

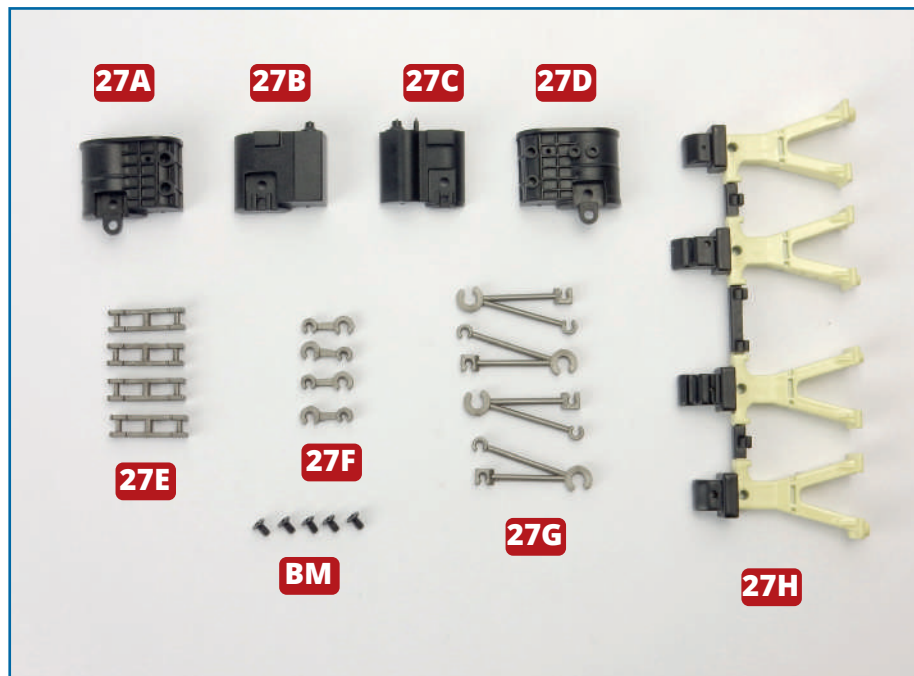
TITANIC

THE SHIP • THE LEGEND

Pack 6

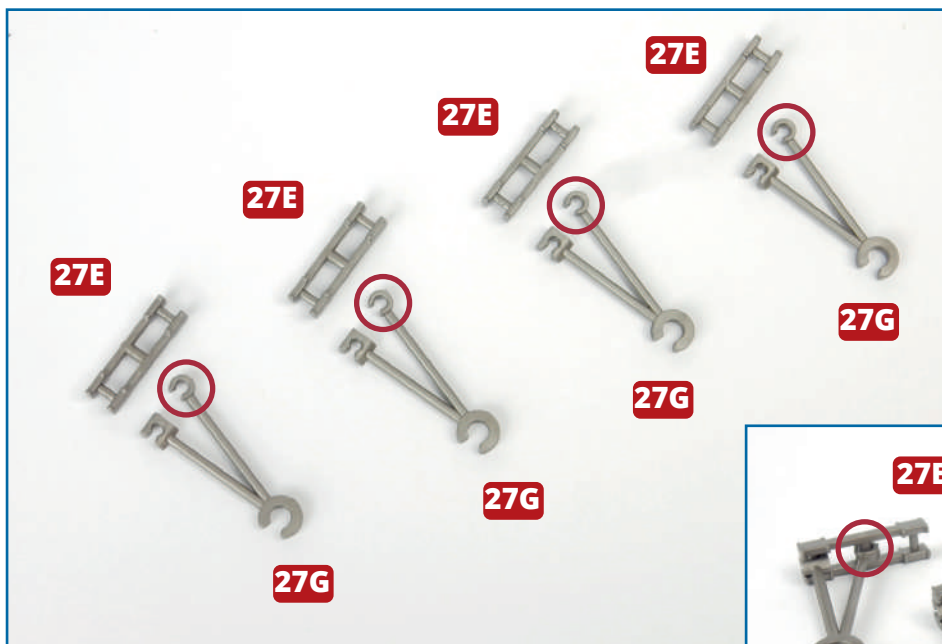


PARTS FOR THE SECOND ENGINE

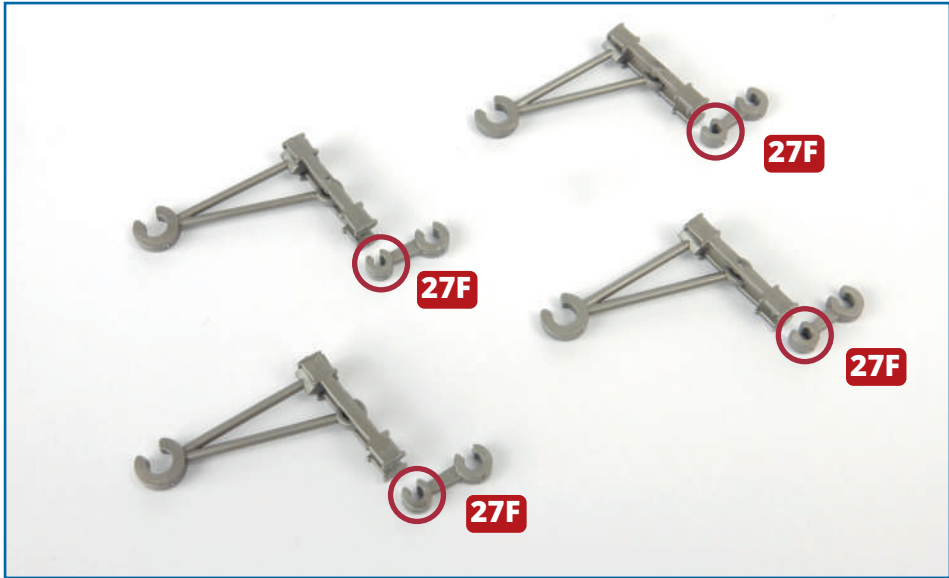


PARTS IN THIS ISSUE

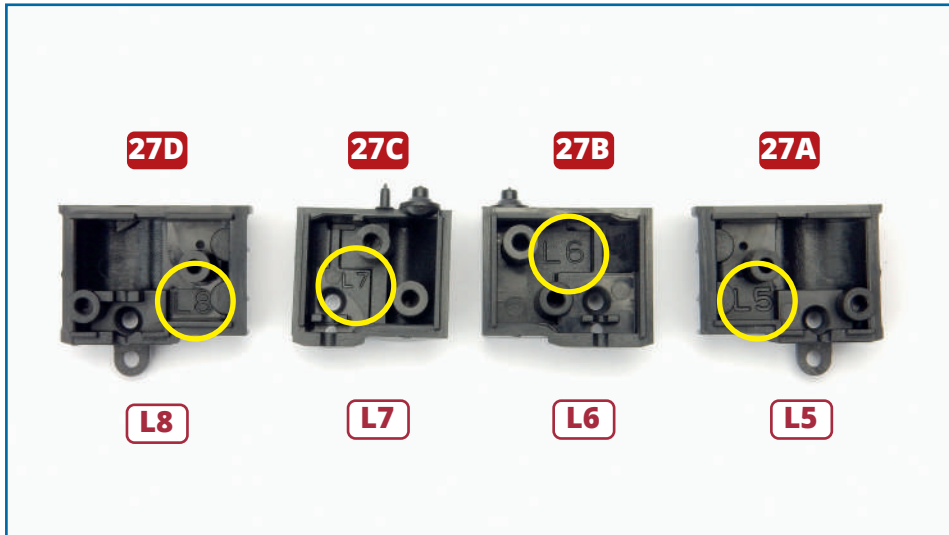
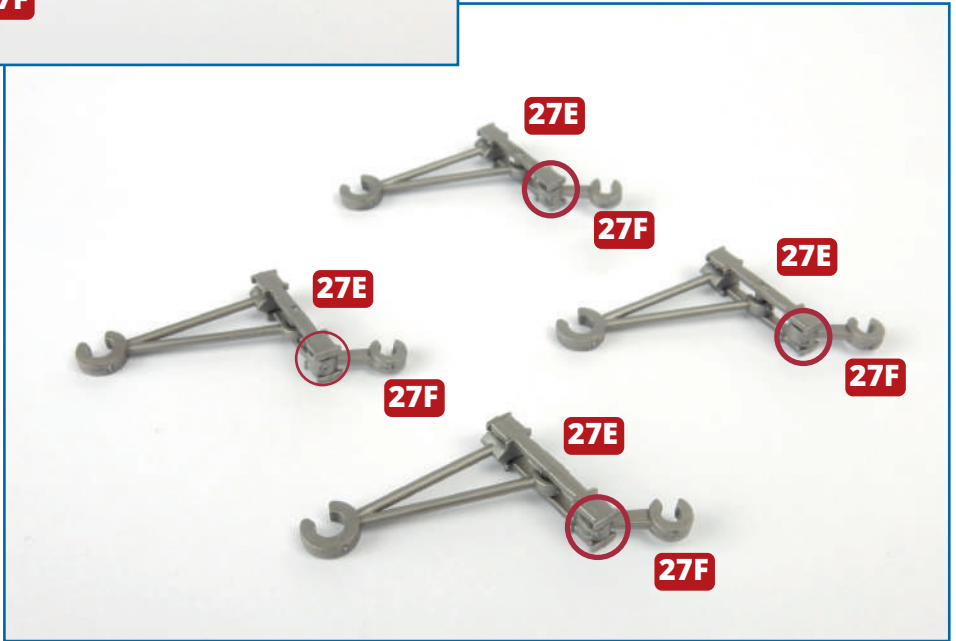
- 27A** Cylinder L5
- 27B** Cylinder L6
- 27C** Cylinder L7
- 27D** Cylinder L8
- 27E** Connecting shafts (x 4)
- 27F** Short connectors (x 4)
- 27G** Valve rods (x 4)
- 27H** Columns for port side
- BM** Five 2 x 4mm PM screws (1 spare)



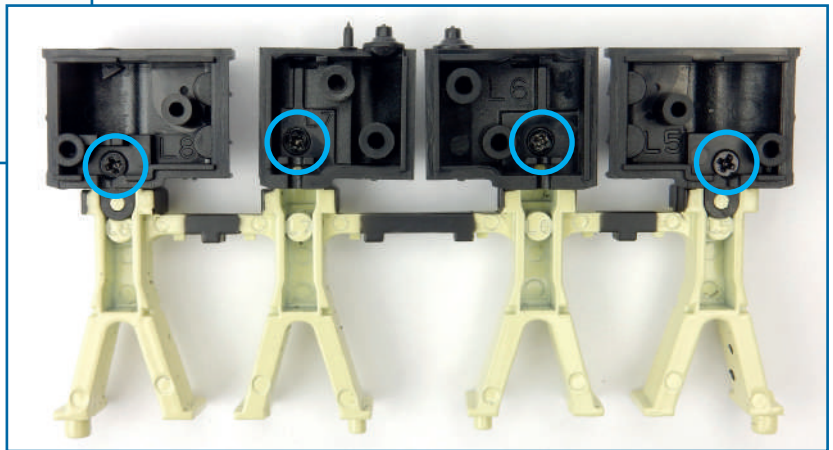
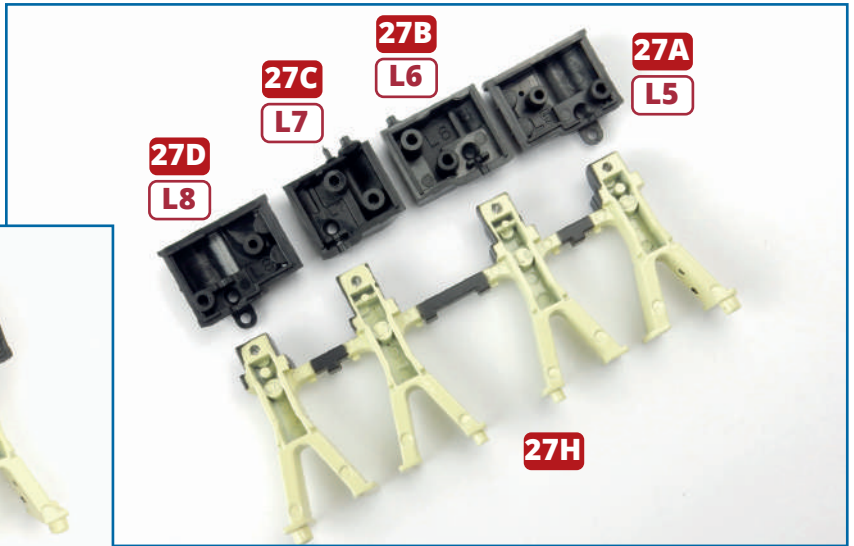
1 Take the four connecting shafts **27E** and the four valve rods **27G**. Lay them out on your work surface, as shown, noting the position of the round grips on the end of the longer shafts (circled). Fit the valve rods on to the shafts, making sure that the grips circled above are connected to the central bars of the connecting shafts **27E** (circled, right).



2 Take the short connectors **27F**: note that one end has a smaller grip than the other (circled). Noting the orientation, connect the smaller grips of parts **27F** to the free bar on the connecting shafts **27E**. Do not use any glue, as the parts need to move freely.



3 Arrange the four cylinders **27D**, **27C**, **27B** and **27A** in order, as shown: they are marked **L8**, **L7**, **L6** and **L5** (circled).



4 Fit the cylinders to the tops of the columns **27H**, as shown above right. When you are happy with the fit, fix the cylinders to the frame with four **BM** screws (circled in blue above and right).

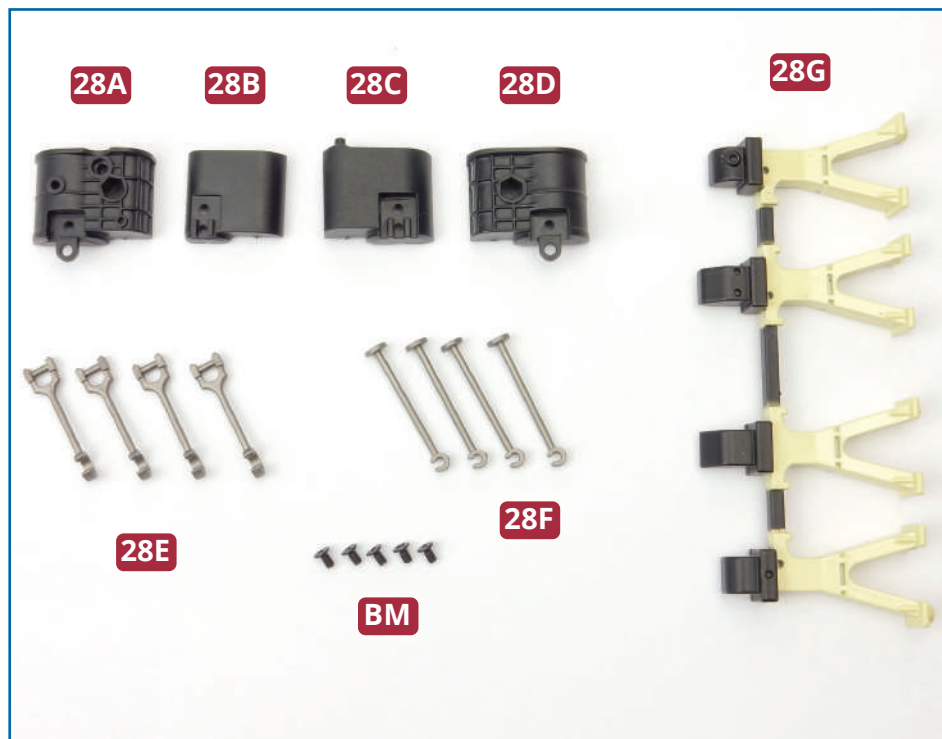


Completed work

The first parts of the second reciprocating engine have been assembled. Store the parts carefully for the next stage in the assembly.

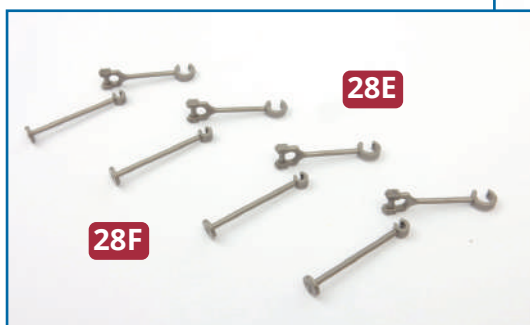


MORE PARTS FOR THE SECOND ENGINE

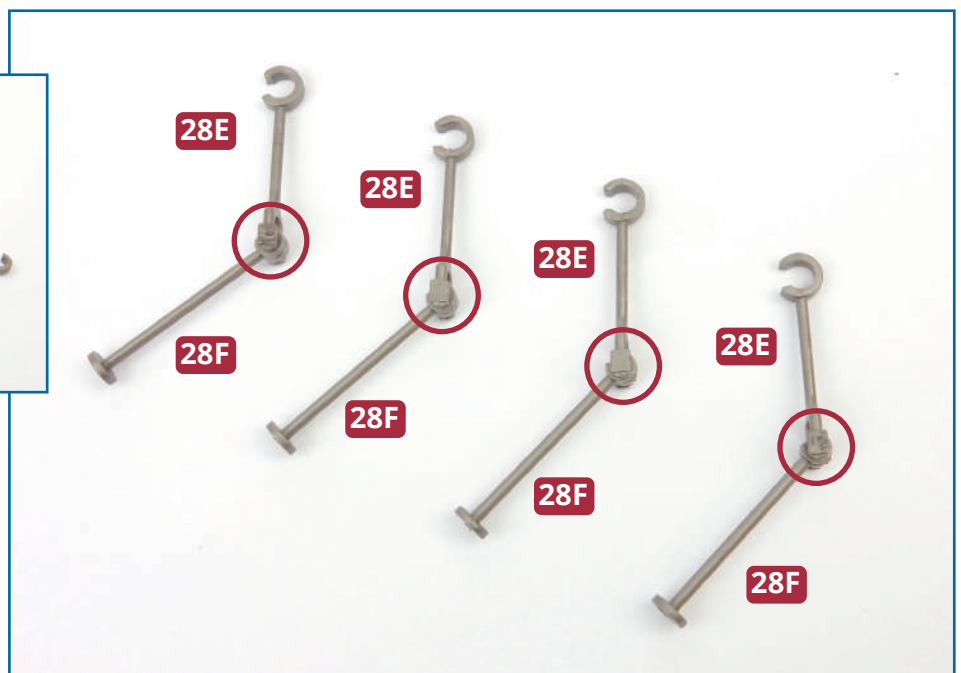


PARTS IN THIS ISSUE

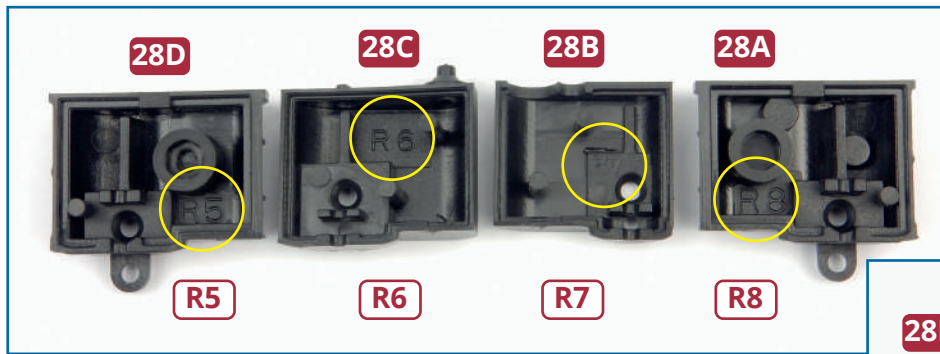
- 28A** Cylinder R8
- 28B** Cylinder R7
- 28C** Cylinder R6
- 28D** Cylinder R5
- 28E** Connecting rods (x 4)
- 28F** Piston rods (x 4)
- 28G** Columns for the starboard side
- BM** Five 2 x 4mm PM screws (1 spare)



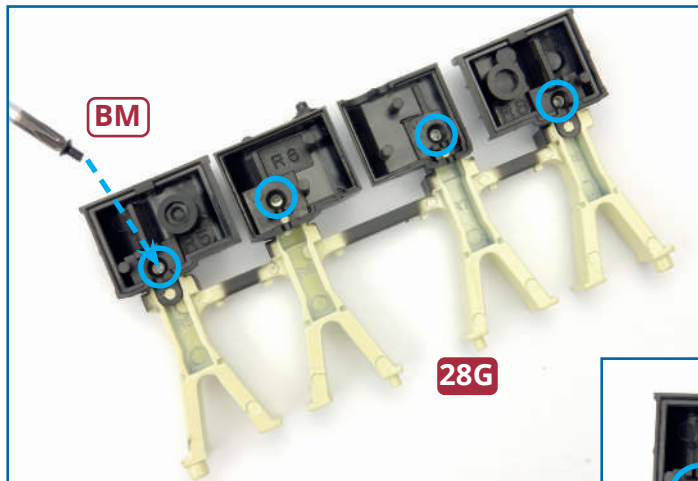
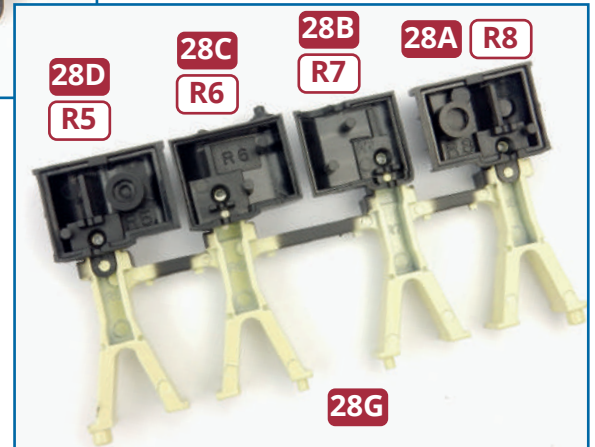
1 Take the four piston rods **28F** and the four connecting rods **28E**. Fit the grips on the ends of the rods **28F** onto the bars on the rods **28E**, as shown. Do not use any glue.



