

How to remove and refit the GTT headgasket

Tools required for Head gasket removal and replacement:

- 8mm Sump removal tool or Mole Grips,
- 10mm ratchet spanner,
- 11mm ratchet spanner,
- 13mm spanners,
- 13mm socket,
- 19mm spanner,
- Flat head screwdriver,
- Feeler gauges,
- Torque Wrench that goes from 60 – 100 N.M.
- T50 Torx head,
- Torx head adapter for the torque wrench,
- Oil filter removal tool,
- Solid steel rule (must be perfectly straight),

New parts required:

- 1x New Head Gasket either OE or Mellior blue seal type,
- 10x New Head bolts either OE or 12.9 High Tensile (M10 x 100 Non stretch 12.9),
- 1 x New oil filter,
- 1 x Copper sump plug washer - Renault dealer part number 7703062062 about 20p
- 1 x New Coolant,
- 1 x Engine oil to flush engine with,
- 1 x Good engine oil to use once completed 15w/50 for example or what you prefer to use,

Time to do the job:

This all depends on your confidence and how many times you have done this before could be from 30 minutes to the best part of ½ a day.

The following to be used as a guide to remove and replace the head gasket on a Renault C1J turbo lump.

Start

Unplug the battery terminal,

Optional - Remove the bonnet 4 x 10mm nuts, you may have to drill the rivet on the bonnet stay to get it off (this will give you a lot more clearance to work in the engine area).

Drain the oil - Undo the sump plug and remove the copper washer (Do no re-use the washer as it will only leak) put the sump plug safely to one side and place new sump washer on it ready for later.

Drain the coolant - Use the 11mm ratchet spanner on the driver's side of the block to remove the coolant drain bolt if this is not possible to get to remove the bottom radiator hose connection on the water pump.

Remove the boost hoses (If this is your 1st time take a picture 1st so you know where the hoses go back).

Remove the coolant hoses from the water pump, turbo, carburettor, header tank, (You can label this if you want so you know where they go back),

Remove the carburettor top 3 x 10mm nuts or could be allen key bolts,

Undo the 13mm nut and bolt securing the alternator to the alternator support arm that comes from the water pump (Leave arm attached to water pump).

Undo the 10mm bolt on the water pump that secures the alternator throw support and remove and put to one side.

Push the alternator towards the block and remove the alternator belt (Re-new belt if necessary),

Remove the water temp sender at the back of the water pump and tie / place it up out of the way.

Remove the carb fuel line and tie / place out of the wire,

Remove all vacuum pipes around the carb and again tie / place out of the wire,

Remove the dizzy cap & rotor arm HT leads (Mark on the leads and cap what is connecting to where) remember that number 1 is flywheel end and 4 will be the water pump end,

Undo the 2 x 13mm bolts that secure the turbo down pipe to the turbo elbow and push out of the way,

Undo and push to one side the oil feed to the turbo and undo the oil drain connection at the base of the turbo (Coolant pipes should have been already removed as per earlier coolant pipe removal).

Now undo the 3 x 13mm nuts on the top of the rocker cover and the small gasket pieces under each bolt (renew if necessary). Remove the rocker cover and place to one side again renew the rocker gasket if necessary.

Optional – You can unbolt the turbo from the manifold if you want but this is not necessary (will make it a little lighter to remove the head),

Undo the head bolts at the front of the block and remove / dispose (Do not re-use the bolts),

Remove the push rods and label them in the order removed 1 being the flywheel end and 8 being the water pump end (Get a piece of long card and number 1 inch gaps from 1 to 8 and place the relevant push rod in section 1 etc.),

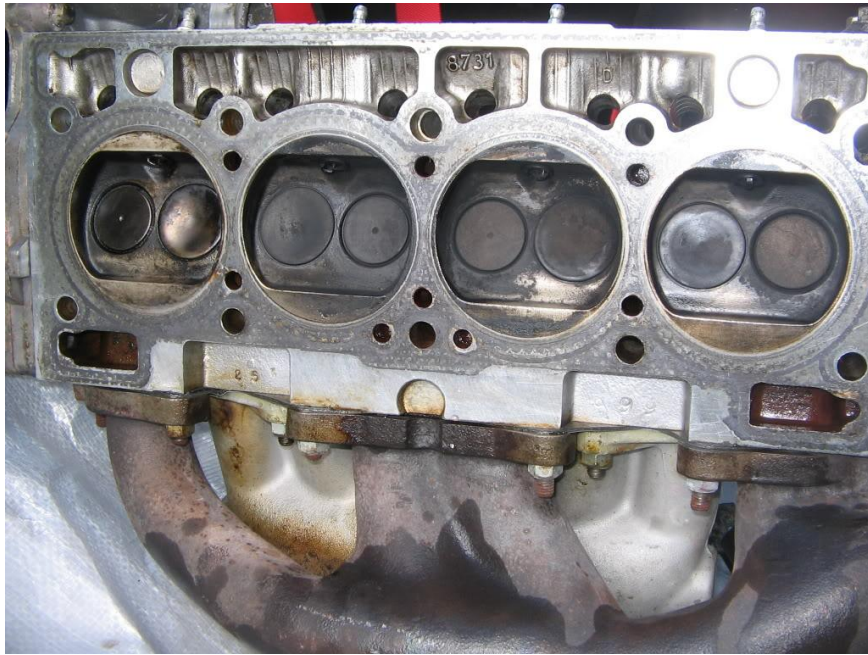
Undo the remaining bolts at the back of the head slowly (You will probably notice coolant leaks out the back do not worry this normal as the head has waterways within and would still have coolant in it) and again dispose of the used head bolts,

Remove the head with the manifolds, carb and turbo still attached and place to one side.

