

#TL100171

INSTALLATION MANUAL

IC100028

APR 2.9T Air-to-Water Intercooler

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Notes:

These instructions were written for a North American specification Audi RS5, but other models are similar.

When disassembling the car, be sure to keep all fasteners so they can be reused. It is recommend that you get some kind of compartmented tray to organize the fasteners, such as a fishing tackle box or several large ice cube trays. Fasteners that are not reused for reinstallation are noted in the instructions. All directions used in this manual (right, left, front, etc.) are based on if you were sitting in the drivers seat of the car.

These instructions assume that you have basic mechanical skills and several varieties of basic hand tools in order to install the kit. If you have any questions about the install, feel free to contact your APR representative.



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1) Support the vehicle on a lift, and remove the two front wheels.

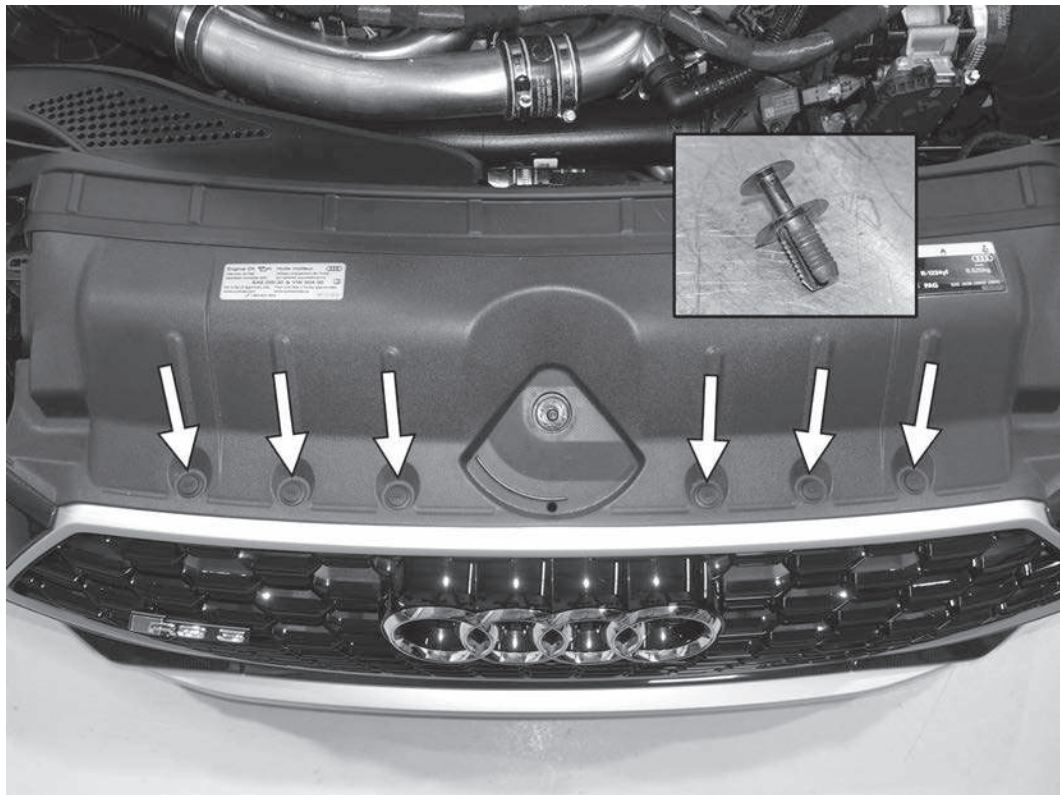
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2) Remove the engine hood latch by pressing in on the button on the back side of the latch, and then lifting the latch up and away from the car.

Be sure not to close the hood at any time without first reinstalling the latch!



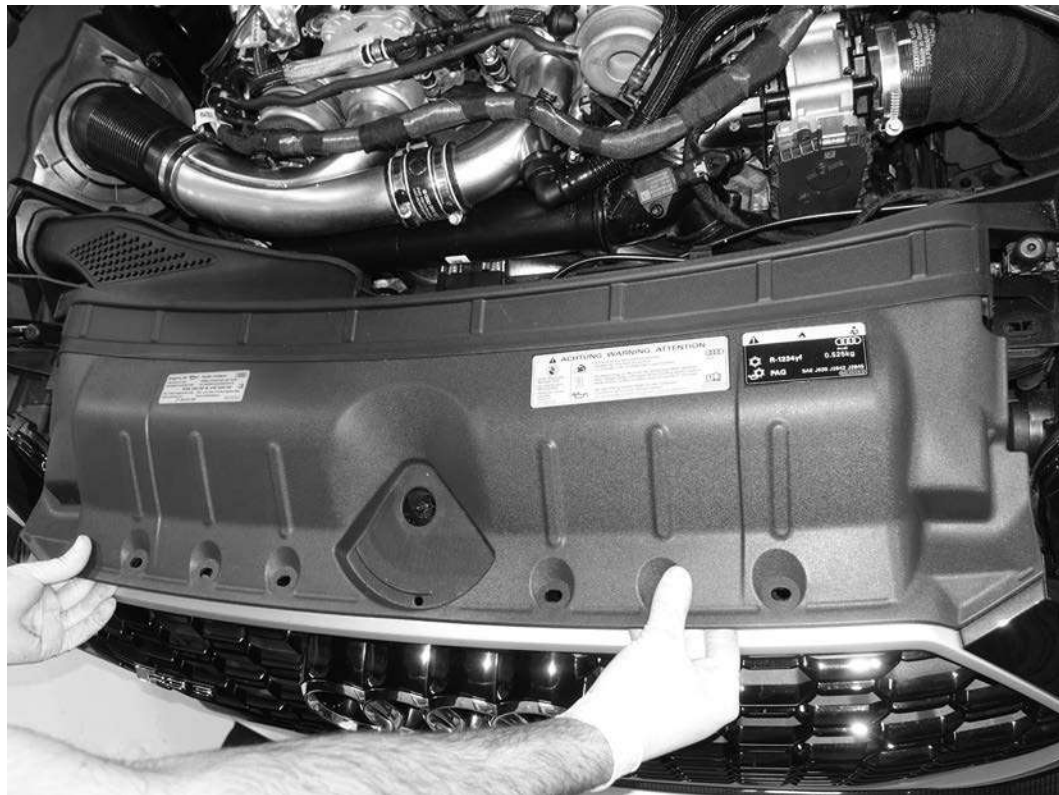
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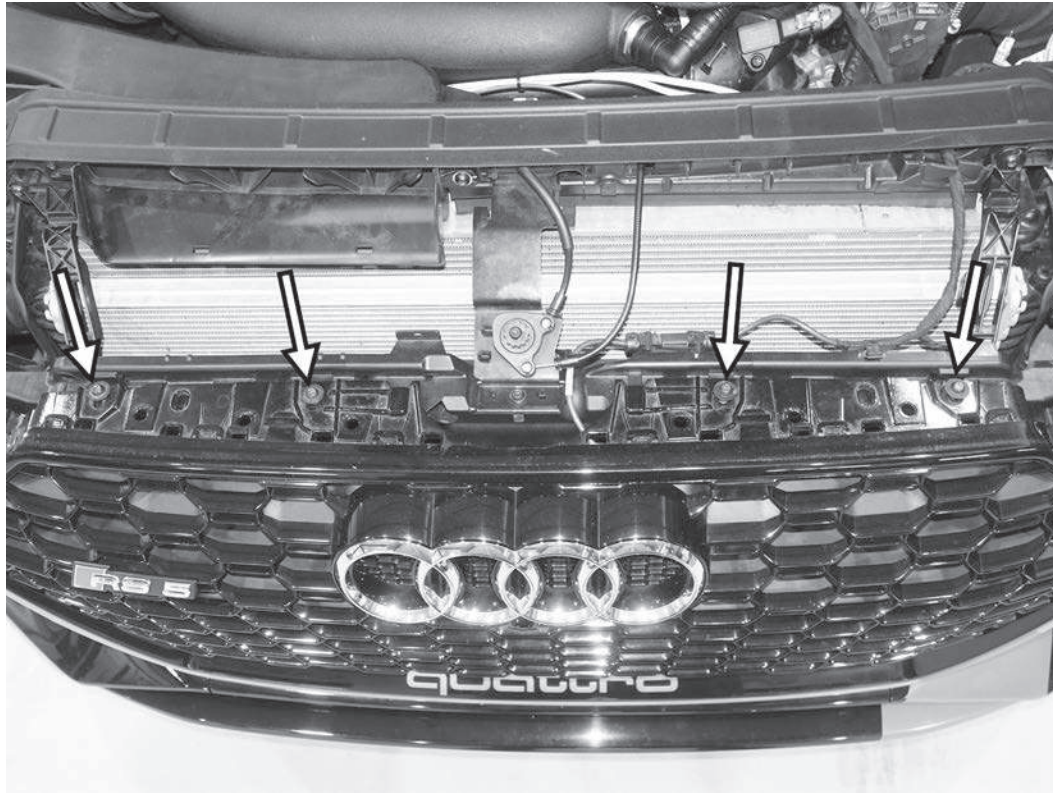
3) Remove the six push pin style connectors holding the cover between the front bumper and the radiator support. Carefully pry the raised center part of the pin up, and then remove the entire pin assembly up and out of the cover.

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4) Carefully lift up on the front side of the cover where it attaches to the grille. Then, pull the cover forward and away from the core support to remove the cover from the car.



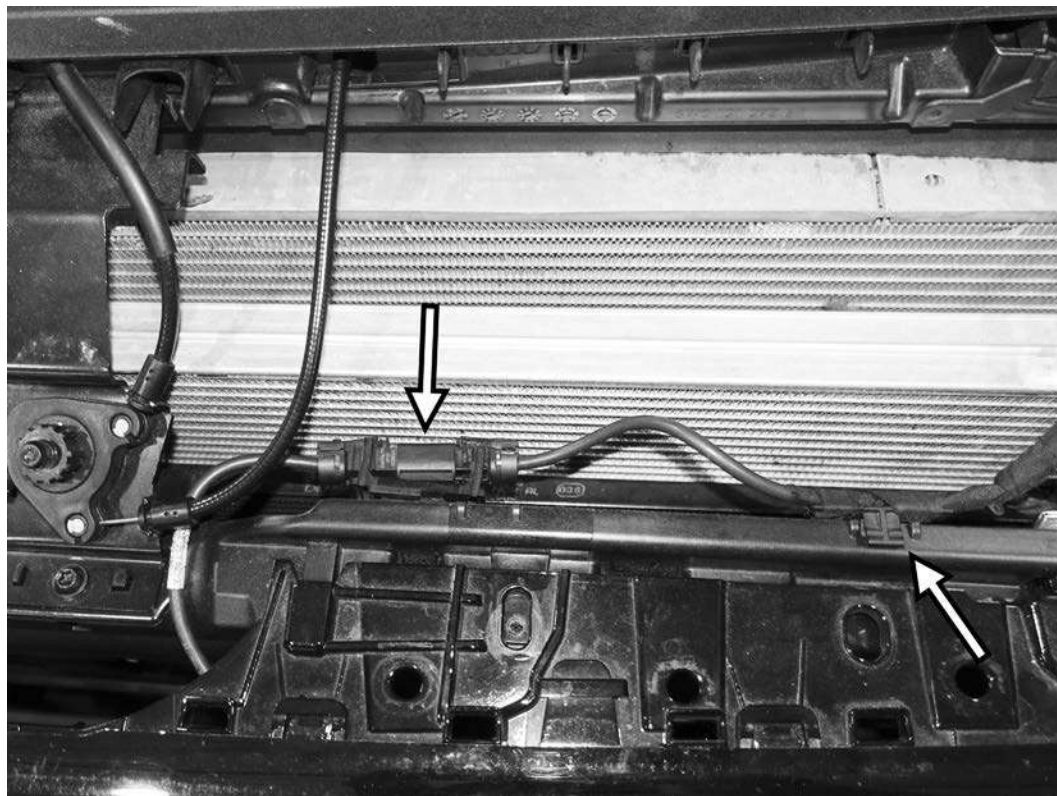
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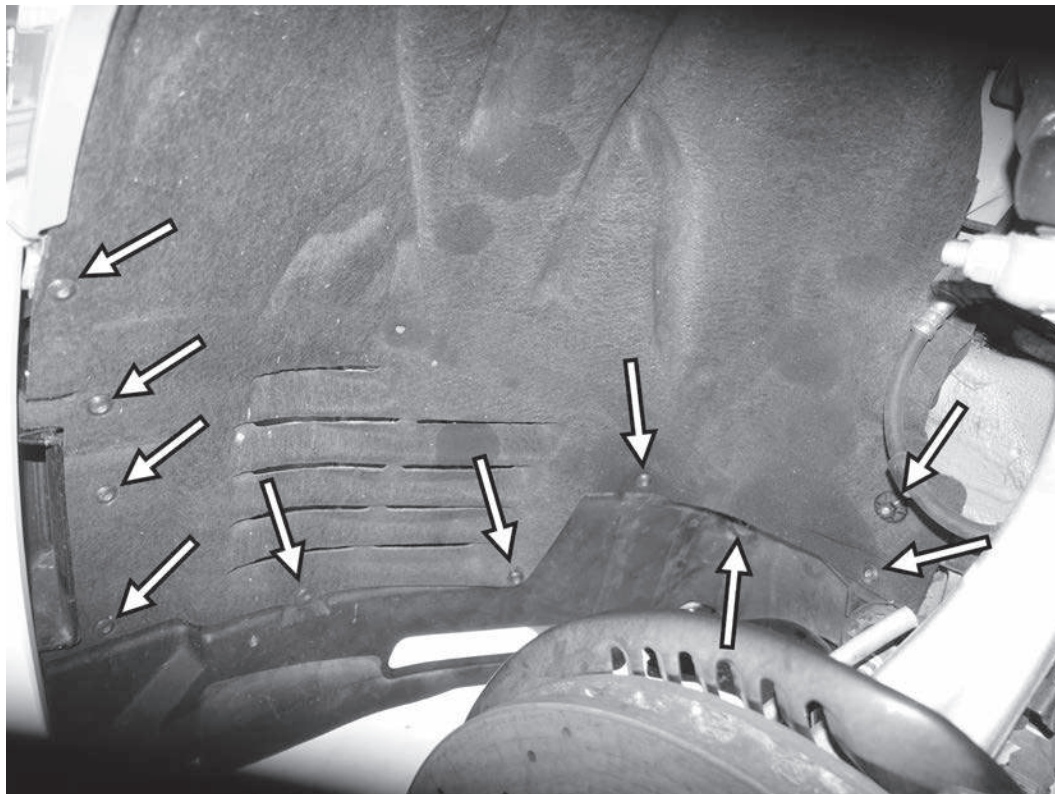
5) Remove the four T30 screws holding the top of the bumper cover to the upper bumper support.

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6) Ensure the ignition is off on the car. Disconnect the cable to the front distance sensor, then separate the harness from the upper bumper support. Do not turn the ignition back on in the car until this has been reconnected, or the car may require having the driver assistance system recalibrated!



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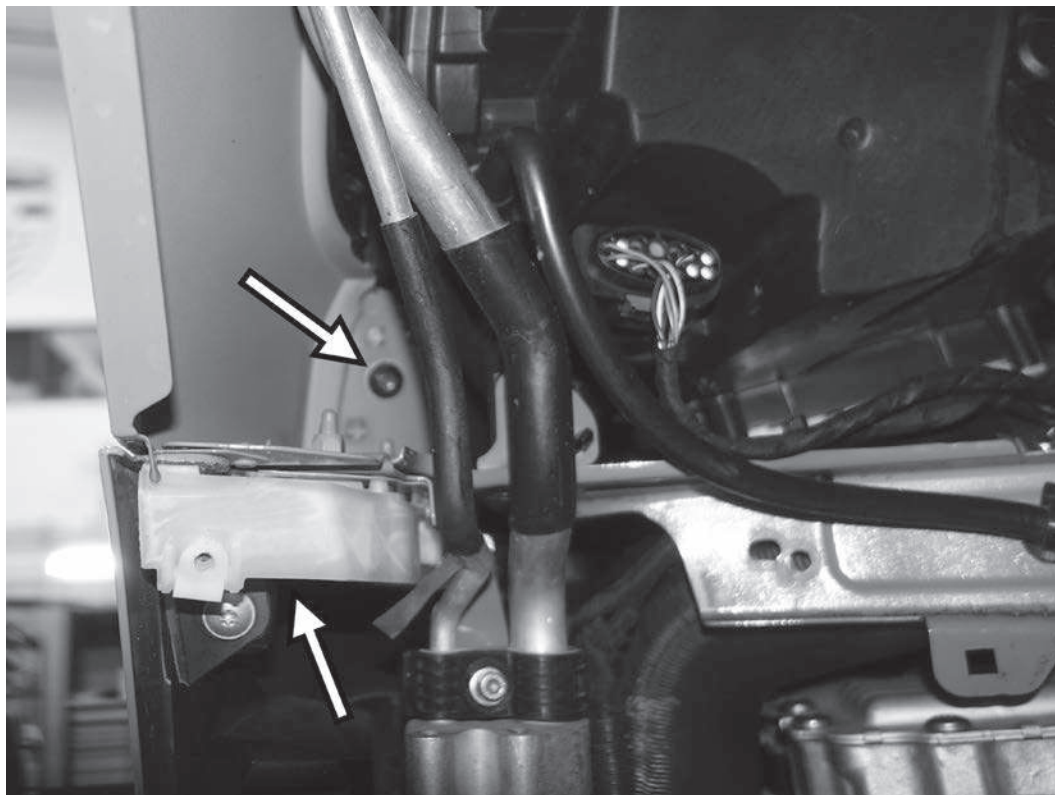


7) Remove all the fasteners from the front side of the wheel well liner. Typically, this is ten T25 fasteners, two 10mm nuts, and one T30 screw. Repeat this step on both sides of the car.

8) Carefully separate the front wheel well liners and fold the liner back behind the brakes so they are out of the way.

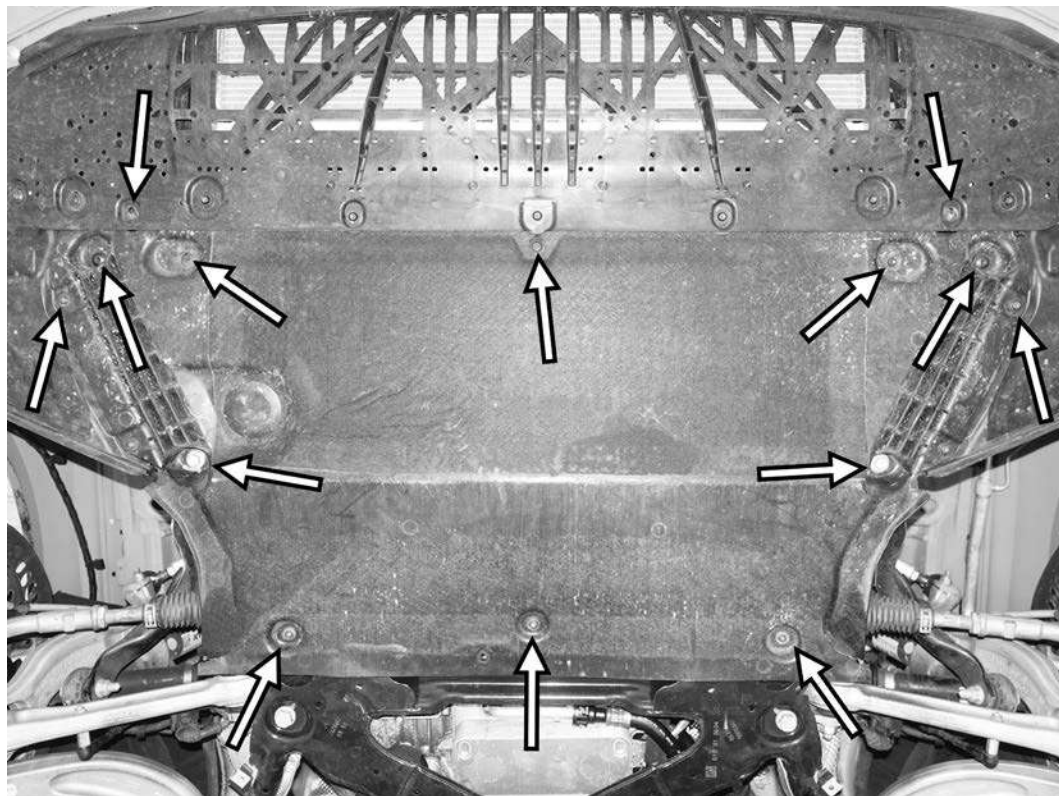


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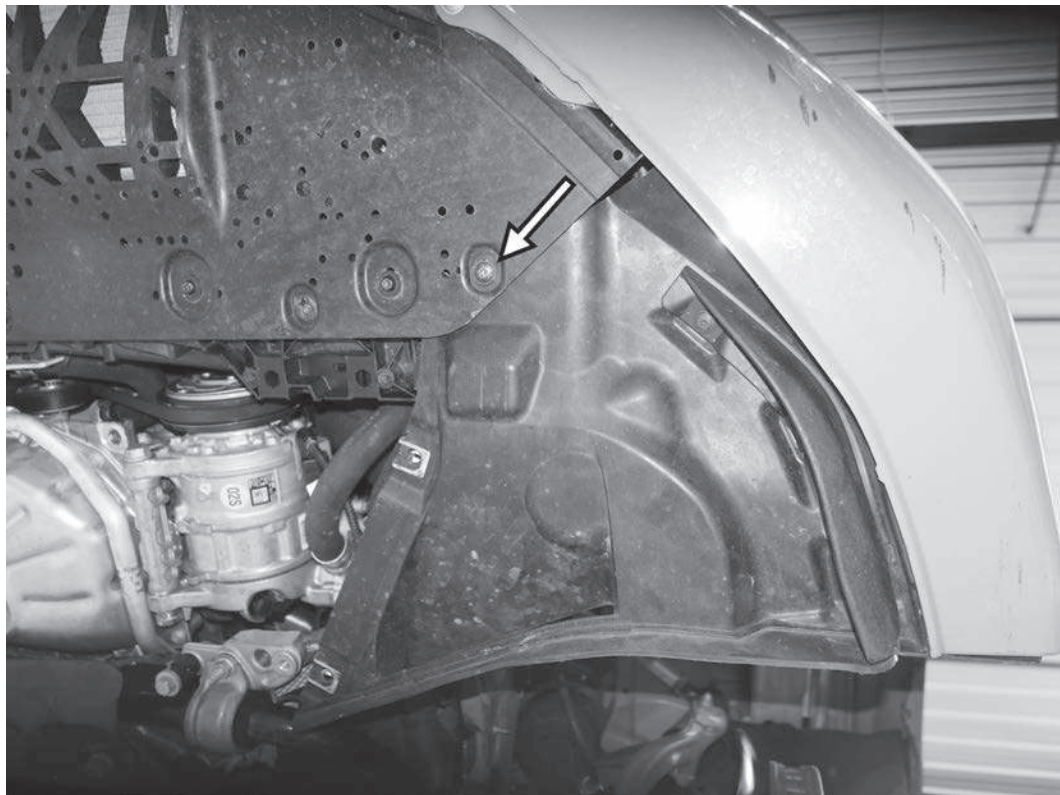


9) Remove the T30 screws holding the bumper cover to the front side of the fender. Also remove the push pin style connector between the side of the bumper cover and the bottom of the front fender. Repeat on the other side of the car.

