

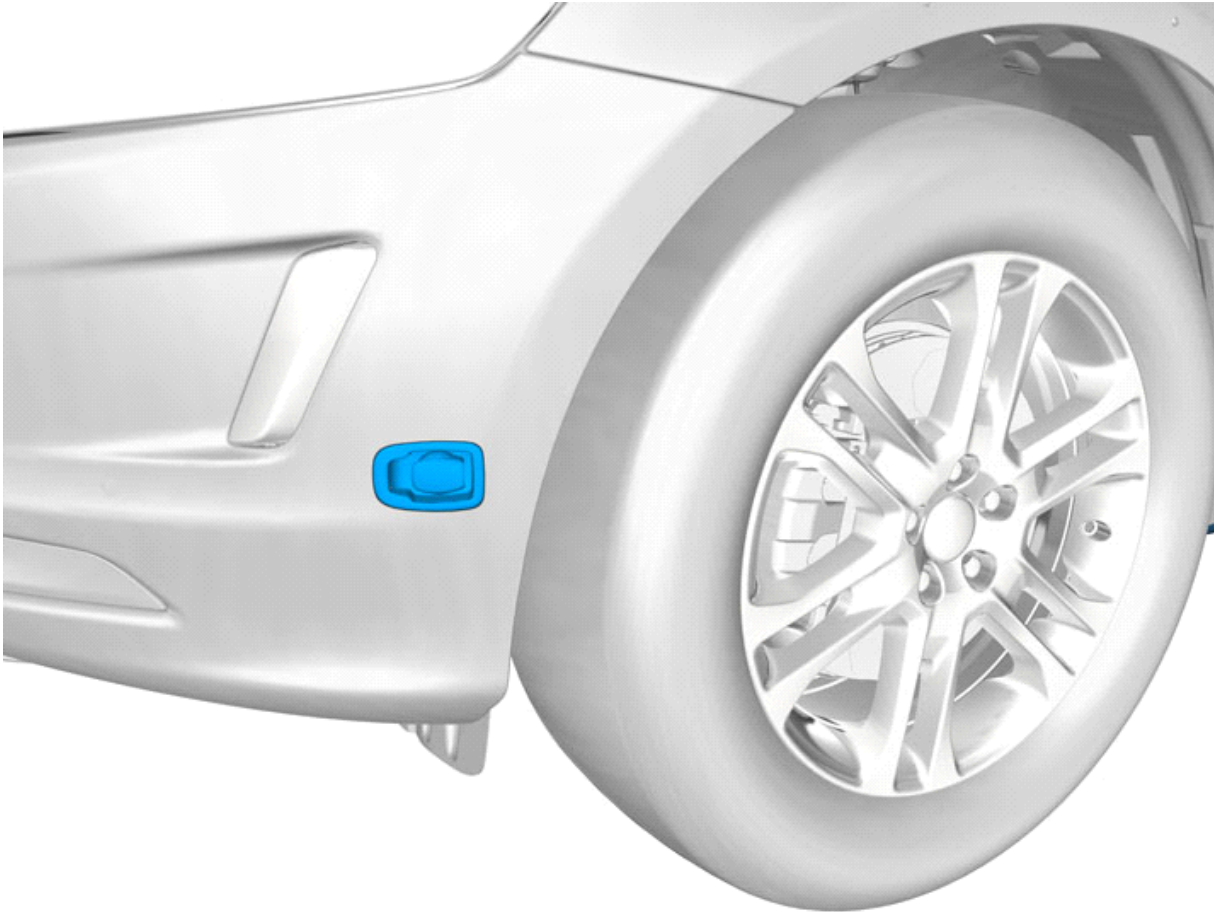


Installation instructions, accessories

Volvo Car Corporation Gothenburg, Sweden

Instruction No	Version	Part. No.
31399532	1.0	31373831

Electric engine block heater 110V



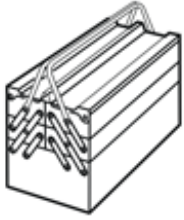
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Equipment



A0000162



IMG-239664



IMG-239660

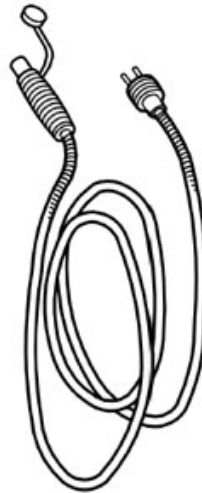
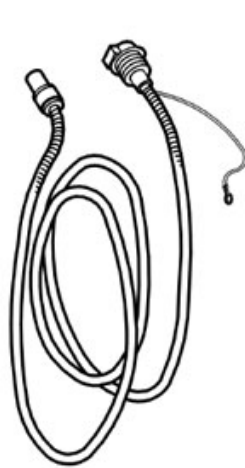
Nm
lbf.ft



x2



x2

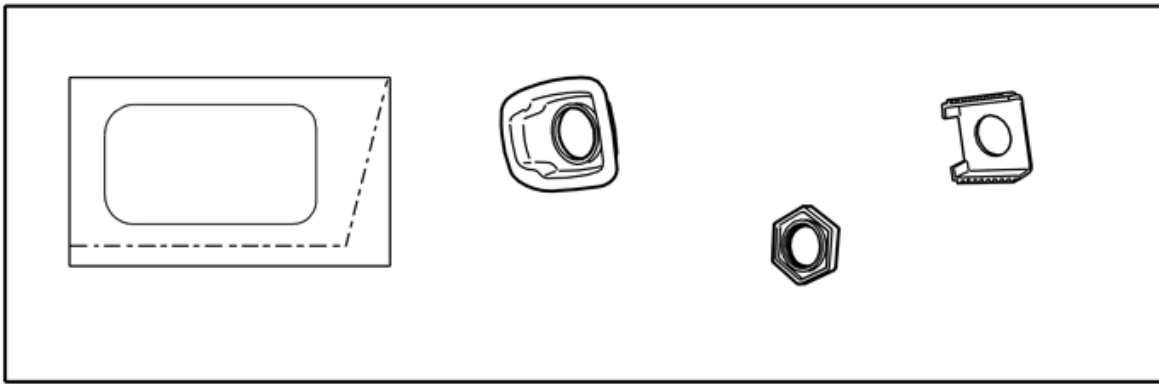
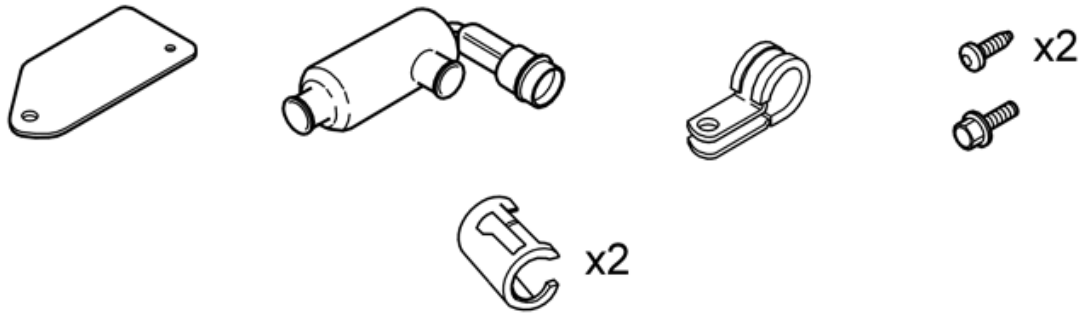


