



# FERRARI

# 312 T4

THE LEGENDARY 1970s F1 FERRARI

PACK **02**

STAGES 07-15



SCALE  
**1:8**

**AGORA**  
MODELS®



# FERRARI

# 312 T4

SCALE  
1:8

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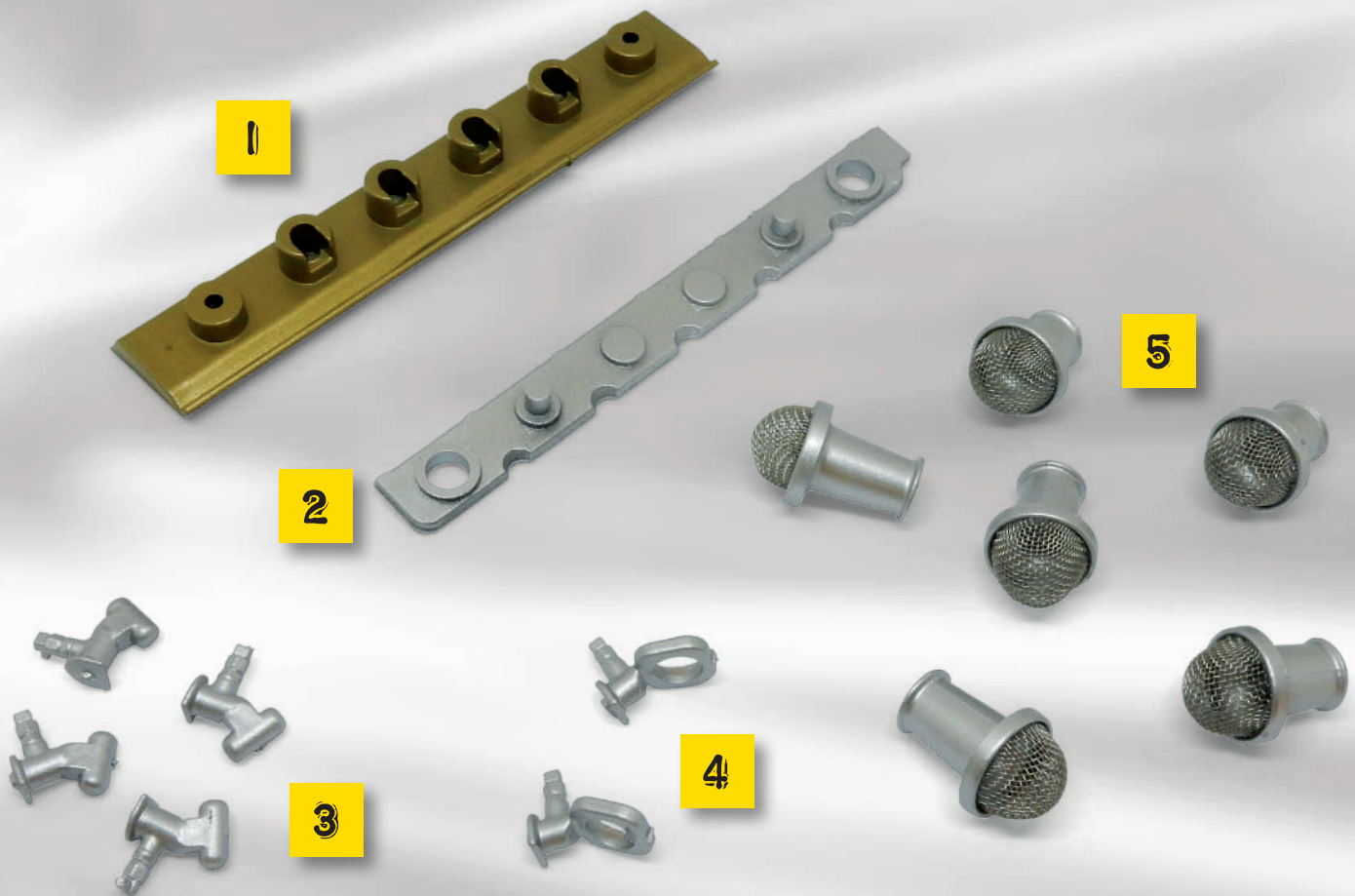
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WARNING: NOT SUITABLE FOR CHILDREN UNDER THE AGE OF 14. THIS PRODUCT IS NOT A TOY AND IS NOT DESIGNED OR INTENDED FOR USE IN PLAY. ITEMS MAY VARY FROM THOSE SHOWN.

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# FIRST PARTS OF THE ENGINE

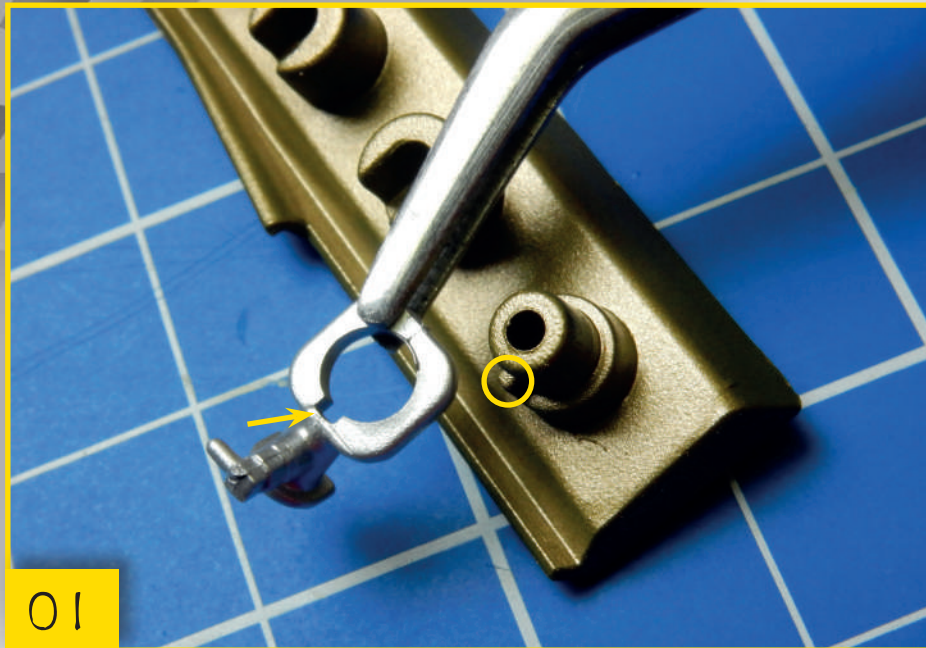
USING THE COMPONENTS RECEIVED IN THIS STAGE, YOU'LL BEGIN ASSEMBLING THE ENGINE OF YOUR 1:8 SCALE FERRARI 312 T4, FOCUSING ON THE LEFT-HAND SIDE.



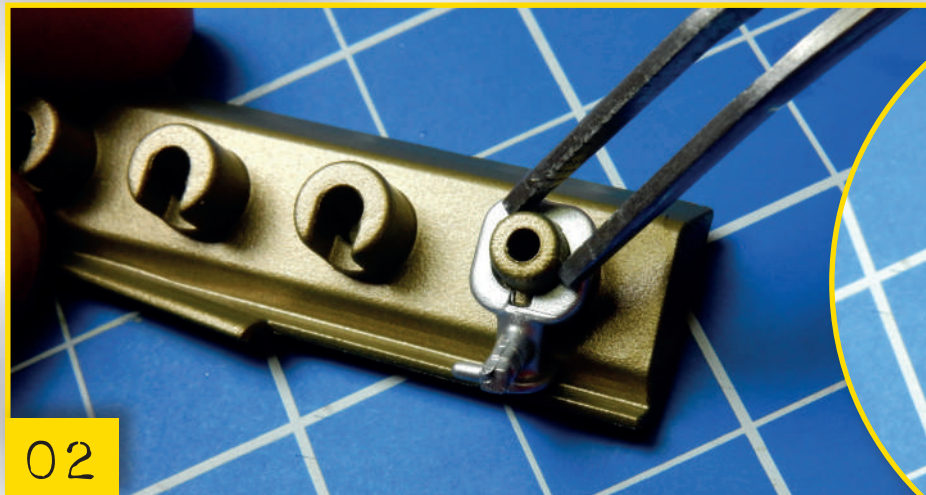
## LIST OF PARTS

- 1** Intake manifold
- 2** Flange
- 3** Central injectors
- 4** Side injectors
- 5** Intake trumpets





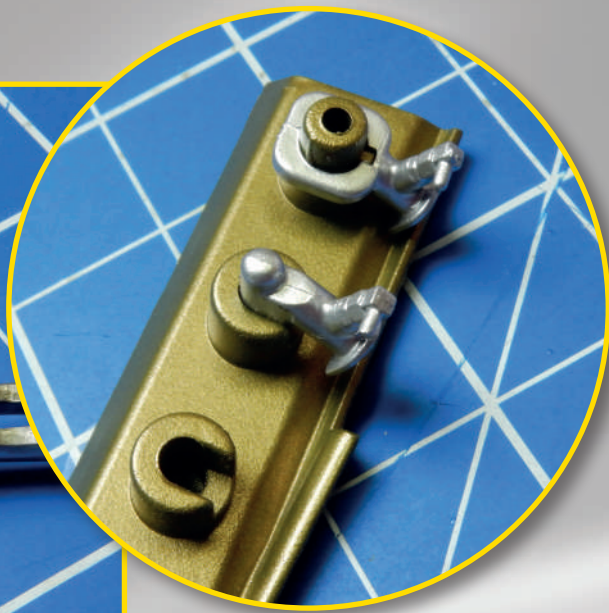
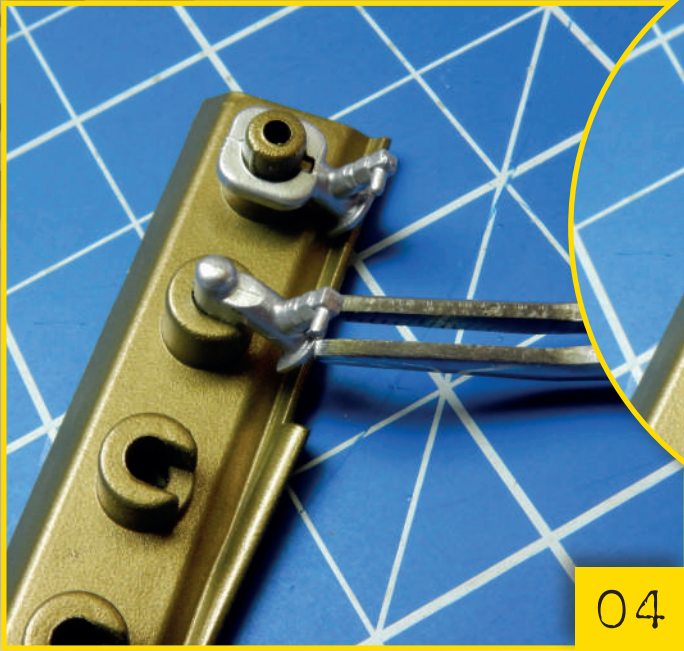
**07-01** Using tweezers, pick up one side injector and bring it next to the intake manifold. The notch on the injector (yellow arrow) will match up with the protrusion (yellow circle) and will ensure that the component is exactly centred.



**07-02** Then position the injector and push it downwards until it comes into contact with its support column (inset image).

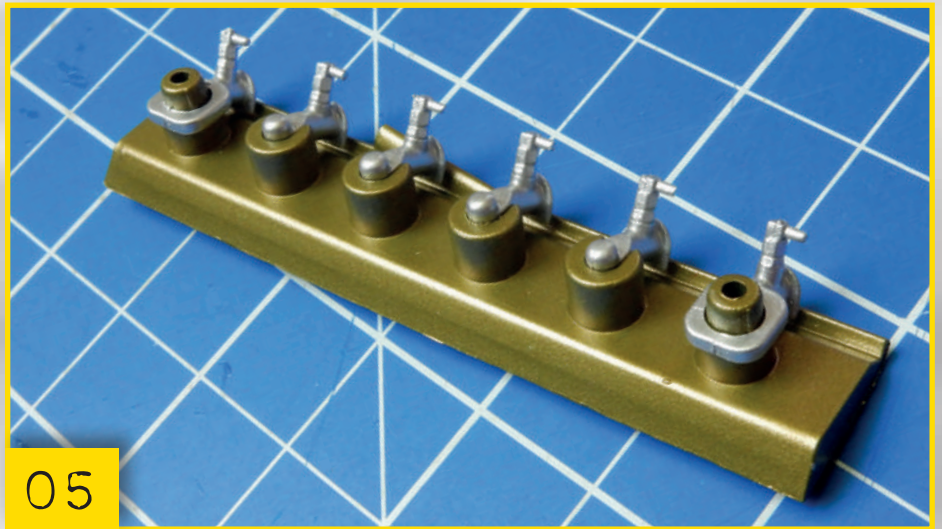


**07-03** Fit the second side injector to the intake manifold in the same way.



04

**07-04** Place the first central injector in position as shown.



05

**07-05** Then place the remaining injectors on the intake manifold.



06

**07-06** Install the flange above the injectors in the same orientation as shown in the image opposite.

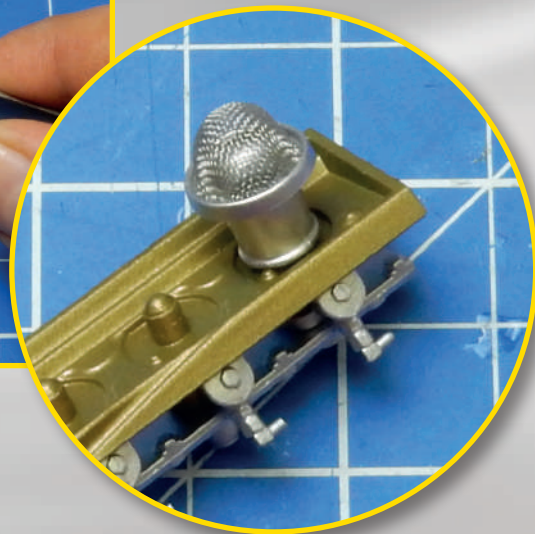


## ALL TO SCALE

The intake trumpets (numbers 1 to 6) increase in height. To distinguish them one from another, refer to the number printed on the blister in which they are supplied.



07



**07-07** Install trumpet 1 as shown, pushing it on to the intake manifold. Avoid pressing on the mesh, which could deform. In sequential order, install the other trumpets, finishing with number 6. The couplings between these parts are extremely precise and some small adjustment of the hole in the trumpets may be required.



## In the next stage

The top of the crankcase.



## FINAL RESULT

Compare what you have just done with the photograph above. If necessary, correct your assembly. Then put it to one side.

# TOP OF THE CRANKCASE

THIS STAGE CONTINUES WITH ASSEMBLY OF THE ENGINE OF YOUR 1:8 SCALE FERRARI 312 T4. WE WILL ALSO PROVIDE YOU WITH THE NECESSARY INSTRUCTIONS FOR APPLYING AN OPTIONAL WEATHERING TO THE PART.



3 type J screws



## LIST OF PARTS

I The top of the crankcase

## SCREWS

Three type J screws



## WEATHERING THE TOP OF THE CRANKCASE

Your model is extremely realistic and each part has been accurately reproduced.

Nevertheless by using a number of advanced modelling techniques, you can further enhance the look of your 1:8 scale replica Ferrari 312 T4.

On these pages we will show you how to “weather” the top of the crankcase. But like all the other “ageing” procedures suggested in our instruction book, this is optional. If you do decide to do it, it’s best to do it before you go on to the assembly operations described in the pages that follow.

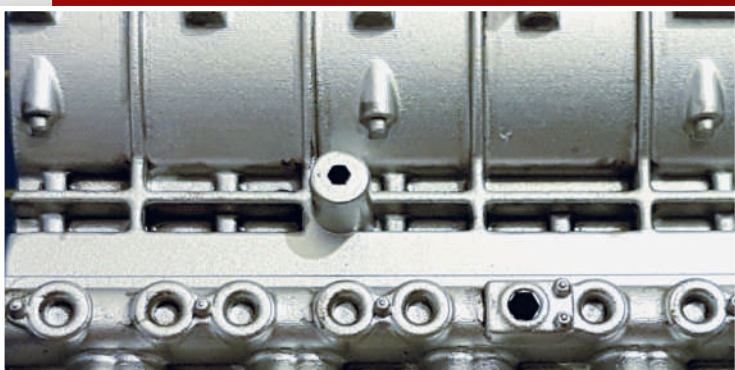


### What you will need

The first thing you will need is a modelling paint, in a “smoke black” colour or a very diluted matte black. To apply the colour you will also need a fine brush, which you can easily obtain from any model shop. Also keep some cotton buds handy.

### The procedure

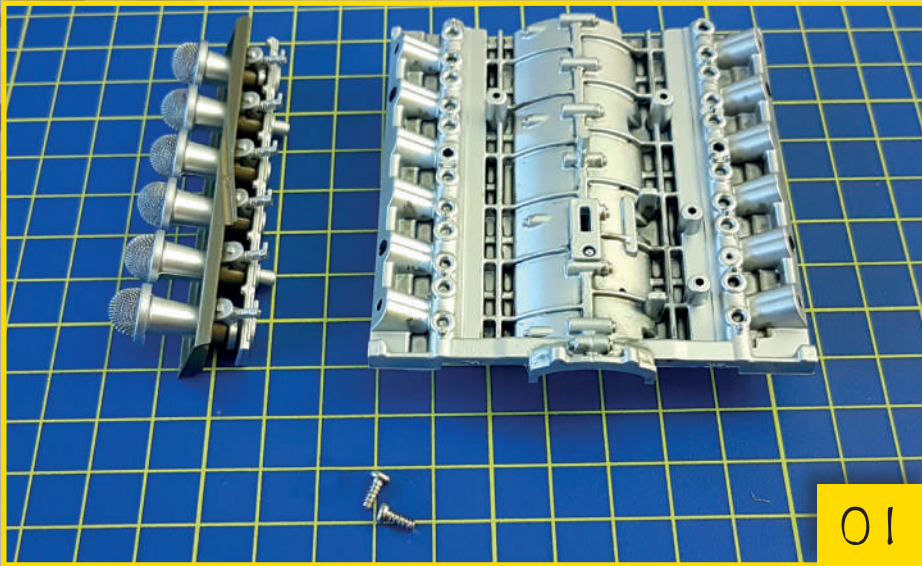
The ageing process described here is intended to darken the recessed surfaces of this component to increase the visual depth. Apply the colour with the brush, in the areas identified. At this stage, don’t worry about smudging or using too much colour. Once the paint is dry take a cotton bud, moisten it, and use it to clean off any traces of colour from the most prominent parts of the component. Needless to say, it’s up to you to decide how far you go with this; it depends on how much you want to “age” the model. In any case bear in mind that if every part of an engine is perfectly clean, it will tend to look not very realistic.



