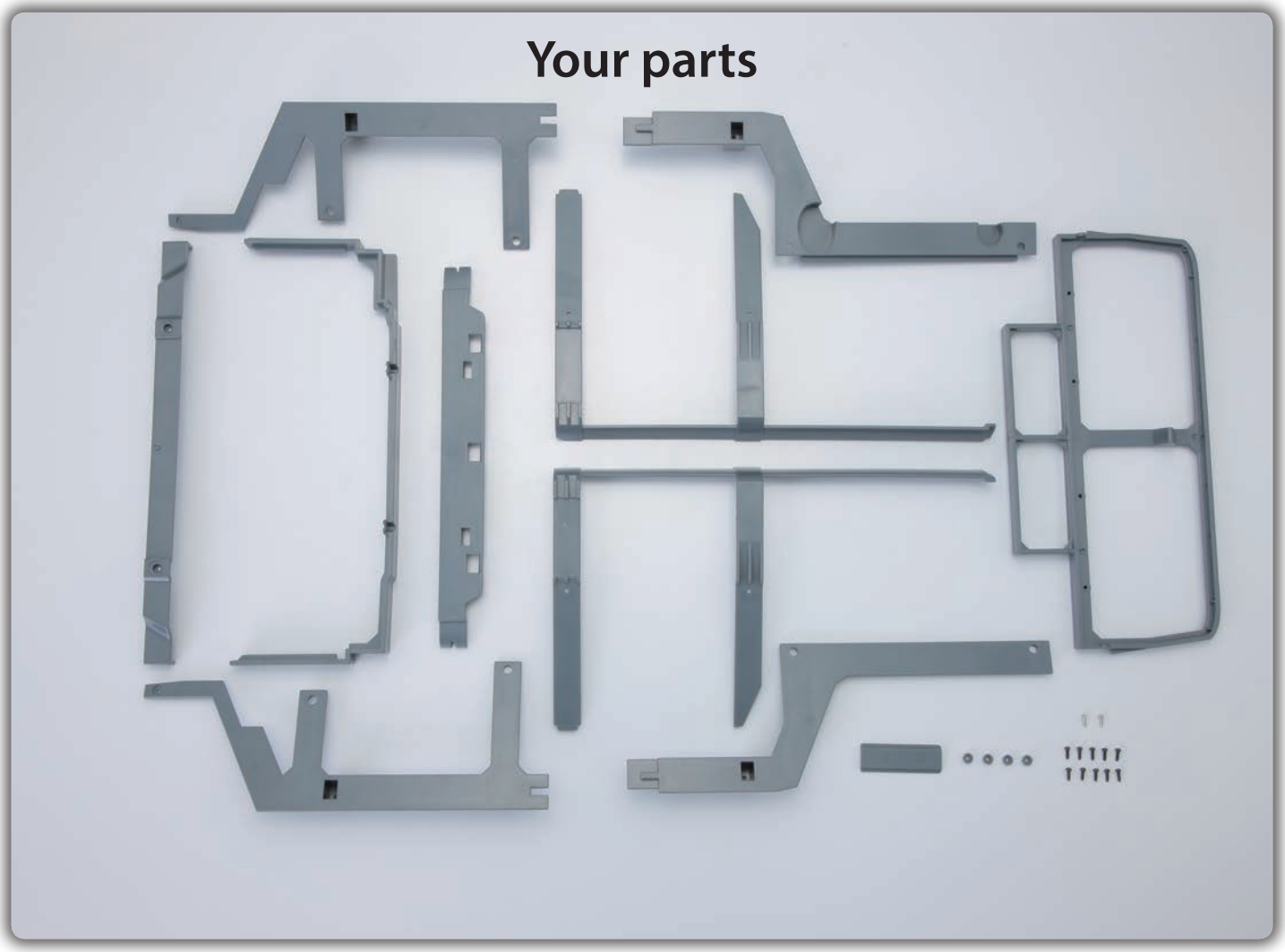
Stage 33

Assembling the body frame

Your parts



Right lower front frame
Right lower rear frame
Bonnet front frame
Bonnet rear frame
Roof frame

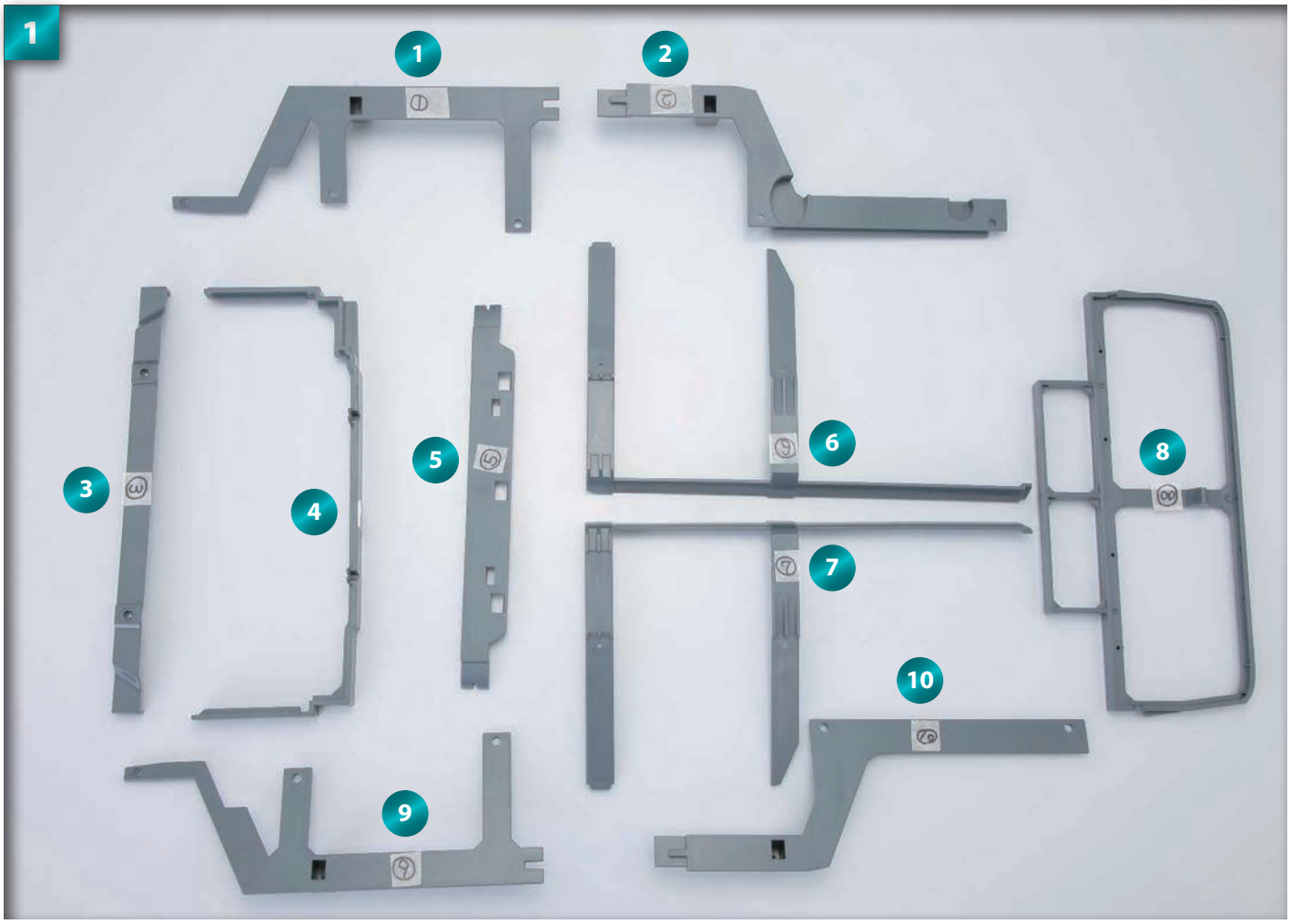
Right cabin frame
Left cabin frame
Rear panel frame
Left lower front frame
Left lower rear frame

Window holder
Window collars x 4
2 x 6mm screws x 2
2 x 6mm self-tapping screws x 16

Tools and materials

Low-viscosity plastic glue (plastic cement) (preferably with a fine-tipped brush applicator)
Phillips screwdriver
Marker pen

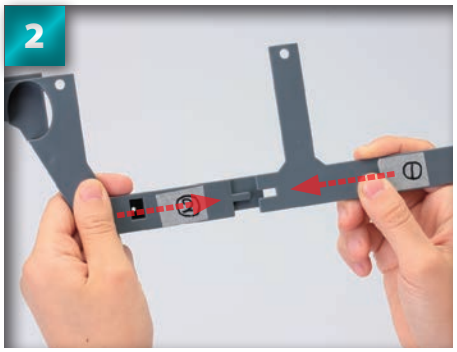
Masking tape
Bonnet assembly (Stage 2)
Clothes peg or clip



Lay out the parts on your work surface to see how the frame will fit together. Many of the parts look similar, so before you begin, number them against the parts list (above). Write each number on a length of masking tape and stick this to the part. The numbers, rather than the part names, will be used in the instructions, so double-check your numbering is the same as in the above photo.

