

STEVE MCQUEEN'S ICONIC
PORSCHE
917KH



Pack 03

BUILD INSTRUCTIONS

STAGE 13: ATTACHING THE LEFT CAM COVERS

STAGE 14: FITTING THE LEFT CYLINDER HEAD

STAGE 15: STARTING WITH THE LEFT VELOCITY STACKS

STAGE 16: INSTALLING THE RIGHT VELOCITY STACKS

STAGE 17: CONNECTING THE THROTTLE LINKAGE SHAFT

STAGE 18: ADDING THE ENGINE FAN

STAGE 19: ASSEMBLING THE LEFT EXHAUST PIPING

STAGE 20: ASSEMBLING THE RIGHT EXHAUST PIPING

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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 Porsche 917KH, 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 13: ATTACHING THE LEFT CAM COVERS

13A Left cylinder head

13B Spark plugs (x12 + 5 spares)

13C Exhaust cam cover

13D End shield (x2)

13E Pulley front

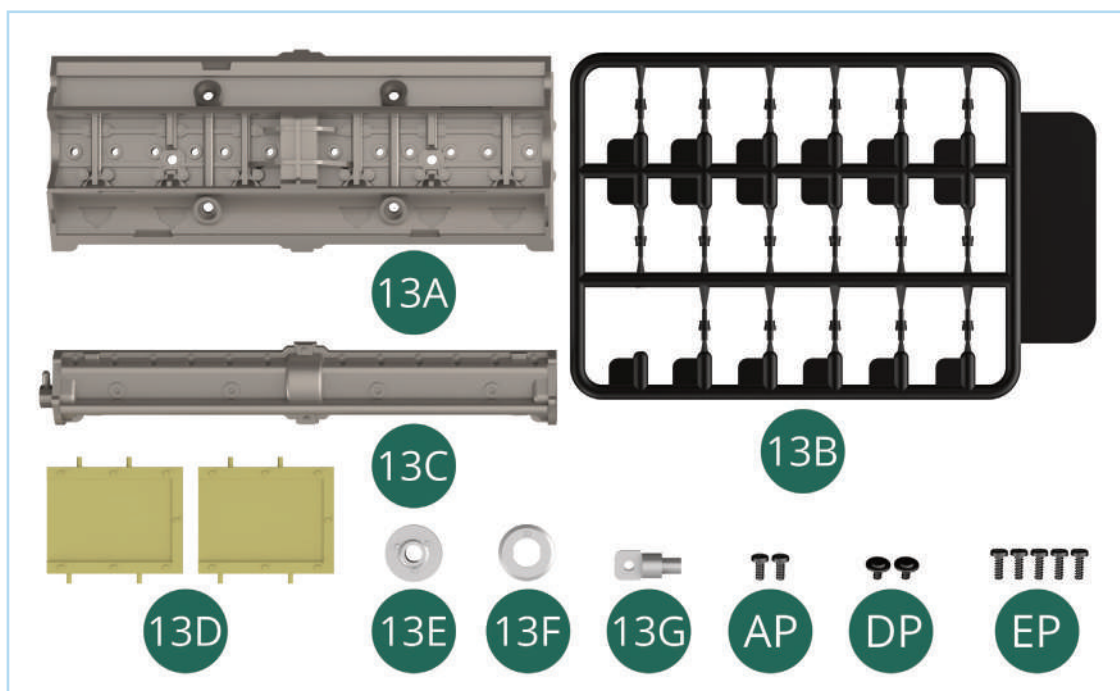
13F Pulley back

13G Pulley shaft

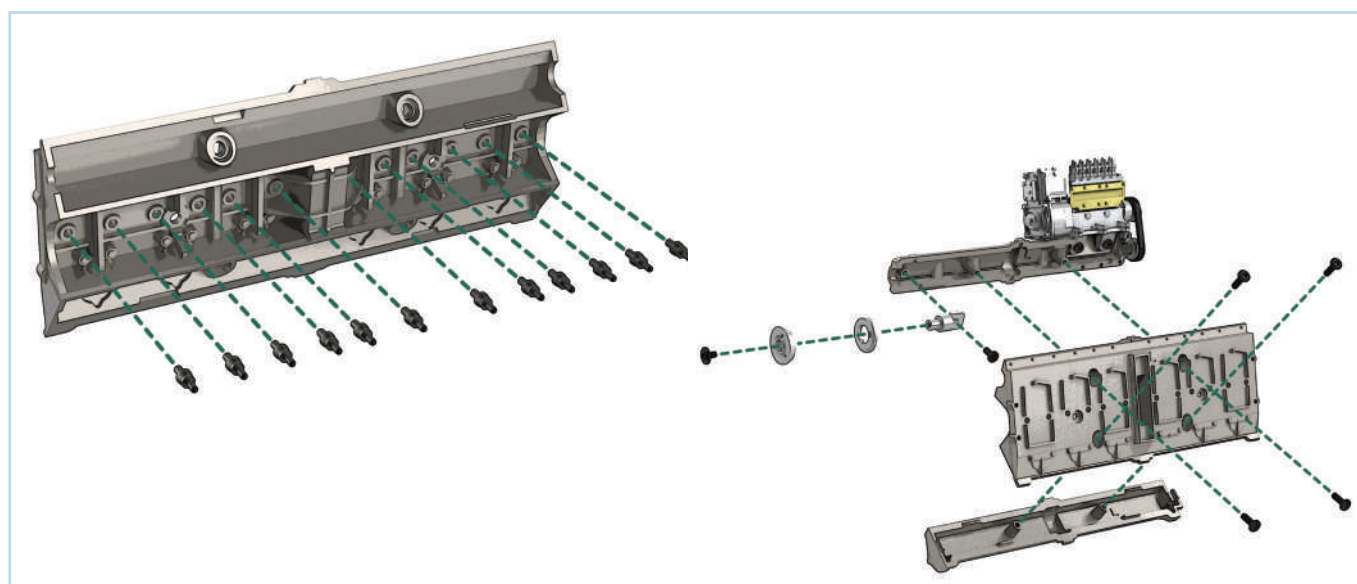
AP Screw 1.7 x 4 mm (x2)

DP Screw 1.7 x 3 x 5 mm (x2)

EP Screw 1.7 x 5 mm (x5)



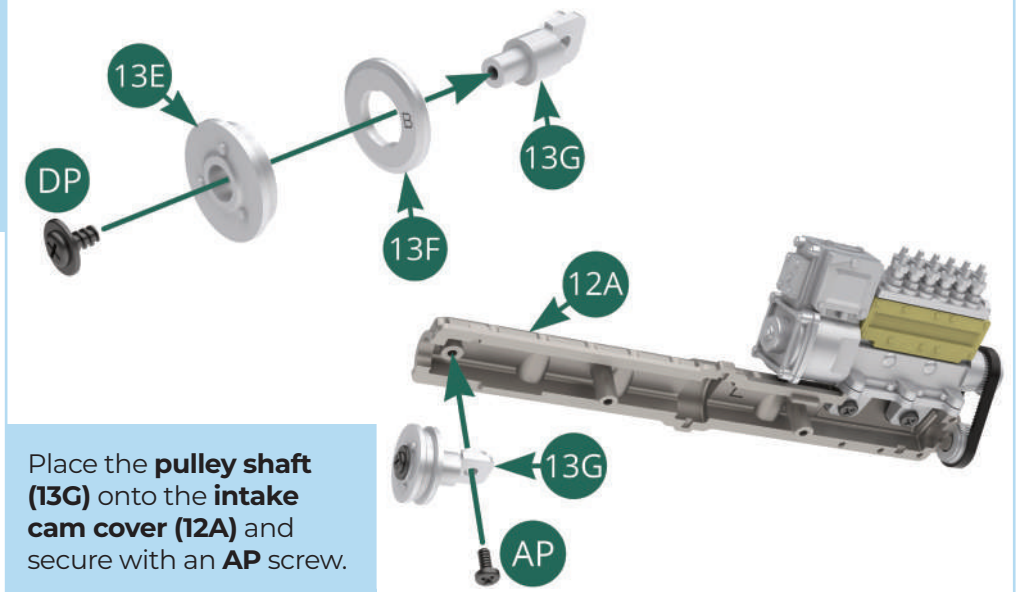
ASSEMBLY DIAGRAM



STAGE 13: ATTACHING THE LEFT CAM COVERS

STEP 1

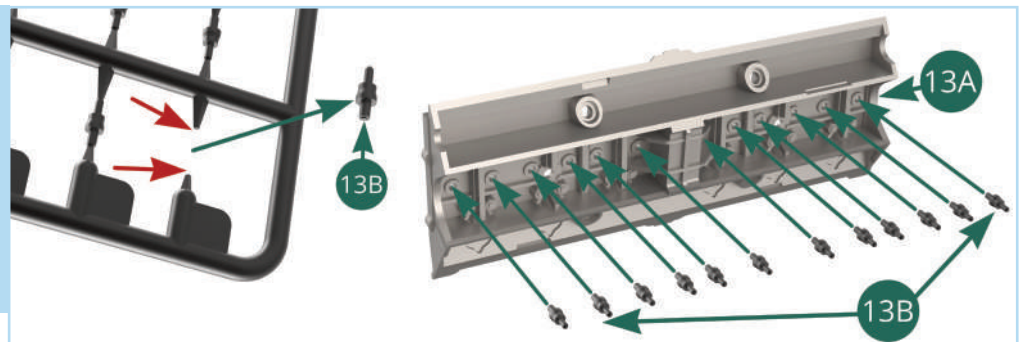
Position the **pulley back (13F)** and **front (13E)** onto the **shaft (13G)** as shown, then fix the parts together using a **DP** screw.



Place the **pulley shaft (13G)** onto the **intake cam cover (12A)** and secure with an **AP** screw.

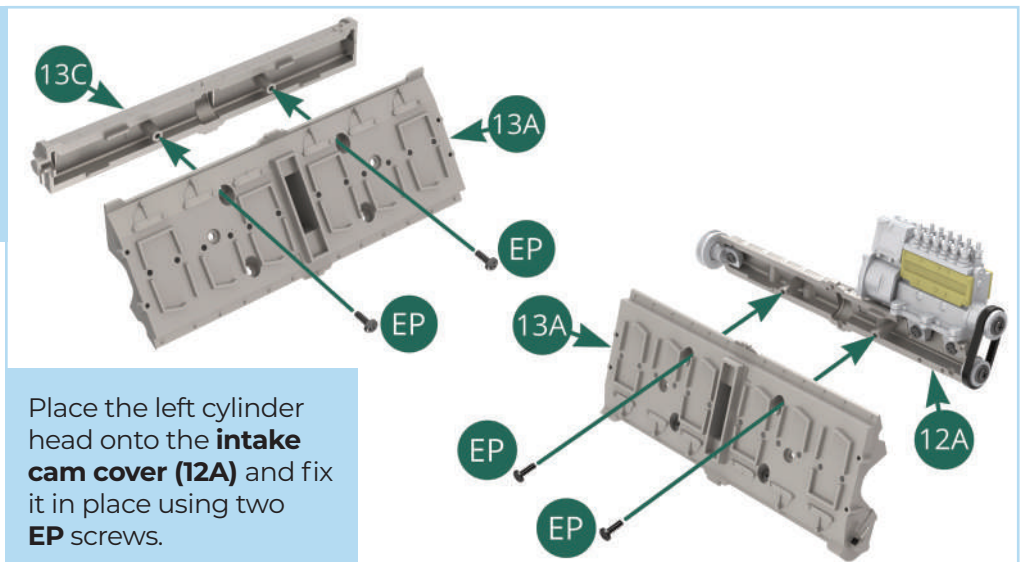
STEP 2

Using sprue cutters, cut twelve **spark plugs (13B)** at the points indicated by red arrows. Push them into the corresponding holes in the **left cylinder head (13A)**.



STEP 3

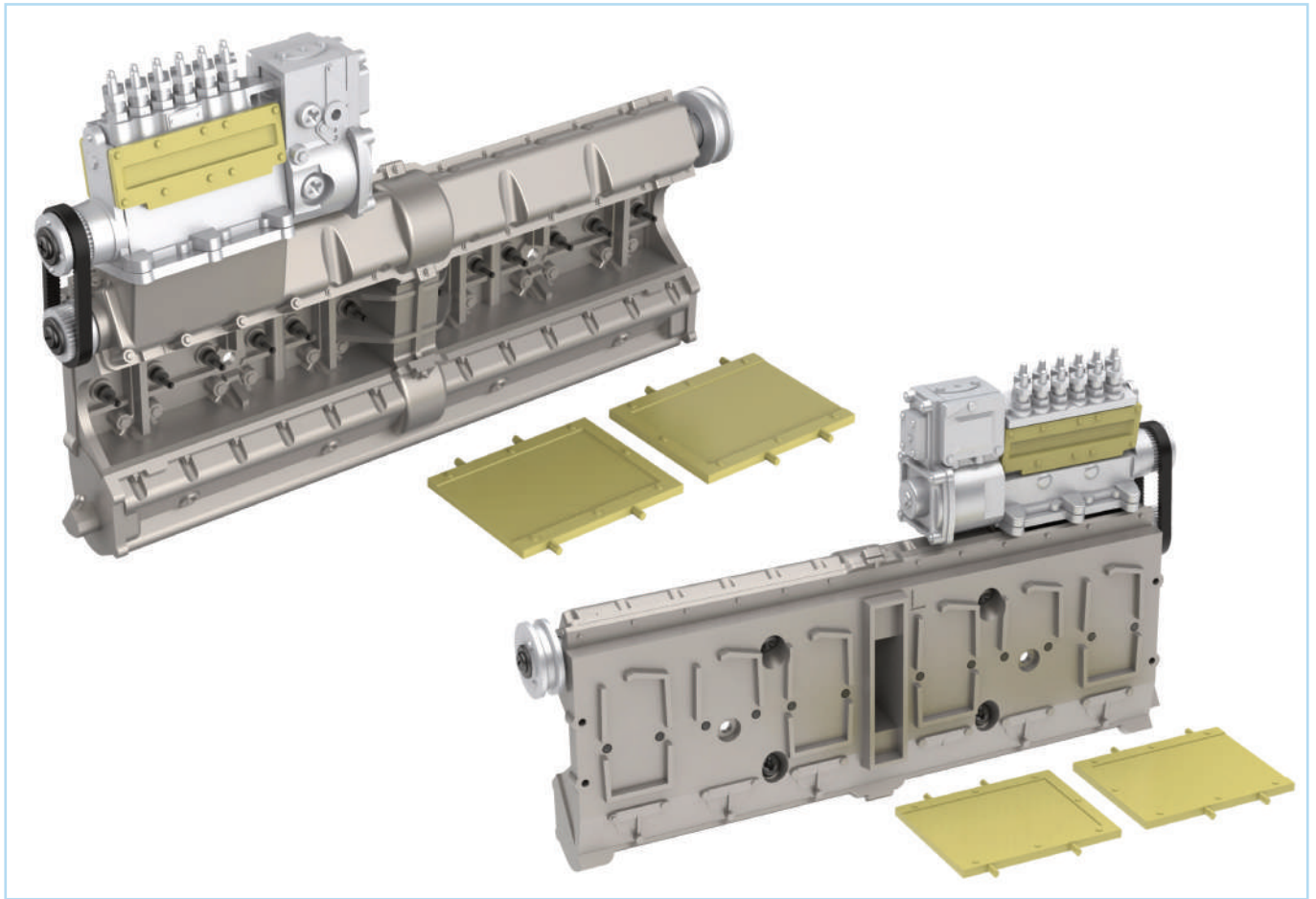
Fit together the **exhaust cam cover (13C)** and the **left cylinder head (13A)** as shown then attach using two **EP** screws.



Place the left cylinder head onto the **intake cam cover (12A)** and fix it in place using two **EP** screws.

STAGE 13: ATTACHING THE LEFT CAM COVERS

STAGE COMPLETE



STAGE 14: FITTING THE LEFT CYLINDER HEAD

14A Air cooling chamber top

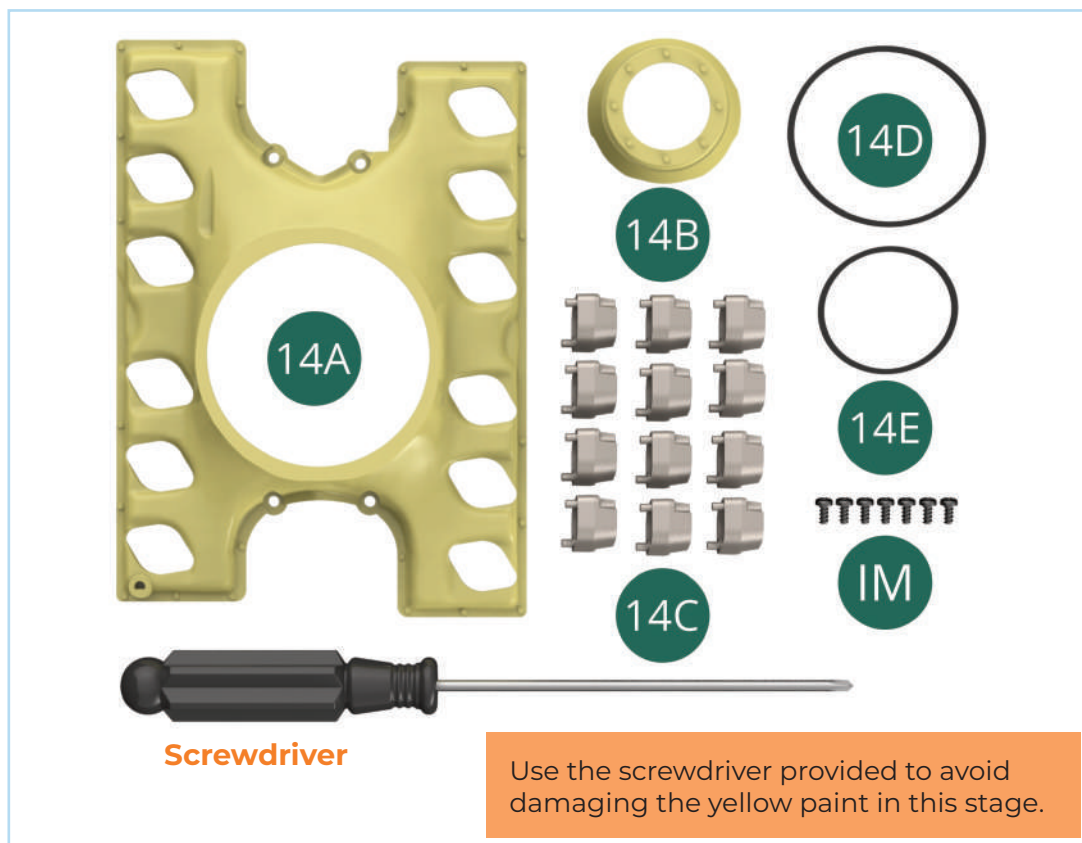
14B Upper airflow guide

14C Air intake bracket (x12)

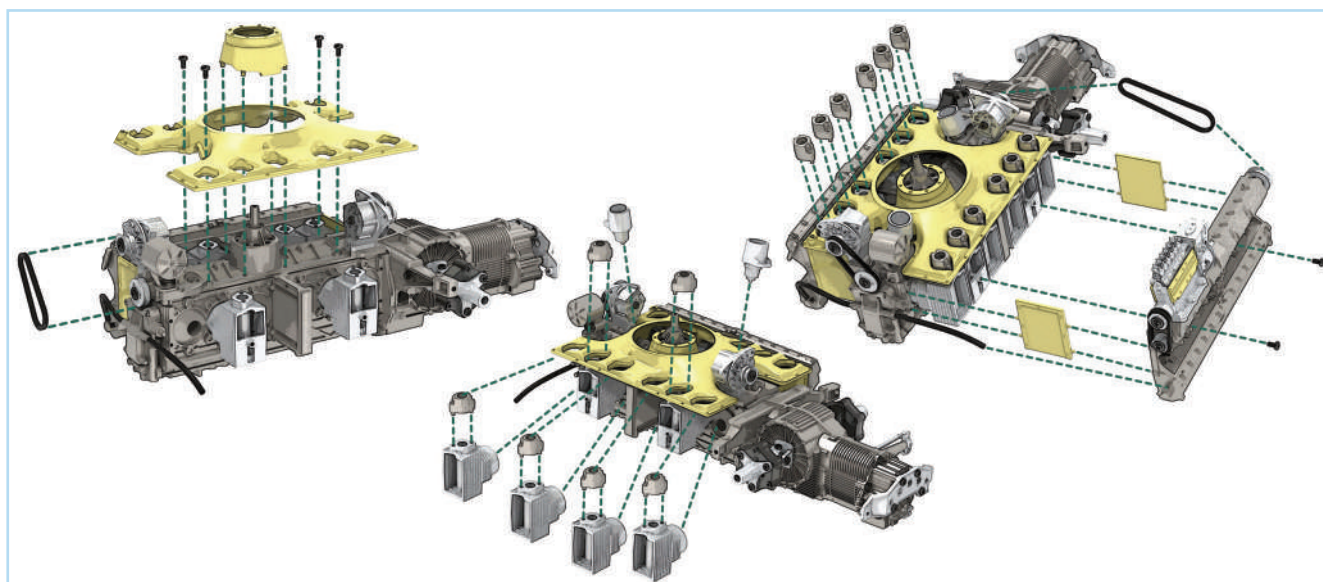
14D Alternator main belt

14E Alternator secondary belt

IM Screw 1.7 x 3.5 mm (x7)



ASSEMBLY DIAGRAM

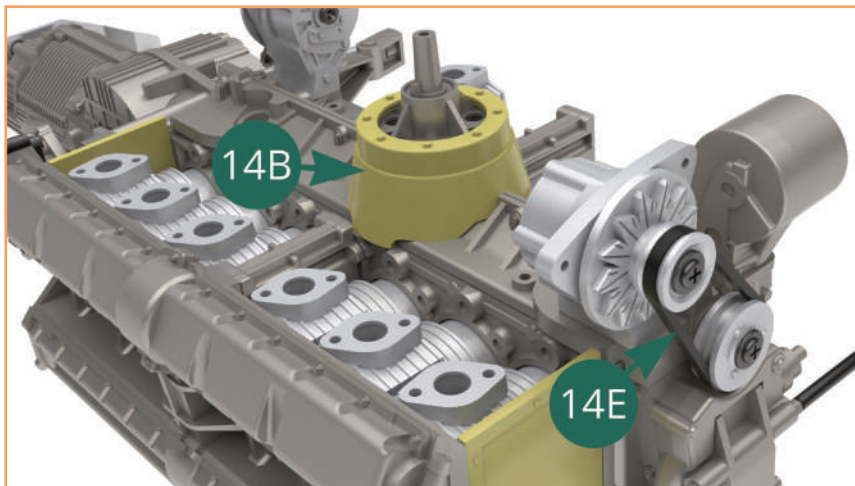
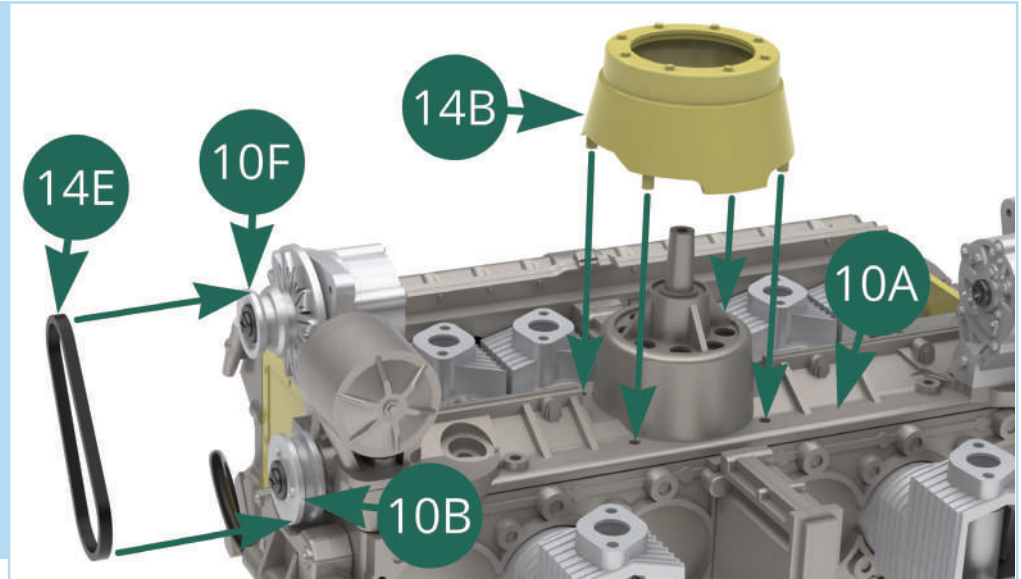


STAGE 14: FITTING THE LEFT CYLINDER HEAD

STEP 1

Place the **upper airflow guide (14B)** in position on the **crankcase top (10A)** and firmly push in place. Take the smaller **alternator secondary belt (14E)** and carefully stretch it around the two pulleys as shown.