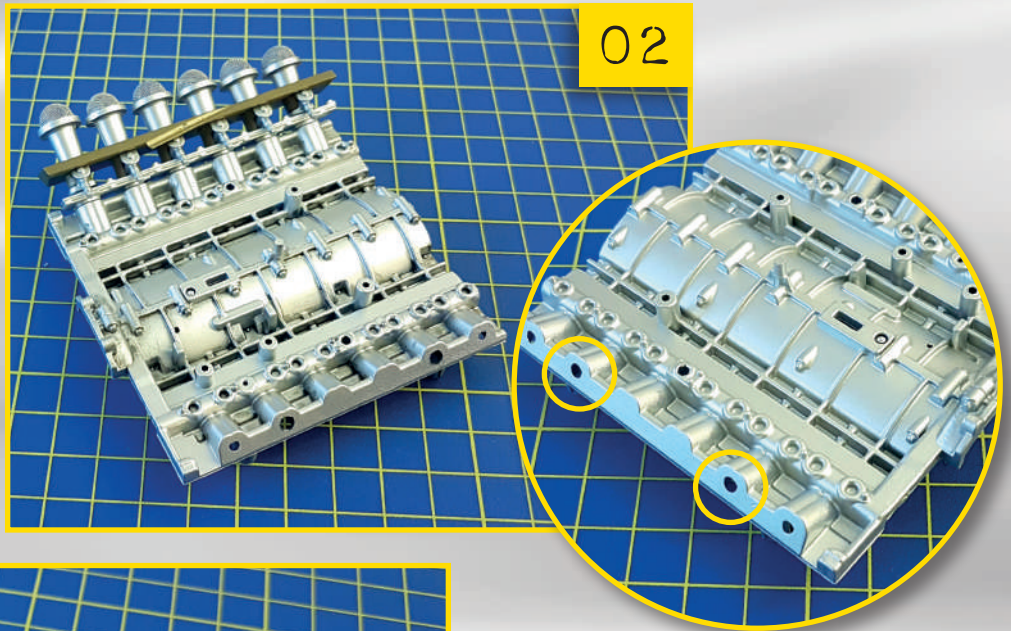
### The result

At the end of this process the top of the crankcase will have a more realistic appearance. The “weathering” will also have accentuated the recessed parts, increasing the contrast between light and shadow. Let the paint dry before continuing with the assembly instructions on the following pages.

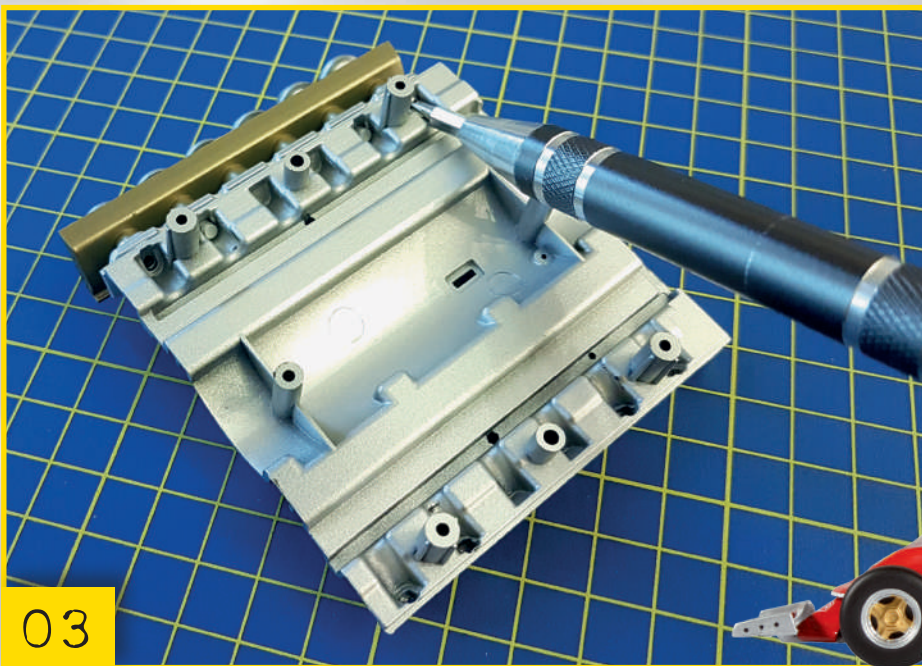




**08-01** Put the top of the crankcase and two type J screws on your work surface. Also retrieve the left-hand intake manifold from stage 7.



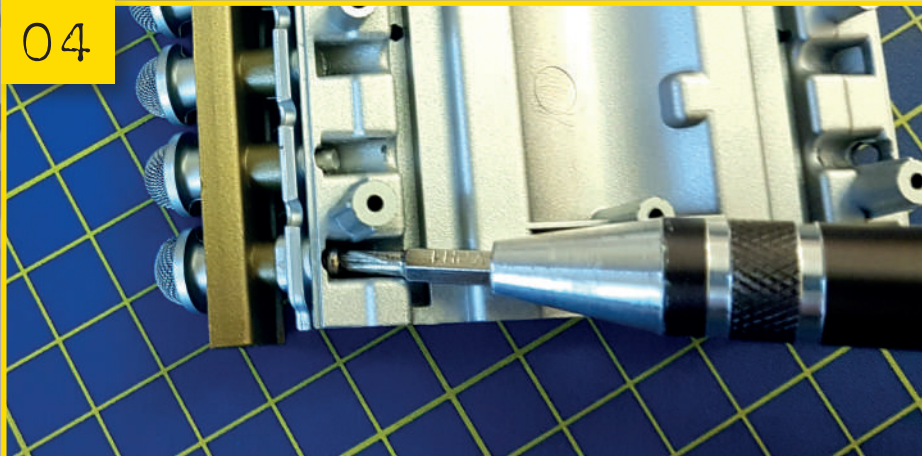
**08-02** Then join the intake manifold to the top of the crankcase. If you find it difficult to insert the pins of the intake manifold into the corresponding holes in the crankcase, slightly enlarge the holes circled in the inset image using a round file.



**08-03** Turn the top of the crankcase upside down and secure the intake manifold with a type J screw.



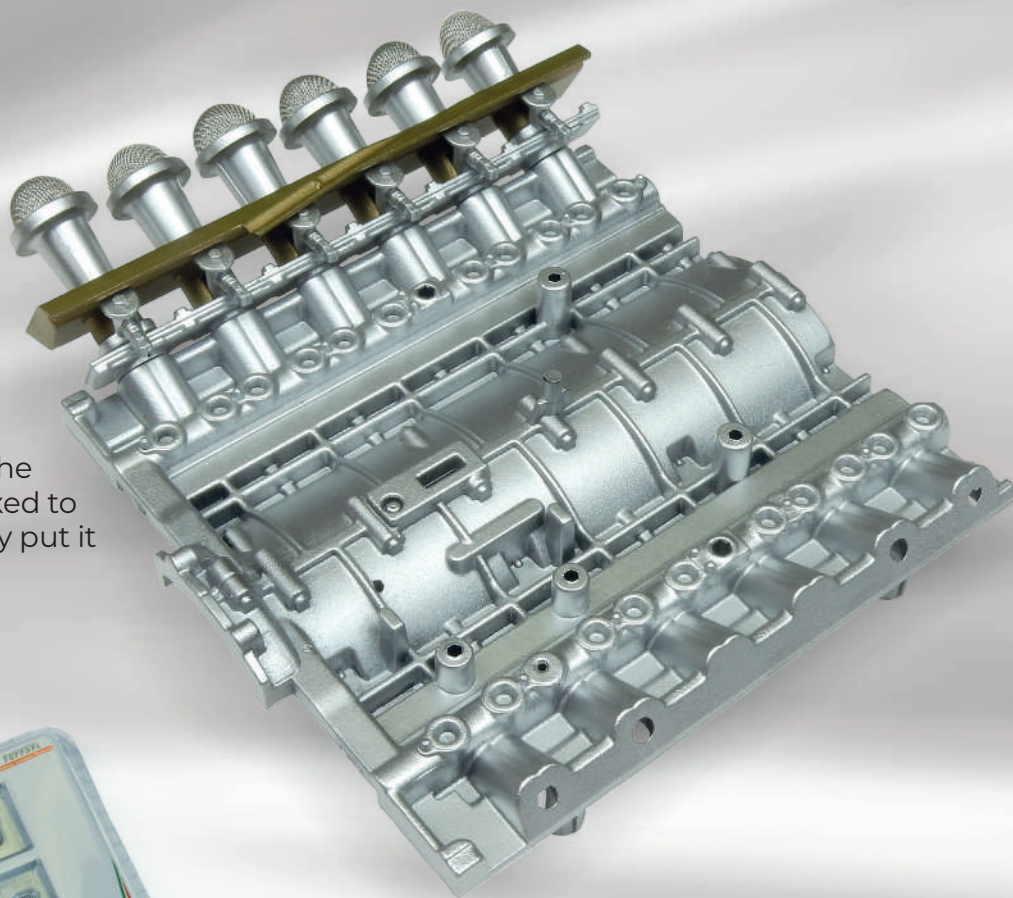
04



**08-04** Using the second J screw, finish attaching the intake manifold.

**FINAL RESULT**

The intake manifold, fitted with the injectors and trumpets, is now fixed to the top of the crankcase. Carefully put it to one side.



**In the next stage**

All the types of screws that are used to build your model.



# TYPES OF SCREWS

DIFFERENT SIZES; ROUND, COUNTERSUNK, OR FLANGED; WITH THREADING SUITABLE FOR GRIPPING IN METAL OR PLASTIC DETAILS – THESE ARE ALL THE TYPES OF SCREWS YOU WILL BE USING TO BUILD YOUR MODEL.



## LIST OF PARTS

- I Screw samples



With Stage 9 of our collection you are given a complete and ordered sample that will enable you to learn to recognise, with confidence, all of the 16 types of screw that will be used in the assembly of your 1:8 scale Ferrari 312 T4. We suggest that you keep this useful tool close to hand, at any time whenever you're working on the model. Let's consider the different characteristics that distinguish one screw from another, regardless of their size and colour, which will naturally depend on which part of the model they are to be applied.

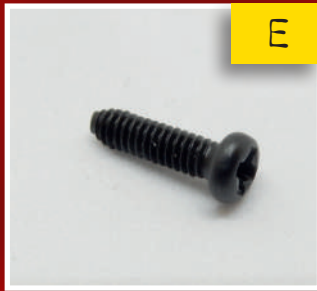
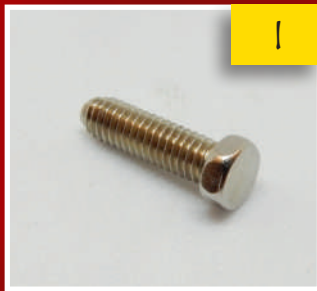
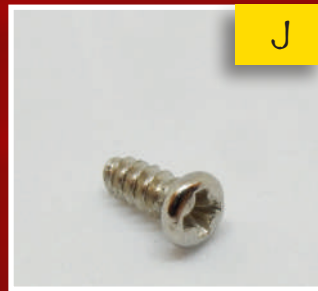
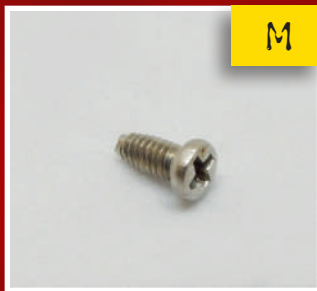
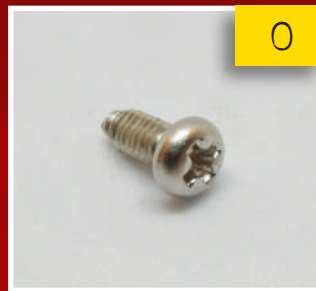
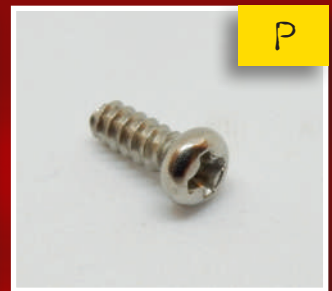
### **For plastic or metal?**

Your model includes both metal alloy components and plastic parts. Due to

the particular characteristics of these two materials, there is also an important difference between the screws that are inserted into them. In metal parts, the female thread of the hole is made by the manufacturer and has a reduced pitch of "mechanical" type. The holes in plastic parts, on the other hand, are not threaded; in this case it is the screw itself, thanks to its thread having a larger pitch, which will "dig out" the grooves inside the plastic material and ensure a perfect seal. Just a quick glance at the sample pack you received will show you that the specific screws for plastic belong to types A, J, K and P, whilst the screws of types B, C, D, E, F, G, H, I, L, M, N and O have been designed to connect the metal alloy parts.



Above: the pack that came with Stage 9. On the next page you will find images of all the screws in the sample, which you will be using to build your 1:8 scale Ferrari 312-T4.

**A****B****C****D****E****F****G****H****I****J****K****L****M****N****O****P**

### It's all about the head

The screws supplied also differ in the shape of their heads: countersunk, round, flanged, and hexagonal. In the first case (type A screws), the head of the screw has a truncated cone shape, which allows it to be “sunk” into its seating so that it does not protrude beyond the surface of the piece into which it is inserted.

The round head is the most common type of screw (types B, D, E, F, G, J, M, N, O and P), whilst the flanged head (C, H and L) has a kind of “washer” integrated into it which increases the support surface and thus the tightness of the screw itself.

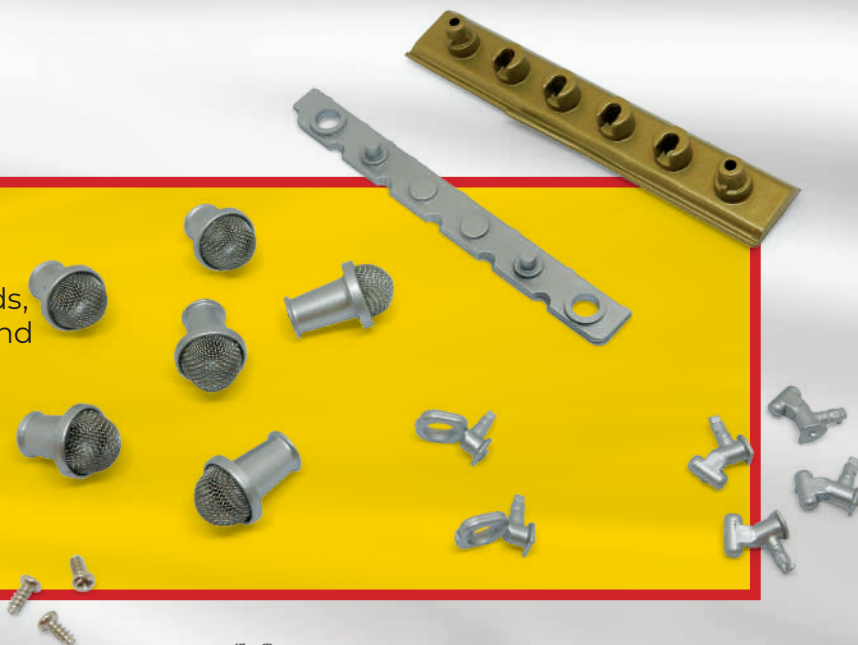
Finally, types I and K screws have a hexagonal head.

## TABLE OF SCREWS USED IN ASSEMBLY

TYPE	DIMENSIONS	HEAD	COLOUR	APPLICATION
A	M2.3x5	countersunk	black	plastic
B	M2.3x5	round	black	metal
C	M1.7x3	flanged	black	metal
D	M2.0x5	round	black	metal
E	M2.0x7	round	black	metal
F	M2.0x13	round	black	metal
G	M1.8x5	round	black	metal
H	M2.3x5	flanged	black	metal
I	M2.3x8	hexagonal	silver	metal
J	M2.3x5	round	silver	plastic
K	M2.3x13	hexagonal	silver	plastic
L	M3.0x12	flanged	silver	metal
M	M1.8x4	round	silver	metal
N	M2.3x5	round	silver	metal
O	M2.0x5	round	silver	metal
P	M2.3x6	round	silver	plastic

### In the next stage

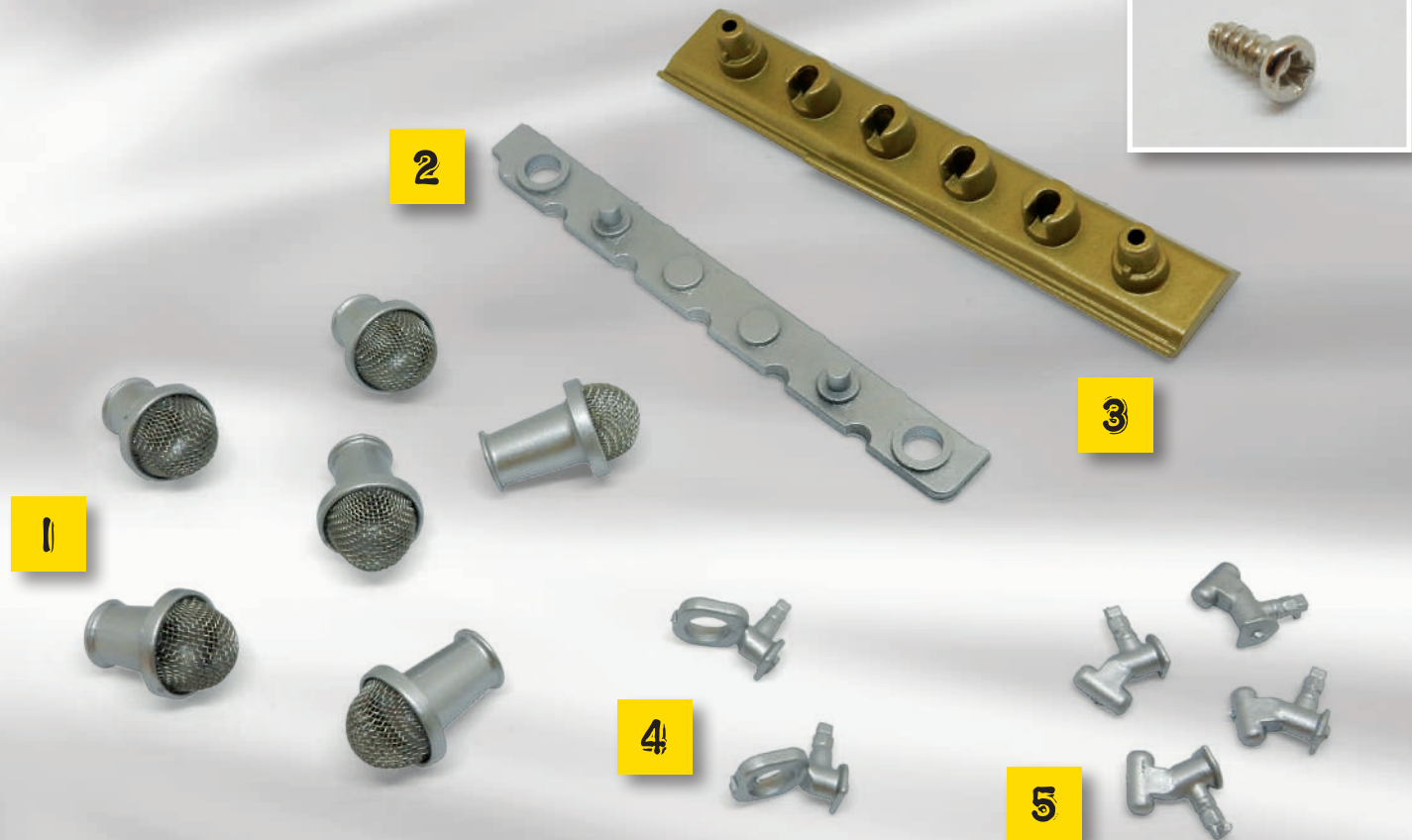
The injectors, intake manifolds, and trumpets of the right-hand cylinder bank of the engine.