Tip

A low-viscosity plastic glue is the best adhesive for this stage. 'Plastic cement' works by melting the covered areas so that they bond together and set as one as the glue dries. This offers a far stronger hold, and also allows for some movement once dry, essential for the bodywork of your Hummer H1.



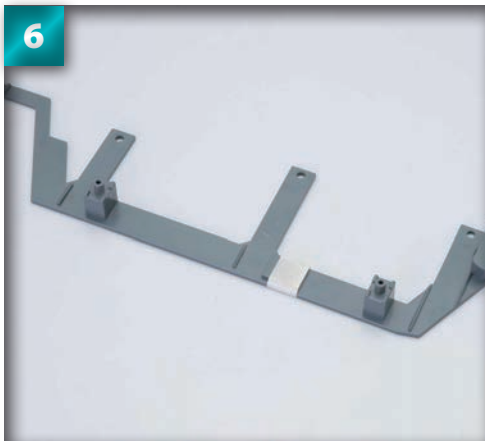
Before applying any glue, perform a dry assembly to ensure parts 1 and 2 fit together correctly.

Once fitted, secure the parts by wrapping them with a length of masking tape.

Apply some plastic glue to the joint – preferably with a fine brush, as shown. Apply a small amount at a time, and repeat if necessary.

Press the parts together between your finger and thumb to spread the glue evenly inside the joint.

Lay the joined parts on a flat surface to dry. Leave the assembly for an hour to fully set, making sure not to move the parts during this time.

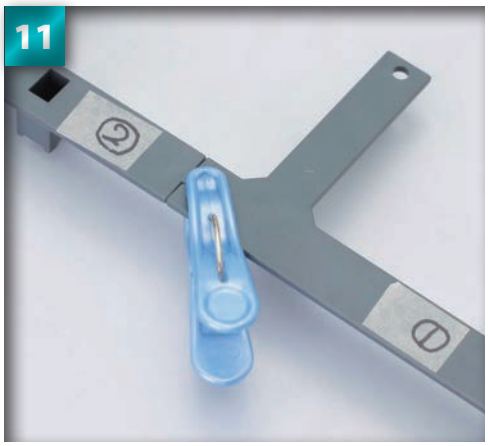


Prepare parts 9 and 10 as you did with parts 1 and 2, and follow the same process of gluing them together. Use masking tape to secure the joint, and leave to dry for an hour.

Once the glue joining parts 1 and 2 has dried, remove the masking tape by peeling it slowly away.

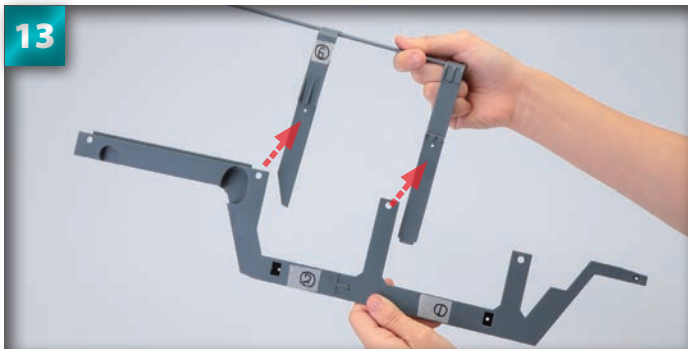
Apply some more plastic adhesive to the joint, as shown. Again, apply the glue with a brush, repeating the process at least three times.

Press together. Do not worry if some of the glue squeezes out as you do so.



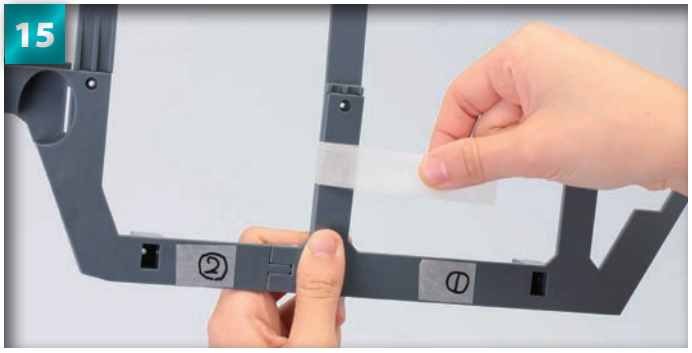
Use a clothes peg or a clip to hold the joint together. Rest the parts on a flat surface and leave for another hour.

Repeat Steps 8 to 10 with parts 9 and 10 once they are set. Again, use a clothes peg or clip to secure the joint, and leave the parts on a flat surface to dry for another hour.



Make sure parts 1 and 2 are completely set, then join them to part 6, as shown above by the red arrows.

Join the parts so that the holes on each one line up, as shown by the red circles. There is a row of elevated ridges moulded into the plastic of part 6 (arrowed) to help the parts align correctly.



Wrap masking tape around the joint between parts 1 and 6, as shown. Make sure the tape is wrapped tightly enough so that the parts do not move.

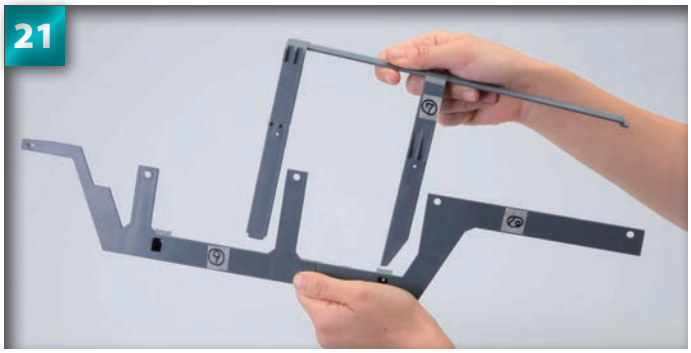
Repeat with the joint between parts 2 and 6.

Apply plastic glue to the joint between parts 1 and 6.

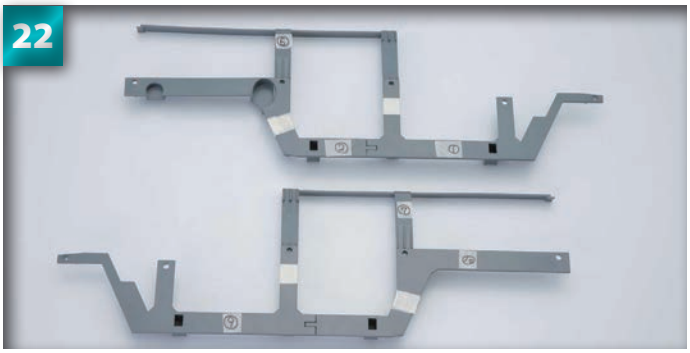
Next, apply some plastic glue to the joint between parts 2 and 6, making sure to get the adhesive into the joint beneath the ridges.

Turn the assembly over and apply some glue to the back side of the joint between parts 1 and 6. This is a large joint, so perform a few applications to ensure enough of the adhesive gets between the parts.

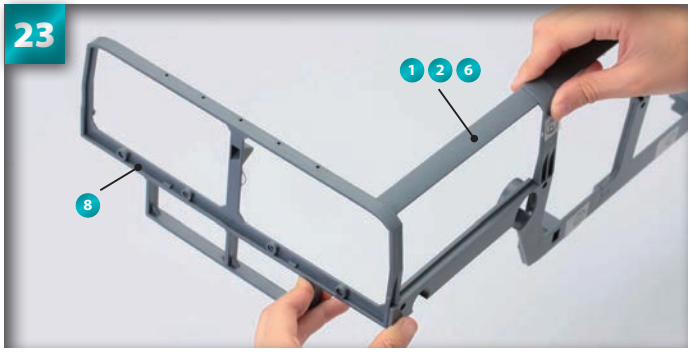
Repeat Step 19 with the joint between parts 2 and 6. Once enough glue has been applied, lay the assembly on a flat surface to dry for 30 minutes to an hour.



Repeat Steps 13 to 20 to assemble parts 9 and 10 and part 7.



The left and right sides of the body frame are complete, and should look like the photo above.



Perform a dry assembly to see where the parts will fit together. Hold the parts 1, 2 and 6 assembly to the edge of part 8, checking with the photo to ensure that the parts are the right way around.

Hold the joint between parts 6 and 8 in place with some masking tape.

Then, repeat for the joint between parts 2 and 8, pulling the tape tight as you apply it to ensure there is no gap between the parts.