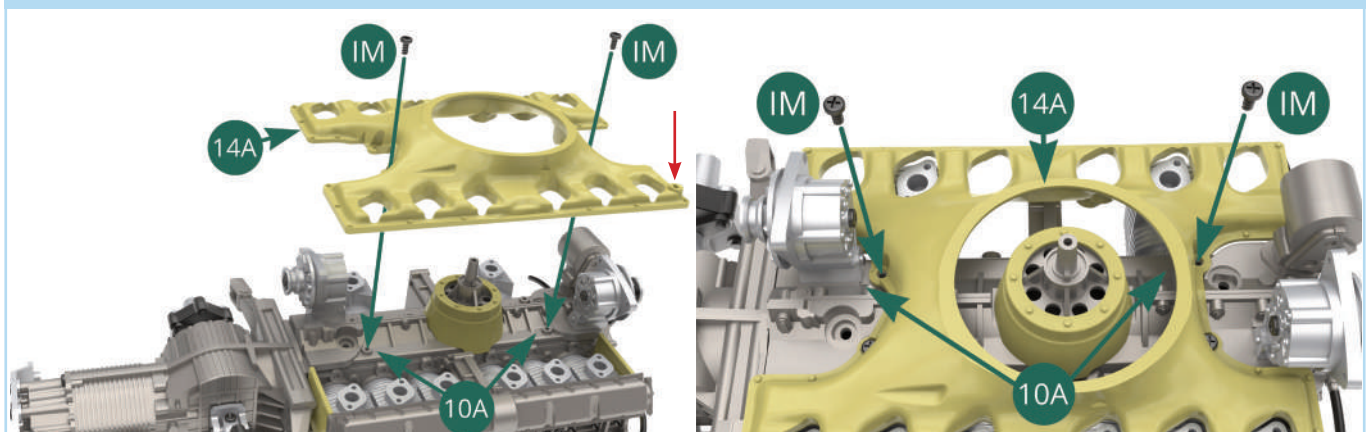
Tip: If the belt is twisted, try gently turning the larger pulley (**10B**) until it untwists itself.



The airflow guide and secondary alternator belt should look like this once in place.

STEP 2

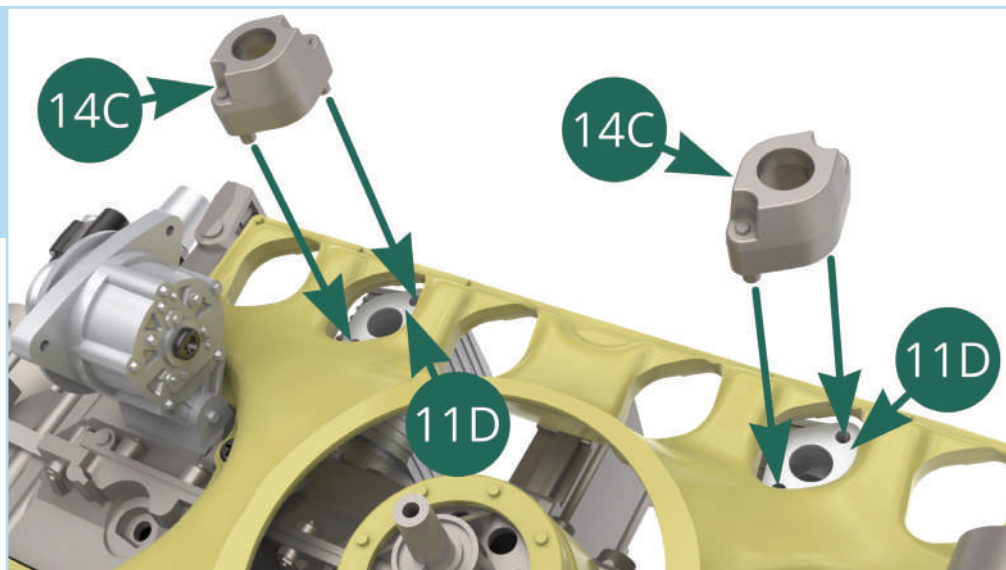
Place the **air cooling chamber top (14A)** over the airflow guide and attach it to the **crankcase top (10A)** using four **IM** screws as shown. Note the D-shaped plug (red arrow) when orienting the top.



STAGE 14: FITTING THE LEFT CYLINDER HEAD

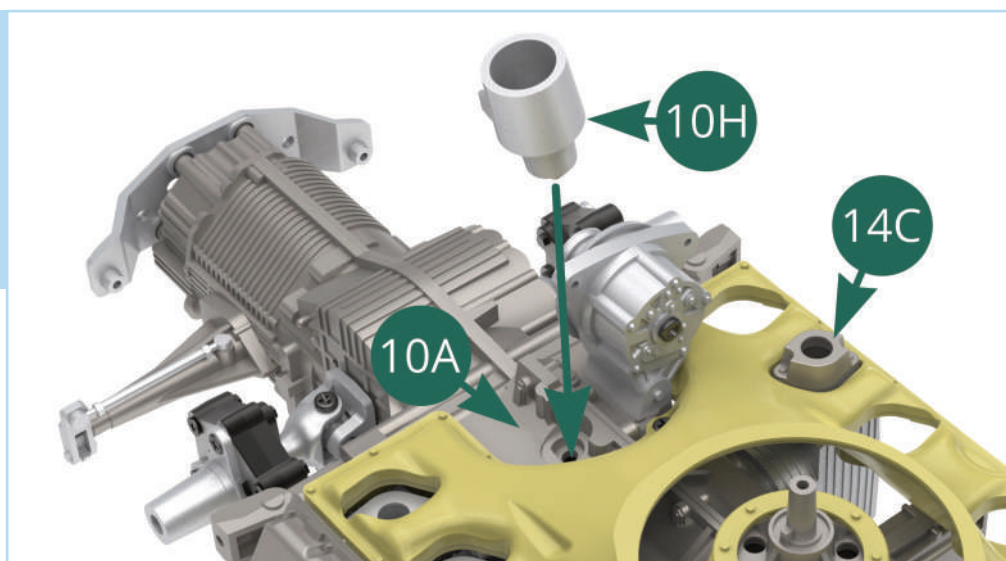
STEP 3

Take two of the **air intake brackets (14C)** and fit them through the chamber top and into the **cylinder tops (11D)** as shown.

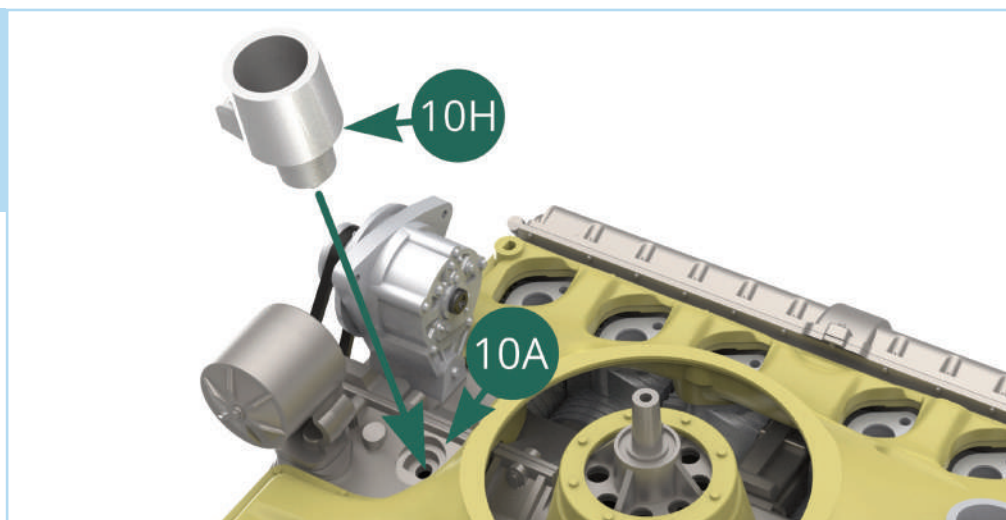


STEP 4

Retrieve one of the **distributor bases (10H)** and fit the shaped plug into the corresponding D-shaped hole on the crankcase top.



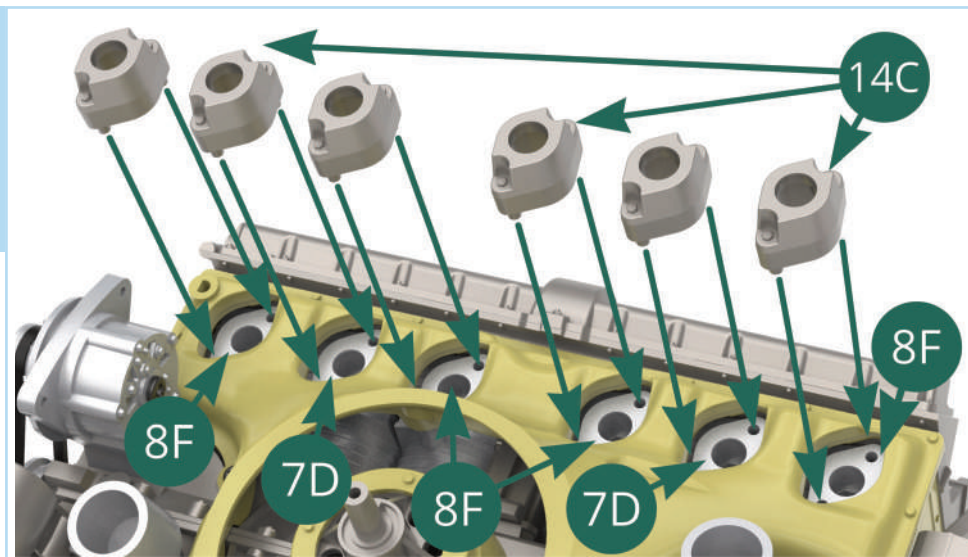
Fit the other **distributor base (10H)** into the shaped hole at the other end of the crankcase top.



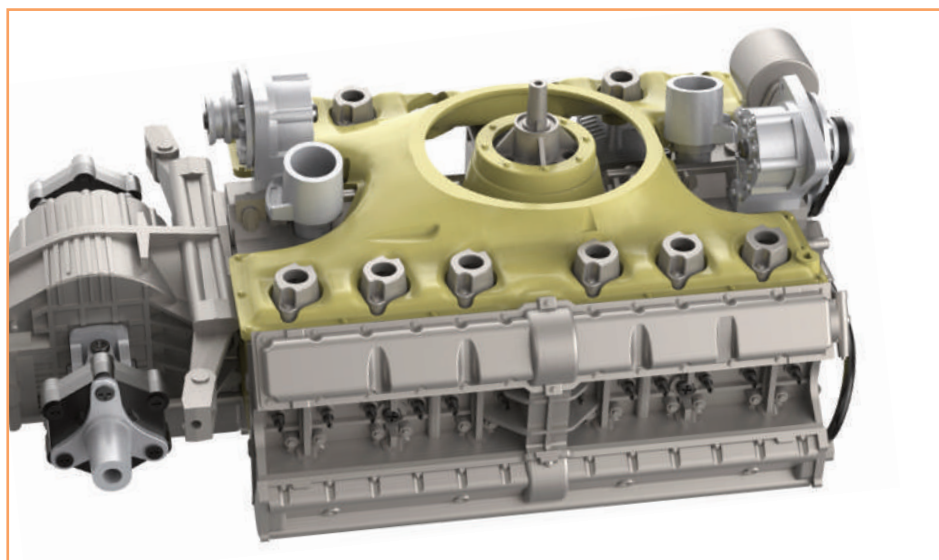
STAGE 14: FITTING THE LEFT CYLINDER HEAD

STEP 5

Position six more **air intake brackets (14C)** into the tops of the cylinders **8F (x4)** and **7D (x2)** in the same manner as before.

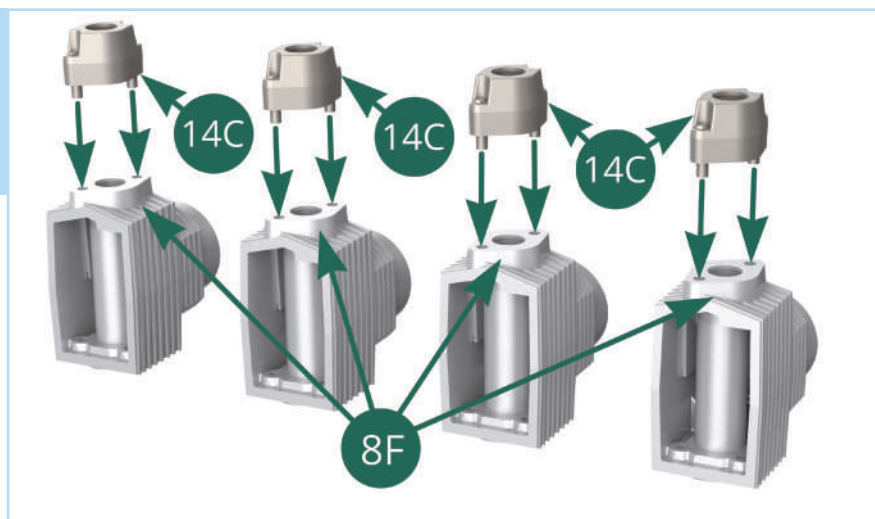


Eight of the air intake brackets and the two distributor bases have been installed onto the engine.



STEP 6

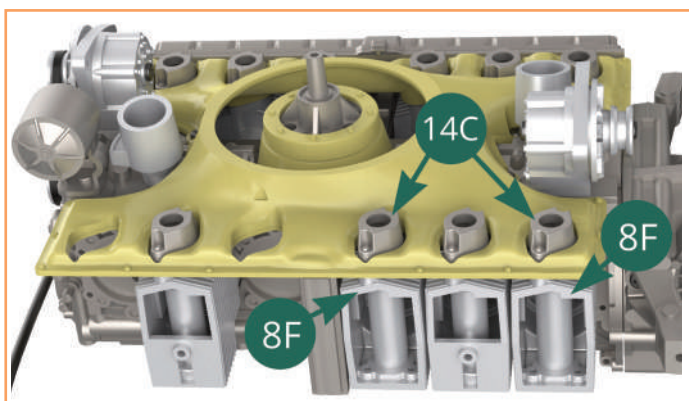
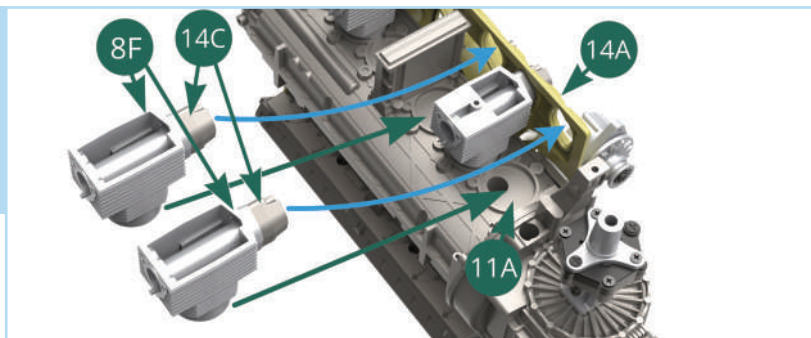
Take the four loose **cylinders (8F)** and fit the remaining **air intake brackets (14C)** onto the tops of them as shown.



STAGE 14: FITTING THE LEFT CYLINDER HEAD

STEP 7

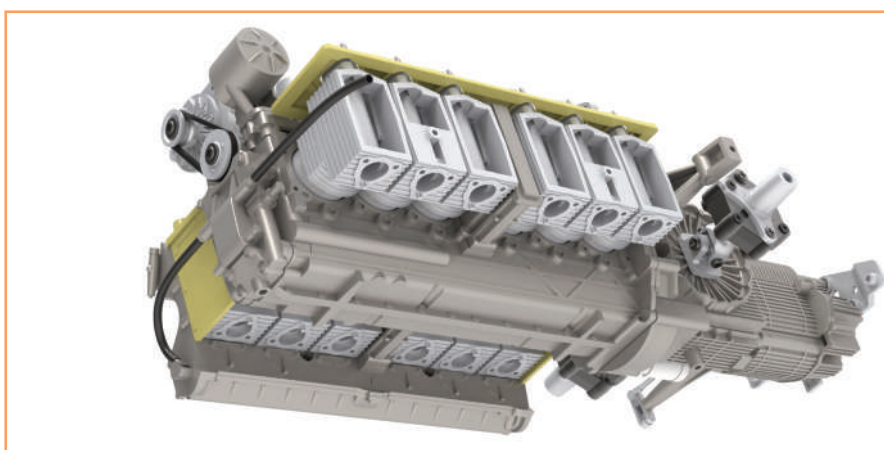
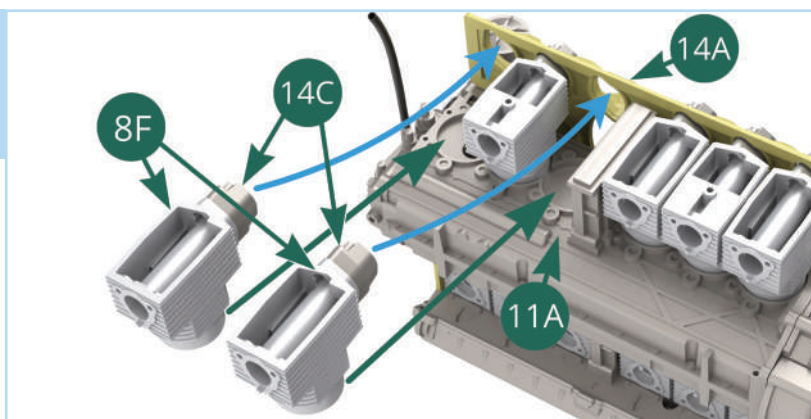
Fit two of the **cylinders (8F)** on the **left engine block (11A)** by passing the **air intake brackets (14C)** through the openings in the chamber top (blue arrows).



The two cylinders should look like this once fitted in place.

STEP 8

Fit the remaining two cylinders through the last two openings in the chamber top.

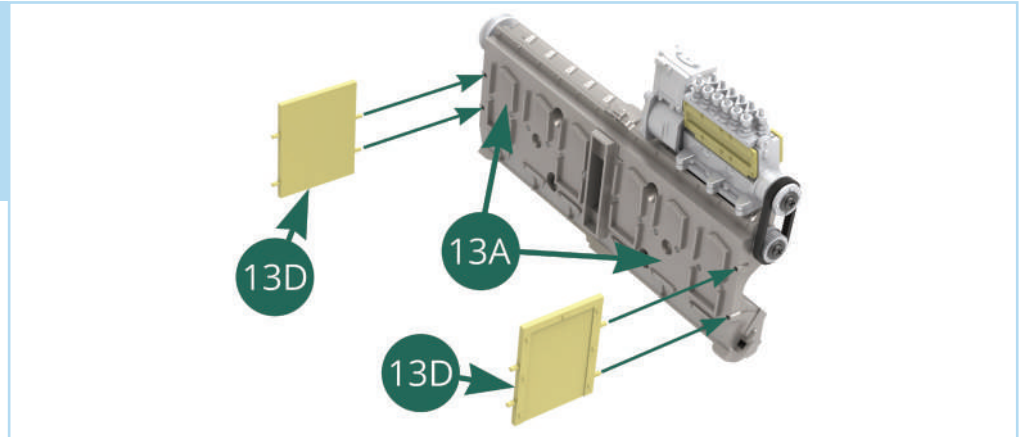


All cylinders have been fitted to the engine.

STAGE 14: FITTING THE LEFT CYLINDER HEAD

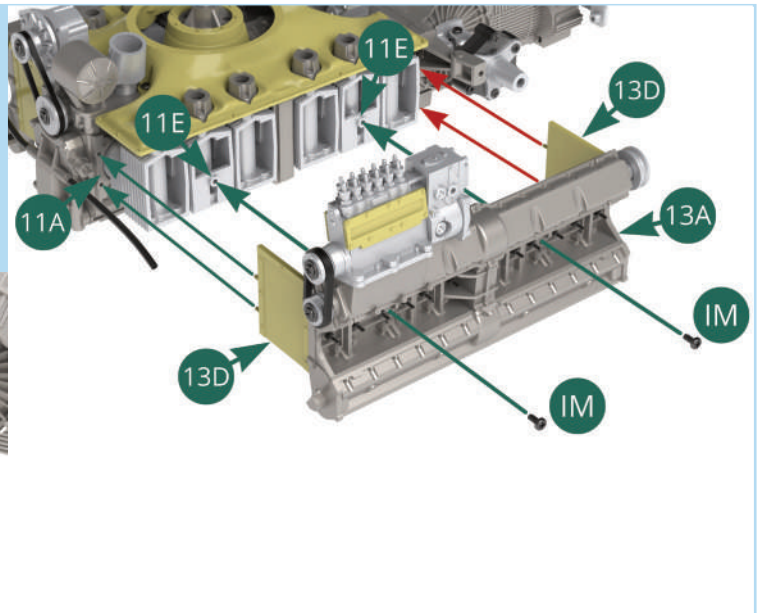
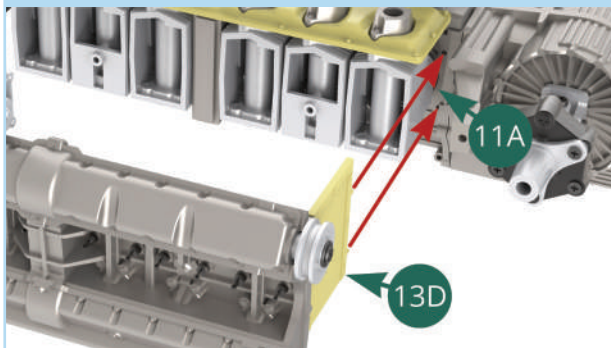
STEP 9

With the rivets facing outwards, push the two **end shields (13D)** into the **left cylinder head (13A)** as shown.