10) Remove all the screws from the engine belly pan. Typically there are two 10mm triple square screws, four T30 screws, one T25, and seven quarter turn fasteners. Once all the fasteners are removed, lower the belly pan and remove it from the car.



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11) Remove the last T25 from both of the front wheel spoilers. Separate the headlight drain lines from the back of the spoilers, and then remove them from the car. The other fasteners to these spoilers should have been removed when uninstalling the wheel well liners.

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12) Remove the seven T30 screws along the bottom side of the bumper cover.



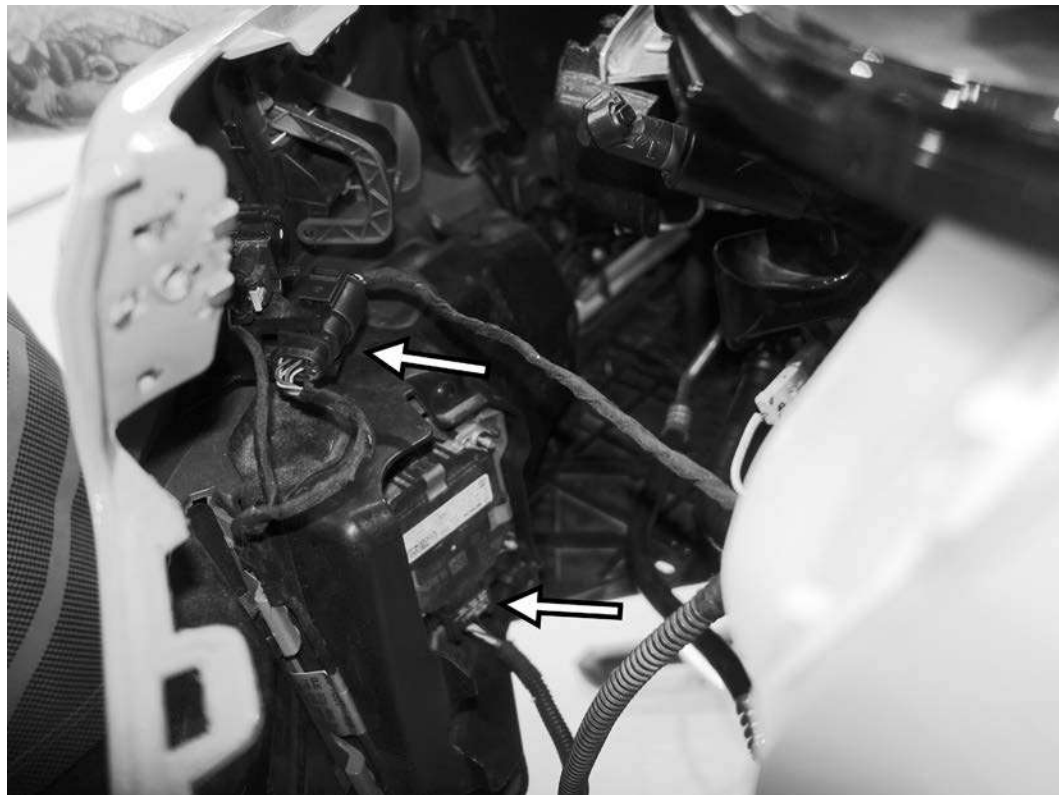
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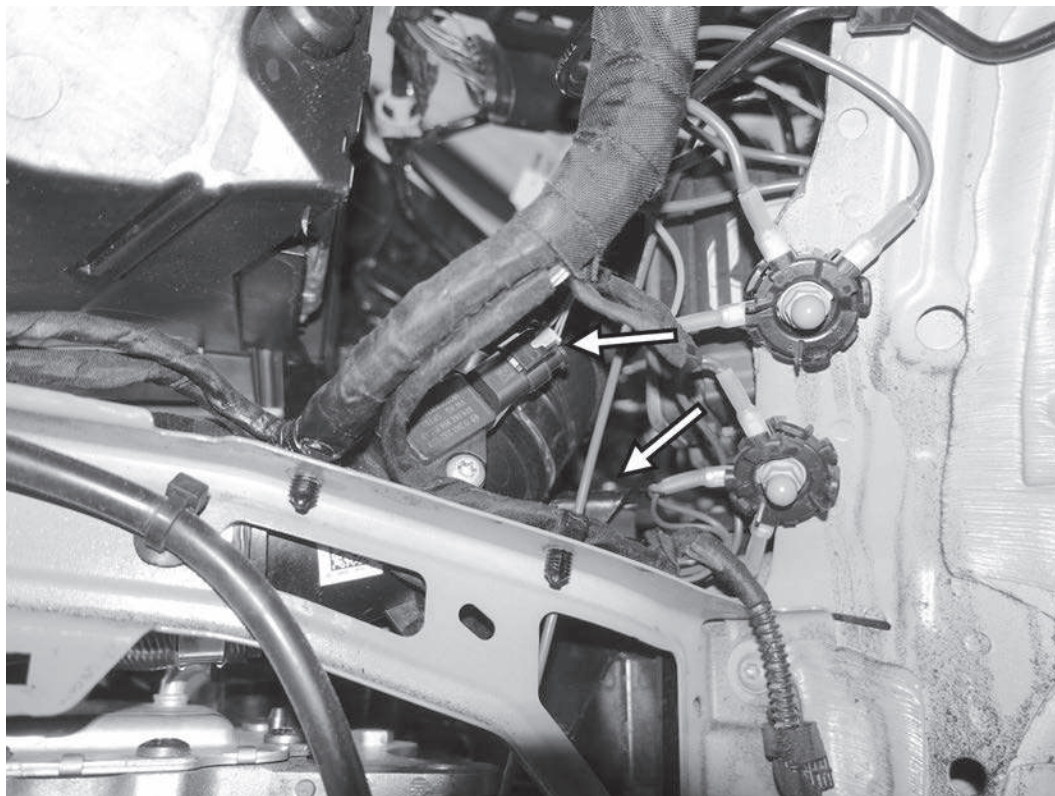


13) Carefully pull both sides of the bumper cover away from the bumper bracket on the bottom of the fender.

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14) With an assistant holding the bumper cover, disconnect any electrical connectors from both sides of the back of the bumper cover. Note how the connectors reattach to the bumper cover. Remove the bumper cover from the car, and place it somewhere that it cannot get damaged.

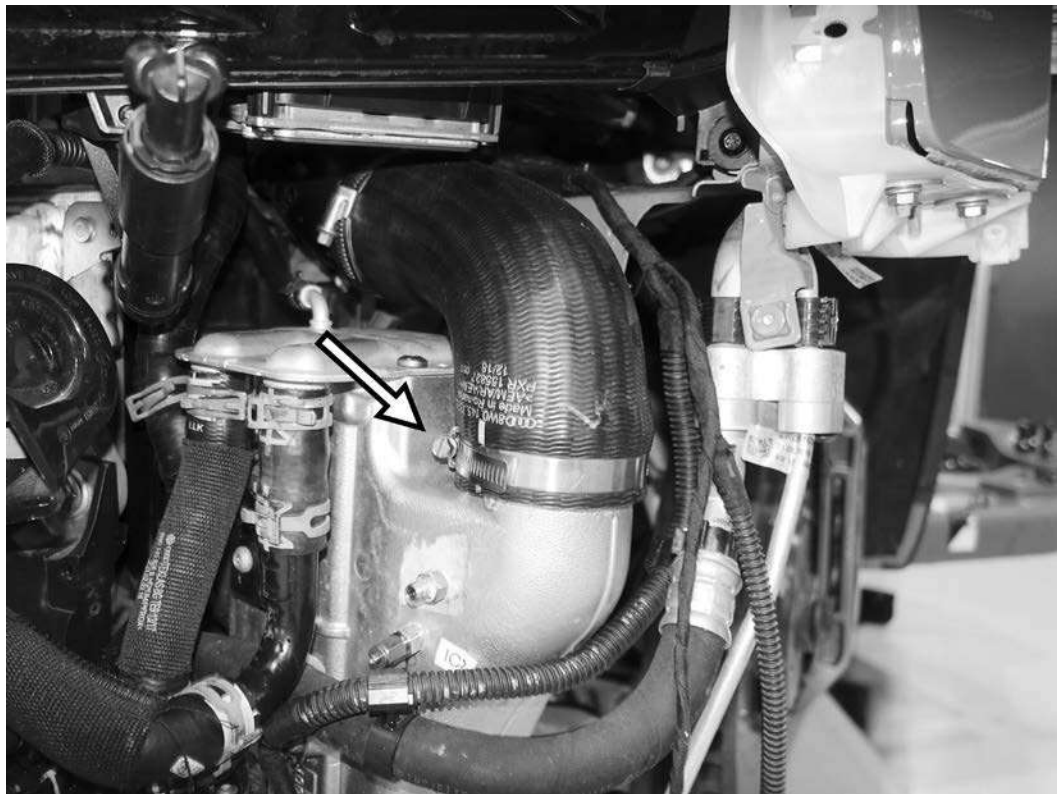




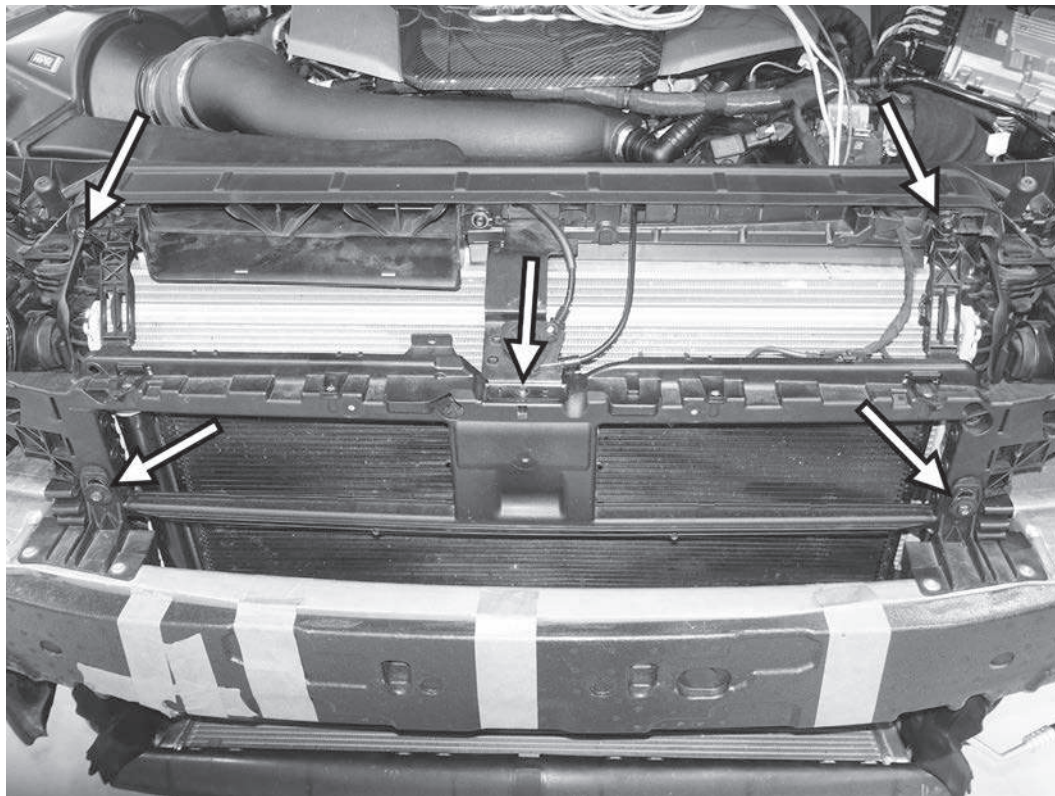
15) As seen from the front side of the left wheel well, disconnect the electrical connector to the MAP sensor that is on the throttle body inlet pipe assembly. Remove the 10mm nut that holds the bracket from the throttle body pipe to the left frame rail.

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16) Loosen the 7mm clamps on the throttle body hose assembly, on top of the stock intercooler and from the throttle body.

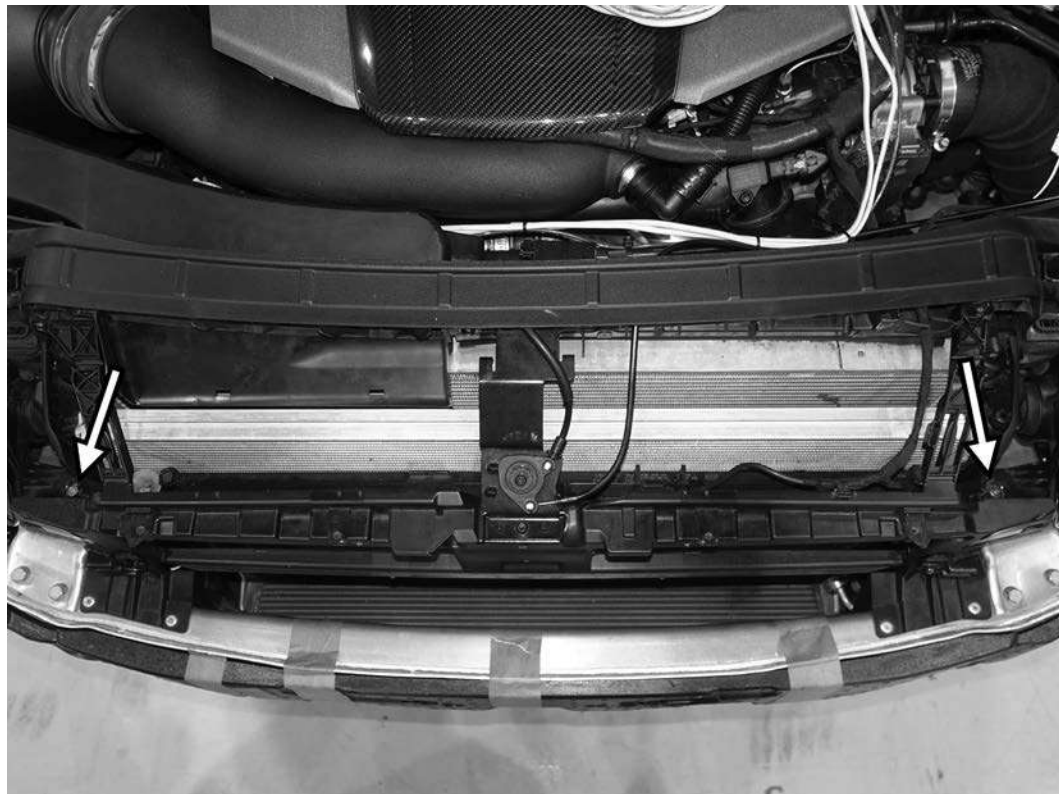


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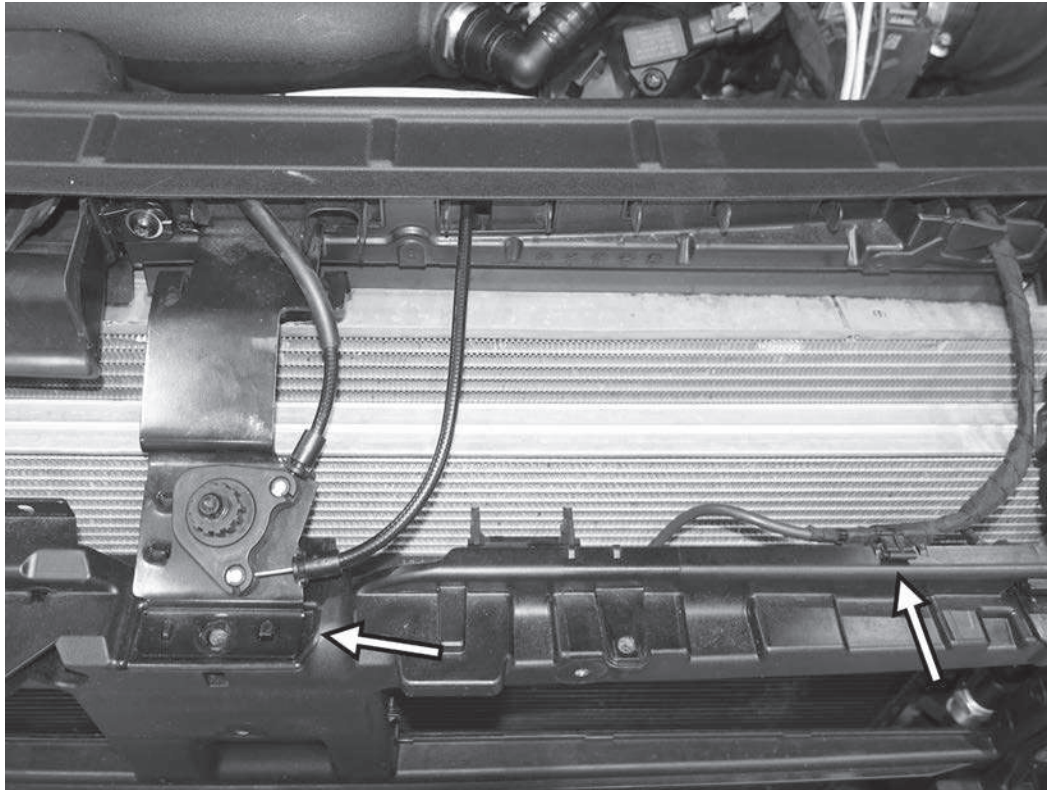


17) Remove the five T30 screws holding the upper bumper support to the radiator core support.

18) Remove the two T30 screws connecting the inside of the head-lights to the upper bumper support.