Turn the assembly over, and apply some adhesive to the joint between parts 6 and 8 from the back of the frame.

Then repeat for the joint between parts 2 and 8, again applying the glue from the reverse of the frame.

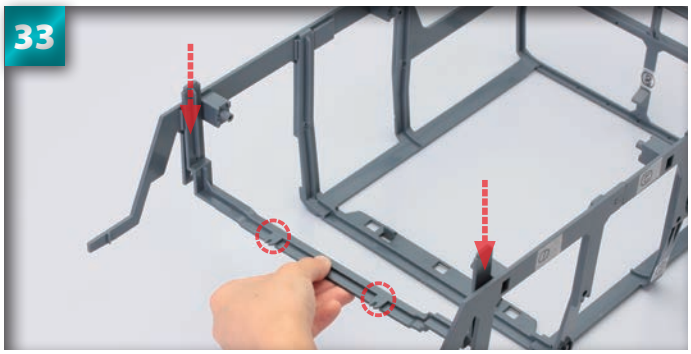
Once the adhesive has dried, repeat Steps 23 to 27 for the left-hand side of the frame, made up of parts 7, 9 and 10.

Allow the assembly completed in Step 28 to dry completely, then ready part 5 to be fitted to it.

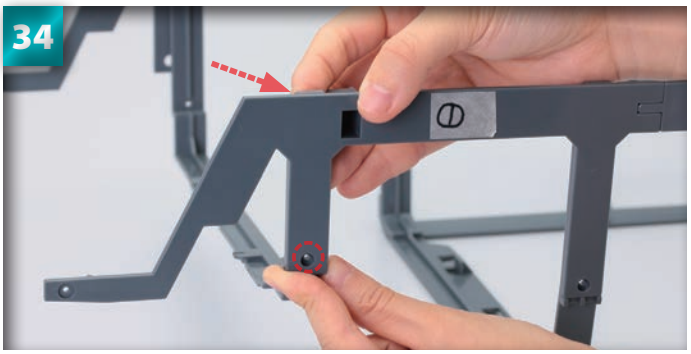
Turn part 5 so that it is positioned as shown in the above photo, and fit it into place so that it joins the left and right sides of the frame.

Apply some glue to the joint between parts 5 and 6, holding the two in place as you do so to prevent any gaps forming.

Repeat for the joint between parts 5 and 7.

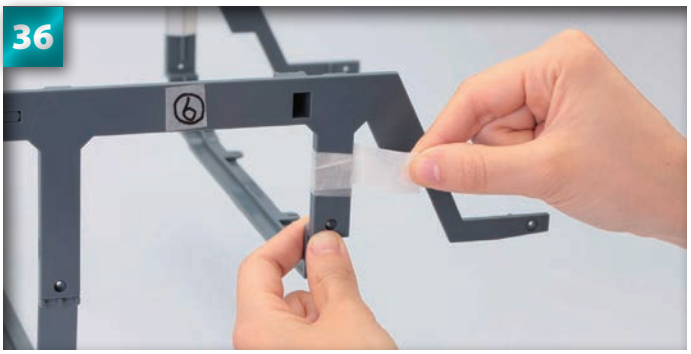


With part 5 secured, slide part 4 into the slots on either side of the frame, following the arrows. Also note the positions of the circled sections of part 4.



Push part 4 to the bottom of the slots, making sure that the holes in the end of part 4 and in part 1 are properly aligned. Also make sure that the tops of both parts (arrowed) are flush with each other.

Wrap parts 1 and 4 with masking tape to perform a temporary fastening.

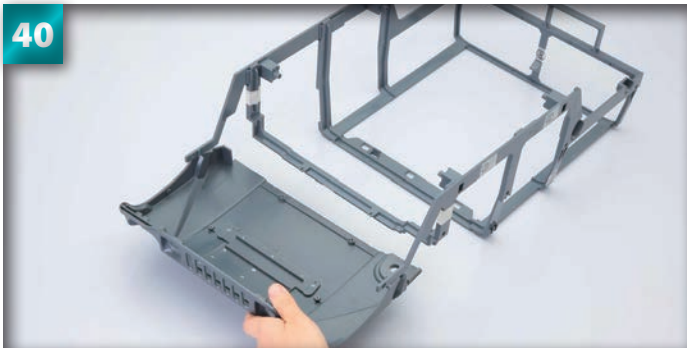


Repeat Steps 34 and 35 for the other end of part 4.

Apply adhesive to the joints of parts 1 and 4, then 4 and 6, starting from the inside of the frame.

Turn the assembly over and apply glue to the same joints from the outside of the frame.

Apply glue also to the joints on the top side of the frame where the end of part 5 meets parts 6 and 7.

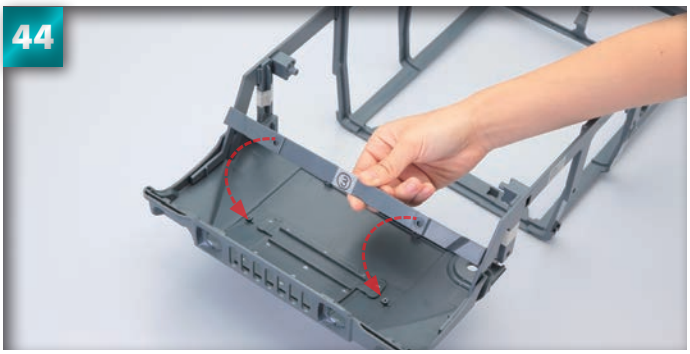


Leave the glue to dry, then turn the assembly over again and line up the bonnet assembly built in Stage 2 to the front end of the frame, as shown.

Line up the protrusions along the edge of part 4 with those on the underside of the bonnet. Insert two 2 x 6mm self-tapping screws into these.

Tighten the screws with a screwdriver, but be sure not to overtighten, as this may damage the plastic parts.

Line up the tip of part 9 with the small hole in the inside of the bonnet side (circled).



Place part 3 across the inside of the bonnet. Make sure you position the part as in the photo, and that the holes marked with red arrows line up.

Place another 2 x 6mm self-tapping screw into the first hole in part 3. Make sure that the outer end of part 3 remains flush with the groove of part 9, and that the holes (circled) are aligned.

Tighten with a screwdriver, again without using too much force to avoid damaging the parts.

Repeat Steps 45 and 46 with the other hole in part 3.

Place a 2 x 6mm screw into the hole joining the end of part 3 to part 9 and the bonnet casing.

Carefully tighten the screw with a screwdriver, turning slowly and with moderate force.

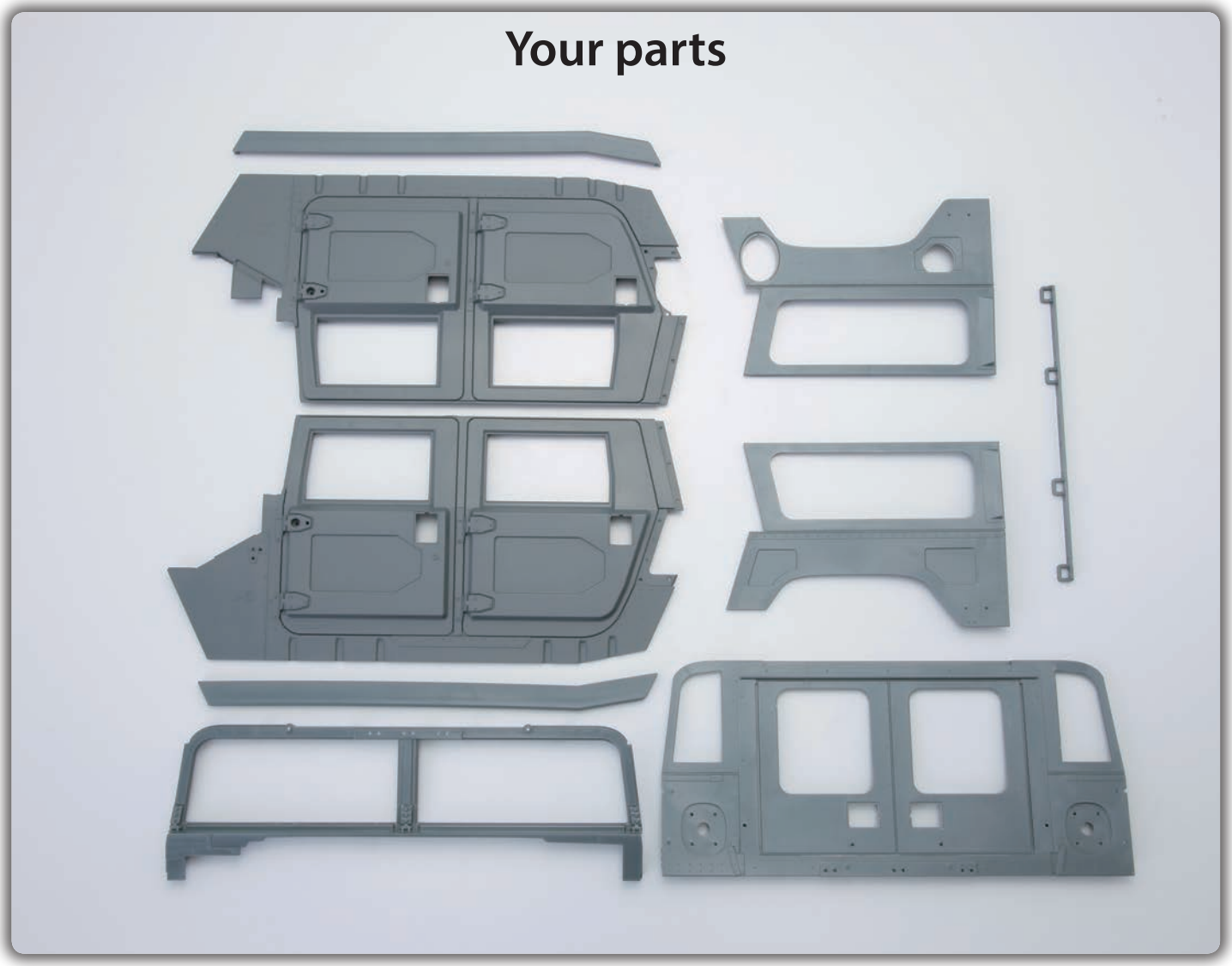
Repeat for the joint at the other end of part 3.