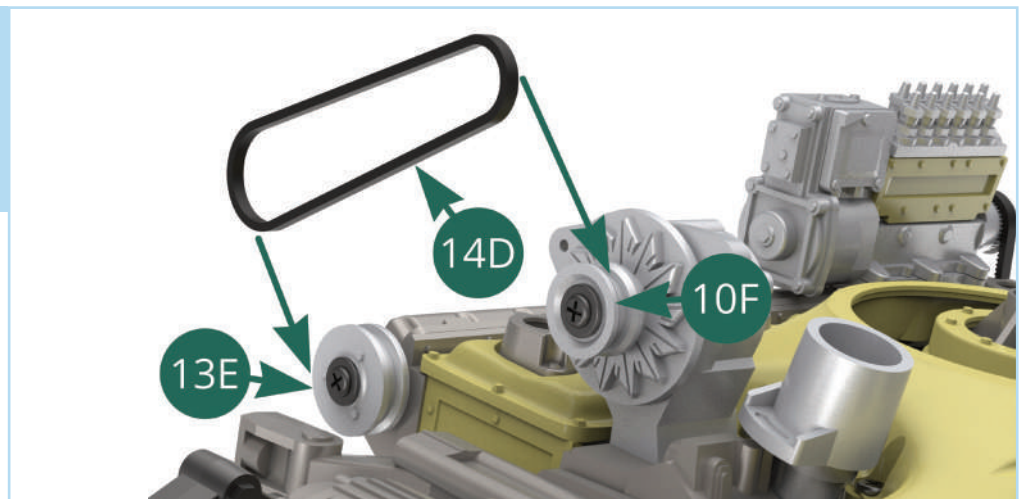
STEP 10

We recommend test fitting the end shields to check if any of the pins need filing. Align the pins on the end shields with the holes in the engine as indicated by the red arrows. Carefully push the left cylinder head into place, then secure it using two **IM** screws.



STEP 11

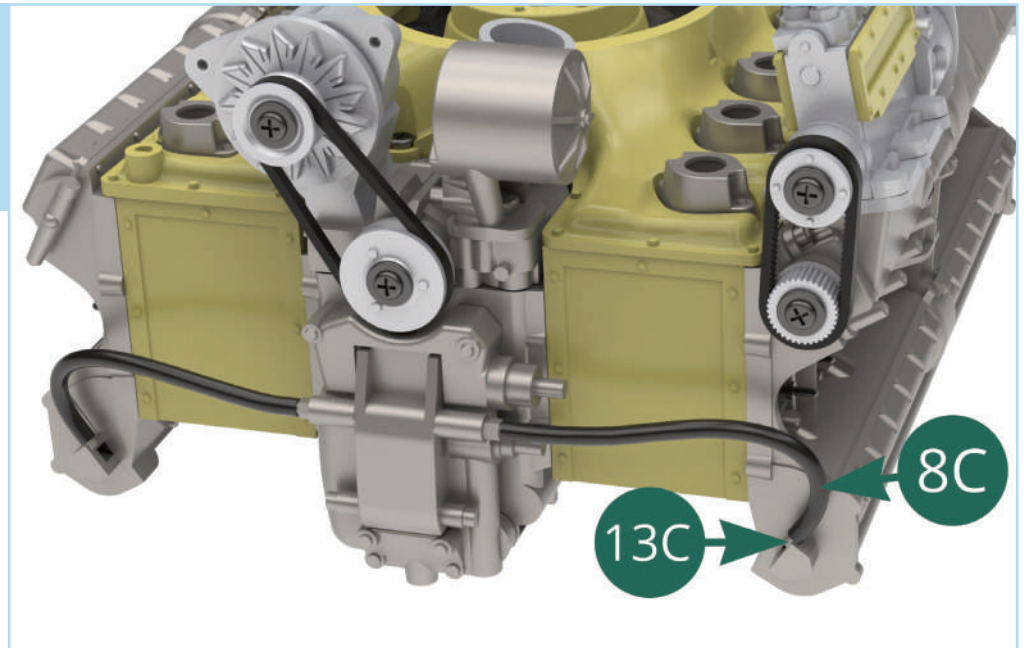
Carefully stretch the larger **alternator main belt (14D)** over the two pulleys **10F** and **13E** as shown.



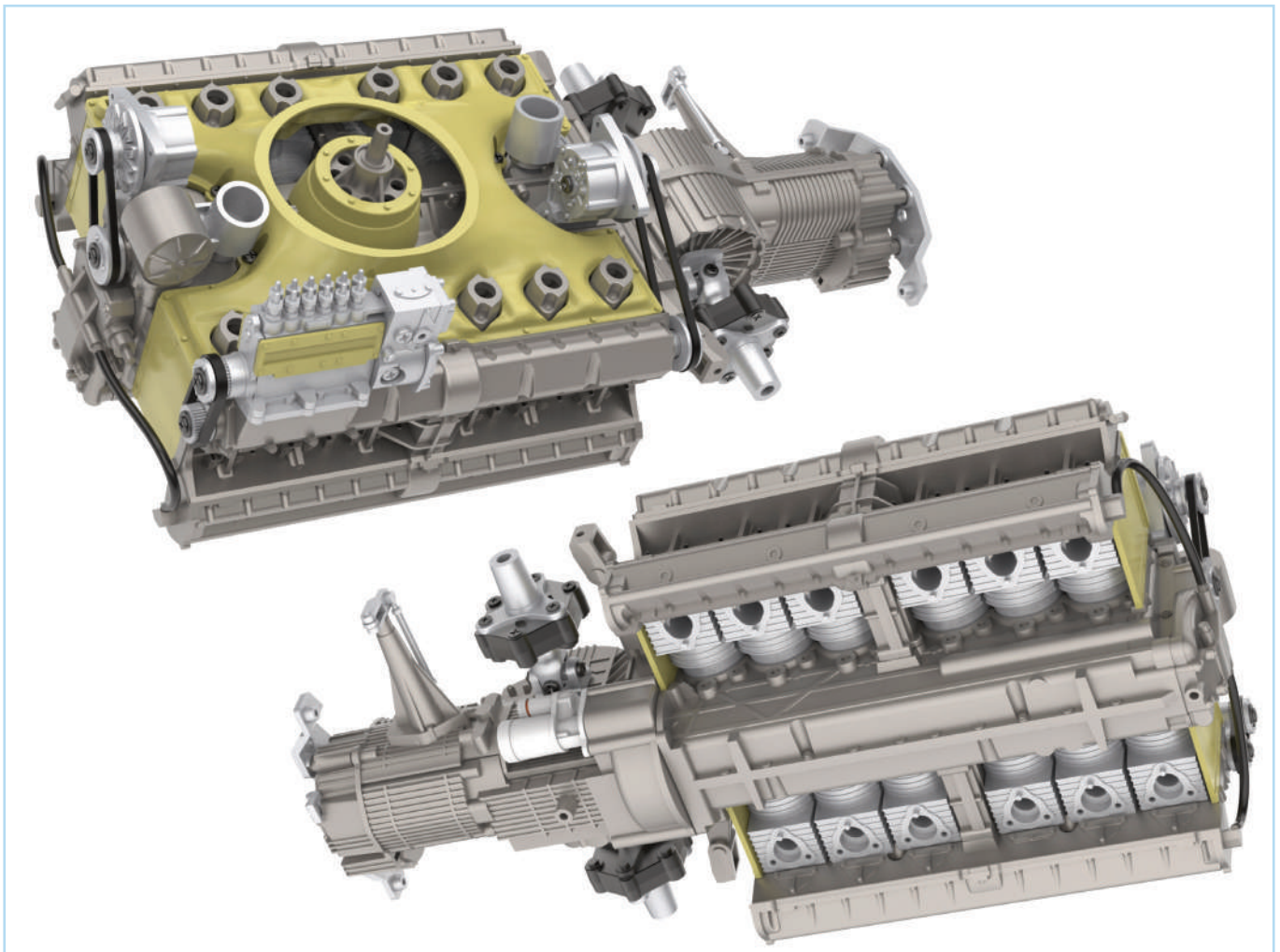
STAGE 14: FITTING THE LEFT CYLINDER HEAD

STEP 12

Finally, plug the loose end of the **oil hose (8C)** onto the pin on the **exhaust cam cover (13C)**.



STAGE COMPLETE



STAGE 15: STARTING WITH THE LEFT VELOCITY STACKS

15A Throttle bodies top

15B Throttle bodies bottom

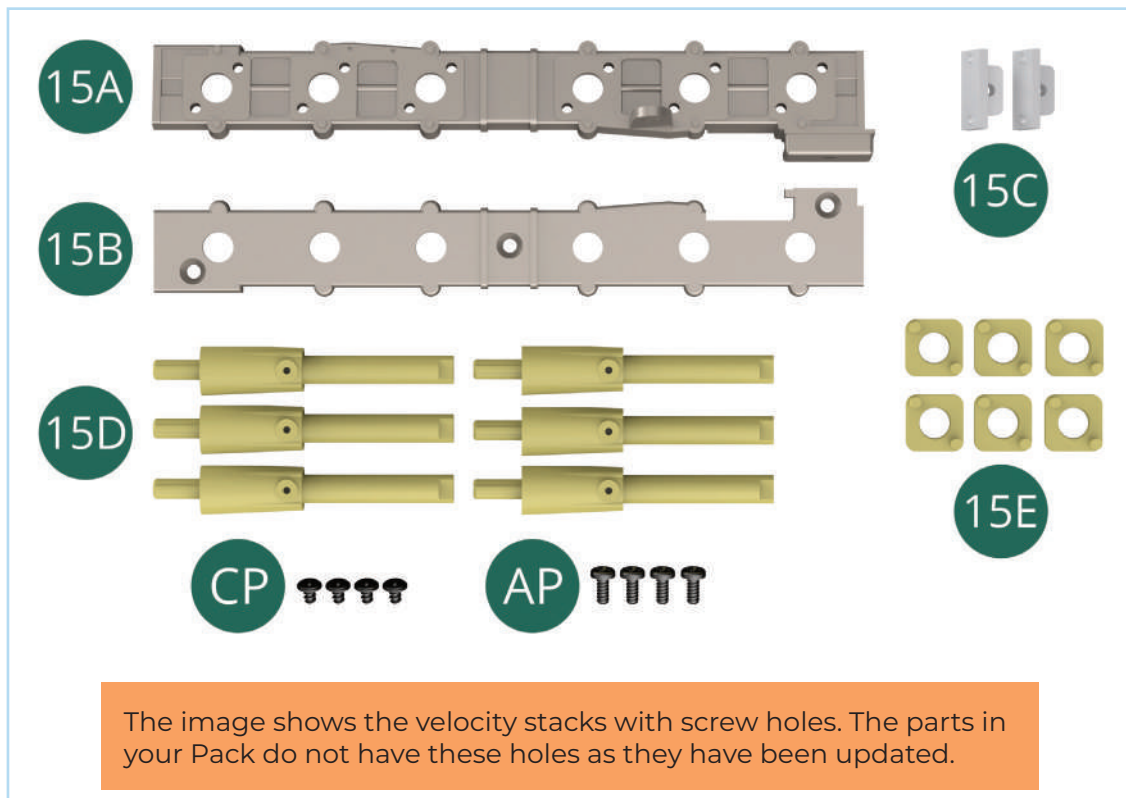
15C End cover (x2)

15D Velocity stack (x6)

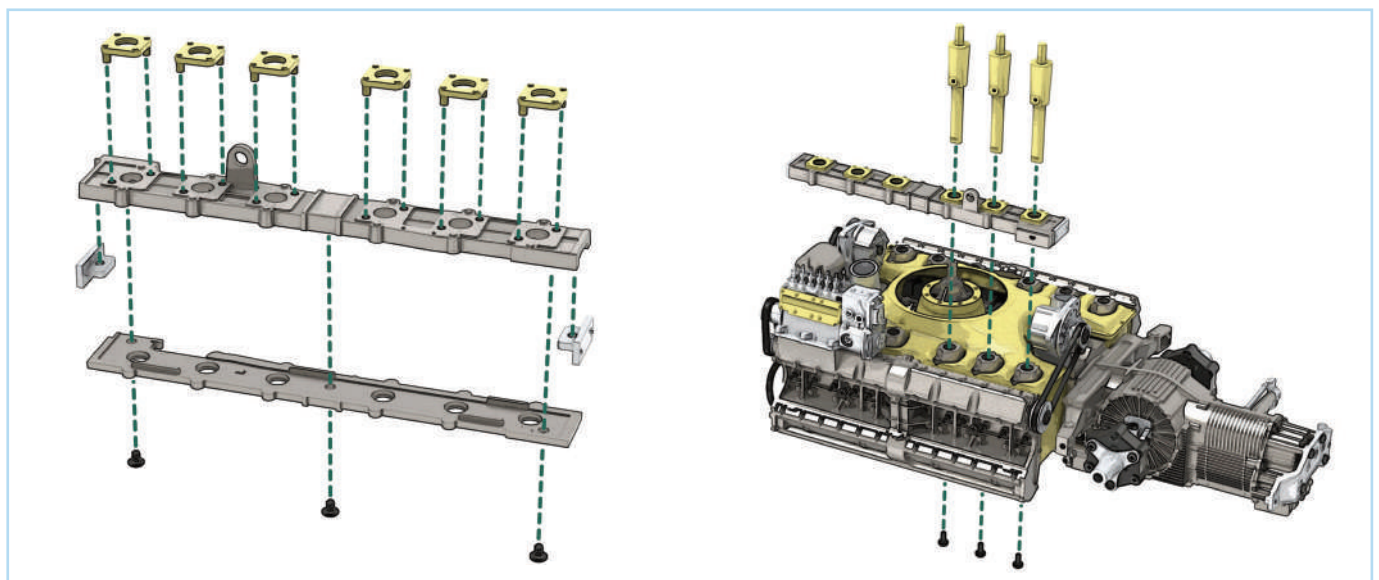
15E Inlet flange (x6)

CP Screw 1.7 x 3 x 3 mm (x4, flat head)

AP Screw 1.7 x 4 mm (x4)



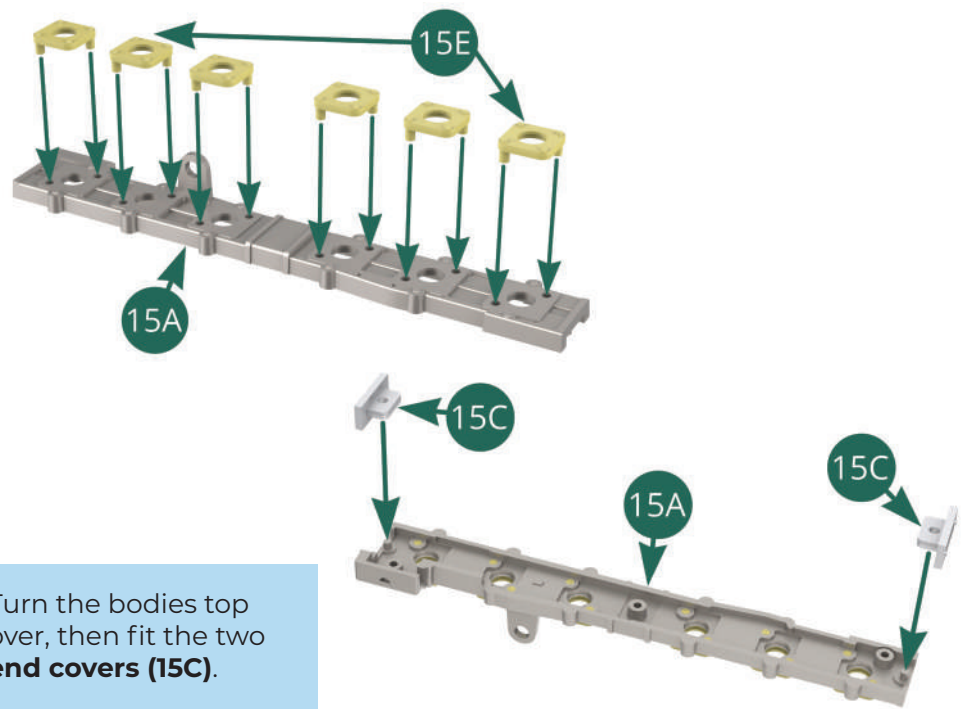
ASSEMBLY DIAGRAM



STAGE 15: STARTING WITH THE LEFT VELOCITY STACKS

STEP 1

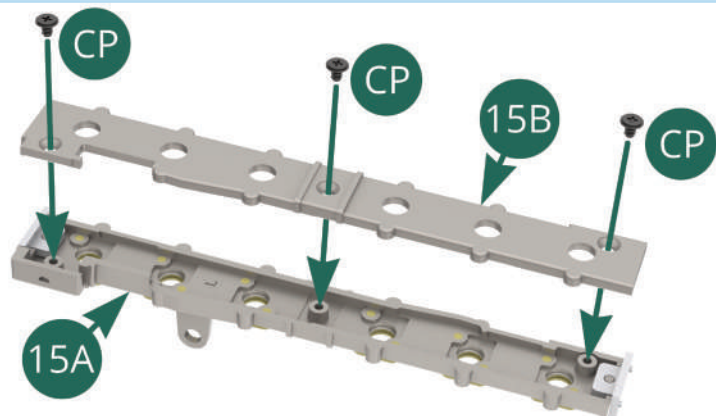
Firmly press the six **inlet flanges (15E)** into the **throttle bodies top (15A)** by pushing the two pins on each of them into the matching holes.



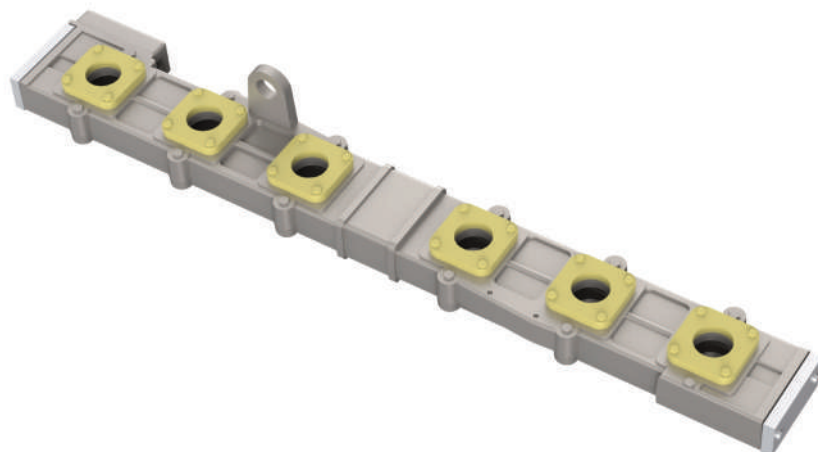
Turn the bodies top over, then fit the two **end covers (15C)**.

STEP 2

Align the **throttle bodies bottom (15B)** with the top part and push into place. Secure the parts with three **CP** screws.



The throttle bodies have been assembled.

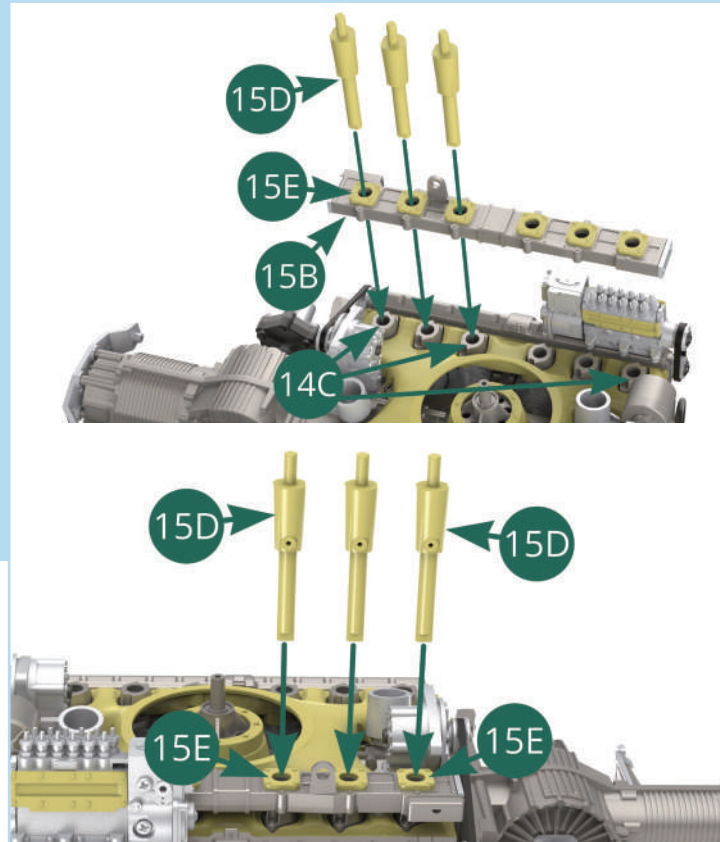


STAGE 15: STARTING WITH THE LEFT VELOCITY STACKS

STEP 3

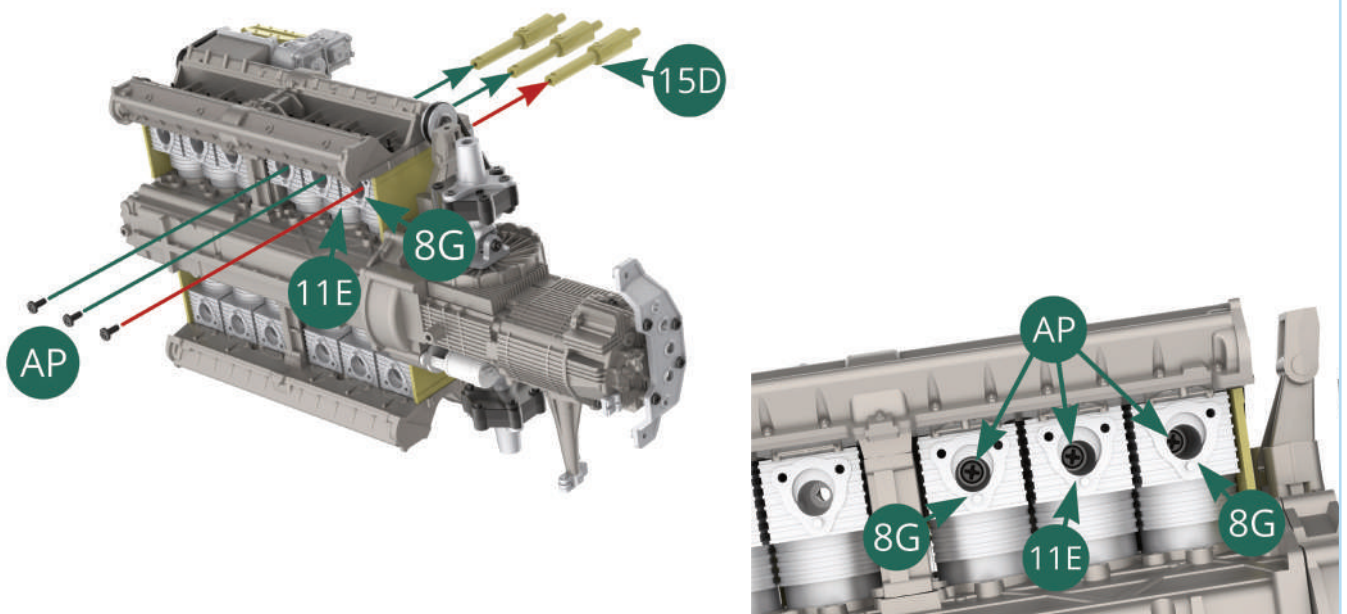
Place the throttle bodies onto the six **air intake brackets (14C)** as shown. Once in place, push three of the **velocity stacks (15D)** through the bodies and into the air intake brackets.

Tip: Twist the velocity stacks around as you push them in to allow the shaped ends to find the fittings inside the cylinders.