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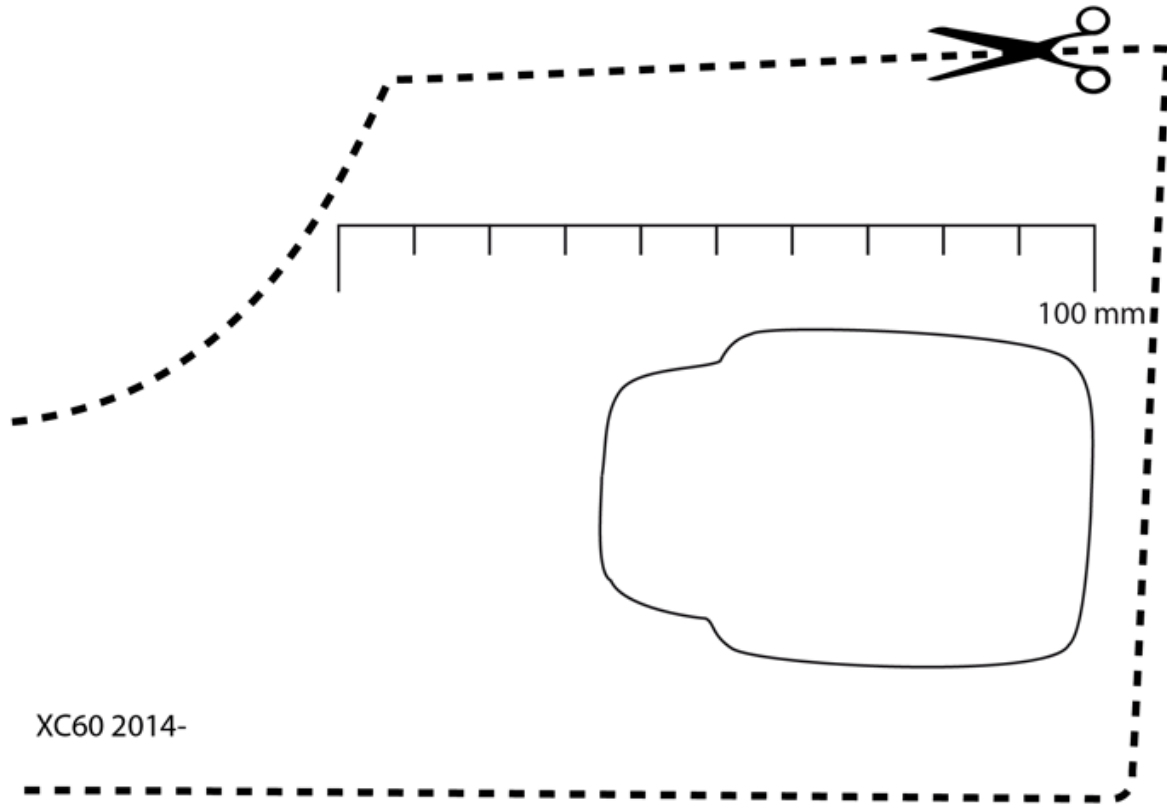


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INTRODUCTION

Read through all of the instructions before starting installation.

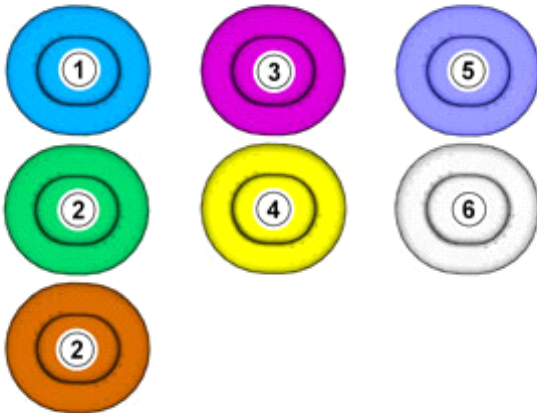
Notifications and warning texts are for your safety and to minimise the risk of something breaking during installation.

Ensure that all tools stated in the instructions are available before starting installation.

Certain steps in the instructions are only presented in the form of images. Explanatory text is also given for more complicated steps.

In the event of any problems with the instructions or the accessory, contact your local Volvo dealer.

1



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Color symbols

Note!

This colour chart displays (in colour print and electronic version) the importance of the different colours used in the images of the method steps.

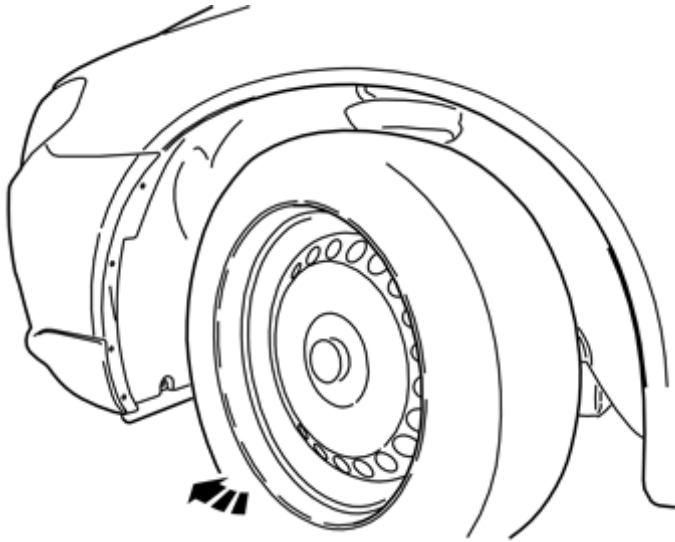
1. Used for focused part, the part that you are to do something with.
2. Used as extra colors when you need to show or differentiate additional parts.
3. Used for attachments that are to be removed/installed. May be screws, clips, connectors, etc.
4. Used when the component is not fully removed from the vehicle but only hung to the side.
5. Used for standard tools and special tools.
6. Used as background color for vehicle components.



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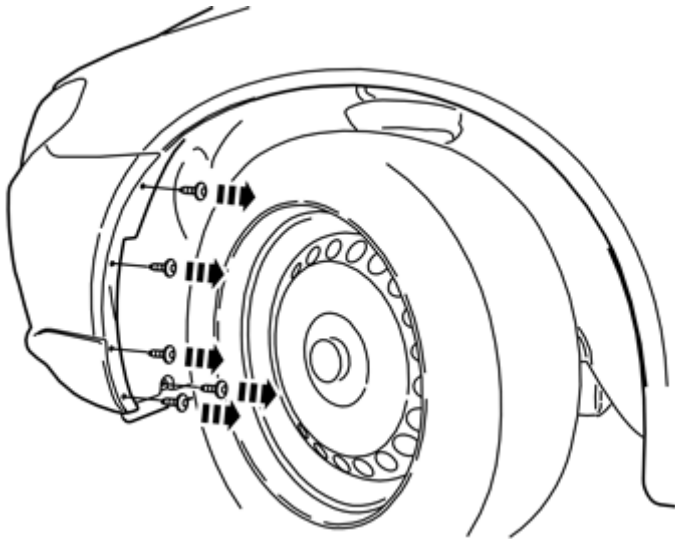


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Removal

Turn the front wheels so that the screws in the wing liner are accessible.

