

## A Fitting Guide for the Forge Motorsport Front Mounting Intercooler for the BMW Mini Cooper S Turbo – R56 Models

(A copy of this guide is available online, in the media section of our website)

A general tool kit will be required with the use ideally of a vehicle ramp or jack and axle stands. More specifically a power drill and 6.5mm or ¼" drill bit, T25 Torx driver and a craft knife.

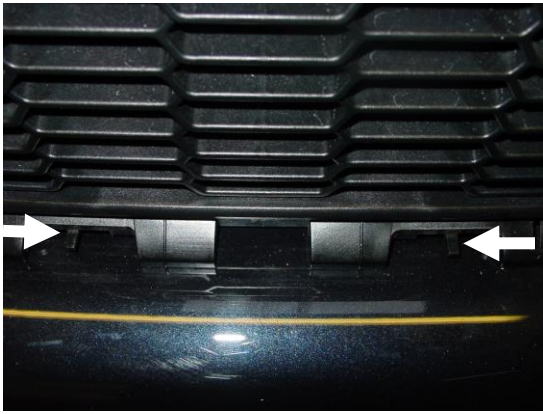
Suitable Personal Protective Equipment, clothing, footwear and eyewear is recommended.



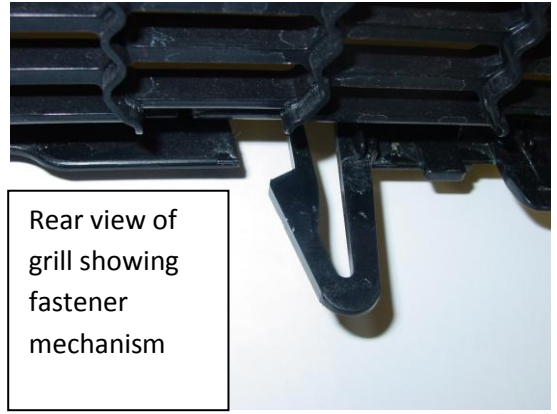
Firstly the vehicle will need to be secure and raised to allow the removal of the front wheels. The hood or bonnet of the vehicle should be opened. The grill needs to be removed. This is secured at the top edge by four plastic fasteners (push pins). The center pin of the fastener is prized out with the blade of a flat screw driver. This allows the fastener to be withdrawn from its locating hole.



In order to release the lower edge of the grill it is first necessary to remove the lower chrome cover. At each side there is a plastic tab that requires raising slightly to release the clip that secures the chrome strip.



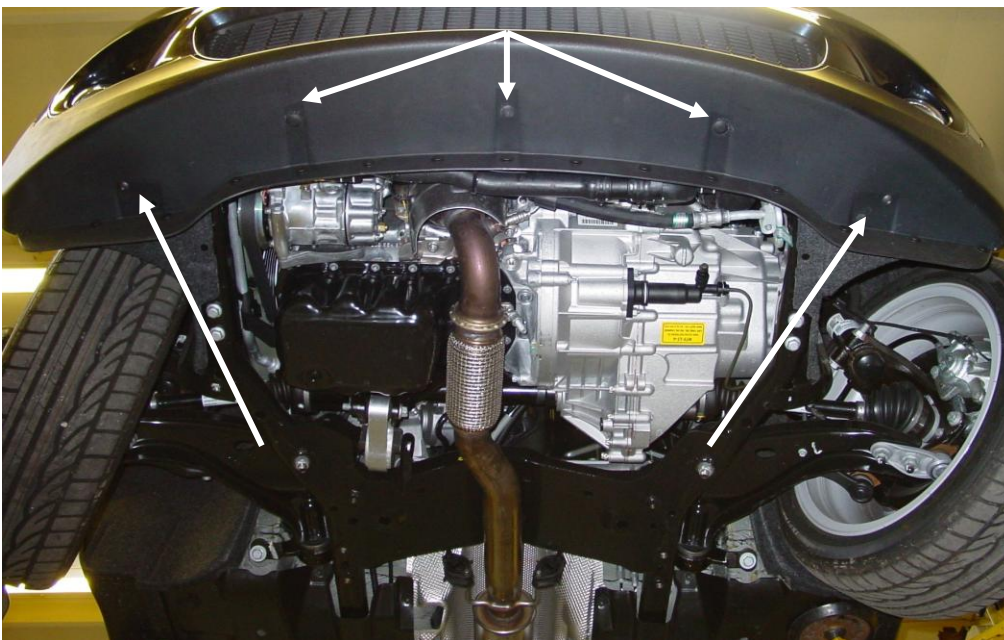
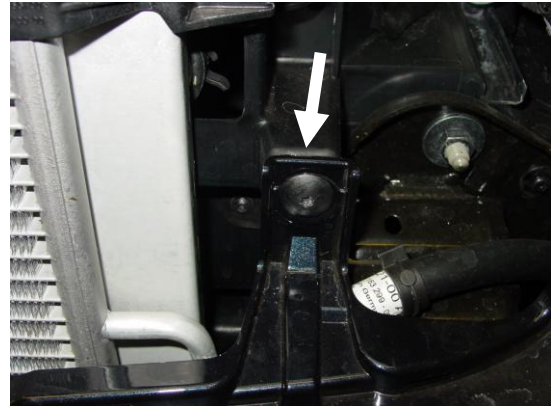
At the base edge of the grill there are four levers. When pushed towards the centre of the vehicle they allow the release of the grill from the bumper cover.