The car will now look a little like this



Once removed use your solid steel rule to check to make sure the head is flat and not warped so from 1 corner to another and across make sure there are no gaps or signs of warping on the head. Do the same on the block. If your head is warped either replace it with another or get it skimmed professional by a local engineering firm.



Remove the oil filter,

Remove any coolant that has entered the piston bores and clean with some petrol after, have a look at the liners whilst in place to see if any cracks and to make sure you can see the hone markings (lines going across the bore crossing each other).

Give the head a good clean again use petrol or something-similar nothing abrasive. Replace the spark plugs if necessary (NGK B8EVX),

Inspect the removed head gasket and see why it failed in the 1st place look for splits, cracks, detonation marks, etc..

Note the split in this pic



Have another cuppa and a break,

Back to work remove the new gasket set from it's packaging and lay it down on the block aligning the alignment hole in the correct place on the block (It protrudes about 3-4 mm from the block)

Then remove the new head bolts from their packaging and put in arms reach (Scuttle area).

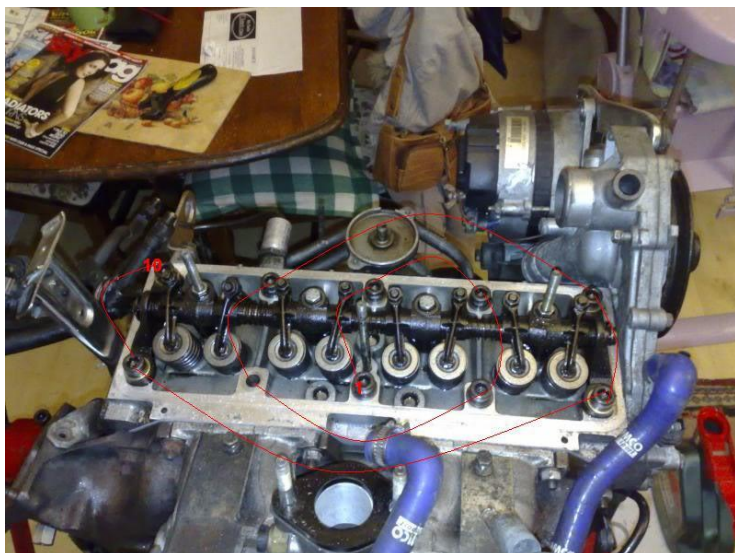


If the head is all clean and checked for flatness place it carefully and slowly on top of the new head gasket making sure the alignment hole is aligning with the H/g and the hole will slot into the head slightly and then leave the head in place.

Use the new head bolts and loosely tighten them up (finger tight) so the head doesn't move out of place once this is done you can put the rods back in there original position remeber number 1 push rod being the closes to the flywheel and number 8 will be the water pump end.



Now torque down the cylinder head in the following sequence noting the torque settings below



OE Head bolts & OE Head gasket **60 NM**

Meillor Blue Seal Head gasket and 12.9 High Tensile Head bolts – **80NM** (can be tightened any where from 65-90nm).

Undo the 10mm nut on the top of the tappets adjuster and unscrew it so that the push rod fits in nicely and then do it up so the screw is firm against the push rod (do not tighten with spanner yet) do the same if required for all 8.

With the use of the 19mm spanner place it on the crankshaft bottom pulley and rotate it until the following valve is open (valve spring fully compressed) and then adjust the appropriate valve tappet as necessary. Tappet adjustment varies from cam to cam

Clearances

Standard cam Inlet 0.20 and exhaust 0.25

Piper 285 cam Inlet 0.20 and Exhaust 0.20

Tappet adjustment order- (Use 'the rule of 9' for doing tappets)

Remember valve clearance should only be done when the engine is cold.

Valve Open Valve to Adjust

No 8 ex No 1 Ex

No 6 in No 3 in

No 4 ex No 5 ex

No 7 in No 2 in

No 1 ex No 8 ex

No 3 in No 6 in

No 5 ex No 4 ex

No 2 in No 7 in

Don't forget that once the engine has been run in say for around 500miles the head bolts will need to be re-torqued that's if you only torqued them to 60-75nm.

If your torqued them down to 80nm no re-torque is required.

On both cases the tappets may need be re-adjusted as per the above sequence.