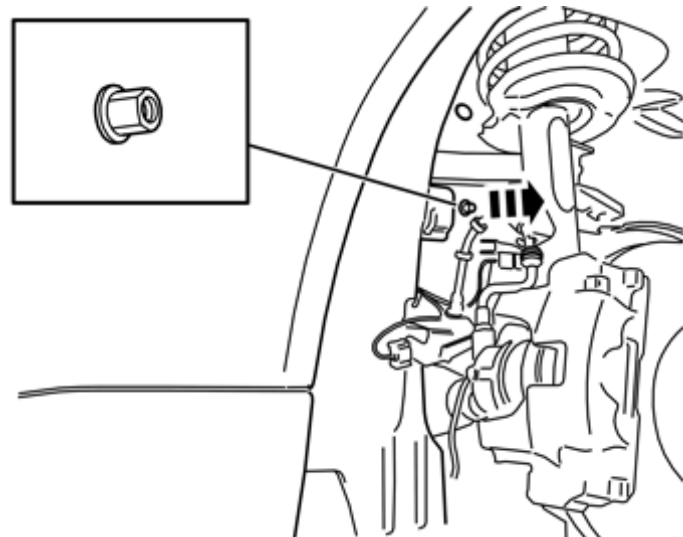
3



IMG-231549

Remove the seven screws from the front edge of the wing liner.

4



IMG-231550

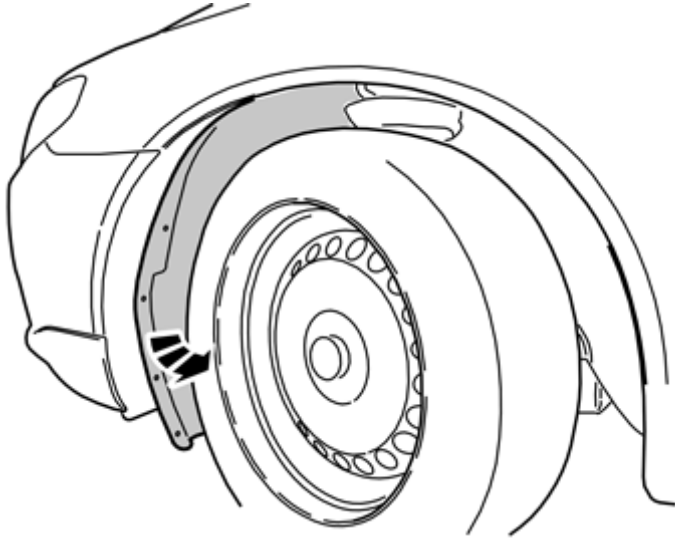
Remove the plastic nut that holds the wing liner into the body.



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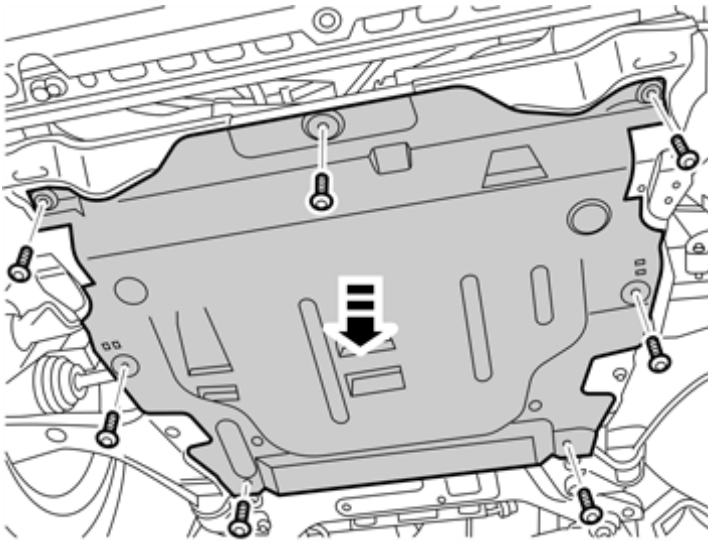
5



IMG-231551

Fold the wing liner out of the way.

6



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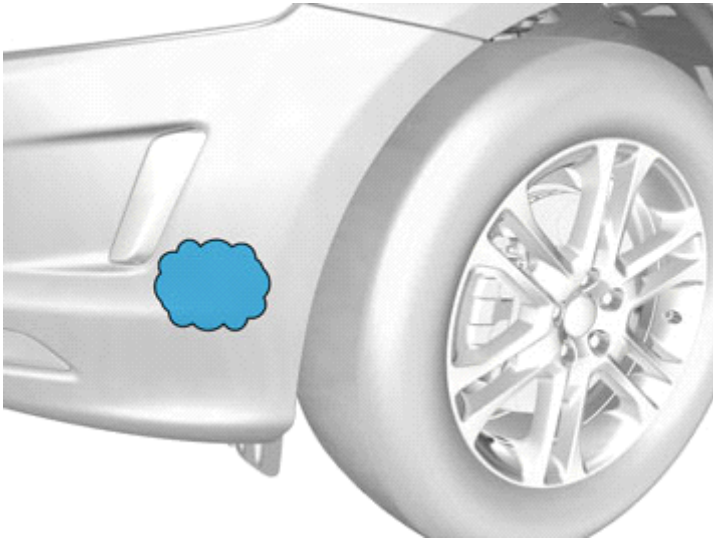
Remove the engine splash guard.



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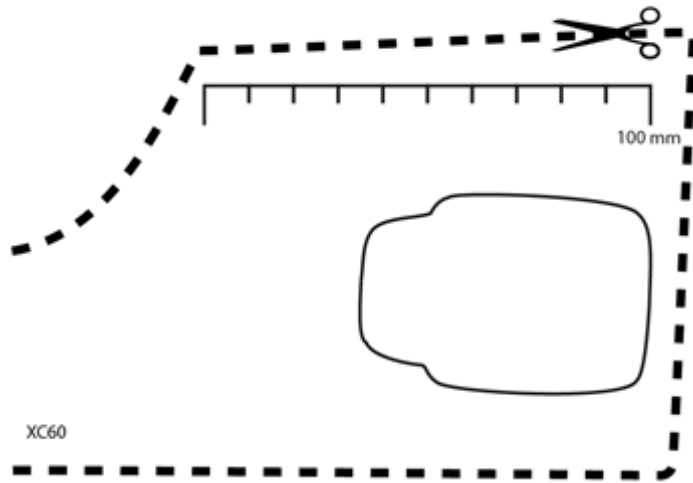
IMG-378301

Clean the marked area.

Note!

Use soap solution.

8



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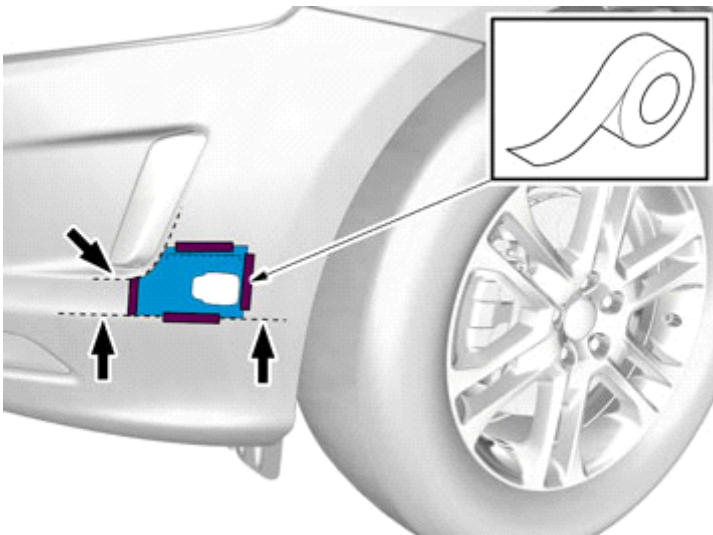
Use the template from the installation instructions.

Cut out following the dotted lines.

Note!

Check the scale.