Rear view of grill showing fastener mechanism



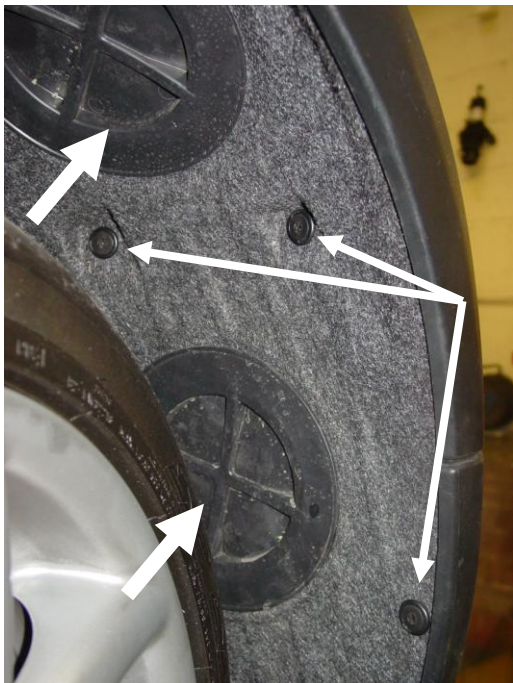
There are now two Torx T25 screws to remove. One on each side at the top of the bumper cover.



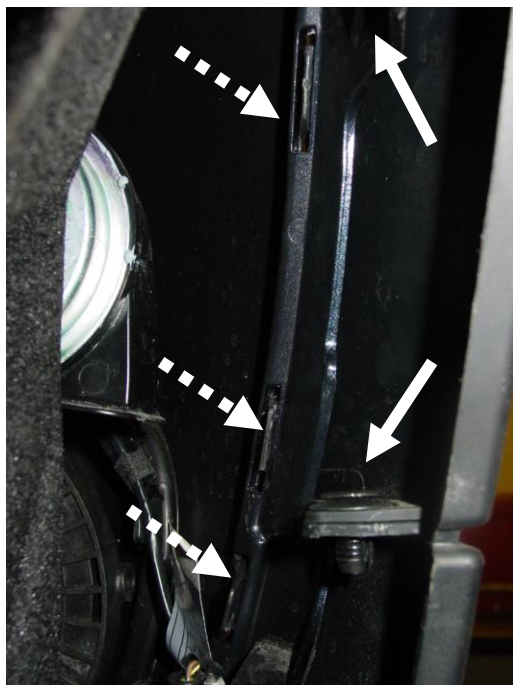
The underside of the bumper cover is secured by three of the push pin type fasteners and two T25 Torx screws (one each side).







The next fasteners to be removed are those that secure the wheel arch liner at the front. With the vehicle suitably supported, and the front wheels removed it will be easier to gain access to these. Also remove the two round access covers by rotating and withdrawing.



With the fasteners removed the wheel arch liner can be pulled away. The outer wheel arch trim is secured by two of the pushpin type fasteners that require removal and three plastic tabs (dotted arrow) These can be "released" by pushing with a flat blade screw driver. The above operations need to be carried out on both sides of the vehicle.