# INTAKE AND INJECTION SYSTEM

IN THIS STAGE YOU WILL COMPLETE THE INTAKE AND INJECTION SYSTEM THAT YOU BEGAN ASSEMBLING IN STAGE 7.

3 type J screws



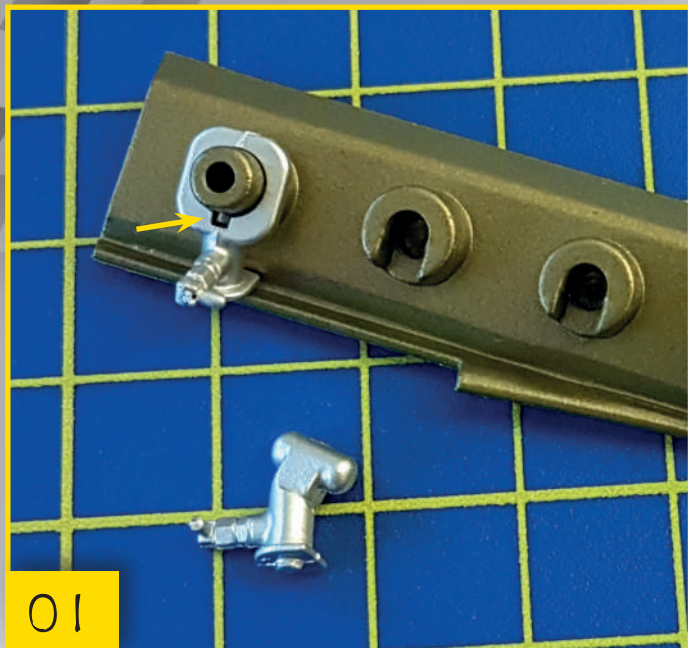
## LIST OF PARTS

- 1 Intake trumpets
- 2 Flange
- 3 Intake manifold
- 4 Side injectors
- 5 Central injectors

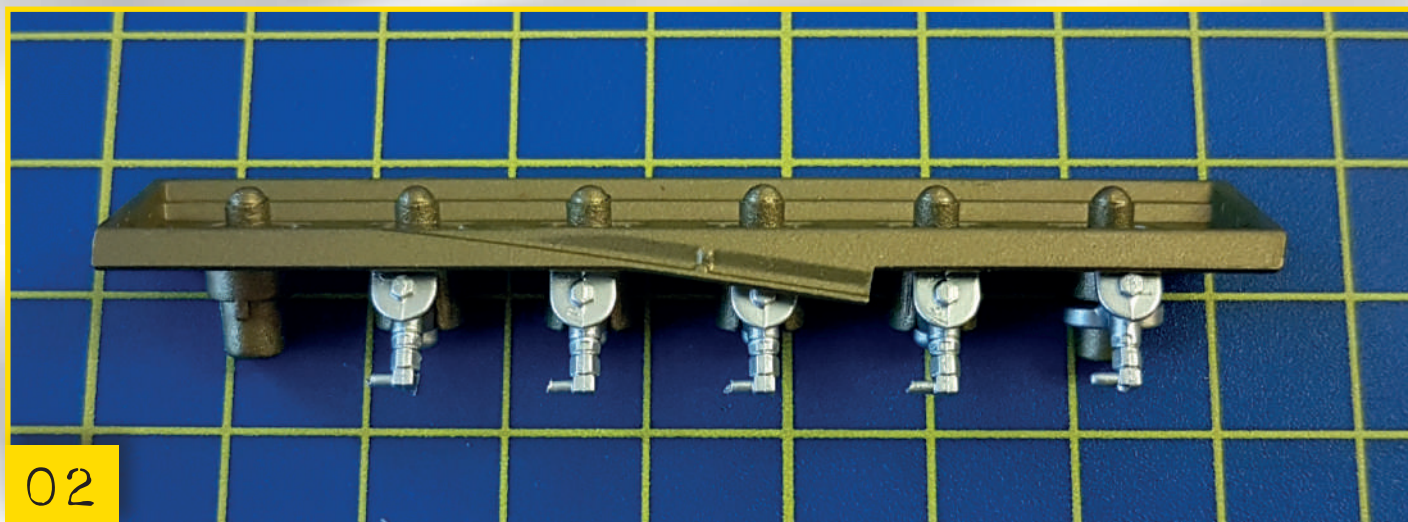
## SCREWS

Three type J screws



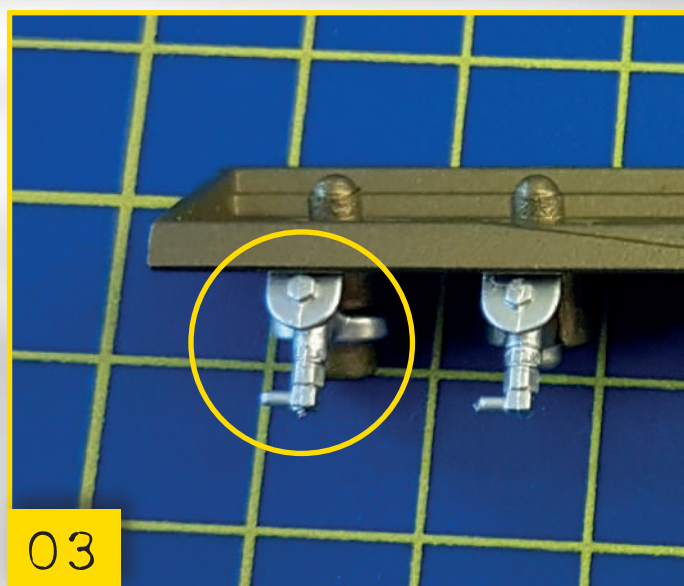


**10-01** Fit one of the side injectors to one end of the intake manifold. This can only be assembled in one way, thanks to the designated centering notch (indicated by a yellow arrow in the photograph). Using tweezers, push this piece into contact with the intake manifold.

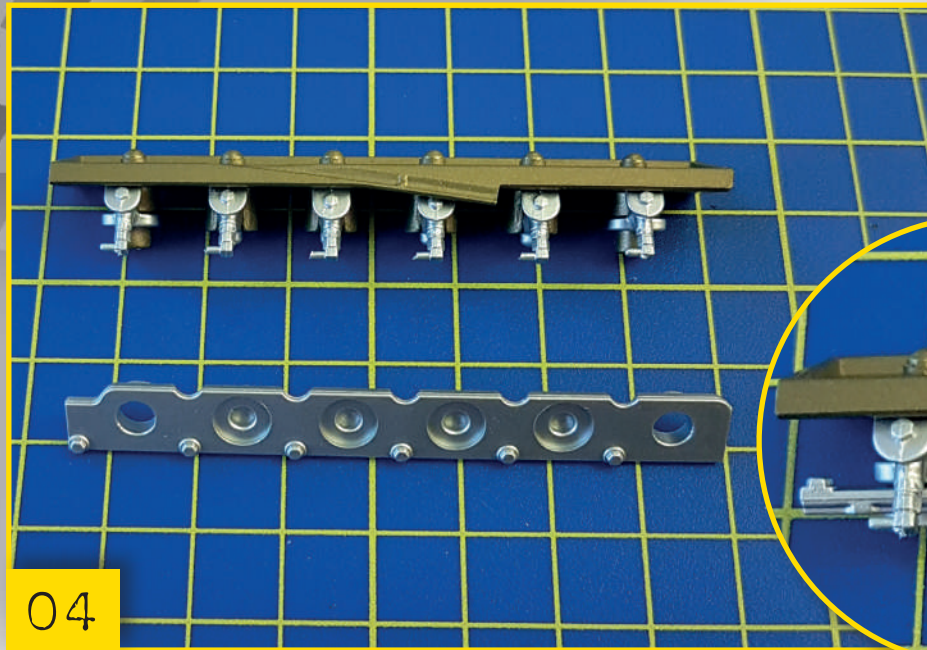


**10-02** Now fit the four central injectors on to the intake manifold. Again, the interlocking structure of these components ensures that they are correctly orientated.

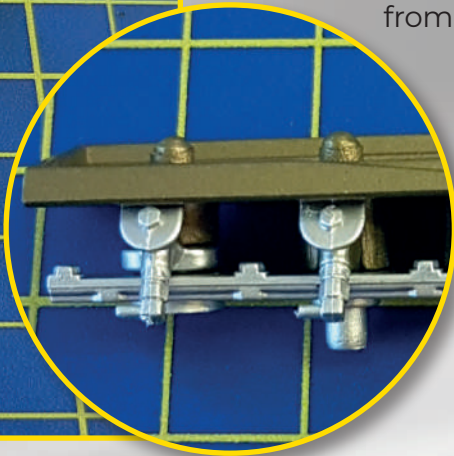
**10-03** All that remains is to mount the last injector. Before continuing, check that all the injectors are firmly in contact with the intake manifold.





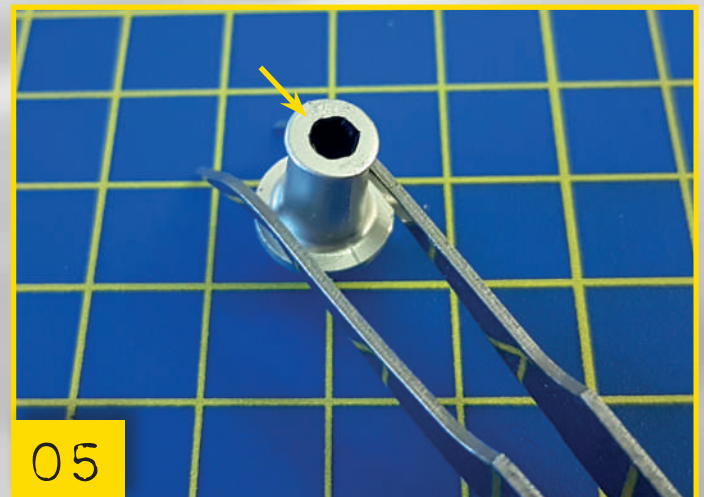


**10-04** The connection flange fits on the injectors; its pins must face outwards and the semicircular machining must be on the opposite side from the nozzles protruding from the injectors.

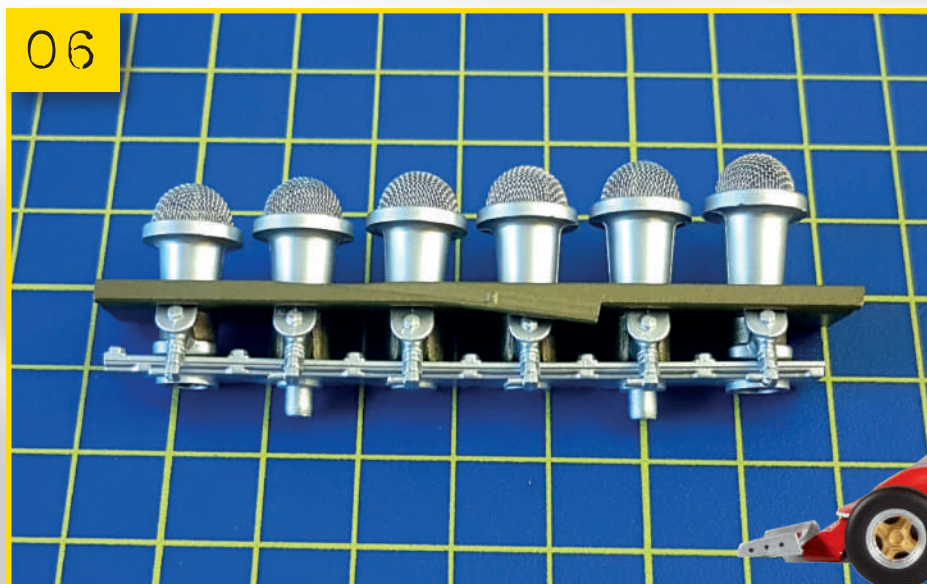


04

**10-05** Following the sequence from 1 to 6, install the trumpets on the side of the intake manifold opposite the side on which you mounted the injectors and flange. Avoid pressing on the trombone mesh; it is delicate and may deform. The couplings between the components are very precise. If you encounter any resistance, do not use force; slightly widen the hole at the base of the trumpet with a file or a drill bit.



05

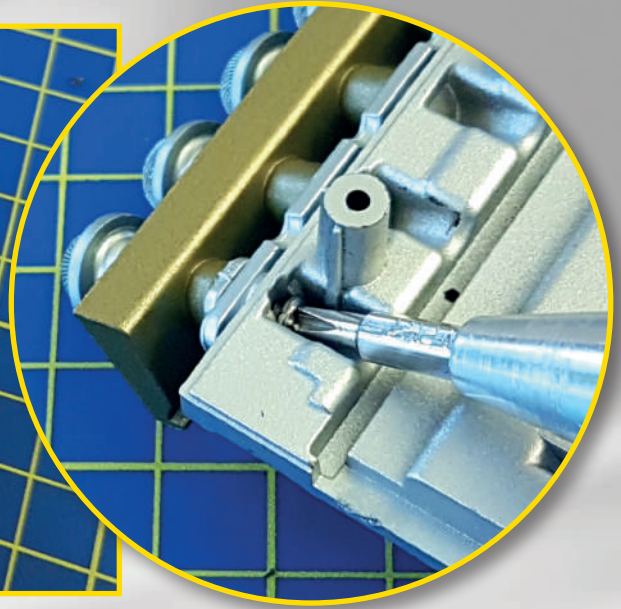


**10-06** The illustration shows the intake manifold fitted with the injectors, flange, and trumpets. Before proceeding, make sure you have carried out all the steps described up to this point.

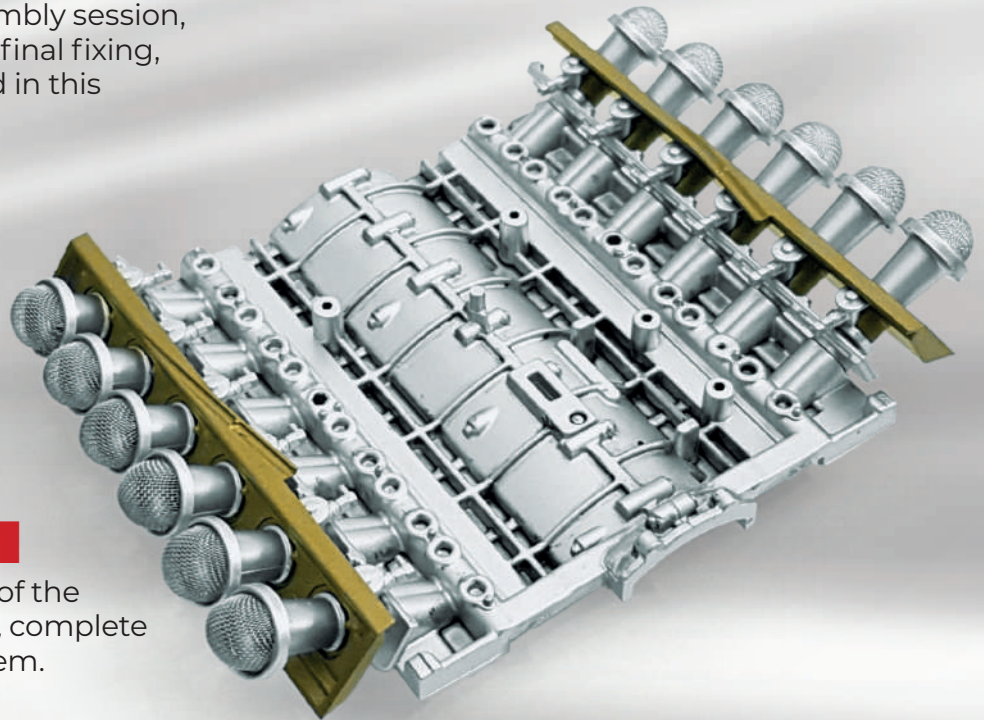
06



07



**10-07** Now join the right intake manifold, which you have put together in this assembly session, to the top of the crankcase. For its final fixing, use the two type J screws received in this stage.



**FINAL RESULT**

This is what the top of the crankcase looks like, complete with the intake system.

**In the next stage**

The engine heads.



