

R56 Mini Cooper S Oil Cooler

Fitting Instructions

Tools needed:

- Ratchet and Socket set
- Torx bits
- Trim removal tool or flat-bladed screwdriver
- Jubilee flexi-driver or flat-bladed screwdriver
- Lambda sensor 22mm removal socket
- Drill and 6mm and 7mm drill bits
- Dremel tool (or similar) to trim the inside of grille
- Adjustable aluminium spanner for hose fittings
- Oil of the correct grade to top up after installation (refer to the vehicle's handbook)

Kit Includes:

- 1x AIRTEC Motorsport Oil Cooler Take Off Plate
- 1x AIRTEC Motorsport Oil Cooler
- 1x AIRTEC Motorsport Oil Cooler Main Bracket
- 2x AIRTEC Motorsport Oil Cooler Lower Brackets
- 2x AN10 Oil Lines
- 2x M6x25mm Button Head bolts
- 8x M6x16mm Button Head bolts
- 4x M6 Mudguard Washers
- 16x M6 Pan Washers
- 10x M6 Nyloc Nuts

PLEASE THOROUGHLY READ THESE INSTRUCTIONS AND MAKE SURE YOU ARE FAMILIAR WITH THE STEPS BEFORE CARRYING THEM OUT



AIRTEC 
M O T O R S P O R T

Instructions

1. Start by opening the bonnet and locating the four plastic push-fit clips on the top of the upper grille. Carefully remove both parts of the clips using a trim removal tool or flat-bladed screwdriver.



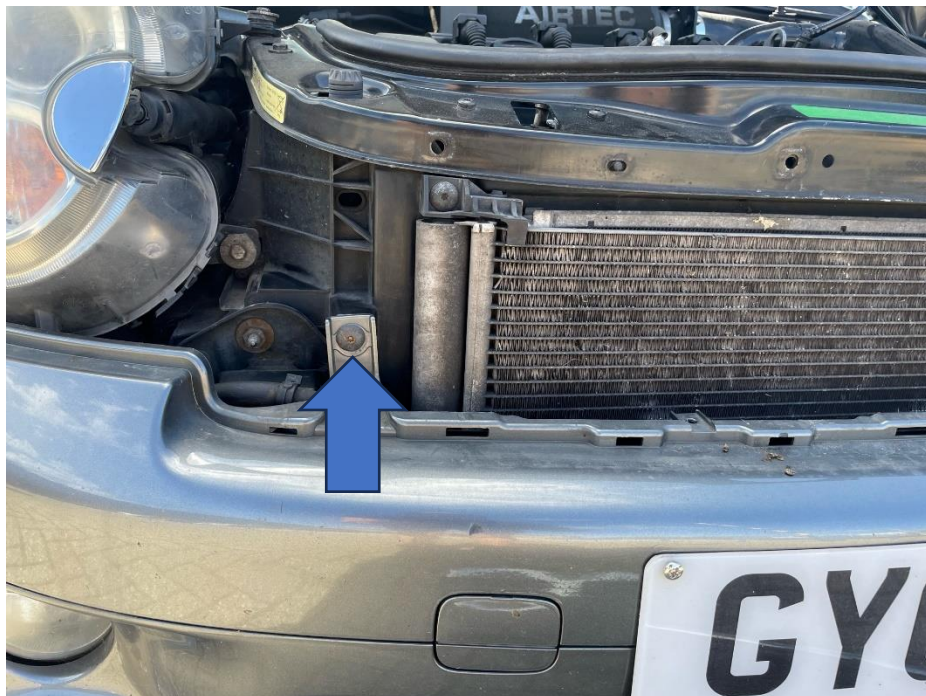
2. Now locate the two outer clips on the bottom of the grille as shown. Gently push these inward whilst pulling on the outer corner of the grille to release. Take care as they can become brittle over time and snap.



3. Pull the top of grille forward gently to gain access to the two remaining lower clips and squeeze them together whilst pulling at the bottom of the grille to release. The grille can now be removed and placed aside.



