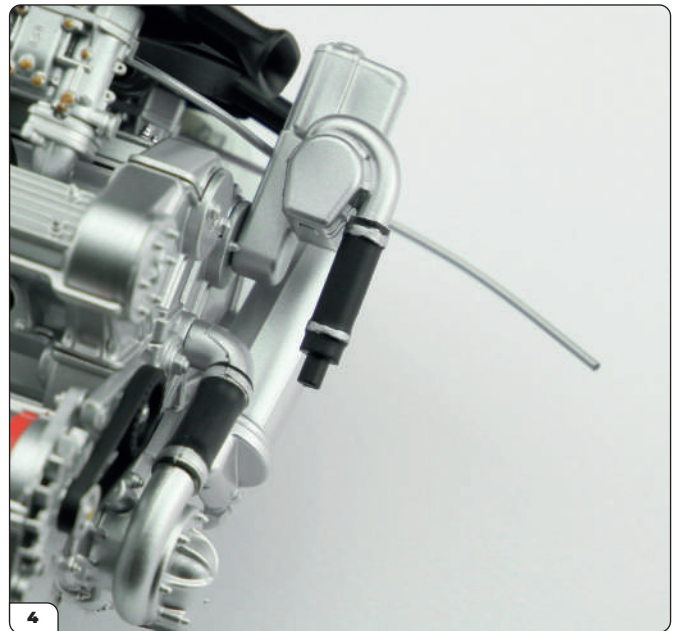
Take the oil breather separator box along with the engine assembly. Locate the shaped hole on the right cylinder head (circled).



The oil breather separator box has a shaped pin that corresponds to the hole on the cylinder head (inset). Using it as a guide, push the oil breather separator box into place as shown.

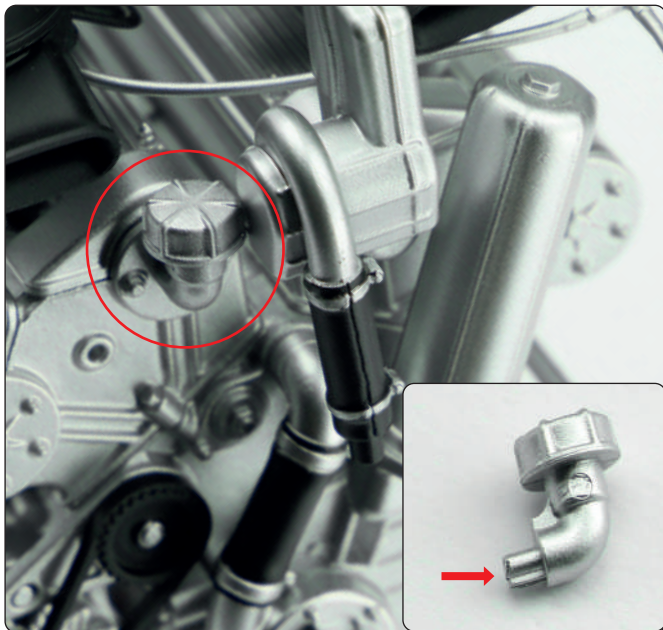


Next take the oil pump, which has a notch below the pin (inset). Using this as a guide, press the pump into the corresponding hole in the breather (arrow).



The oil pump should look like this once fitted in place, the curve of the pipe faces upwards as shown.