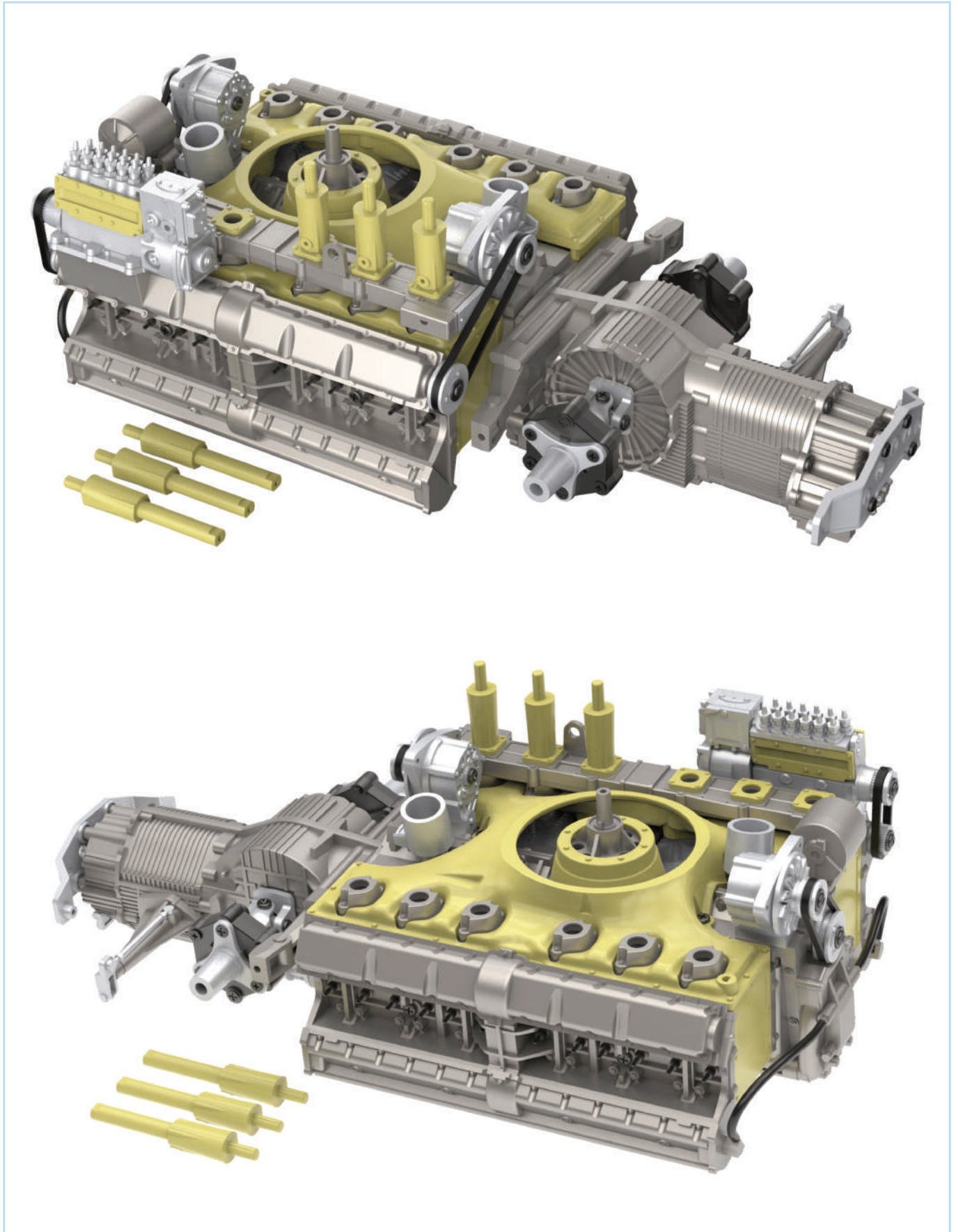
STEP 4

Keeping the velocity stacks in place, turn the engine assembly on its side and look for the screw holes located inside the **cylinders (8G)**. Secure the velocity stacks using three **AP** screws and driving them through as shown.



STAGE 15: INSTALLING THE LEFT VELOCITY STACKS

STAGE COMPLETE



STAGE 16: INSTALLING THE RIGHT VELOCITY STACKS

16A Throttle bodies top

16B Throttle bodies bottom

16C End cover (x2)

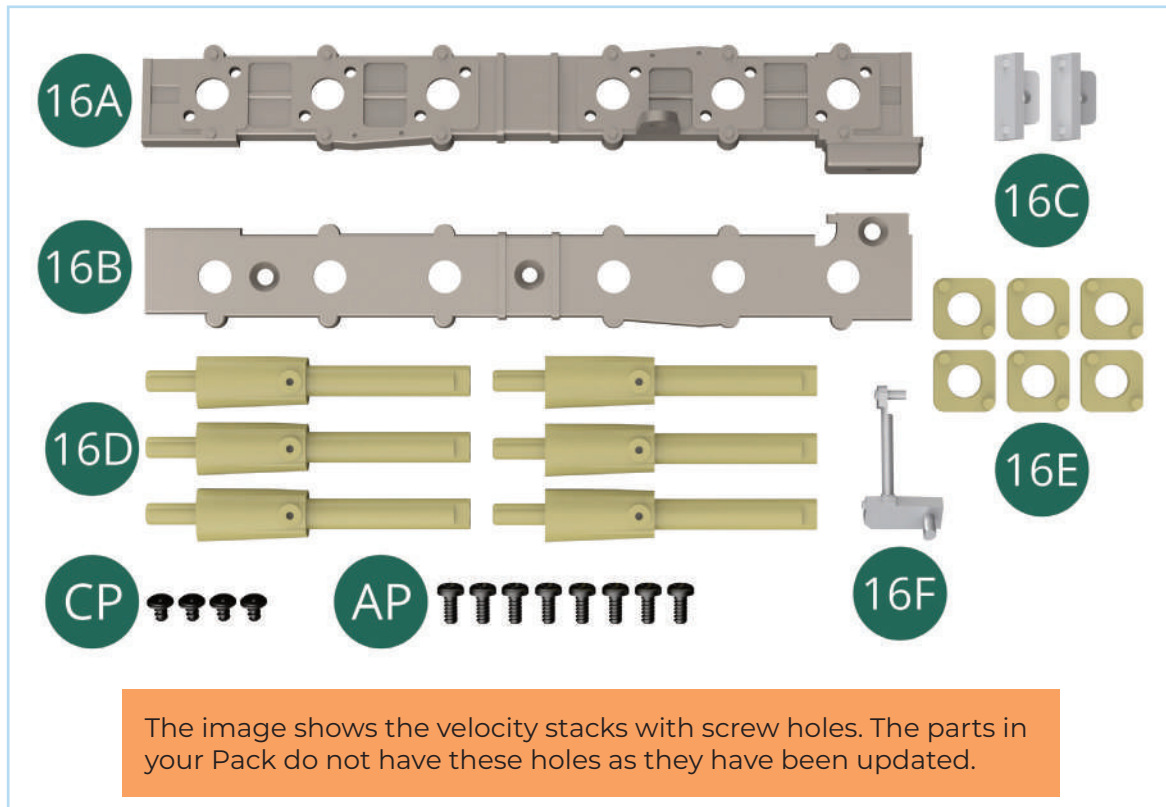
16D Velocity stack (x6)

16E Inlet flange (x6)

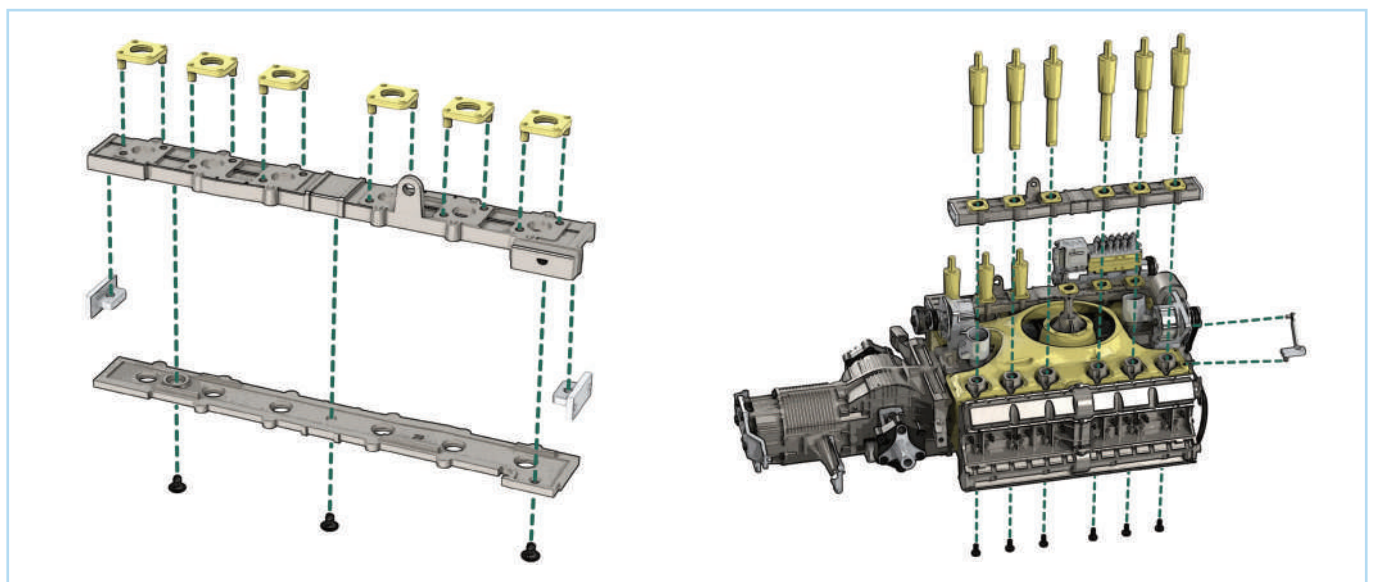
16F Generator support arm

CP Screw 1.7 x 3 x 3 mm (x4, flat head)

AP Screw 1.7 x 4 mm (x8)



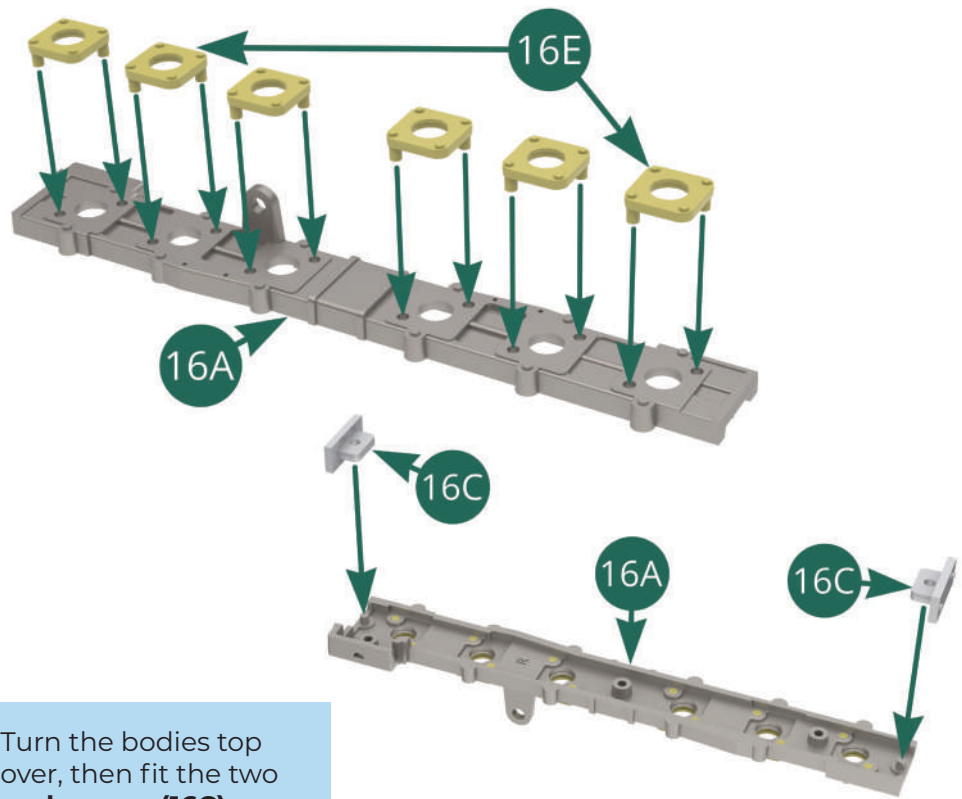
ASSEMBLY DIAGRAM



STAGE 16: INSTALLING THE RIGHT VELOCITY STACKS

STEP 1

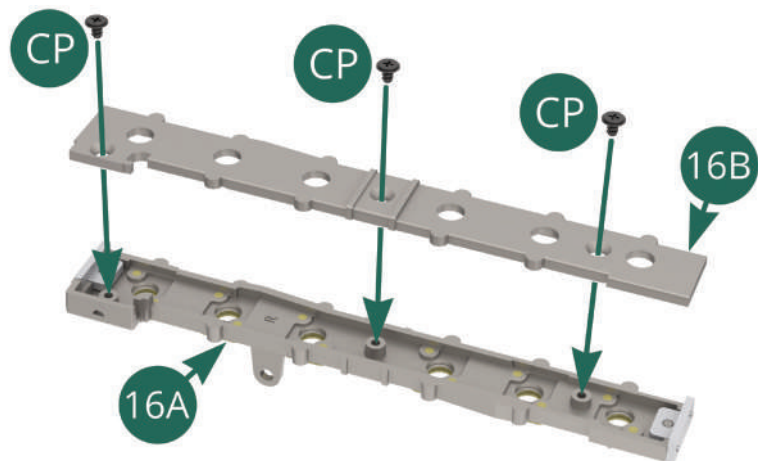
As you did in the previous stage, firmly press the six **inlet flanges (16E)** into the **throttle bodies top (16A)** by pushing the two pins on each of them into the matching holes.



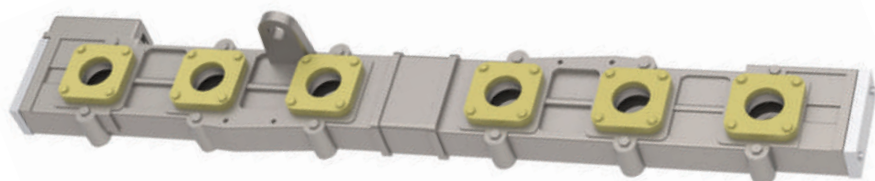
Turn the bodies top over, then fit the two **end covers (16C)**.

STEP 2

Align the **throttle bodies bottom (15B)** with the top part and push into place. Secure the parts with three **CP** screws.



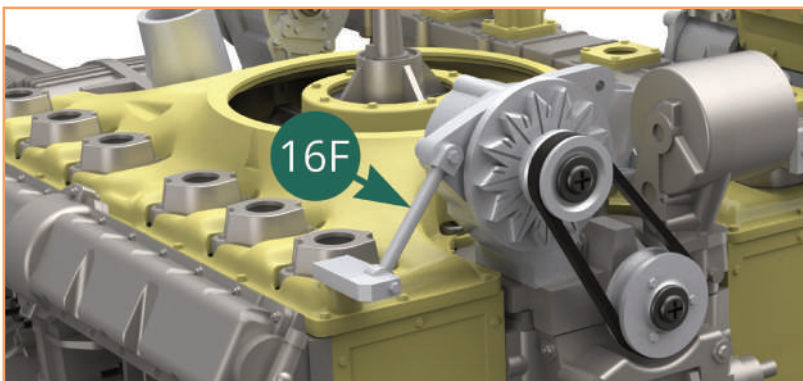
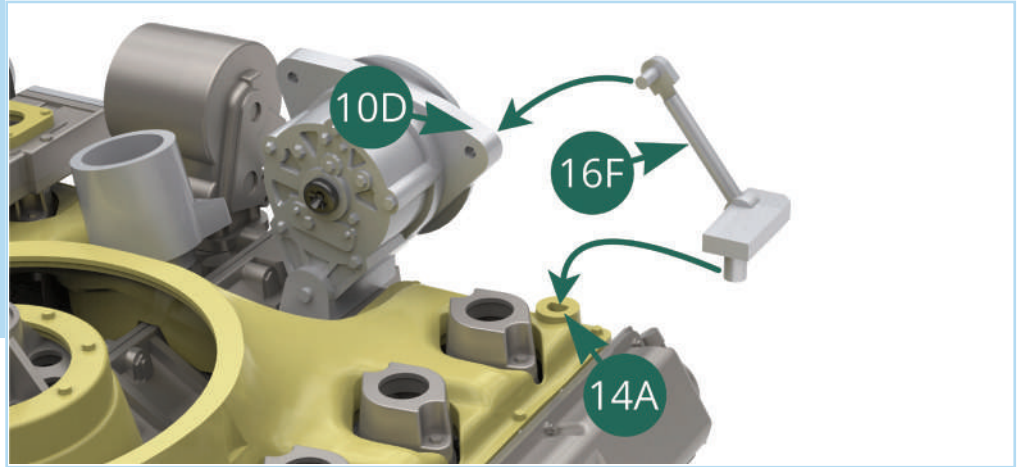
The throttle bodies are ready to fit.



STAGE 16: INSTALLING THE RIGHT VELOCITY STACKS

STEP 3

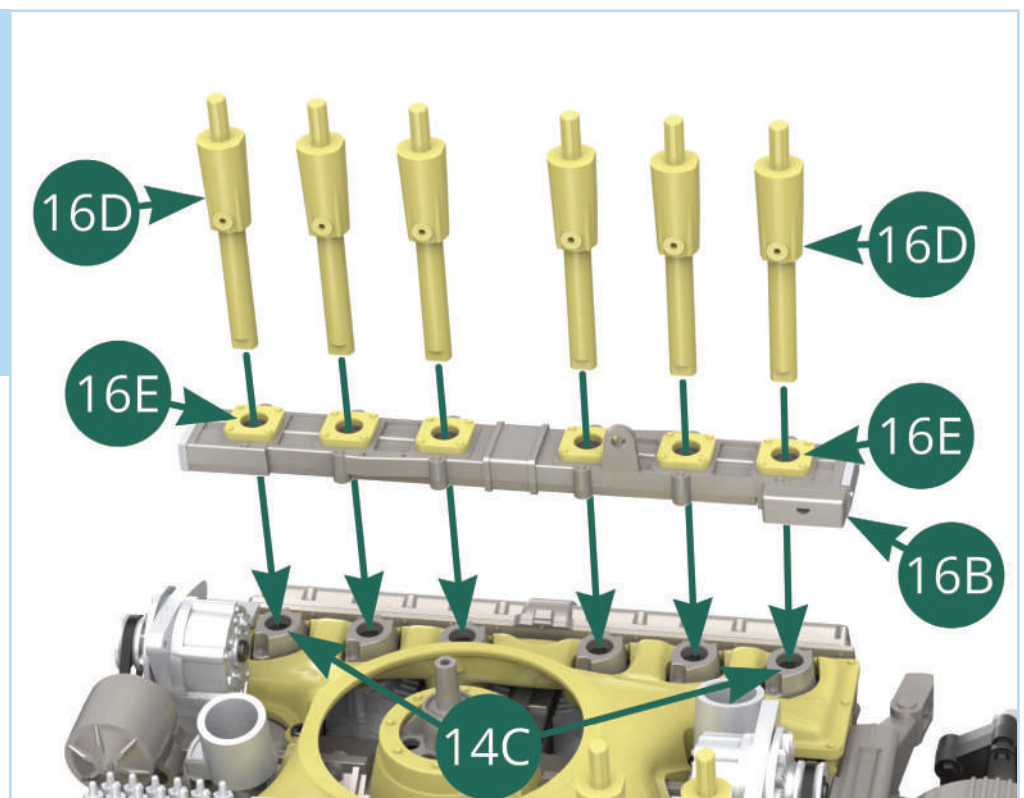
Fit the **generator support arm (16F)** into the D-shaped hole on the **air cooling chamber top (14A)**. At the same time, press the pin of the arm into place on the **alternator (10D)**.



The support arm should look like this once fitted.

STEP 4

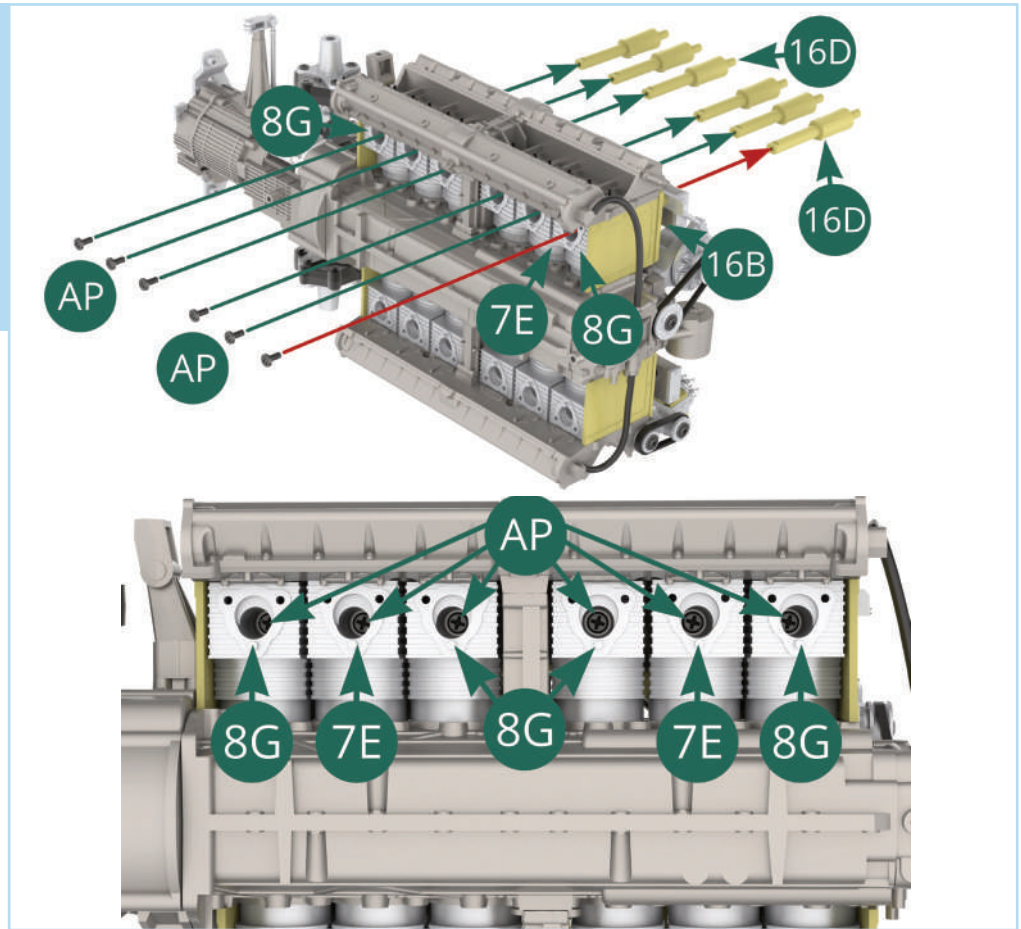
Place the throttle bodies onto the six **air intake brackets (14C)** as shown. Once in place, push the six **velocity stacks (16D)** through the bodies and into the air intake brackets in the same manner as before.