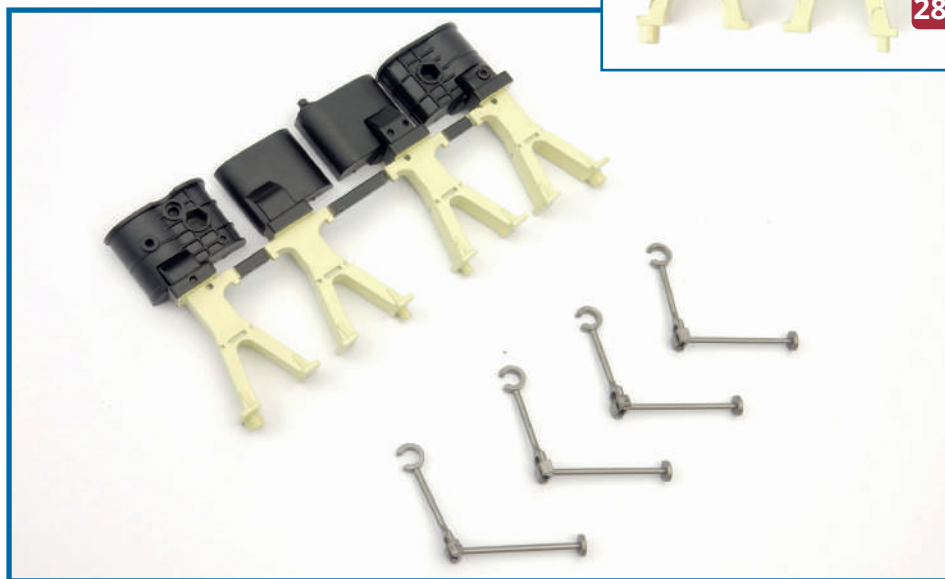
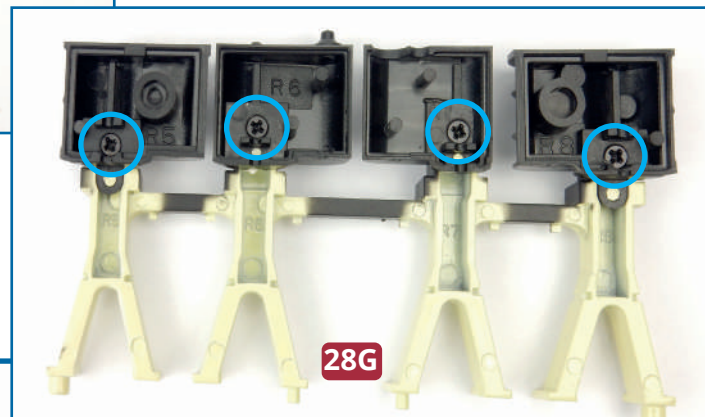
★ STEP-BY-STEP INSTRUCTIONS ★



2 Arrange the four cylinders **28D**, **28C**, **28B** and **28A** in order: they are marked **R5**, **R6**, **R7** and **R8**. Fit them on the tops of the columns **28G**, as shown below.



3 When you are happy with the fit, fix the cylinders in place with four **BM** screws (circled).



Completed work

Further parts of the second reciprocating engine have been assembled. Store the parts carefully for the next stage in the assembly.

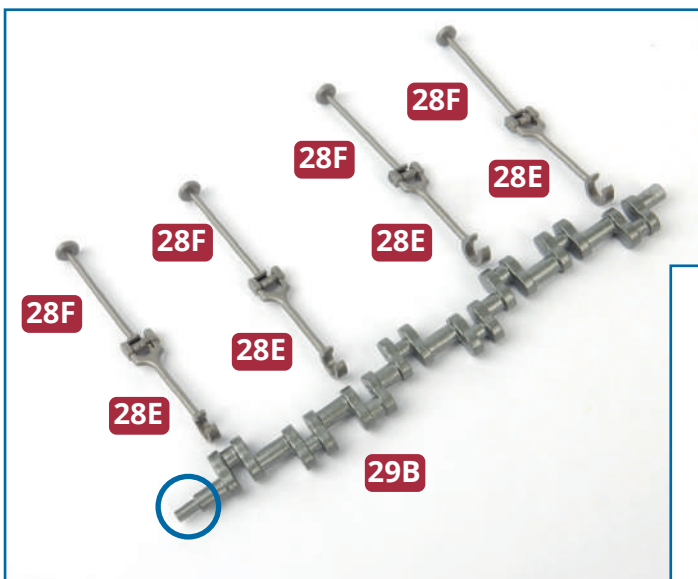


CRANKSHAFT FOR THE SECOND ENGINE

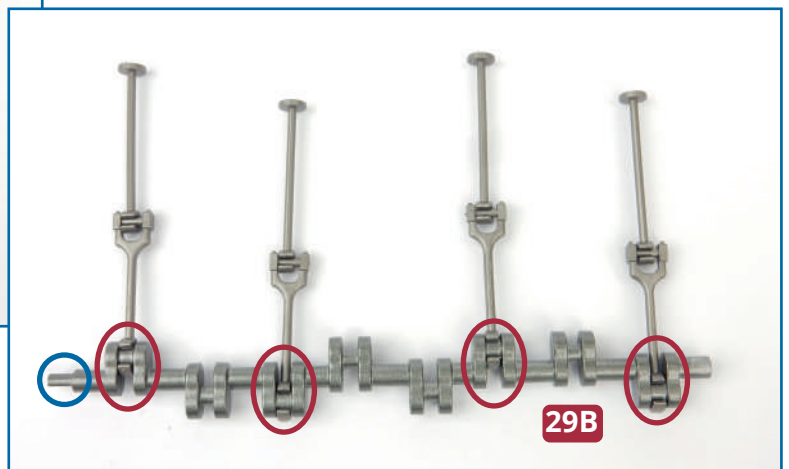


PARTS IN THIS ISSUE

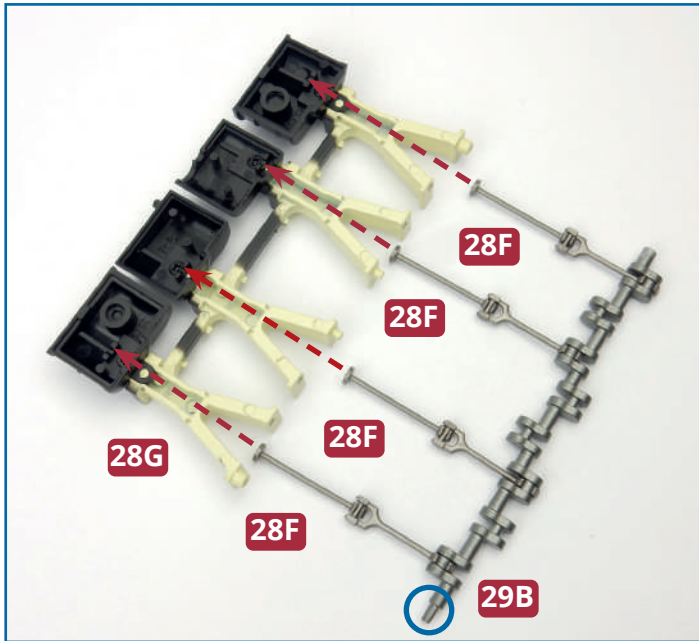
- 29A** Shaft
- 29B** Crankshaft
- 29C** Stop plate (upper, front)
- 29D** Stop plate (lower, front)
- 29E** Flywheel
- 29F** Cylinder head C
- 29G** Stop plate (lower, rear)
- 29H** Stop plate (upper, rear)
- 29I** Cylinder head B
- 29J** Distribution valves (x 2)
- 29K** Cylinder heads A (x 2)
- CM** Five 1.7 x 4mm KP screws (1 spare)



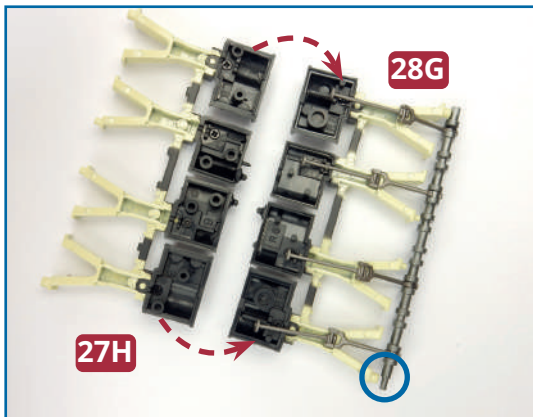
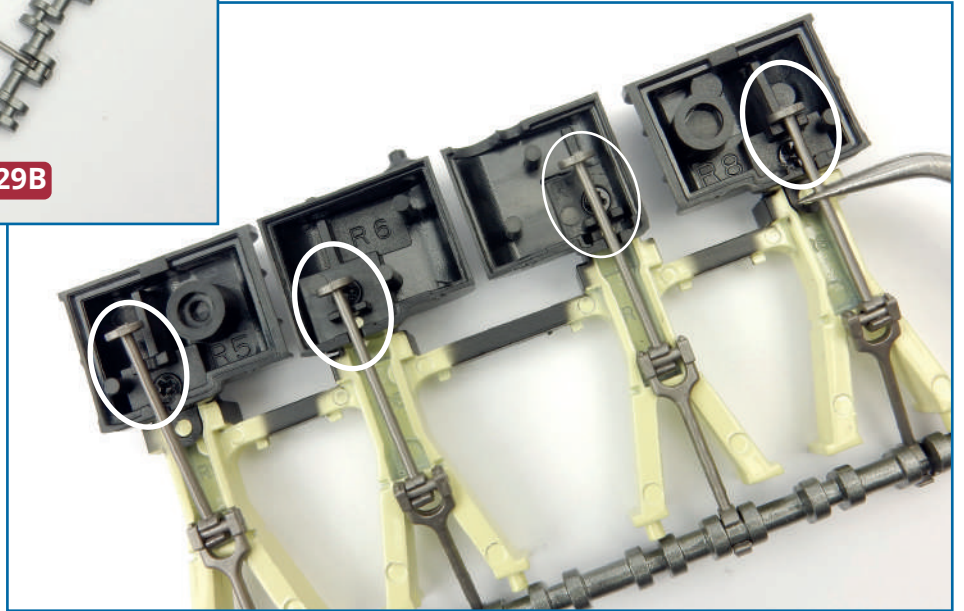
1 Take the connecting rods assembly from issue 28 and the crankshaft **29B**. Position them on your work surface as shown: note the position of the longer shaft at the end of part **29B** (circled in blue). Fit the free ends of the connecting rods **28E** on to the four joints on part **29B**, circled in red (below).



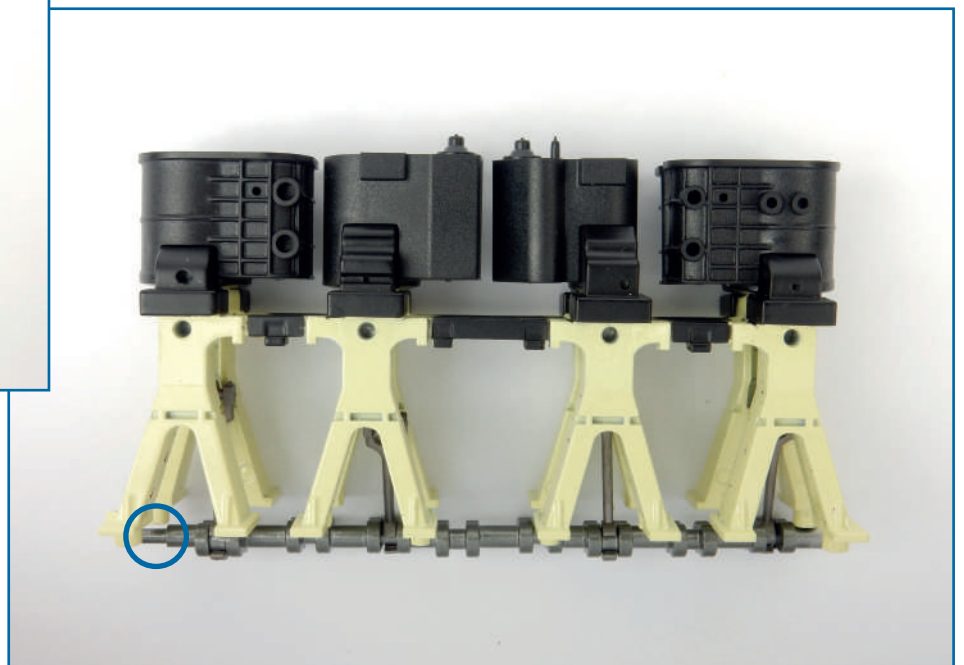
★ STEP-BY-STEP INSTRUCTIONS ★



2 Take the starboard columns **28G** and fit the pistons **28F** inside the cylinders (assembled in issue 27). You may need tweezers to position the ends of the piston rods inside the tabs in the cylinders (circled, below). Also make sure that you have the crankshaft the right way round (the longer end shaft is circled in blue, left).

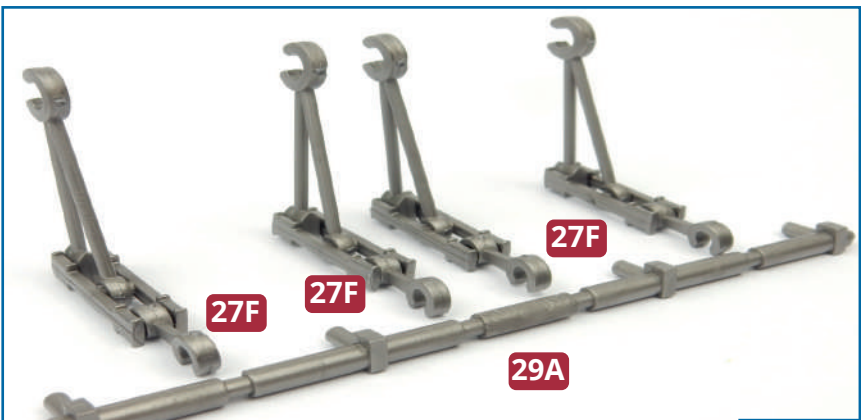
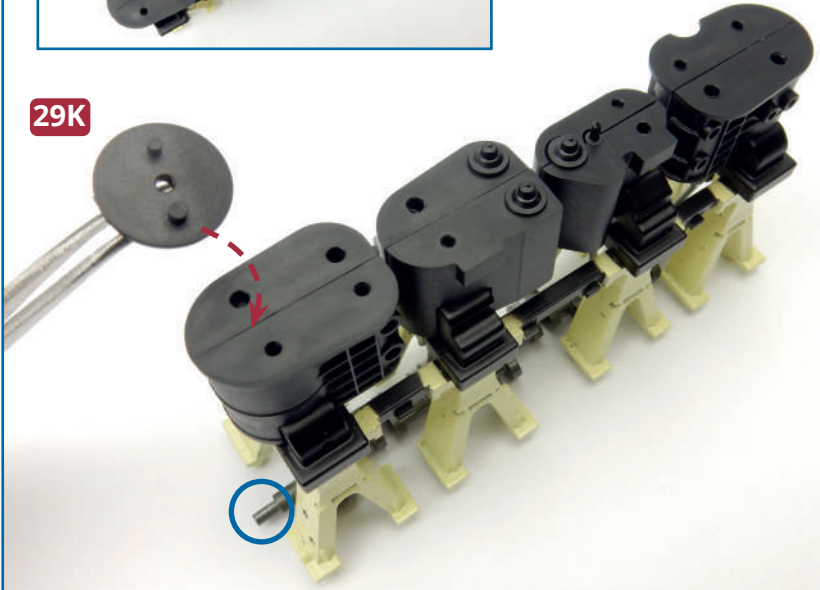
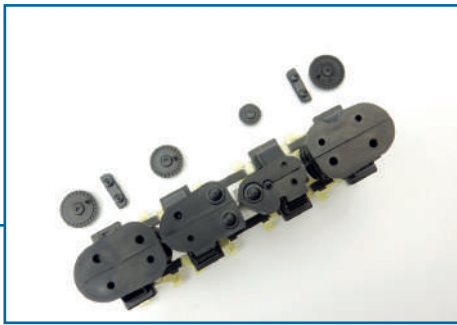


3 Take the port columns **27H**, with the cylinders in place, and align it with the starboard columns **28G**. Check that the ends of the piston rods remain in the correct position and can move freely inside the cylinders (right).