9



IMG-378304

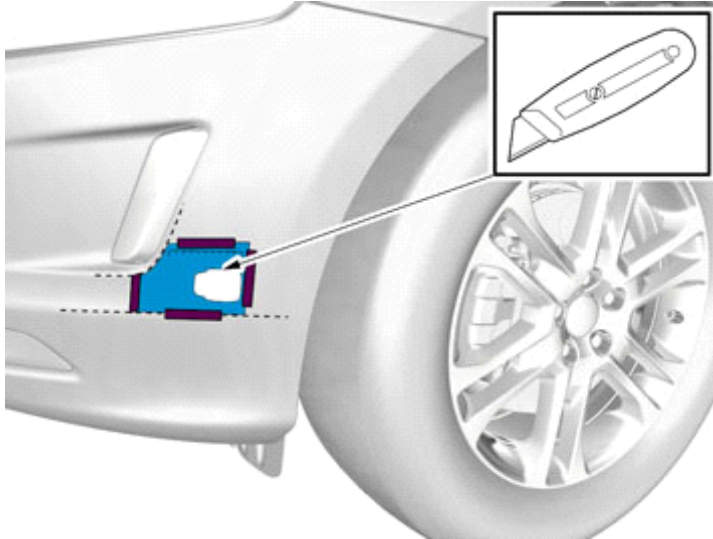
Tape the template as illustrated.



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Accessory installation

Take a sharp knife. First make a thin cut along the edges of the inside of the template. This provides a groove to follow. Then cut carefully out of the bumper cover.

Note!

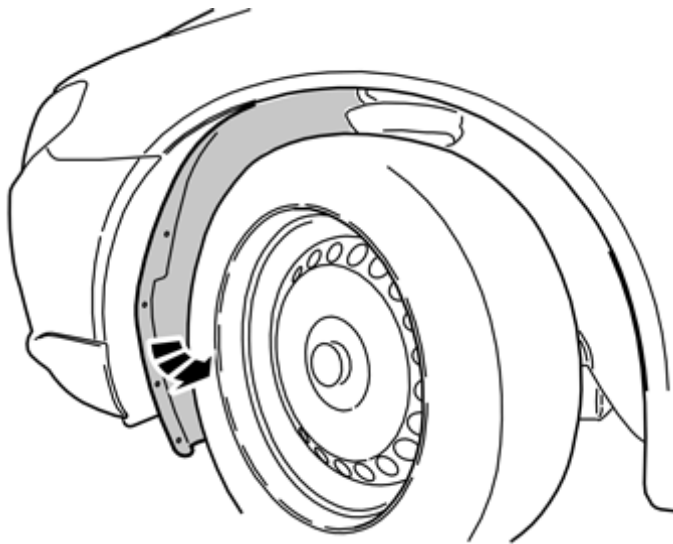
Cut carefully. It is easy to slip with the knife and move outside the template.

Remove the template

Install the protective cover for the front engine block heater socket from the kit. Check that it aligns. Adjust the hole using a knife as necessary.

Smooth off the hole edges. Remove any swarf.

11



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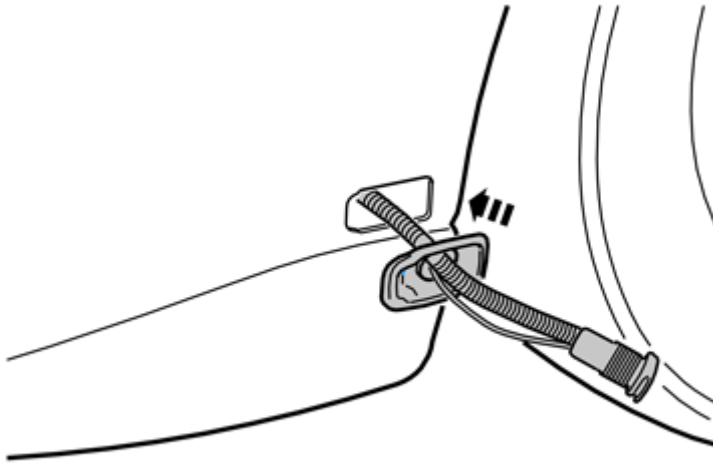
Fold the wing liner out of the way.



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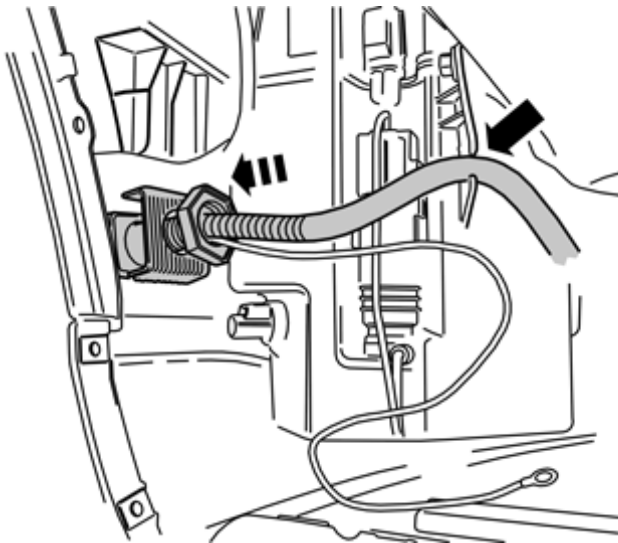


IMG-231564

Press the protective cover (from the kit) into place in the hole cut in the bumper cover.

Insert the cable for the front engine block heater socket together with the ground lead from the kit through the protective cover.

13



IMG-231566

Install the attaching brace and nut from the kit.

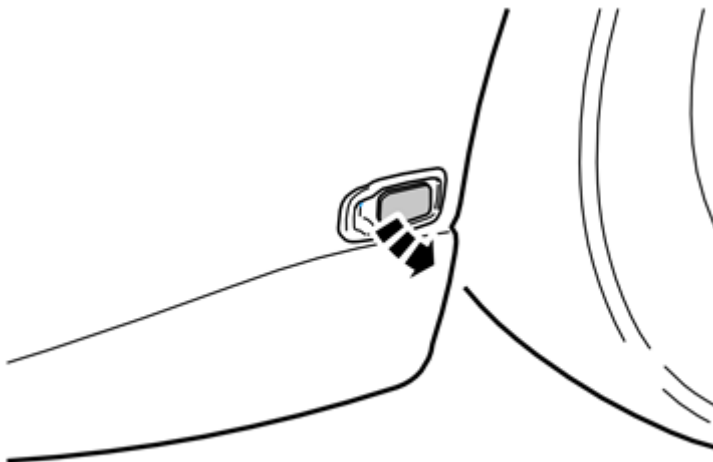
Tighten the front engine block heater socket to the bumper shell.

Plug the electrical connector into the front engine block heater socket. Use the connector as a counterhold when tightening.

Press the cable into the holder on the washer fluid reservoir.

Remove the cover on the cooling system expansion tank.

14



IMG-231565

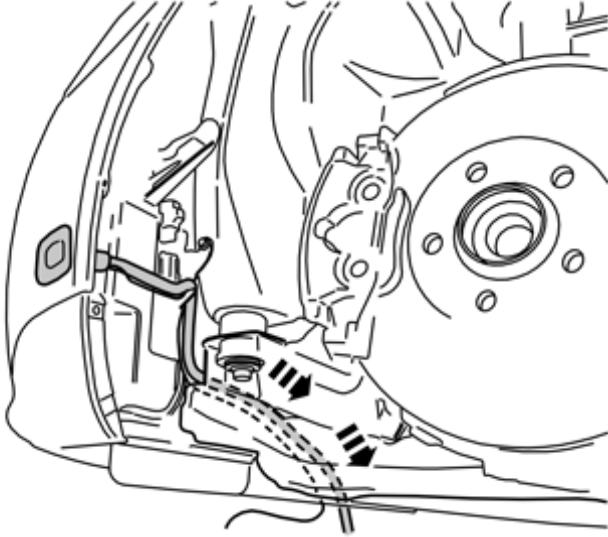
Turn the front intake connector so that the cover opens rearwards.