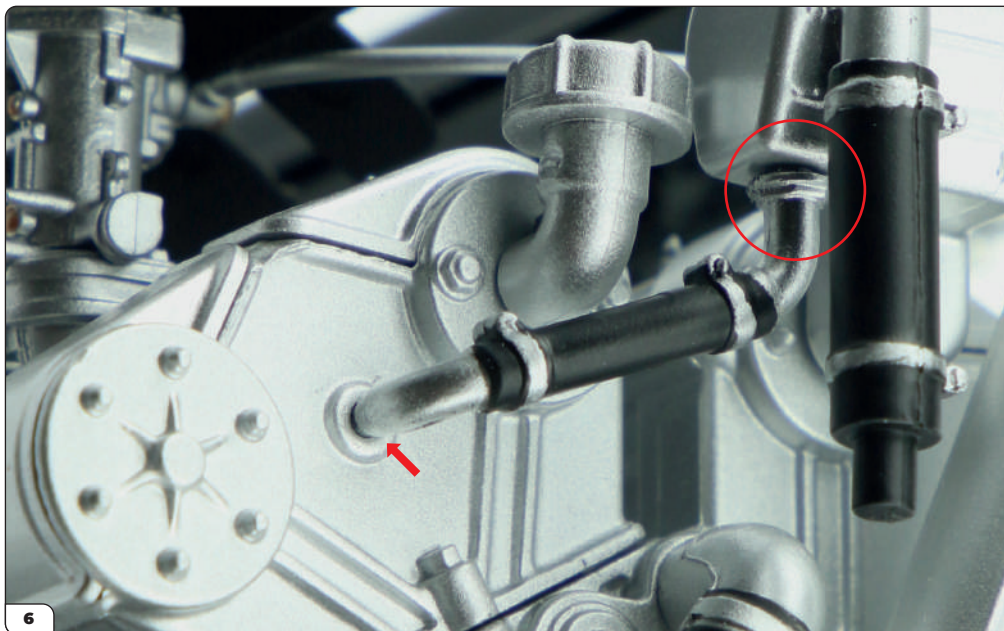
Stage 23: Oil Pump and Breather System



Now take the oil filler cap, noting the shaped pin (inset). This fits into the corresponding hole on the left cylinder head, next to the oil breather separator box. Push the filler cap in place (circled).