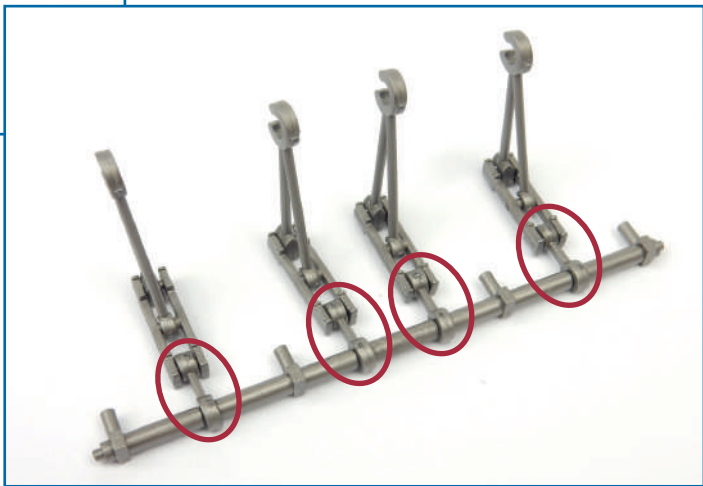
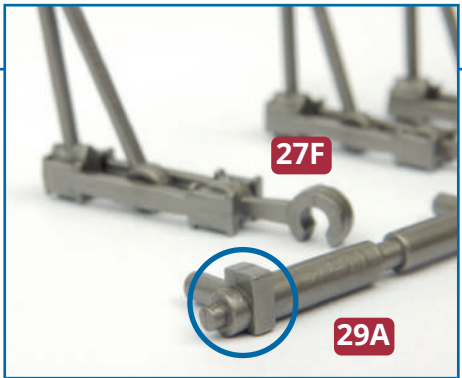




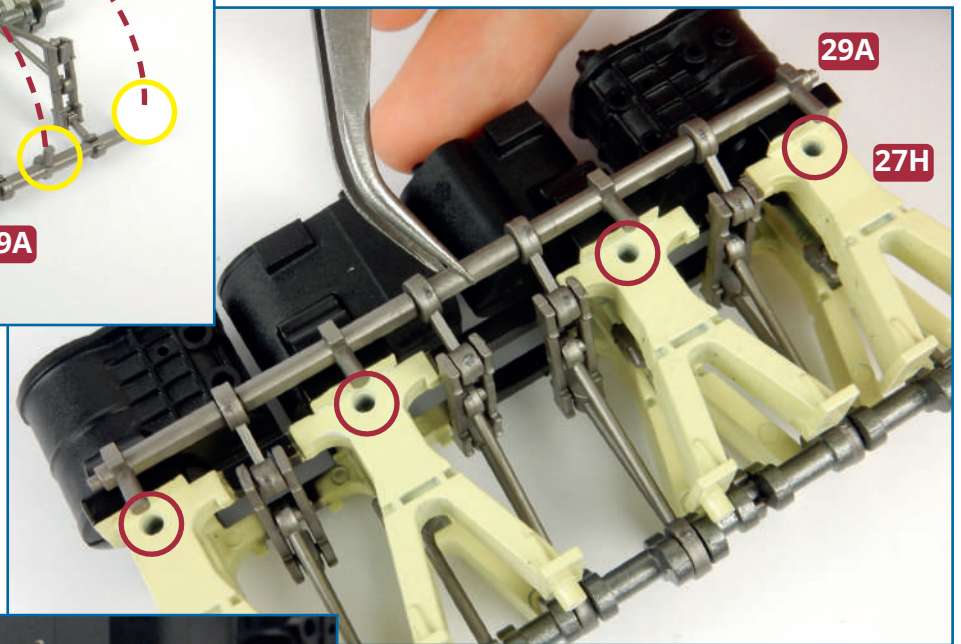
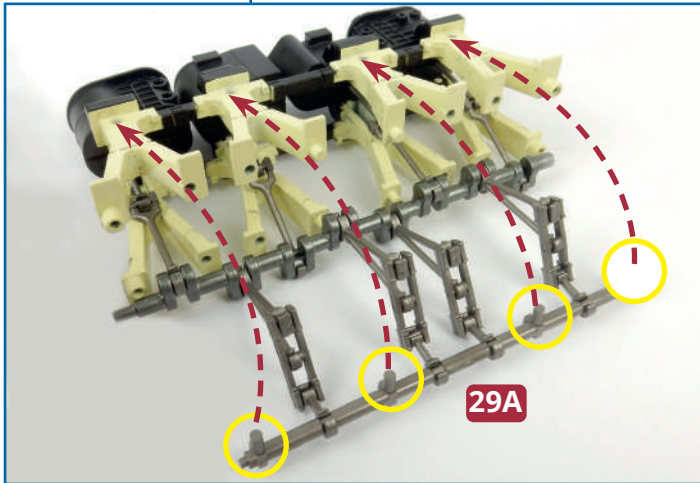
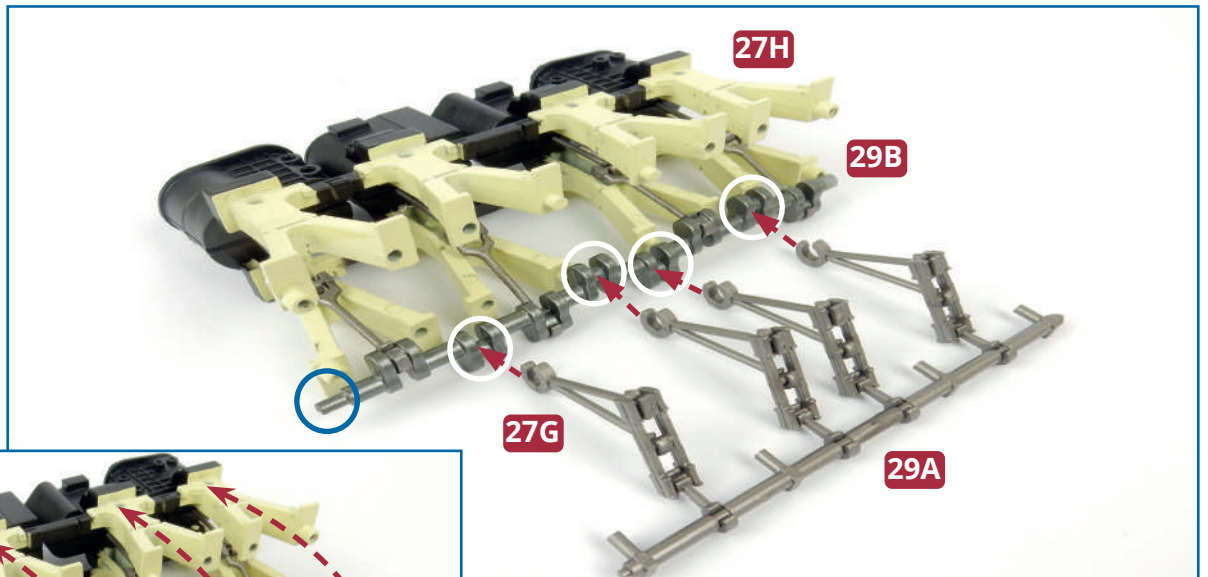
4 Take the cylinder heads and distribution valves and fit them on top of the cylinders: take time to make sure you have the correct parts for each cylinder head. These are push-fit connections.



5 Take the shaft **29A** and place it on your work surface. Note the arrangement of the four rectangular blocks along the shaft – one side of each block is almost flush with the shaft and this side is flat on the work surface (circled, below left), with the four arms pointing towards the short connectors **27F**, on the assemblies from issue 27. Fit the grips on the ends of parts **27F** onto the shaft **29A**, as shown below.

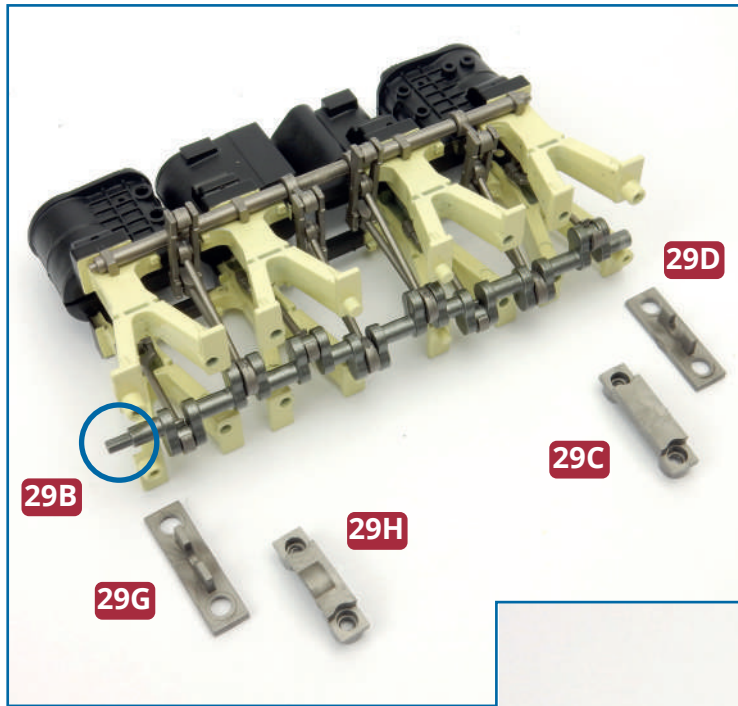


★ STEP-BY-STEP INSTRUCTIONS ★



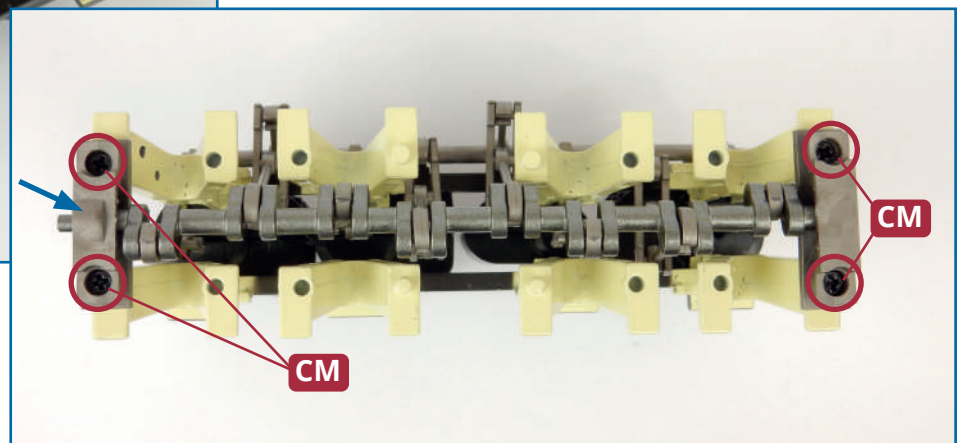
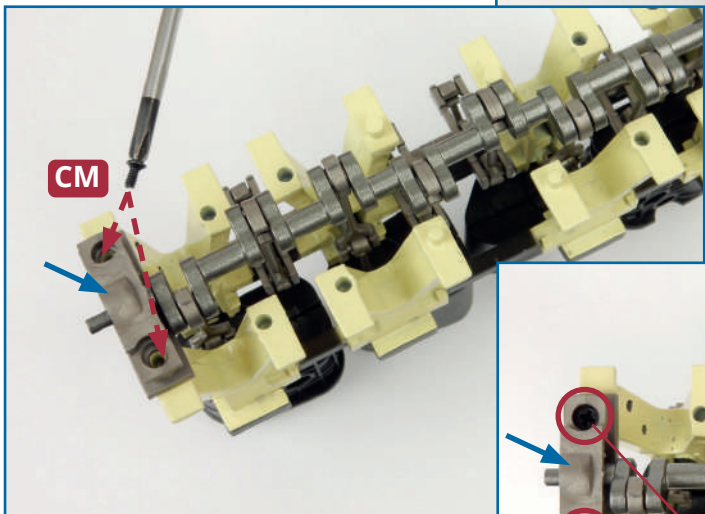
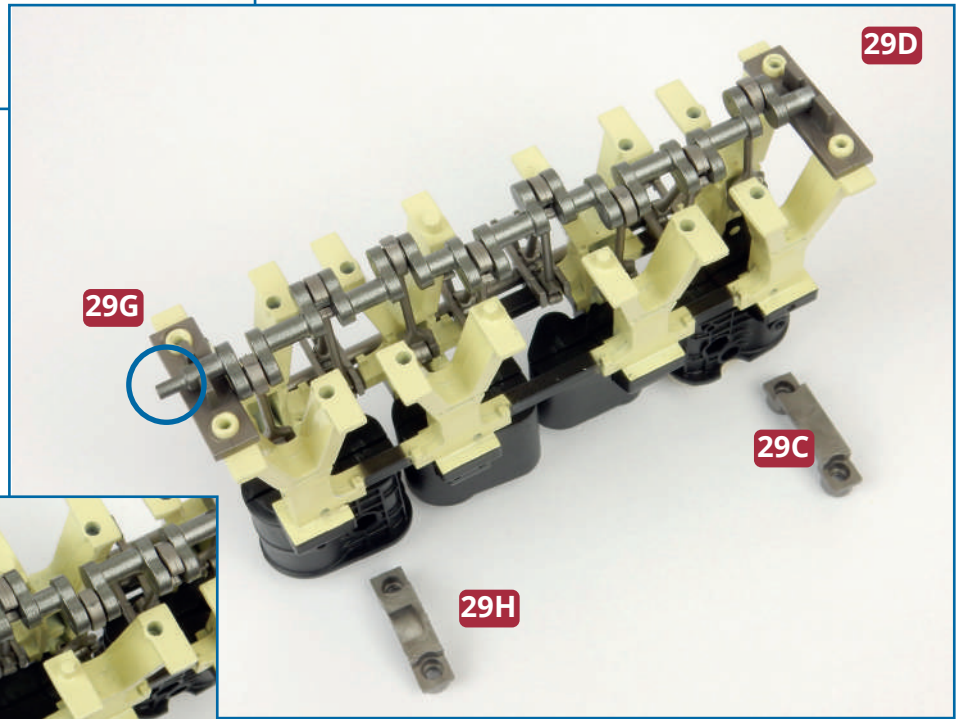
6 Take the assembly from step 4, noting the position of the long shaft at the end of the crankshaft **29B**, circled in blue (top). Position the assembly from step 5 as shown: note that the flat side of the blocks is now facing upwards. Fit the grips on the ends of the connectors **27G** to the free joints in the crankshaft **29B**.

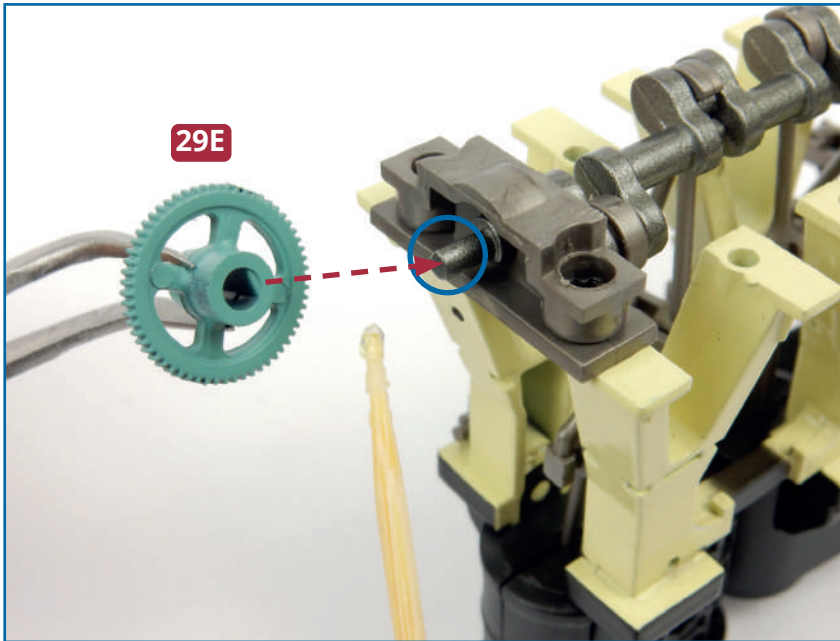
Manoeuvre the shaft **29A** so that you can fit the four arms (circled in yellow, above left) into the holes in the port columns **27H** (circled in red, above). If necessary, apply a little superglue to the arms to hold them in place.



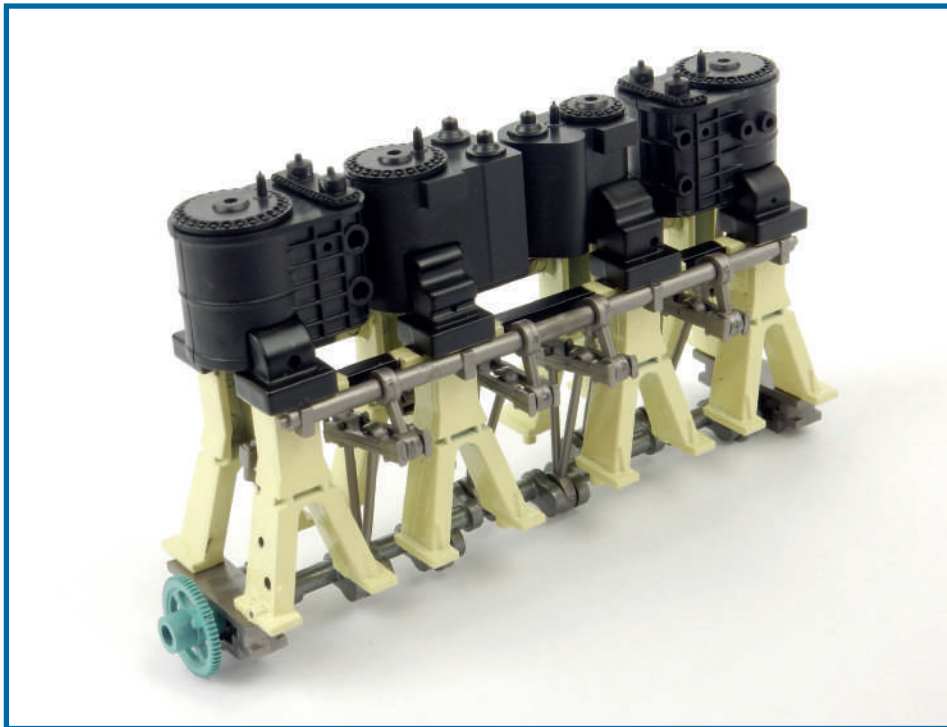
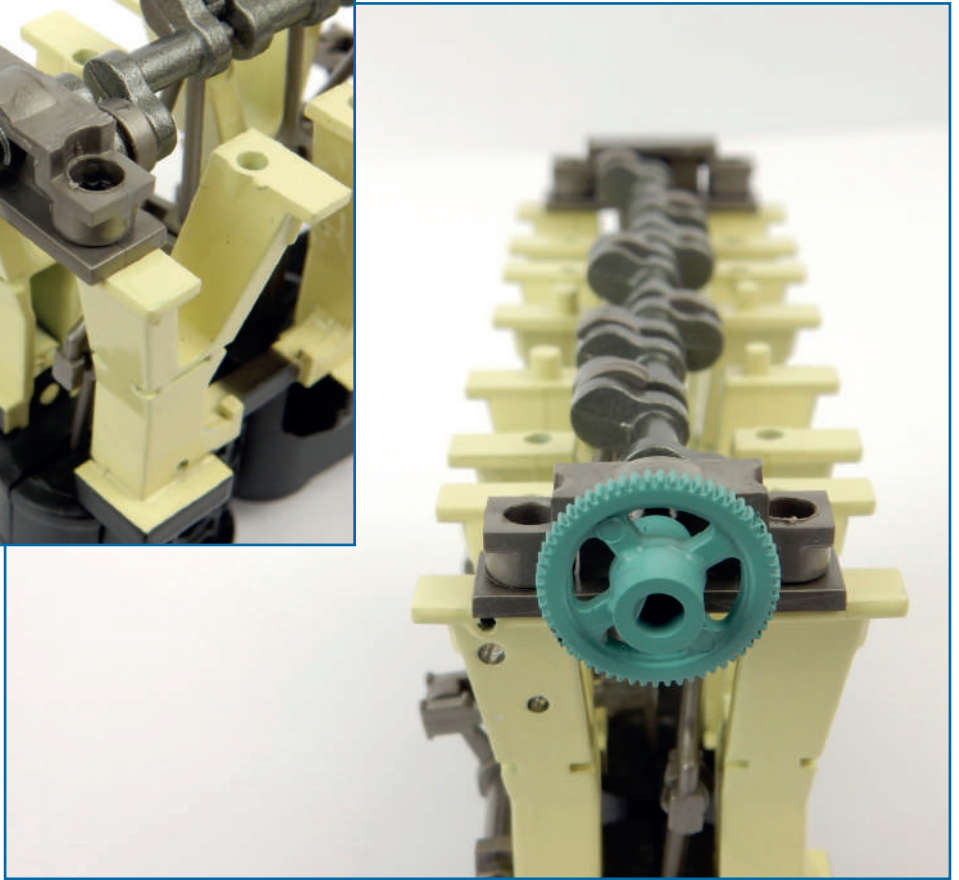
7 Take the four stop plates **29C**, **29D**, **29G**, **29H**. Once again, note the position of the long shaft at the end of the crankshaft **29B** (circled in blue). Also, note the difference in shape and size: parts **29G** and **29H** are shorter, and have a raised detail. Turn the engine assembly upside down and fit the upper stop plates **29G** and **29D** between the crankshaft and the feet of the end columns. Raised screw sockets on the feet of the columns fit into the holes in the stop plates and the ends of the crankshaft are held between the tabs on the stop plates. Note the position of the raised hump on the upper stop plate **29G** (blue arrow, below).

Fit the lower stop plates on the assembly and fix each of them in place with two **CM** screws.





8 Fit the flywheel to the end of the crankshaft: note that one side of the hole in the flywheel is flattened and matches the shape of the end of the shaft. Use a little glue to hold the flywheel in place if necessary.

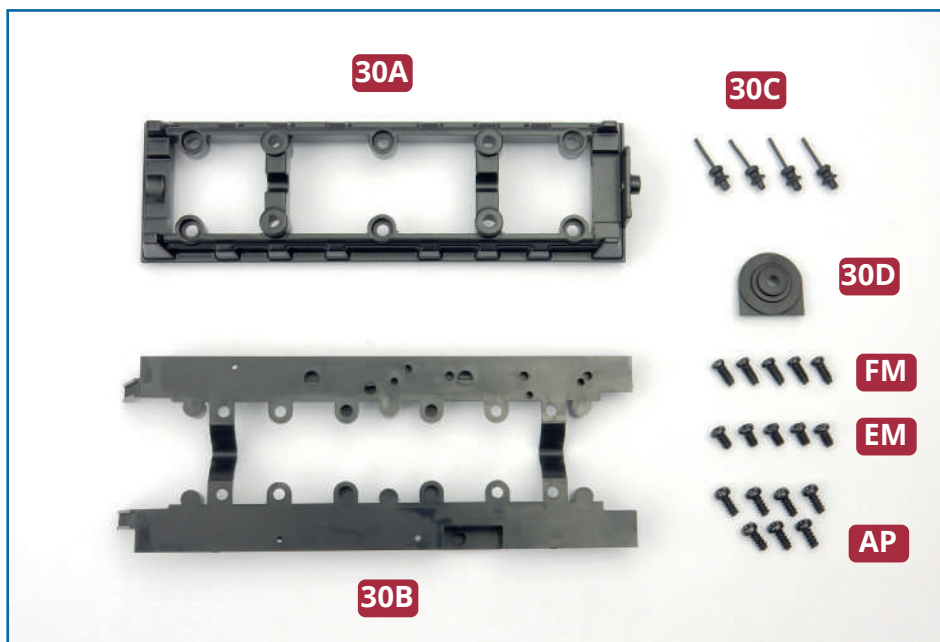


Completed work

The second reciprocating engine is almost complete.