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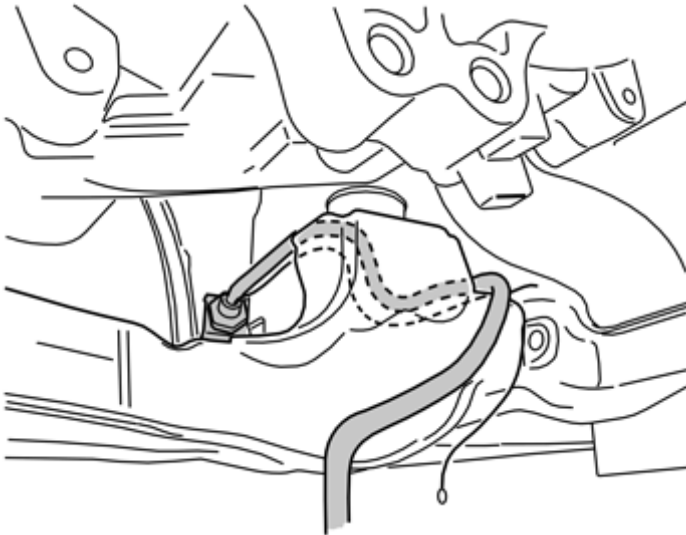
15



IMG-231567

Route the cable with the ground cable from the front engine block heater socket in front of the left-hand front mounting for the subframe and down on the inside of the subframe.

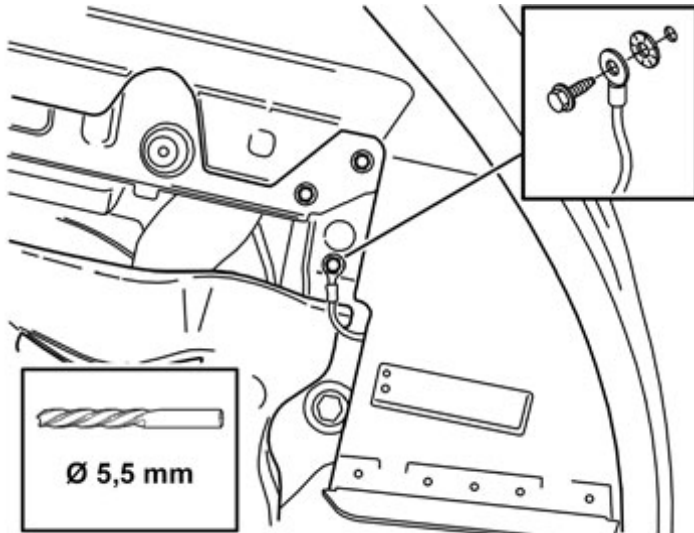
16



IMG-231568

Continue downwards on the inside of the subframe.

17



IMG-372648

Drill a **Ø5.5 mm (5/32 ")** hole for the front intake grounding on the underside of the left front side member as illustrated.

Deburr the hole edges, remove the drill swarf and apply rustproofing agent to the edges.

Remove screw and toothed washer from the kit and tighten the ground cable.

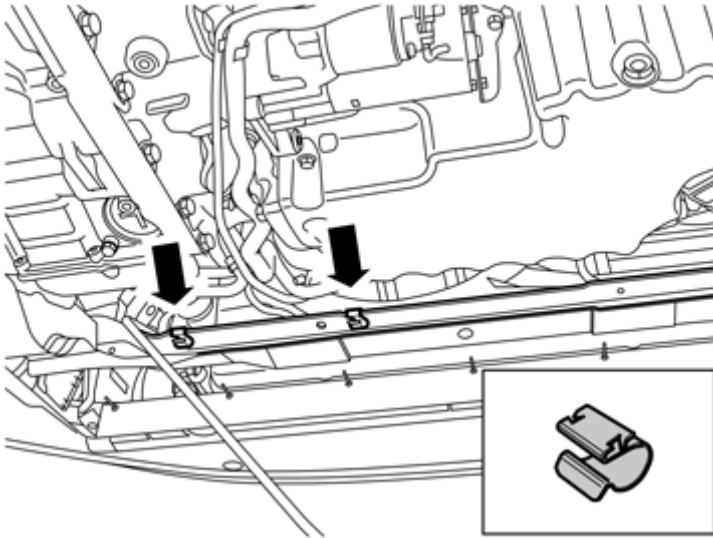
Clamp up the excess ground cable to the cable for the front engine block heater socket using a tie strap from the kit.



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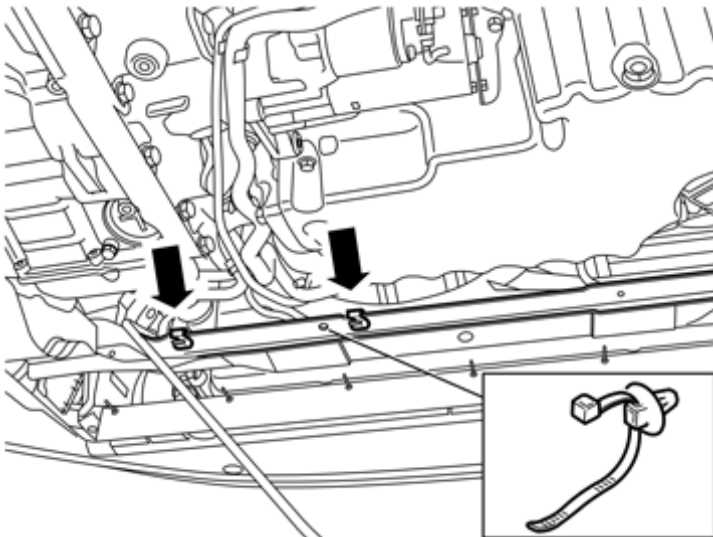
18



IMG-231572

Take two clips from the kit and install them on the upper edge of the subframe, and turned in toward the subframe U-profile. Install the clips in the positions illustrated.

19



IMG-231472

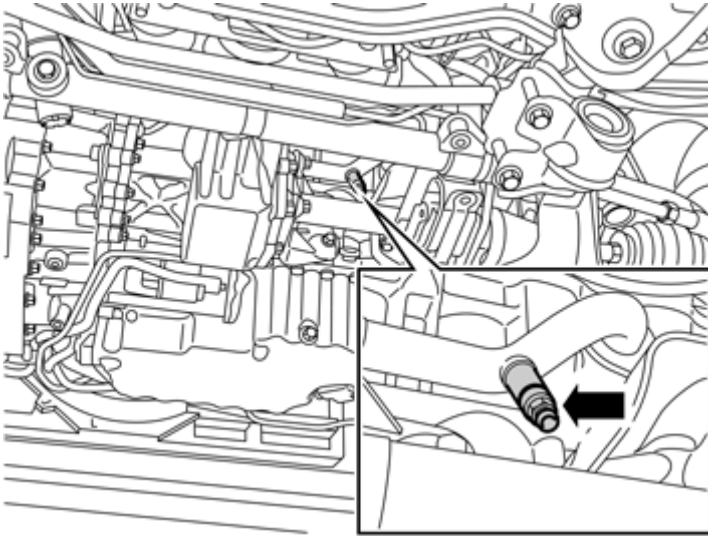
Install a cable tie with clip in the hole in the upper edge of the subframe in order to clamp up any excess cable. The cable tie must be fitted turned in toward the subframe U-profile, between the already installed clips.