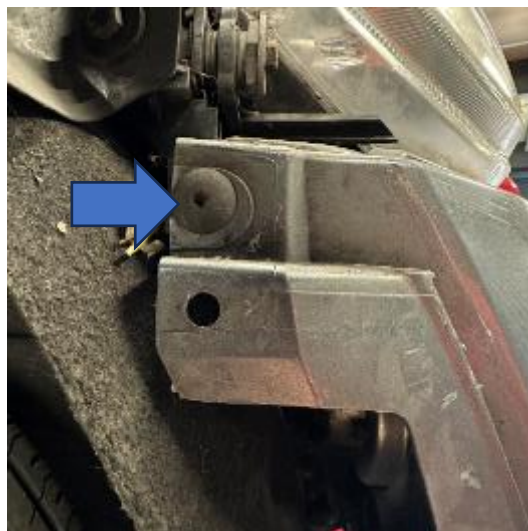
4. With the grille removed access can be gained to the two bolts located by each headlight. Remove these with a T25 Torx bit.



5. With the car raised in the air locate and remove the two T25 Torx bolts (highlighted with blue arrows) and three plastic push fit clips (highlighted with orange arrows).



6. Each side, remove the three plastic push fit clips in the wheel arch and pull the liner back to reveal a push fit clip that holds the outer arch trim in place. Remove these to then gain access to the T25 Torx bolt holding the bumper underneath the headlight.



7. Using a second person to assist, pull the bumper forward and release the plugs for both fog lights and the ambient temperature sensor. The bumper can then be carefully placed aside.



8. Whilst under the car, remove the lower lambda sensor using either a 22mm spanner or specific lambda socket and undo the exhaust clamp using a 15mm socket.



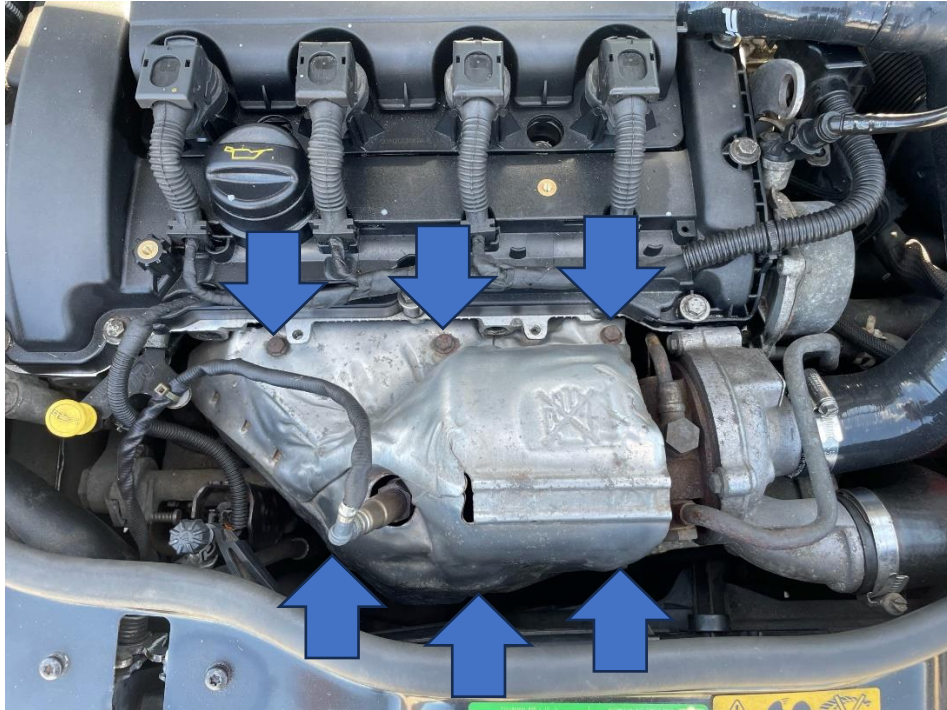
9. Locate the three 10mm bolts holding the heat shielding around the downpipe and remove. One is on the left-hand side by the bracket and there are two on the right-hand side; one above and one below the oil sandwich plate.