BASE OF THE SECOND ENGINE



PARTS IN THIS ISSUE

30A Base for the engine

30B Catwalk

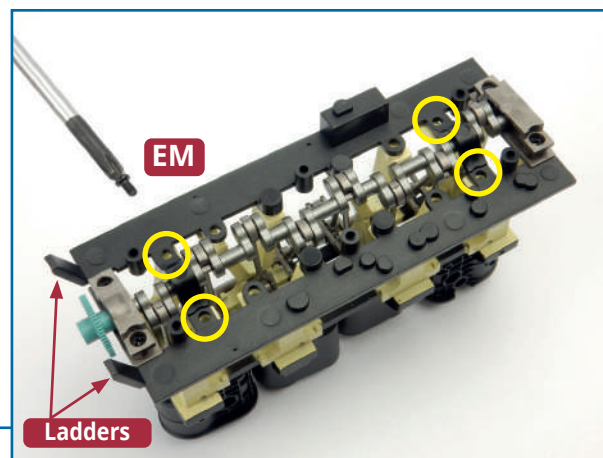
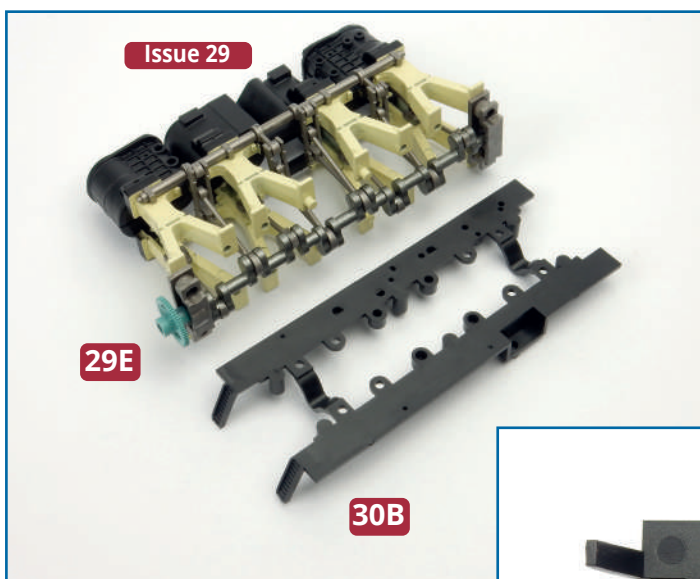
30C Exhaust valves (x 4)

30D End plate

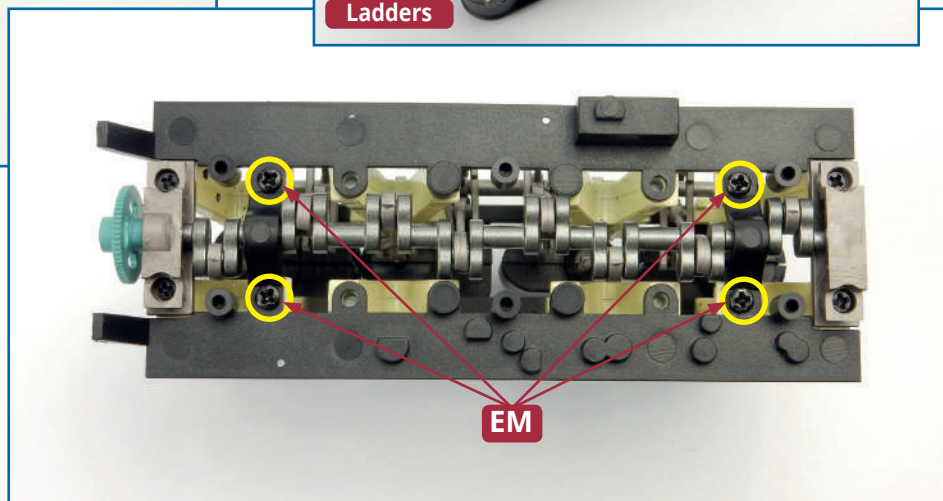
FM Five 2.3 x 5mm PM screws (1 spare)

EM Five 2.3 x 4mm screws (1 spare)

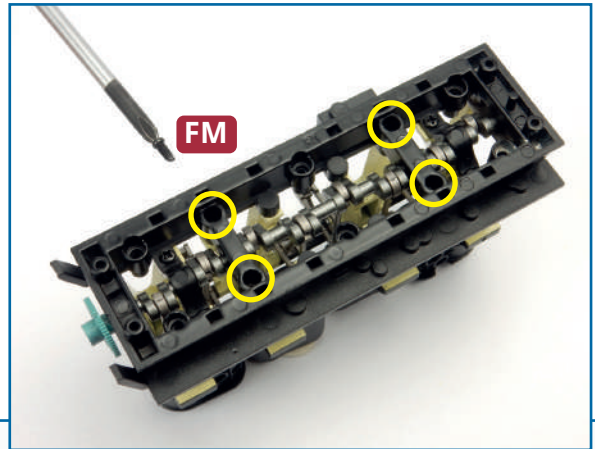
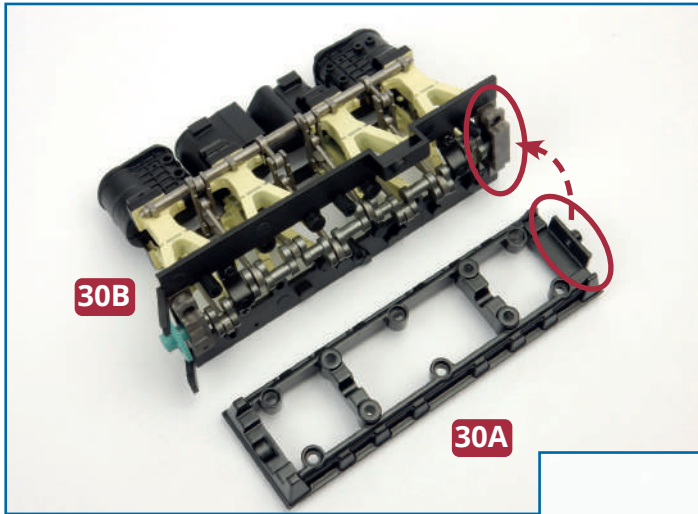
AP Seven 2.3 x 5mm PM screws (1 spare)



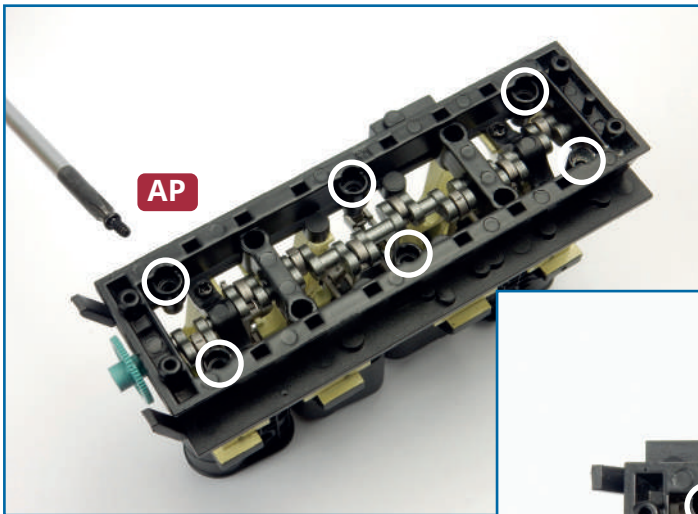
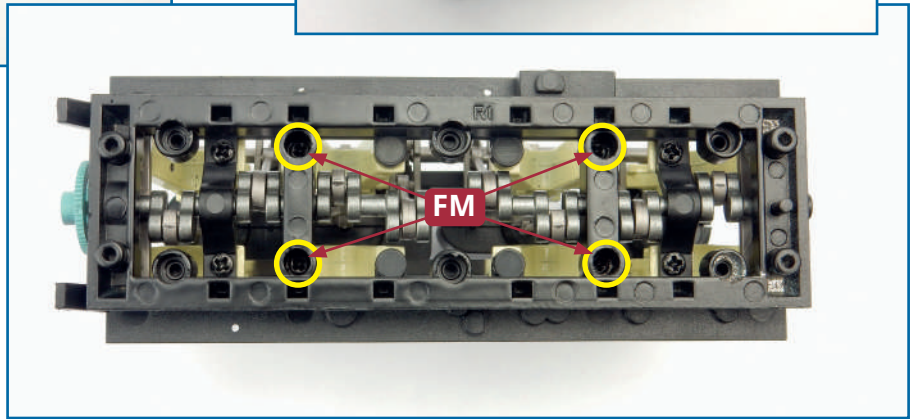
1 Take the engine assembly from issue 29 and the catwalk **30B**. Position the catwalk with the two ladders on either side of the flywheel **29E**. Fix the base to the engine assembly with four **EM** screws (circled in yellow).



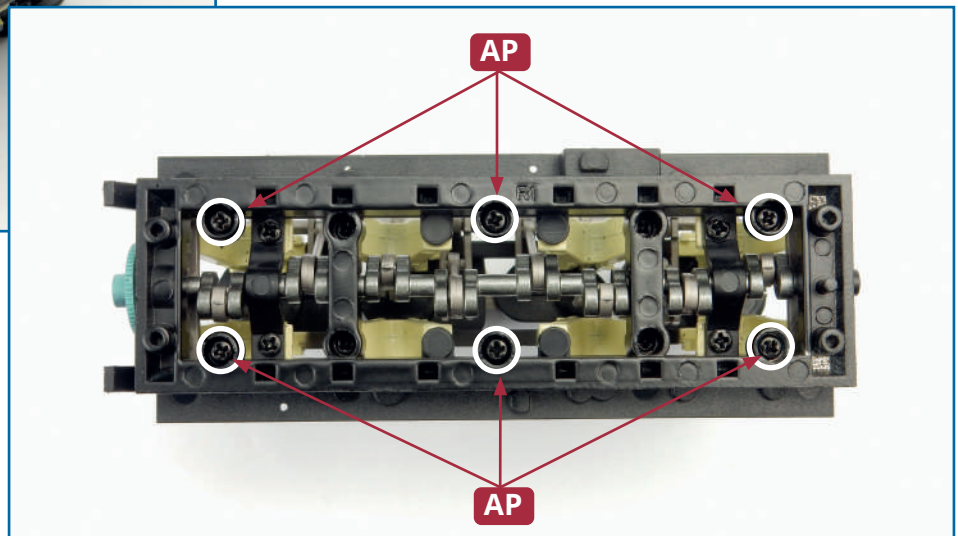
★ STEP-BY-STEP INSTRUCTIONS ★

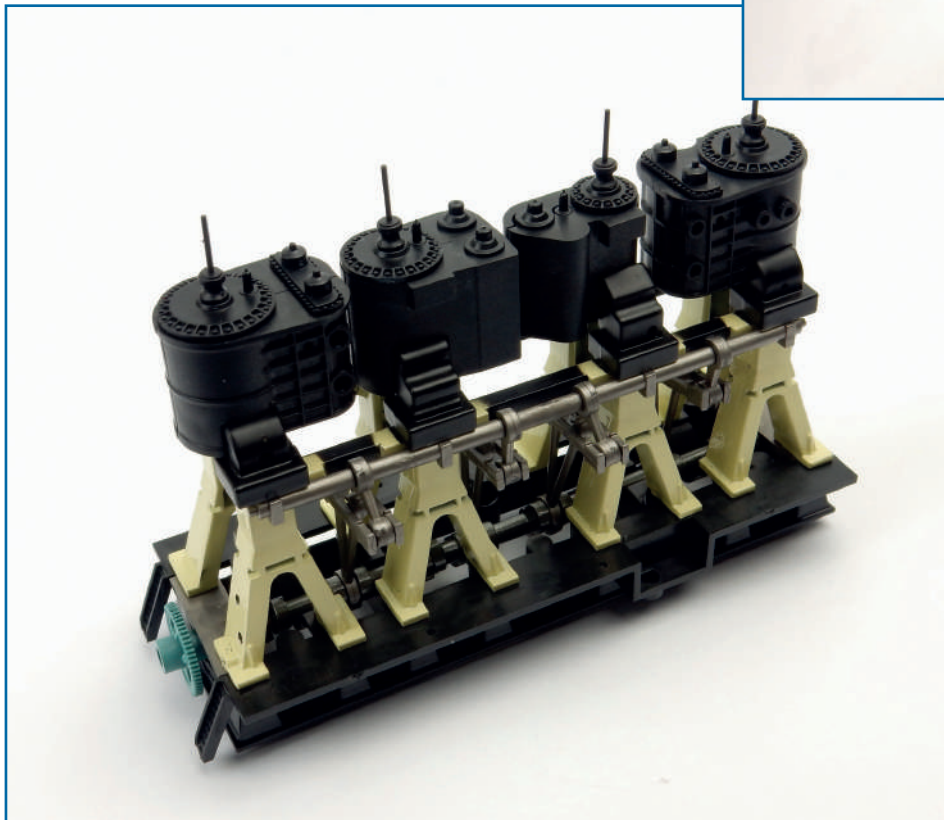
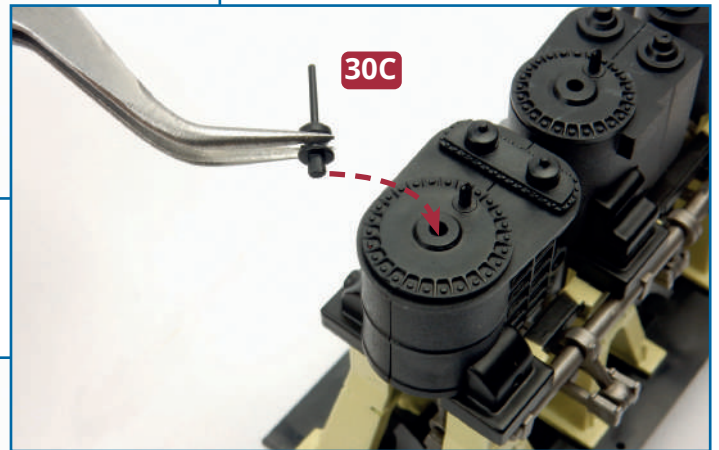
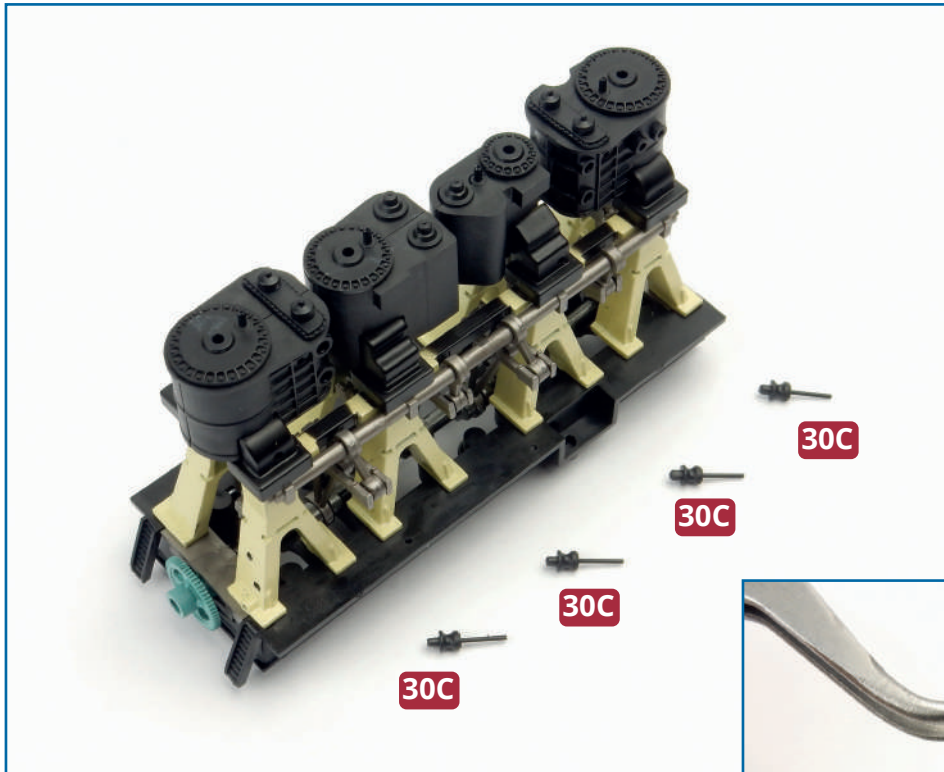


2 Position the base **30A** over the catwalk **30B**. Note the position of the plate on part **30A**, which aligns with the end of the engine assembly. Fix the base to the feet of the inner columns of the engine with four **FM** screws (circled in yellow). Tighten each screw a little at a time in rotation until the base is firmly fixed.

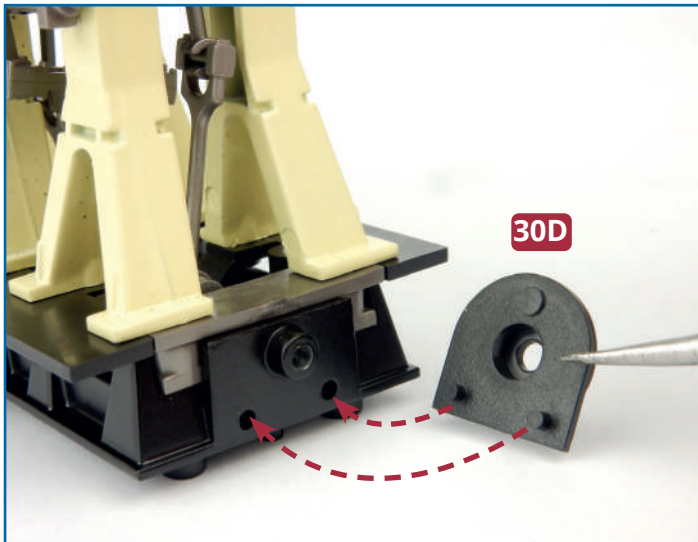


3 Complete the assembly of the base by fixing the base to the catwalk with six **AP** screws (circled in white).

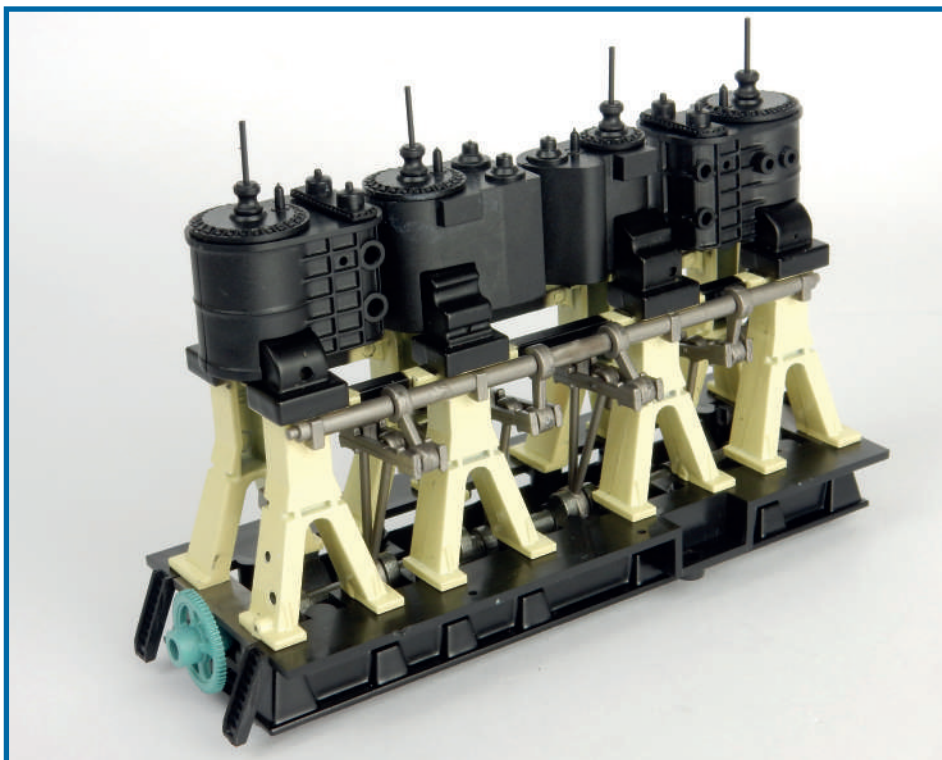
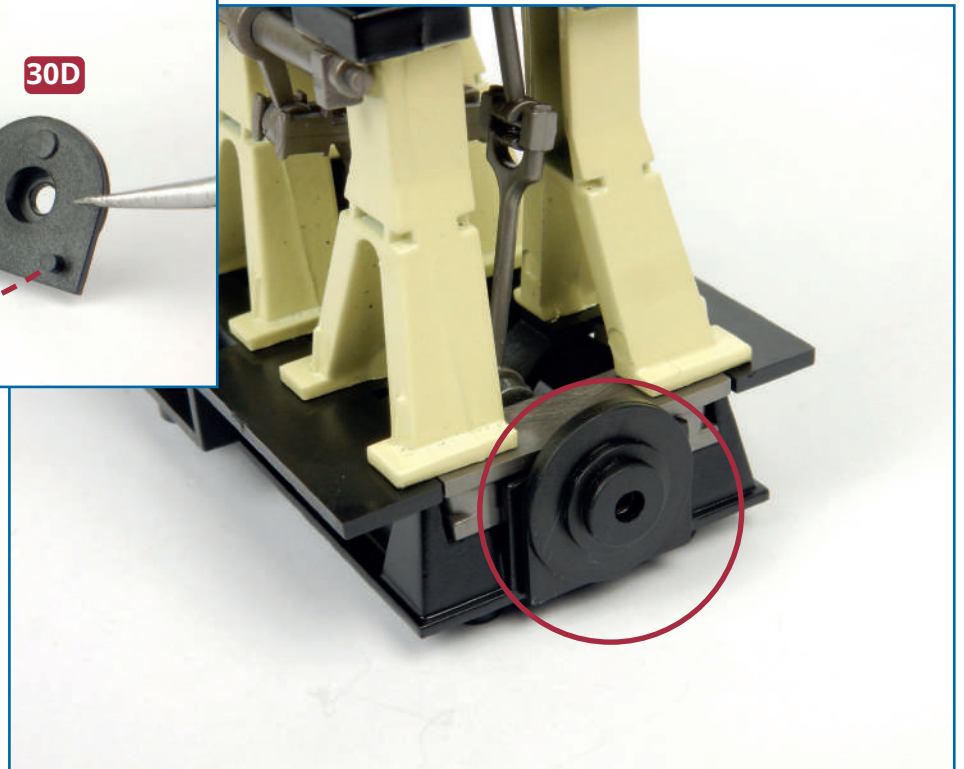