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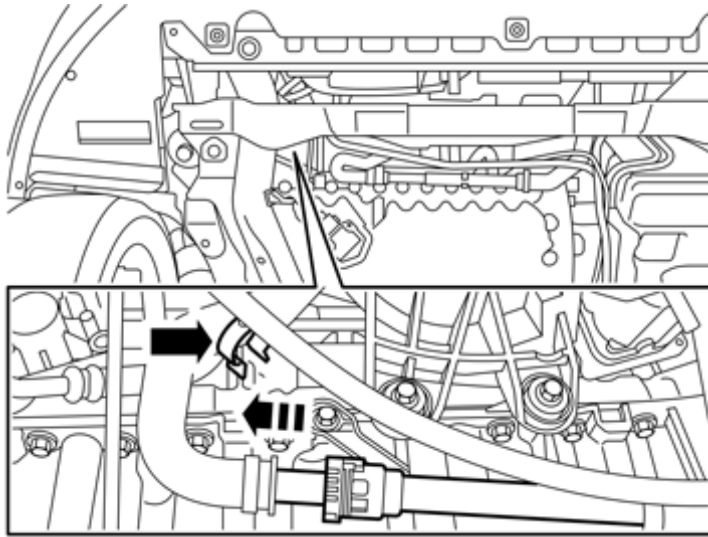


IMG-231473

Drain the coolant.

Tighten the nipple after the coolant has been drained.

21

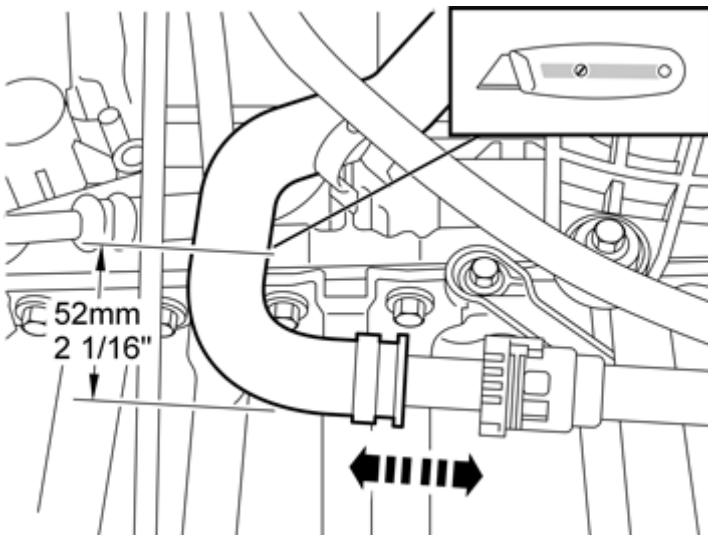


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Detach the double clamp for the cable to the alternator on the thermostat housing hose.

Rotate the catch on the thermostat housing pipe anticlockwise, detach the hose and drain the remaining coolant.

22



IMG-231475

Cut off the hose using a sharp knife in accordance with the measurements.

Hint

Install a piece of tape over the cutting location and mark with a pen where the incision should be. Reinstall the hose connection in the pipe in order to support the cutting process.

Note!

Do not damage the adjacent cable harnesses.

Make the incision as straight as possible.



Installation instructions, accessories

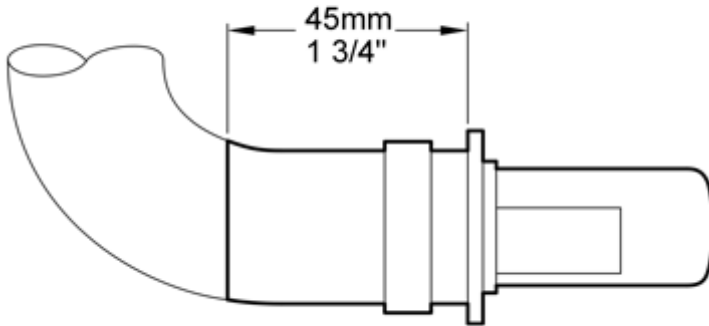
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The short hose-end that was cut off shall be used again.

23

Cut out the short cut-off hose section as illustrated.

Discard the cut-off hose bend.



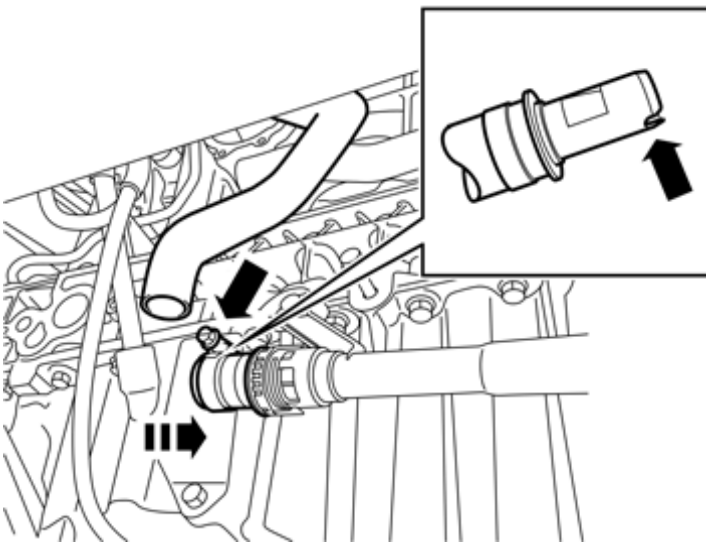
IMG-231476

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Remove the short hose-end and press it on the pipe that runs to the thermostat housing. Make sure that the cut-out in the hose connection is turned down and fits into the corresponding pin in the pipe connection.

Rotate the catch on the pipe clockwise against the stop.

Take a hose clamp from the kit and install it on the hose-end.



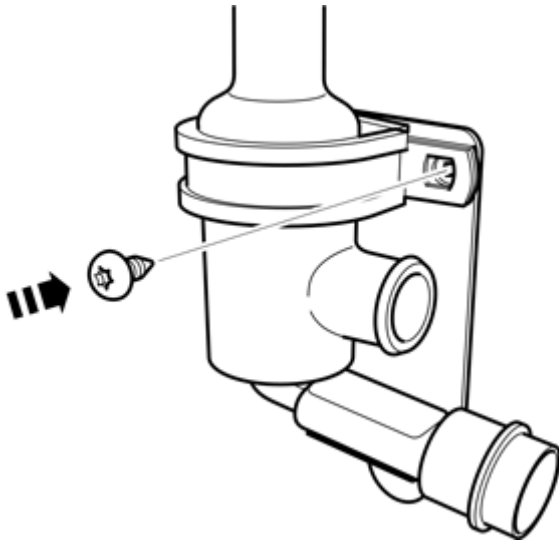
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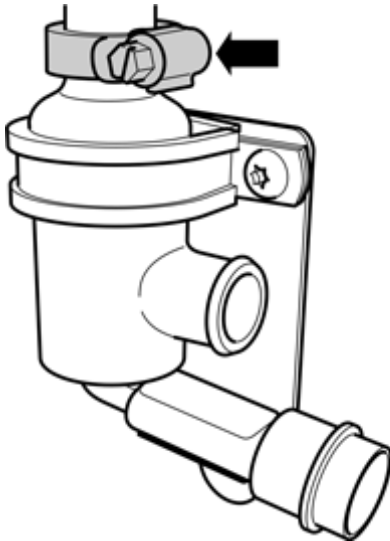


IMG-231478

Take the engine block heater, bracket, rubber coated clamp and screw from the kit and assemble them as illustrated.

Do not tighten the screw yet.