# CYLINDER HEADS

IN THIS STAGE YOU'LL RECEIVE THE VALVE COVERS (COMMONLY KNOWN AS THE "HEADS"), ONE FOR EACH OF THE TWO ENGINE CYLINDER BANKS ALONG WITH THE SCREWS REQUIRED FOR FIXING THEM TO THE ENGINE OF YOUR FERRARI 312 T4.



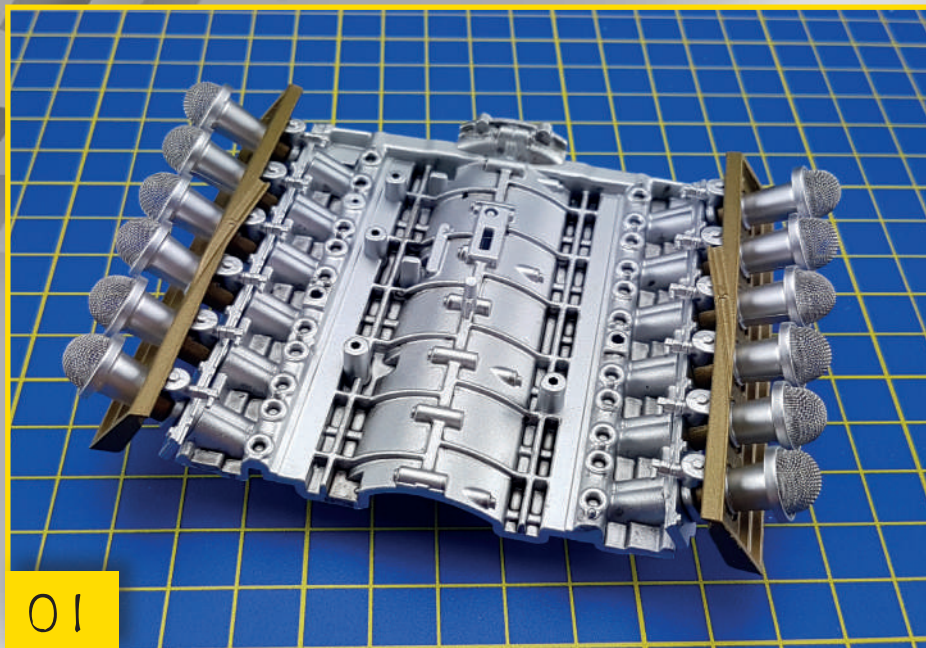
## LIST OF PARTS

- 1 Right-hand head
- 2 Left-hand head

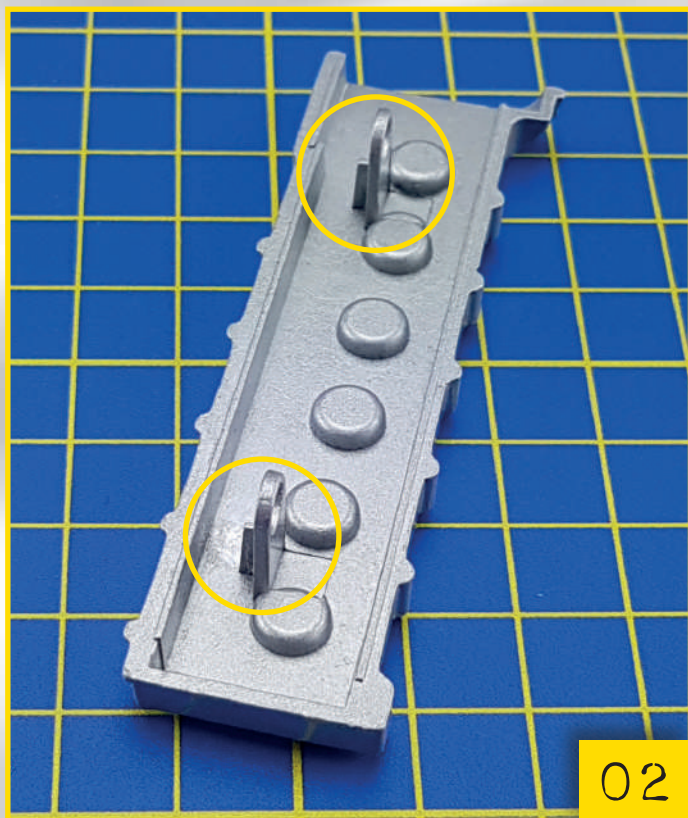
## SCREWS

Five type J screws



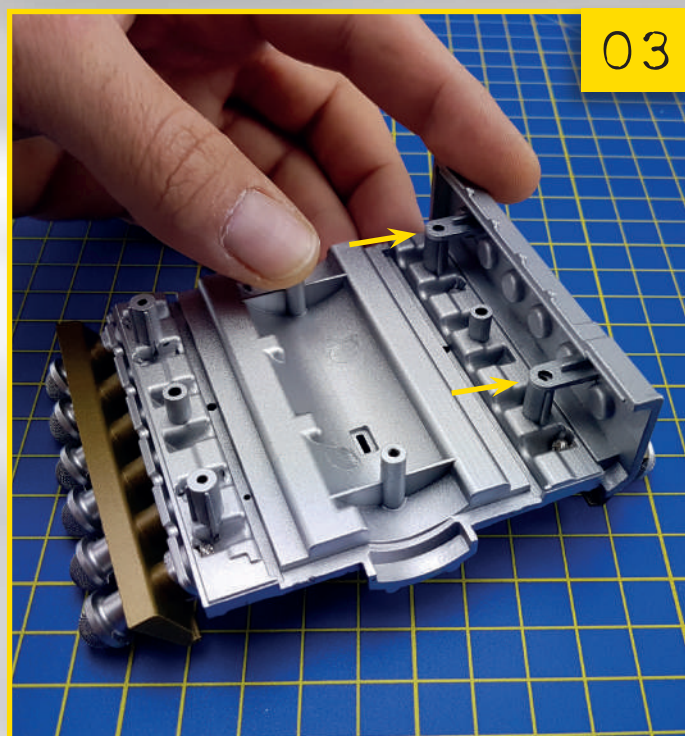


**11-01** Place the engine assembly on your work surface. In the previous assembly stages you installed the components of the intake system.

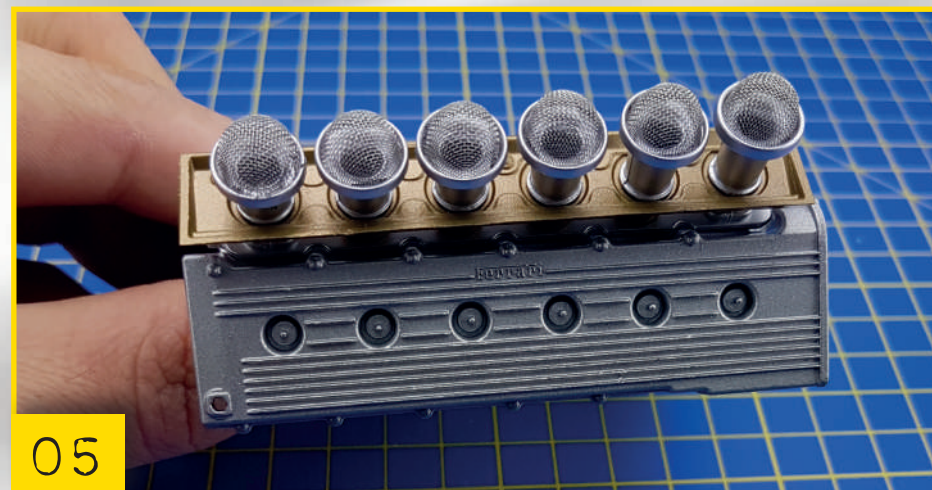
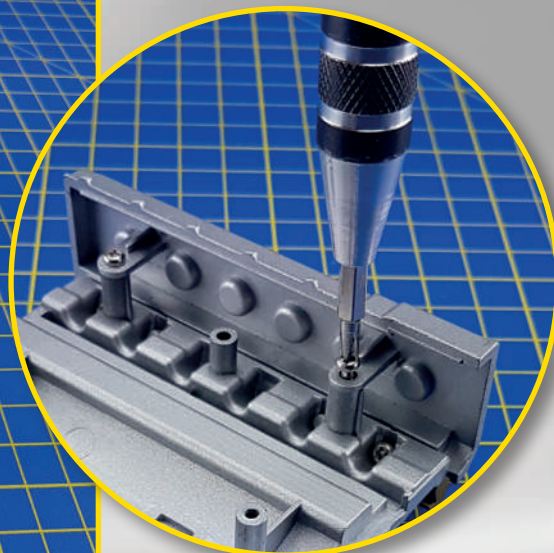
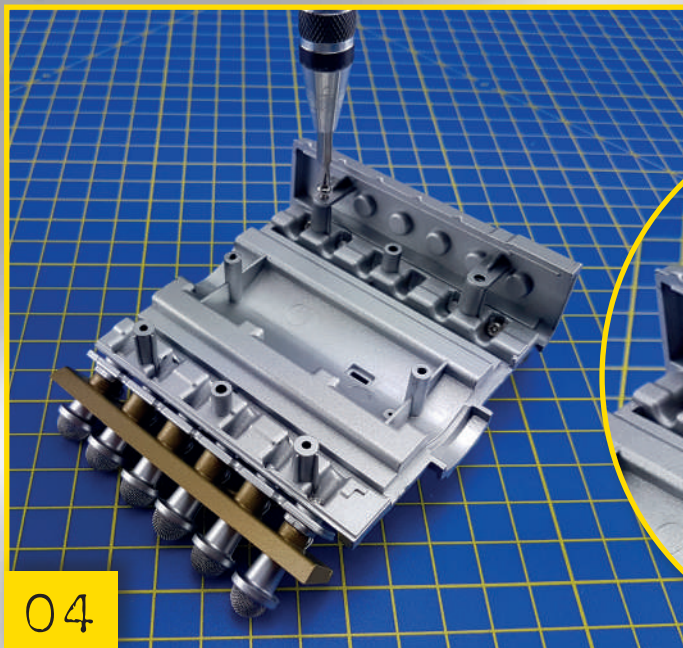


**11-02** Look at the back face of the left-hand head. The fixing supports (circled in the photograph) are not centred in relation to the length of this part. Thanks to this arrangement there is no risk that you might mount the component in the wrong position.

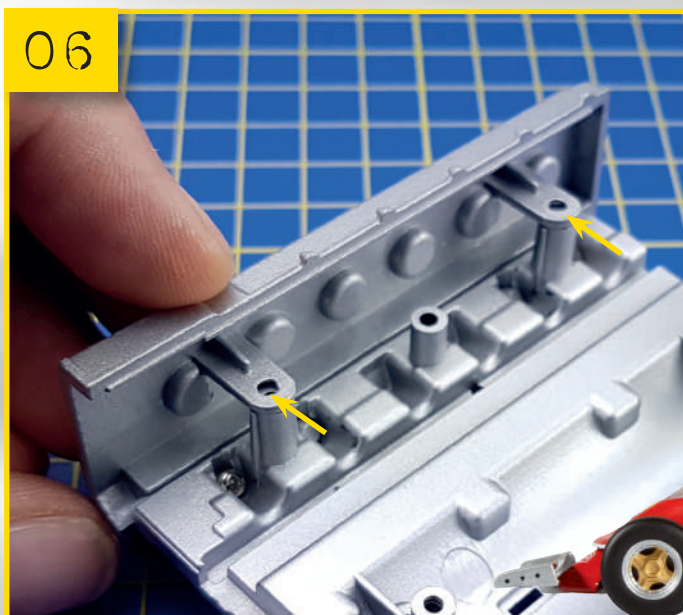
**11-03** Turn over the engine assembly and place the left-hand head in position. The two mounting holes (highlighted by arrows in the photograph) must align with the corresponding perforated columns on the top of the crankcase.



**11-04**  
Using two  
type J screws,  
secure the  
left head to  
the engine  
assembly.



**11-05** This is what the left-hand side of the engine looks like after installing the cylinder head. Before continuing, check that you have done everything correctly.

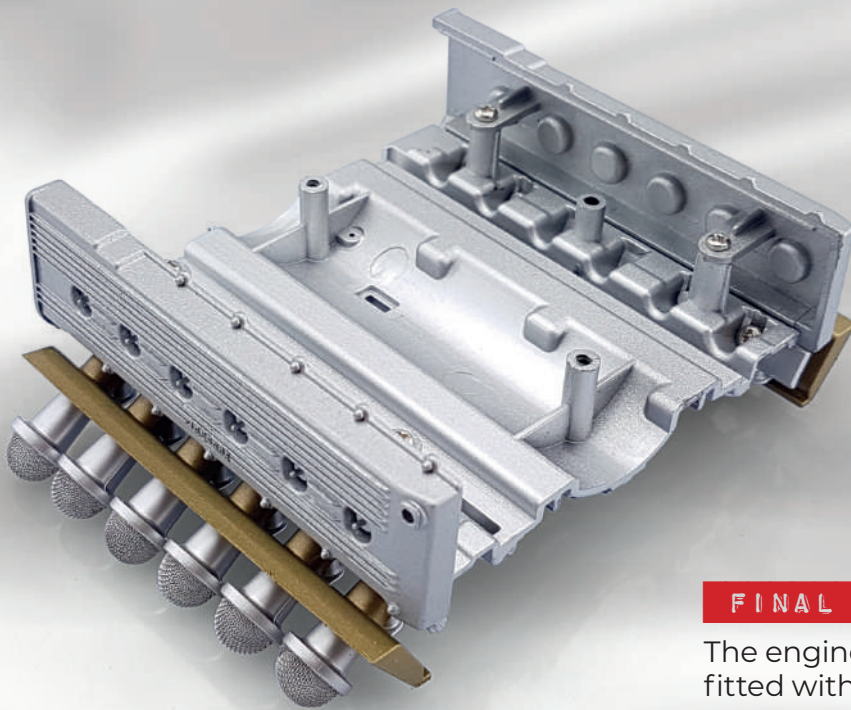
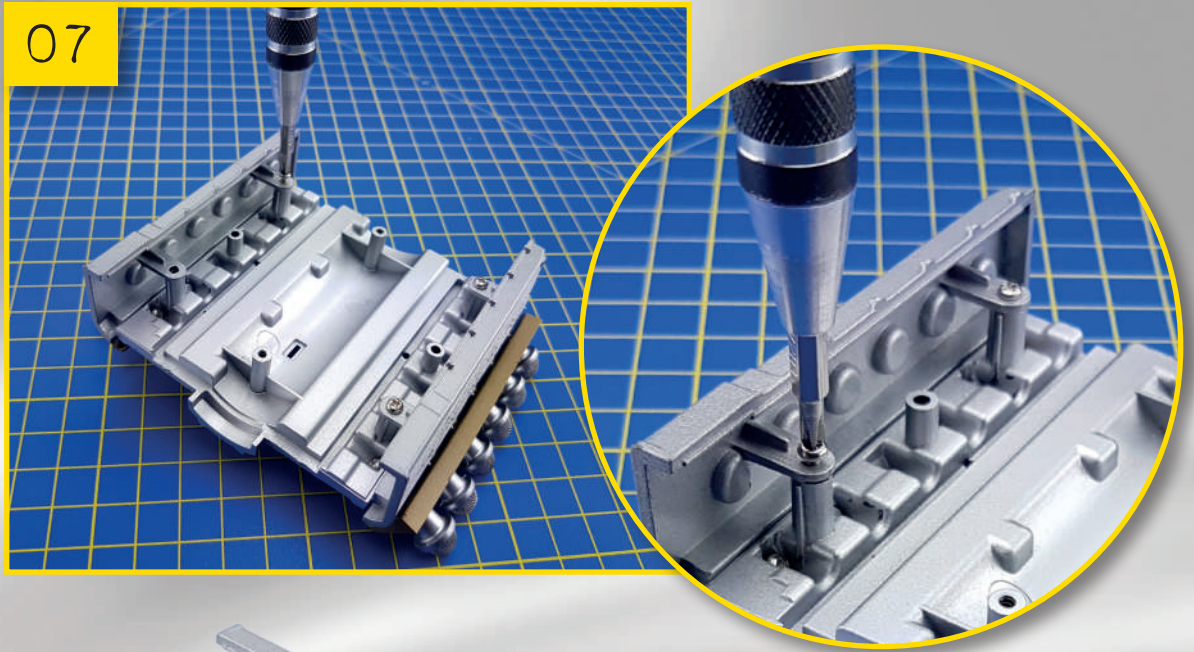


**11-06** Place the right-hand head into position. Again, check that the fixing holes are properly aligned.



07

**11-07**  
Drive two  
type J screws  
into these  
holes and  
tighten them  
fully.

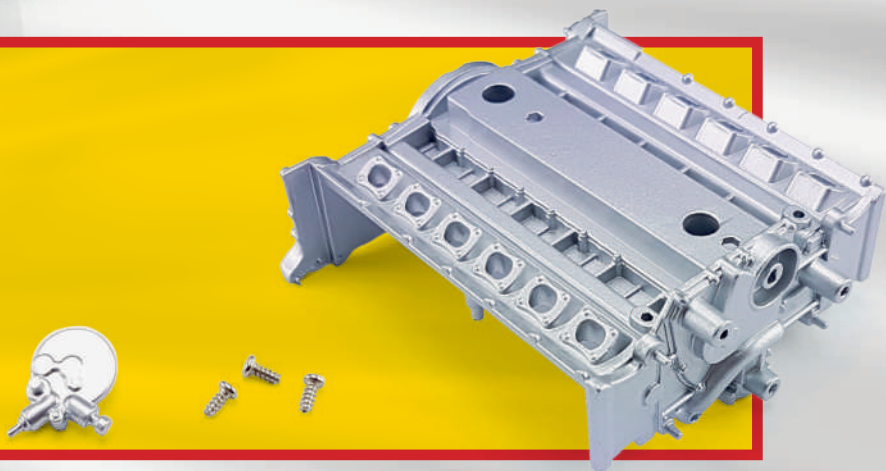


**FINAL RESULT**

The engine of your 1:8 scale Ferrari 312 T4 is now fitted with the left and right-hand heads.