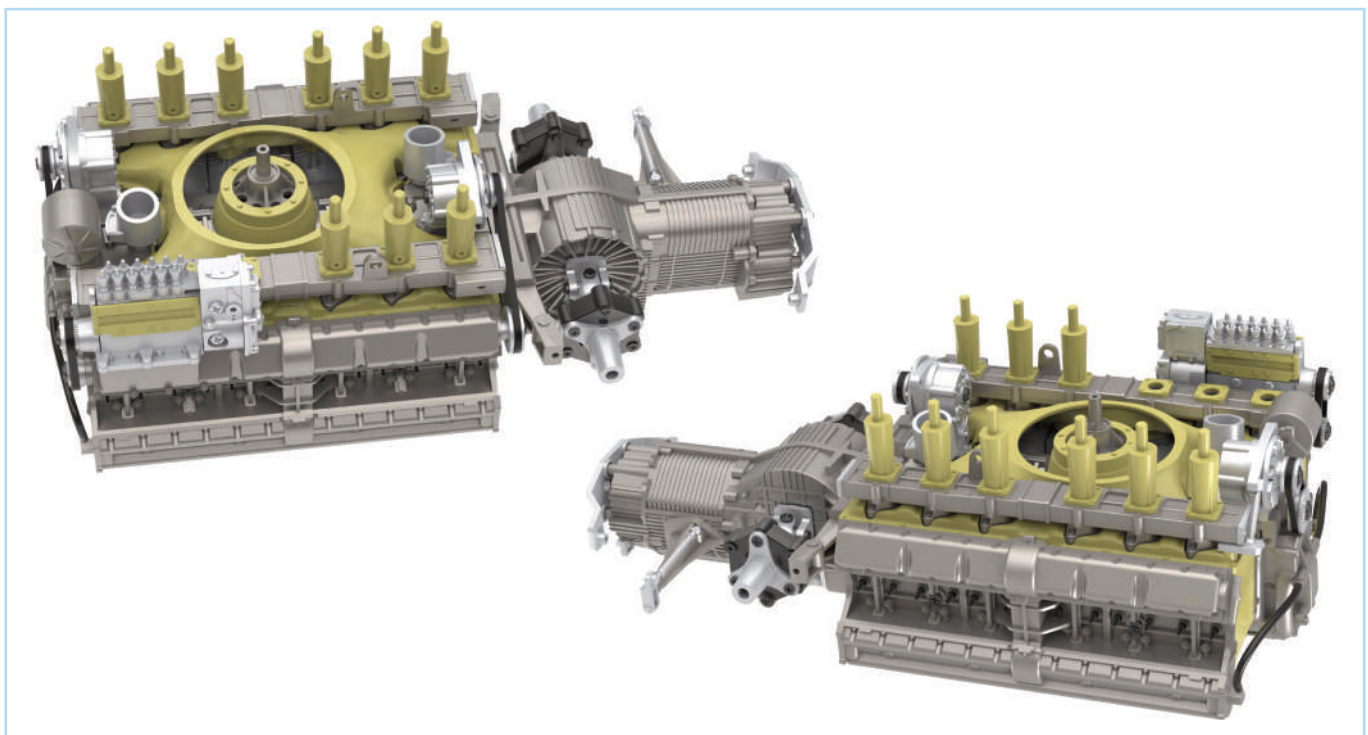
STAGE 16: INSTALLING THE RIGHT VELOCITY STACKS

STEP 5

Fix the velocity stacks **(16D)** by driving six **AP** screws through the bottom of cylinders **8G** (x4) and **7E** (x2). We recommend screwing the stack indicated with the red arrow to begin with.



STAGE COMPLETE



STAGE 17: CONNECTING THE THROTTLE LINKAGE SHAFT

17A Return spring (x2)

17B Generator stand

17C Control rod

17D Throttle linkage shaft

17E Control lever

17F Return lever

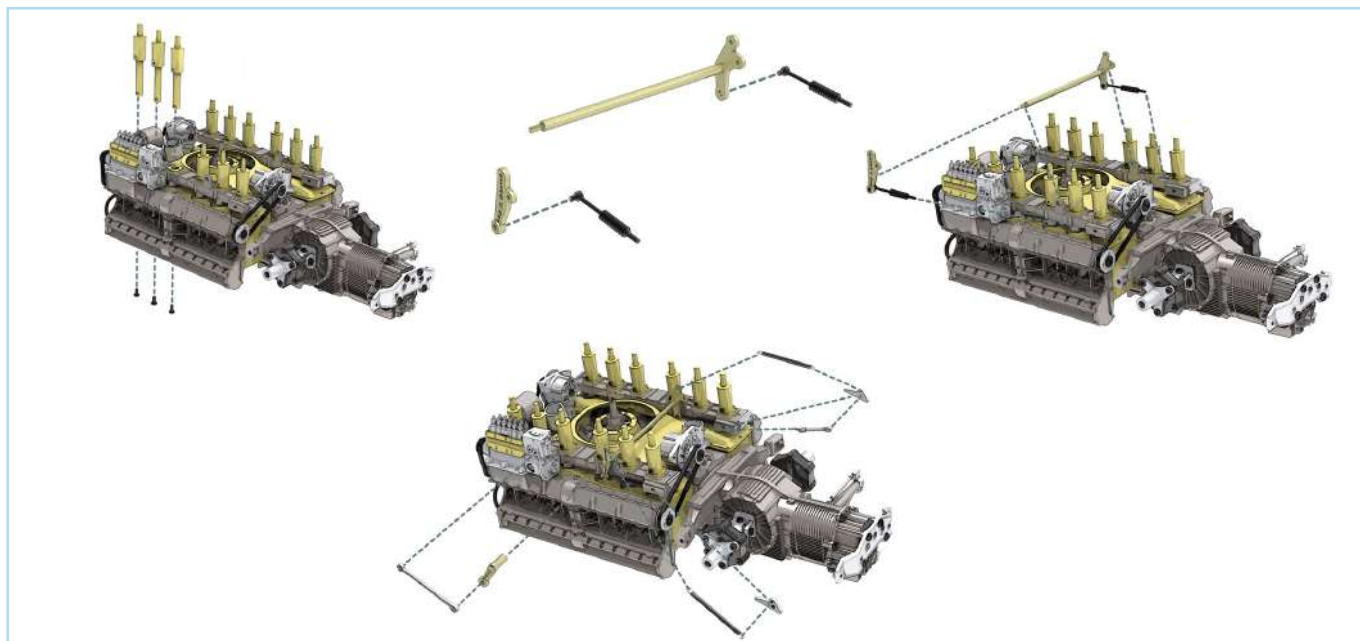
17G Support (x2)

17H Throttle pushrod (x2)

AP Screw 1.7 x 4 mm (x4)



ASSEMBLY DIAGRAM

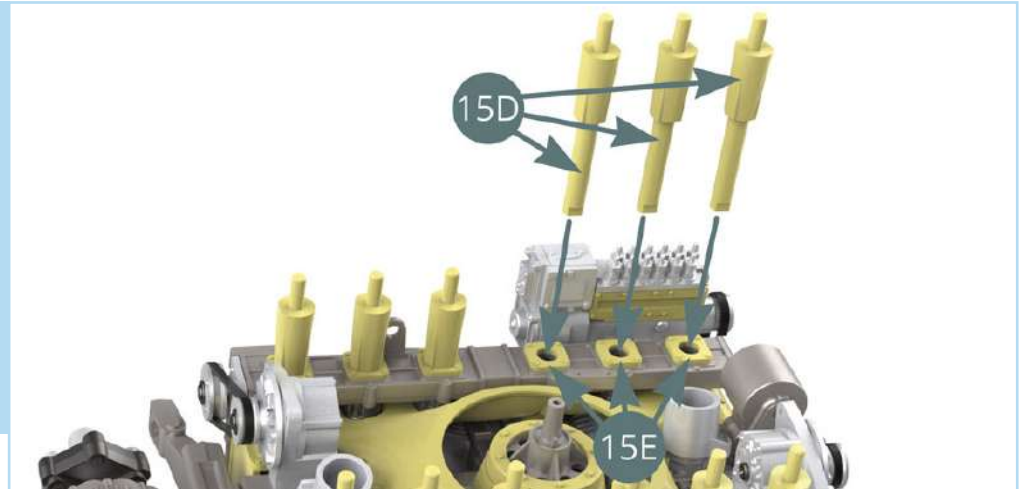


STAGE 17: CONNECTING THE THROTTLE LINKAGE SHAFT

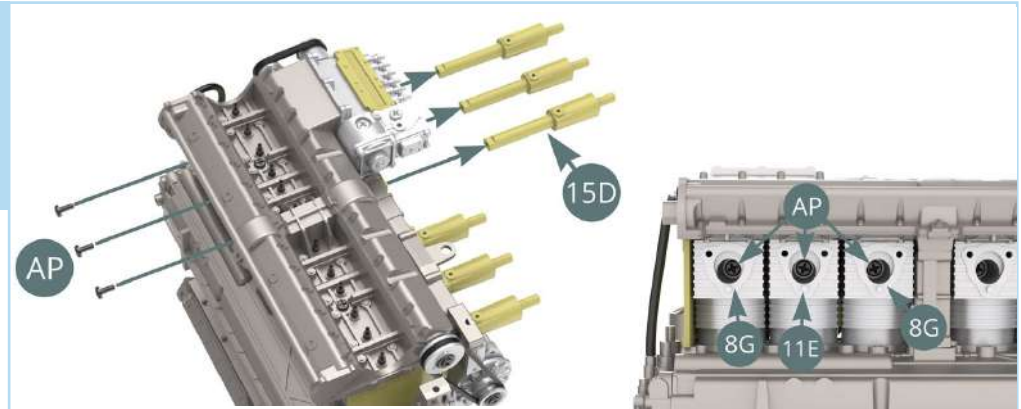
STEP 1

Retrieve the three **velocity stacks (15D)** and fit them through the bodies and into the air intake brackets.

As you did before, twist the stacks while fitting them to allow the shaped ends to find the fittings inside the cylinders.

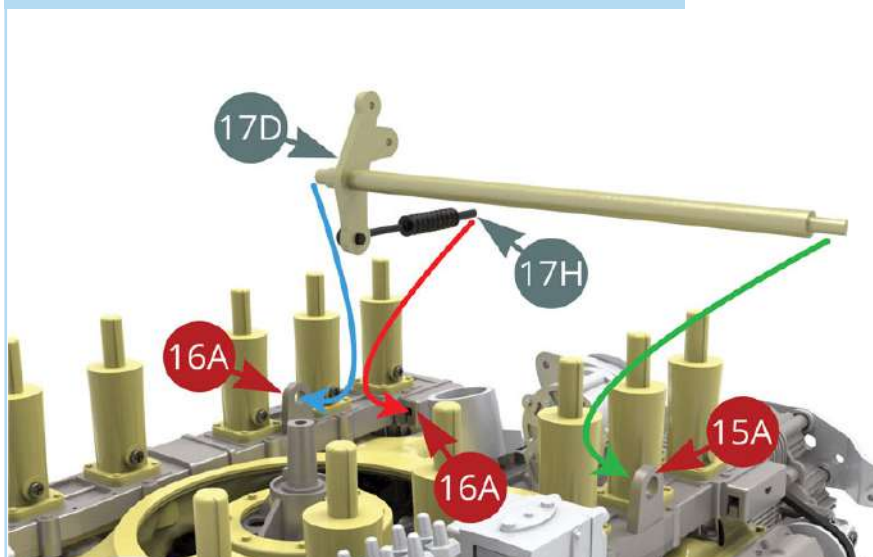
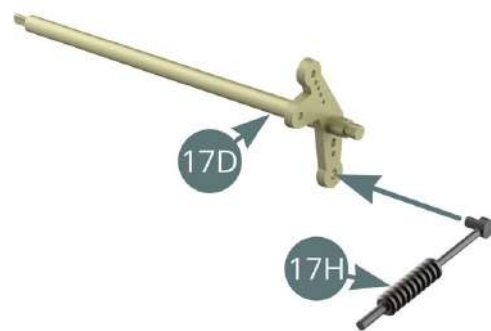


Secure the stacks by driving three **AP** screws through the cylinders from underneath.



STEP 2

Align the **throttle linkage shaft (17D)** and one of the **throttle pushrods (17H)**, then fit the pin of the spring into the largest hole in the shaft as shown.

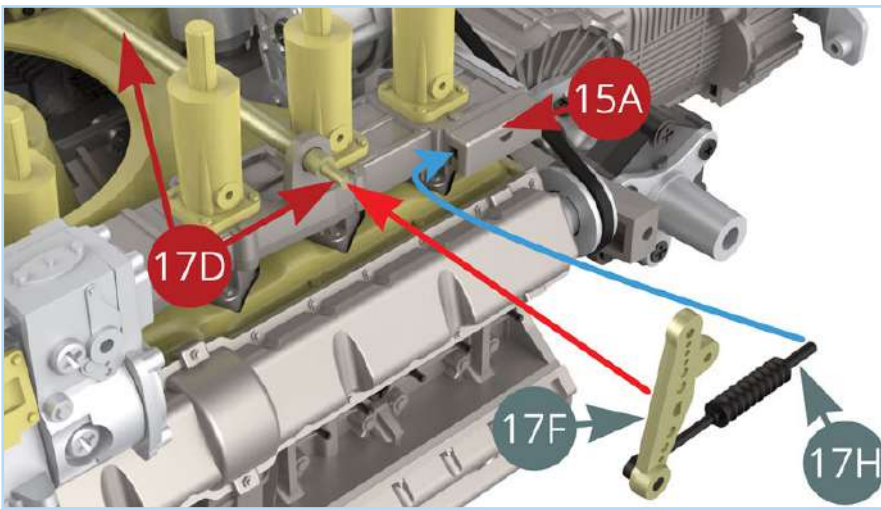
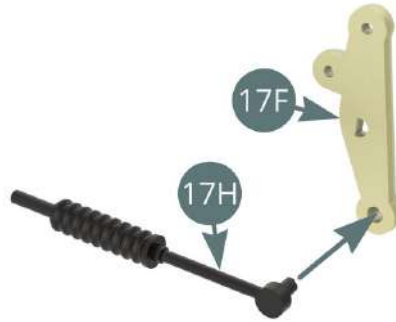


Start fitting **shaft (17D)** by passing the end through the eye plate of the **throttle bodies top (15A)** (green arrow). Then push the end of the **pushrod (17H)** into the other **throttle bodies top (16A)** as shown by the red arrow. Finally, fit the end of the **shaft (17D)** into the base eye of the **top (16A)** (blue arrow).

STAGE 17: CONNECTING THE THROTTLE LINKAGE SHAFT

STEP 3

Align the **return lever (17F)** and the other **throttle pushrod (17H)** as shown, then push the pin in place in the corresponding hole.

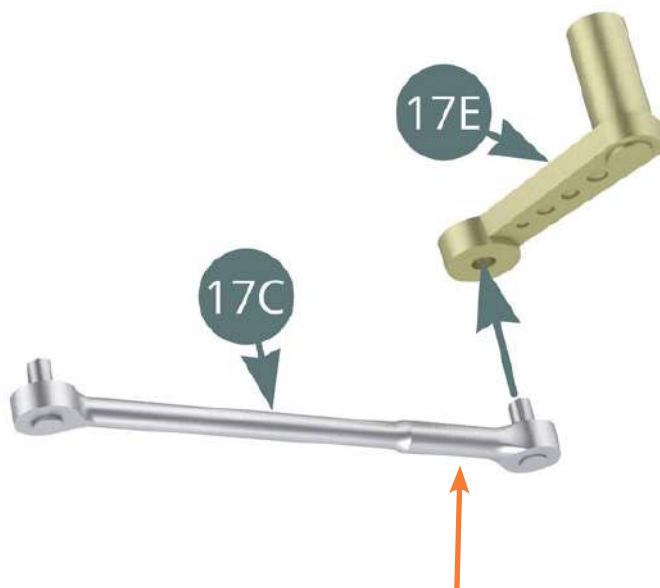


Push the **pushrod (17H)** into the hole on the **throttle bodies top (15A)** as you did before, then fit semi-circle hole of the **return lever (17F)** onto the corresponding pin of the **shaft (17D)**.

STEP 4

Fit together the **control rod (17C)** and the **control lever (17E)** as shown.

Note the orientation of the control rod – the thick end (orange arrow) aligns with the control lever.

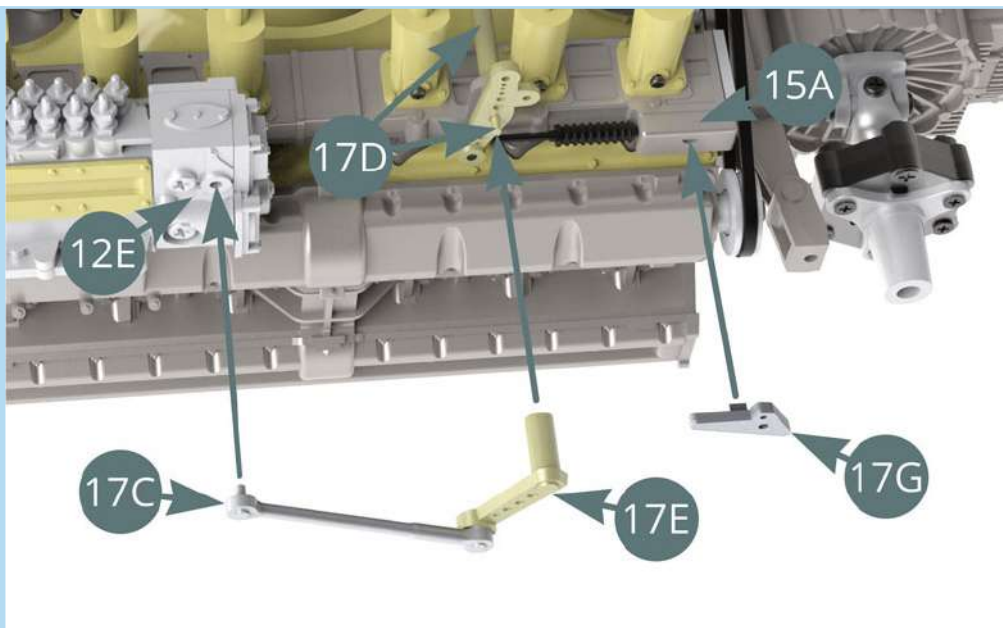


STAGE 17: CONNECTING THE THROTTLE LINKAGE SHAFT

STEP 5

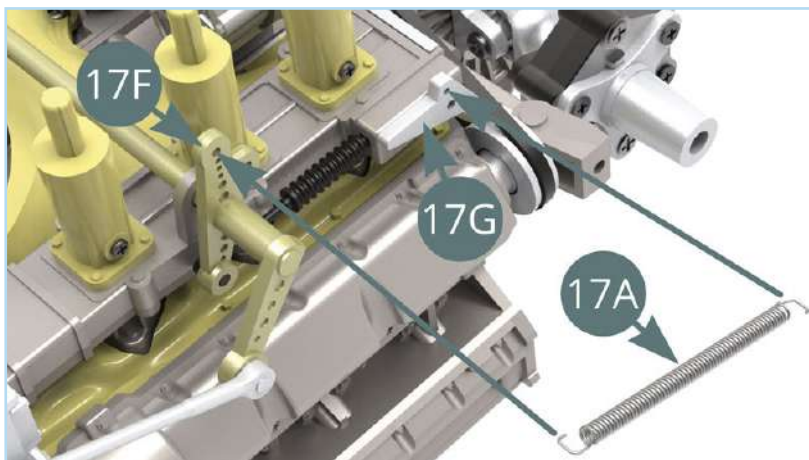
Press the semi-circle hole of the **control lever (17E)** over the end of the **shaft (17D)**, then move the **control rod (17C)** into place to press its pin into the hole of the **fuel pump housing (12E)**.

Take one of the **supports (17G)** and press it into the semi-circle hole in the **throttle bodies top (15A)**.

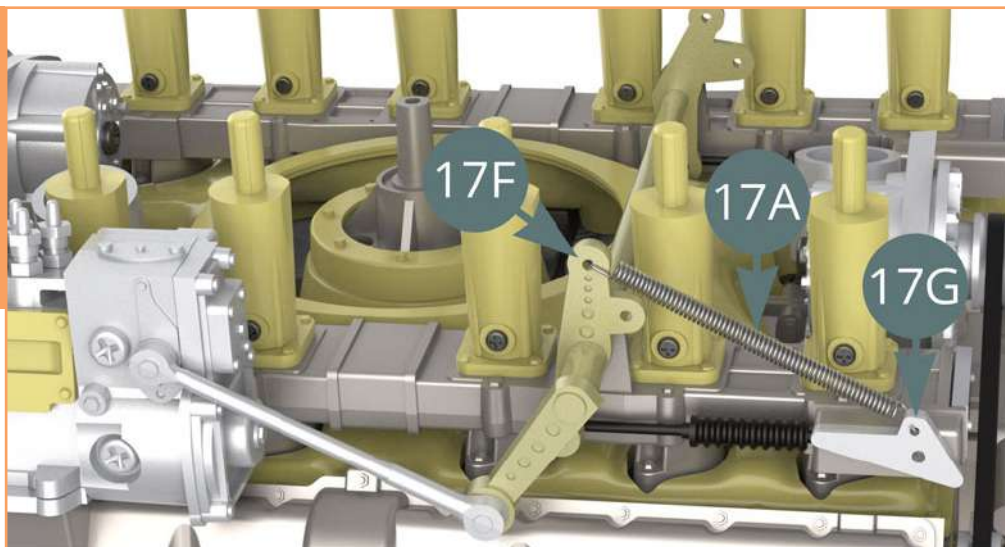


STEP 6

Take one of the **return springs (17A)** and attach it between the **return lever (17F)** and **support (17G)**.



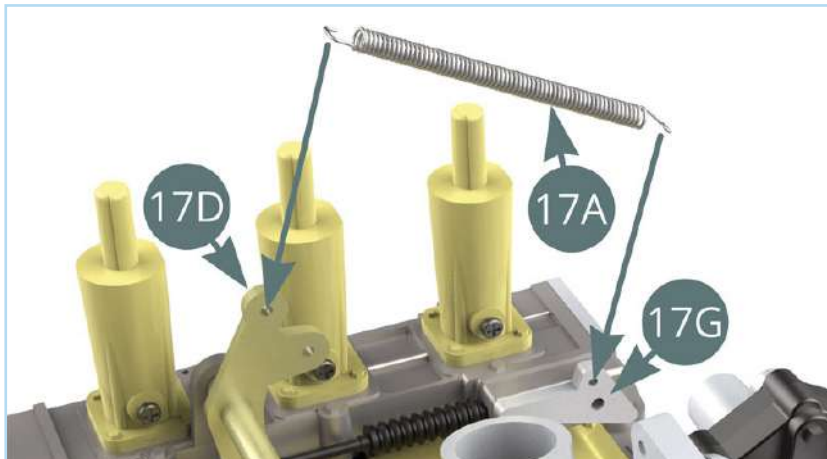
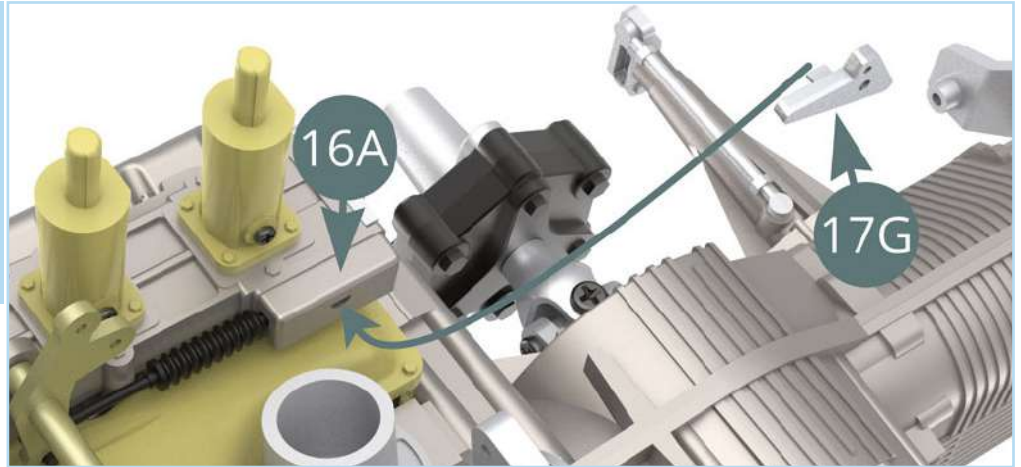
The return spring should look like this once it has been fitted in place. You can also see the control lever and rod connected to the fuel pump housing.