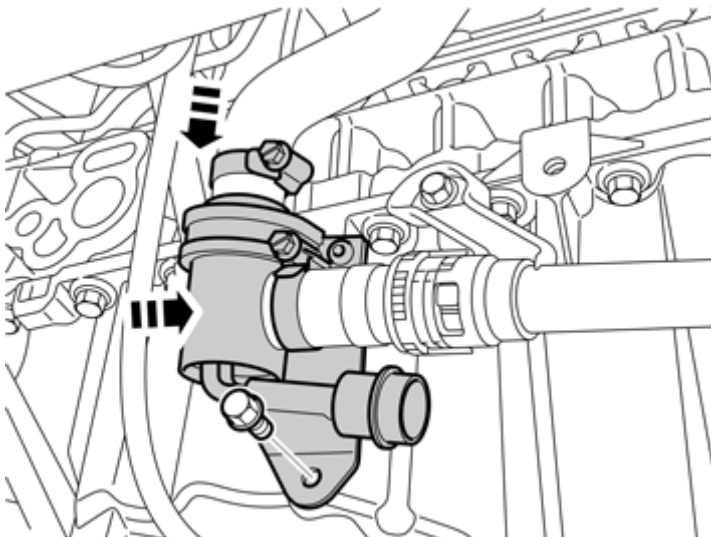
26



IMG-231479

Take the hose clamp from the kit and fit it onto the engine block heater's upper connection.

27



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Position the engine block heater with bracket in the front edge of the oil sump and connect both hose-ends to the engine block heater's connections.

Take a screw from the kit and tighten the bracket with engine block heater into the existing hole in the oil sump.

Note!

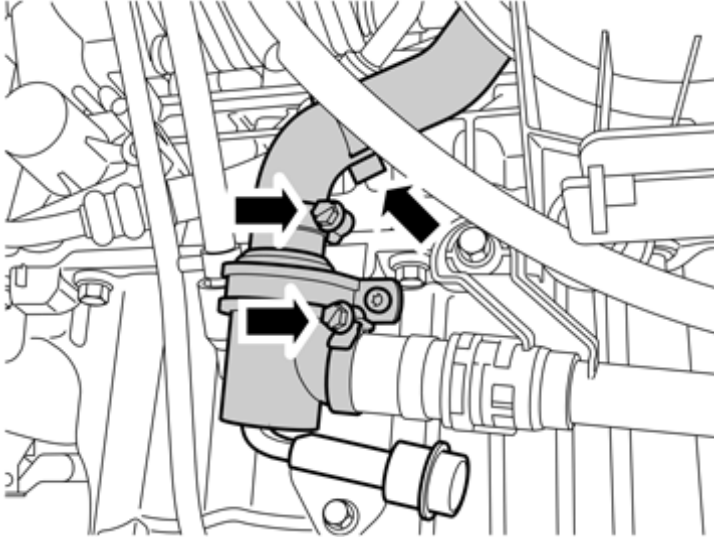
The screw is self-tapping so insertion may be slow. Make sure that the screw is centred straight into the hole, so that the screw head is flat against the bracket.



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IMG-231481

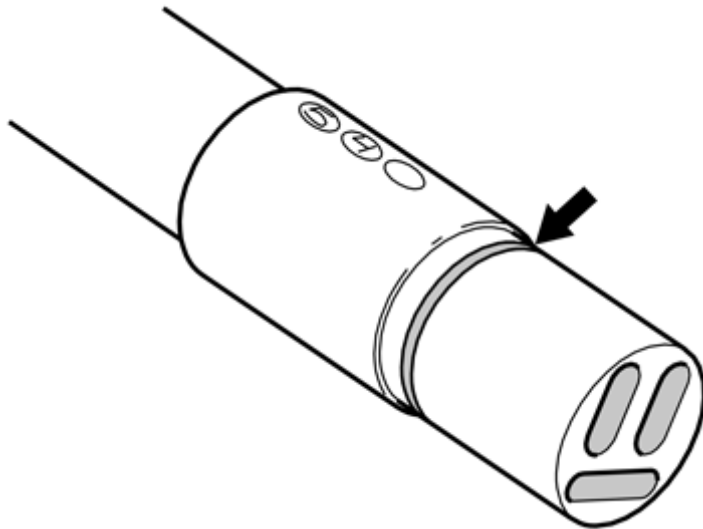
Adjust the engine block heater in the rubber coated clamp so that the hoses are properly fitted on the engine block heater's connections.

Tighten the screw to the rubber coated clamp.

Tighten the hose clamps to the engine block heater.

Install the double clamp to the cable for the alternator in the engine block heater's upper hose.

29



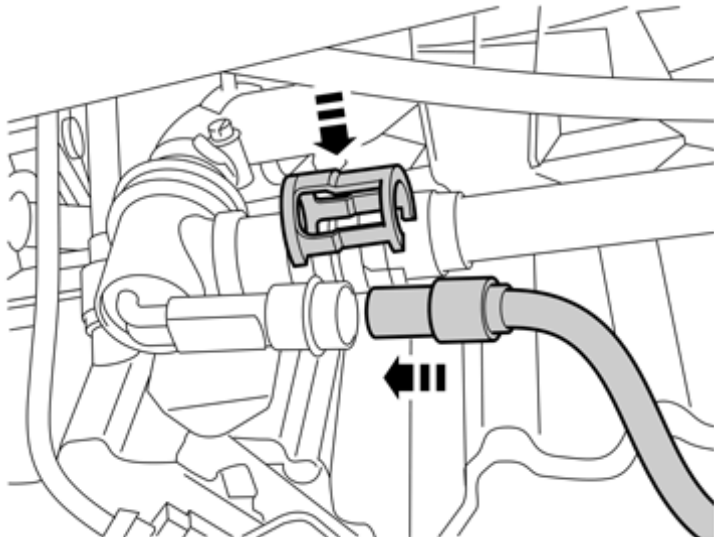
IMG-225580

Lubricate the O-ring on the connector for the heater's cable with low temperature grease **P/N 1161427**.

Note!

Do not get any grease on the surfaces of the connector.

30



IMG-231482

Connect the front intake cable in the engine block heater and press it in firmly.

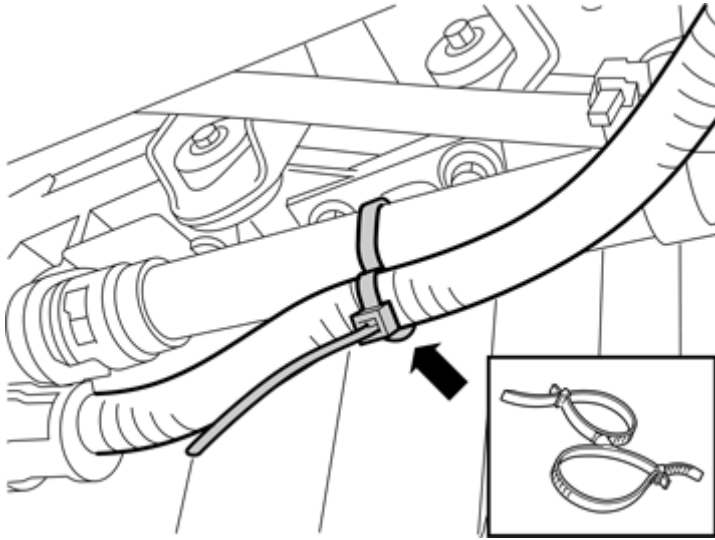
Press a locking sleeve from the kit over the cable splice.