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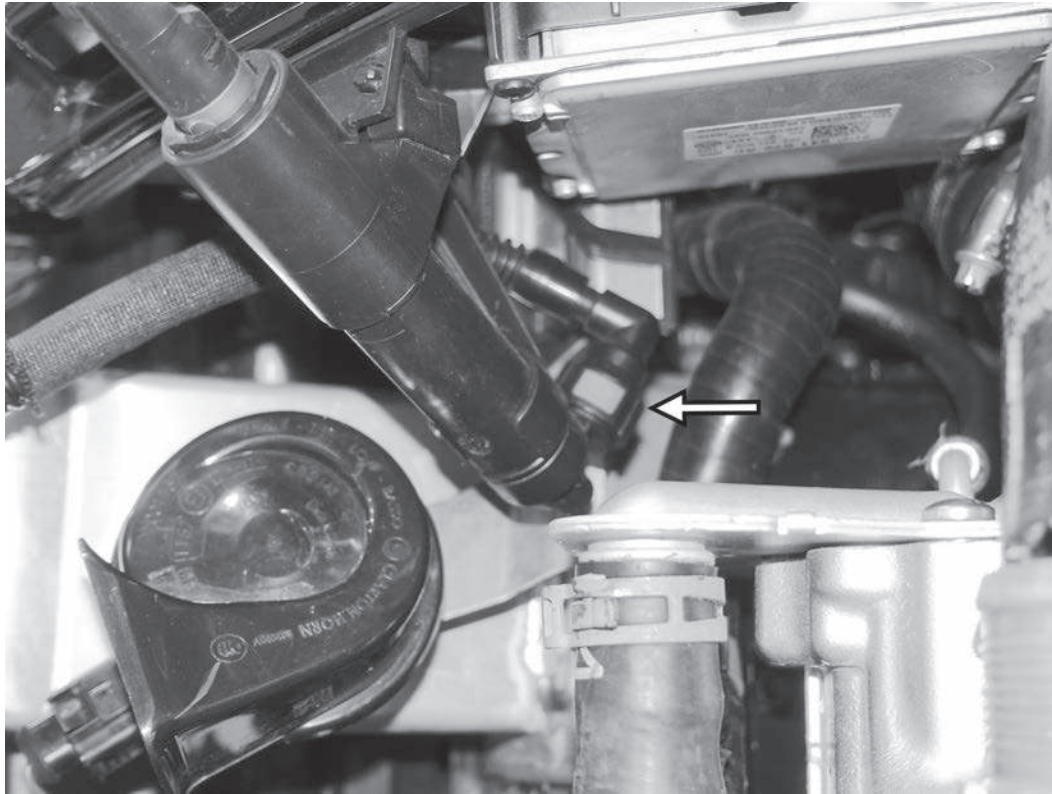


19) Separate the hood latch mounting bracket from the upper bumper support. Remove the clip holding the front camera wiring harness to the upper bumper support.

20) While holding the top side of the crash beam bolts with a 13mm wrench, loosen the four 13mm nuts on the bottom side of the crash beam and remove the four nuts and bolts from the car.



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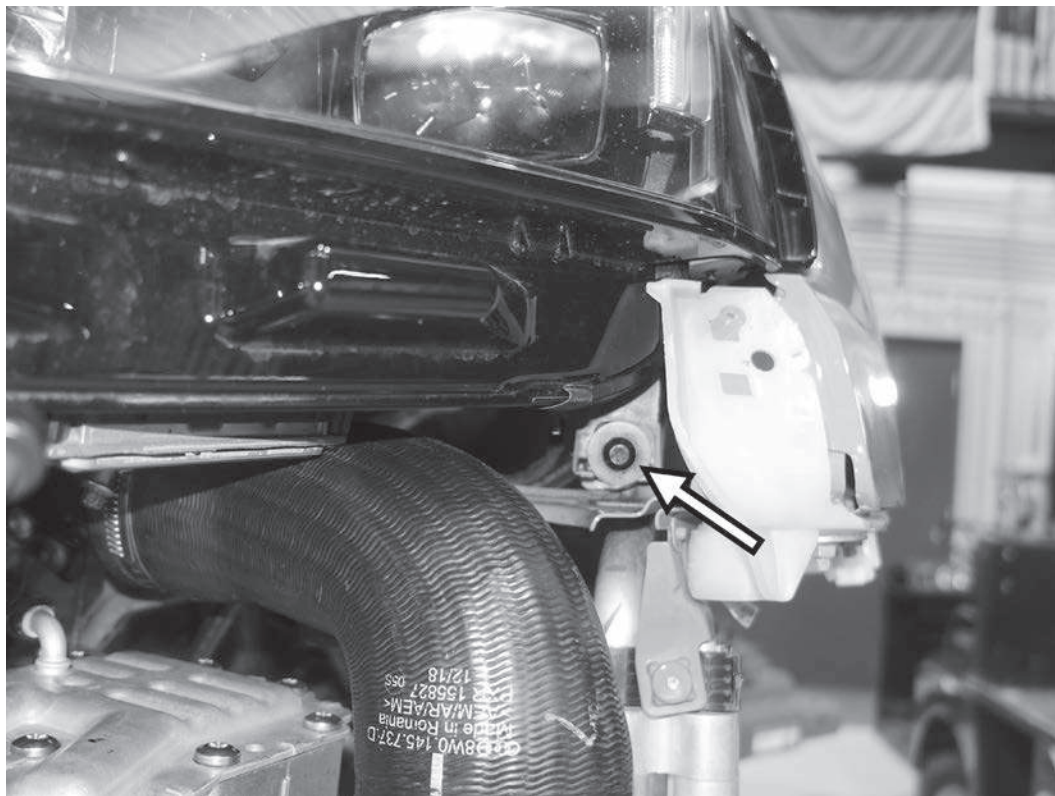


21) Disconnect the washer fluid line from behind the back of the left headlight washer by pressing on the blue tab. Also disconnect the washer line that is on the right side of the bumper crash beam. The washer line will stay attached to the crash beam.

22) Using a pry bar between the crash beam and the crash beam impact bars, separate the crash beam from the car. While removing the crash bar, press down on the accordion supports that connects the crash beam to the upper bumper support.



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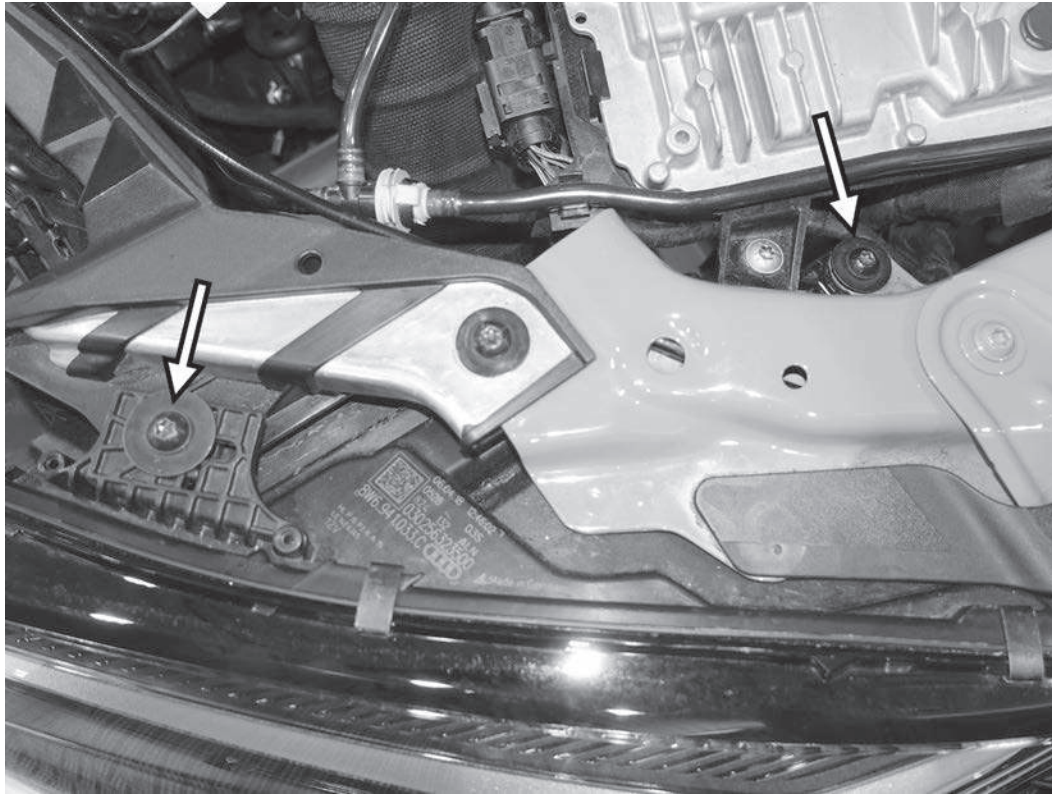
23) Remove the T30 screw from underneath the left headlight, by the front fender.

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24) From inside the left wheel well, disconnect the electrical connector to the left headlight. Also disconnect the headlight drain line from the back of the headlight.



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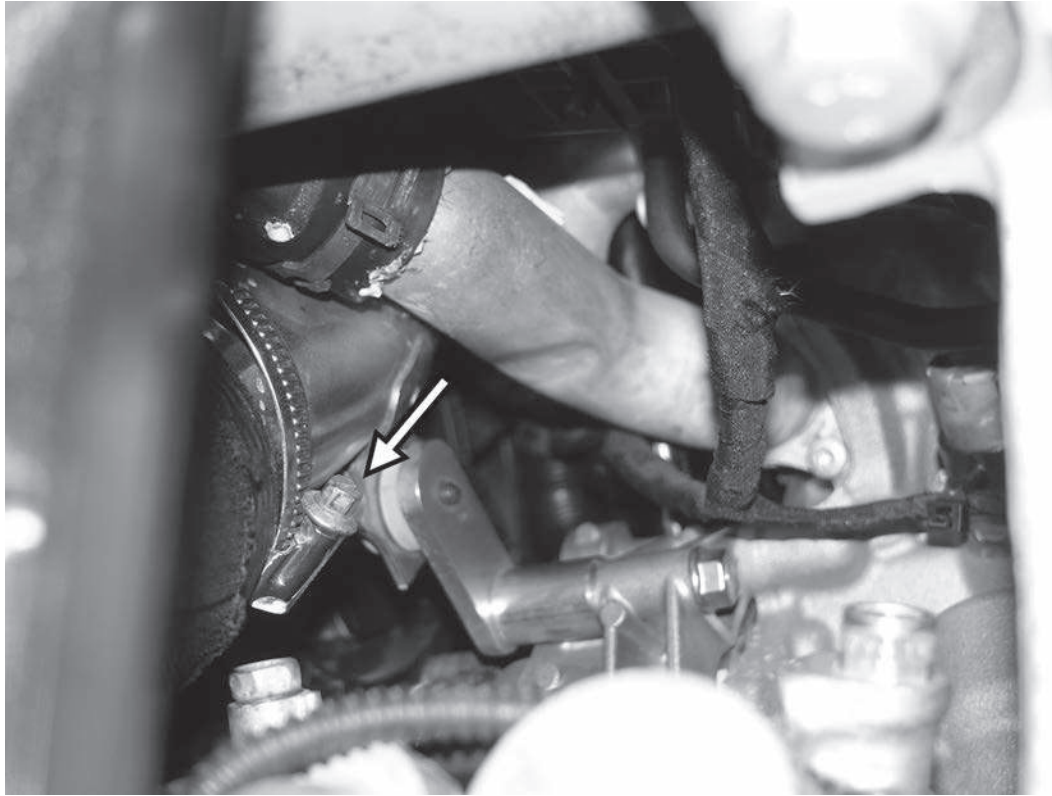


25) Remove the last two T30 screws from the top of the left headlight, and then carefully slide the headlight forward to remove it from the car. Place the headlight somewhere that it cannot be damaged.

26) With the headlight removed, pull the already loosened hose off the throttle body. Lifting the hose from the mounting bracket on the frame rail, remove the intercooler to throttle body hose assembly from the car.

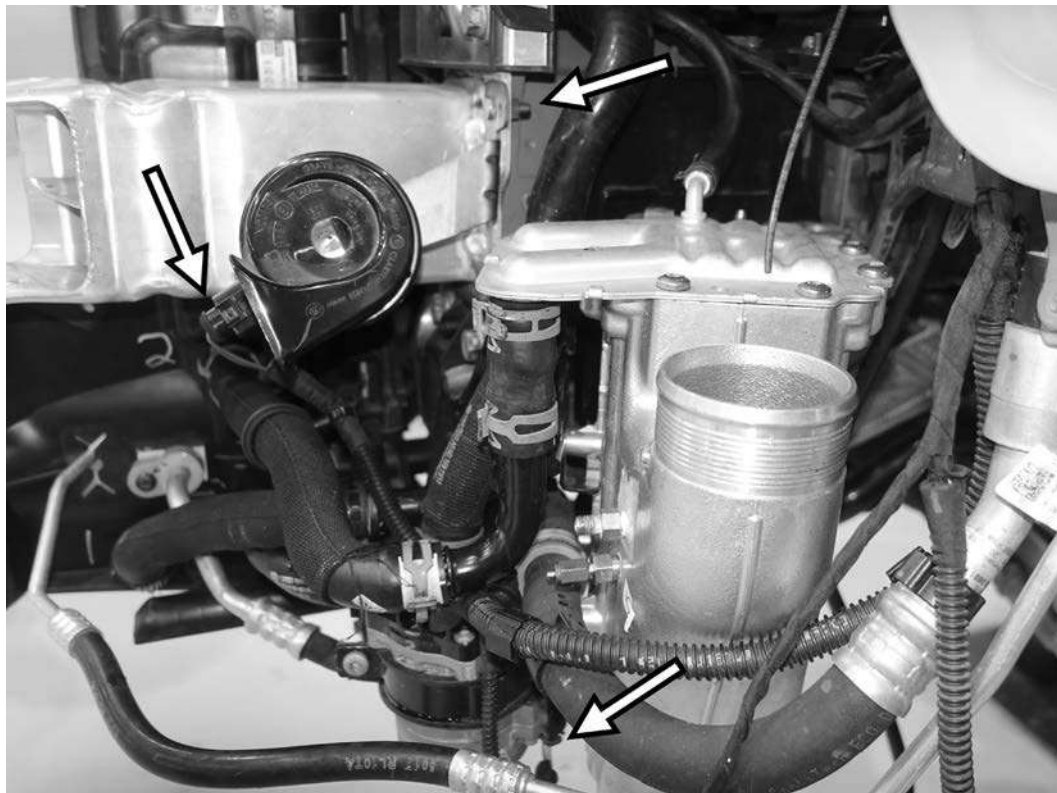


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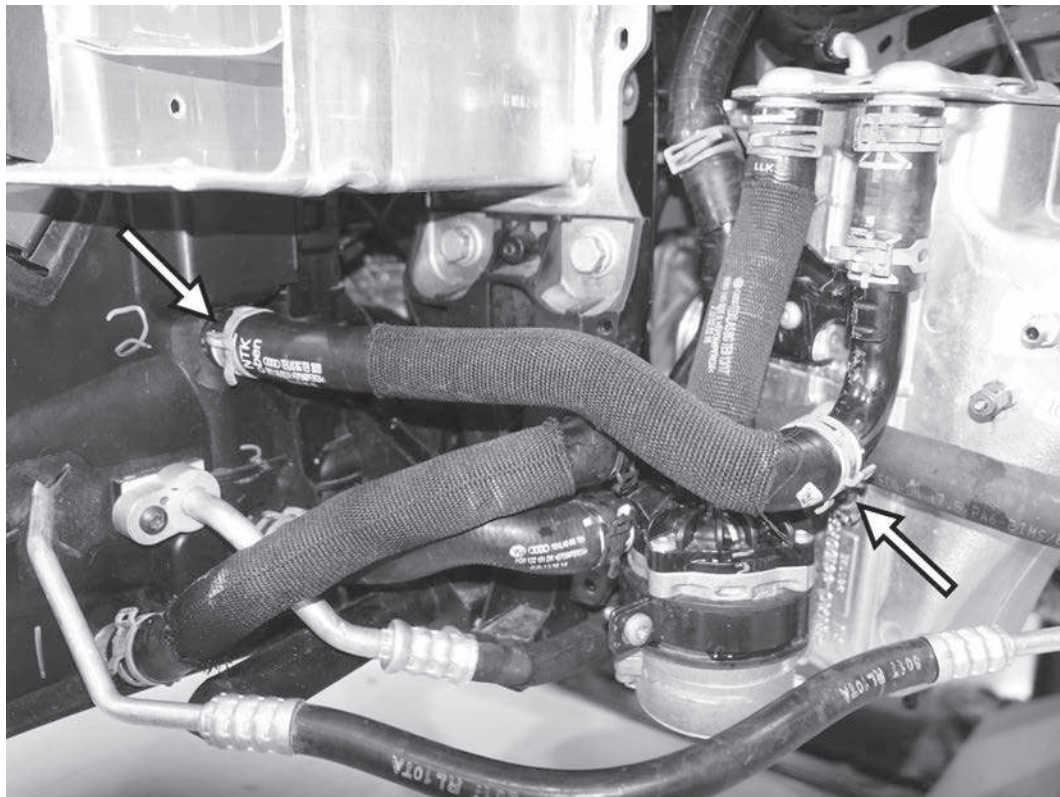


27) Loosen the 7mm hose clamp holding the lower intercooler hose to the factory metal charge pipe.

28) Disconnect the electrical connectors to both the horn and the auxillary coolant pump. Remove the 10mm nut holding the horn bracket to the front frame rail, and then remove the horn and bracket from the car.

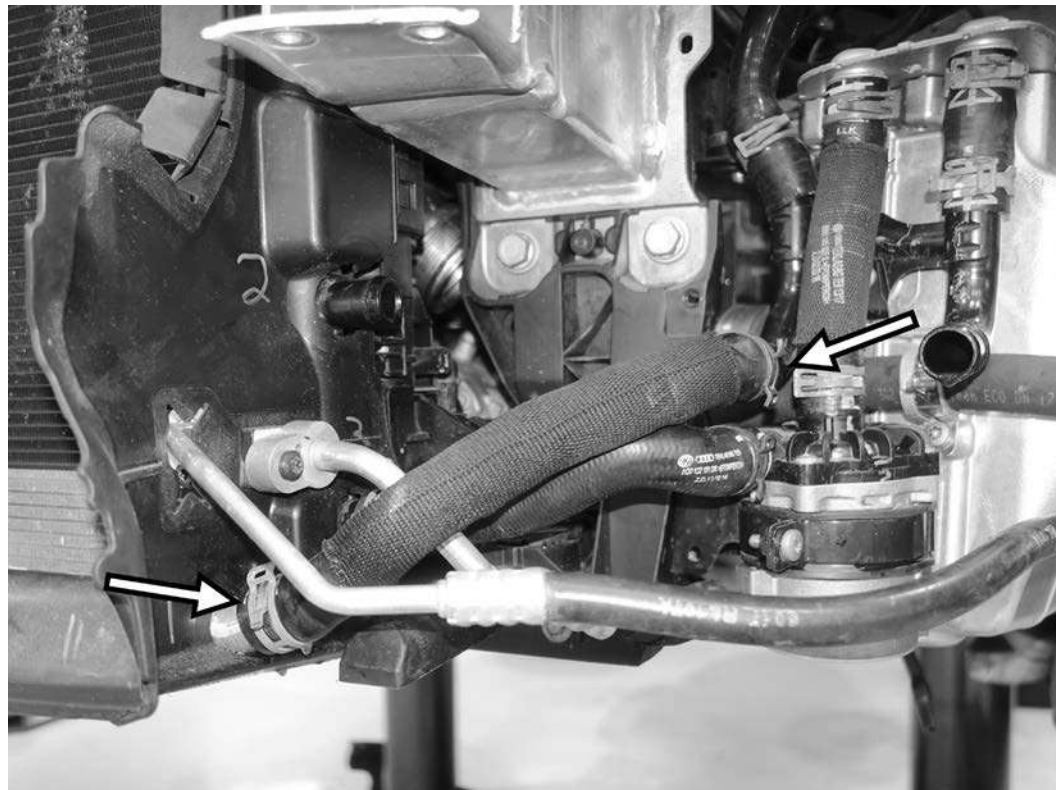


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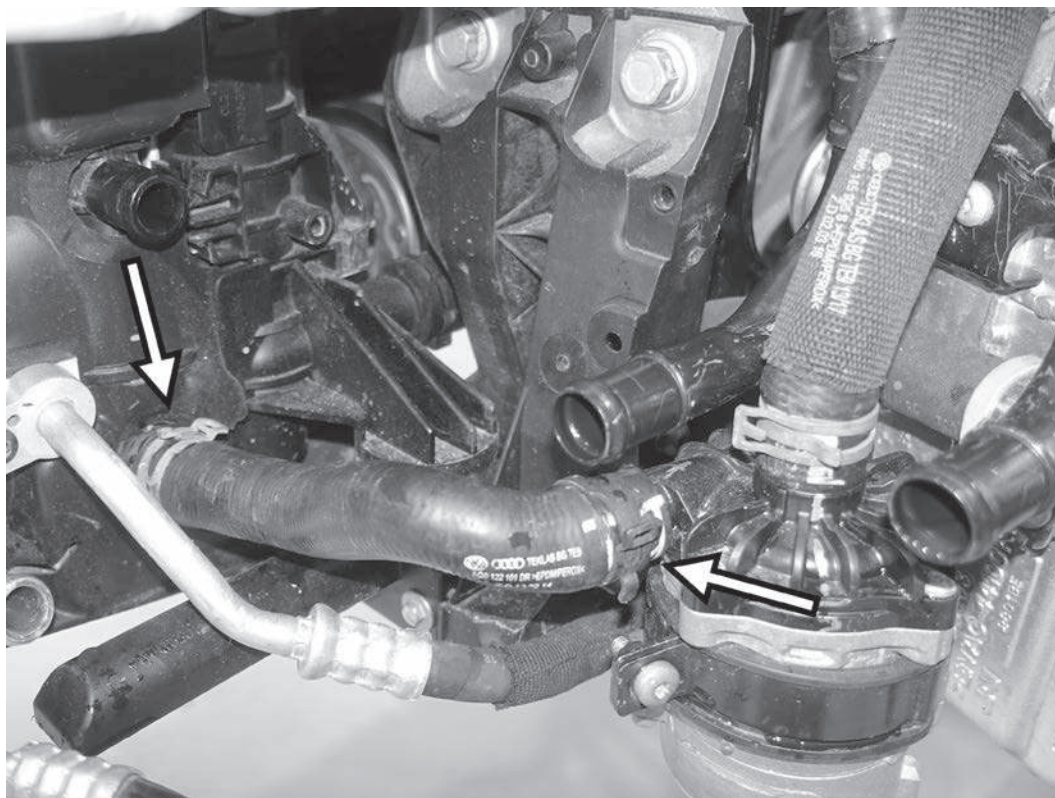


29) Loosen the two spring clamps on the coolant hose on the top of the auxillary radiator, and remove the hose from the car. Be aware coolant will spill as these hoses are removed.