STAGE 17: CONNECTING THE THROTTLE LINKAGE SHAFT

STEP 7

Fit the other **support (17G)** onto the opposite side by pressing it into the **throttle bodies top (16A)** in the same manner as the first support.

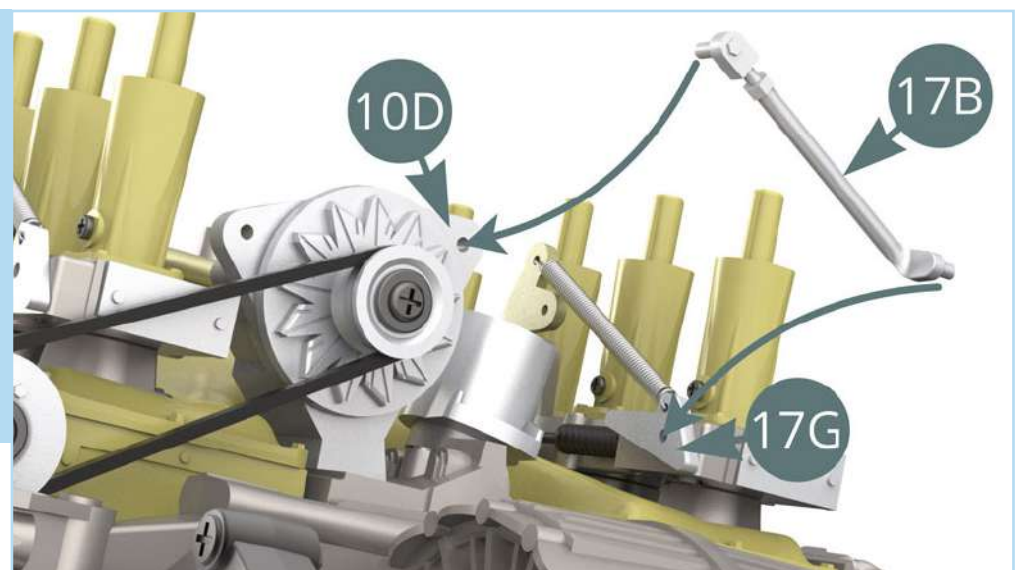


Take the remaining **return spring (17A)** and attach it to the **throttle linkage shaft (17D)** and **support (17G)** as shown.

STEP 8

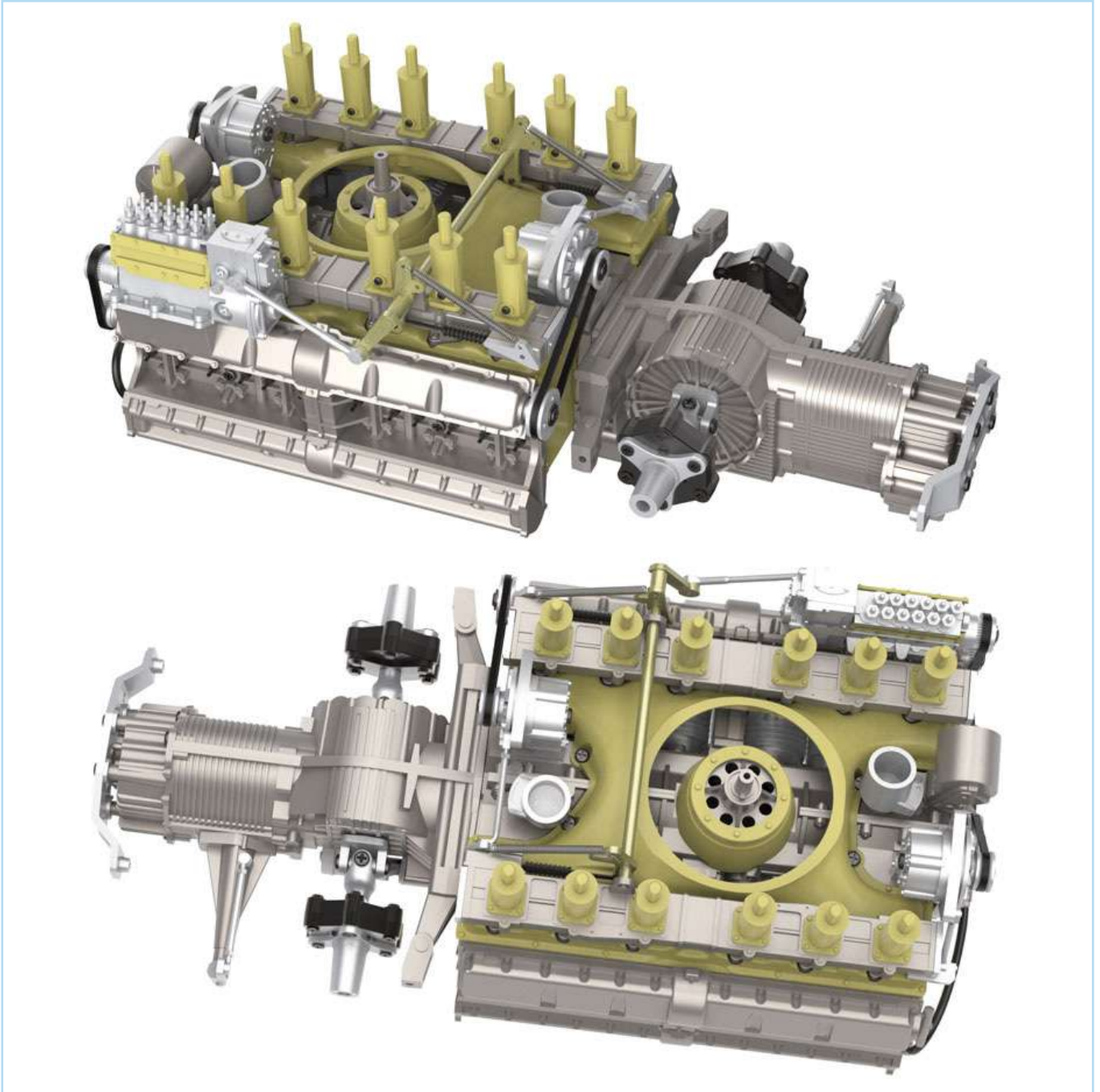
Finally, push the **generator stand (17B)** into the **support (17G)** fitted in step 7, then press the other end into the **alternator (10D)**.

Take care when fitting the stand as you may need to bend it to get it in place.



STAGE 17: CONNECTING THE THROTTLE LINKAGE SHAFT

STAGE COMPLETE



STAGE 18: ADDING THE ENGINE FAN

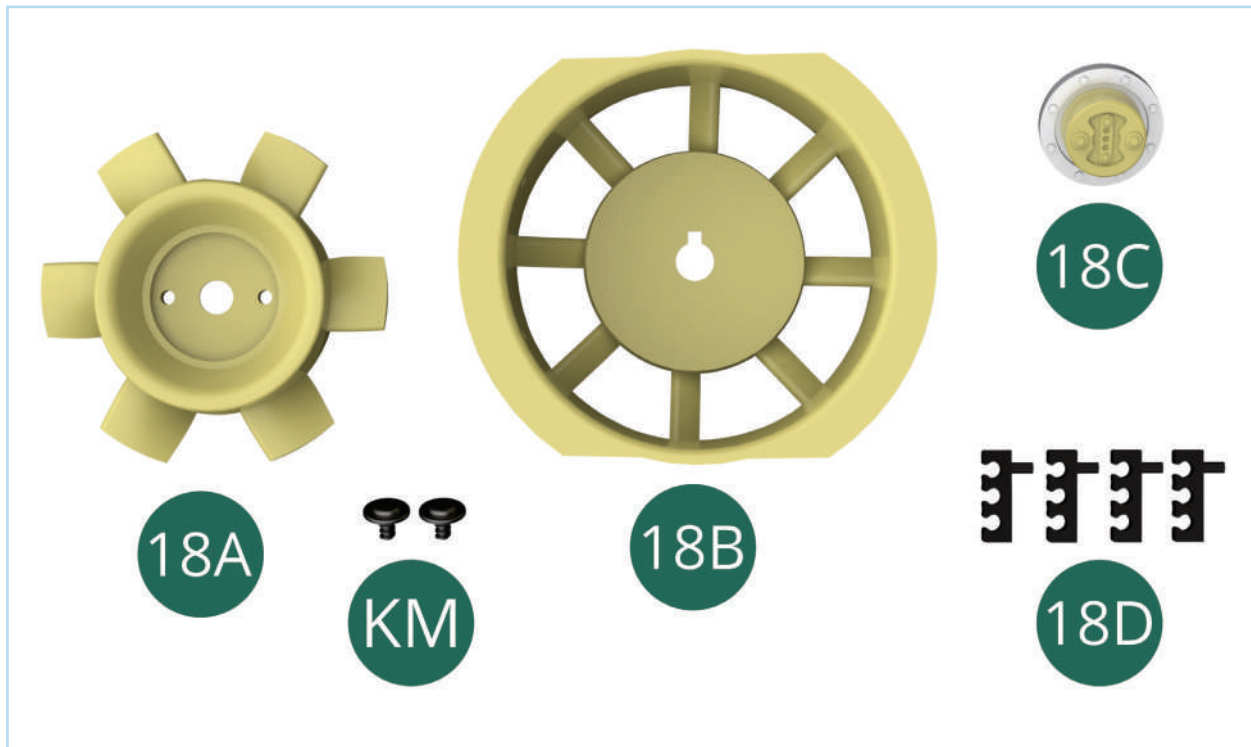
18A Fan propeller

18B Fan housing

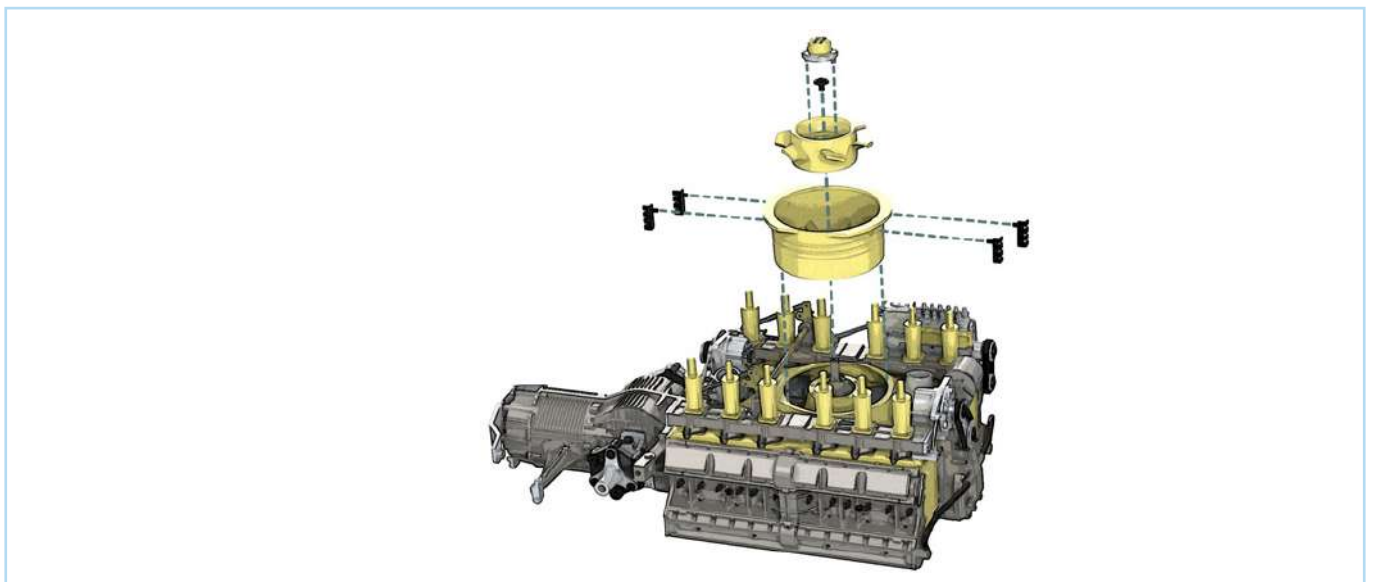
18C Fan hub cap

18D Fuel line guide (x4)

KM Screw 1.7 x 3 x 5 mm (x2)



ASSEMBLY DIAGRAM



STAGE 18: ADDING THE ENGINE FAN

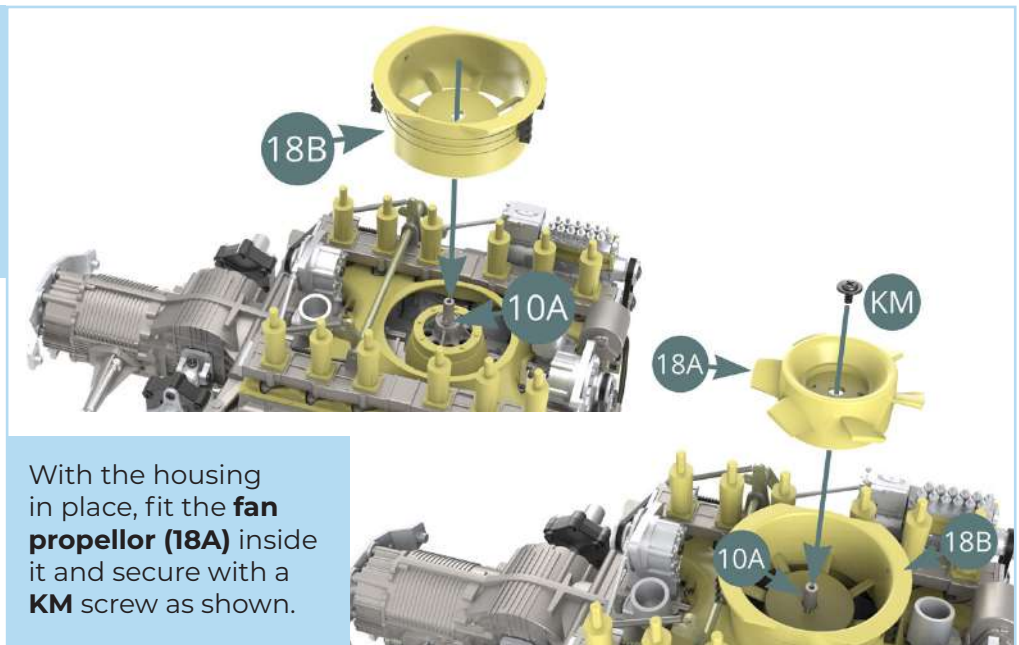
STEP 1

Press the four **fuel line guides (18D)** into the holes on the sides of the **fan housing (18B)**.



STEP 2

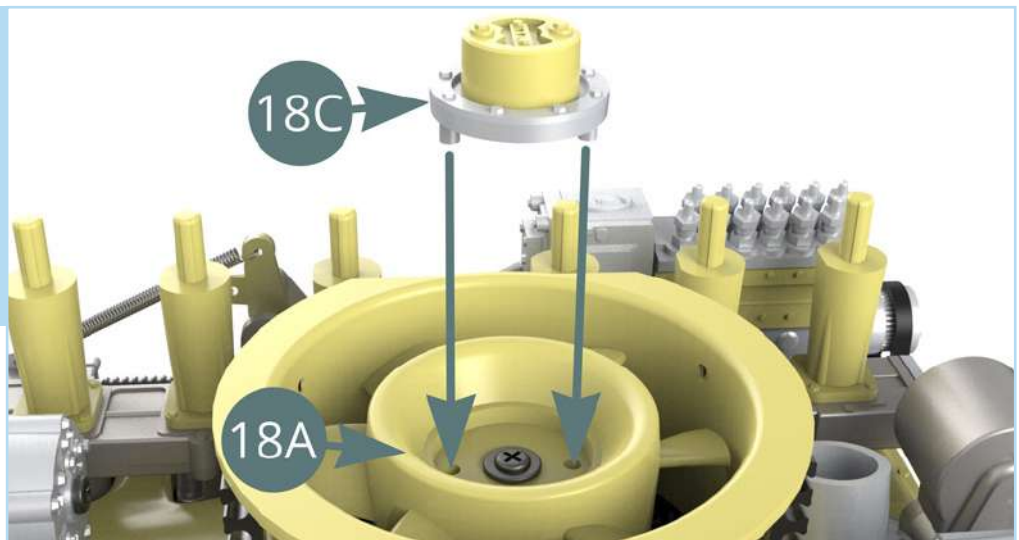
Position the **fan housing (18B)** onto the protruding pin of the **crankcase top (10A)**, using the shaped hole on the housing as a guide.



With the housing in place, fit the **fan propellor (18A)** inside it and secure with a **KM screw** as shown.

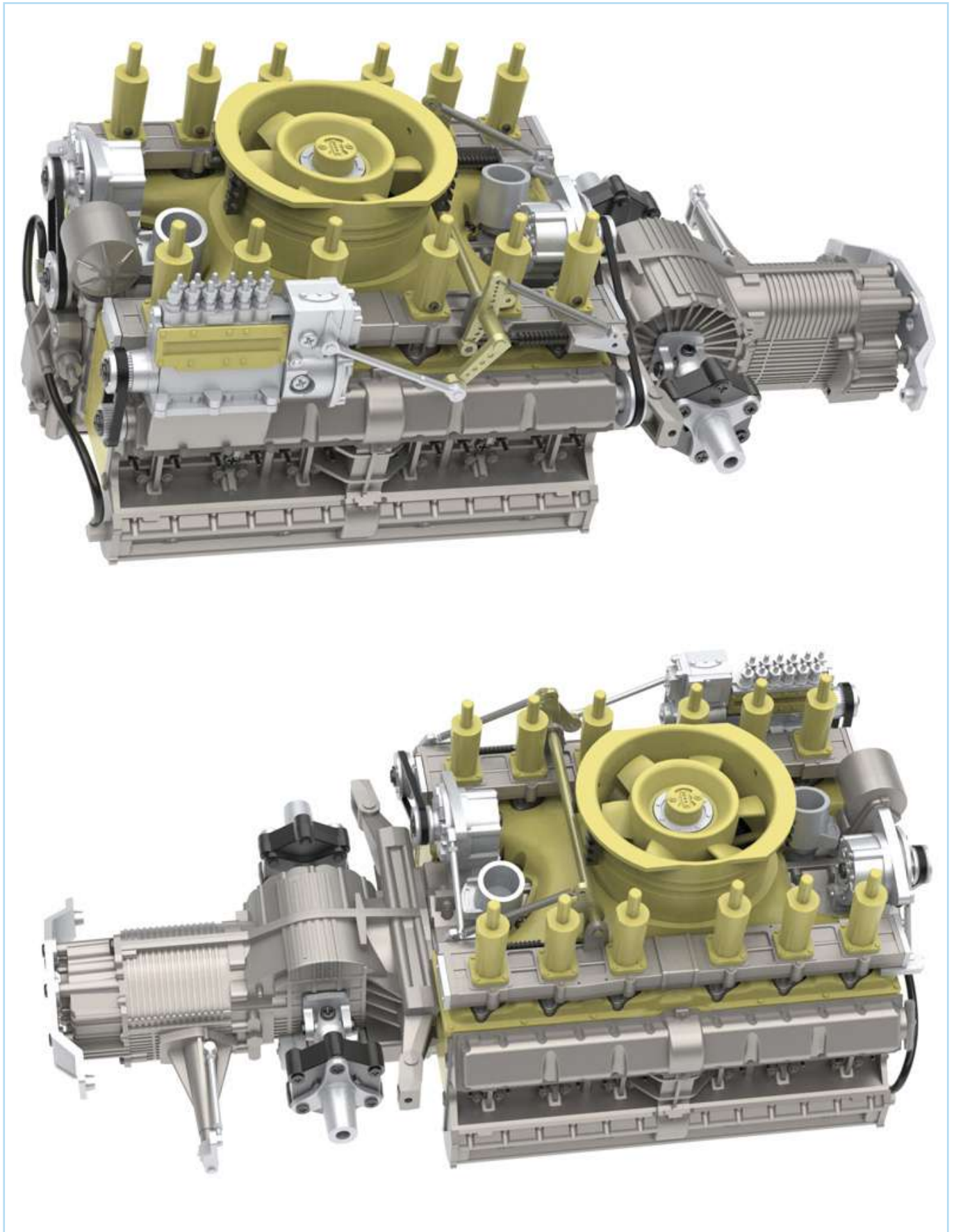
STEP 3

Make sure the screw is tightened so the fan housing is secure. Then take the **fan hub cap (18C)** and press the pins on it into the two small holes in the fan propellor.