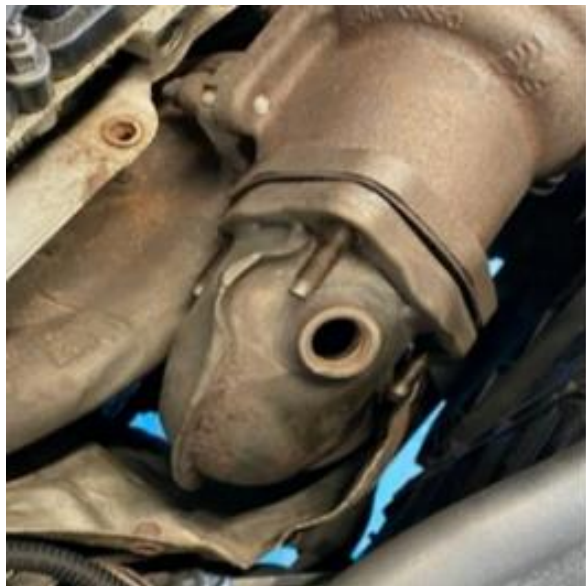
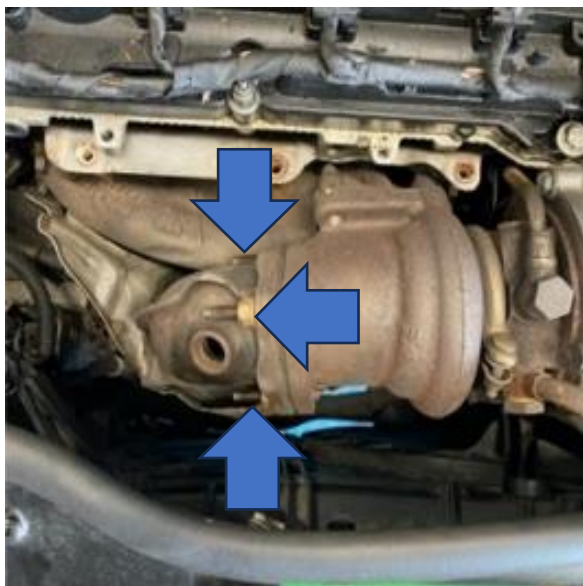
10. Working in the engine bay, now remove the top lambda sensor from the manifold.



11. Undo the three 10mm bolts holding the top of the heat shield to the manifold, followed by the three connecting the two heat shields together. You can then remove the upper heat shield from the engine bay.



12. Undo the three 13mm nuts holding the downpipe to the turbo.



13. Working under the car, undo the two 13mm nuts holding the downpipe brackets attached to the engine (blue arrows) and then remove. If there is not enough movement to free the downpipe, undo the 13mm nut attached to the bracket that was holding the left-hand downpipe bracket (orange arrow).



14. Working back in the engine bay, remove the 8mm bolt holding the header tank in place and lift it to release it from the push fit below in order to gain better access. Then move it aside and secure as necessary.



15. Remove the induction hose using a jubilee flexi-driver or flat-bladed screwdriver to undo the clips (blue arrows) and then pull the breather hose to release it from the standard pipe (orange arrow) and remove it from the car.



16. Undo the two clamps holding the boost pipe to the turbo and remove from the car.
17.



18. Once the hose is removed you will see three blue and black wiring plugs. Unclip these and remove the harness from the bracket for the electric water pump. The cable that was attached to the blue connector with the red plug is for the lower lambda sensor. Make sure as you remove these cables from the bracket that you do not let the sensor fall as damage to it may cause it to fail.



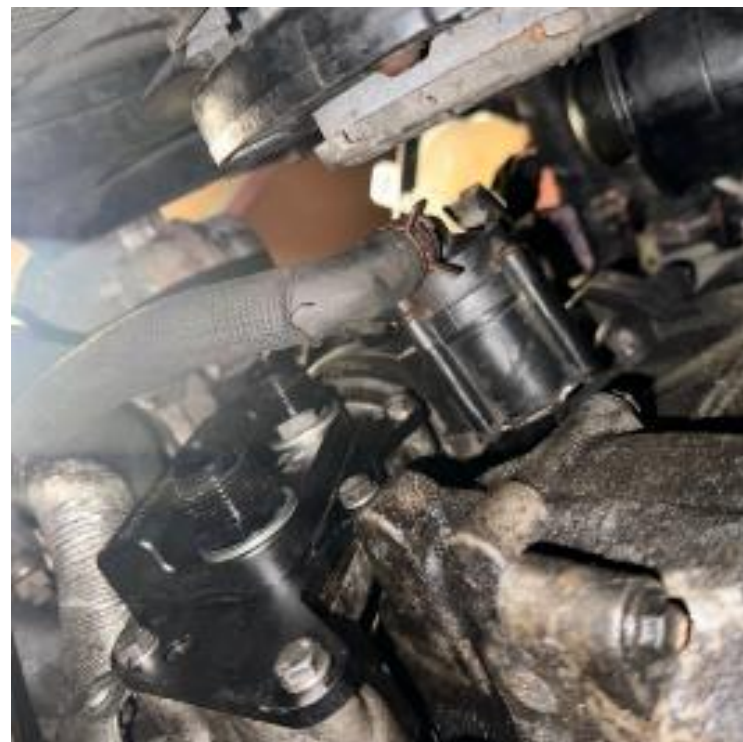
19. Locate and remove the two 10mm bolts that hold the electric water pump to the engine and then the water pump can then be moved aside. (These are hard to photograph and so you will need to feel for where the bolts are.)