30) Loosen the two spring clamps on the coolant hose on the bottom of the auxillary radiator, and remove the hose from the car.

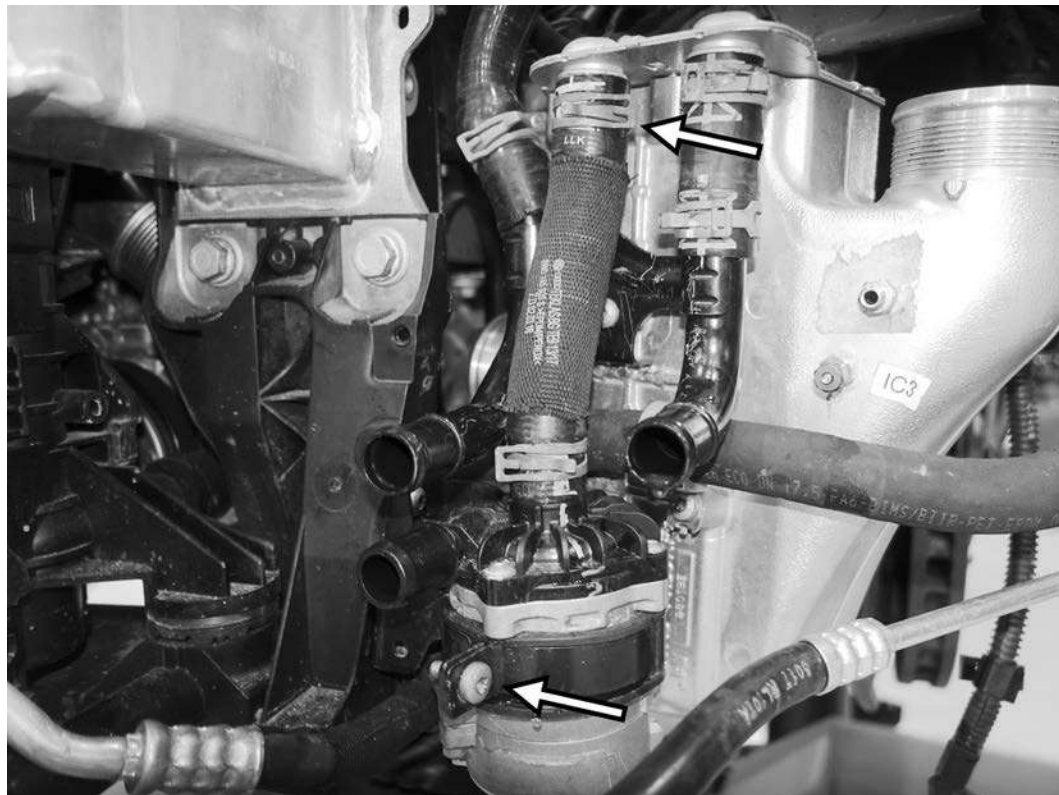


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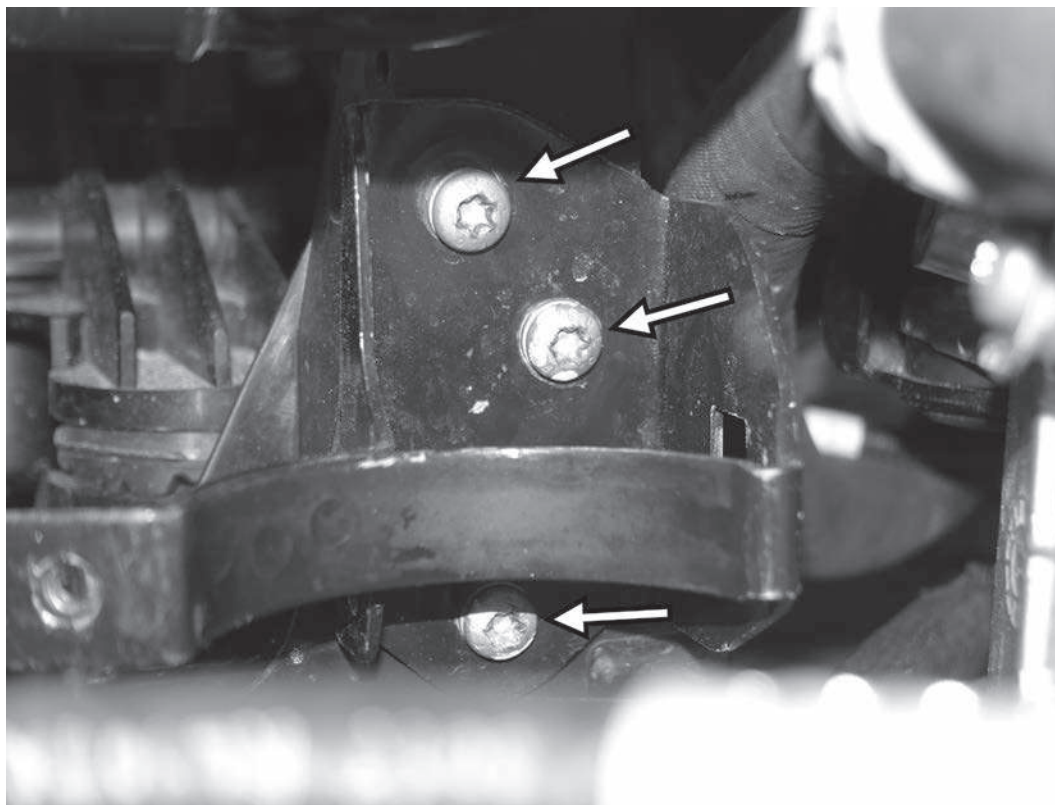


31) Loosen the two spring clamps on the coolant hose going into the side of the auxillary coolant pump, and remove the hose from the car.

32) Loosen the spring clamp from the top of the coolant hose that connects between the coolant pump and the stock intercooler. Remove the T30 screw holding the bracket on the coolant pump. Remove the bracket from the pump, and then remove the pump with the hose attached from the car.

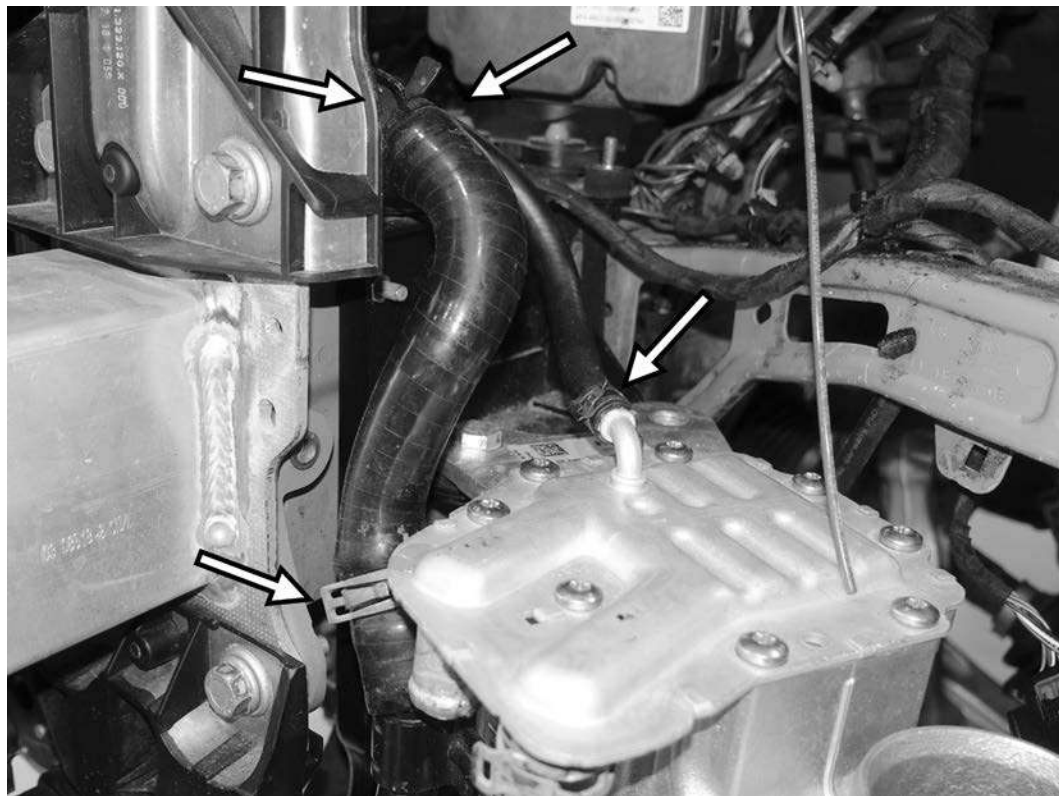


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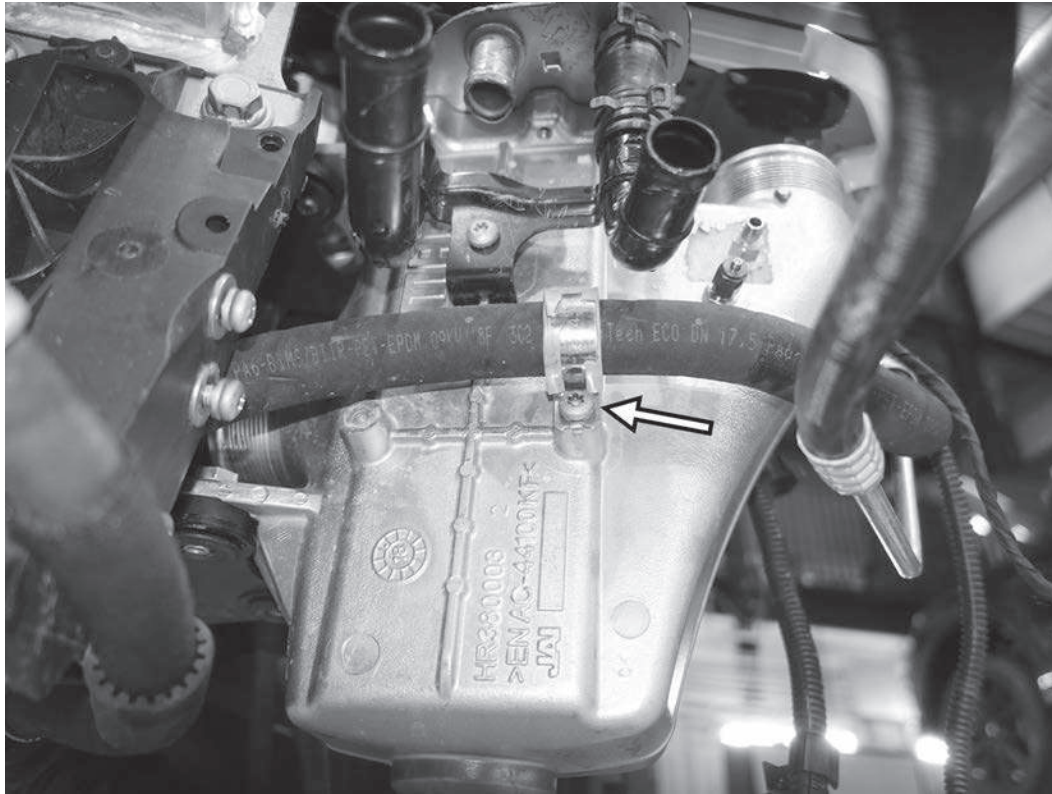


33) Remove the three T30 screws holding the auxillary coolant pump bracket to the side of the radiator support, and remove the bracket from the car.

34) Loosen the four spring clamps to the last two coolant hoses to the intercooler. Remove the hoses from both the intercooler and from the factory tee fitting above the frame rail.

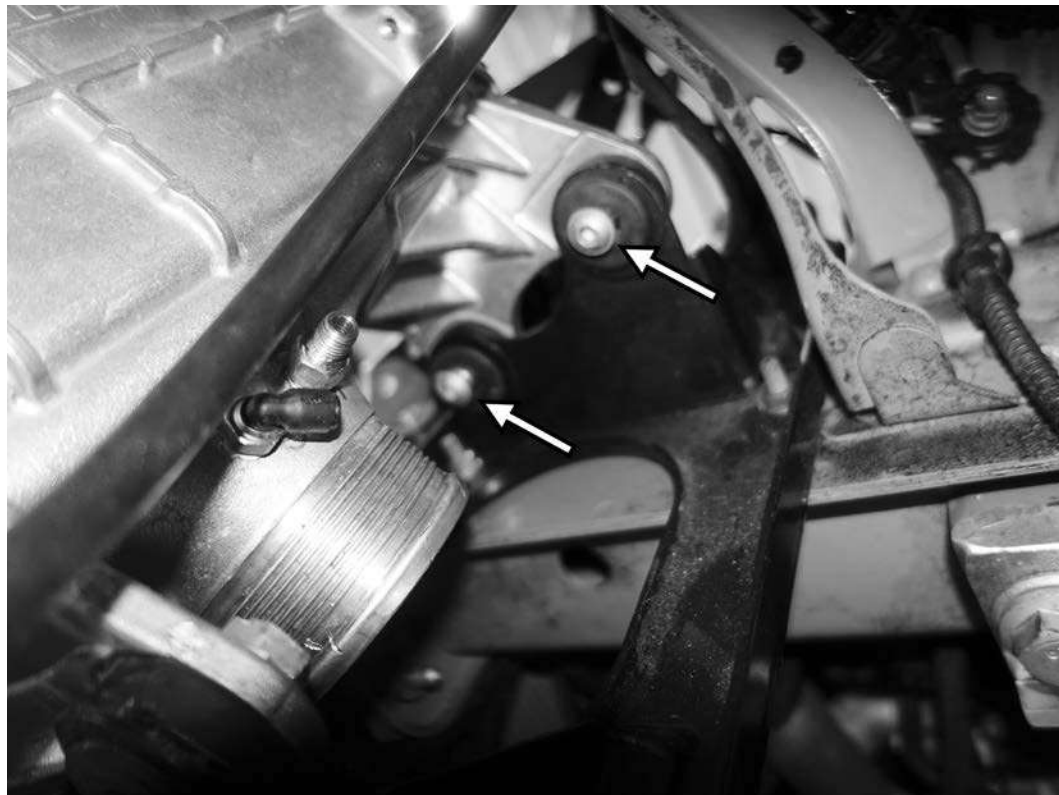


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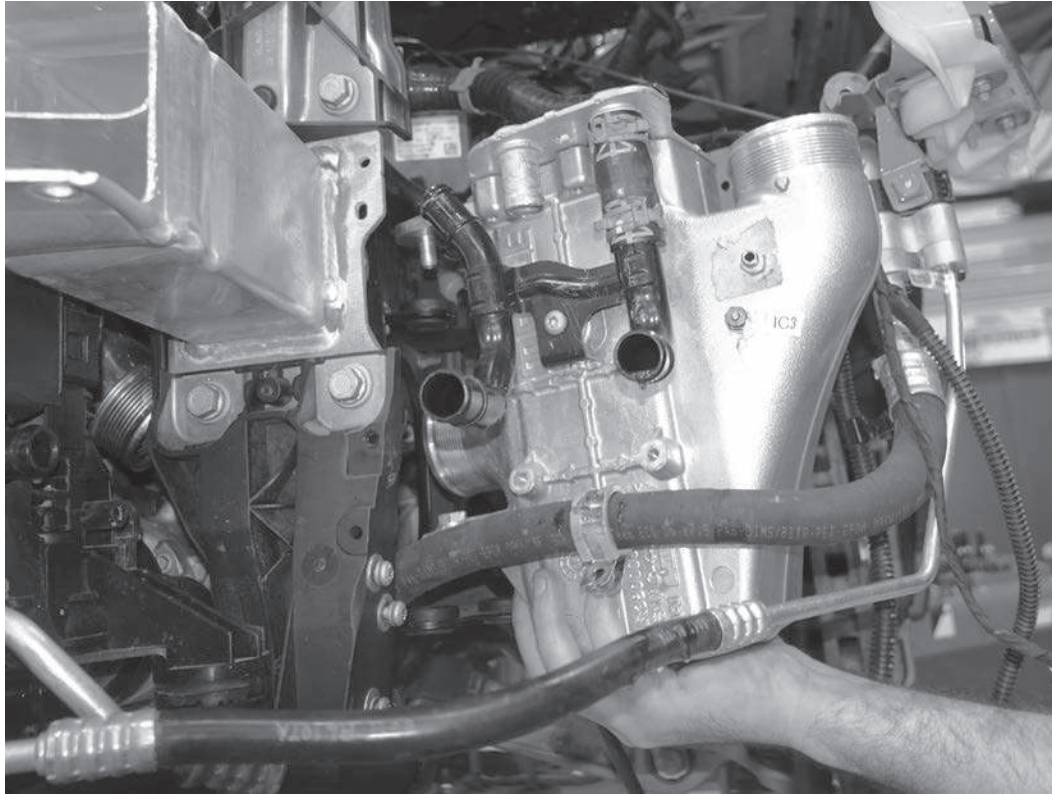


35) Remove the T30 screw holding the air conditioning line from the front of the stock intercooler. Remove the bracket from the AC line as well.

36) Remove the two T30 screws from the upper intercooler mounting brackets from underneath.



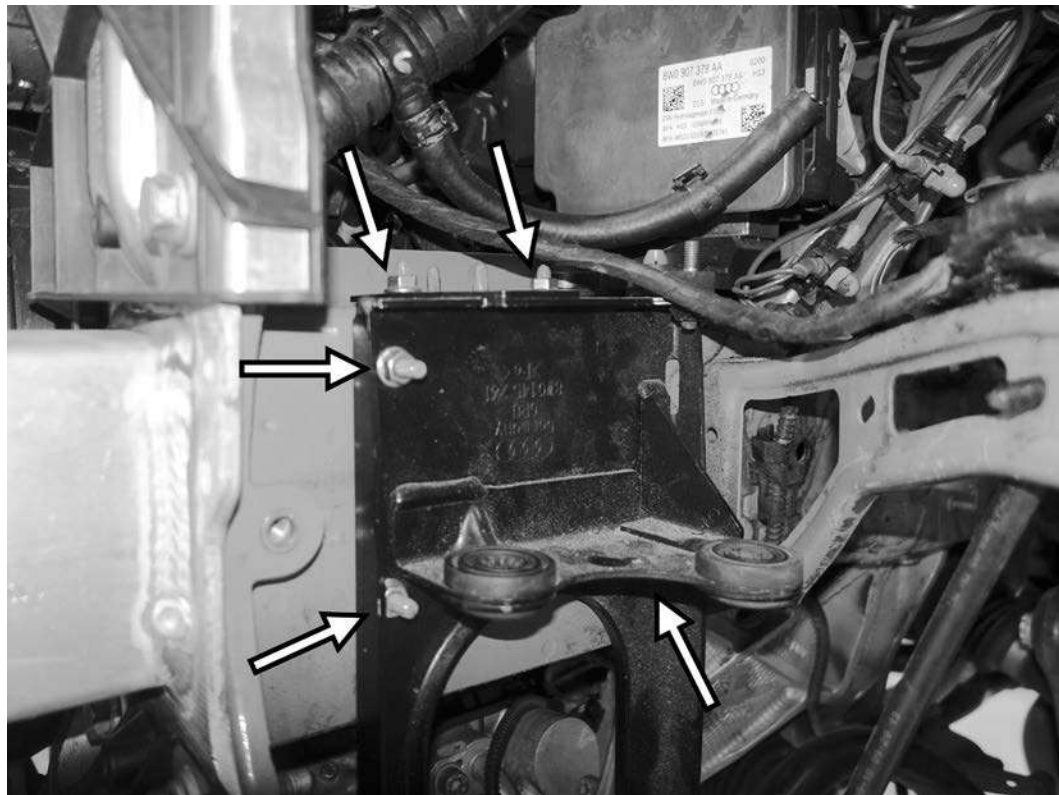
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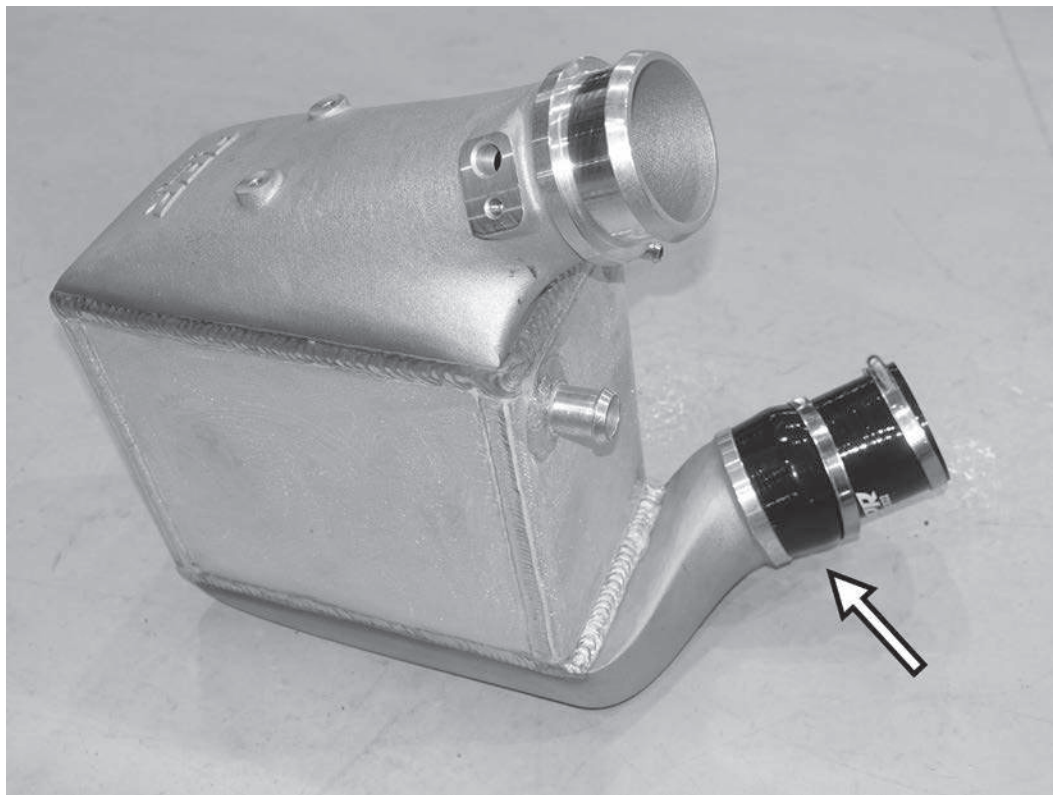


37) Lift up on the stock intercooler to remove it from the stock mounting bracket. Remove the stock intercooler from the car.