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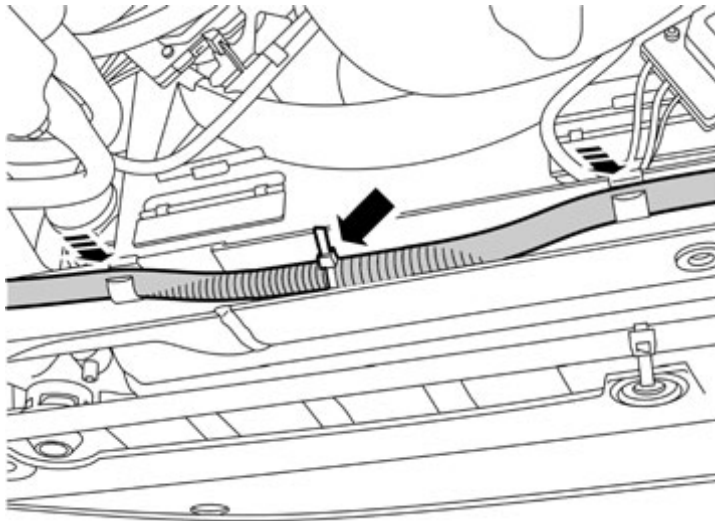
31



IMG-214063

Take a double cable tie and clamp the cable into the pipe that runs to the thermostat housing.

32



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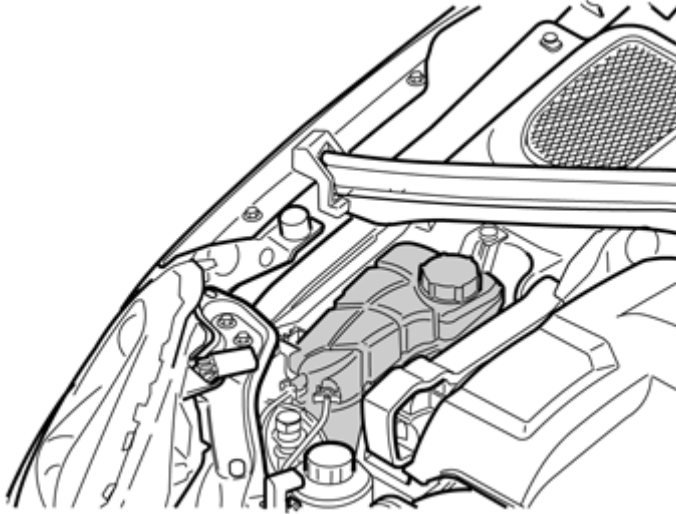
Press the cable into the two clips and tighten the cable to the subframe using the clip's cable tie.



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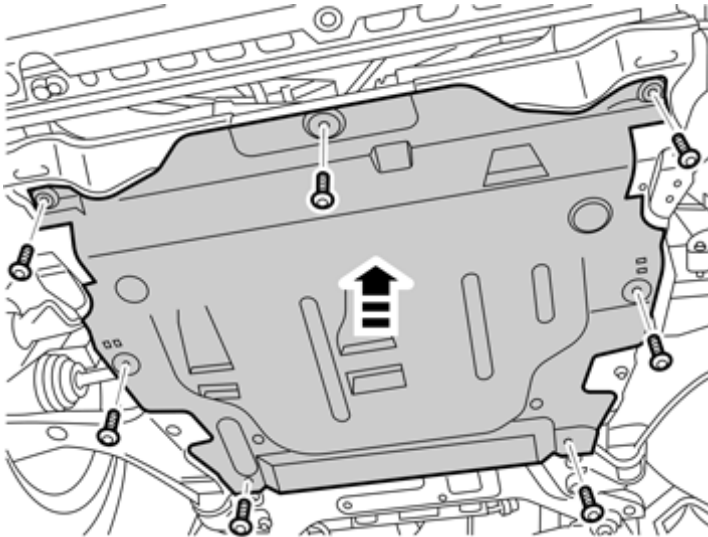
Installation

Top up with coolant and run the engine to operating temperature.

Bleed the cooling system and check that there is no leakage.

Top up the cooling system as required.

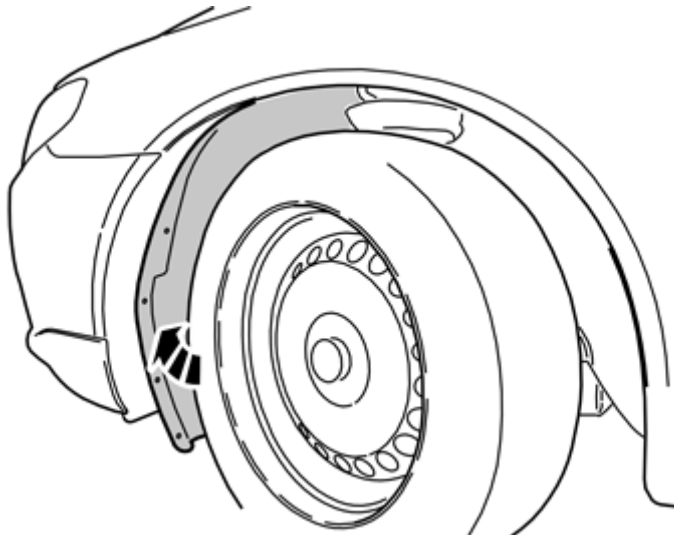
34



IMG-231335

Reinstall the engine splash guard. Tighten.

35



IMG-231579

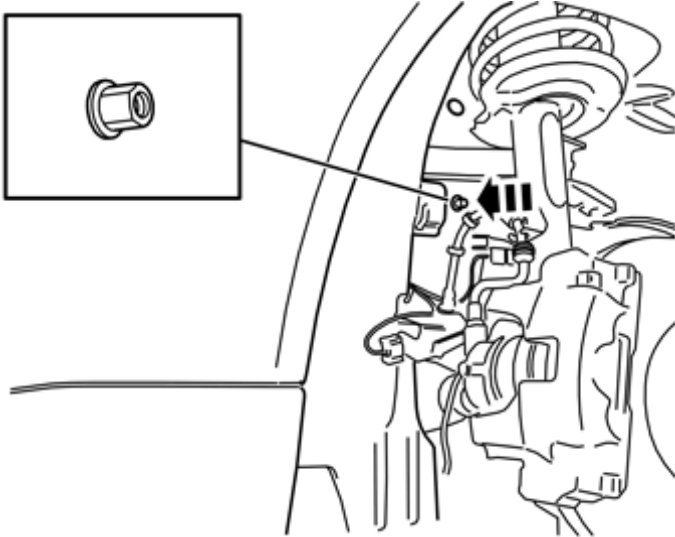
Reinstall the wing liner.



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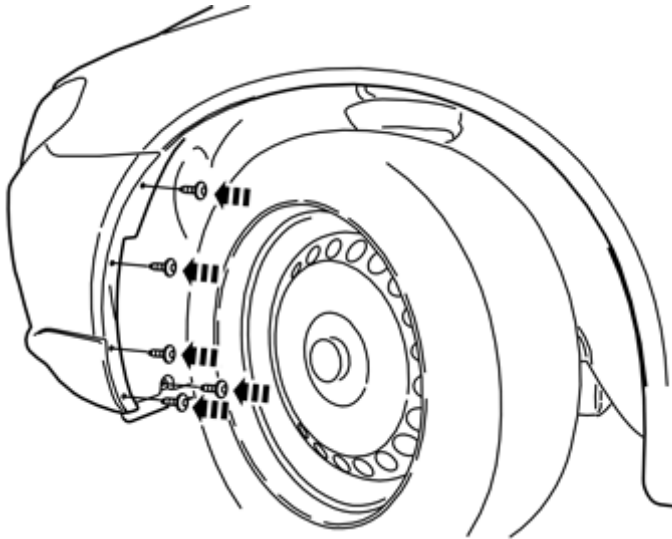
36



IMG-231580

Reinstall the plastic nut.

37



IMG-231581

Tighten the screws in the front edge of the wing liner.