Assembled parts

Stage 34

Fitting the body panels

Your parts



Right door panel
Right step panel
Right side panel

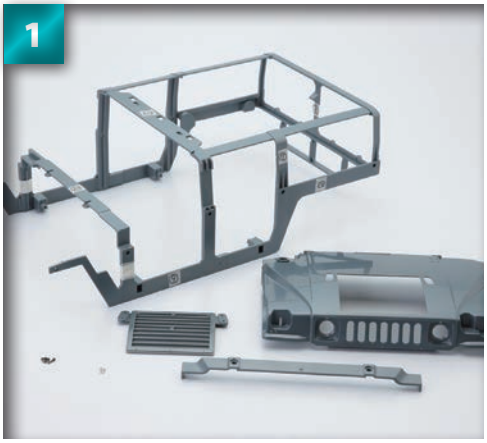
Left door panel
Left step panel
Left side panel

Front roof mount
Windscreen frame
Rear panel

Tools and materials

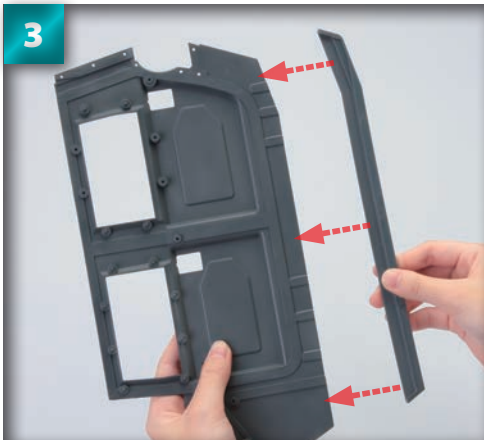
Phillips screwdriver
Low-viscosity plastic adhesive
Masking tape

Body frame assembly (Stage 33)
Window holder (Stage 33)
2 x 6mm self-tapping screws x 12 (Stage 33)

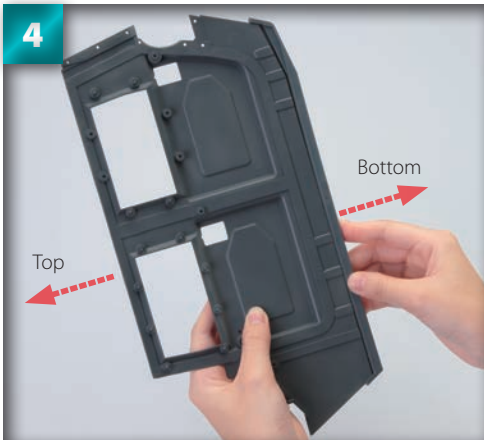


Remove the bonnet and radiator cover fitted in Stage 33. Be careful to keep the screws safely.

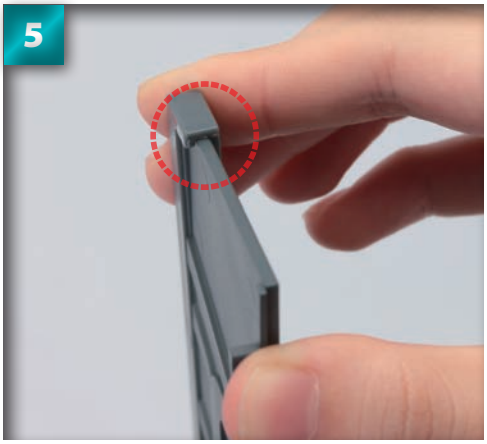
Peel off the masking tape you used to hold the parts in place while the adhesive set.



Fit the right step panel to the underside of the right door panel, following the arrows.



The step should fit snugly to the door panel, with its ridge sitting flush to the contour of the panel. However, do not worry if the part is slightly warped, as this will be dealt with at a later stage.



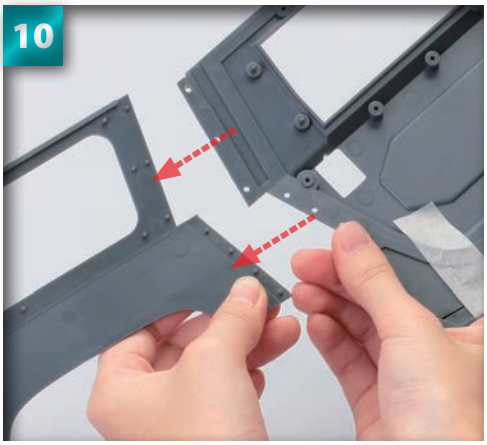
The door panel edge should sit inside the concave slot (circled) at the end of the step.

Use masking tape to hold the parts together temporarily at the rear of the assembly, pulling the tape tightly as you apply it to prevent any gaps.

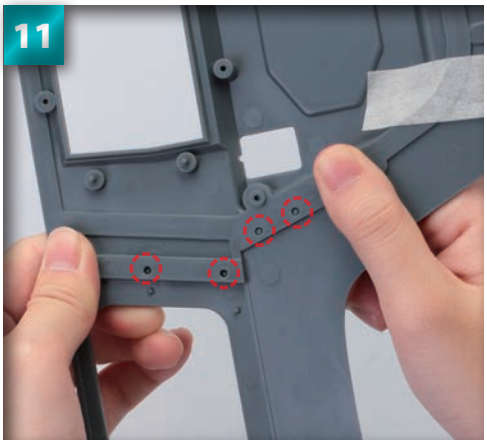
Repeat for the front end of the assembly.

Apply low-viscosity plastic adhesive to the joint between the parts, following the green dotted line.

Repeat Steps 3 to 8 for the left door panel and left step, then leave both assemblies to dry for about 30 minutes.

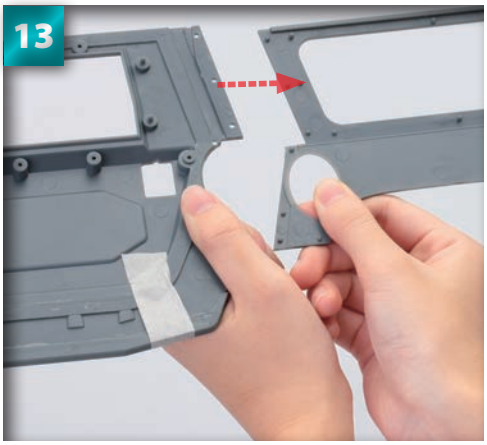


Once the glue has set, prepare the left side panel by fitting it to the left door panel assembly.



Align the row of small protrusions on the door panel with the holes on the side panel, then push these together to connect the parts.

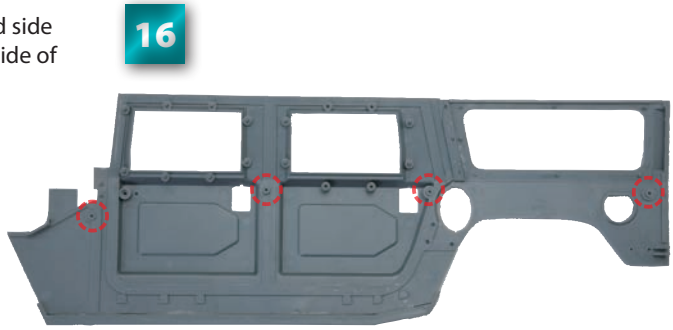
Apply the adhesive along the line of holes, so that it enters them and bonds the parts. Leave to dry for 30 minutes to one hour.