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38) Remove the five 10mm nuts holding the stock intercooler bracket to the left frame rail, and remove the bracket assembly from the car.





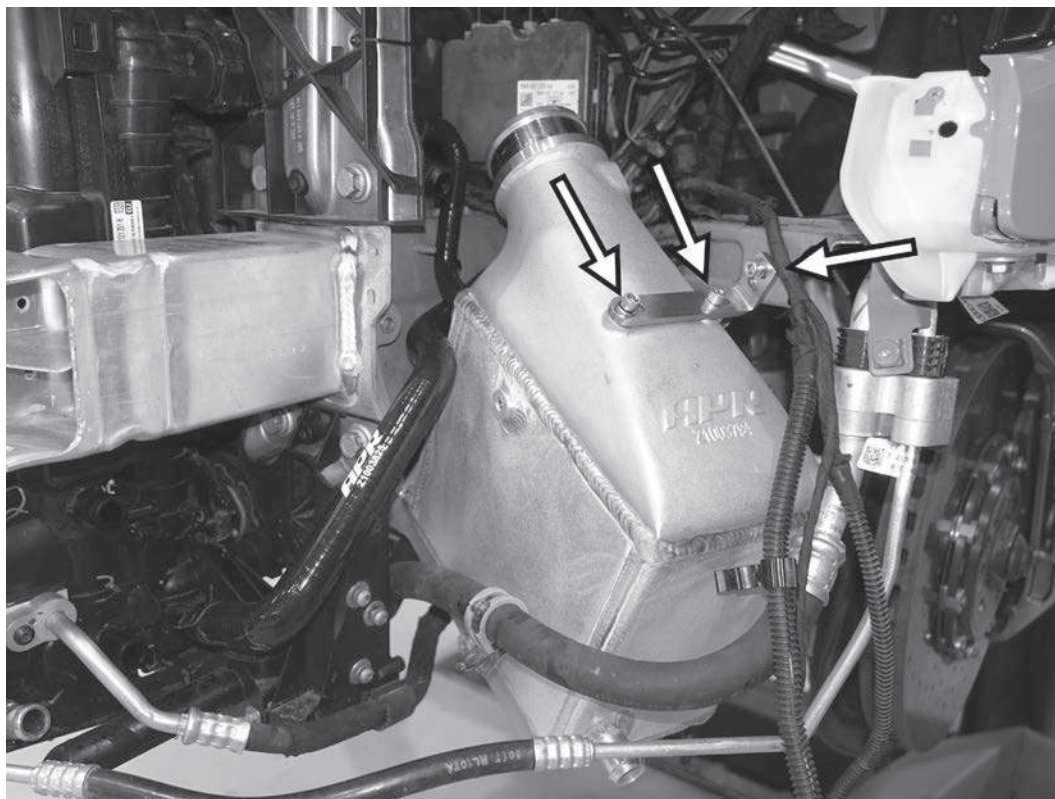
39) Install the APR lower intercooler hose (Z1003822) loosely onto the inlet of the APR intercooler. Loosely secure the hose with the supplied hose clamp.

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40) Install the two APR hoses (Z1003825 and Z1003827) onto the side of the intercooler as shown.



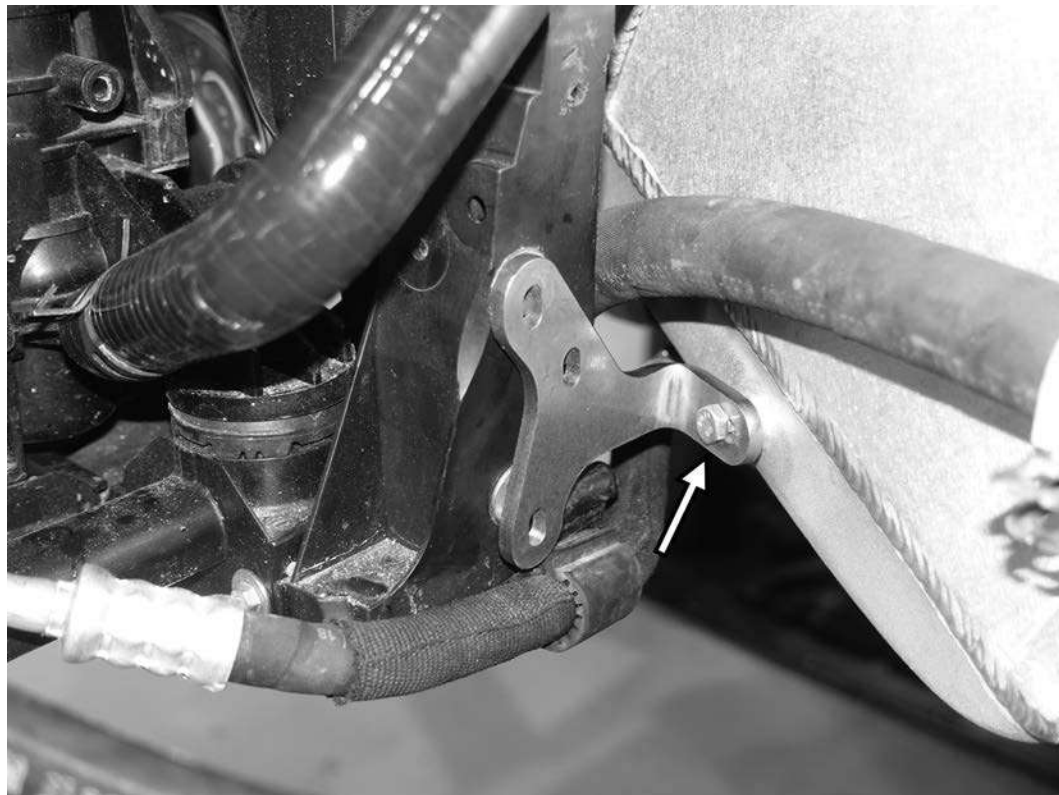
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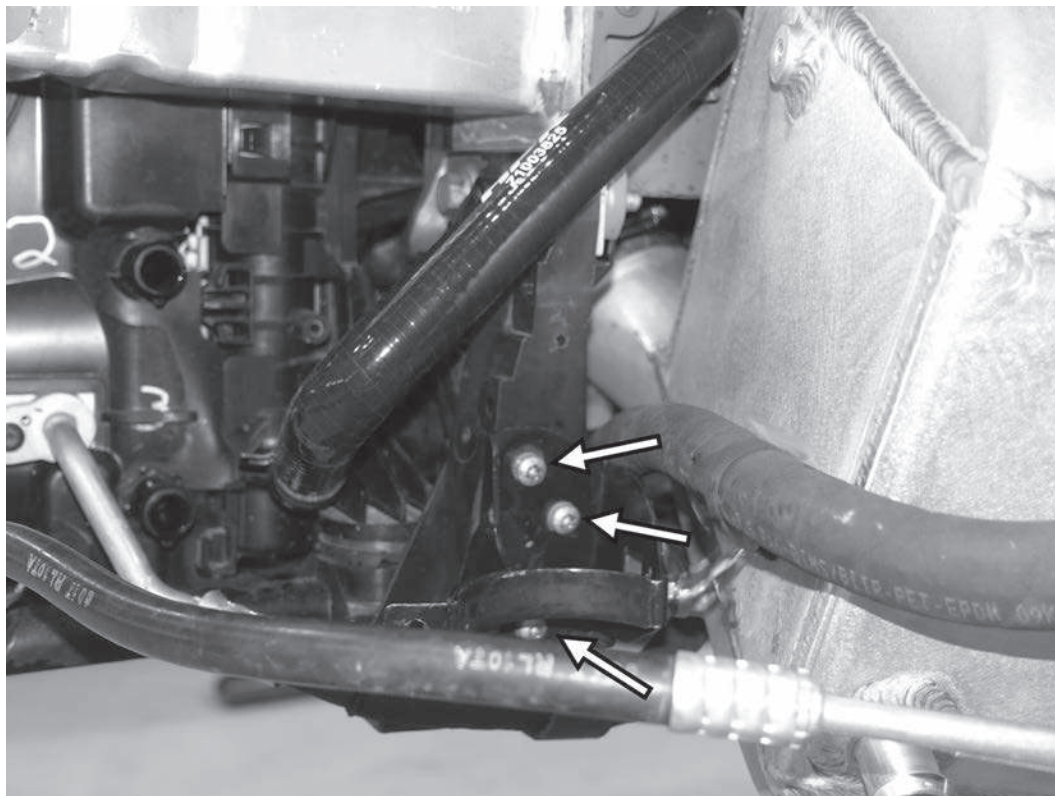
41) Place the APR intercooler in the car where the stock intercooler and stock bracket were. Loosely connect the lower intercooler hose as you place the intercooler. Loosely attach the upper APR mounting bracket to the intercooler with two of the supplied 5mm allen screws and flat washers. Use another 5mm allen screw and flat washer with the supplied 10mm flanged nut to attach the other side of the bracket to the slotted hole in the left fender support bracket.

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42) Loosely install the lower APR bracket on the threaded boss on the bottom of the APR intercooler with the supplied 10mm hex screw and one flat washer.

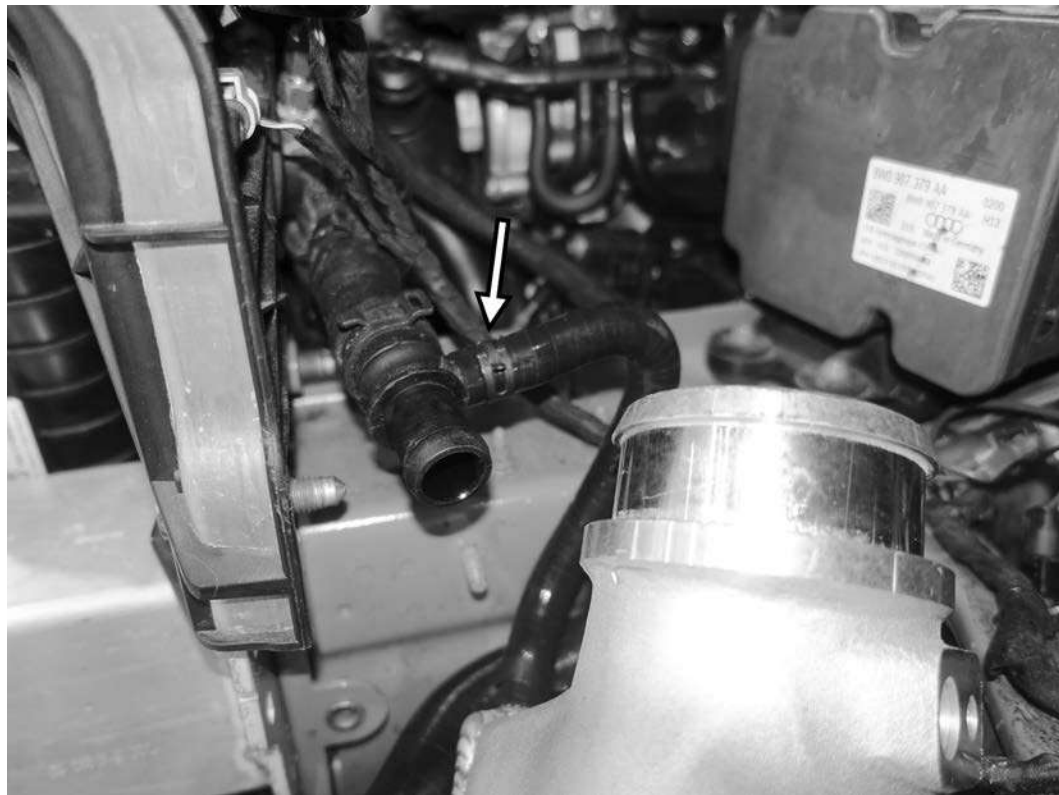


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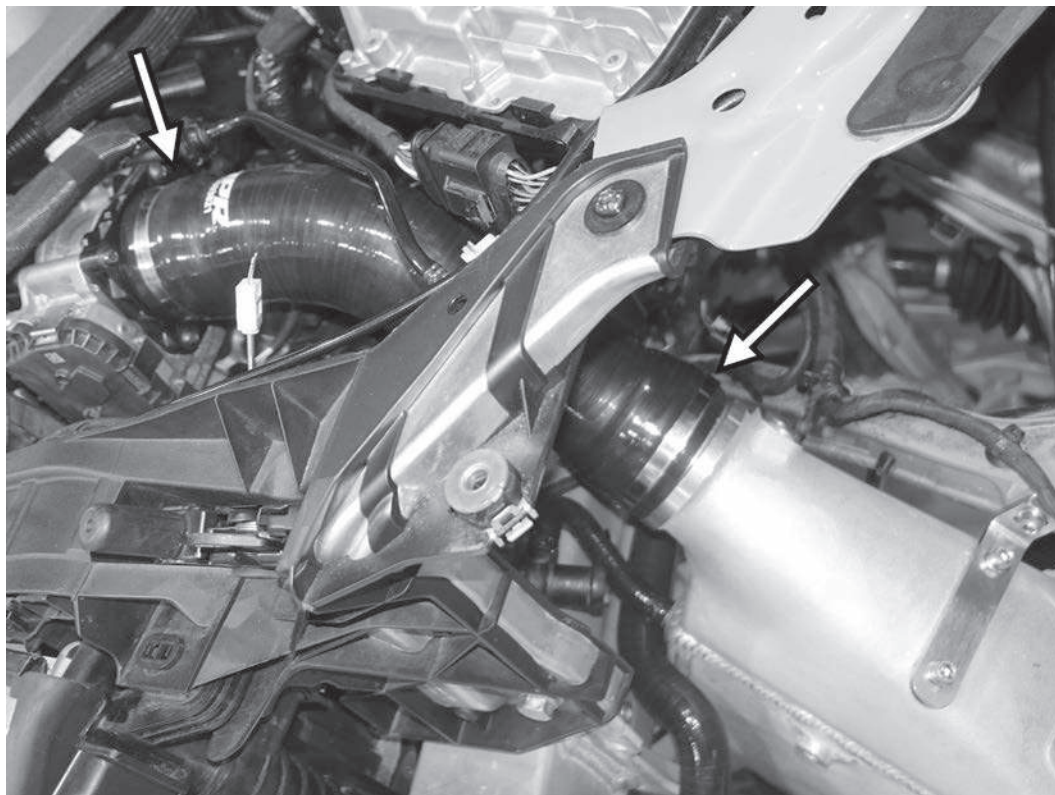


43) Reinstall the stock auxillary coolant pump bracket in its original location, sandwiching the APR lower intercooler bracket between the pump bracket and the radiator core support. Loosely install the three original T30 screws. Tighten the three upper 5mm APR intercooler mounting bracket screws to 9Nm (80in-lbs). Then tighten the three factory T30 screws on the coolant pump bracket to 9Nm (80in-lbs). Finally, tighten the 10mm hex screw on the lower APR intercooler bracket to 9Nm (80in-lbs).

44) Connect the upper end of the small APR coolant vent hose (Z1003827) to the factory tee fitting with the supplied spring clamp.



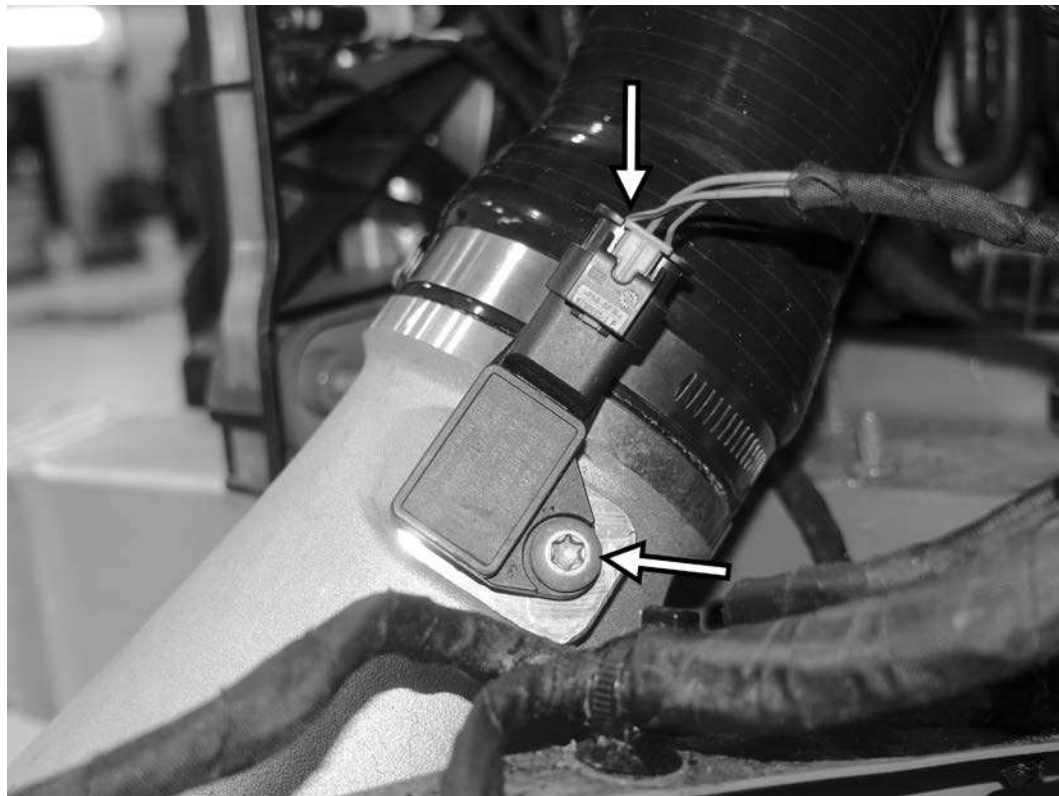
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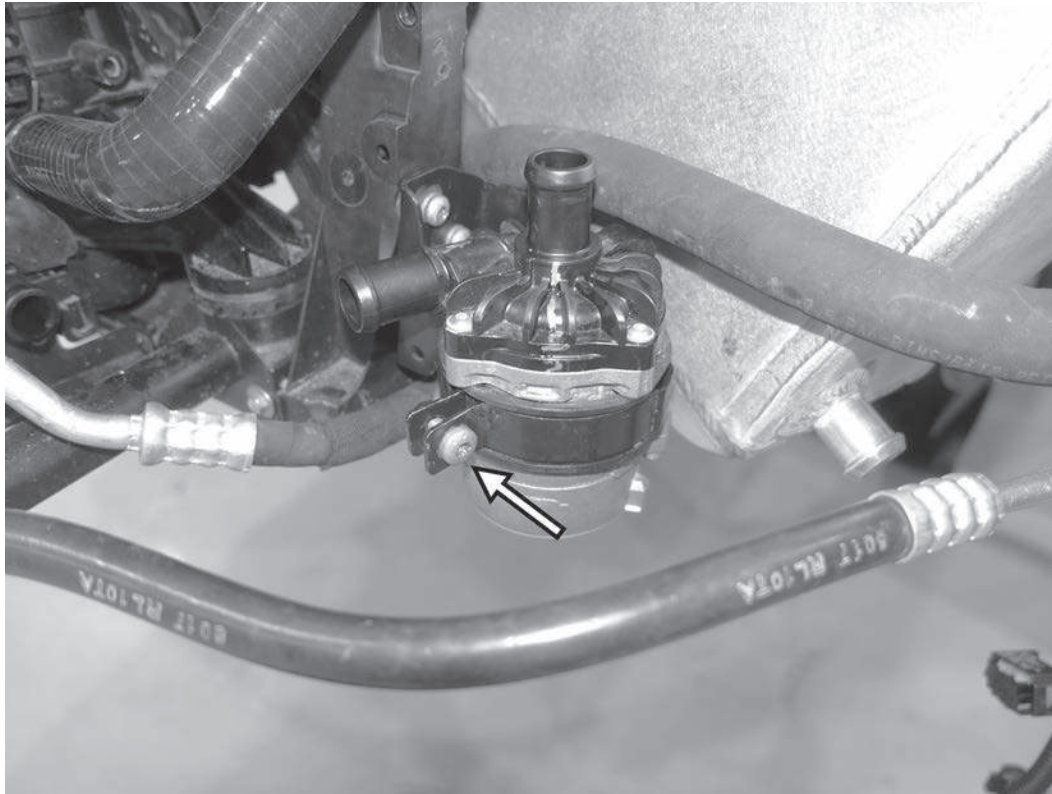
45) Install the APR upper intercooler hose (Z1003821) between the throttle body and the APR intercooler outlet. Tighten the hose clamps to 3.4Nm (44in-lbs). Also position and tighten the two clamps on the lower APR intercooler inlet hose to 3.4Nm (44in-lbs).