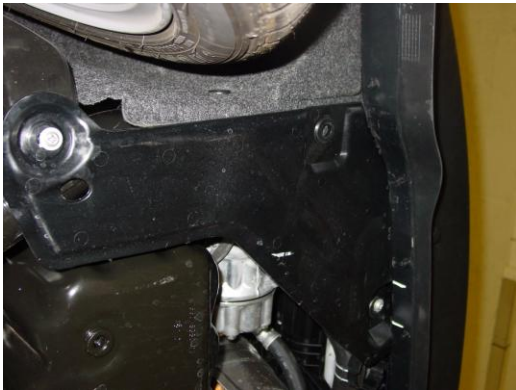
With the wheel arch trim loose at the front it is possible to access and remove the T25 Torx screw that secures the front panel. On both sides it is necessary to unplug the wires that go to the side and fog lights. (There is a tab on the plug that is squeezed to release the plug) and also disconnect the temperature sensor plug on the right hand side.



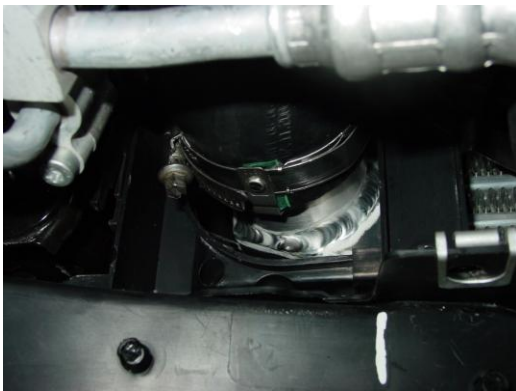
The front panel can now be removed. It is advisable to lay it on an old blanket or other suitable protection.



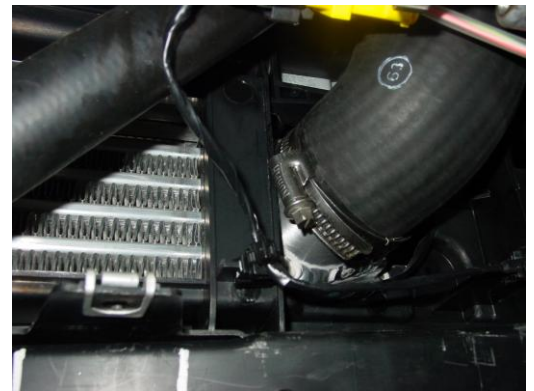
The Original intercooler mounting screws (T25 Torx) can now be removed from each side of the intercooler.



Depending on the vehicle origin it may be necessary to remove the plastic quadrants that fit between the wheel arch and the front of the vehicle, from underneath. These are secured by cross point screws that are rotated through 90 degrees to release.



It should now be possible to slacken the hose clamps around the intercooler hoses and remove them.





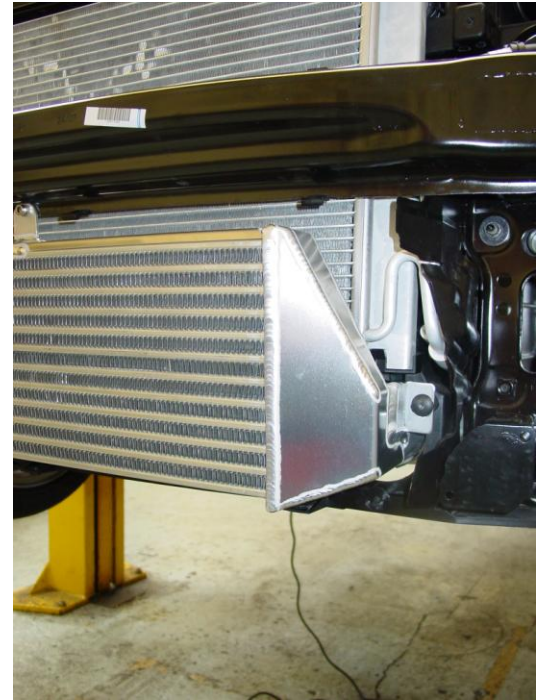
The Original intercooler can now be removed. It may be easier, when stood at the front of the vehicle to remove the right hand side first before removing the left hand side.

The forge intercooler can now be installed into the hoses (do not tighten the clamps at this stage) and the two T25 Torx screws used to secure the intercooler brackets to the front panel.