4 Take the four exhaust valves **30D** and fit them into the centre of each of the cylinder heads. Use a little glue to hold them in place if necessary.



5 Take the end plate **30D** and fit it to the front end of the engine (at the opposite end to the flywheel). Use a little superglue to hold the part in place.



Completed work

The second engine has been completed, with a catwalk, base and exhaust valves.



STEAM PIPES FOR THE FIRST ENGINE



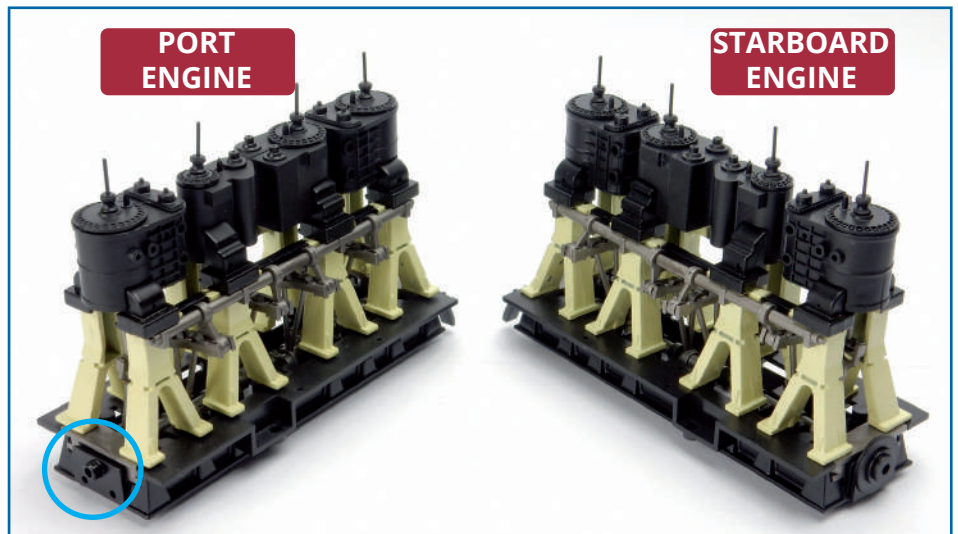
PARTS IN THIS ISSUE

- 31A** Turbine steam pipeline
- 31B** Hand wheel
- 31C** Hand-wheel support
- 31D** Reversing gear
- 31E** Low pressure pipelines

- 31F** Pipe A
- 31G** Pipe B
- 31H** Pipe C
- 31I** Pipe D
- 31J** Detail

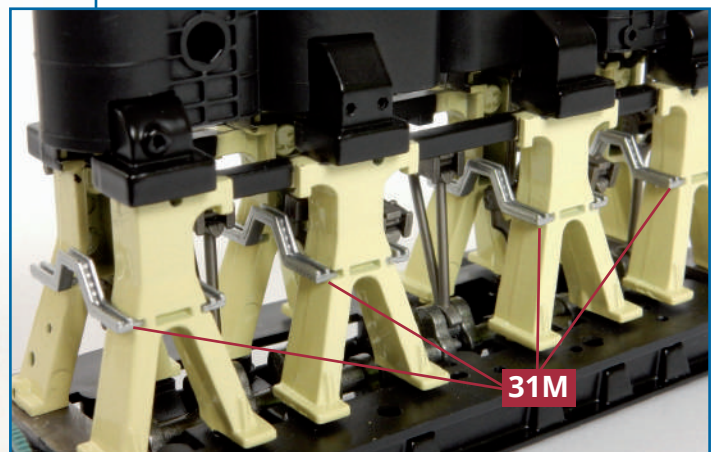
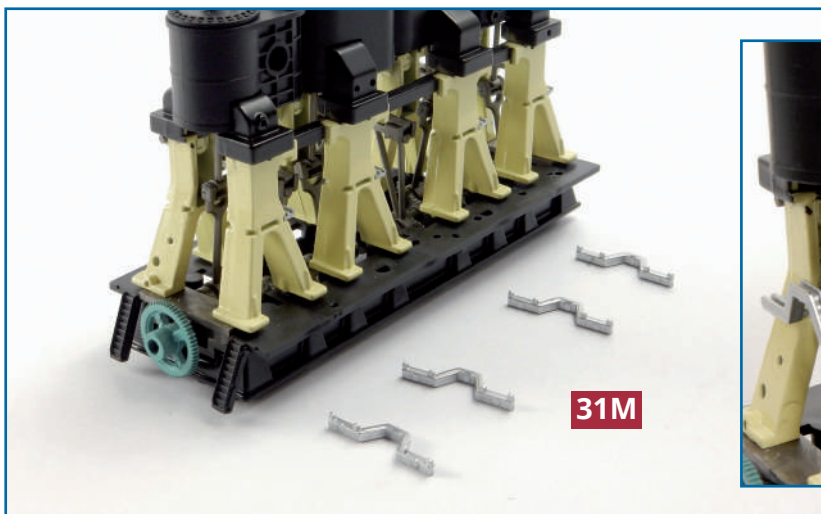
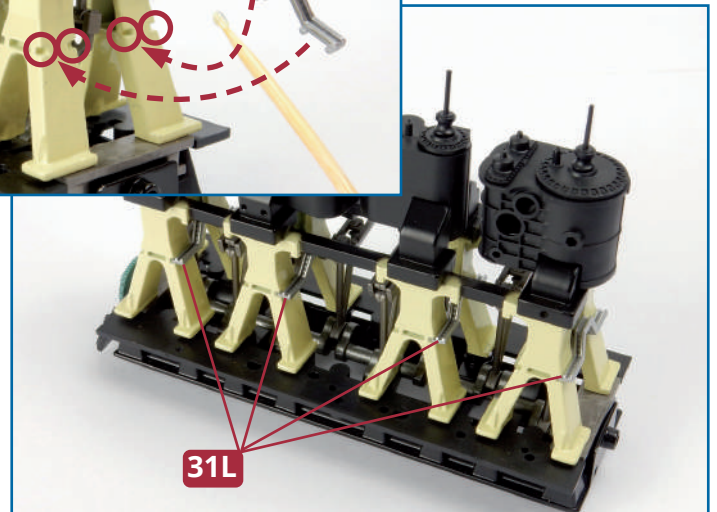
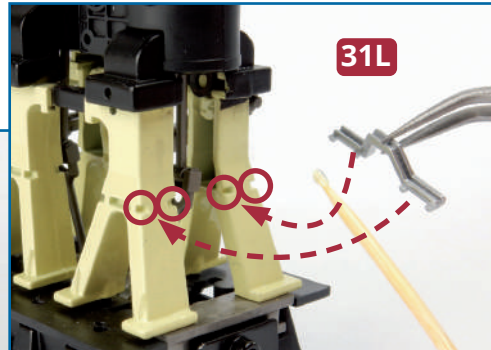
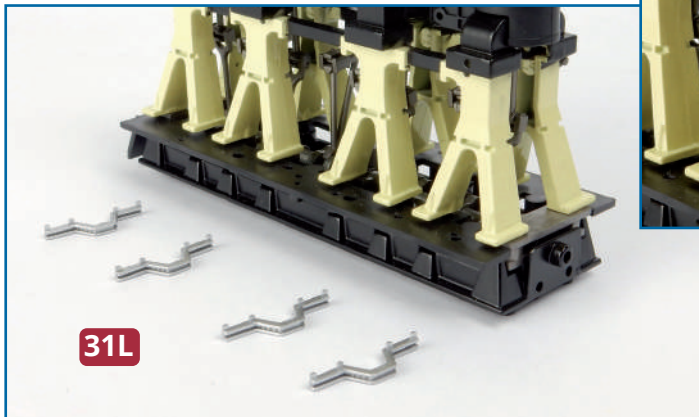
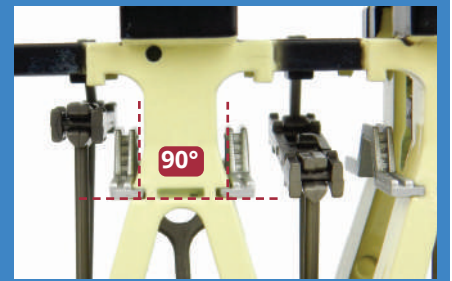
- 31K** Pipe E
- 31L** Gangway A (x 4)
- 31M** Gangway B (x 4)

1 Two reciprocating engines were assembled in previous issues. In this issue, work is continued on the port engine, which was completed in issue 10. The two engines are shown here (right), and are almost mirror images of each other: the front of the port engine, which is slightly different from the starboard engine, is circled in blue. Make sure you are working on the correct assembly.



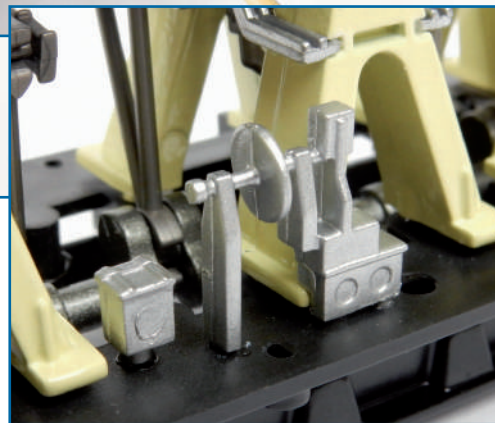
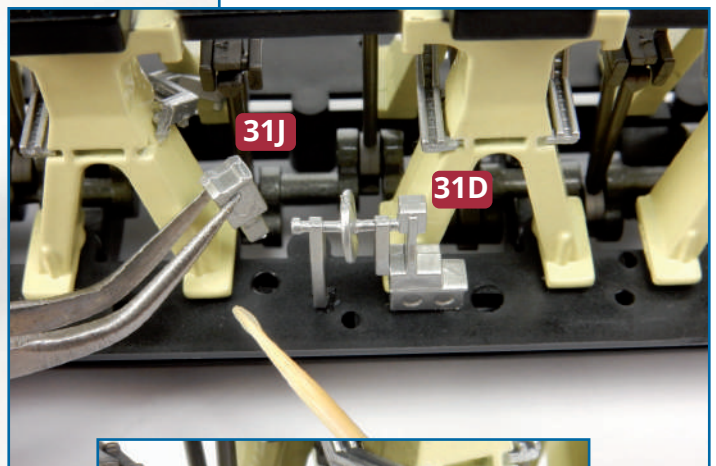
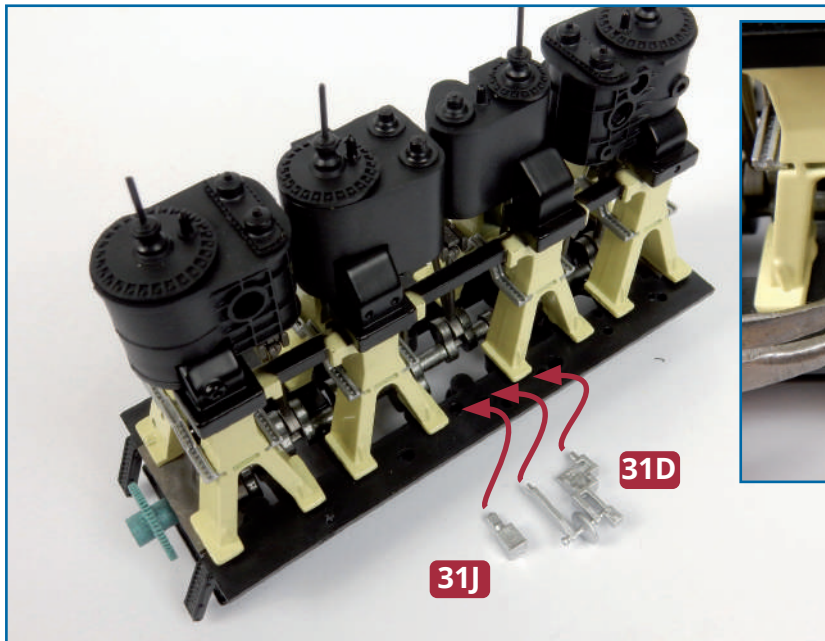
2 Take the four gangways A, **31L**. Check how they fit on the forward sides of the four columns. Ensure the gangways are completely upright and do not lean in towards the columns (see box, right) so they do not block the vertical movement of connecting rods. You can test they are in the correct position by turning the shaft. Fix the gangways in place one at a time by applying a little superglue in the holes and holding the parts upright until the glue has set.

Important advice
Gangways **31L** and **31M** must be positioned upright, at 90° to the horizontal, as shown right. Check that they do not lean inwards, as this would block the connecting rods and the rotation of the drive shaft.

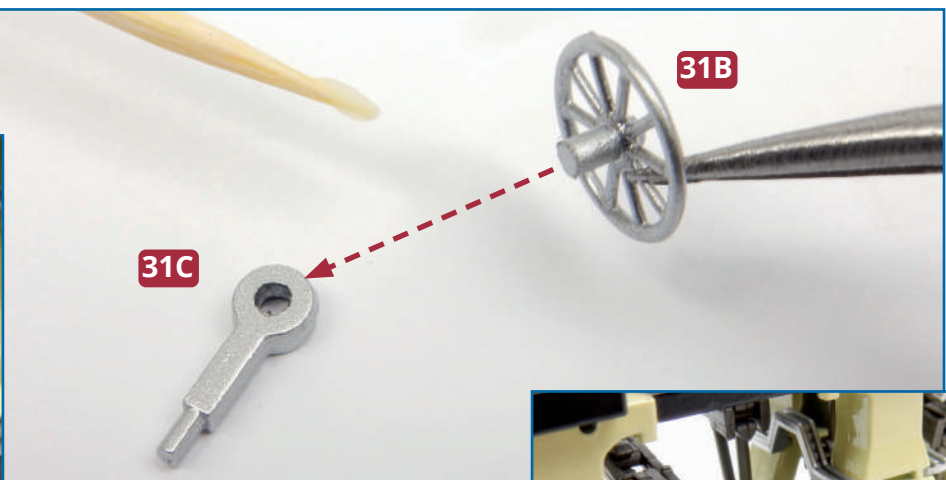
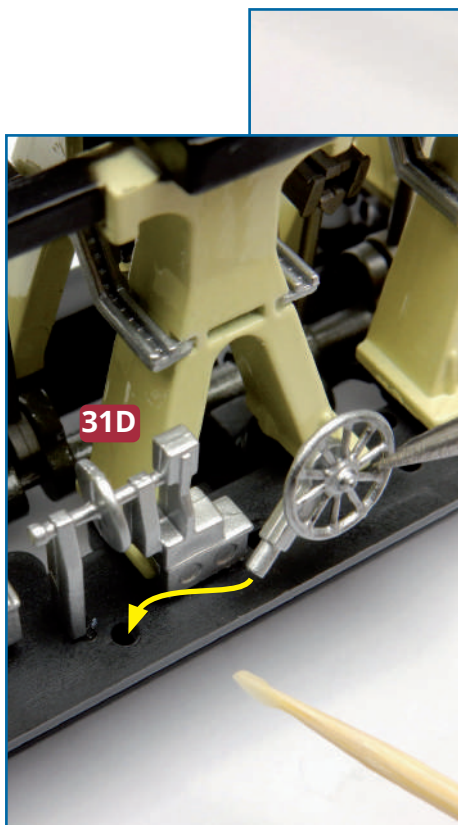


3 Check the fit of the four gangways B, **31M**, on the other sides of the columns, as shown. Again, they must be upright and not leaning in towards the columns, so that the

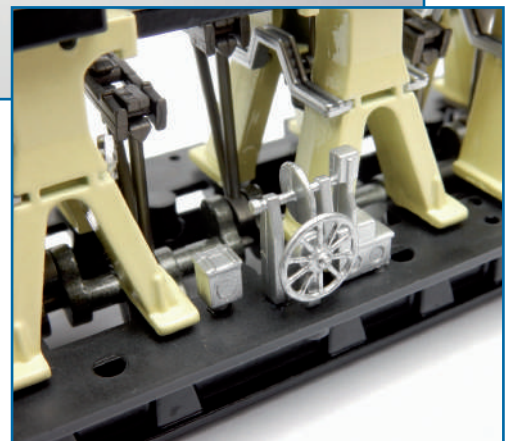
drive shaft can rotate freely. Fix the parts in place one at a time by applying a little glue to the holes and holding the gangways upright until the glue has set.