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46) Remove the factory MAP sensor in the stock upper intercooler hose assembly. Install the MAP sensor with the original T30 screw into the top of the APR intercooler.



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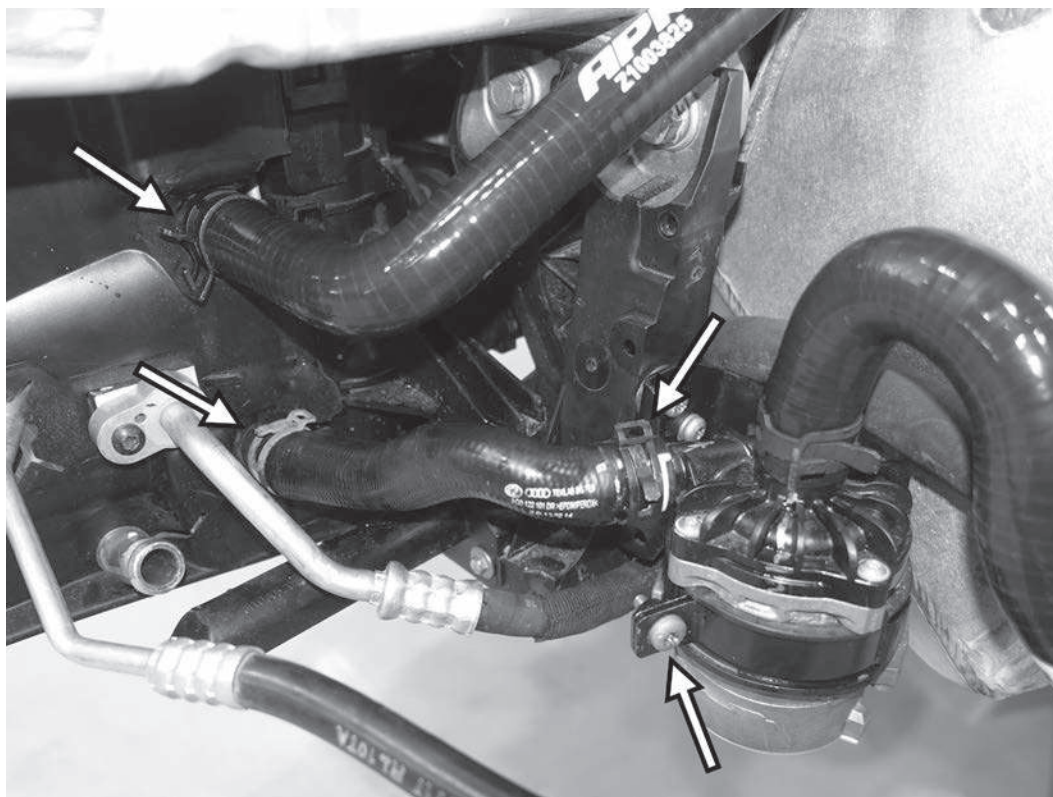


47) Reinstall the factory coolant pump with the original T30 screw. Leave the screw loose, so the pump can be rotated if necessary.

48) Install the curved APR coolant hose (Z1003824) between the side of the APR intercooler and the top of the factory coolant pump. Secure with the supplied spring clamps.



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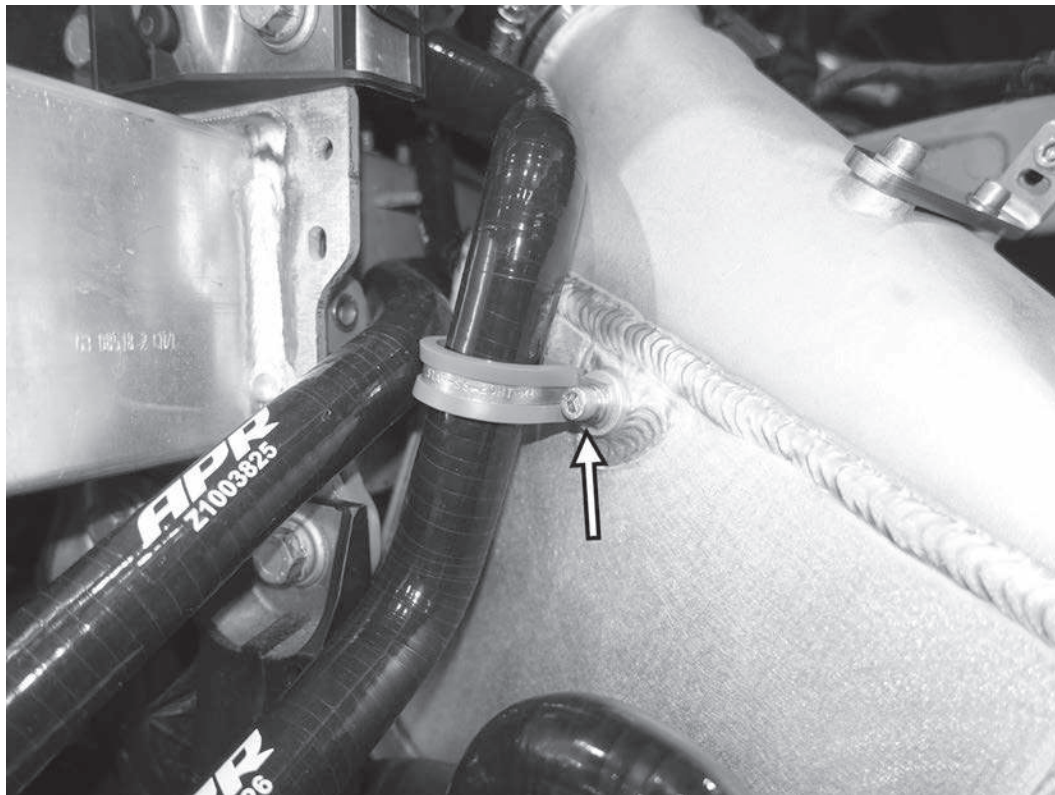
49) Reconnect the factory coolant hose to the side of the coolant pump, and then to the connection by the radiator support and secure with the spring clamps. Connect the other end of the previously installed APR hose (Z1003825) to the top connection of the front radiator and secure with a spring clamp. Finally, when the factory coolant hose is without tension, fully tighten the T30 screw on the coolant pump bracket to 9Nm (80in-lbs).

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50) Install the final APR coolant line (Z1003826) between the tee fitting above the left frame rail, and the forward, lowest factory coolant connection. Secure with the supplied spring clamps.



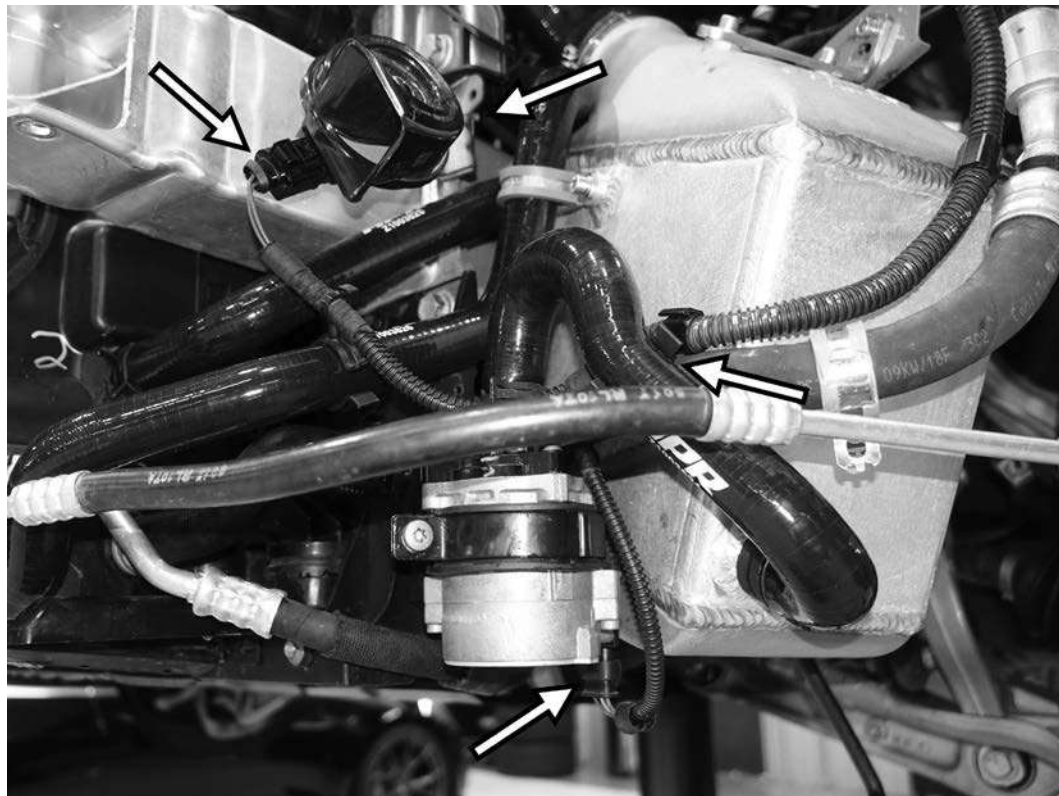
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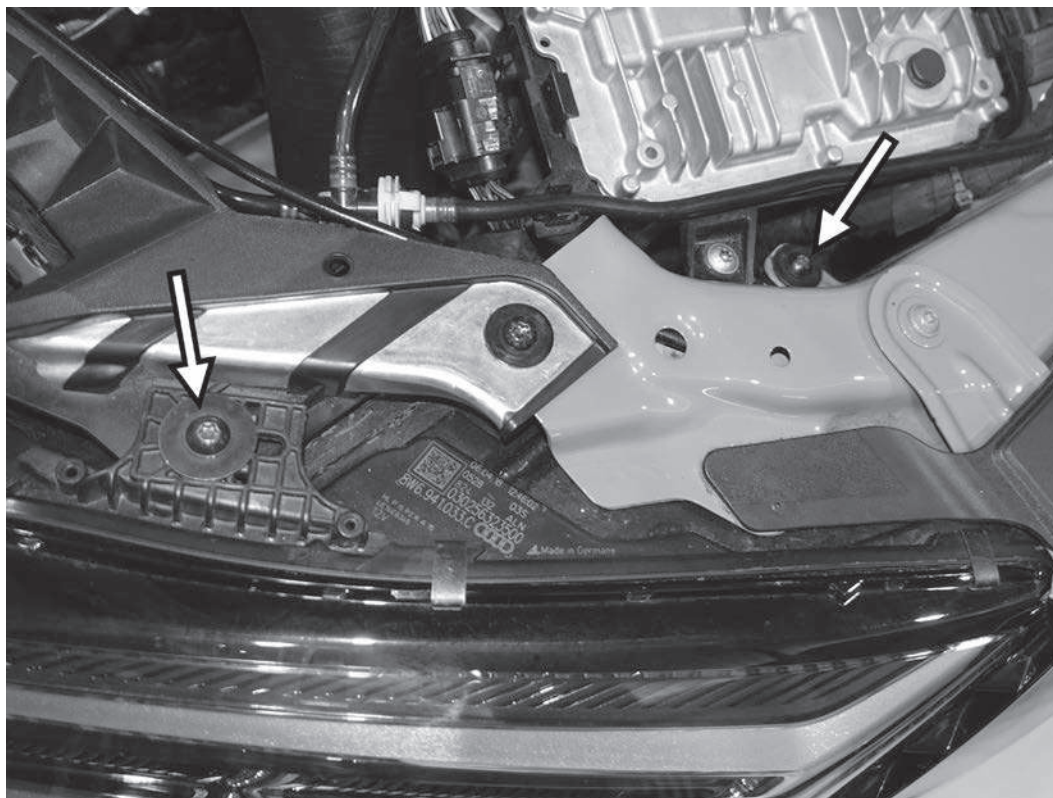


51) Install the rubber clamp on this final coolant hose (Z1003826), and secure to the top boss on the front of the APR intercooler with one of the 5mm allen screws with a flat washer. Tighten the screw to 9Nm (80in-lbs).

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52) Reattach the horn to the left frame rail with the original 10mm nut. Tighten the nut to 8Nm (71in-lbs). Reroute the wiring harness as shown clipping the connector to the curved APR coolant hose (Z1003824). Reconnect the harness to the bottom of the coolant pump as well as the horn.

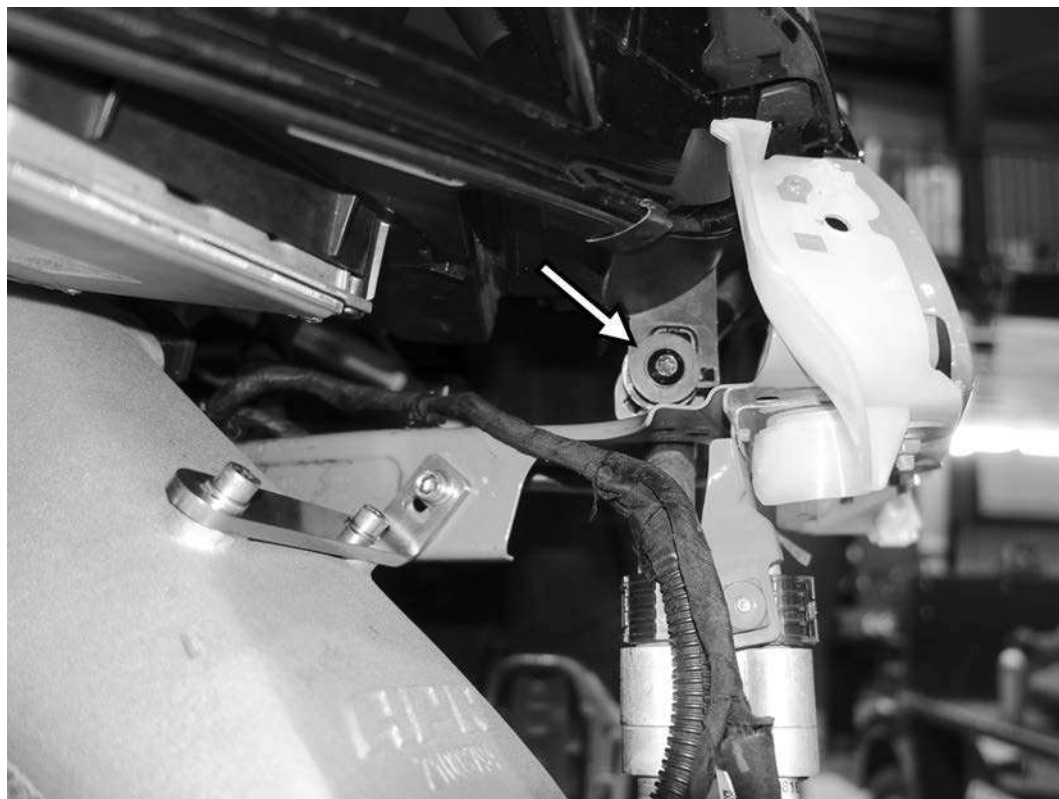




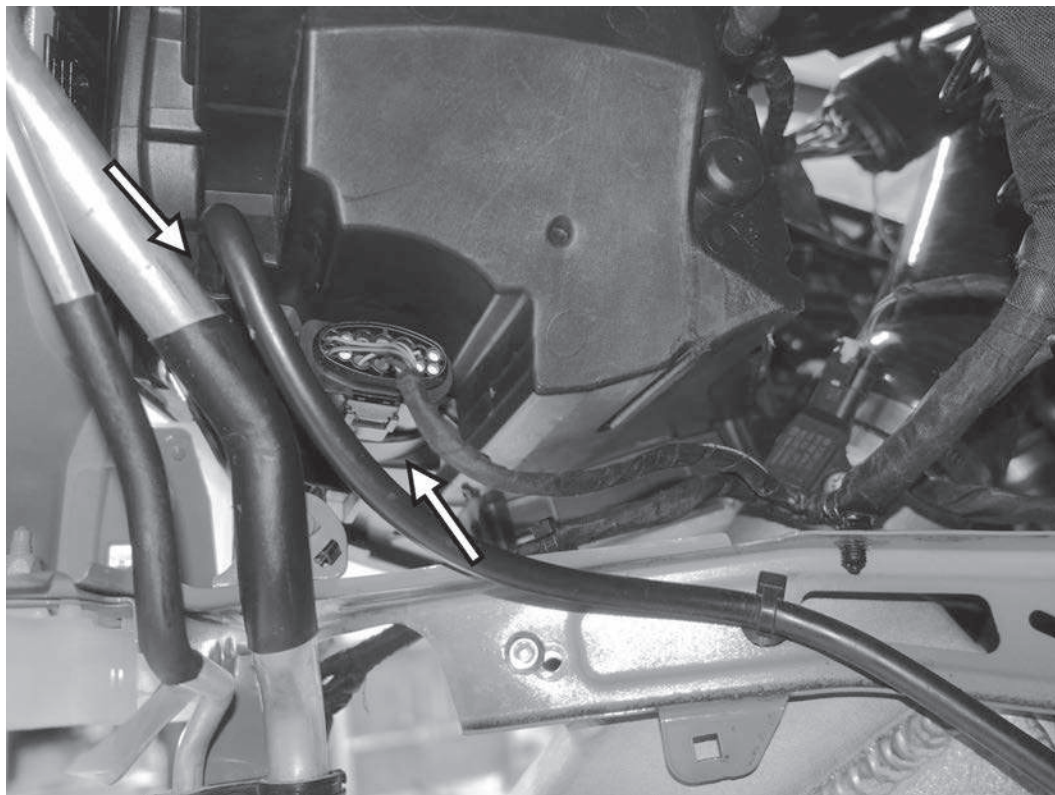
53) Carefully slide the left headlight back in place, and loosely secure it with the two original T30 screws. Try to align the headlight in its original position.

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54) Reinstall the T30 screw underneath the headlight, holding it to the left fender.



