

Ferrari 348GTS 1994 Cam Cover Remove, Refresh and Refit

compiled by dasadrew following the inspiration of Stevew and many different tips and tricks posted over the last months in various threads

All of the above was performed on my own 348. The cam covers had been off a few times in the past from previous owners and certainly some of the nuts and bolts were no longer the standard ones. Thus do not be overly concerned if yours do not match up exactly to the ones in the pictures.

I don't claim that this is a full and faultless description, but I made the notes myself during the job and thought I might as well share them.

I'll leave out the obvious bits like "open engine cover" as, if you've really got two left hands and only thumbs on them you shouldn't start taking a Ferrari engine apart.

The more hoses you can remove and lay to one side, the easier the job will be. It would be nice to do it in combination with an engine hose and cable freshen up as this can be done in the 8 day period when the repainted cam-covers are fully hardening.

My description covers a minimalist approach to disconnections.

Let's get going...

Pull off the main air intake duct tubes LH and RH from the Air Filter Box

Unplug the multiplugs from the Mass Air Flow (MAF) Sensors LH & RH by depressing the wire retainer clips and pulling off the plugs.

Undo the large Jubilee Clips on both the Intake Plenum and MAF Sensor ends of the plastic duct connecting the Intake Plenum and MAF Sensor LH&RH. Flat blade screwdriver or 8mm AF socket.

Undo the Jubilee Clips on the small hoses leading to the Air Filter Box next to the MAF Sensor duct and release the hoses from the Air Filter Box.



Undo the 4 M6 self-locking nuts and washers retaining the Air Filter Box to its anti-vibration mounts and remove the Air Filter Box from the vehicle. A 10mm Ring Spanner seems to work best for this.

Gently twist and then pull off the vacuum tubing (see photo) LH & RH



LH Cam Cover End Plates

Note there is a mixture of bolts and nuts depending on whether the plate is attached to the cam cover or cylinder head.

The 4-hole outboard plates are identical LH-RH and have two 10mm AF bolts and two 10mm AF nuts.

There is a Cable Clamp on LH outboard Cam Cover End Plate with a tightly recessed nut which is best got at with a 1/4" drive thin-walled 10mm socket.

The Cam Cover End Plate will bleed some residual oil when it is removed. Put a rag underneath it first to catch this

RH Cam Cover End Plates

The RH Cam Cover has one end plate and, on the inboard cam, the Phase Sensor is attached with its own cover plate. You need first to remove the Multiplug on RH Cam Cover Phase Sensor

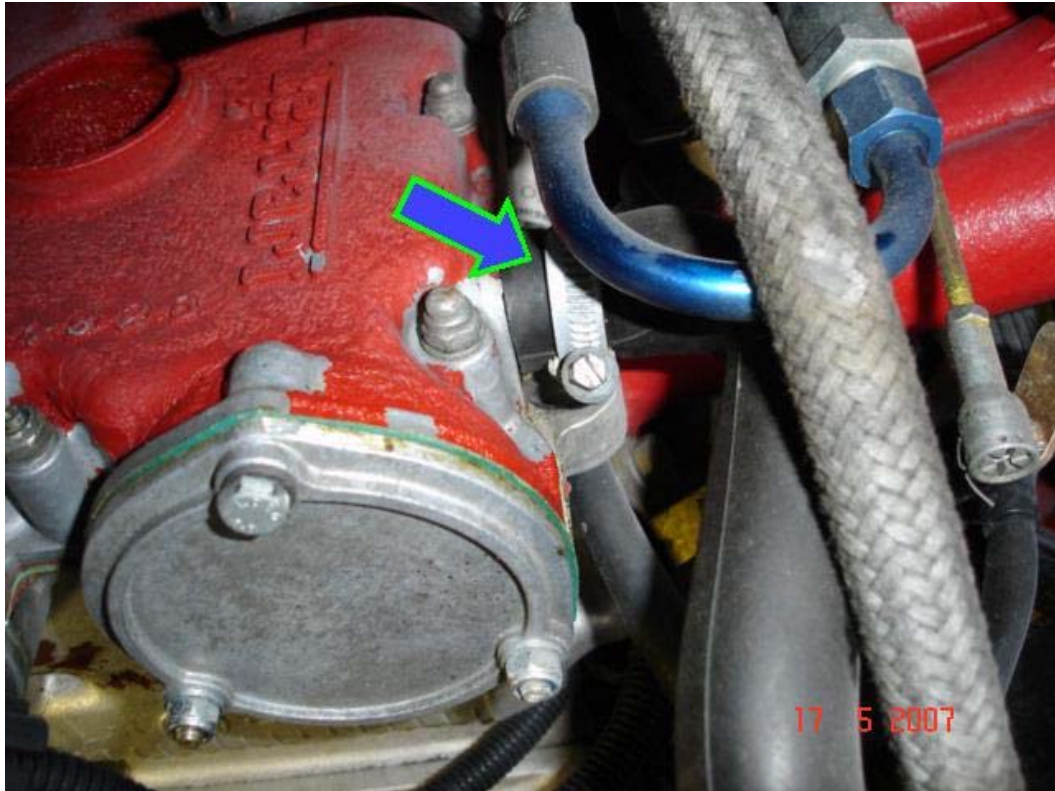
The undo the RH Phase Sensor Cover 3 x 8mm AF self-locking nuts and washers. It is still attached to the Phase Sensor body by its small cable loom. Hang carefully to one side.