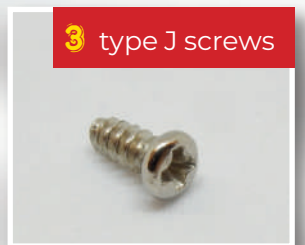
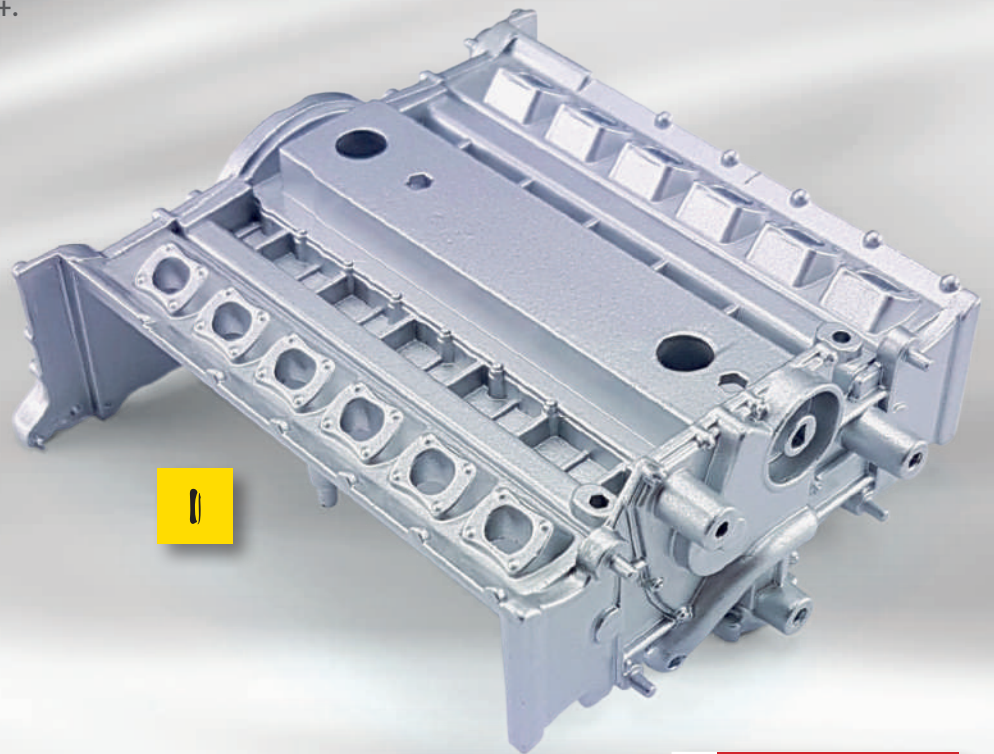
**In the next stage**

The crankcase, coolant pump cover, and fixing screws.



# CRANKCASE

THIS STAGE PROVIDES THE CRANKCASE AND THE COOLANT PUMP COVER. YOU CAN NOW BEGIN WORKING ON THE ENGINE OF YOUR 1:8 SCALE FERRARI 312 T4.



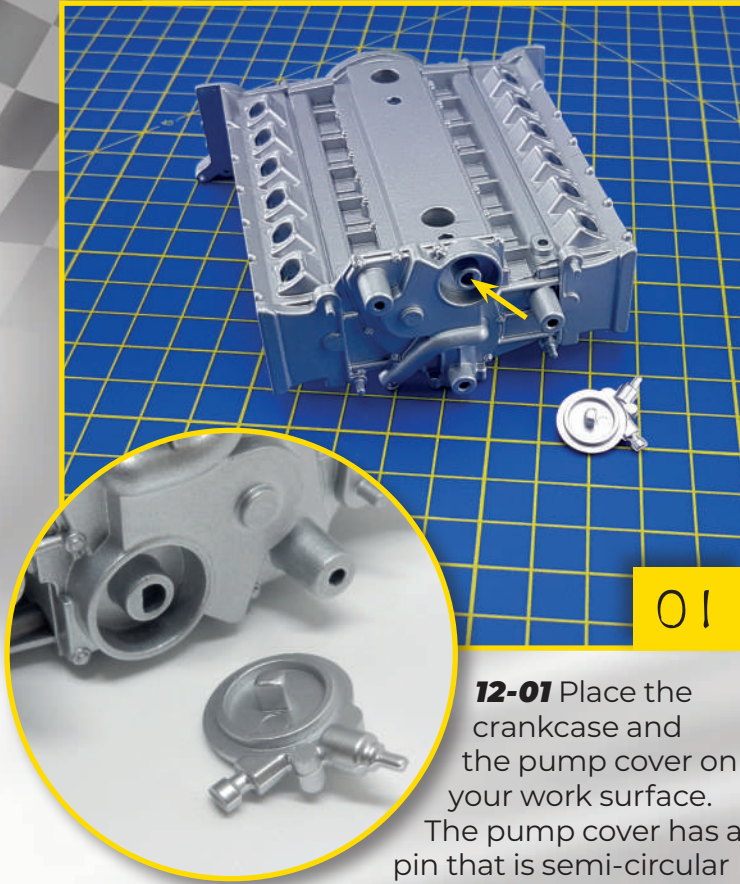
## LIST OF PARTS

- 1 Crankcase
- 2 Coolant pump cover

## SCREWS

Three type J screws



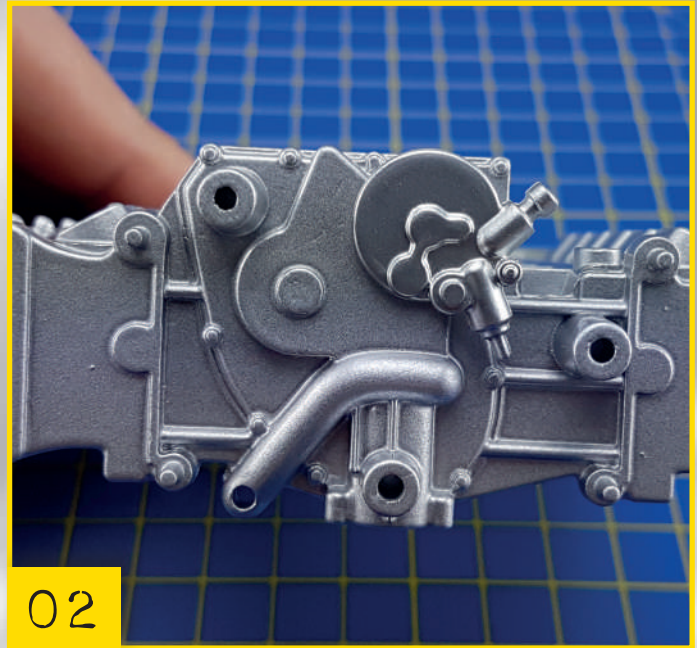


01

**12-01** Place the crankcase and the pump cover on your work surface.

The pump cover has a pin that is semi-circular in cross-section. This must

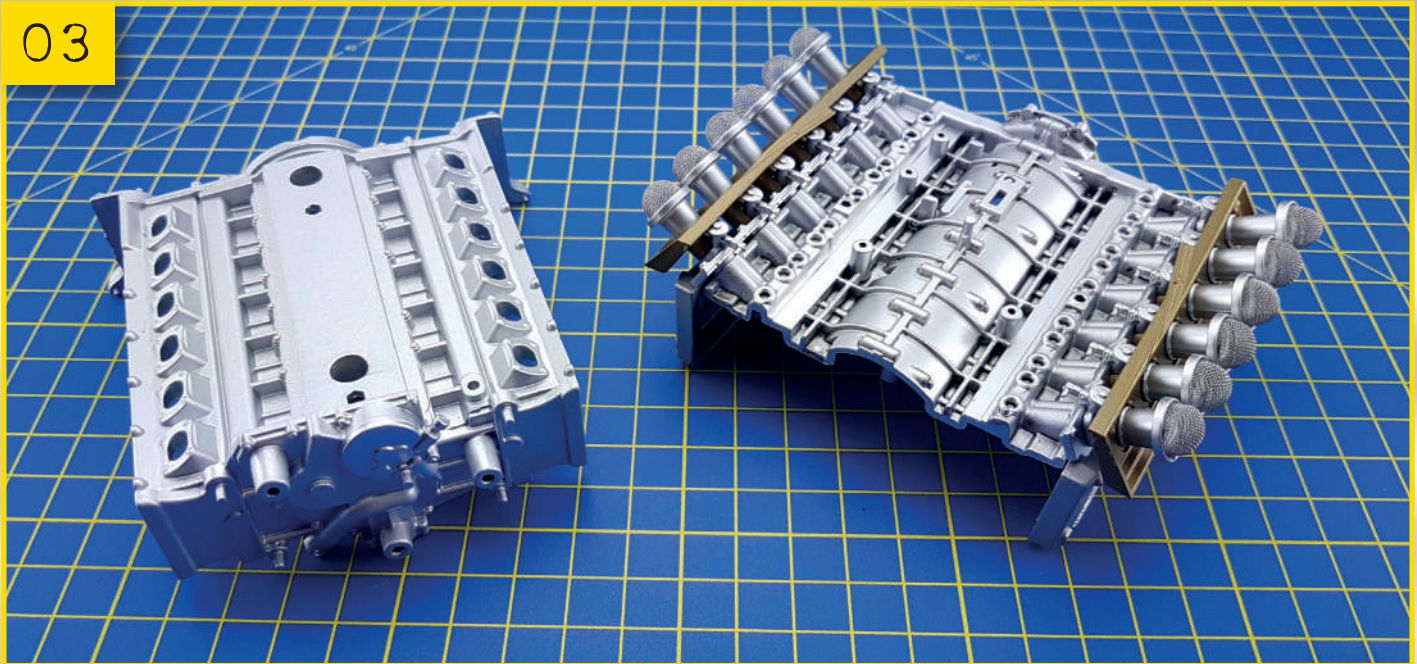
be inserted into the hole of the same shape on the front of the crankcase (arrow).



02

**12-02** Referring to the photograph in the previous stage, install the coolant pump cover on the crankcase. Careful: this assembly is temporary, so avoid using glue.

03

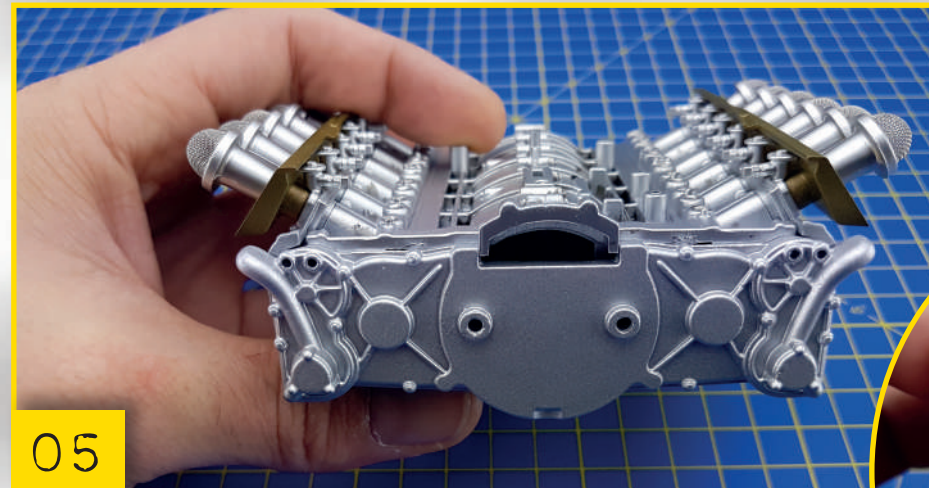
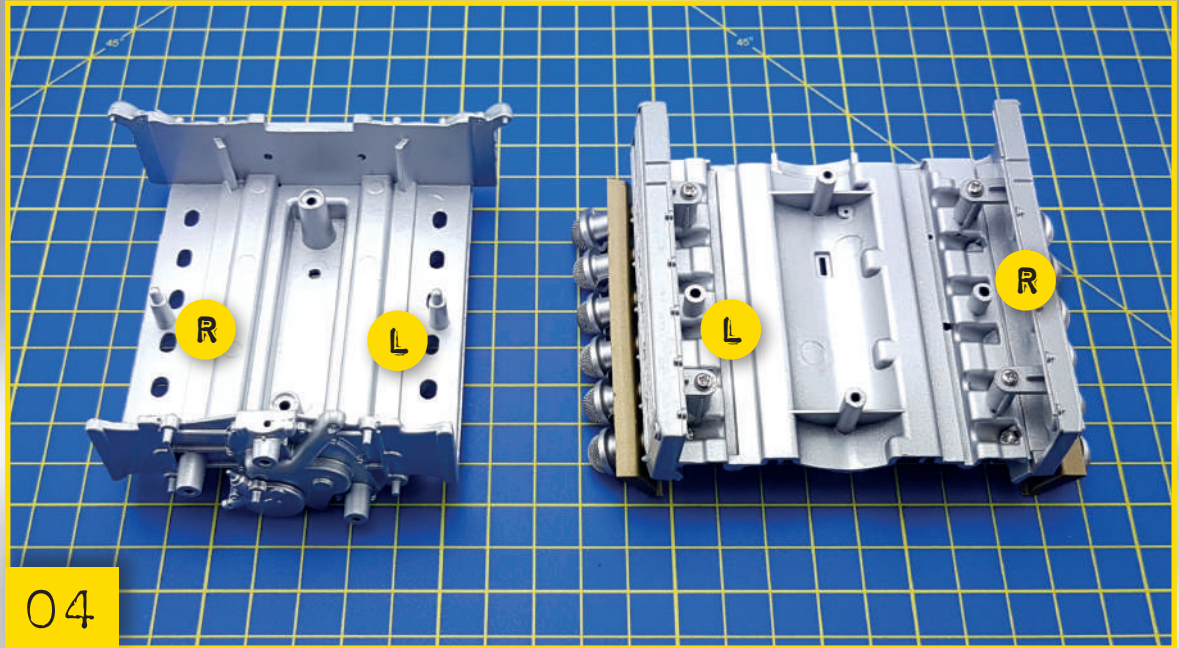


**12-03** Now retrieve the engine assembly from the previous stage and place it on your work surface next to the crankcase.

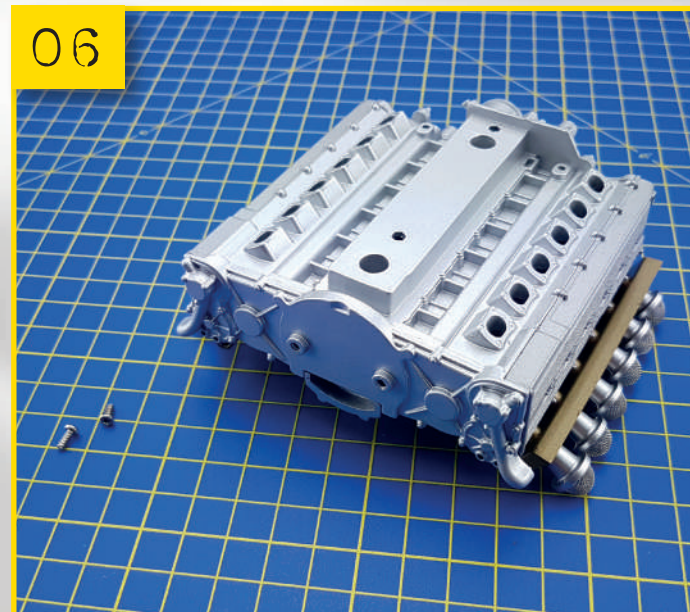


**12-04**

Carefully turn both pieces upside down. The labels in the photograph ("R" for "right", "L" for "left") will help you at a later stage when you put these two parts together.

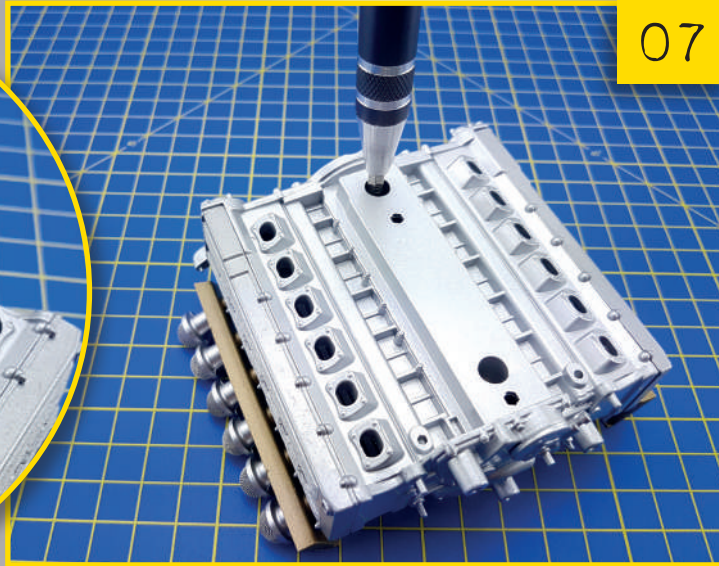
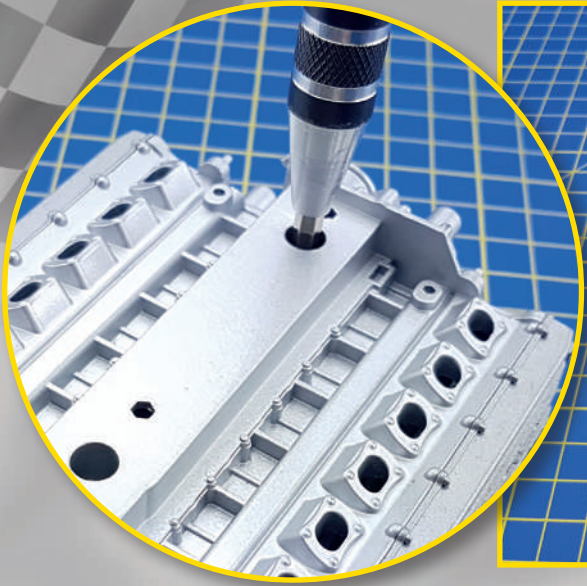


**12-05** Join the crankcase to the top engine assembly. For a perfect fit you will need to exert some force with your hands.