20. The standard oil cooler modine can now be removed from the car by undoing the five bolts. As you remove it from the oil filter housing water and oil will spill.



21. Install the AIRTEC Motorsport oil cooler adaptor using the original bolts.



22. Install the oil lines onto the AIRTEC Motorsport take off plate and route them through the gap to the right-hand side of the radiator pack, as shown.



23. Install the supplied upper bracket onto the oil cooler as shown using eight of the supplied M6x16mm bolts with Nyloc nuts and washers both sides.



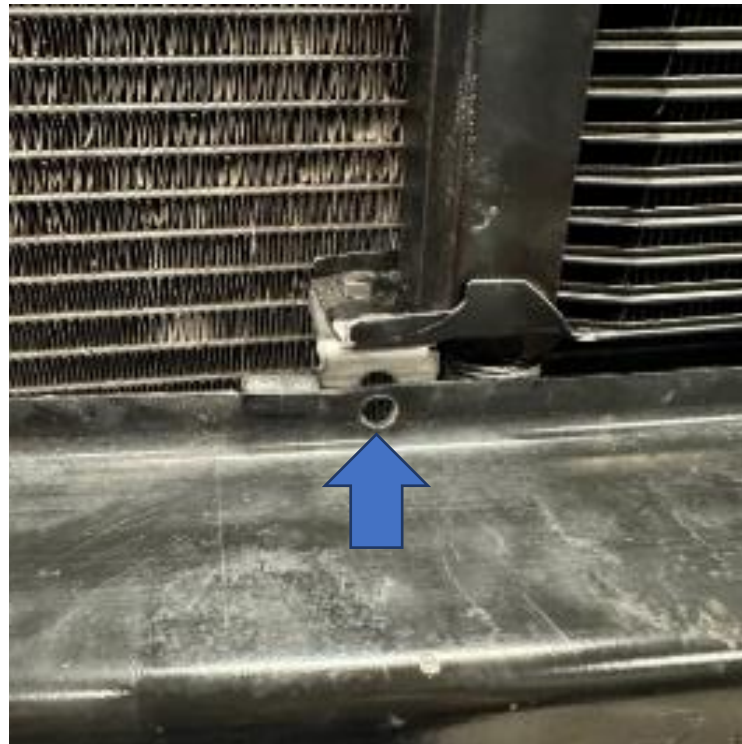
24. Feed the oil lines up behind the crash bar and attach them to the oil cooler. Make sure the fittings are in-line with the oil cooler otherwise they will hit either the air-con radiator and/or the crash bar.



25. Locate the oil cooler in place using two of the original push fits from the upper grille (removed in Step 1) to hold it in place temporarily.



26. Mark where the lower brackets meet the crash bar and drill out between 6mm and 7mm so that you can get an M6 bolt installed. Start with a small drill bit and work up in size as the crash bar is steel and can be difficult to drill.



27. Install both the lower brackets facing towards the front using two of the supplied M6x16mm bolts with Nyloc nuts and washers both sides, as shown. Then install onto the crash bar using the last two M6x16mm bolts with Nyloc nuts and washers.



28. The back of the grille will need trimming in order to allow the oil cooler to fit. The section that needs trimming is highlighted below. Using a suitable attachment on a Dremel-type tool, slowly remove material from the back of the grille, checking the fitment periodically and continue until the grille can clip back into place along the bottom.



27. Reinstall the grille using the original outer push fit clips but replace the inner clips with the supplied M6 Button Head bolts with Mudguard washers and Nyloc nuts, as shown.



28. You can now reinstall all of the parts removed in Steps 1 to 21 in reverse of removal.



29. **IMPORTANT:** Finally, top up the oil (approx. 500ml) and start the car. Look immediately for leaks from any of the four connections. If there are, turn the engine off and retighten the fittings and repeat. Then let the car get to full operating temperature, recheck the oil level and top up if required.