The Phase Sensor body is attached with 3 x 5mm hex Allen key bolts. Be careful withdrawing the Phase Sensor body as it harbours an oil seal (which you might like to replace anyway)

The Cam Cover End Plate will bleed some residual oil when it is removed. Put a rag underneath it first to catch this

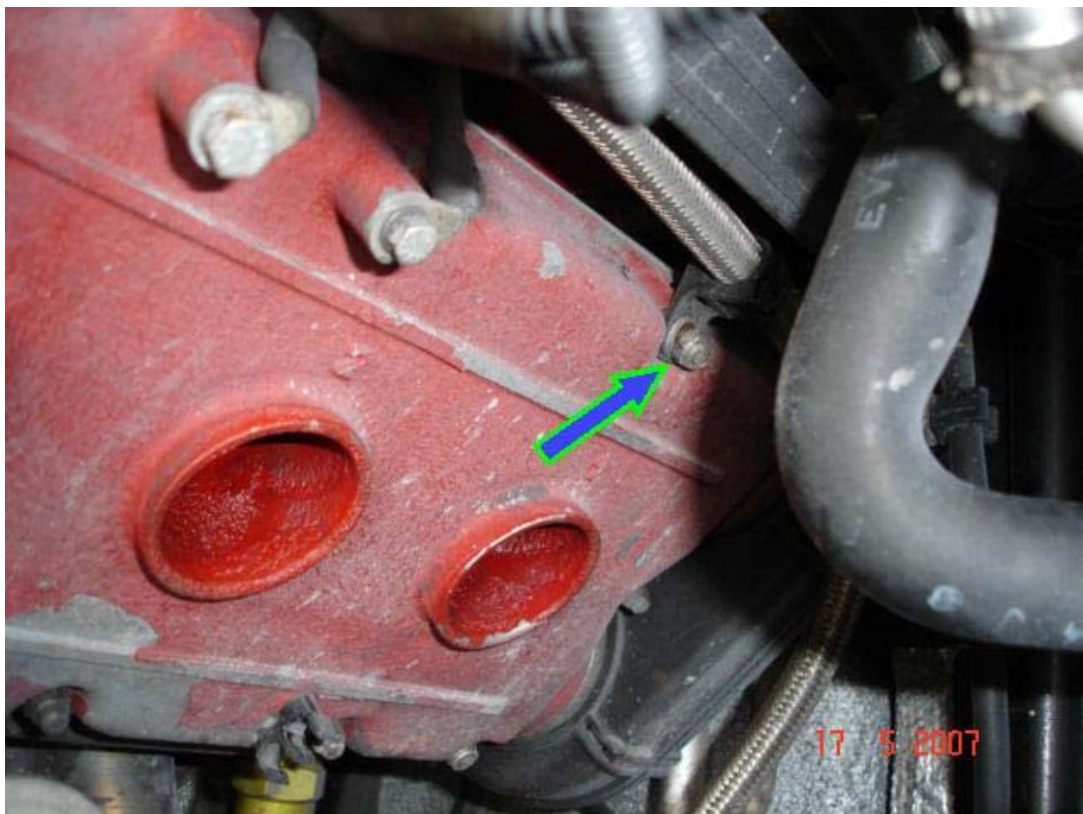
On both Cam Covers

Remove Oil breather hose from Cam Cover (Jubilee Clip)