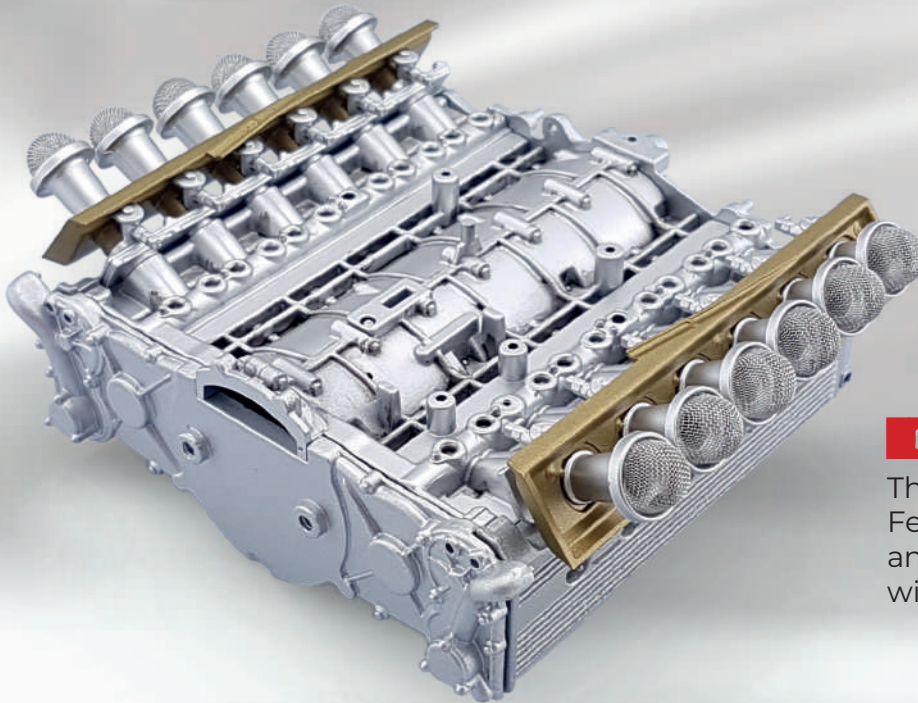
**12-06**

Carefully turn over the engine and take two J-type screws.



07

**12-07**  
Insert and tighten the two type J screws until you have both parts firmly joined together.

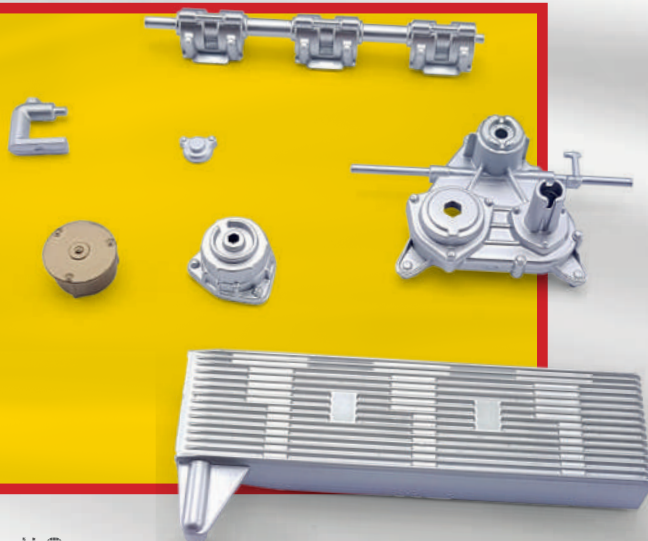


#### FINAL RESULT

The engine of your 1:8 scale Ferrari 312 T4 is becoming more and more complete. Set it down with the utmost care.

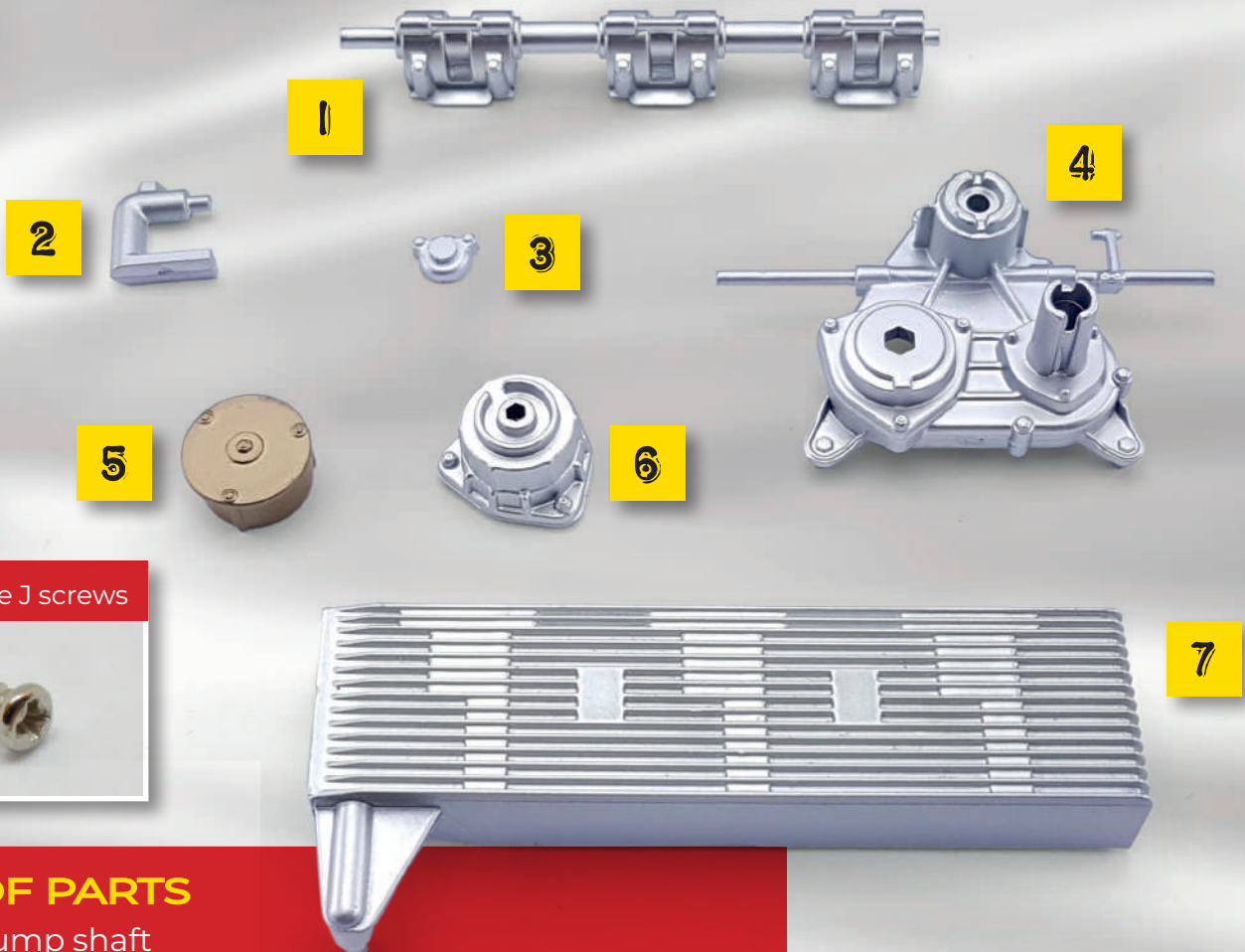
### In the next stage

The oil sump, the oil pump shaft and its retainer; the crankcase/sump connector; and the two parts of the alternator.



# ENGINE DETAILS

STAGE 13 COMES WITH A WEALTH OF NEW COMPONENTS FOR THE ENGINE ASSEMBLY, WHICH YOU'LL INSTALL TO ADD INTERESTING DETAILS ONTO THE ENGINE.



2 type J screws

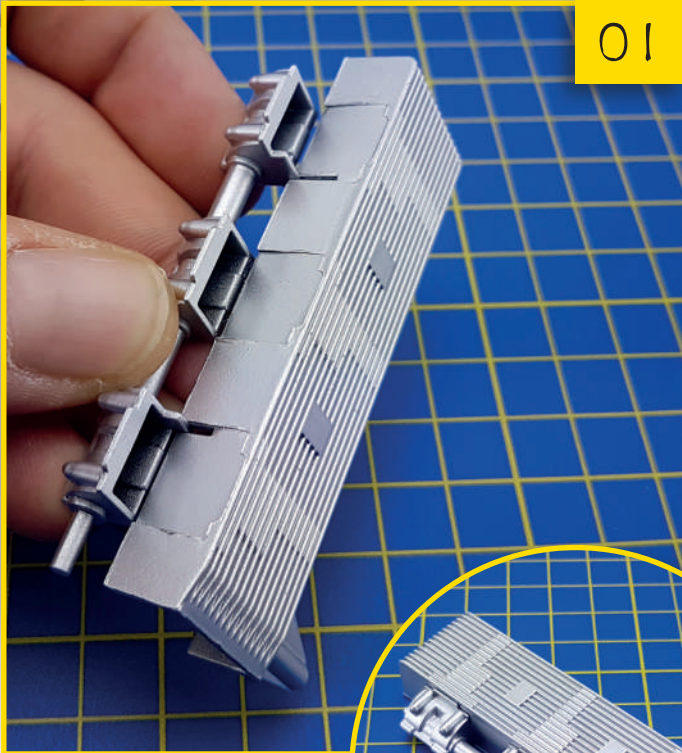
## LIST OF PARTS

- 1 Oil pump shaft
- 2 Crankcase oil/sump connector
- 3 Oil pump shaft cover
- 4 Distributor cover
- 5 Alternator cap
- 6 Alternator base
- 7 Oil sump

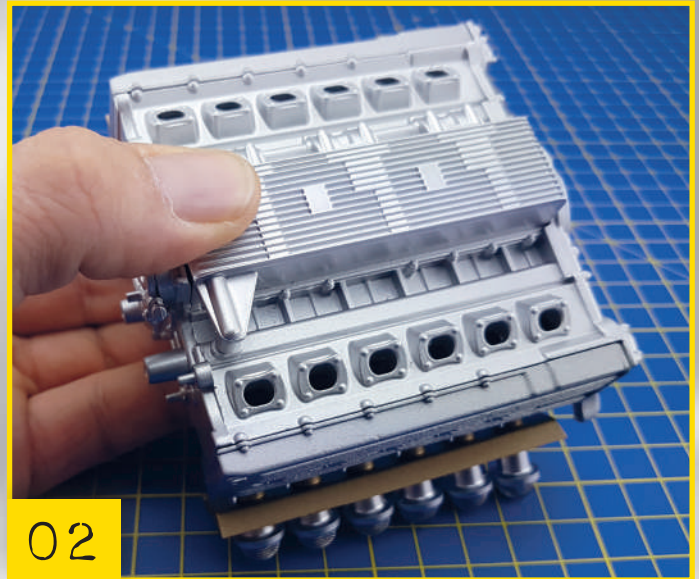
### SCREWS

Two type J screws





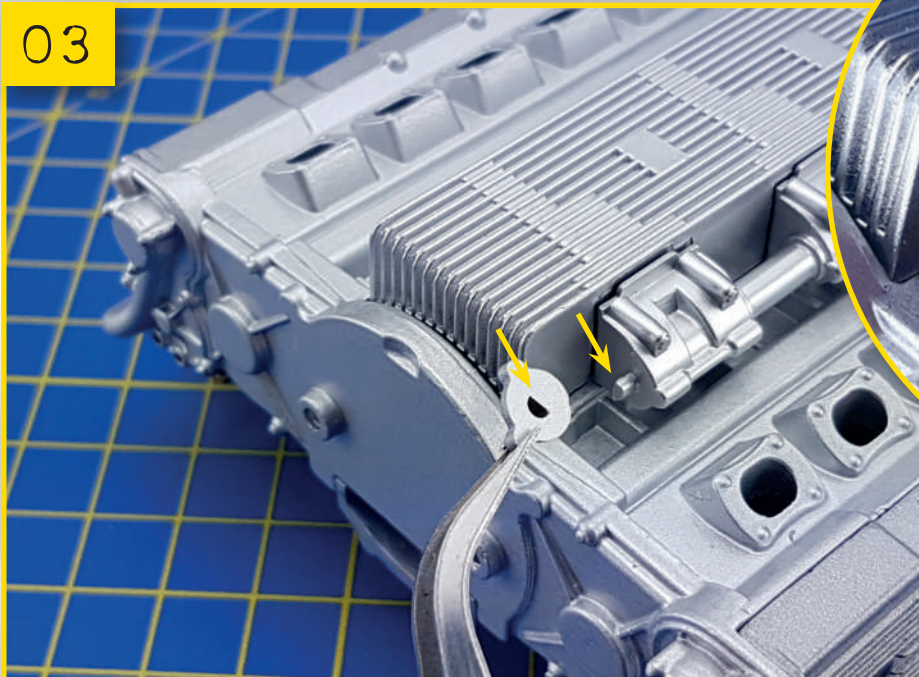
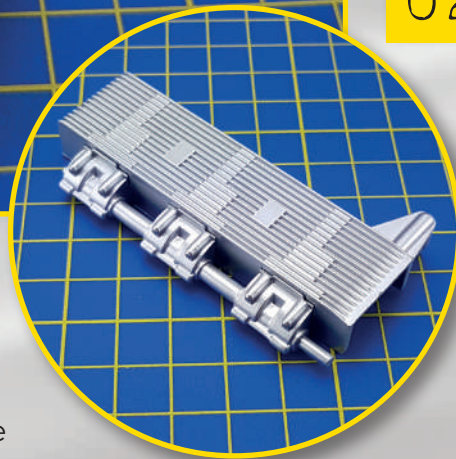
01



02

**13-02** Couple the oil sump to the crankcase as shown in the image.

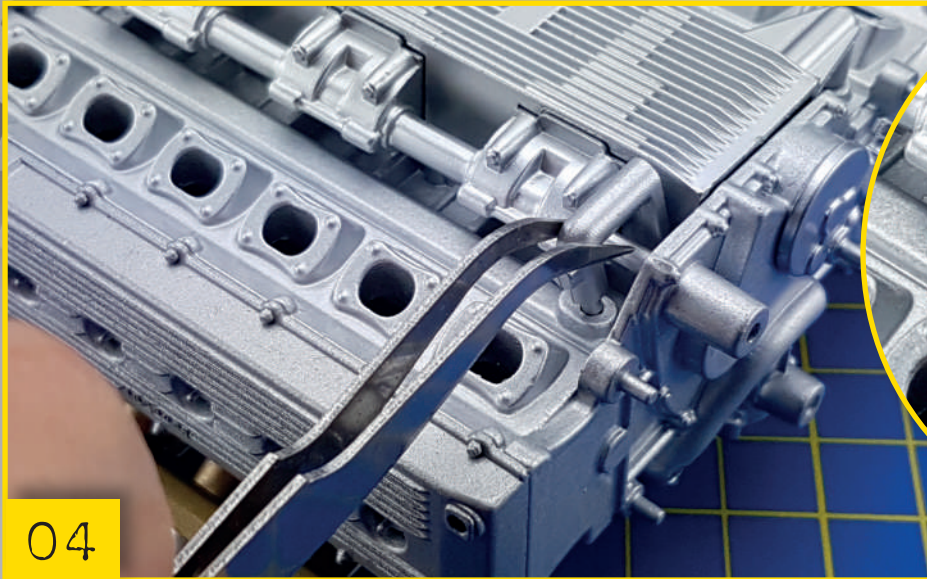
**13-01** Join the oil pump shaft to the oil sump. This is done by simply applying pressure and taking advantage of the designated interlocks.



03

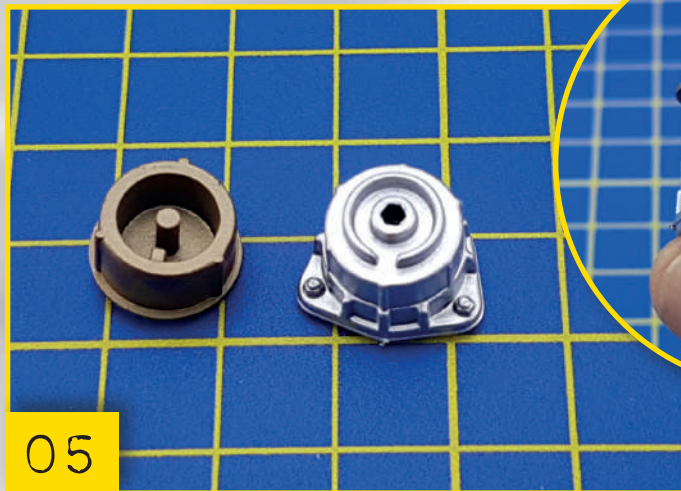
**13-03** Mount the oil pump shaft cover on the free end of the pump shaft. The arrows indicate a semi-circular hole coupled to a corresponding pin for fitting the parts correctly.





04

**13-04** It's time for the connector. Using tweezers, press it into place against the crankcase.



05

**13-05** Join together the alternator base and cap. Again, the shape of the interlocks ensures that these parts are correctly orientated.