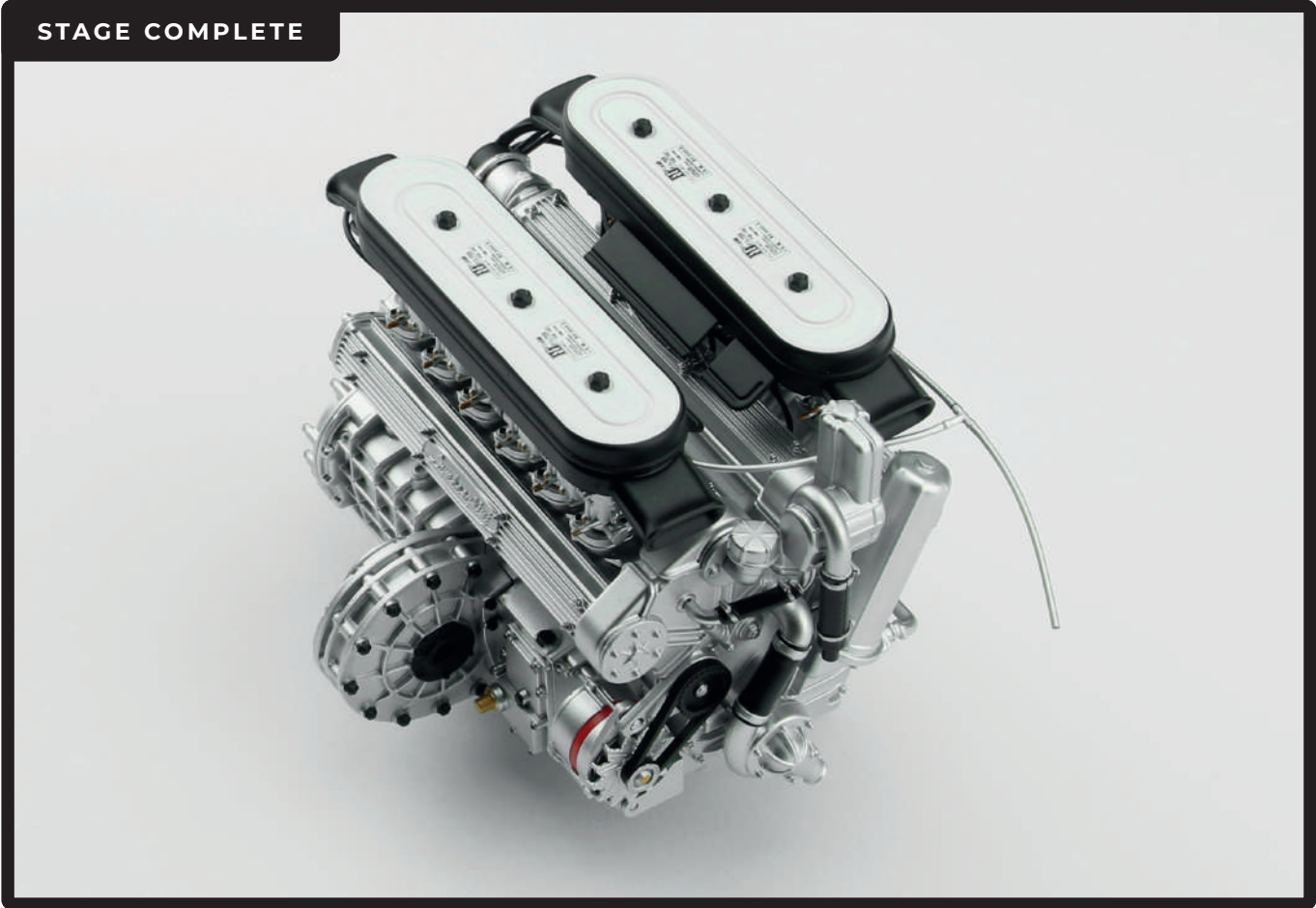


Finally, take the oil breather pipe. Note that one end has a flange (circled), while the other has only a pin (arrow).



Press the end with the flange into the oil pump (circled). The other end fits into the hole in the left cylinder head (arrow).

Stage 23: Oil Pump and Breather System



Stage 24: The Rear Frame

In the final stage for this pack, you'll begin to prepare the rear frame which will be used for mounting the engine and the rear suspension.



STAGE 24 PARTS LIST

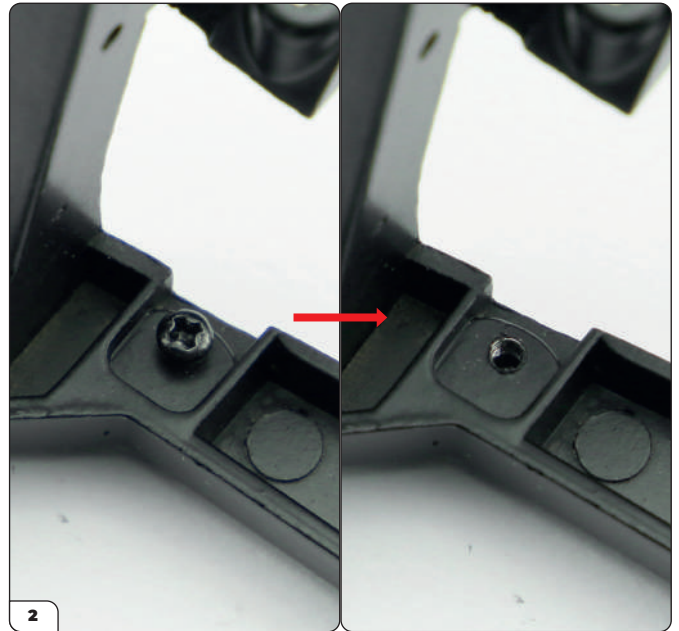
Name
Rear frame
Front support for lower suspension
Back support for lower suspension x2
Type A screws x3