Next, fit the right side panel to the rear of the right door panel.

Using the same process as you did for the left door and side panels, glue the right door and side panels together, and leave to dry for 30 minutes to one hour.

Once dry, set the right door and side assembly onto the right-hand side of the body frame.



Locate the series of bosses (cylindrical projections) on the insides of the door panel assemblies. These bosses are circled in the above photo.

Line up the bosses on the right door panel assembly with the holes in the body frame parts (circled).

Place one of the 2 x 6mm self-tapping screws supplied with Stage 33 into the boss in the centre of the frame by the door panel.

Tighten with a screwdriver, but make sure not to overtighten, as this may damage the part.

Next, fit and tighten another 2 x 6mm self-tapping screw into the boss between the door and the side panels.

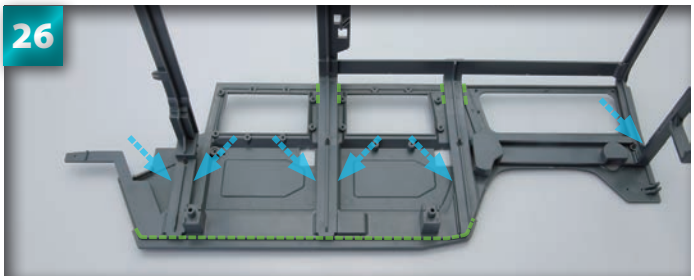
Repeat for the front boss.

Finally, repeat for the rear boss.

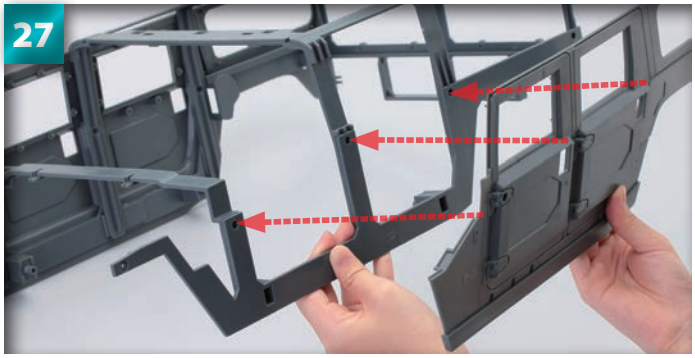
Begin to glue the parts together, starting by applying the adhesive to the joint between the door panel and step.

Next, glue the vertical strut of the frame to the door panel.

Glue the vertical strut of the side panel.



Check you have applied adhesive to the areas marked in the above photo by dotted green lines. The next step is to apply adhesive to the areas marked by the blue arrows. These areas are more challenging, so go slowly, applying only a little at a time.



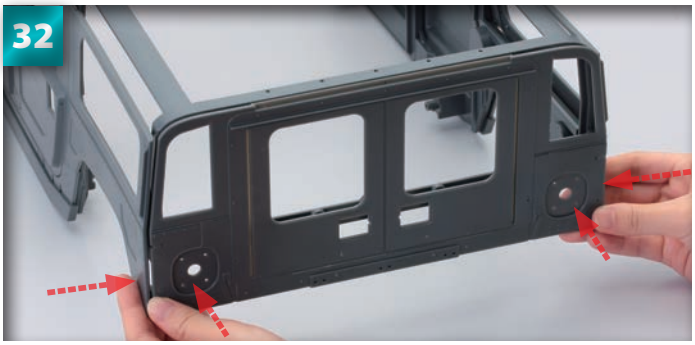
When the glue has dried, repeat Steps 17 to 26 to attach the left door and side panels to the body frame.

Next, fit the window holder supplied with Stage 33 into the holes in the inside centre of the rear panel (see arrows).

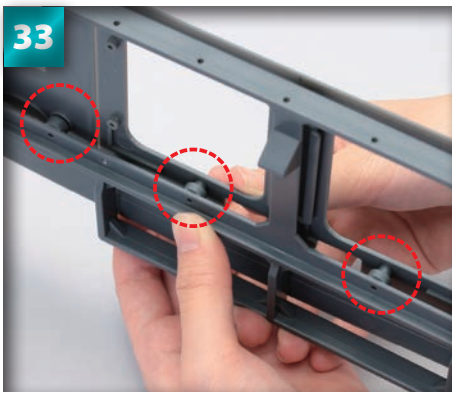
Apply some glue to secure the part.

Fit the rear panel onto the rear panel frame. Use the arrows and numbering shown in the photograph to line up the bosses with which you will fasten the part.

Engage the triangular projections of the bottom corners of the rear panel with those on the lower side panel, as shown by the arrows.



Carefully press the panel into place.



Make sure the four bosses on the rear panel are properly aligned.

Place a 2 x 6mm self-tapping screw into the first of the holes from the inside of the frame.

Tighten gently with a screwdriver.

Repeat for the remaining three holes, so that the panel is fastened in four places.

Apply adhesive to the joints between the rear panel and body frame.

Continue applying glue to the area marked by the green dotted line. It may help to use some masking tape to hold the parts together while the glue sets.

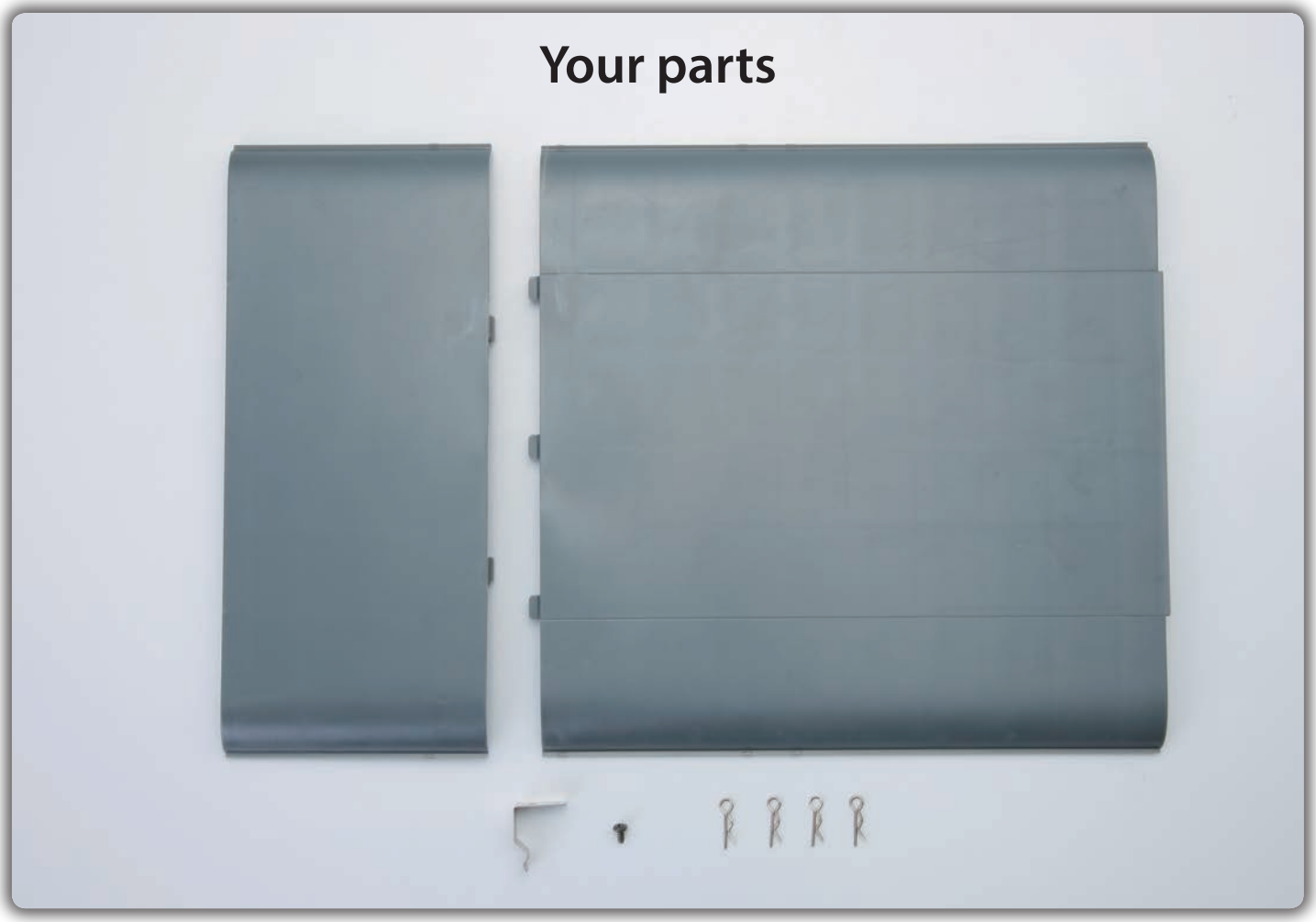
To complete this stage, apply glue to both corner joints on the insides of the rear panel.