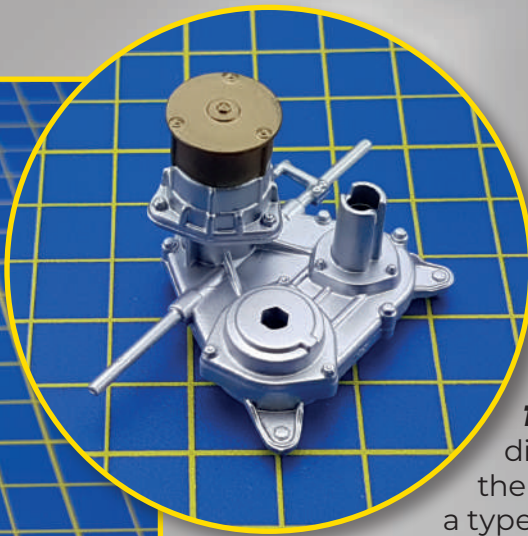
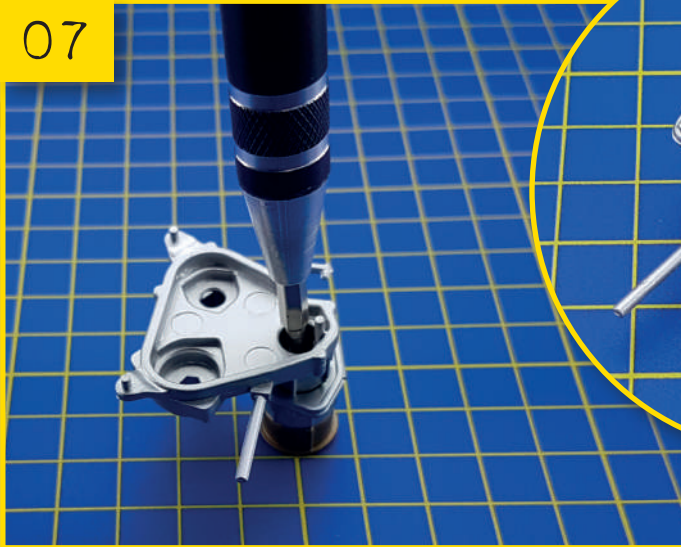


06

**13-06** Install the alternator on the distributor cover, using the designated centering elements.



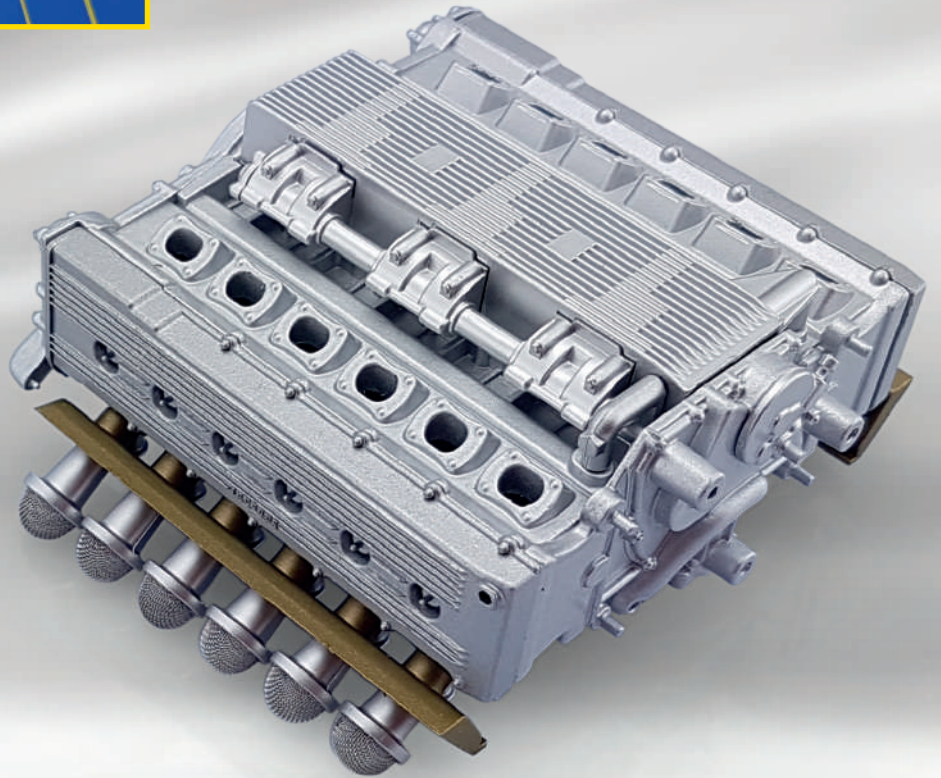
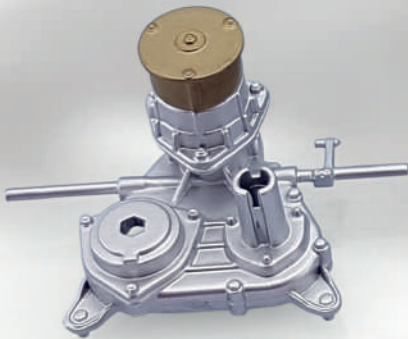
07



**13-07** Turn over the distributor cover and fix the alternator in place using a type J screw.

### FINAL RESULT

You have now added new details to the engine and prepared the distributor cover, ready for the next assembly session.



### In the next stage

The first parts of the ignition system: the distributor with spark plug leads and their caps.



# DISTRIBUTOR, SPARK PLUG LEADS, AND PLUG CAPS

USING THE PARTS THAT YOU RECEIVE IN THIS STAGE, YOU CAN BEGIN ASSEMBLING THE ENGINE IGNITION SYSTEM OF YOUR 1:8 SCALE FERRARI 312 T4. THE ASSEMBLY SEQUENCE DESCRIBED IN THESE PAGES REQUIRES PRECISION AND PATIENCE, BUT THE RESULT IS A REALISTIC REPRESENTATION.

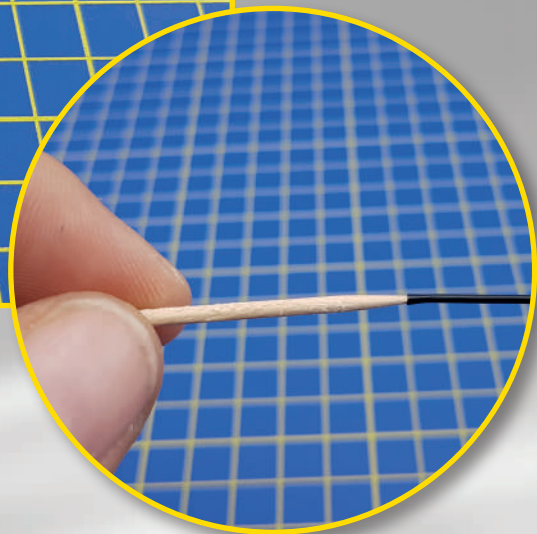
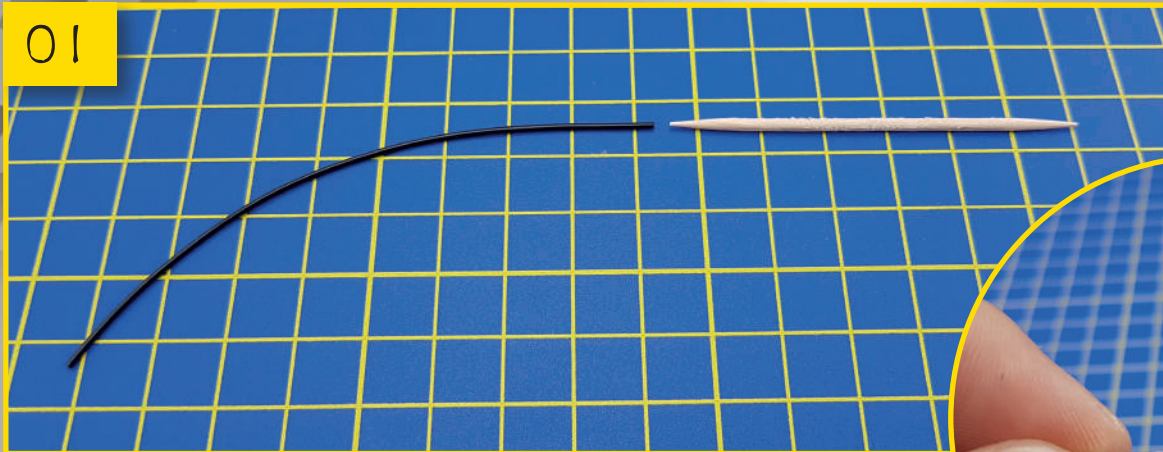


## LIST OF PARTS

- 1 Three spark plug caps
- 2 Distributor
- 3 Three spark plug leads (100 mm)



01

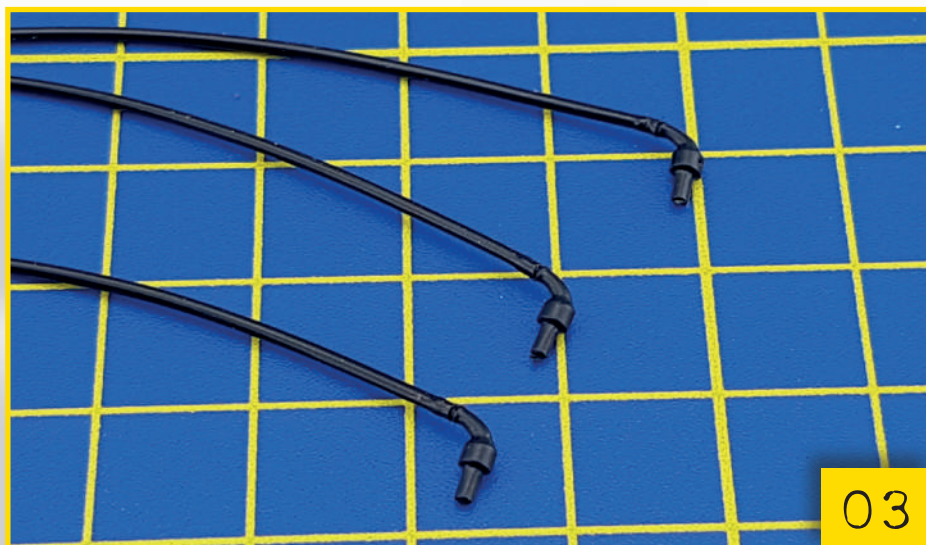


**14-01** Before you begin, check that the three spark plug leads are no longer than 100 mm – shorten them with a sharp knife if needed. Next, take a cocktail stick and slightly widen the hole at one end of each lead. Do not allow the cocktail stick to penetrate more than 2 mm into the lead.

**14-02** Couple one of the spark plug caps to one of the spark plug leads, using the hole enlarged in the previous step. You will need to insert the thinner, curved end of the cap.



02

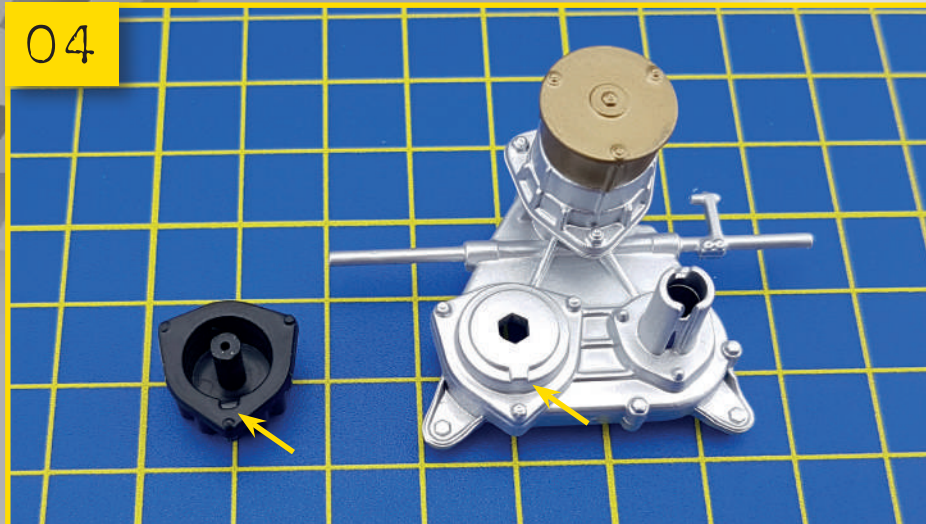


03

**14-03** Do the same with the remaining caps and the spark plug leads.

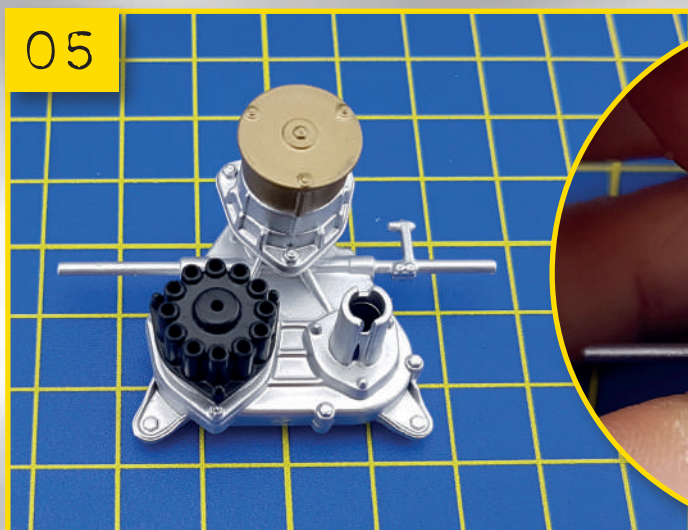


04



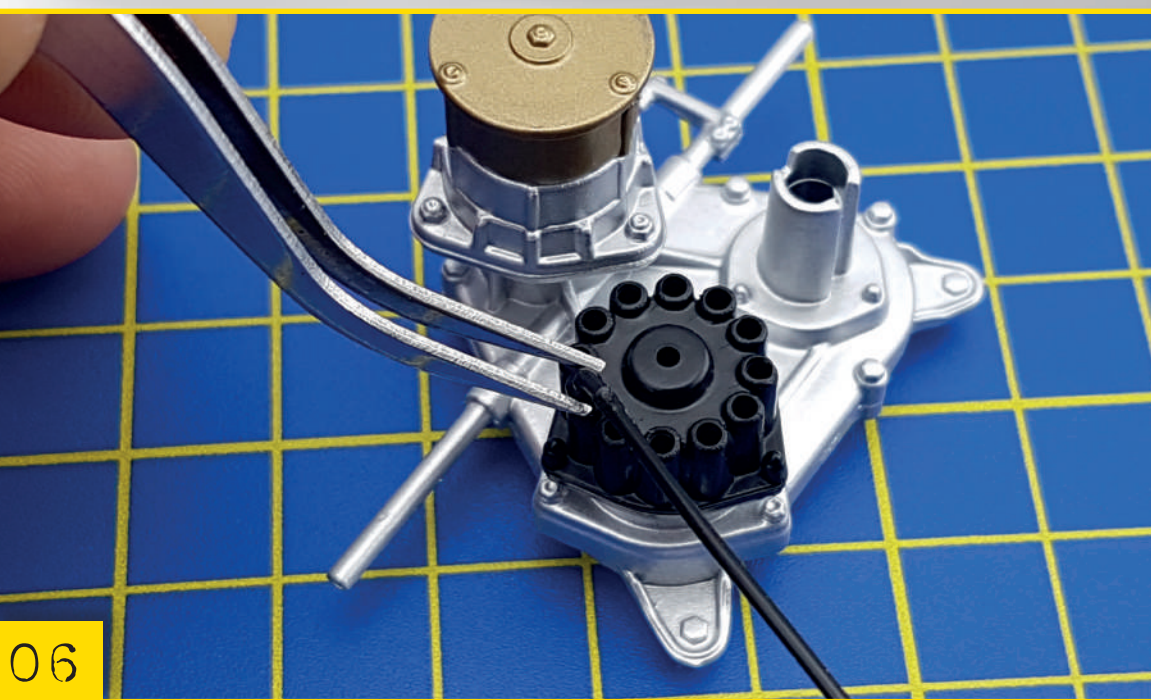
**14-04** Look carefully at the underside of the distributor and where it is to sit on the distributor cover. There is a fitting (highlighted with two arrows in the image) to ensure that the distributor is perfectly centred on its base.

05

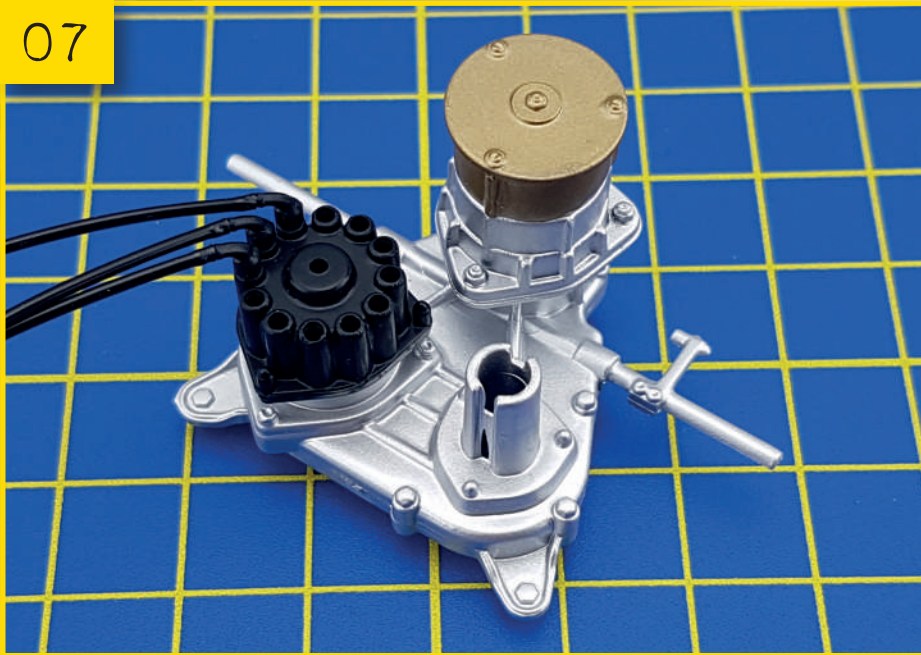


**14-05** Fit the distributor on the distributor cover and press it down with your fingers.

**14-06** Insert the free end of one plug cap into the distributor hole, which you can easily identify in the photograph.



07



**14-07** Fit the other two caps, orientating them as shown in the image.



**FINAL RESULT**

You have begun assembling the ignition system which continues in the next stage.