The rubber mountings of the original intercooler are not re-used. On the lower edge of the black plastic front panel there are slots that the intercooler end tanks will locate in



In the centre at the top of the new intercooler there is a bracket that will secure the intercooler to the metal crash bumper. On cars up to late 2009, the metal bracket goes in front of the crash bar, late 2009 onwards the centre bracket goes behind the crash bar. If your car has a build date of late 2009, then it will become obvious when you attempt to fit the intercooler as to which way it needs to go (see illustration on next page)



In order to attach this bracket, a 6.5 mm or ¼" hole requires drilling. With the intercooler in place, mark the required position of the hole on the crash bumper. Now remove the intercooler. It is strongly advised that in order to drill the crash bumper it is removed from the vehicle first, to prevent any damage to the air condenser radiator.





Up to late 2009, upper bracket in front of crash bar



Late 2009 on, upper bracket behind crash bar. Note the crash bar is 10mm lower on the late 2009 cars.

To remove the crash bumper there are three 13mm nuts at each side that are visible looking at the front of the vehicle and two lower 13mm bolts visible from the rear of the front panel. The front panel is also attached on the lower edge each side with a T25 screw.

With the crash bumper removed the position the hole is to be drilled can be centre punched and if available, a smaller diameter drill used for a "pilot" hole prior to drilling the 6.5mm or  $\frac{1}{4}$  " hole. Due to the material the crash bumper is constructed from this operation made prove to be slow and difficult. The use of a lubricating oil at the drill tip may assist this operation. On successful completion of this task the crash bumper can then be refitted as a reversal of the removal procedure.

The intercooler is now installed again, this time tightening the hose clamps, side fixing T25 screws and securing the top of the intercooler with the supplied bolt and nut as shown.

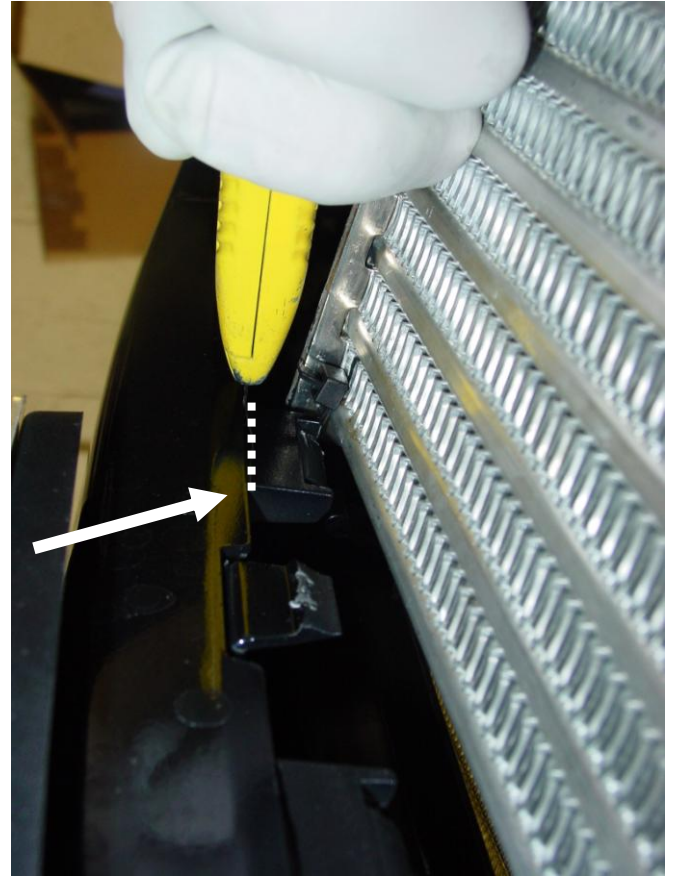
Before the plastic front panel can be refitted to the vehicle it is necessary to change the front lower grill with the one supplied with the intercooler.





Prior to removing the lower grill, the ambient temperature sensor is removed from its retaining slot in the grill. The sensor is moved to the rear of the side / fog light and secured with the supplied tie wrap.

To remove the grill it is necessary to gently release each plastic clip with a bladed screwdriver. If you start at one side working around the grill it is possible to gently pull the grill away each time a clip is released.



Before fitting the new lower grill it is necessary to cut off two (one each side) of the lower securing clips with a craft knife. These clips correspond to the corner of the intercooler core and are removed to give greater clearance.

With the clips removed the replacement lower grill is clipped into place.

The front panel, grill, wheel arch liners of the vehicle can now be refitted as a reversal of the removal procedure not forgetting to reconnect the light and sensor connectors.



It is always good practice on re-assembly to tick off each operation to ensure no part is left loose or excluded.