Assembled parts

This stage of assembly is complete, and the next step will be to paint the framework of your Hummer H1 in preparation for mounting the roof, bonnet and windscreen panels. This must be done prior to assembly, as it will be far neater and easier than applying the paint after the model is built. Wait for the glue to dry completely, then see the box on page 161 for details on painting process.

Attaching the roof panel

Your parts



Front roof panel
Rear roof panel

Roof stopper
Body pins x 4

3 x 6mm binding-head self- tapping screw

Tools and materials

Phillips screwdriver
Low-viscosity plastic glue
File
Sandpaper (800 grit)
Front roof mount (Stage 34)
2 x 6mm screw (removed Stage 34)
Front bonnet frame (removed Stage 34)
Body frame assembly (Stage 34, to paint)
Windscreen frame (Stage 34, to paint)
Front bonnet (removed Stage 34, to paint)
Radiator cover (removed Stage 34, to paint)
Grille (removed Stage 34, to paint)
2 x 6mm self-tapping screw (removed Stage 34)

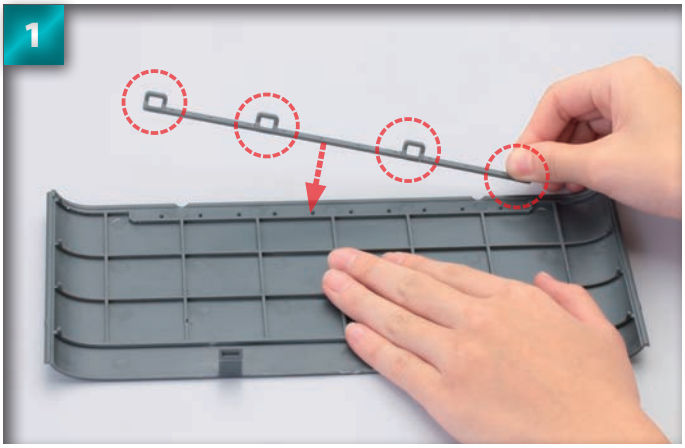
Painting your Hummer H1

Once you have chosen the colour for your Hummer H1's bodywork, you will need to paint the relevant parts during assembly. For best results, use a spray paint appropriate for plastic modelling, and ensure that any glue used to join the parts is completely dry before proceeding. For this stage, both roof panels, the body frame assembly, windscreen frame, bonnet, grille and radiator cover should be painted before beginning. Before painting, wash off any oil or dirt from the parts using a mild detergent, and allow the parts to dry fully.

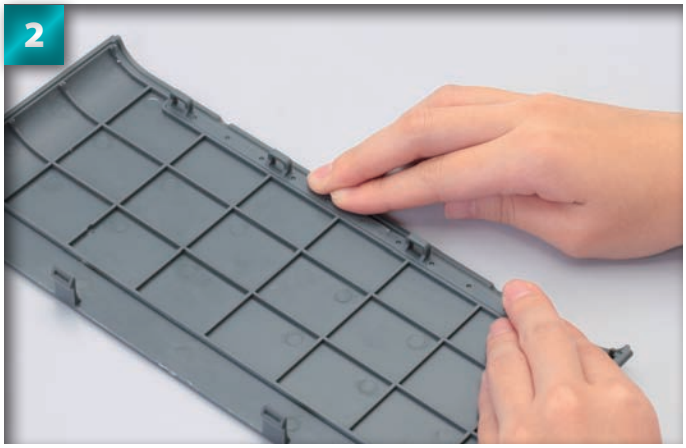
Then, use masking tape to cover any areas of the parts that are still to be joined, as this will maximise the efficiency of the glue used in assembly.

To paint, lay the part or assembly on a mat or spread of newspaper in an area free from dust, and apply the paint following the manufacturer's instructions. Note: parts that are to be painted a different colour (e.g the grille and radiator cover) should be removed and painted separately. Ensure that the paint is completely dry before proceeding with further assembly.

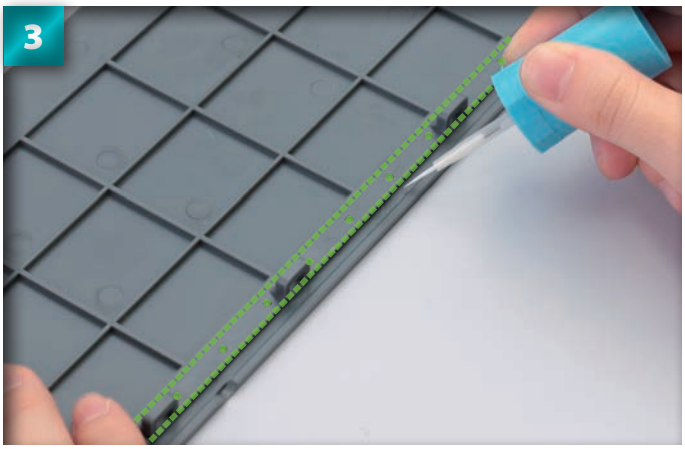
The roof panels



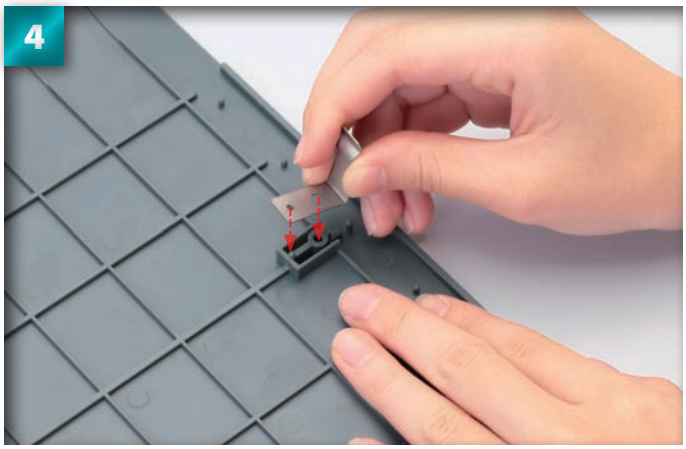
Fit the front roof mount provided in Stage 34 onto the underside of the painted front roof panel, as shown by the red arrow. The circled projections should be facing outwards.



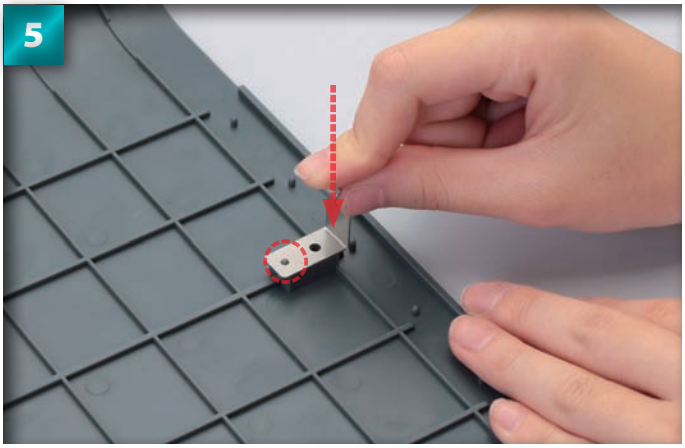
Press the mount onto the row of short pins on the roof panel to secure the part for gluing. Make sure that no part of the mount is raised.



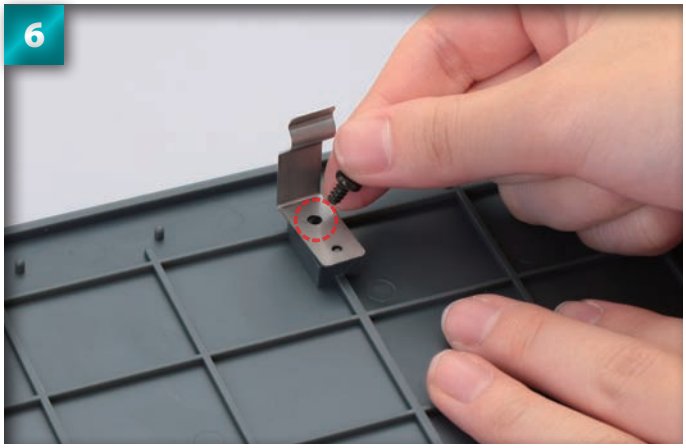
Apply some low-viscosity plastic glue to the joint between the mount and roof panel, and then the row of holes (shown by the dotted green lines and marks).