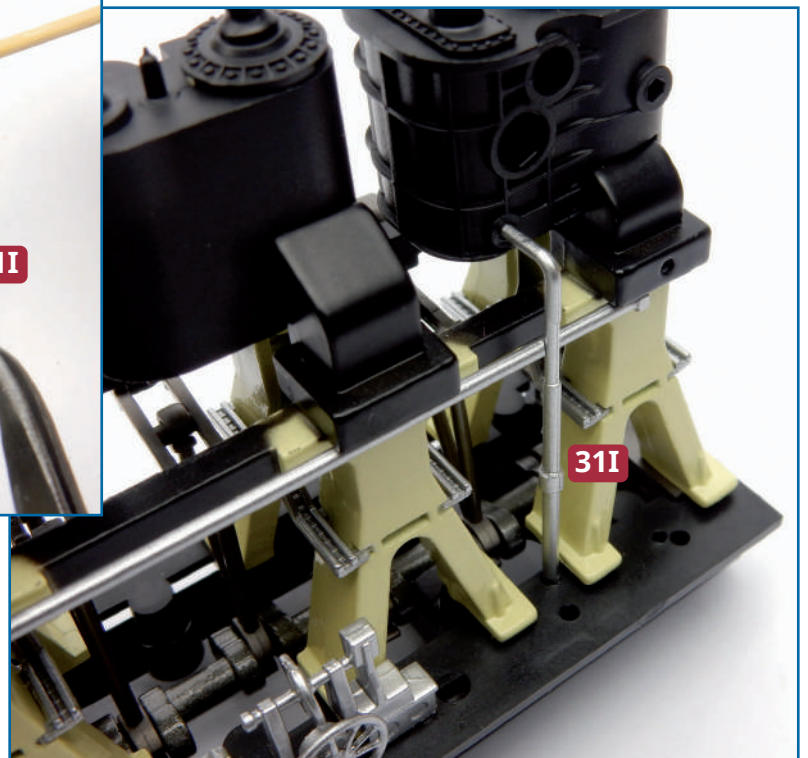
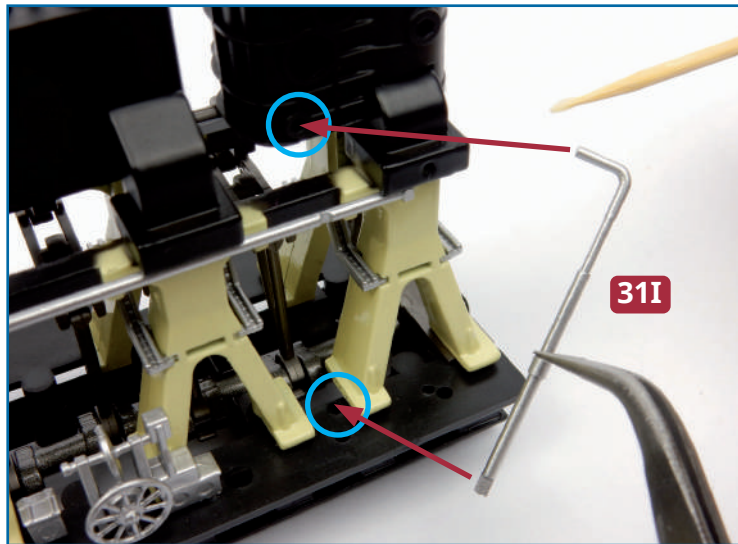
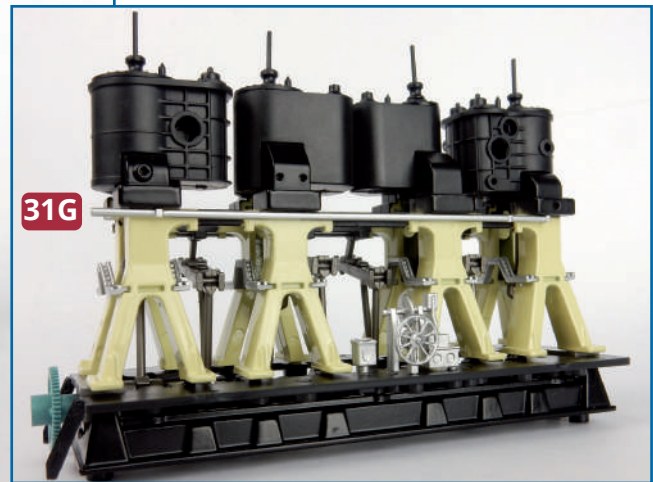
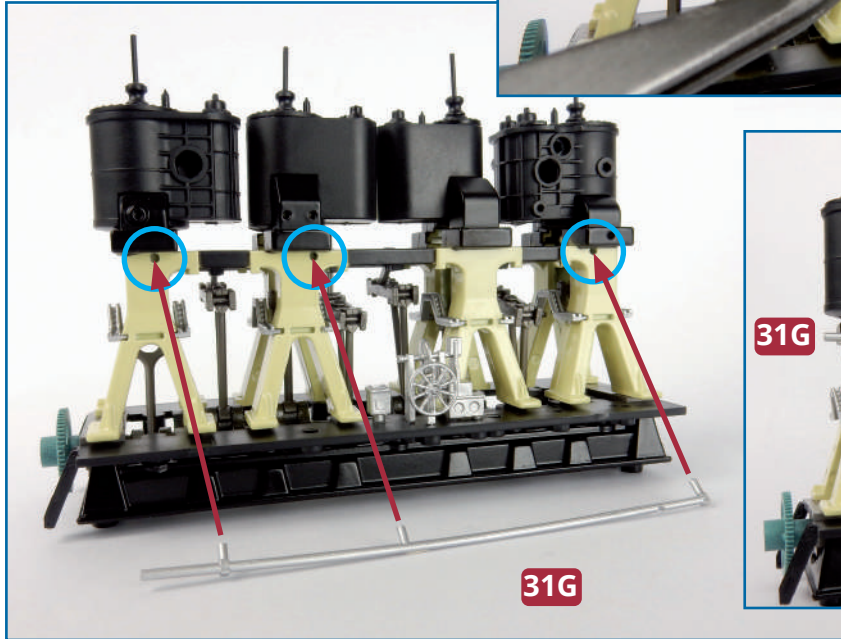
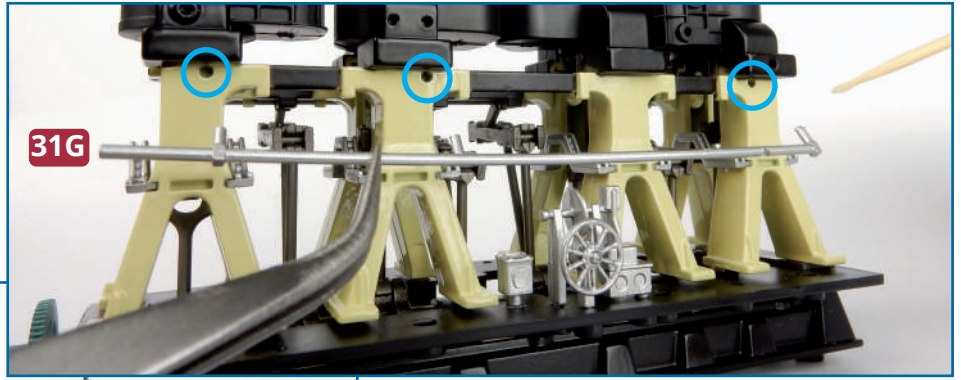
4 Take the reversing gear **31D** and the detail **31J**. Check how the pegs on these parts fit into the holes in the starboard side of the plinth, as shown. Use a little glue to fix them in place, if necessary.



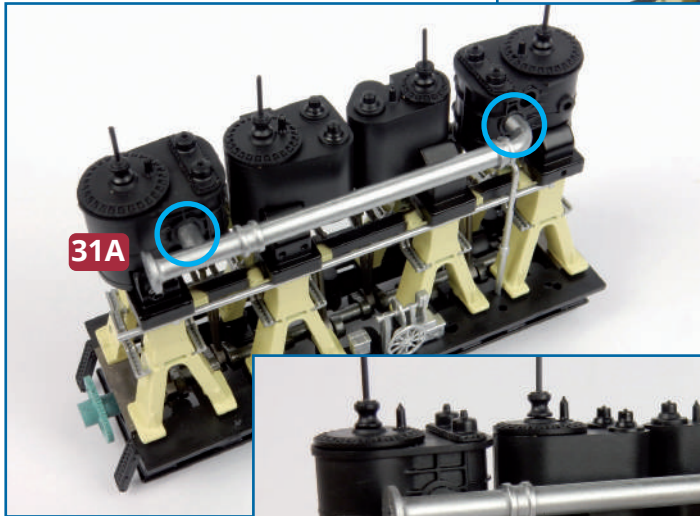
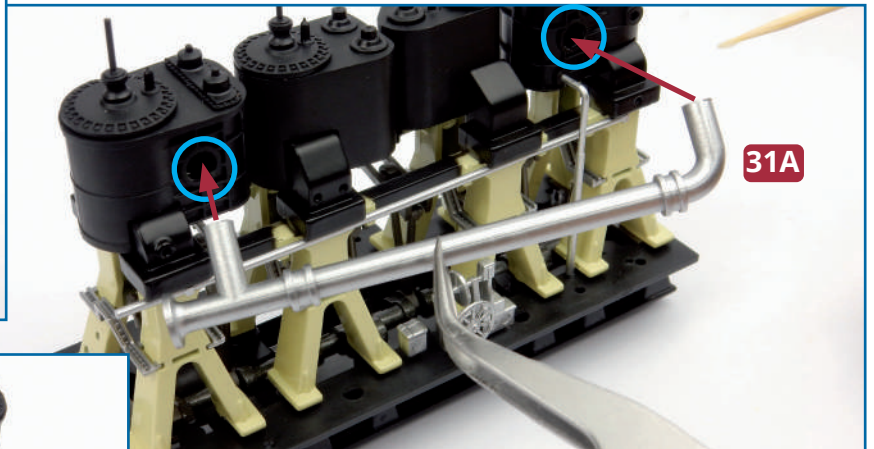
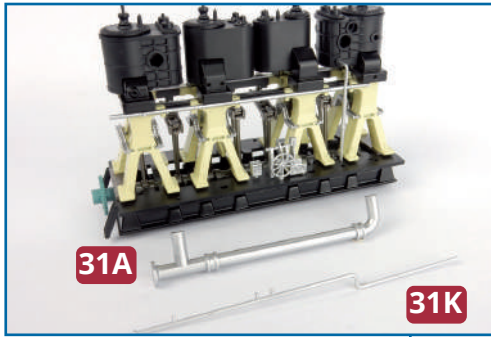
5 The peg on the hand wheel **31B** fits into the hole in the support **31C**. Check how part **31C** fits into the base: the peg on the base of part **31C** is D-shaped, so it will only fit one way. Use a little glue to fit part **31B** to the front of part **31C** then glue the peg on part **31C** in place.



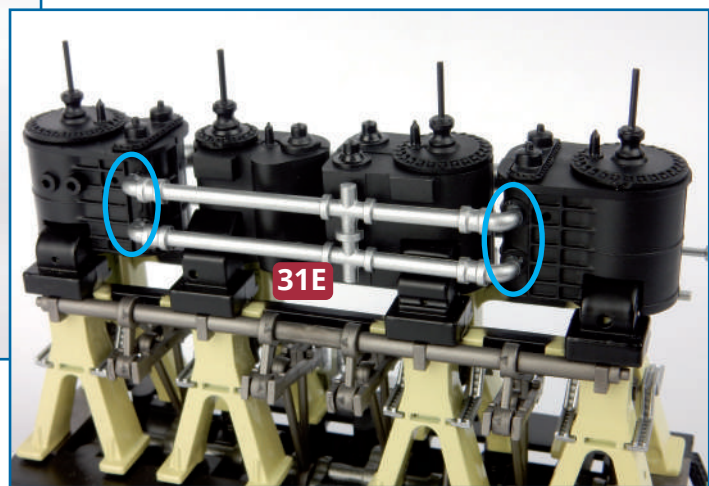
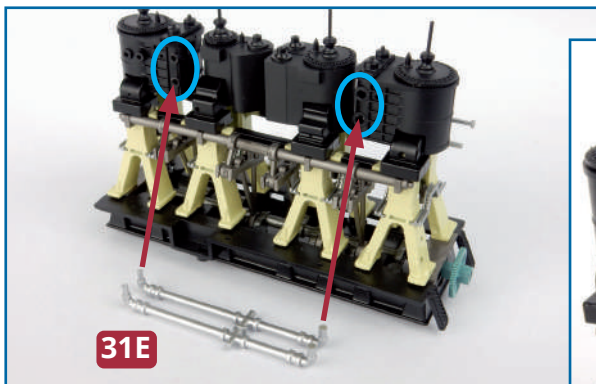
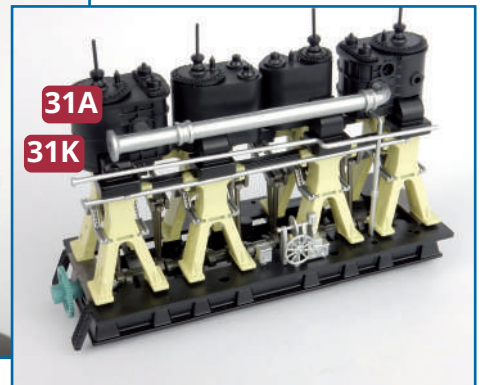
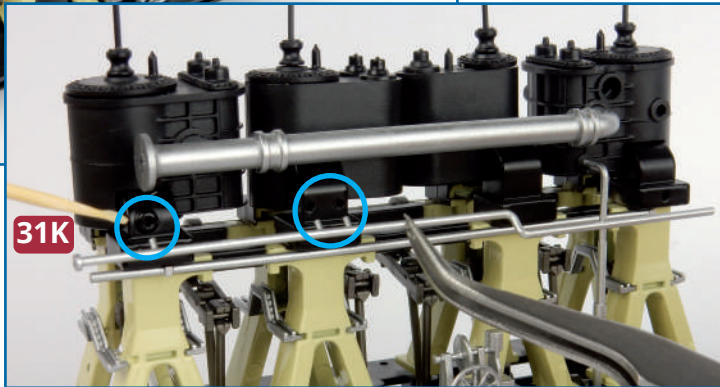
6 Take pipe B, **31G**, and fix it to the starboard side of the engine: three pegs fit into the tops of three of the columns, as indicated. Use a little glue to hold the pegs in place.



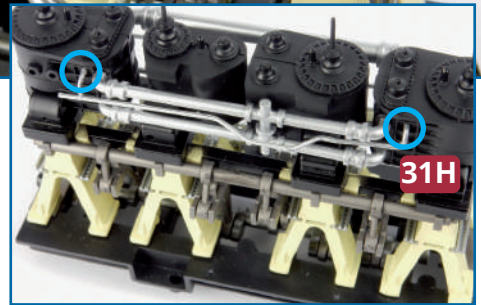
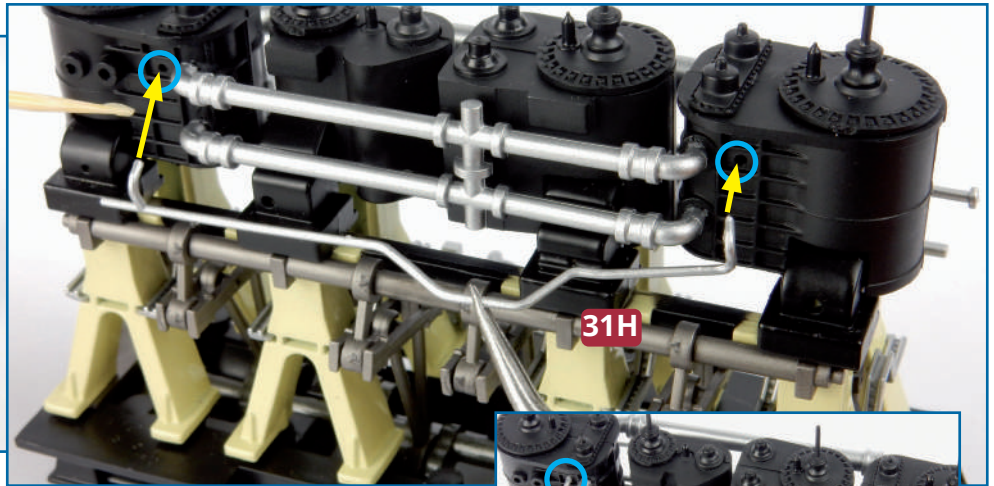
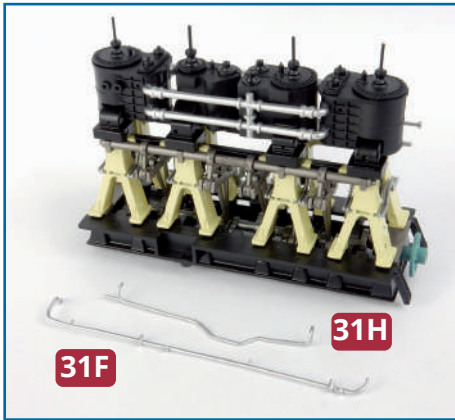
7 Pipe D, **31I**, fits vertically over pipe B, **31G**: fit the D-shaped peg at the base of pipe D into the corresponding hole in the plinth and fit the peg at the top into a hole in the front cylinder. When you are happy with the fit, apply a little glue to the pegs to fix the pipe in place (right).



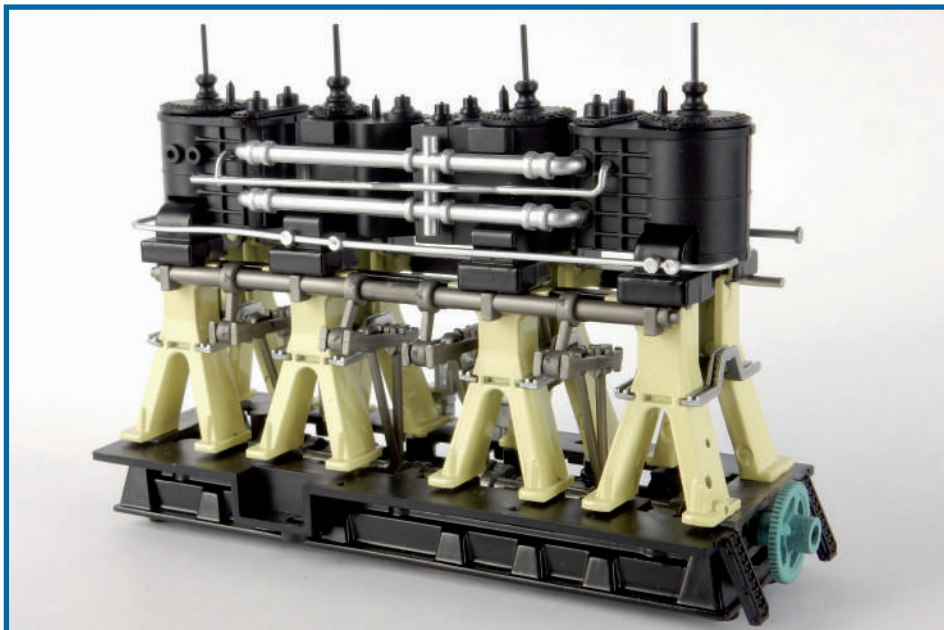
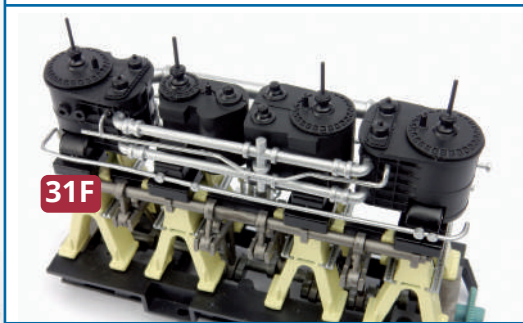
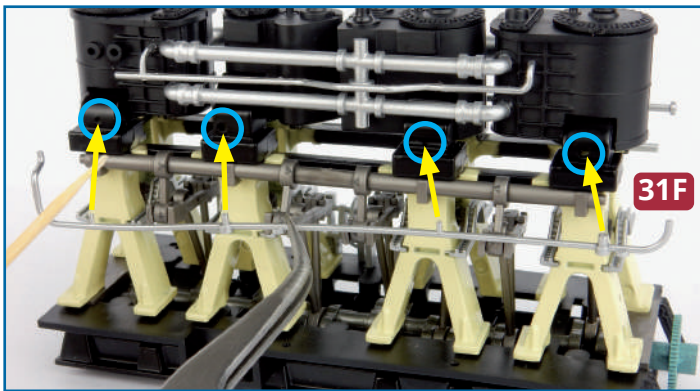
8 Take the turbine steam pipeline **31A** and pipe E, **31K**. The ends of the pipeline fit into the cylinders at each end of the engine. Glue in place if necessary. The pegs on tube E, **31K**, fit in the holes at the base of the cylinders, as shown below. **NOTE:** you may need to remove 'flash' from mis-shapen pegs with a fine file.



9 Turn the engine around so that you can access the port side. The ends of the low pressure pipelines **31E** fit into the end cylinders, as shown. Fix in place with a small amount of glue if necessary.



10 Take the last two tubes A **31F**, and C, **31H**. Both pipes are fitted on the port side of the engine. Fix the pipe C, **31H**, between the two low pressure pipelines (above and right). Pegs on pipe A, **31F**, fit into holes at the base of the cylinders (below). **NOTE:** you may need to remove 'flash' from mis-shapen pegs with a fine file.



Completed work

This shows the port engine with the steam pipes and other details fitted.