STAGE 18: ADDING THE ENGINE FAN

STAGE COMPLETE



STAGE 19: ASSEMBLING THE LEFT EXHAUST PIPING

19A Flange (x6)

19B Exhaust pipe

19C Exhaust pipe

19D Exhaust pipe

19E Exhaust pipe

19F Exhaust pipe

19G Exhaust pipe

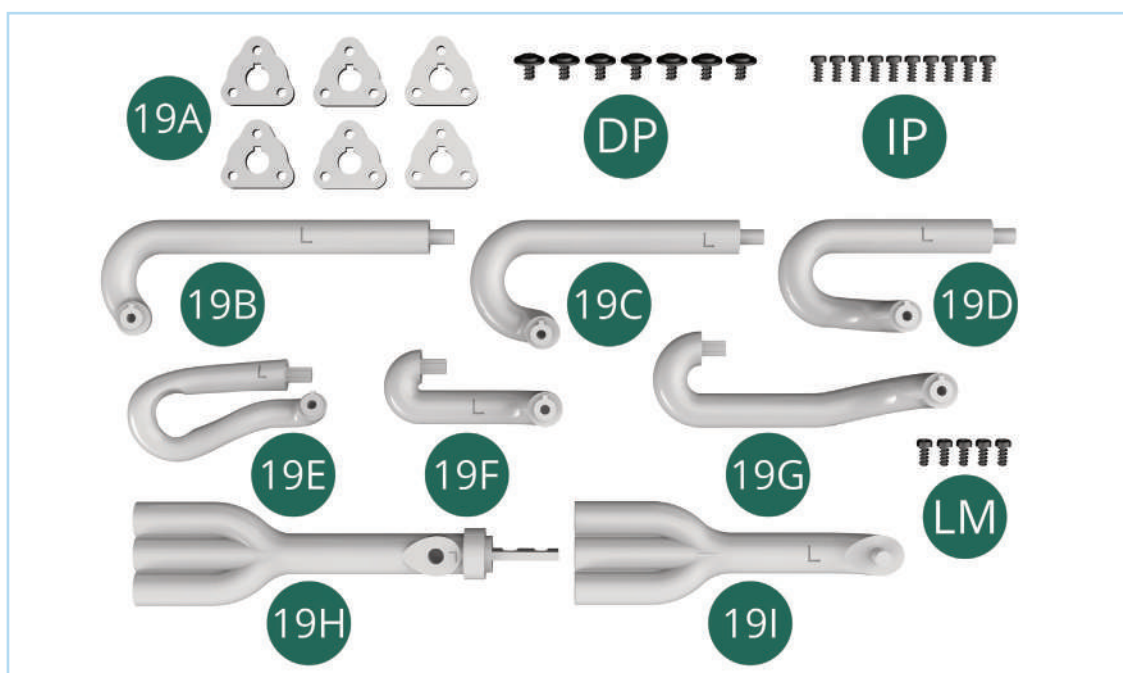
19H Exhaust manifold

19I Exhaust manifold

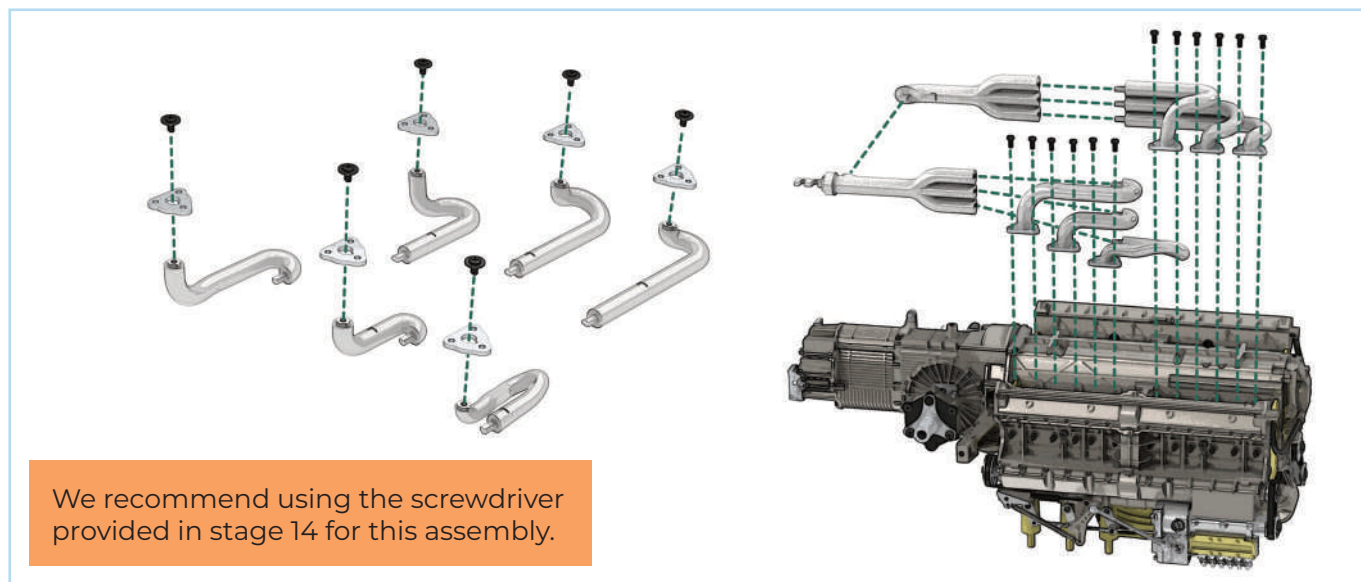
DP Screw 1.7 x 3 x 5 mm (x7)

IP Screw 1.5 x 3 mm (x10)

LM Screw 1.5 x 3 mm (x5)



ASSEMBLY DIAGRAM



STAGE 19: ASSEMBLING THE LEFT EXHAUST PIPING

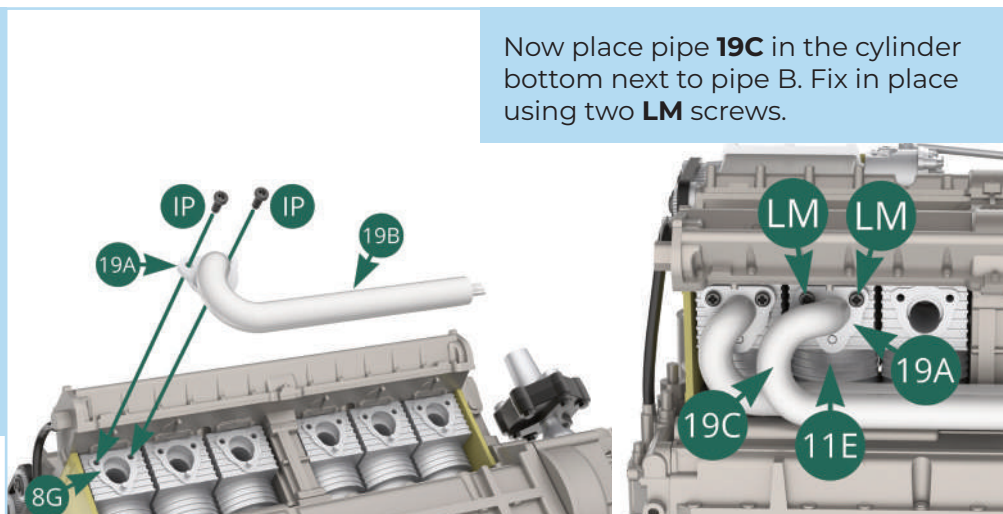
STEP 1

Fit the six **flanges (19A)** onto each of the exhaust pipes **19B, 19C, 19D, 19E, 19F** and **19G**, using the shaped lugs on the pipes as a guide. Secure each of them in place using a **DP** screw as shown.



STEP 2

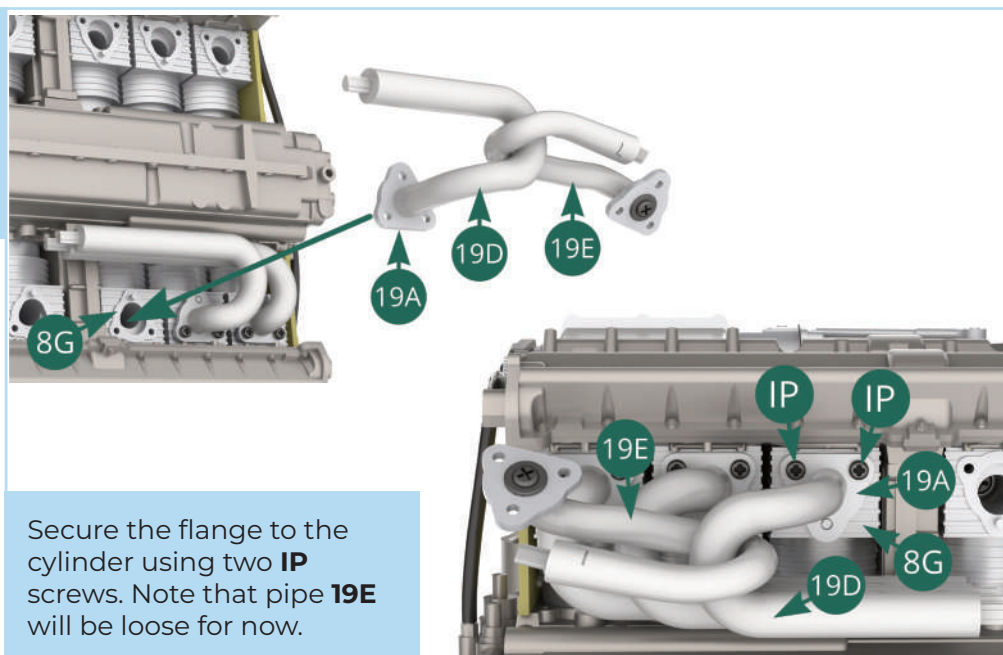
Take the engine assembly and place it upside down on your work surface. Starting with the exhaust pipe **19B**, fit the attached **flange (19A)** over the leftmost **cylinder bottom (8G)**. Hold in place and attach to the cylinder using two **IP** screws.



Now place pipe **19C** in the cylinder bottom next to pipe B. Fix in place using two **LM** screws.

STEP 3

Take pipes **19D** and **19E** and link the bends together as shown. Fit the flange of **19D** over the next cylinder in sequence as shown.

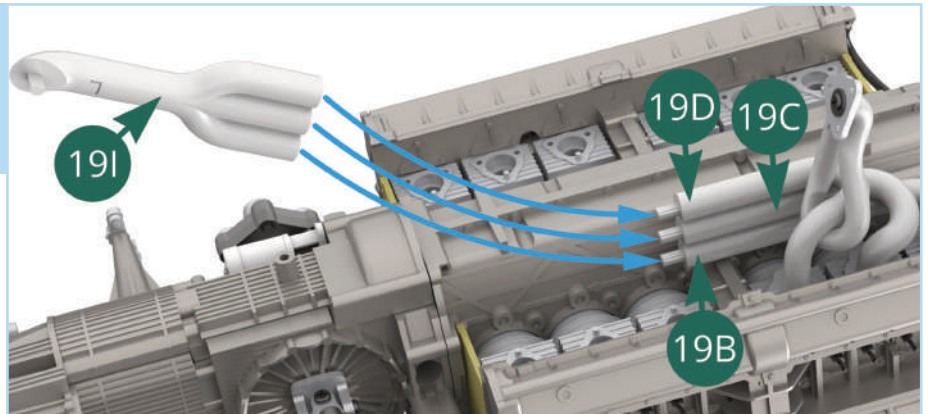


Secure the flange to the cylinder using two **IP** screws. Note that pipe **19E** will be loose for now.

STAGE 19: ASSEMBLING THE LEFT EXHAUST PIPING

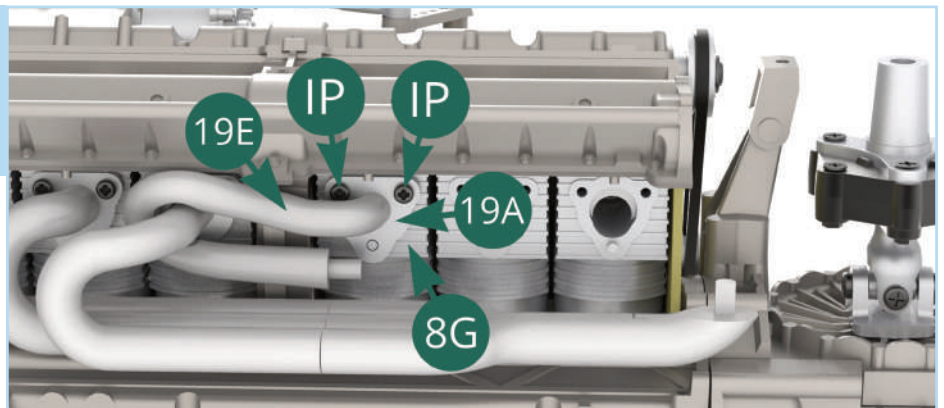
STEP 4

Take the **exhaust manifold (19I)** and plug the three pins at the ends of pipes **19B**, **19C** and **19D** into it.



STEP 5

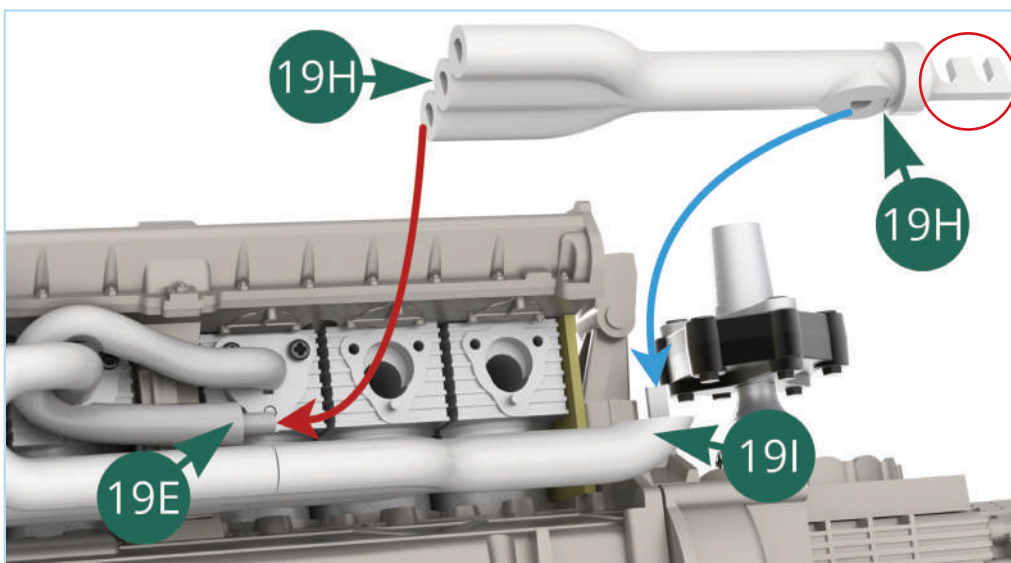
Move the loose pipe **19E** into position as shown and fit its flange onto the next cylinder. Secure using two **IP** screws.



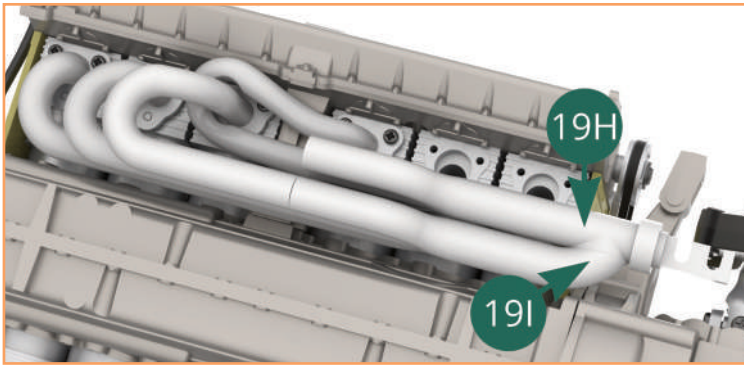
STEP 6

Align the exhaust manifold (**19H**) as shown. Plug the pin on pipe **19E** into the pipe on the manifold (red arrow). At the same time, plug the shaped hole at the other end of **19H** into the pin on **19I**, installed in step 4 (blue arrow).

Take care not to apply pressure to the end of the exhaust manifold circled in red as it is very fragile.



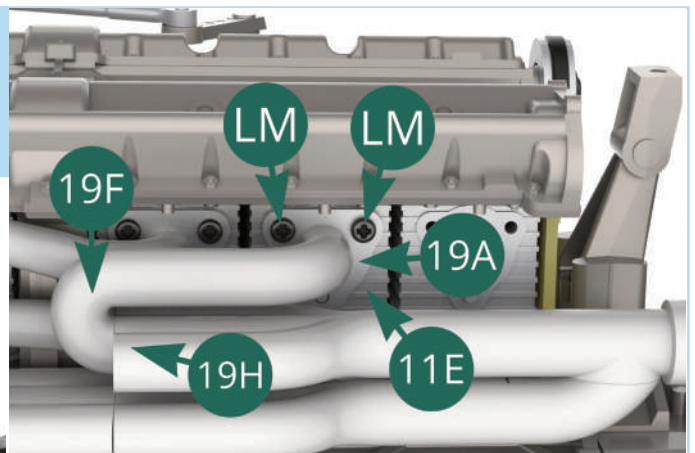
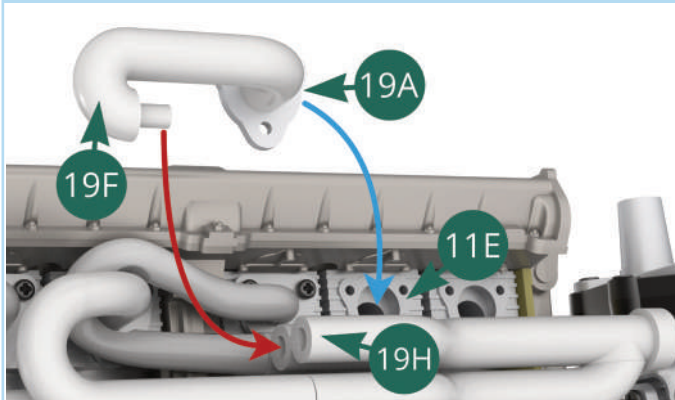
STAGE 19: ASSEMBLING THE LEFT EXHAUST PIPING



With both manifolds in place the exhaust should look like this.

STEP 7

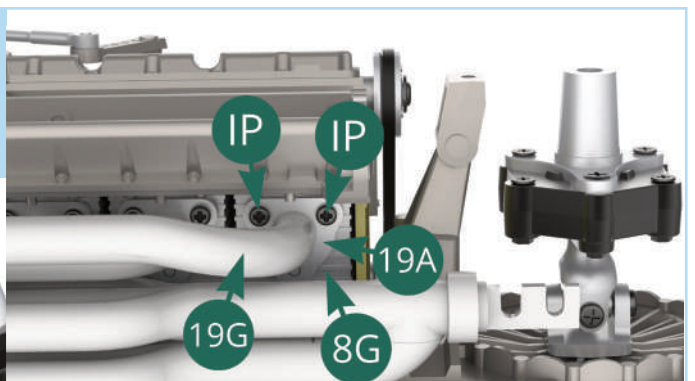
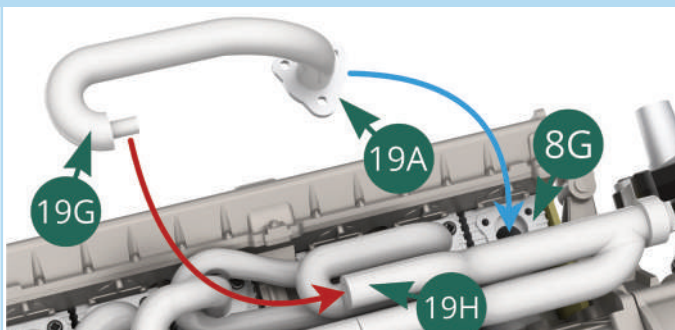
Take pipe **19F** and plug the pin into the middle hole of the manifold **19H** (red arrow). Fit the flange over the next cylinder in sequence at the same time (blue arrow).



Secure the pipe by driving two **LM** screws through the flange into the cylinder.

STEP 8

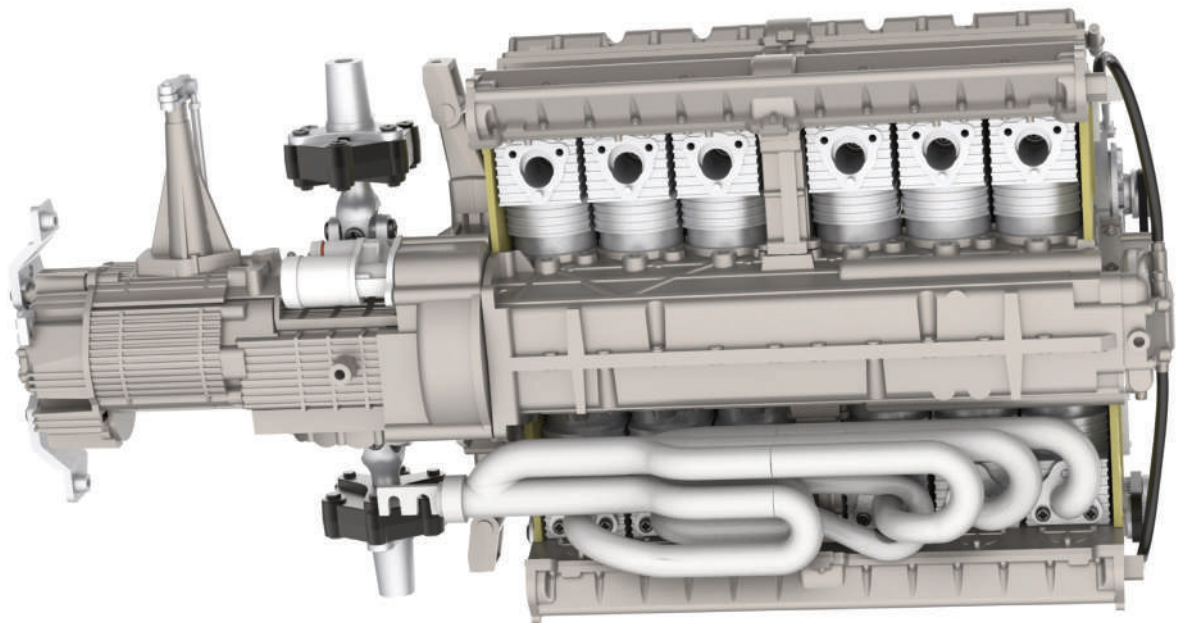
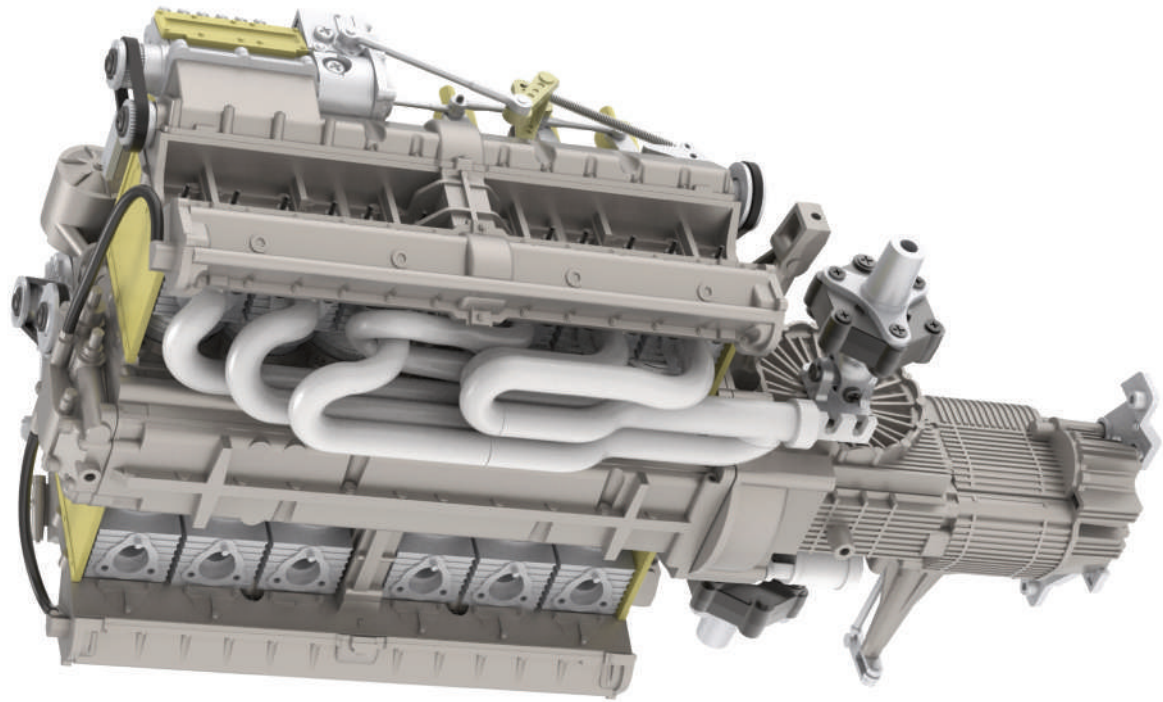
Now plug the pin of pipe **19G** into the remaining hole of the manifold **19H** (red arrow). Fit the flange over the last cylinder at the same time (blue arrow).



Secure the pipe, this time using two **IP** screws to connect the flange to the cylinder.