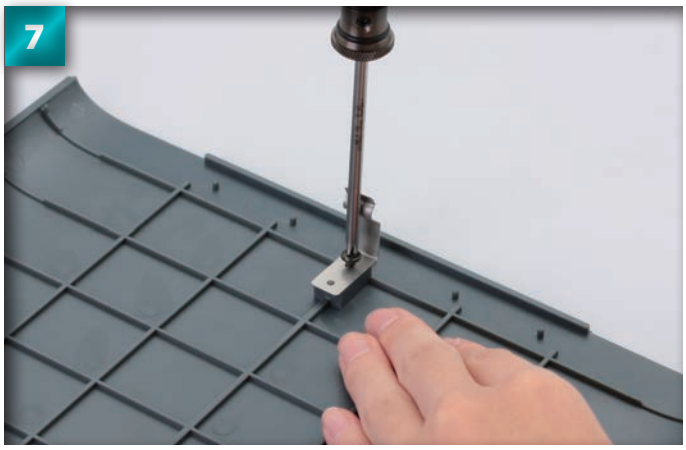
Next, on the underside of the rear roof panel, fit the roof stopper into the slot provided. The upright portion of the stopper should be facing the edge of the panel.



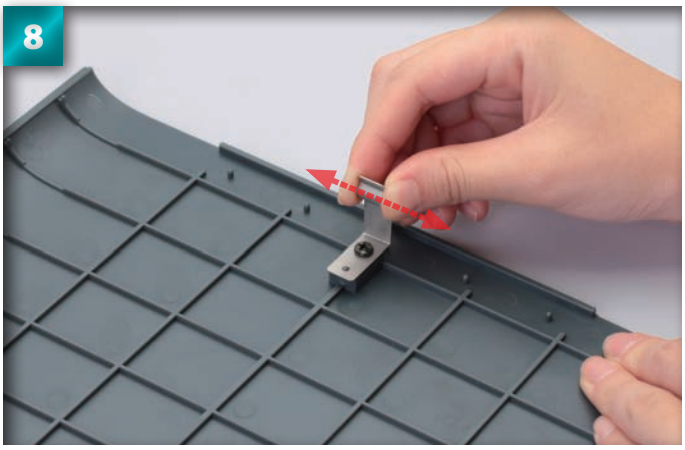
Press the stopper into place so that the short pin (circled) sits in the hole in the metal part.



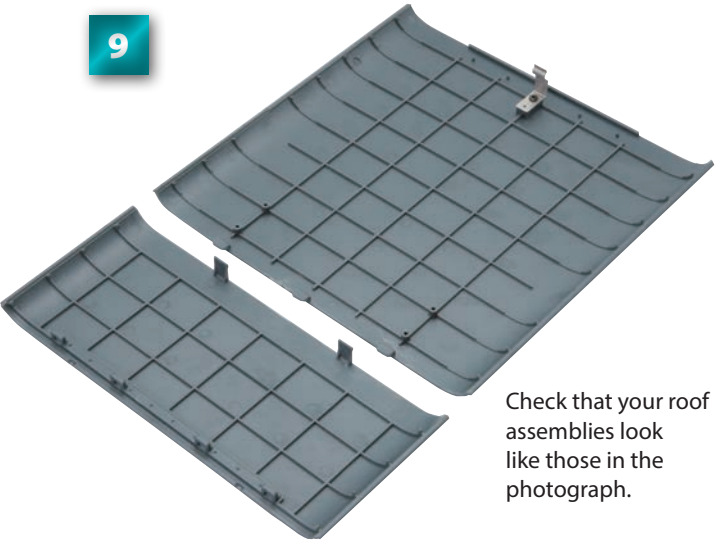
Place the 3 x 6mm binding-head self-tapping screw into the circled hole in the stopper.



Tighten with a screwdriver.

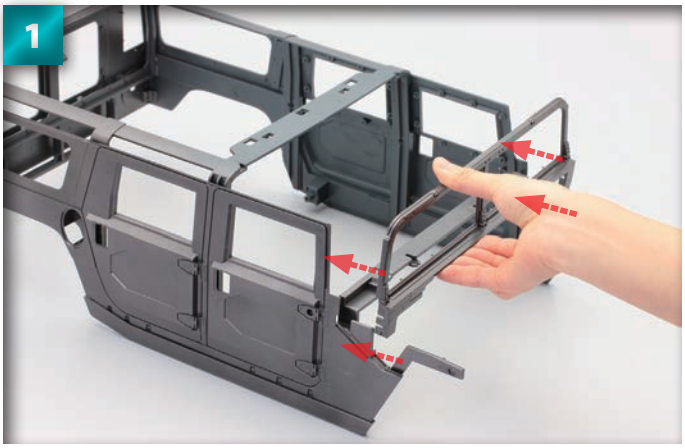


Gently push the stopper from side to side to check that it does not move.

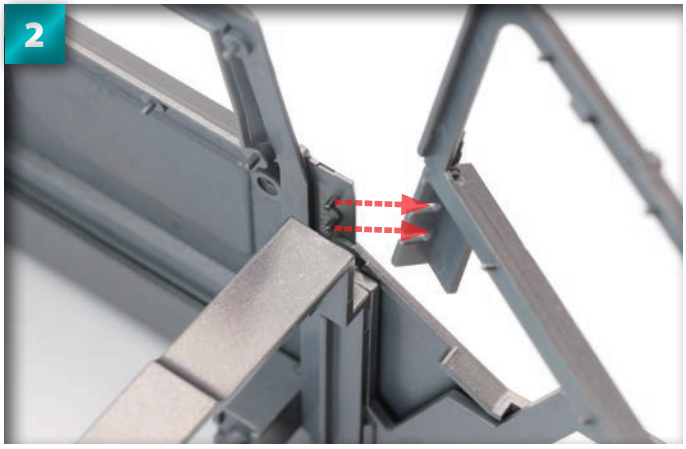


Check that your roof assemblies look like those in the photograph.

The windscreen frame



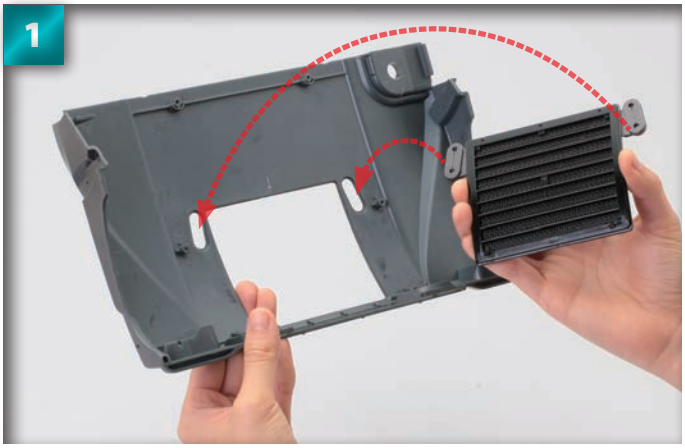
Place the painted windscreen frame onto the front end of the body frame assembly (both from Stage 34).



To attach the windscreen frame, slot the two pins on the inside of the body panel into the slots on the side of the frame (see arrows).

Line up both sides of the frame and press into place.

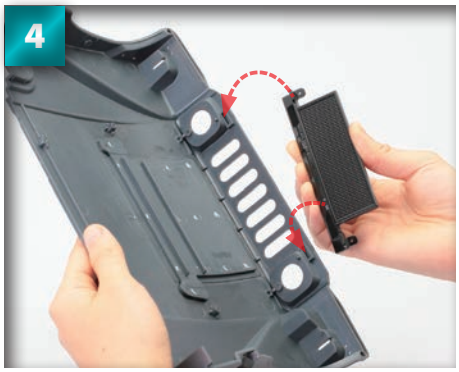
The bonnet



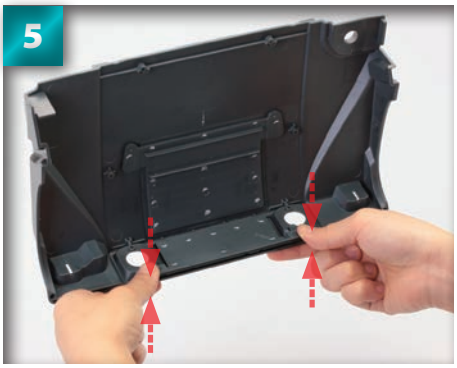
Insert the painted radiator cover from the underside of the bonnet, fitting the two side projections into the holes marked by the arrows.

If the paint is applied too thickly onto the radiator cover, it may not fit into the hole easily. If this happens, use 800 grit sandpaper to lightly scrape away some of the paint from the edges of the cover.

When the cover fits correctly, apply glue to the joint between the parts.



Next, fit the painted grille into place on the inside of the bonnet (see arrows).



Press the grille into place, again sanding away a little of the paint if the part does not fit easily.

Apply glue to the joint between the grille and the bonnet.