ENGINE DETAILS AND TWO PUMPS



PARTS IN THIS ISSUE

32A Valve for large pump

32B Base of lubrication pump

32C Detail B for large pump

32D Detail A for large pump

32E Base of large pump

32F Detail A for lubrication pump

32G Pressure gauge for large pump

32H Detail C for large pump

32I Tube for lubrication pump

32J Auxiliary engine part A

32K Auxiliary engine part B

32L Vapour separator for engine cylinder

32M Pipe for large pump

32N Control for large pump

32O Detail B for lubrication pump

32P Auxiliary engine part C

32Q Valve pipe

32R Large pump connection

32S Detail D for large pump

32T Valve control rods

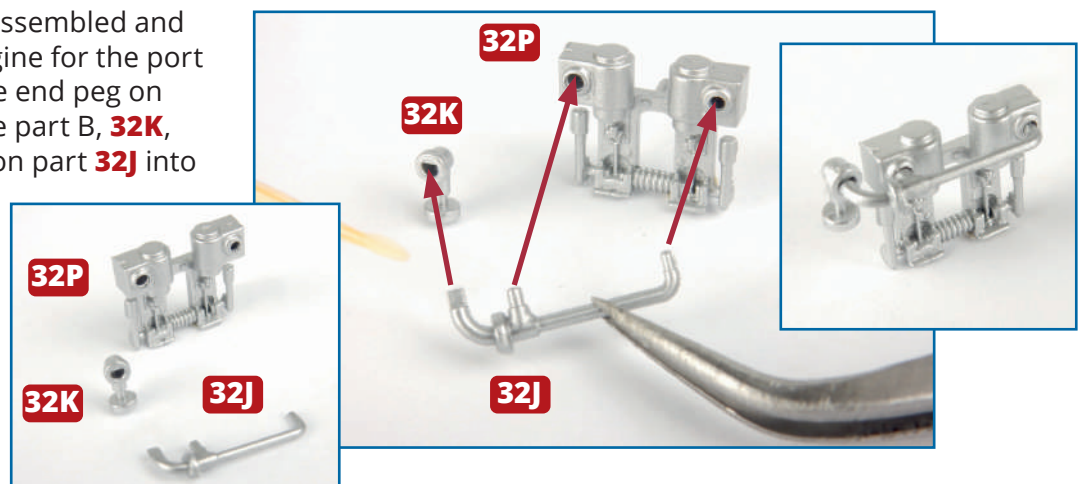
32U Reversing engine

32V Gangway

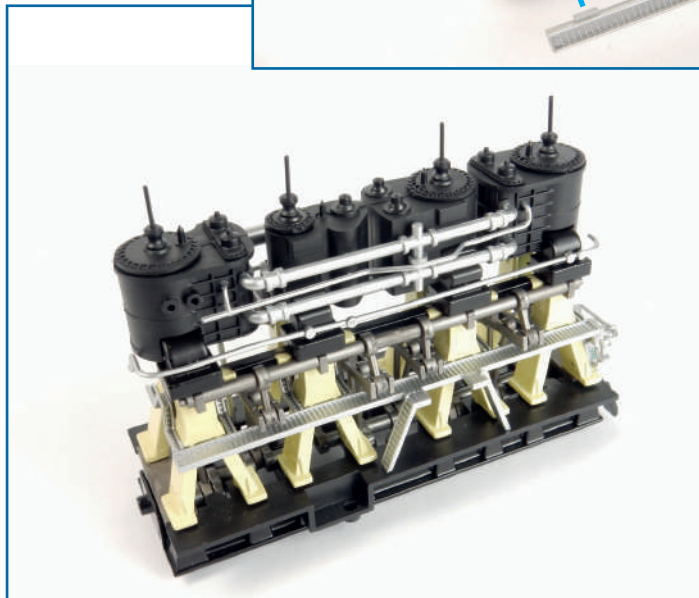
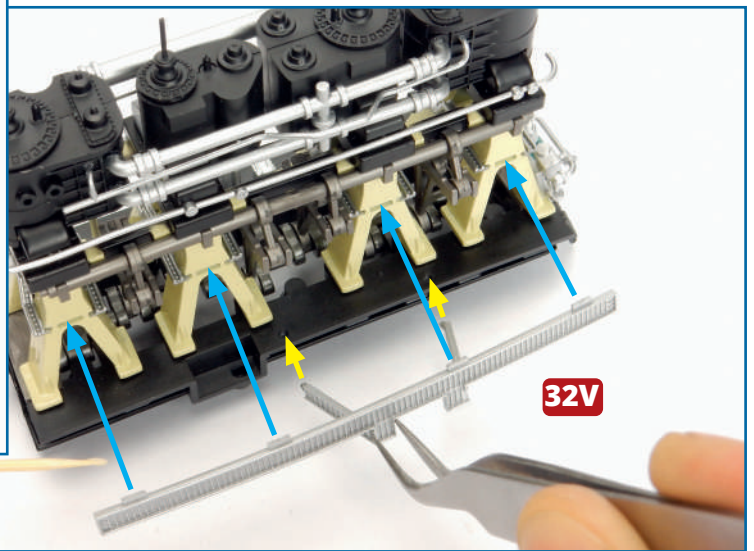
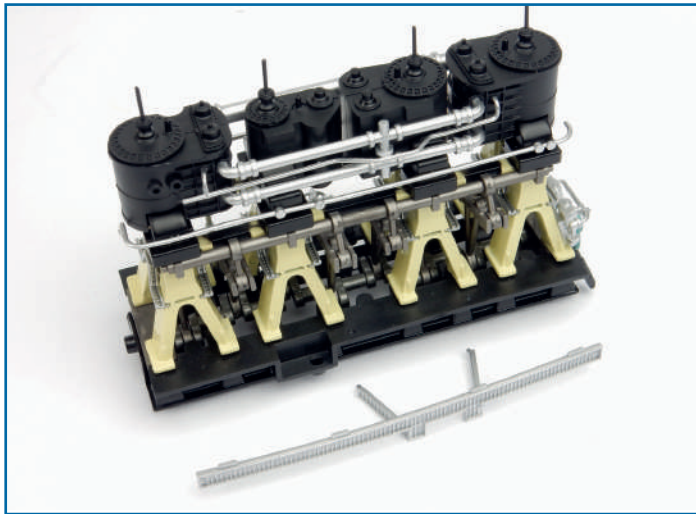
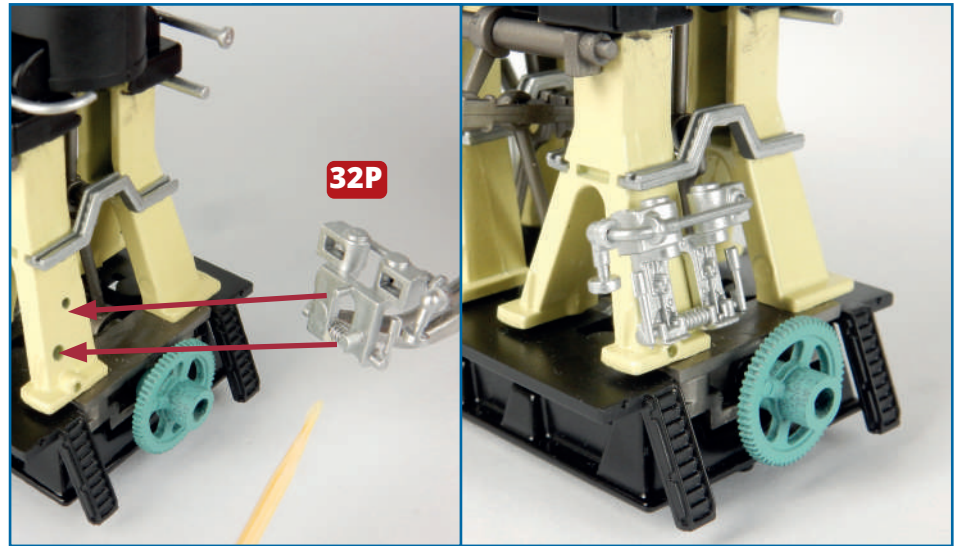
EP Four 2 x 4mm PB screws (1 spare)

FP Two 1.7 x 4mm PB screws (1 spare)

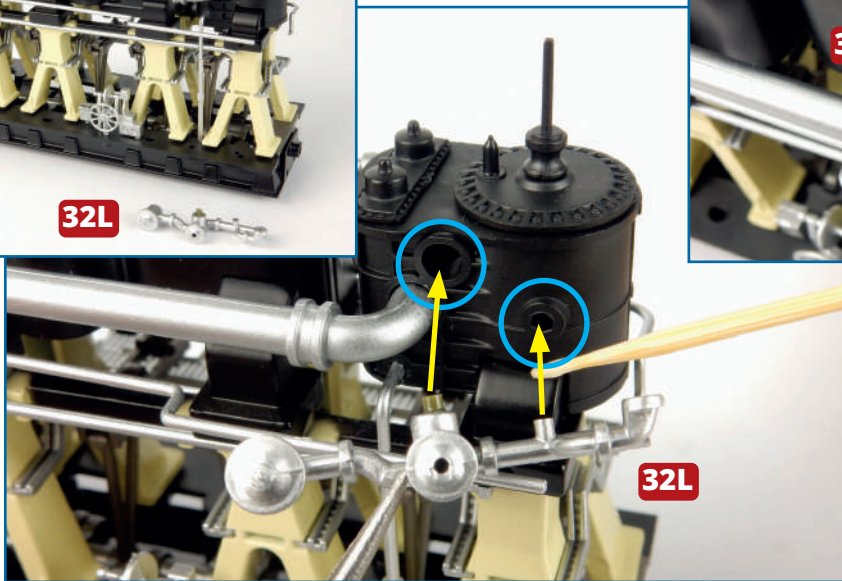
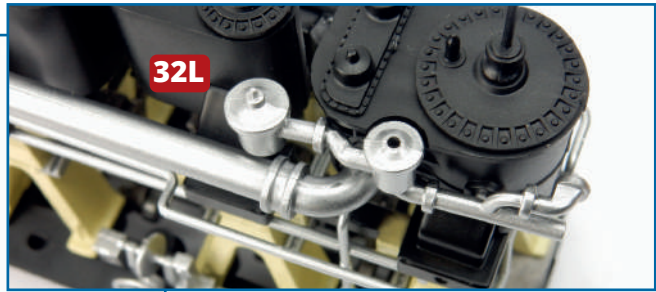
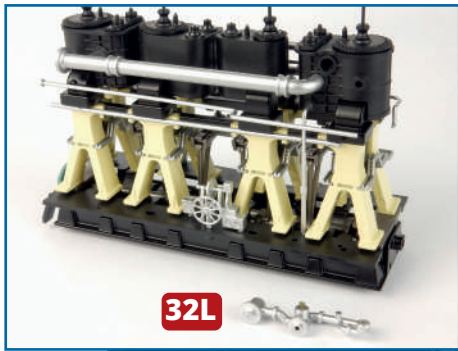
1 The first element to be assembled and fitted is the auxiliary engine for the port reciprocating engine. Fit the end peg on engine part A, **32J** to engine part B, **32K**, and fit the other two pegs on part **32J** into the sockets in engine part C, **32P**, as indicated. When you are happy with the fit, use a small amount of superglue to hold the parts in place.



2 Take the port reciprocating engine from issue 31. Fit the auxiliary engine part C, **32P**, into the end column of the engine: two pegs on the back of part **32P** fit into corresponding holes in the column. When you are happy with the fit, glue in place.

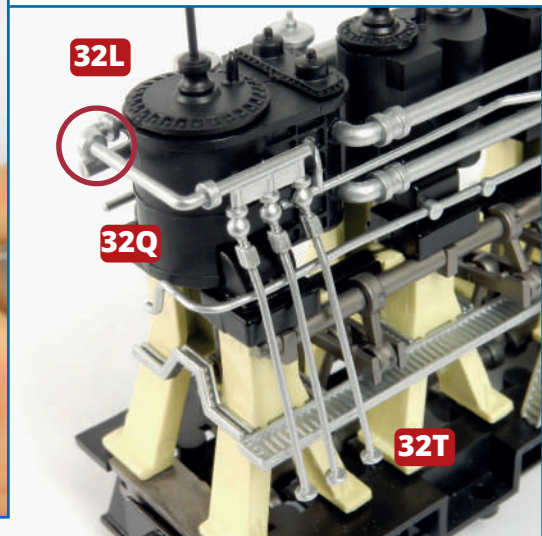
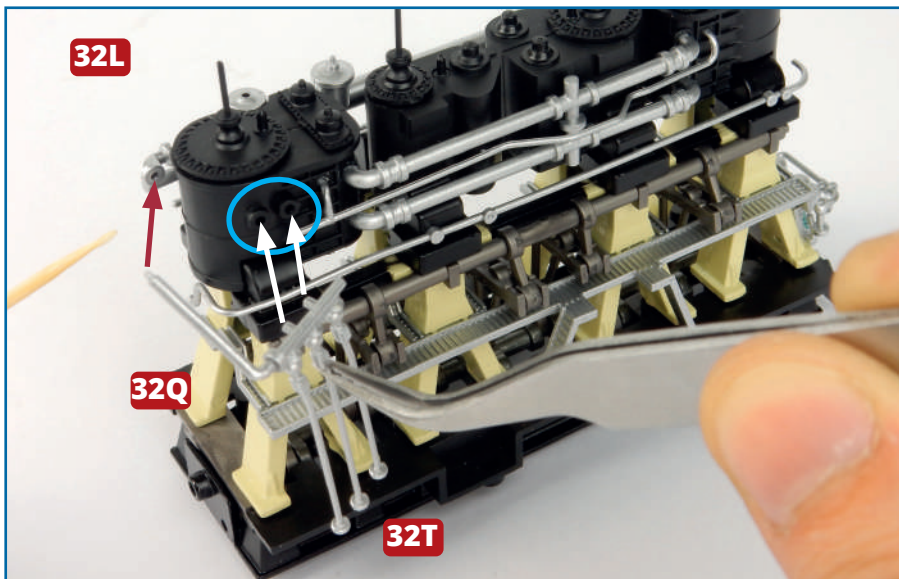
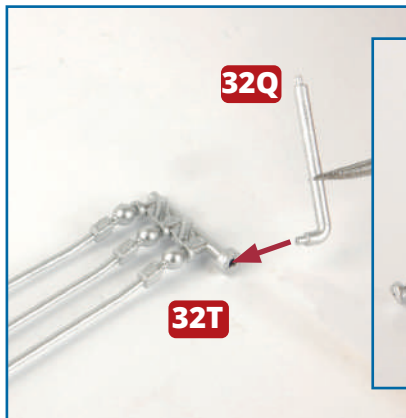


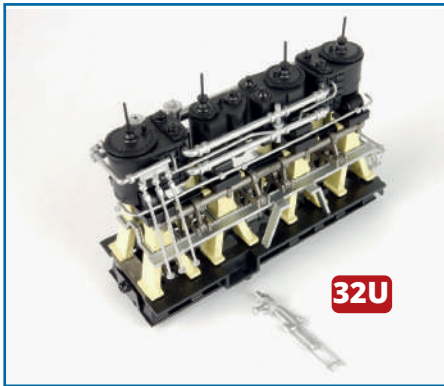
3 Take the gangway **32V** and check how it fits on the port side of the port engine. Four tabs on the gangway fit into slots in the columns (blue arrows) and a peg on the base of each of the ladders fit into holes in the base (yellow arrows). When you are happy with the fit, glue in place.



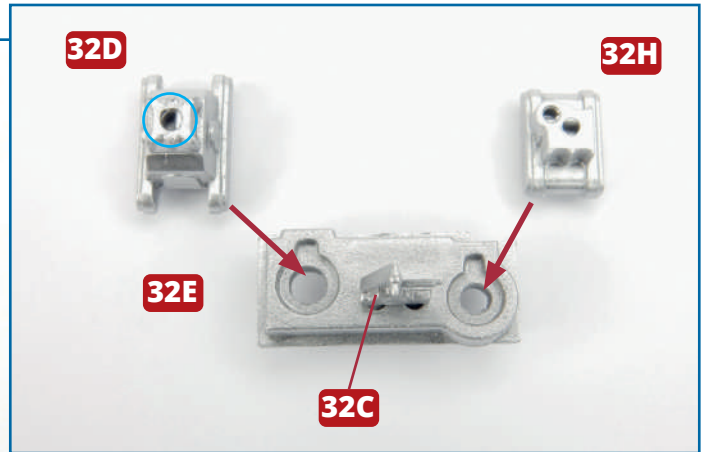
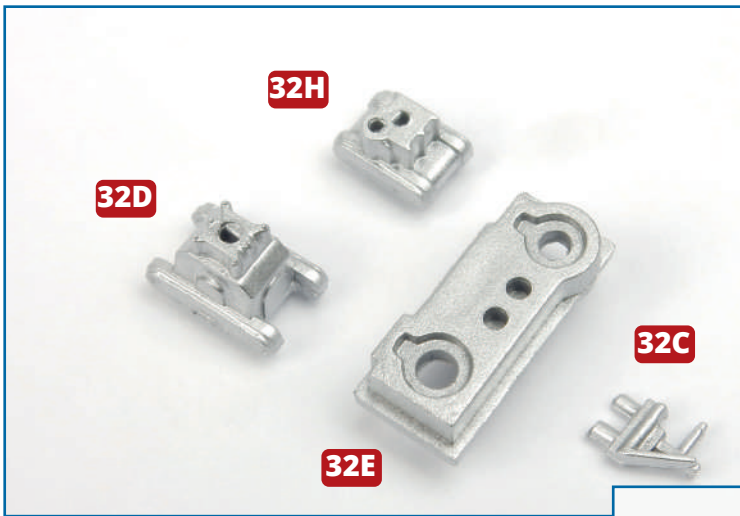
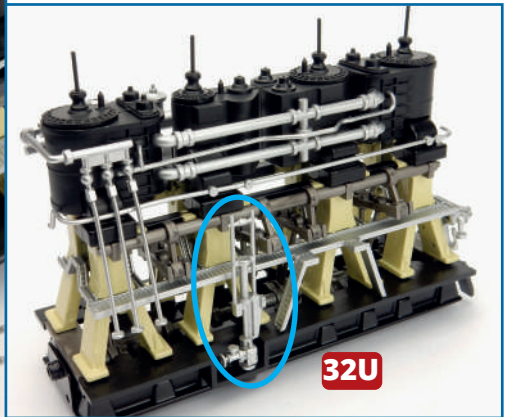
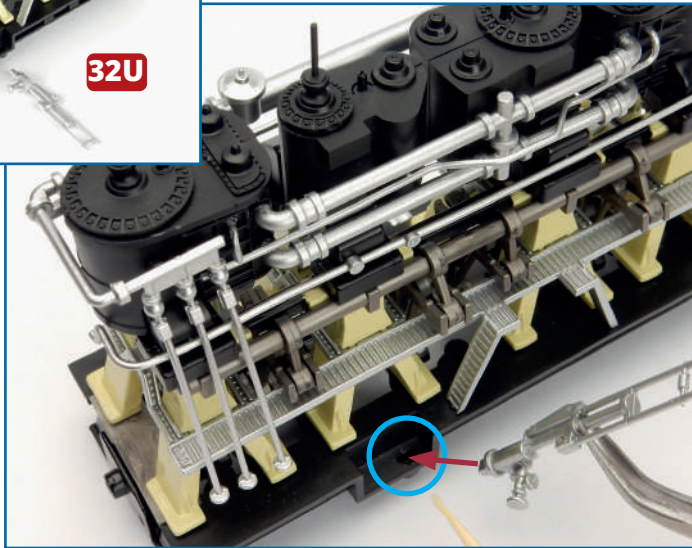
4 Turn the reciprocating engine so that you can access the starboard side. The vapour separator **32L** fits against the low pressure cylinder above the pipe **31A** fitted in the previous issue. Check how the pegs fit into holes in the cylinder and glue in place.

5 Fit the peg near the bent end of the valve pipe **32Q** into the hole in the top of part **32T**. Turn the reciprocating engine round so that you can position the valve control rods **32T** against the end column on the port side: two pegs on the top of part **32T** fit into holes in the end cylinder, as indicated (white arrows). At the same time, a peg on the end of the valve rod **32Q** fits into a hole in the vapour separator **32L** (red arrow). When you are happy with the fit, glue the pegs in place.