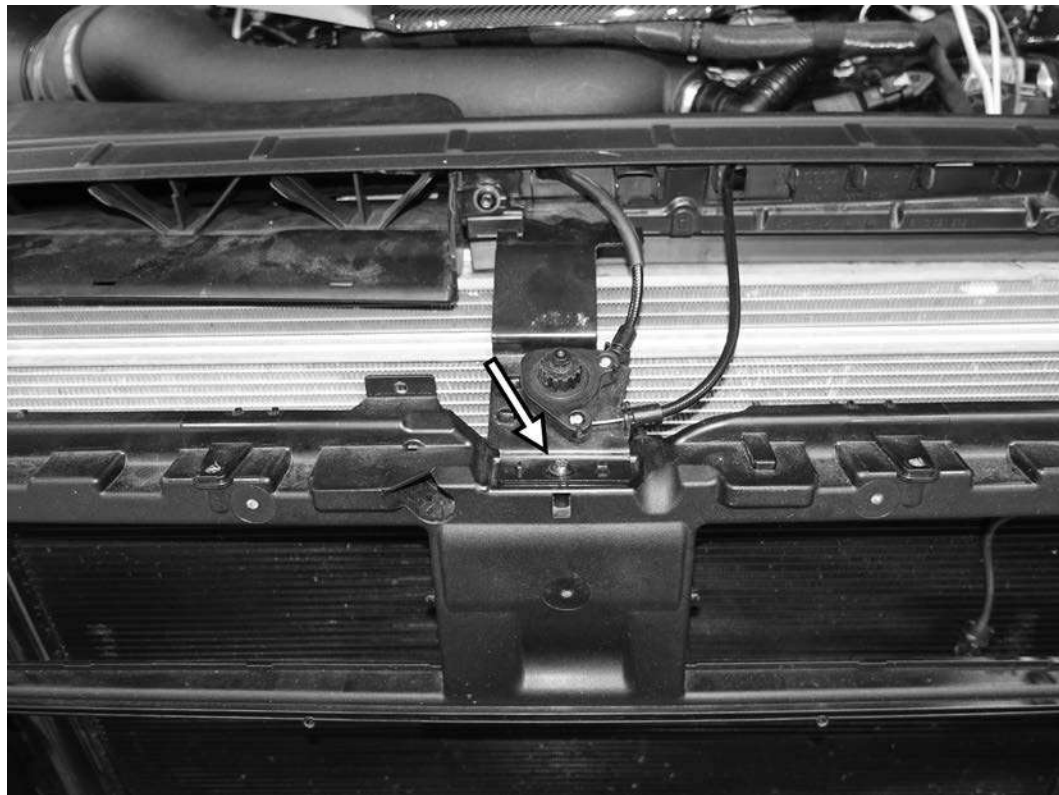
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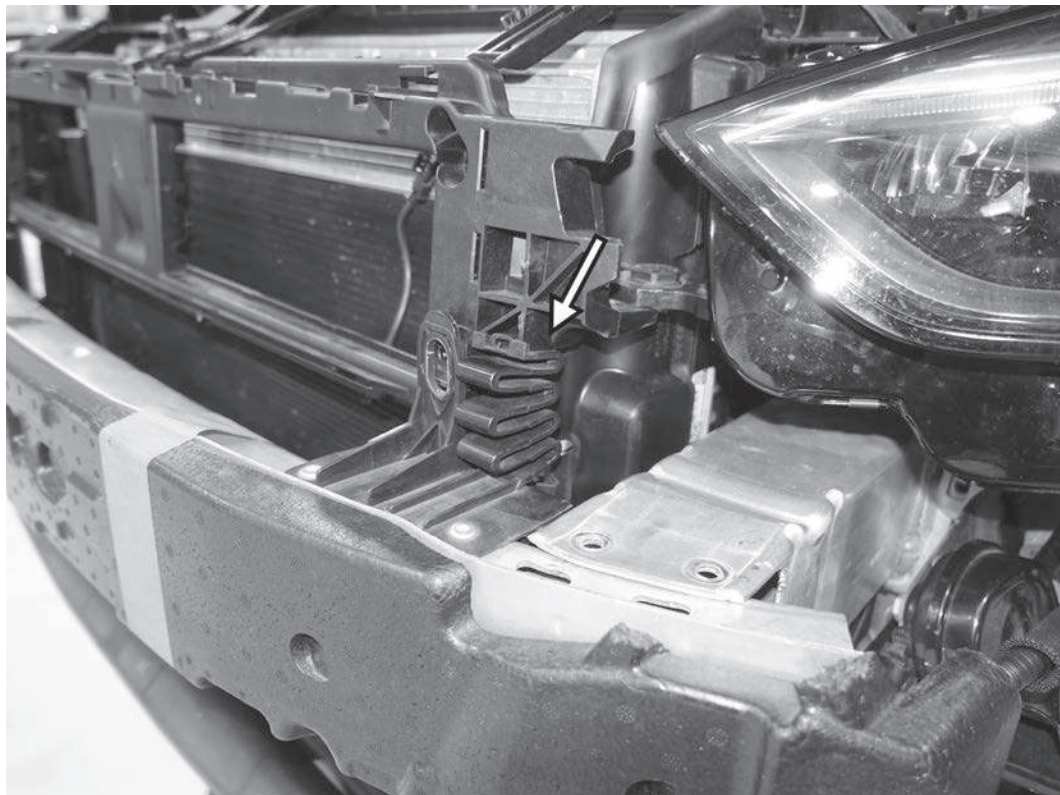
55) On the back side of the headlight, reconnect the drain hose and the electrical connector to the headlight.

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56) Reinstall the upper bumper support on the car, connecting just the one T30 screw on the hood latch bracket.



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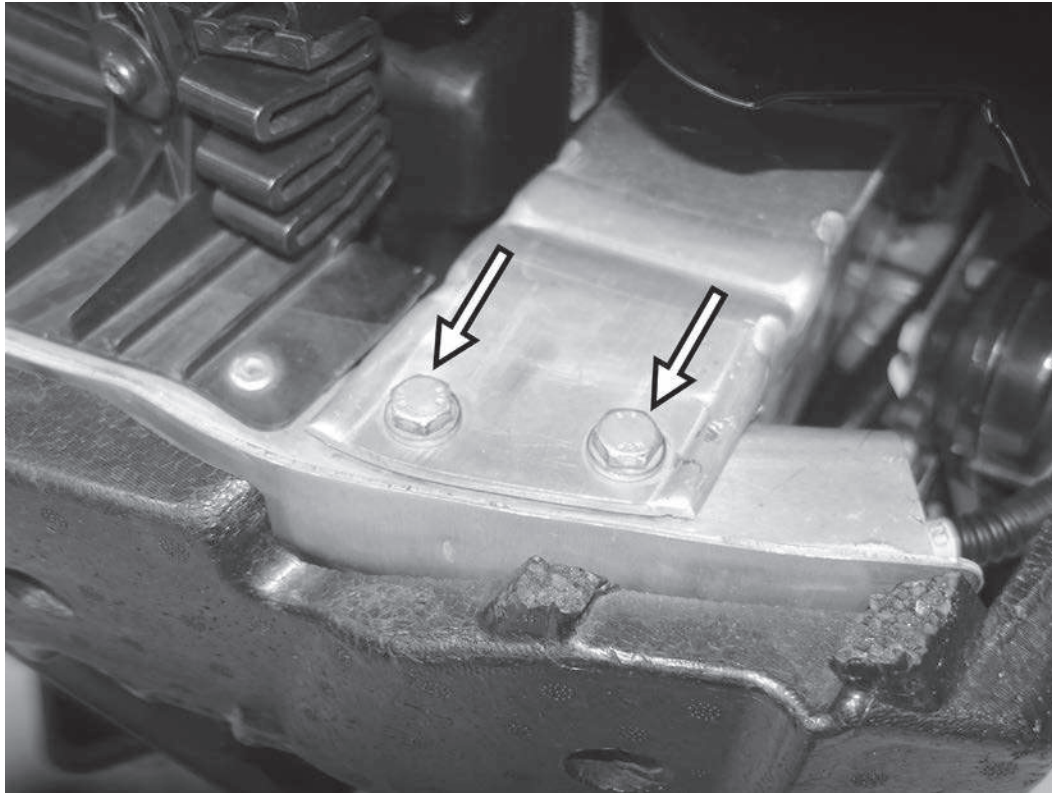


57) Place the crash beam back on the car, ensuring the accordion part from crash beam connects into the tabs of the upper bumper support.

58) Loosely install the four T30 screws to the front side of the upper bumper support.

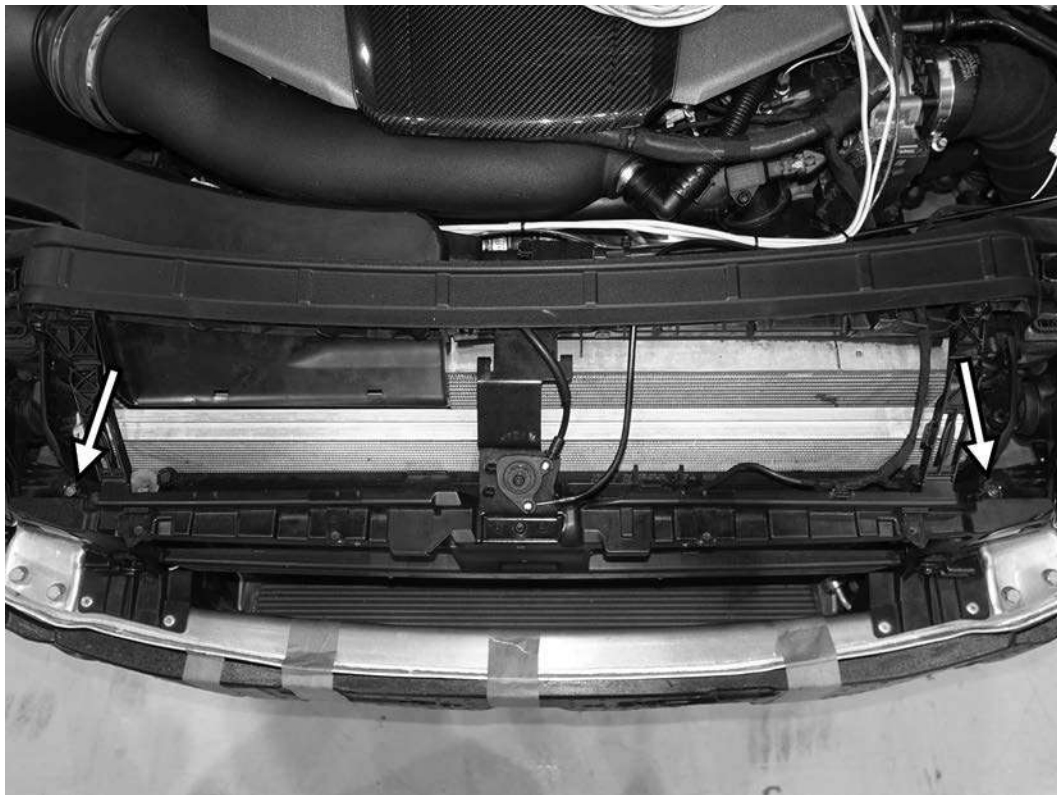


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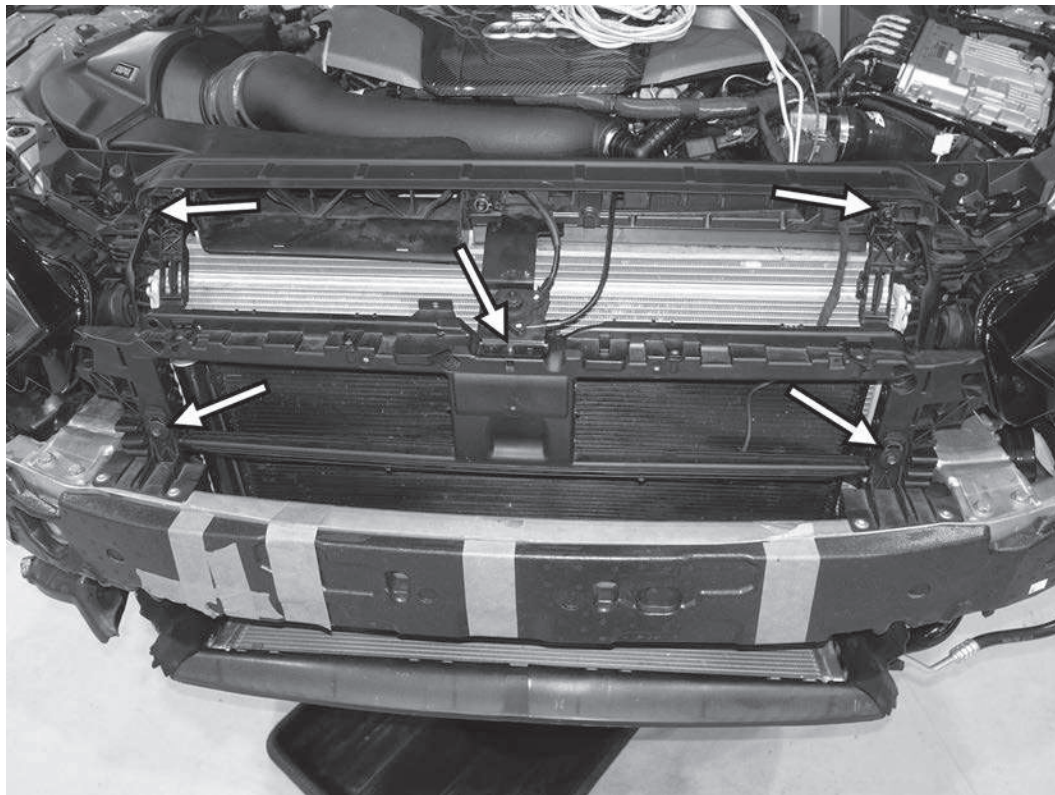


59) Push the bumper crash beam back in place. A deadblow hammer may be needed to push the crash beam back to its original mounting points. Install the four 13mm screws and nuts holding the crash beam in place, and tighten them to 23Nm (17ft-lbs).

60) Reinstall the two T30 screws holding the inside of the headlights to the upper bumper support.



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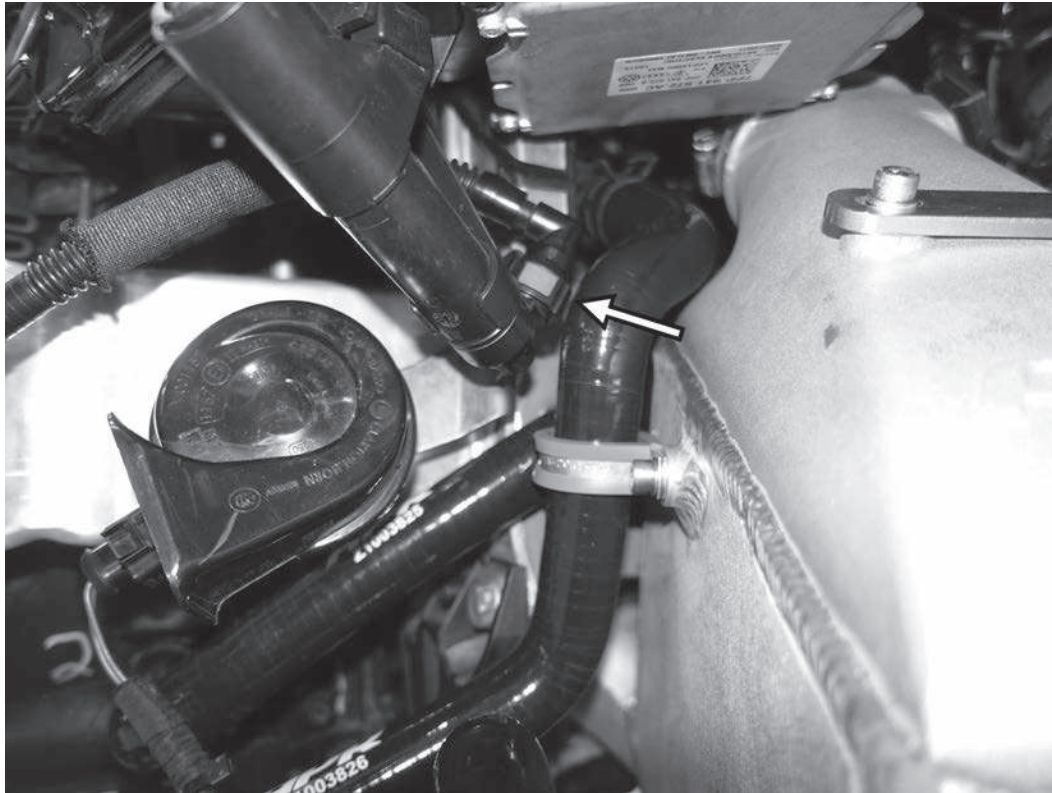


61) After realigning the upper bumper support, tighten all five T30 screws to 5Nm (44in-lbs).

62) Make sure the left headlight is sitting in the same place it was before, then tighten all headlight screws (the two on top of the left headlight, one underneath the left headlight to the fender, and the inner screws on both the right and left headlights) to 6Nm (53in-lbs).



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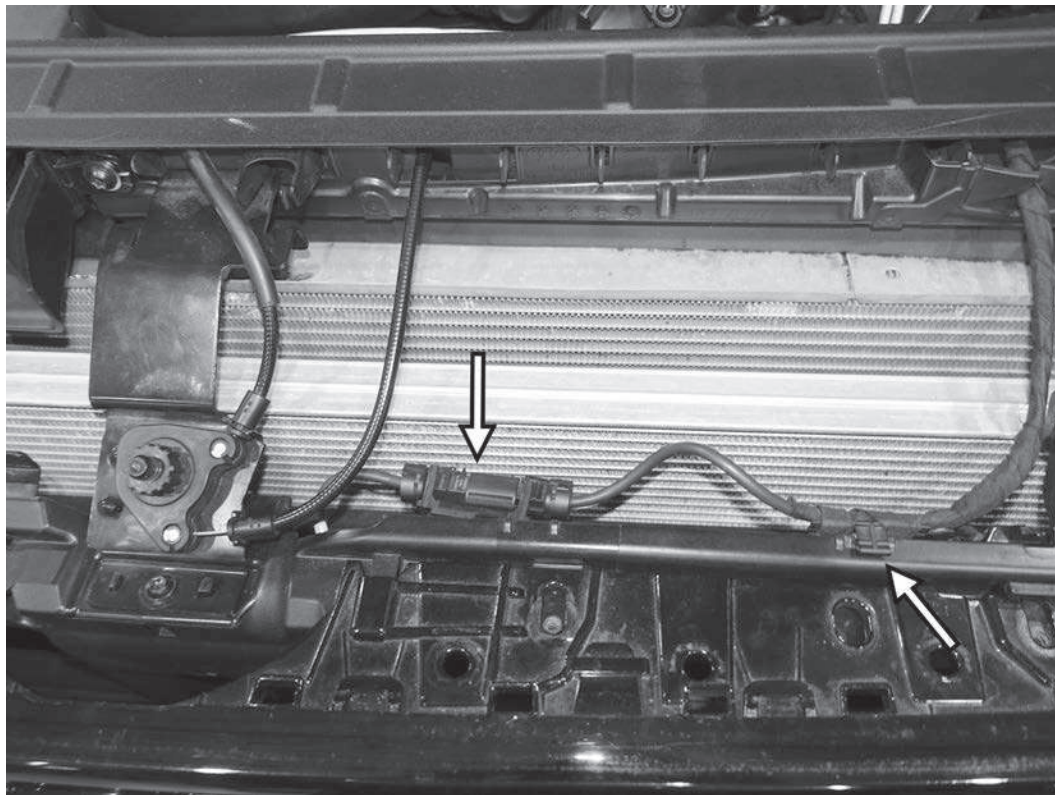


63) Reconnect the windshield washer line from the crash beam to the left headlight washer. Also reconnect the windshield washer line on the right side of the crash beam.

64) With an assistant, bring the front bumper cover back to the car. Connect all the electrical connectors to the back of the bumper, and remount the harness to the bumper.



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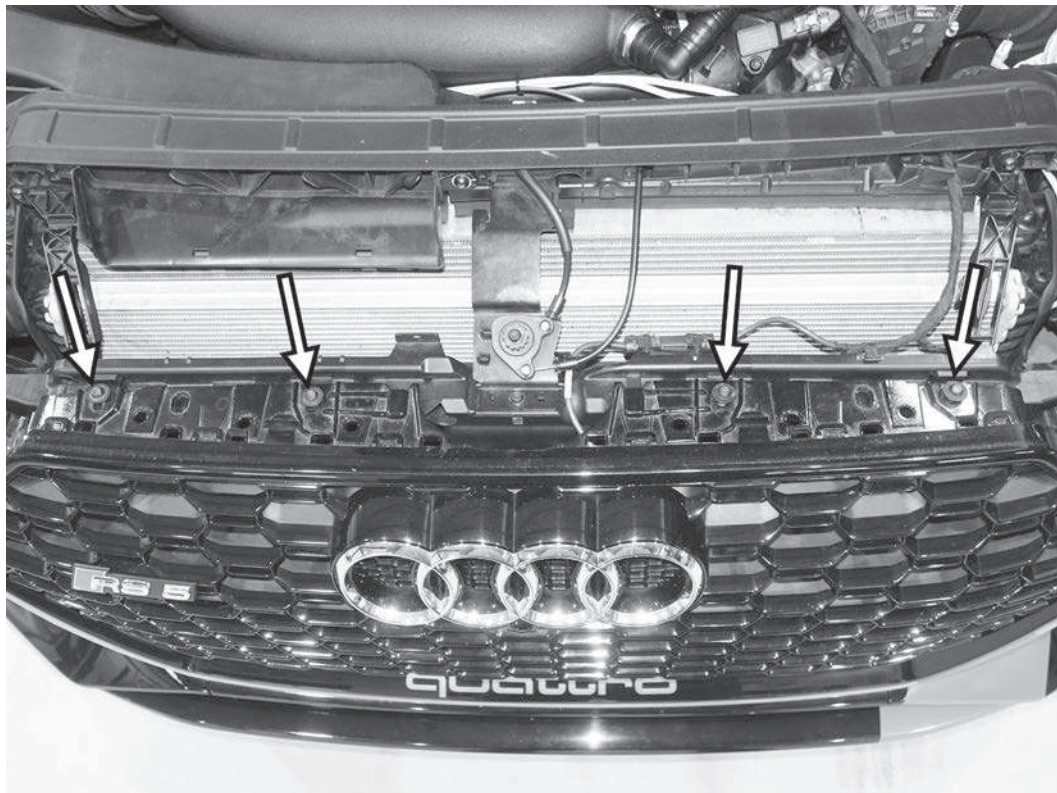


65) Reconnect the cable to the front distance sensor, and reattach the harness to the upper bumper support.

