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### **Lower Front Mounted Intercooler.**

This kit includes:

- 1 x Intercooler
  - 1 x Alloy Tube
  - 2 x Radiator Mounting Brackets
  - 2 x Intercooler Upper Mounting Brackets
  - 1 x U shaped bracket with 3 washers and 3 nyloc nuts.
  - 2 x 25mm spacers
  - 2 x M8 x 20mm bolts
  - 2 x M8 flat washers
  - 2 x M8 spring washers
  - 2 x M6 x 20 mm cap head (allen key) bolts
  - 2 x M6 nyloc nuts
  - 6 x M6 flat washers
  - 2 x M6 x 35mm bolts
  - 1 x pipe joiner
  - 4 x hose clips
  - 1 x 90<sup>0</sup> Silicone Bend
  - 1 x 110mm Silicon Hose (to connect intercooler to alloy tube)
- Please ensure you have all the items listed prior to commencing fitment.

### **Fitting Instructions:**

For the purpose of these fitting instructions L/H side refers to the gearbox side, R/H side refers to the airbox side.

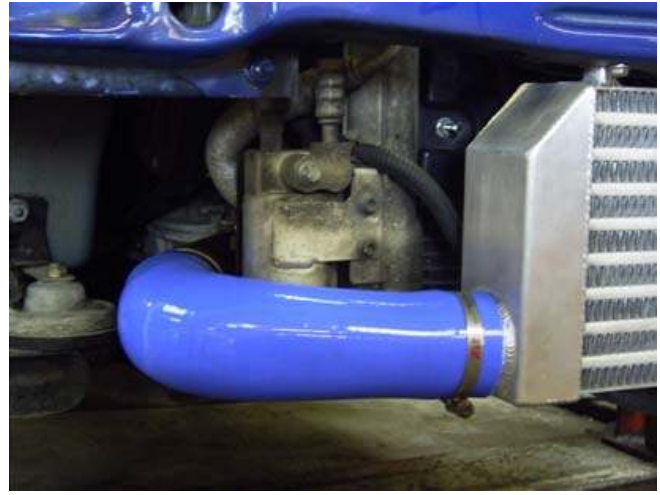
- Remove the Front Bumper – 1 screw in each front wheel arch, 1 underneath the bumper at each side, 3 underneath along the centre section and 2 clips on the bumper bar. Disconnect the Fog Lamp wiring and unclip the outside air temperature sender.
- Remove the Bumper Bar – 3 x 13mm nuts per side. Mark the centre line on the bumper bar.
- Undo the Jubilee clips for the top and bottom hoses onto the intercooler.
- Undo the bolt and remove the map sensor located in the top of the original intercooler. Keep safe for re-installation.
- Undo the top L/H intercooler retaining screw and remove the standard intercooler.
- Remove the top L/H and R/H radiator plastic brackets. These are the inverted 'U' shaped brackets situated on the inside of the L/H and R/H headlamp panels.
- On the engine bed remove the screws for the radiator support bracket and fit the new stainless steel brackets, ensuring the rubber grommets are swapped over. The longer of the two brackets is for the L/H side. Please

note: The step on the new bracket steps the radiator down i.e. so that it sits fractionally lower.

- Relocate fan on the front of the radiator using U shaped alloy bracket to R/H side of radiator, turning it through ¼ of a turn prior to re-fixing it to the front of the radiator. You will need to drill an additional 6.5 mm in the plastic radiator cowl for the 3<sup>rd</sup> fixing. If the fan switch wiring is not long enough to plug back in, more play can be obtained if is gently taken out from the convoluted wiring harness by removing the black tape. Once happy with the positioning of the wiring re-insulate it with black insulating tape.
- Using the 25 mm spacers and M6 x 35 bolts refit the radiator by the top L/H and R/H brackets and refit the U shaped plastic brackets.
- Cut away the return lip from the underside of the bumper bar, 28 cm either side of the centre line. Rust proof with suitable rust proofer and paint.
- Attach mounting brackets to top of intercooler using M8 bolts, flat washers and spring washers. Put the spring washers immediately below the bolt head with the flat washers against the brackets.
- Mark the centre line of the intercooler and the centre line of the bumper bar.
- Offer up the intercooler ensuring that it is central so that when the bumper is refitted it sits centrally and in the maximum cold airflow path. The brackets locate onto the upper side of the lower lip of the bumper bar to support the intercooler.
- Once happy with the positioning of the intercooler, mark up and drill two 7mm holes in the bumper bar bottom rail where the intercooler mounting brackets will mount. Refit bumper bar. Attach intercooler to bumper bar using the M6 bolts, washers and nyloc nuts. If you need to pull the intercooler mounting further towards the front of the car then the 7mm holes can be opened out with a small file.
- Drill an 11 mm hole in the centre of the bumper bar bottom rail to relocate the outside air temperature sensor, as it needs to be moved from the bumper out of the way of the intercooler.
- Attach loosely with hose clips the short piece of silicone hose to the L/H intercooler outlet and fit the alloy pipe to this short hose. Locate top of alloy pipe under slam panel and fit to original hose that leads to the plenum chamber.
- Remove the bracket that holds the boost pipe in place at the lower R/H side of the radiator.
- Cut this pipe along the white line and join the new piece of silicone hose to it using the joiner and hose clips supplied. Attach to the R/H side of the intercooler.
- Check and tighten all nuts, bolts and hose clips.
- Refit the map sensor into the alloy tube at the top of the intercooler.
- Attach original silicone hose to alloy pipe near map sensor.
- Check all bolts, fixings and hose clips are secure and that when closing bonnet there is sufficient clearance between bonnet and alloy pipe from the top of intercooler.
- Offer up front bumper ensuring intercooler is fixed centrally and refit to car.
- After 500 miles re-check all hose clips, fixings and bolts which were touched during fitment and re-tighten as necessary.

**NB:** There is no need to cut back any bumper material from Astra 4 GSi or SRi Turbo Hatch or Zafira GSi models.

Astra Coupe OE bumper requires the inside of the bumper to be cut back to clear the intercooler.



**Please Note:** The L Shaped Brackets Have Been Replaced With Straight Brackets For Easier Fitting.