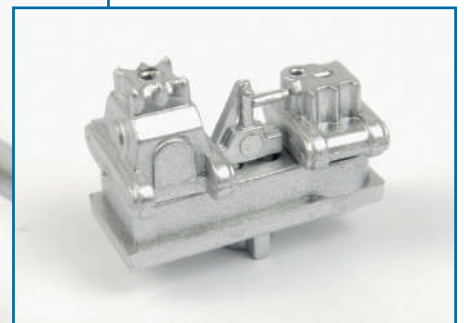
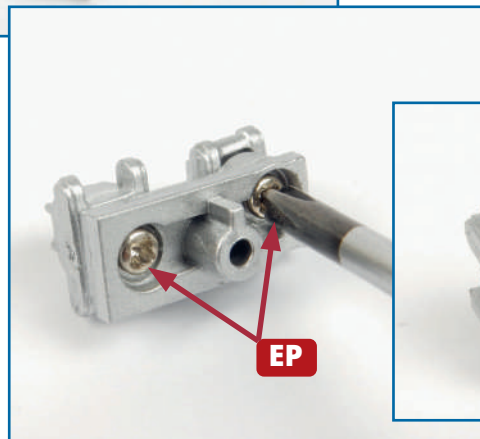


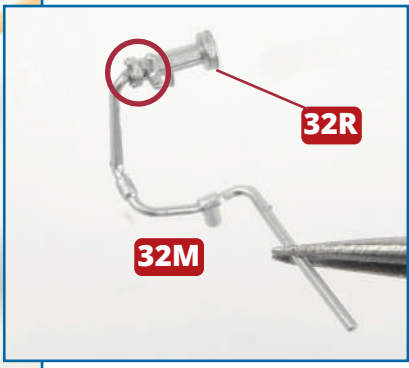
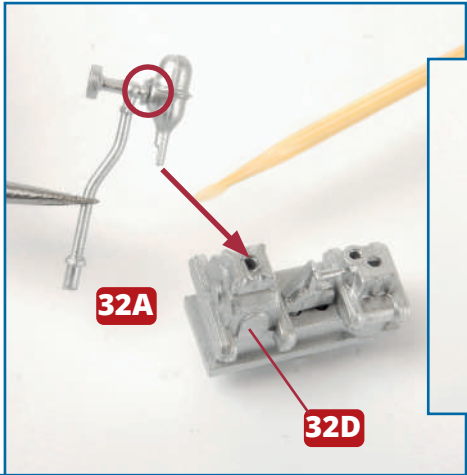


6 The reversing engine **32U** fits on the port side of the port reciprocating engine. A peg at the base of part **32U** fits in a hole in the base, as indicated. When you are happy with the fit, glue in place.



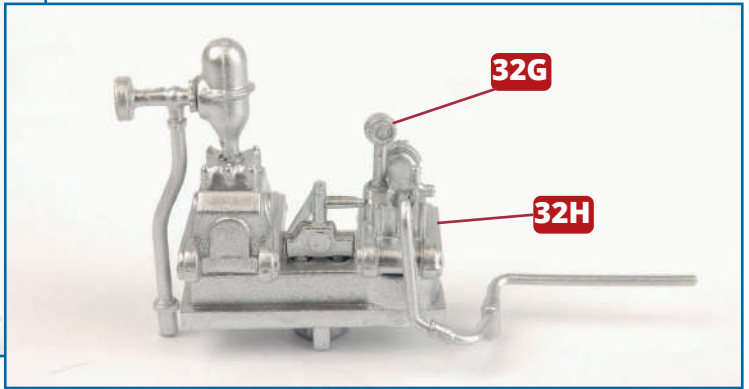
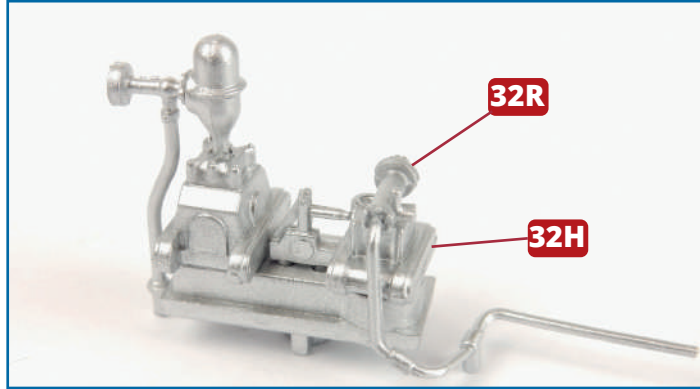
7 Moving on to the first (larger) pump, which is fitted beside the thrust block assembly from issue 26, fit parts **32C**, **32D** and **32H** on top of the base, **32E**, as shown (above right). Note the orientation of the D-shaped hole in the top of part **32D** (circled). Turn the assembly over so that you can fix parts **32D** and **32H** in place with two **EP** screws. Make sure the parts do not turn as you tighten the screws.



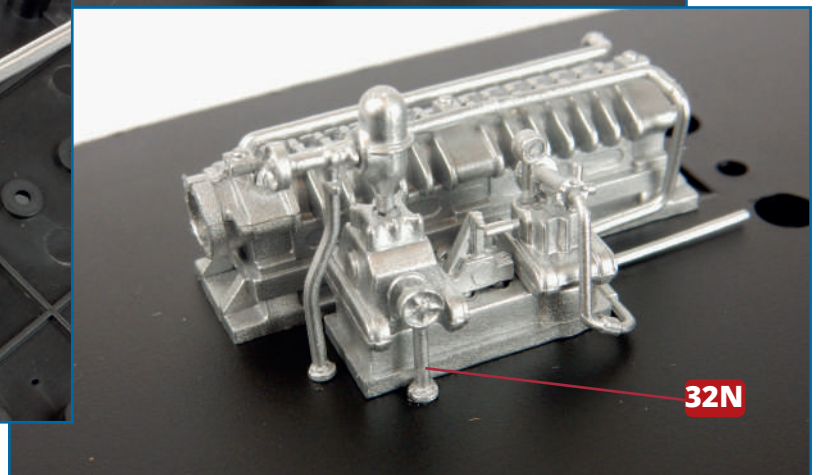
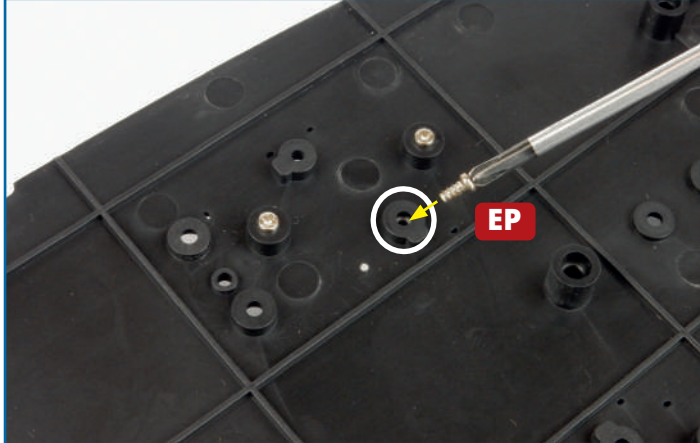
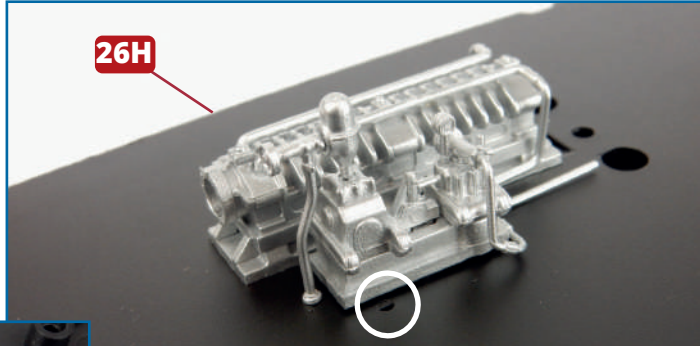


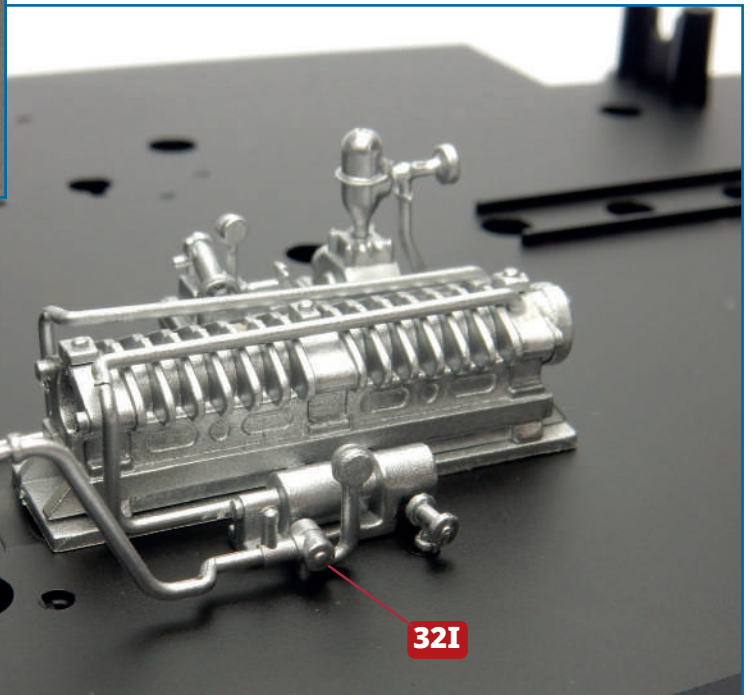
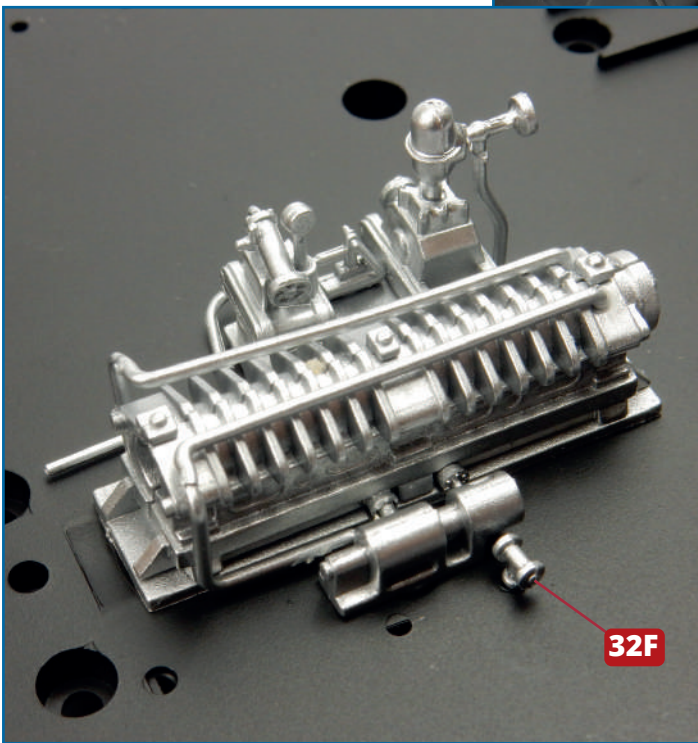
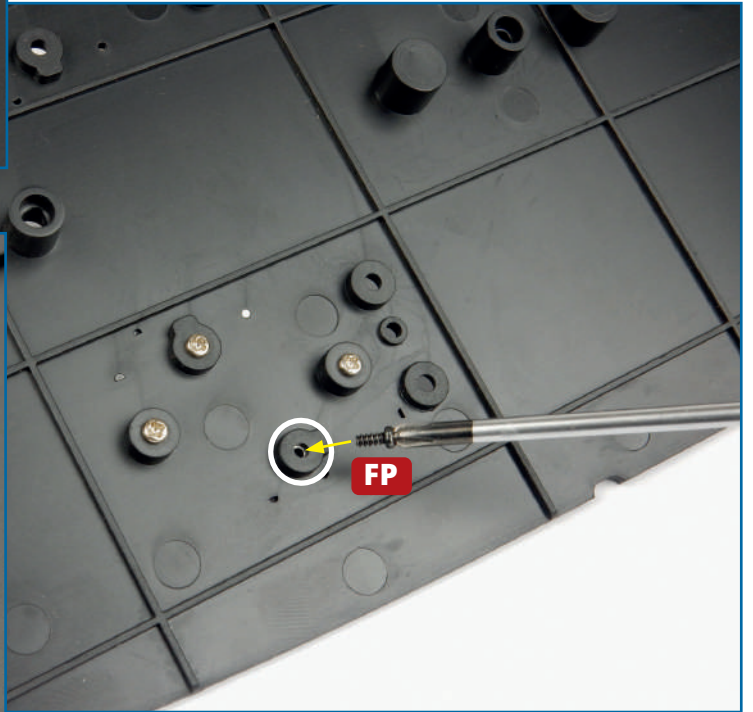
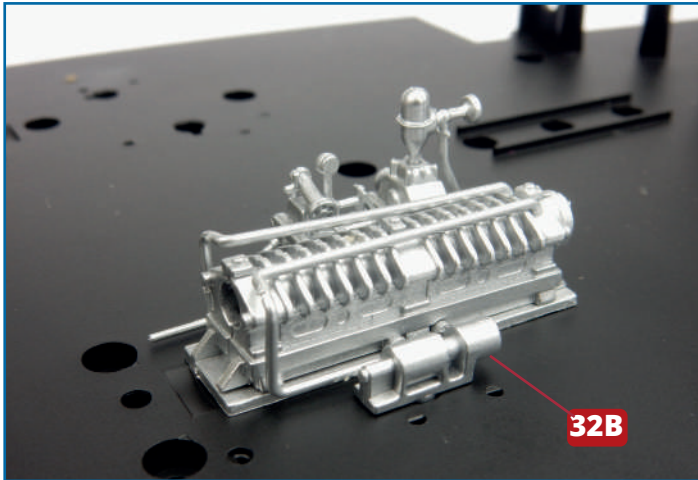
8 Fit the peg on the valve **32A** into the hole in detail D, **32S**, circled, far left. Fit the peg on the end of part **32S** in the hole in part **32D**. Glue in place.

Fit the peg on pipe **32M** into the hole in the connection **32R** (circled, near left). Note the orientation of part **32R**. Fit part **32R** on the top of part **32H** (below left). Finally, insert the D-shaped peg on the pressure gauge **32G** into the free hole of part **32H**. Fix all parts in place with a little superglue, applied to the pegs.

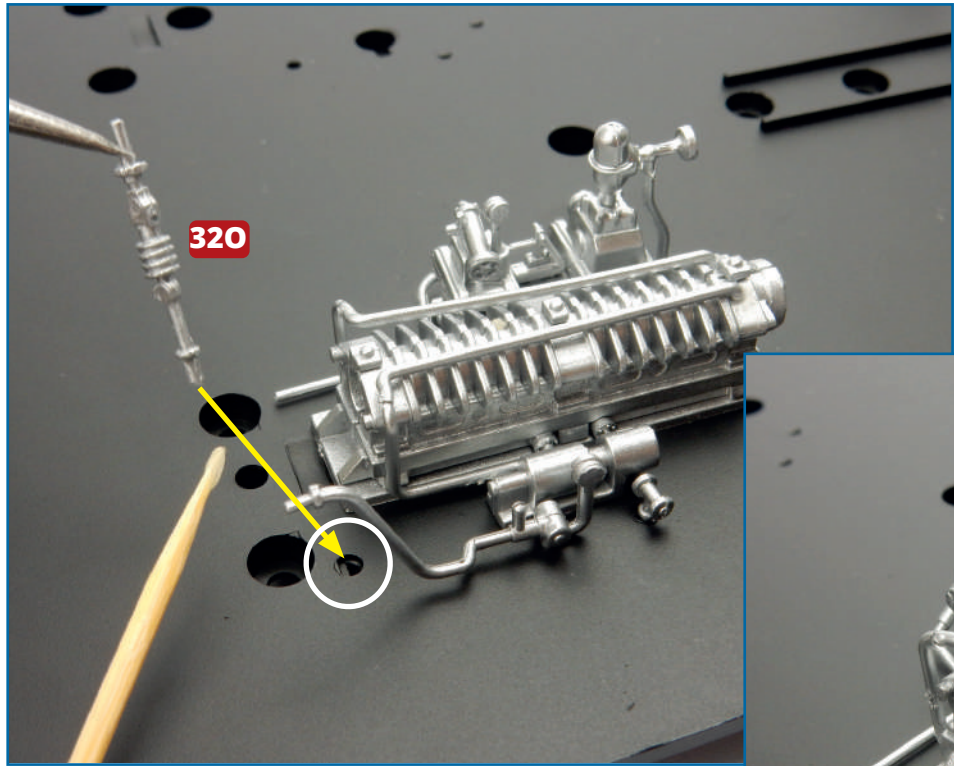


9 Take the engine room floor assembly from issue 26. Identify the screw hole next to the thrust block. Fit the pump on the floor **26H**, next to the thrust block, as shown (right). Turn the assembly over so that you can fix the pump in place with an **EP** screw. The control **32N** fits in a hole beside the pump (circled, right). Glue in place.

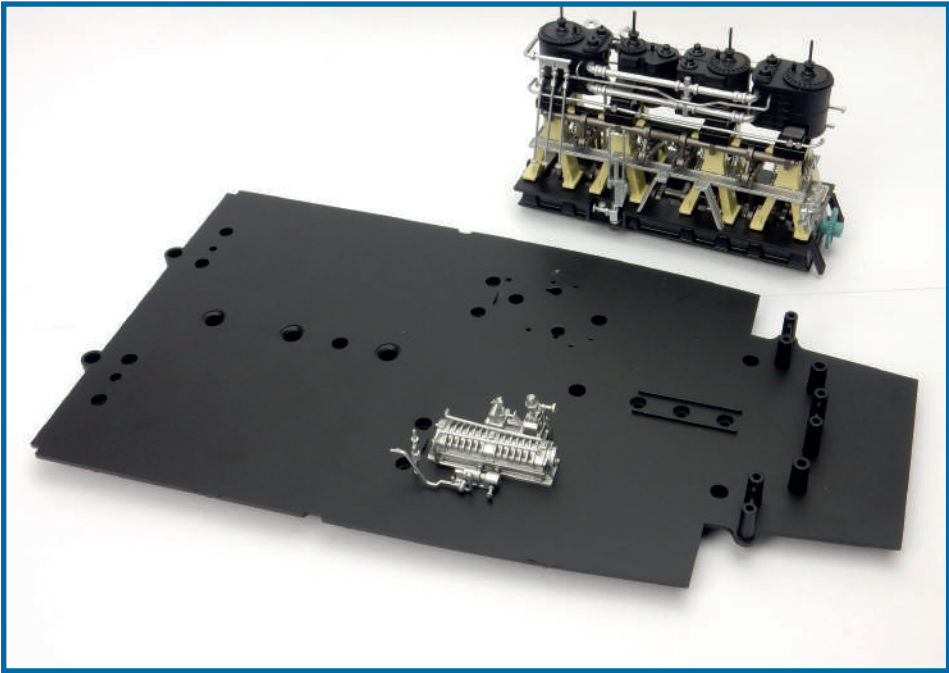
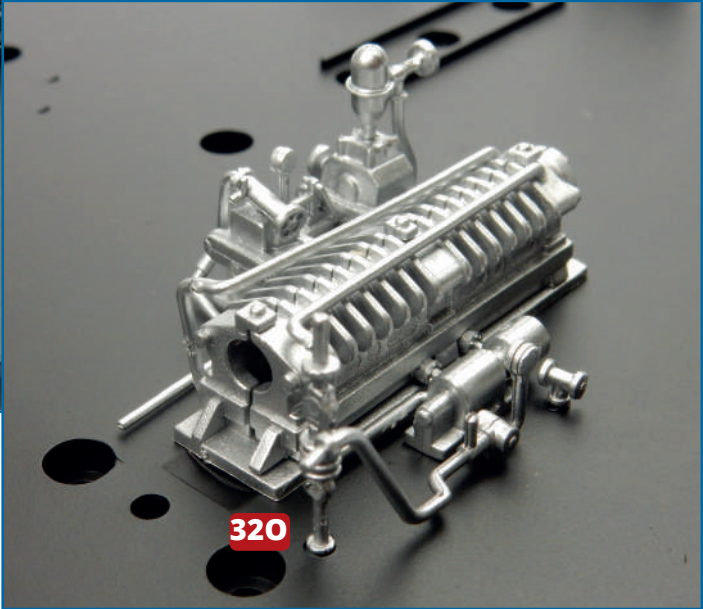




10 The base of the lubrication pump **32B** fits on the other side of the thrust block. Fit it in place as shown (top), then turn the engine floor over so that you can fix it in place with an **FP** screw (above, right). The details **32F** and **32I** fit into holes in the floor next to the pump (above and right). Glue in place.



11 The last detail, **320**, fits in the hole in the floor beside the thrust block. Glue in place.



Completed work

Details have been fitted to the port reciprocating engine. Two pumps have been fitted on either side of the thrust block.