STAGE 19: ASSEMBLING THE LEFT EXHAUST PIPING

STAGE COMPLETE



STAGE 20: ASSEMBLING THE RIGHT EXHAUST PIPING

20A Flange (x6)

20B Exhaust pipe

20C Exhaust pipe

20D Exhaust pipe

20E Exhaust pipe

20F Exhaust pipe

20G Exhaust pipe

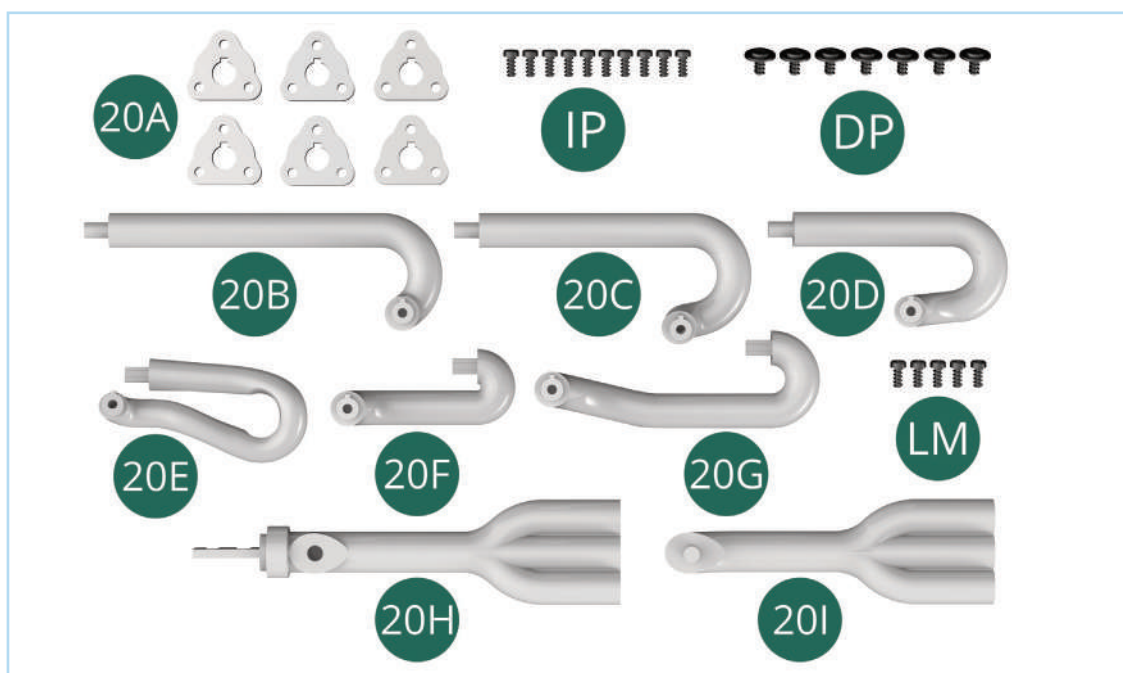
20H Exhaust manifold

20I Exhaust manifold

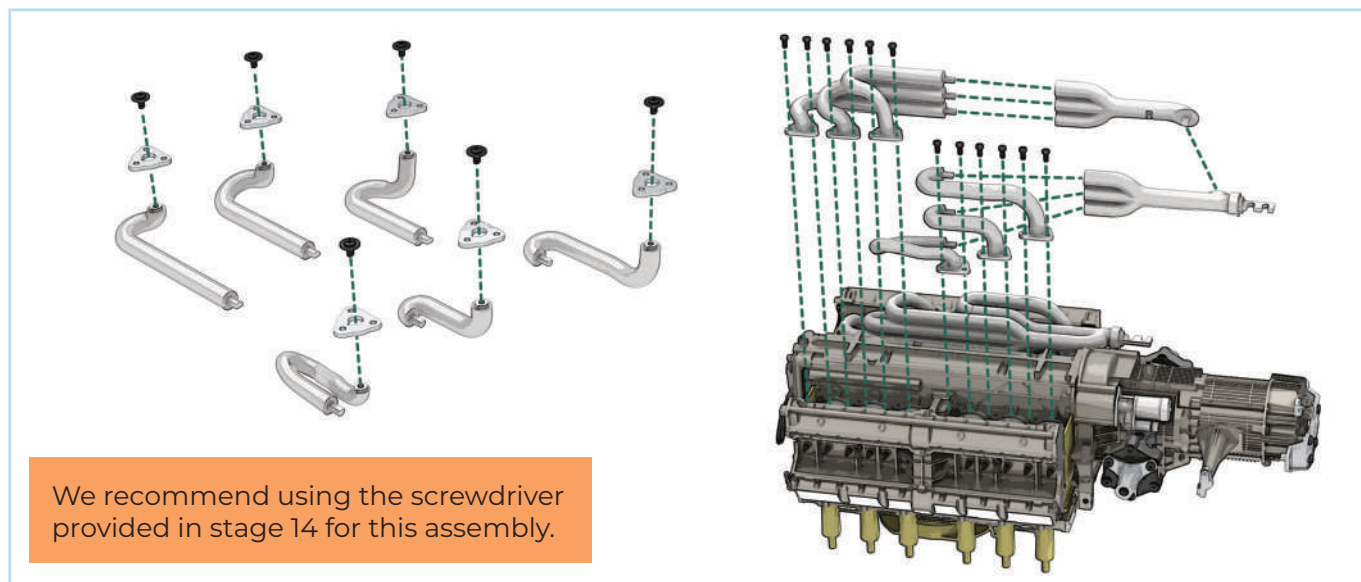
DP Screw 1.7 x 3 x 5 mm (x7)

IP Screw 1.5 x 3 mm (x10)

LM Screw 1.5 x 3 mm (x5)



ASSEMBLY DIAGRAM

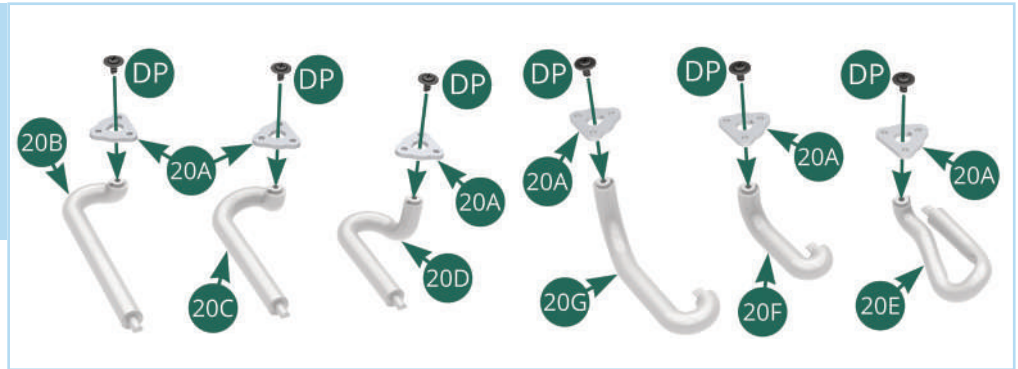


We recommend using the screwdriver provided in stage 14 for this assembly.

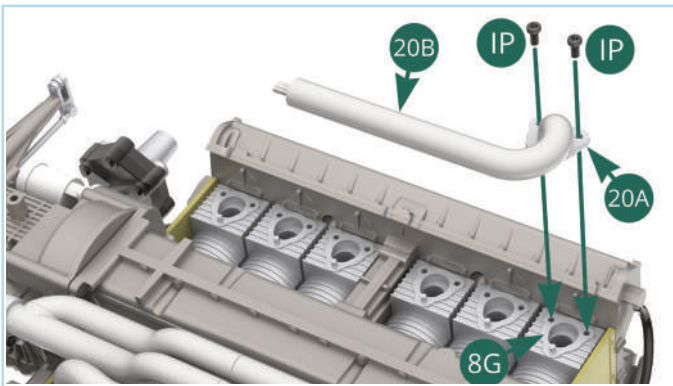
STAGE 20: ASSEMBLING THE RIGHT EXHAUST PIPING

STEP 1

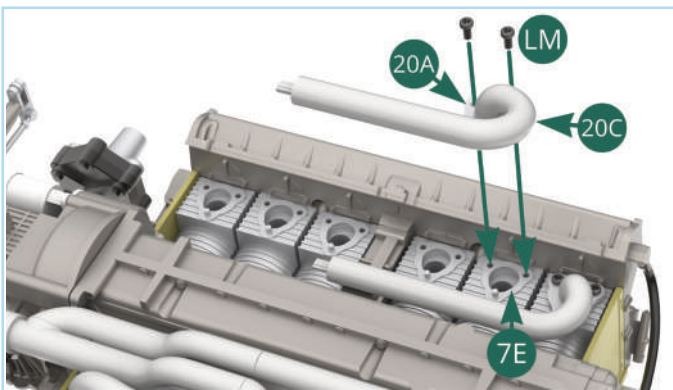
In the same manner as before, fit the six **flanges (20A)** to pipes **20B, 20C, 20D, 20E, 20F** and **20G**, securing each with a **DP** screw.



STEP 2



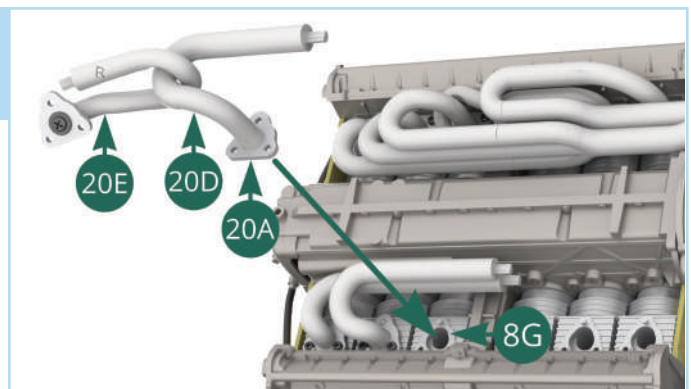
Take the engine assembly and place it on your work surface. Starting with the exhaust pipe **20B**, fit its **flange (20A)** over the rightmost **cylinder bottom (8G)**. Fix in place using two **IP** screws.



Now place pipe **20C** in the cylinder bottom next to pipe B. Fix in place using two **LM** screws as shown.

STEP 3

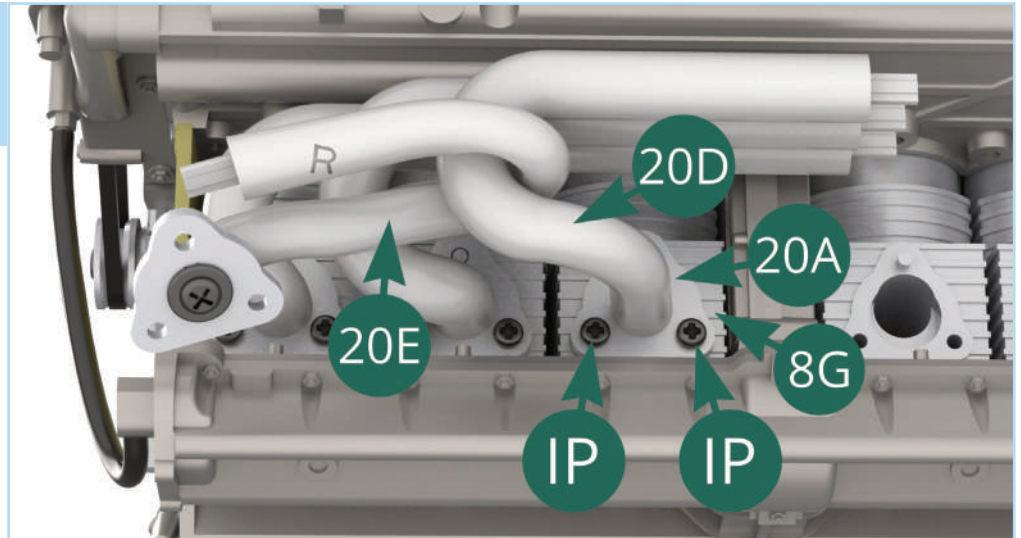
Link pipes **20D** and **20E** together, then fit the flange of **20D** onto the next cylinder.



STAGE 20: ASSEMBLING THE RIGHT EXHAUST PIPING

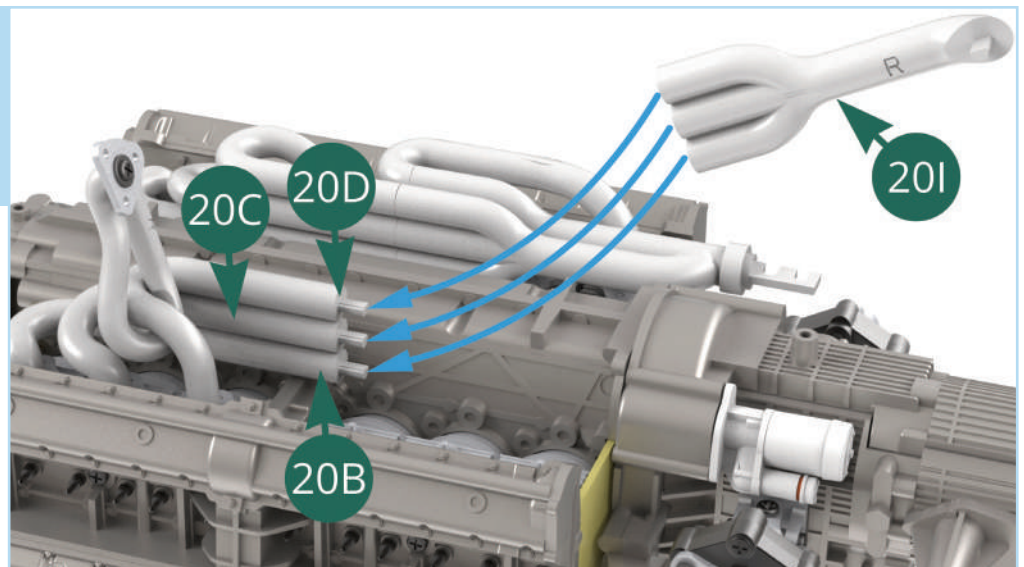
STEP 4

Secure the flange to the cylinder using two **IP** screws.



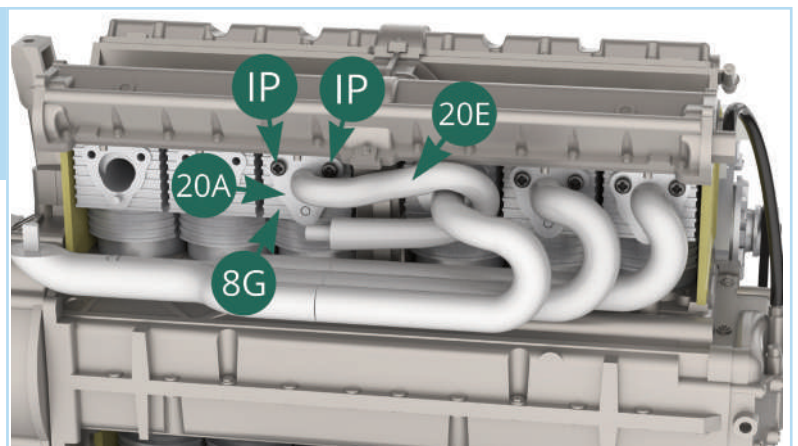
STEP 5

Take the **exhaust manifold (20I)** and plug the three pins at the ends of pipes **20B**, **20C** and **20D** into it.



STEP 6

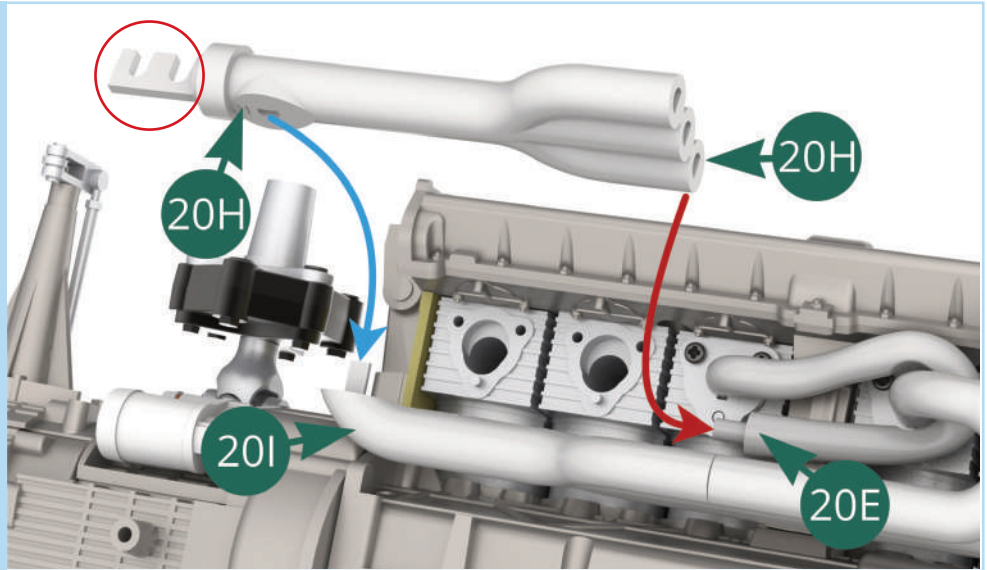
Move the loose pipe **20E** into position as shown and fit its flange onto the next cylinder. Secure in place using two **IP** screws.



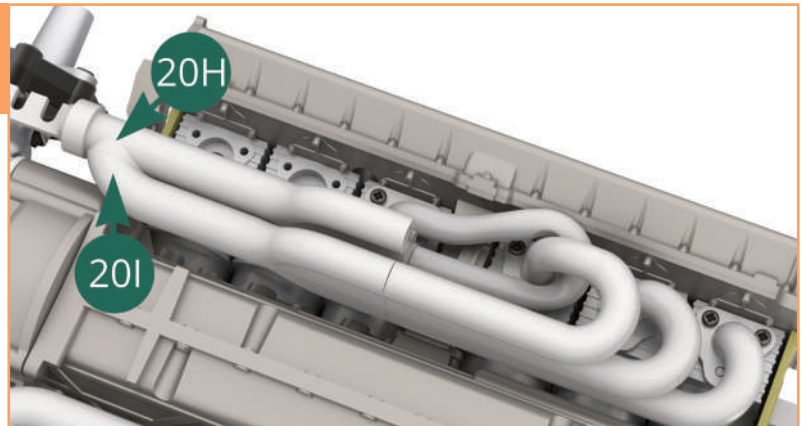
STAGE 20: ASSEMBLING THE RIGHT EXHAUST PIPING

STEP 6

Align the **exhaust manifold (20H)** with the assembly, then plug the pipe closest to the engine in to the pin on **20E** (red arrow). At the same time, plug the shaped hole on the end of **20H** into the pin on **20I**, installed in step 5 (blue arrow). **Take care not to apply pressure to the end of the exhaust manifold circled in red as it is very fragile.**

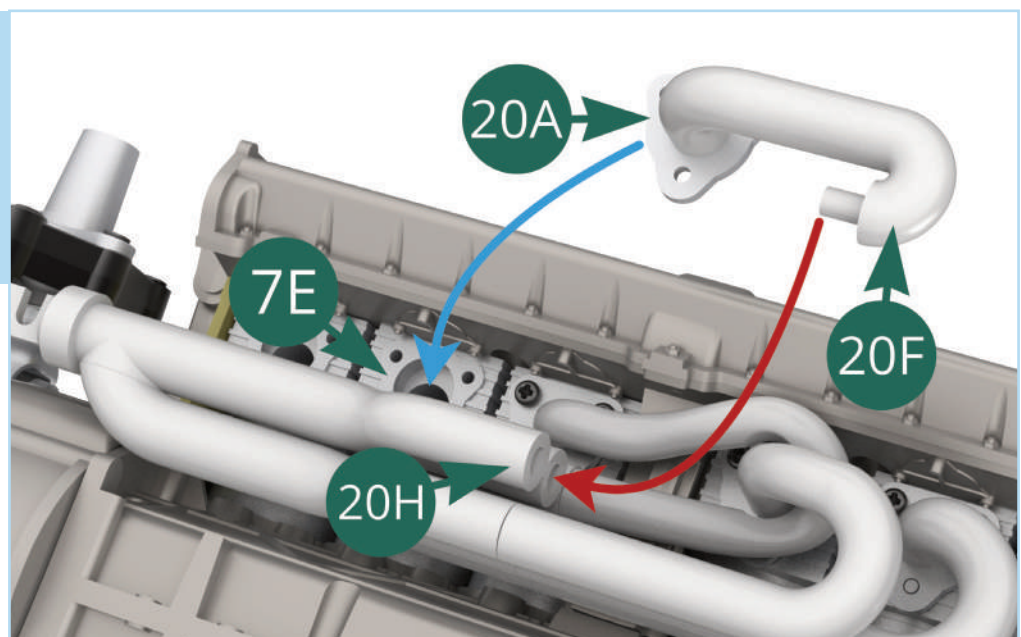


The two manifolds have been installed into the exhaust system.



STEP 7

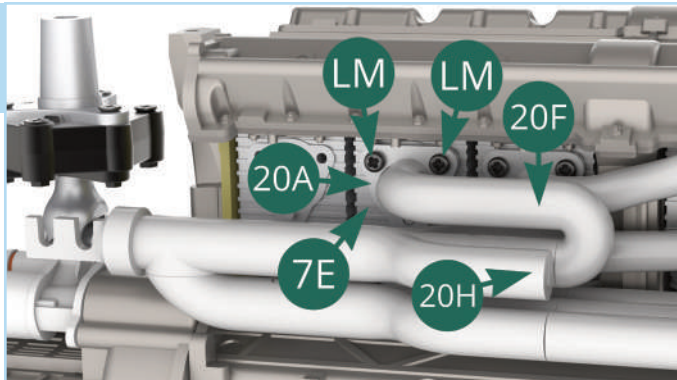
Take pipe **20F** and plug the pin into the middle pipe of the manifold **20H** (red arrow). Then fit the flange over the next cylinder (blue arrow).



STAGE 20: ASSEMBLING THE RIGHT EXHAUST PIPING

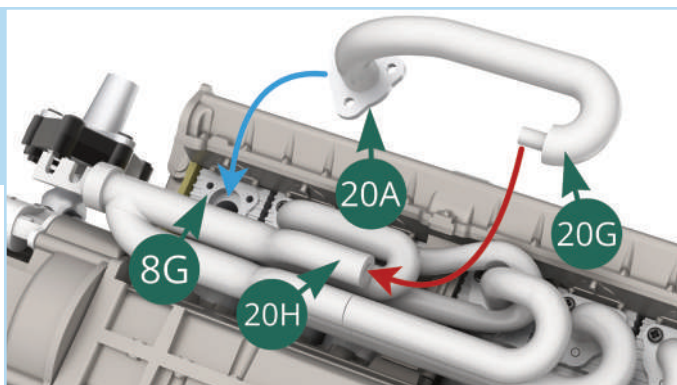
STEP 8

Once the pipe has been fitted, secure it in place using two **LM** screws as shown.



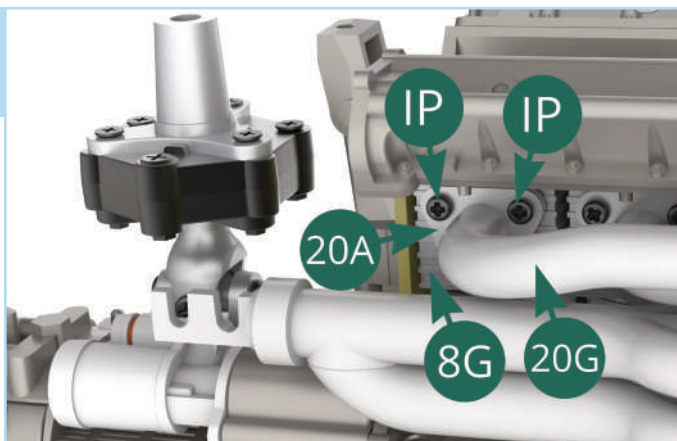
STEP 9

Now plug the pin of pipe **20G** into the remaining pipe of the manifold **20H** (red arrow). Fit the flange over the last cylinder at the same time (blue arrow).



STEP 10

Attach the last pipe for the exhaust in place using two **IP** screws as shown.



STAGE 20: ASSEMBLING THE RIGHT EXHAUST PIPING

STAGE COMPLETE