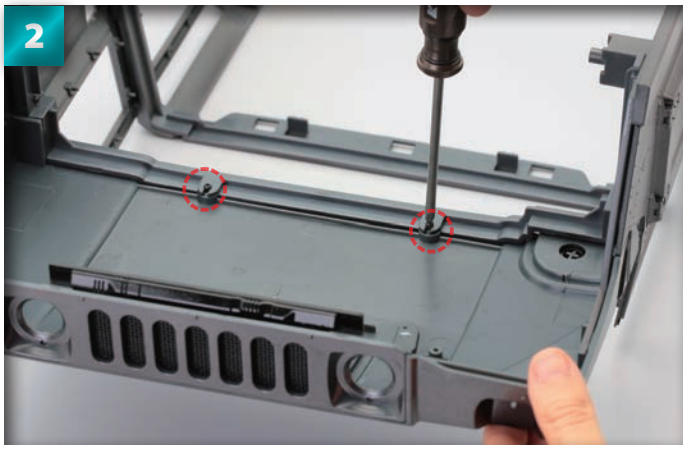
Separate the air cleaner cover and base, paint both, and wait to dry before reattaching.

Place the painted and reattached part into the hole in the top of the bonnet. Again, sand a little if the part is tight.

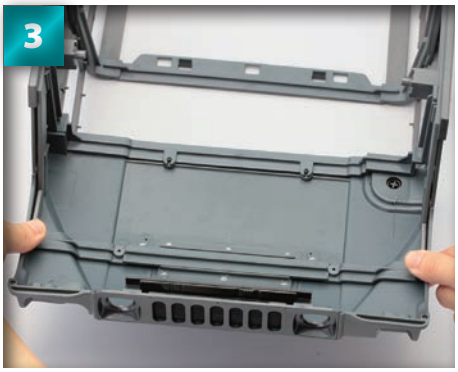
Your bonnet assembly should look like this. The paint used for the display model here is a metallic grey, but you can choose whatever colour you like for the bodywork of your model.

Attaching the bonnet

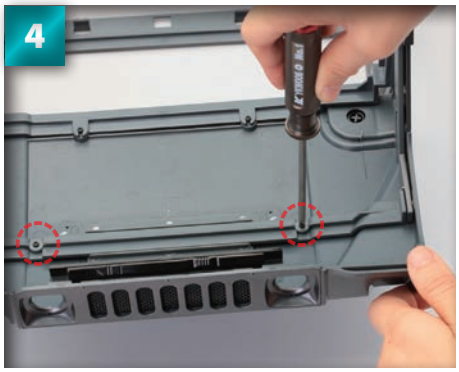
As you did in Stage 33, reattach the bonnet to the frame assembly, making sure that the arrowed and circled joints are aligned.



Tighten two 2 x 6mm self-tapping screws into the circled holes.



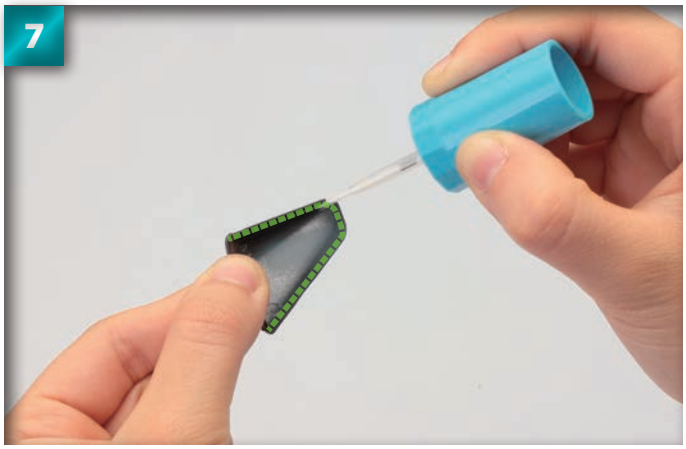
Position the forward strut of the body frame so that the screw holes are aligned and the part is fitted into the groove in the back of the radiator cover.



Tighten two 2 x 6mm self-tapping screws into the circled holes.

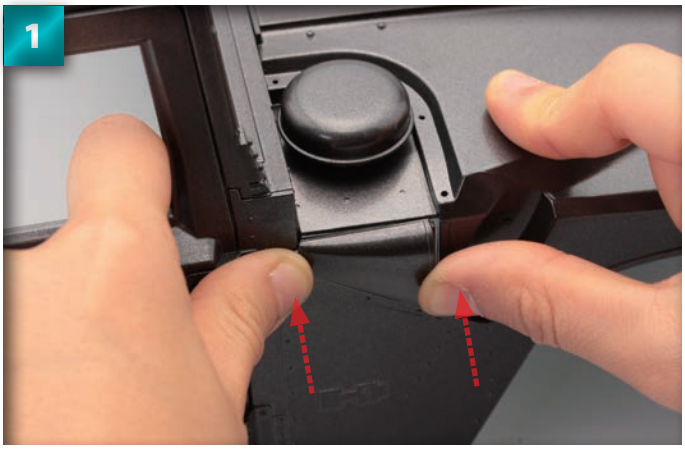
Next, insert a 2 x 6mm screw into each side of the bonnet, as shown. As well as using screws, apply a little plastic glue to the insides of the joints.

Continue to apply the adhesive to the joints between the bonnet and frame.

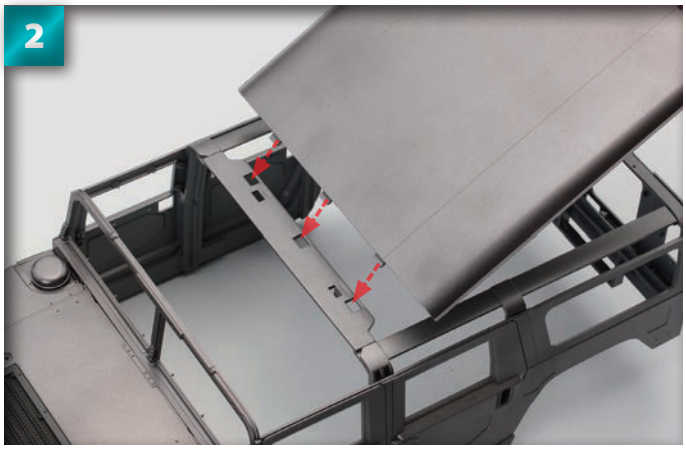


Apply some glue to the highlighted edge of the painted air intake.

The air intake and rear roof panel



Press the air intake into place, following the arrows.



Fit the rear roof panel onto the top of the body frame. Slot the three rectangular projections at the front of the panel into the corresponding holes in the frame (see arrows).

With the three projections still in place within the holes in the frame, press the rear of the panel down so that it slots into place with the stopper fitted in Step 7, page 163.

Assembled parts

Stage 36

Attaching the 46T gear to the main shaft

Your parts

Main shaft
1680 ball bearing
E7 E-ring
2.5 x 16mm pin

Tools and materials

Needle-nose pliers
Phillips screwdriver
Masking tape (or Cellophane tape)
46T gear (Stage 1)

1

Slide the 1680 ball bearing over the main shaft. It doesn't matter which way round the ball bearing goes.

2

Push the bearing down the shaft so that it rests at the bottom (see dotted red line).

3

Once the bearing is sitting flush to the bottom of the shaft, fit the E7 E-ring on top of it (see dotted red line).

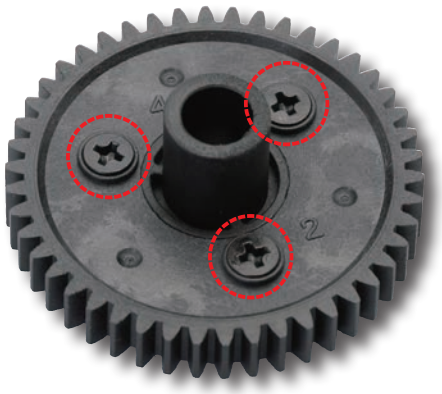
4

Make sure that the E-ring is positioned so that the rounded surface is facing upwards.

5

Clip the E-ring into place with needle-nose pliers.

6



Prepare the 46T gear you built in Stage 1, and check that the three screws are fully tightened. If any are loose, simply tighten them with a screwdriver.

Place the 2.5 x 16mm pin into the hole in the middle of the main shaft (circled).

Adjust the pin so that equal lengths are protruding from each side of the shaft.

Making sure the pin doesn't fall out, slide the 46T gear over the main shaft, back side first.

Push the gear down so that the ends of the pin sit inside the grooves in the back of the gear (marked with the dotted red lines).

Press down firmly so that the pin is set into the groove and the gear is secured.

Wrap masking tape (or Cellophane tape) around the tip of the main shaft, above the gear, to prevent it falling off.

Assembled parts