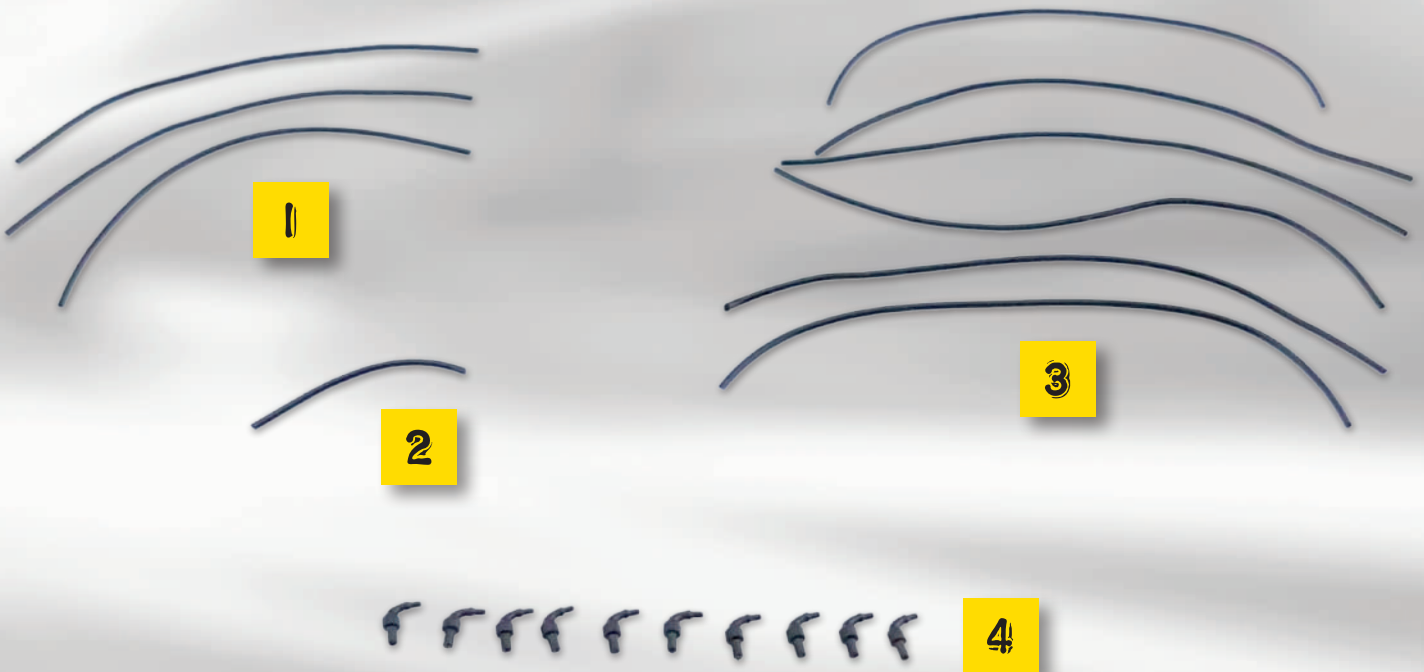
**In the next stage**

The last caps, spark plug leads, and distributor cabling.



# CONNECTING THE SPARK PLUGS TO THE DISTRIBUTOR

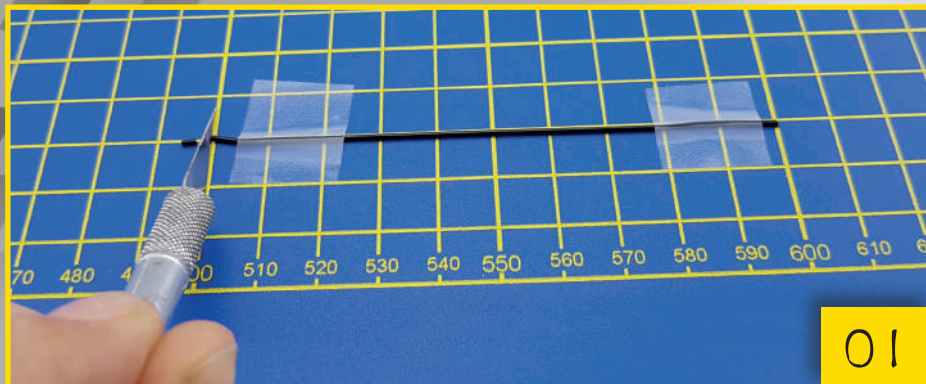
USING THE PARTS THAT COME WITH THIS STAGE YOU CAN NOW COMPLETE THE ELECTRICAL CONNECTIONS BETWEEN THE DISTRIBUTOR AND THE SPARK PLUGS.



## LIST OF PARTS

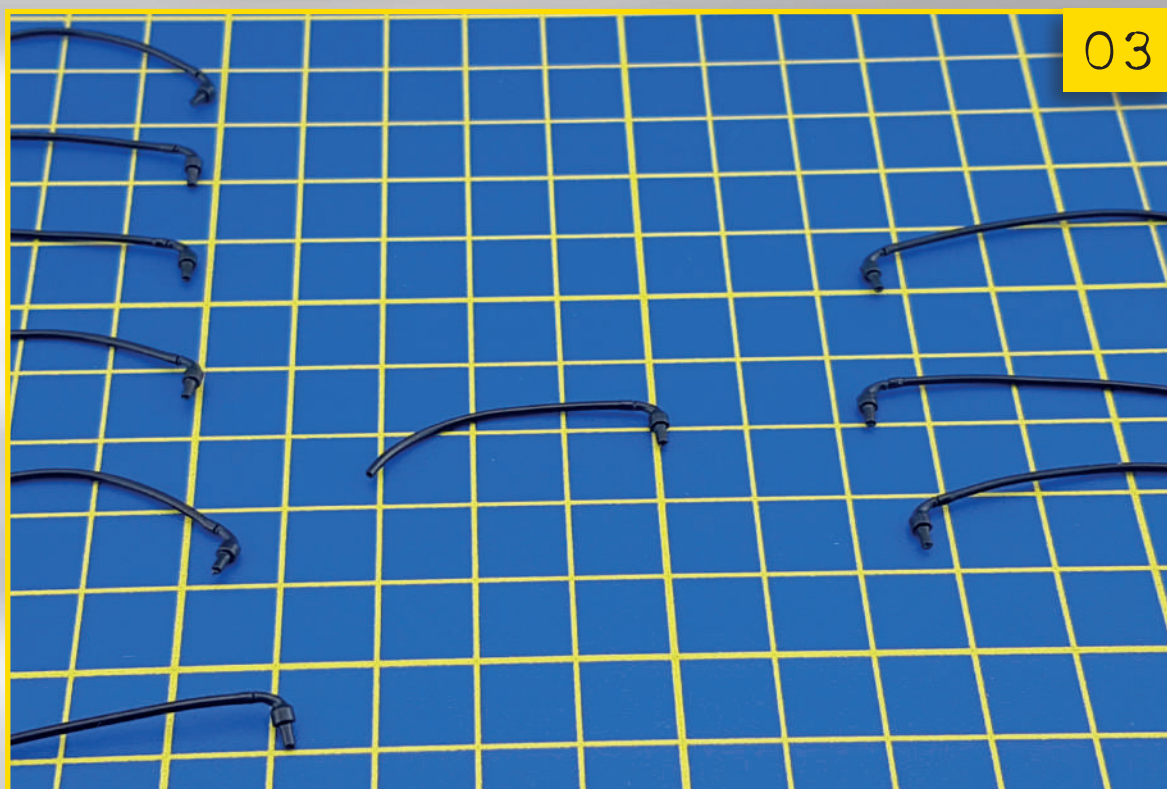
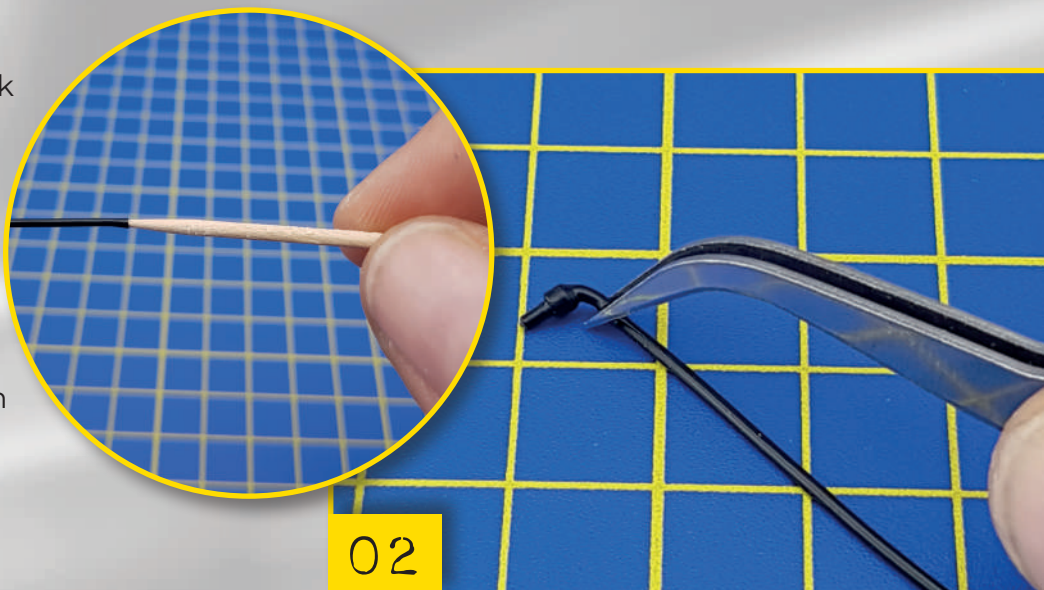
- 1 Three spark plug leads (80 mm)
- 2 Distributor cabling (35 mm)
- 3 Six spark plug leads (100 mm)
- 4 Ten spark plug caps



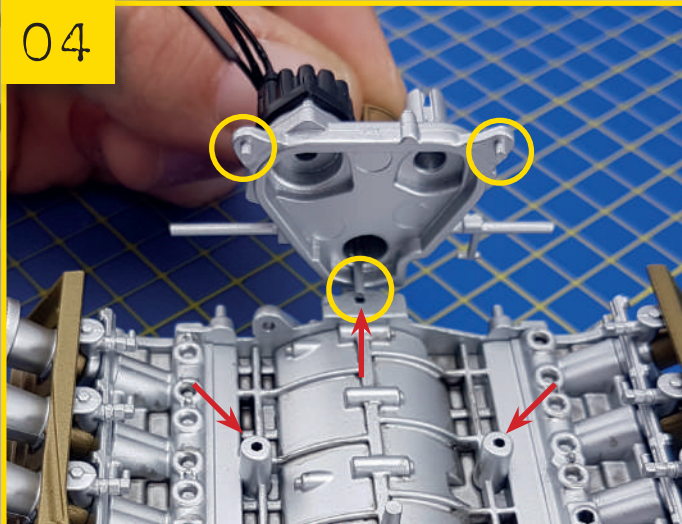


**15-01** Before you begin, check that the ten leads supplied (three x 80, six x 100 and one x 35 mm) are of the required length. If not, shorten them using a sharp knife.

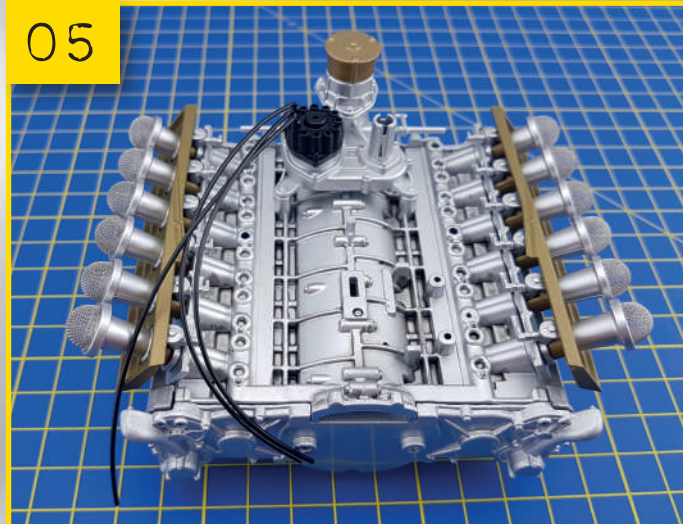
**15-02** Take a cocktail stick and slightly widen the hole at one end of each lead (as shown in the circle). Do not allow the cocktail stick to penetrate more than 2 mm into the lead. Then put the thinner, curved end of one cap on each lead.



**15-03** Now you have the ten leads each fitted with a cap, ready for attaching the cabling.

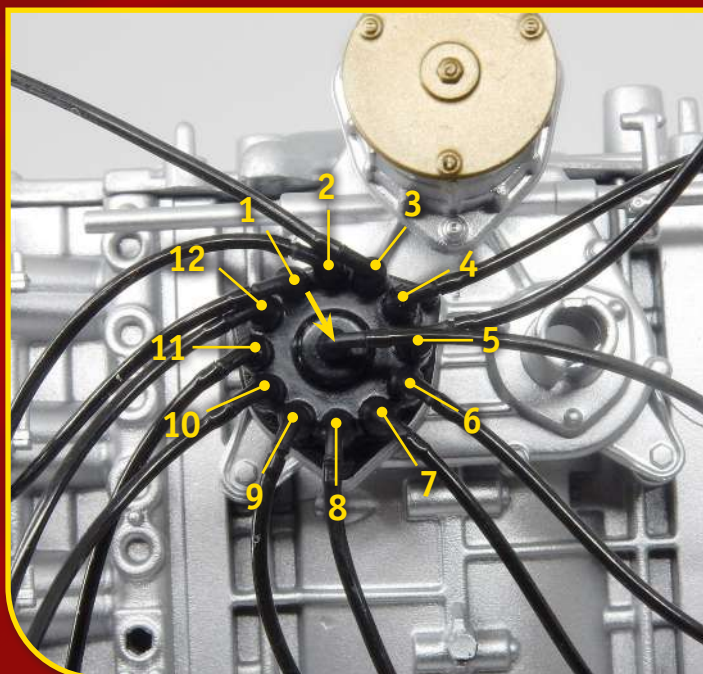


**15-04** Retrieve the distribution cover that you made in stage 14. Align it with the engine assembly. The three fixing points are highlighted in the photograph.

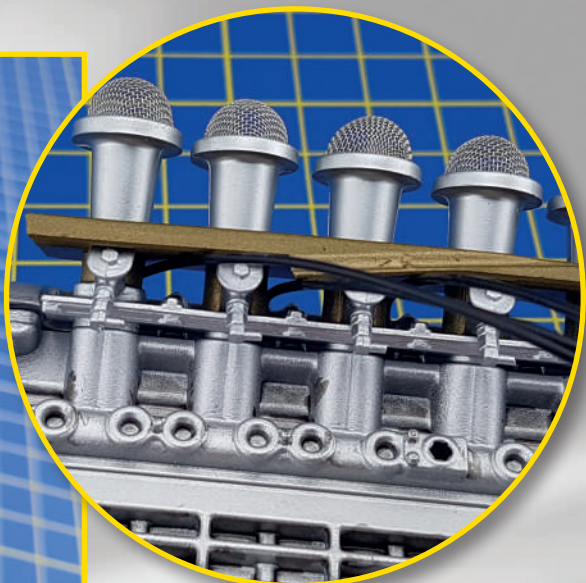
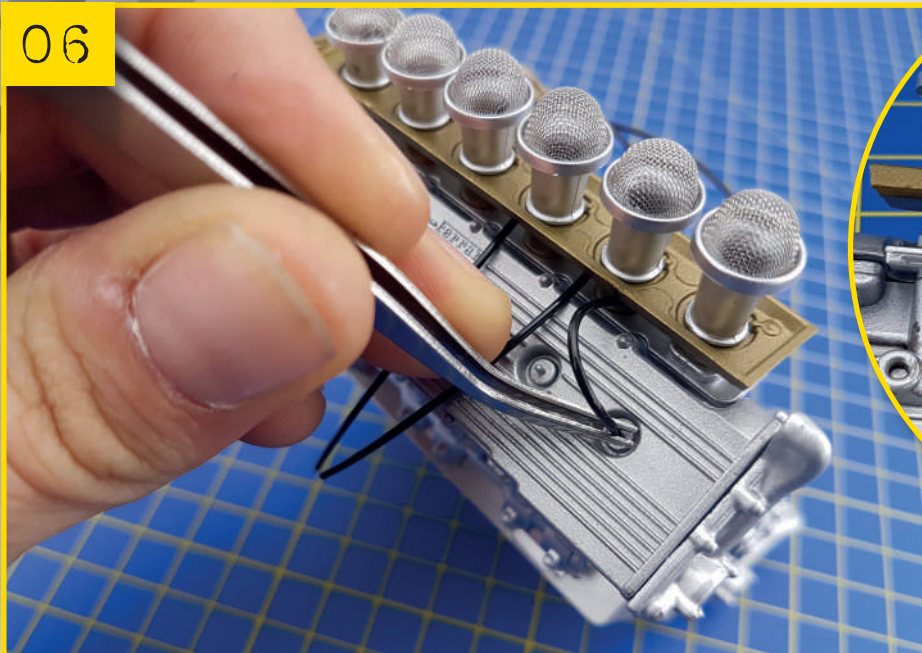


**15-05** Then install the distributor cover on the engine assembly by pushing firmly.

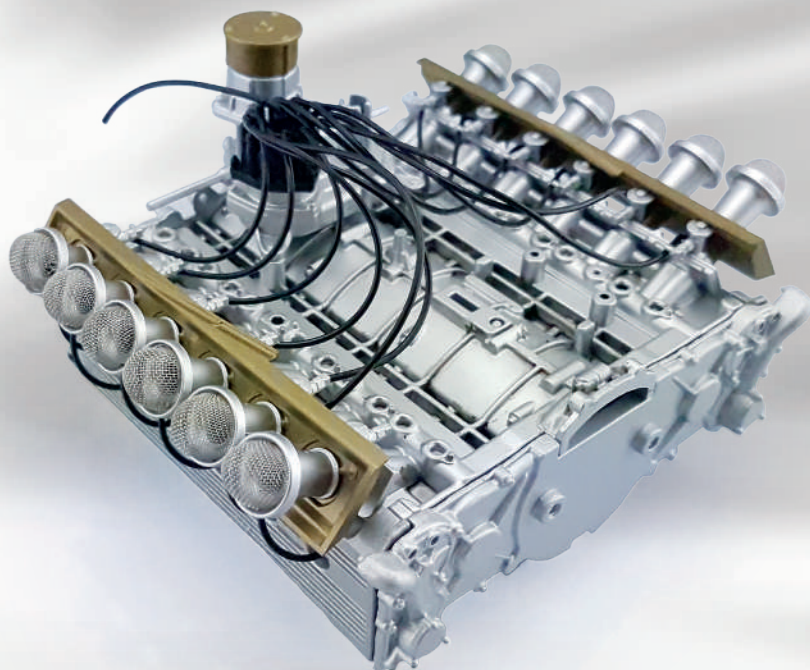
To make it easier for you to wire up the spark plug leads, these images show the engine with the ignition system already complete. Refer to the numbers in the photographs to make sure you are doing this correctly. Bear in mind that cables 1–3 are 80 mm long whilst the other nine are 100 mm long. The 35 mm long cable fits in the central hole of the distributor (arrow).



06



**15-06** Following the guide on the previous page, fit the cables in place. Keep in mind that the cables must pass in front of each trumpet and below the support flange. You will need to fit each cable on to the designated pin on the cylinder head. Use tweezers to help you.



**FINAL RESULT**

The distributor cover and cables have been fitted to the engine.

**In the next stage**

The fuel pipes and their fittings.