66) Push the bumper cover back onto the car, clipping both sides of the bumper back into the brackets on the side of the fenders.



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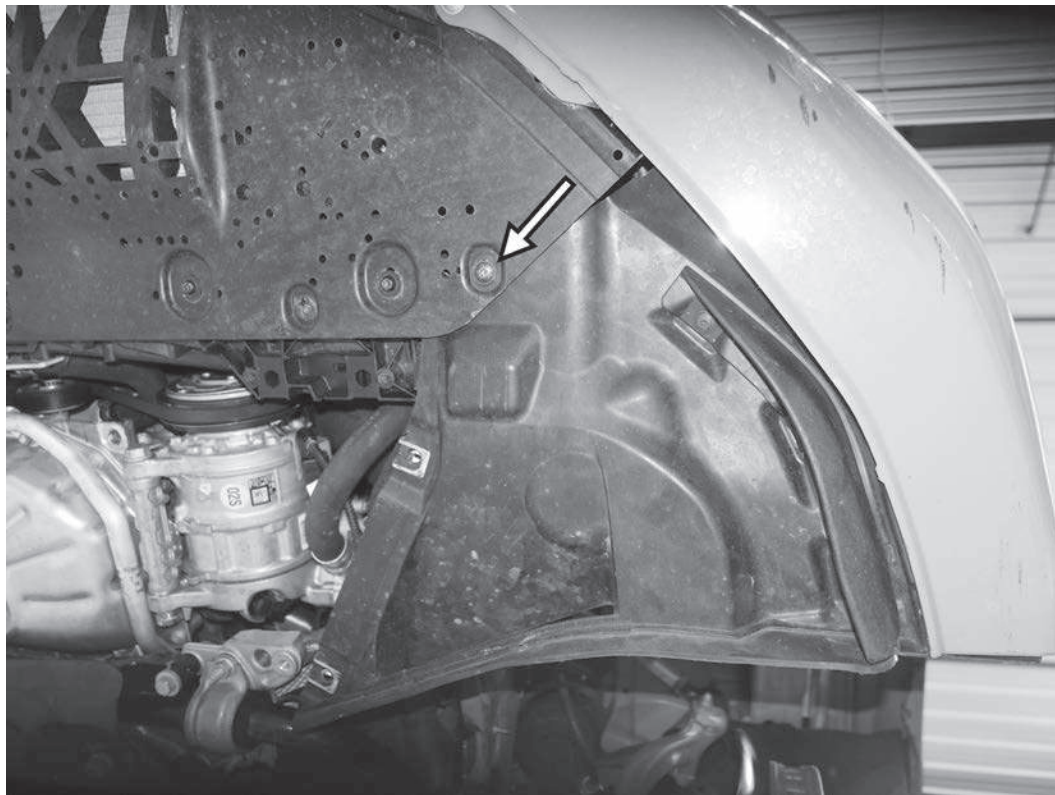


67) Reinstall the four T30 screws along the top of the bumper cover to the upper bumper support.

68) Reinstall the seven T30 screws along the bottom of the front bumper cover.



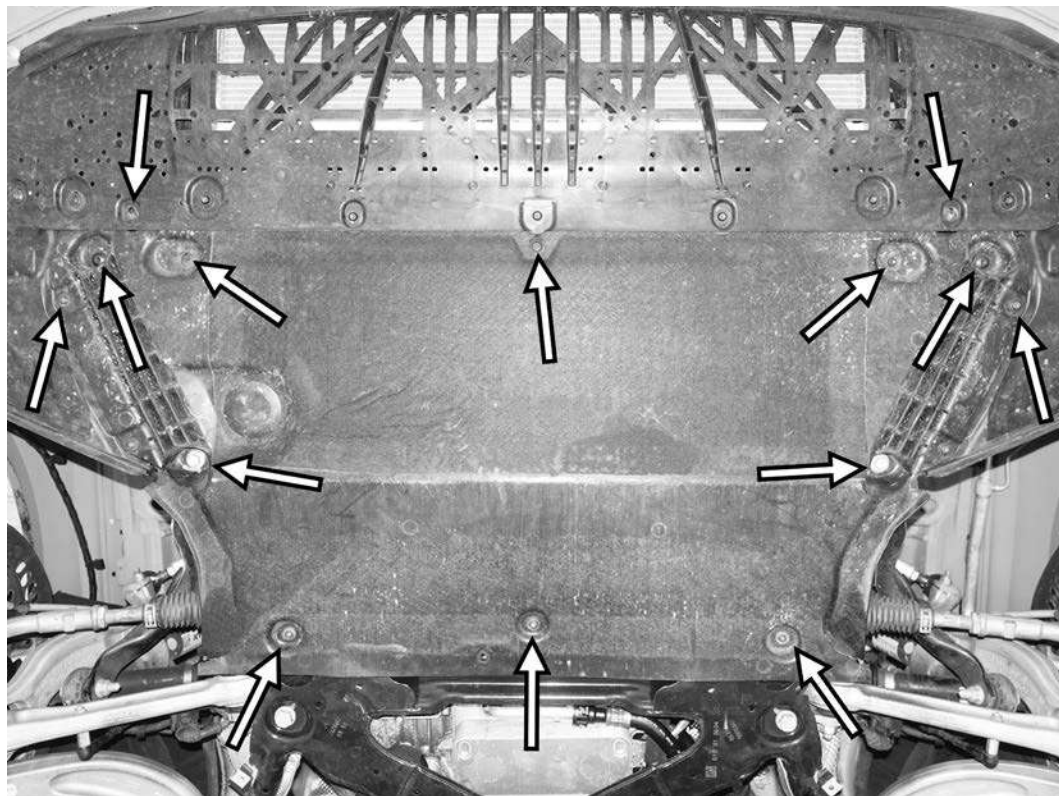
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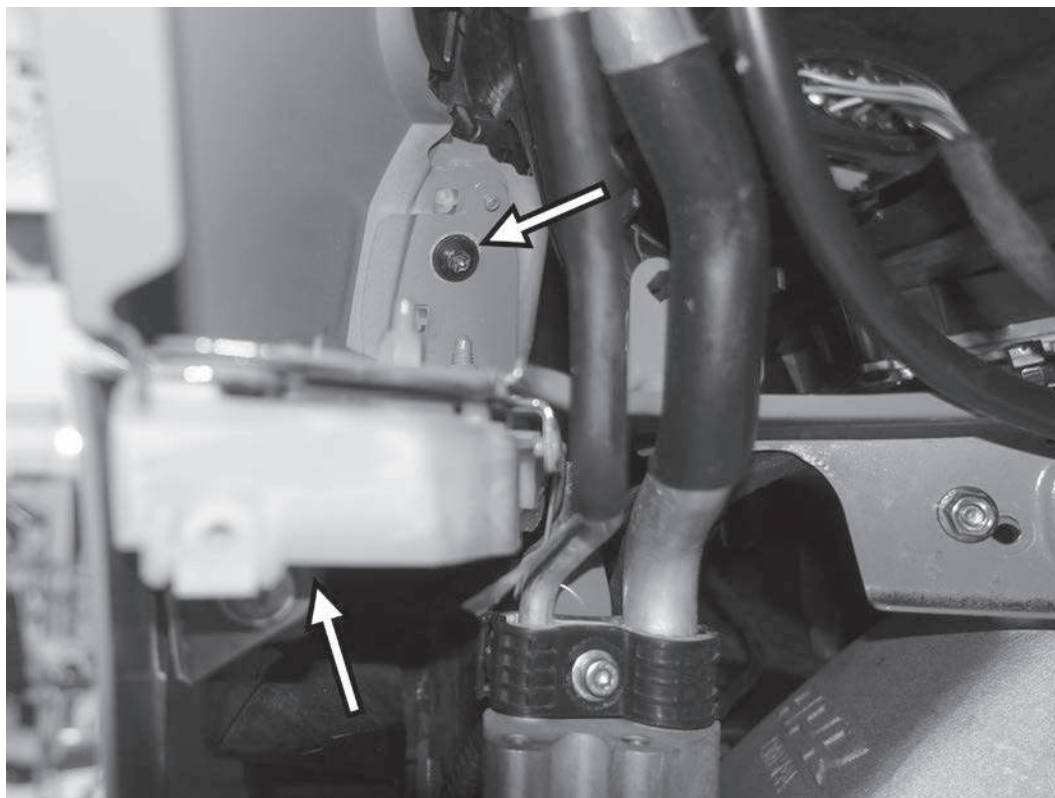
69) Reinstall the two front wheel spoilers and secure with the T25 screw from underneath. Reattach the headlight drain lines to the back side of the spoiler.

APR

70) Reinstall the engine belly pan. Typically there are two 10mm triple square screws, four T30 screws, one T25, and seven quarter turn fasteners.



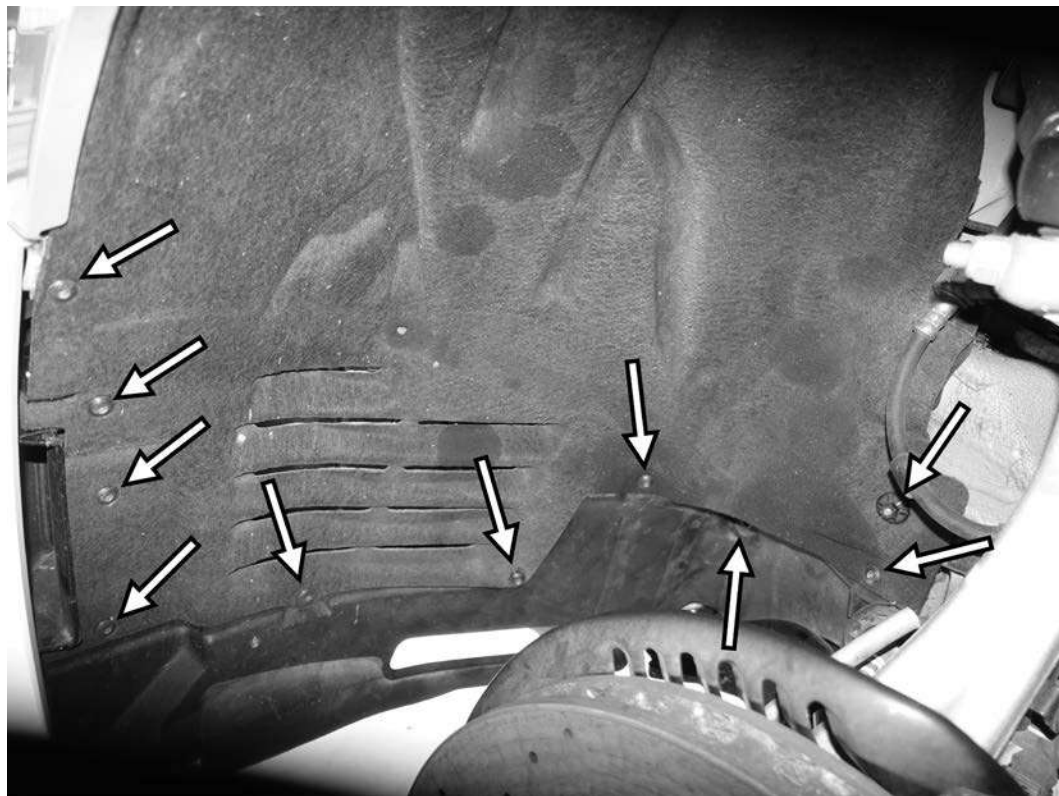
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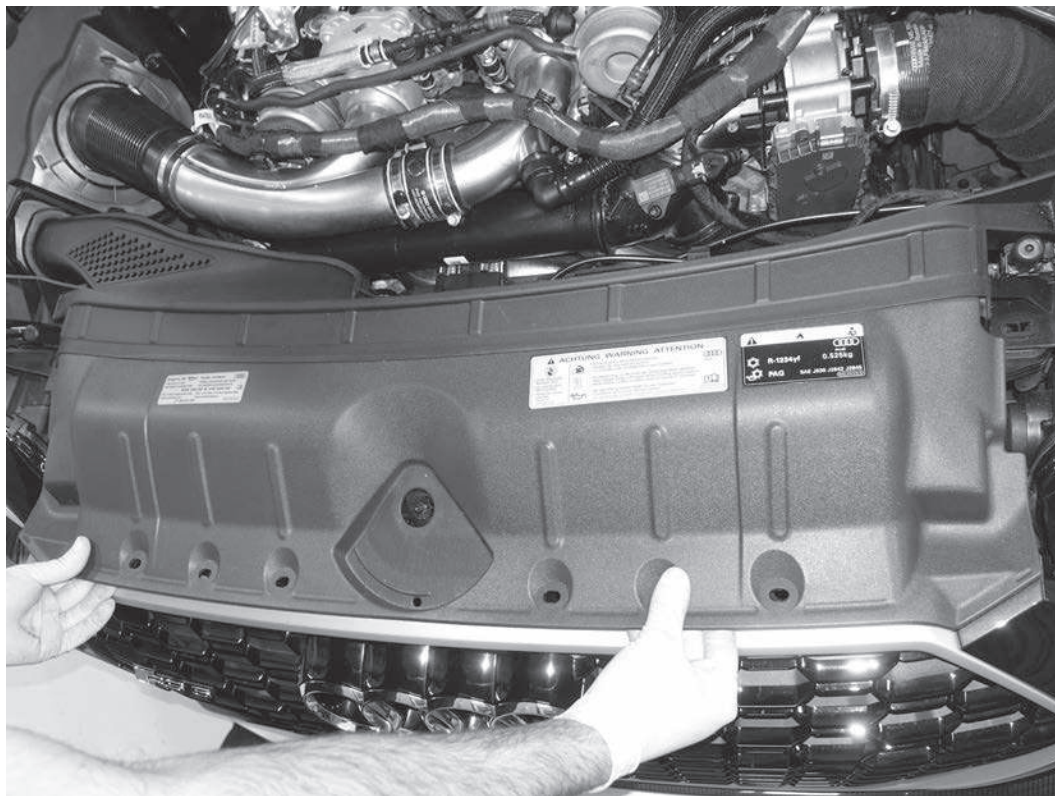
71) Reinstall the T30 screws holding the bumper cover to the front side of the fender. Install the push pin style connectors that go between the side of the bumper cover and the bottom of the front fenders.

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72) Carefully fold the front side of the wheel well liners from behind the brake assembly to the back of the front fenders. Install the ten T25 fasteners, two 10mm nuts, and one T30 screw. Repeat this step on both sides of the car, and then reinstall both front wheels.



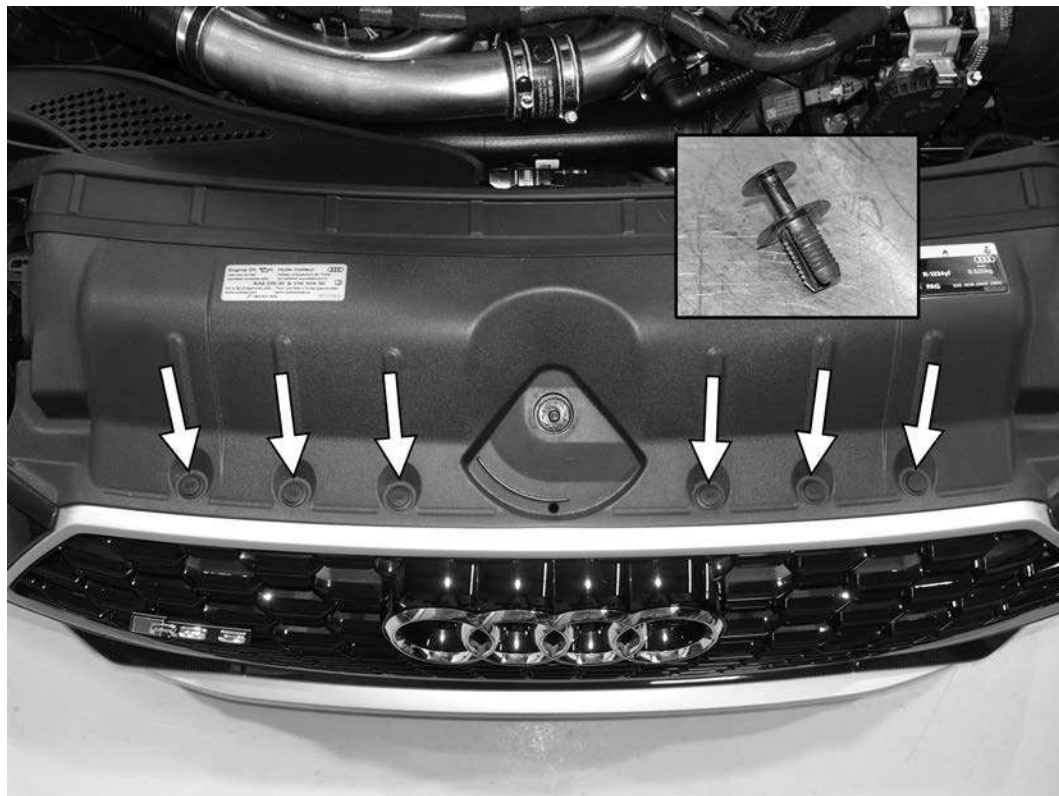
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73) Place the upper bumper cover back on the car. Place the back side of the cover into the radiator core support, and then lower the front side of the cover behind the front grille.

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74) Reinstall the six push pin style connectors securing the upper bumper cover in place.

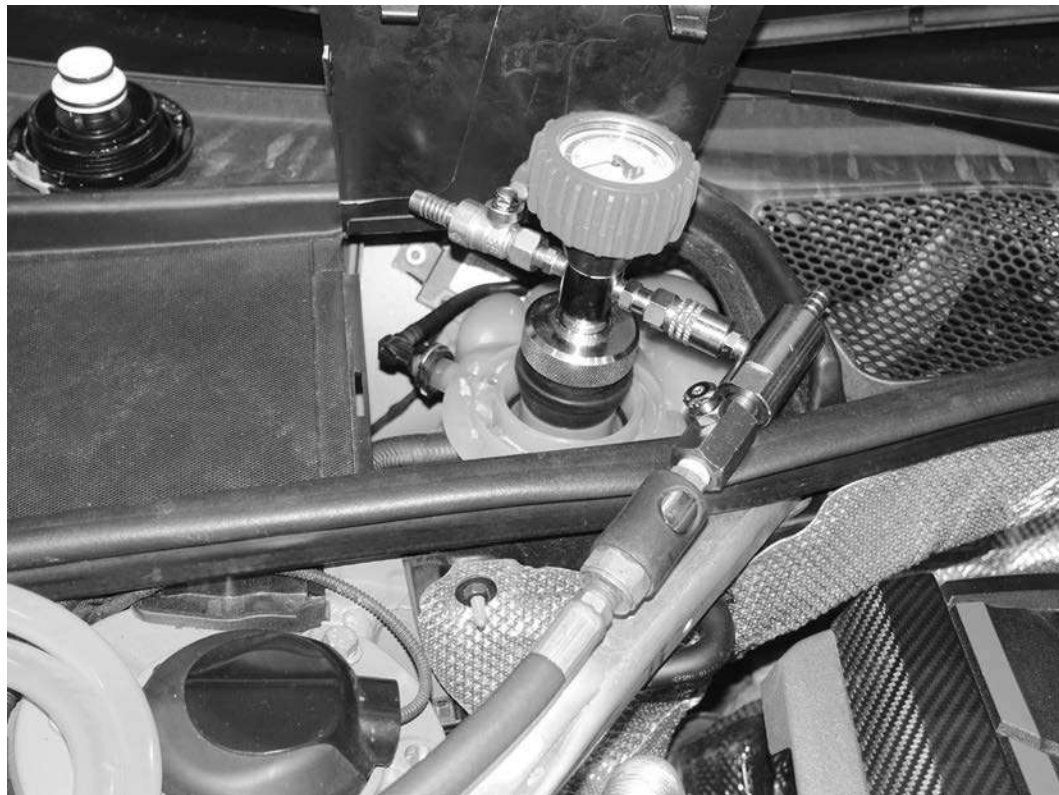


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75) Reinstall the hood release latch. The latch is keyed, so it can only go on in one position.

76) Use a vacuum style coolant bleeder to draw all of the air out of the factory coolant system and then refill the coolant system following the manufacturers directions. This is the only way to ensure there are no air bubbles in the factory cooling system. Finally, top off the windshield washer fluid.



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