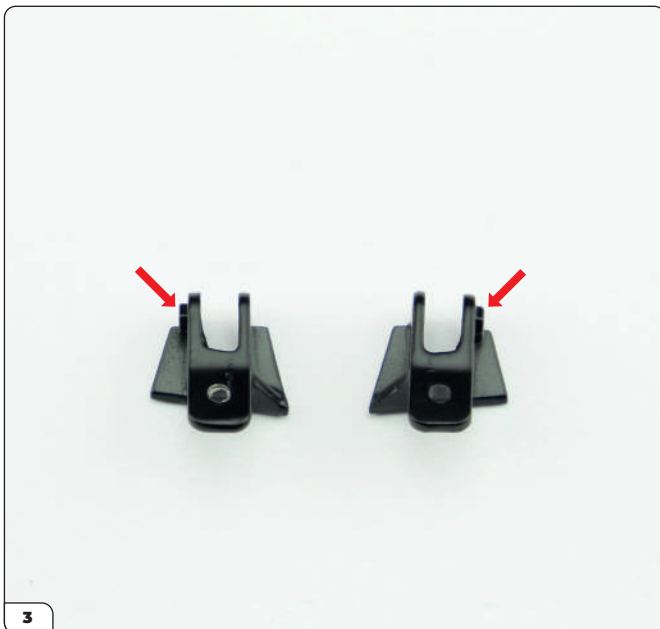
Stage 24: The Rear Frame



The frame will support the engine, with the widest part facing towards the front of the car and the narrowest part towards the rear. Note the two screw holes indicated by arrows.



Before attaching the supports to the frame, we recommend driving the spare screw into the two holes indicated in the previous step, to ensure the parts fit together as best as possible. Apply a small amount of oil, then drive the screw into a hole without overtightening, then repeat for the other hole. Remove the screw before moving to the next step.



Take the two back supports for the lower suspension. Note that there is a fake nut (arrows) on each of them, on opposite sides.

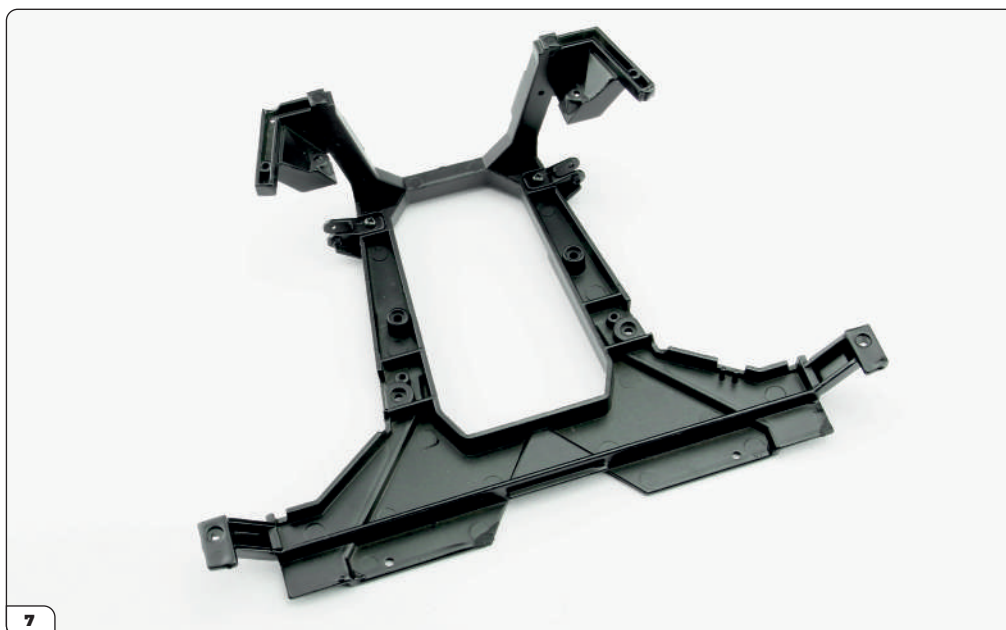


Align the back supports with the frame as shown, so that the fake nuts face towards the widest part of the frame (circled).

Stage 24: The Rear Frame



Fix the supports in place using 2x Type A screws.



Check that both supports are firmly affixed to the frame. If there is any wobble, take the screw out and apply oil to help drive the screw in securely.

Stage 24: The Rear Frame