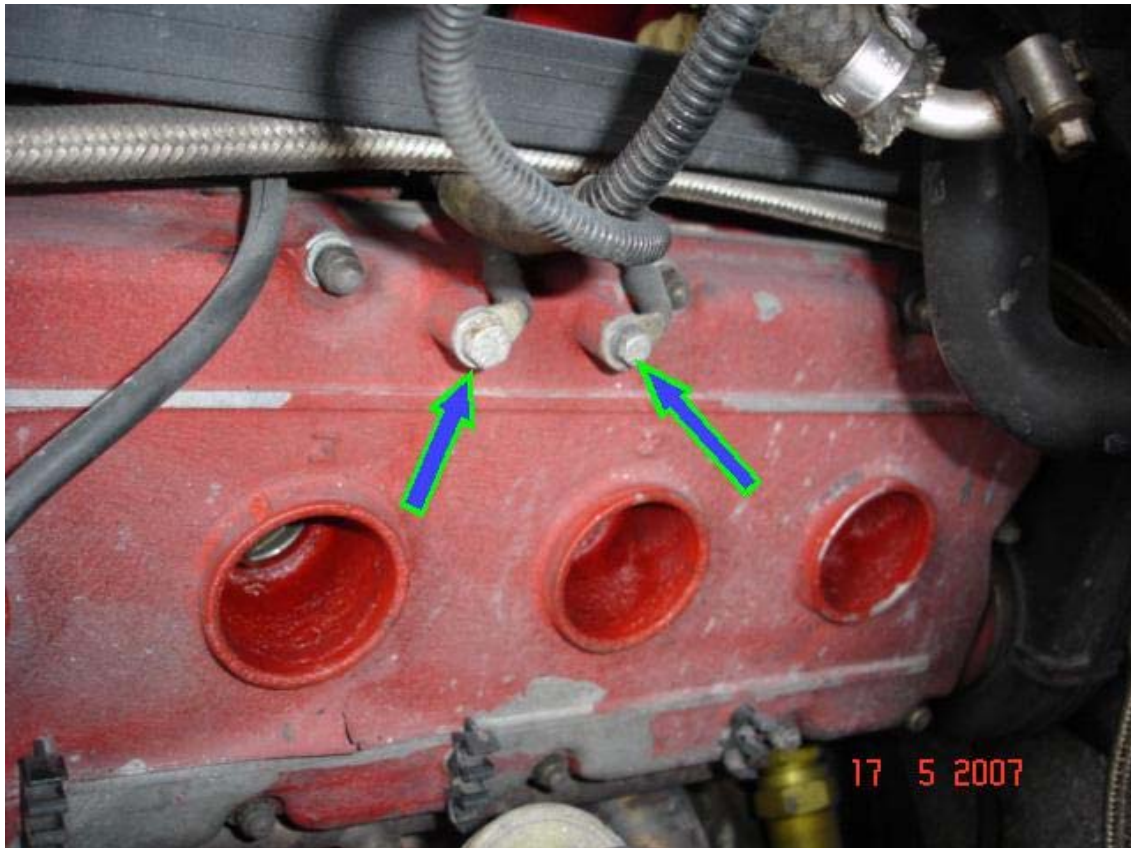


Both sides remove plug leads. The small plastic clips they are held tidy by may come off together with the plug leads. This shouldn't be a major problem. They have to be removed anyway later on for cam cover painting.

The Cam covers also have a P-Clip trapped under the retaining nuts.



Remove the bonding cables on Cam Cover. Strangely enough, the two bolts on these are different sizes - 10mm and 8mm AF



In order to be able to actually remove the cam covers, I had to loosen the fuel rail pipes to enable them to be pivotted out of the way of the oil-breather stub pipes of the cam covers

Loosen them very slightly with a 17mm AF spanner, rotate the fuel pipe out of the way and nip them up lightly again.



The Cam Cover nuts are easiest removed with a 3/4" drive 10mm AF socket. A mix of both deep and normal sockets work well here

Keep the cam cover gaskets to have a guide when cutting the new ones

The three-piece cam cover gaskets come joined at the hip and have to be cut through neatly with a stanley knife to fit. Leave them slightly protruding at the cam cover plate ends and, when fitted, trim them to be exactly flush with the mating face.

Refresh of Covers

I found a mixture of paint stripper, plastic scrapers, some modelling knife blades, some wet-or-dry paper and a bit of gentle wire-brushing worked best to clean up the covers.

Make sure the gasket mating surfaces are also clean and free of gouges etc.

I used two cans of VHT Red Crinkle. In actual fact, the quantity of paint is probably identical to one can, but I didn't want to get into the "pressure-dropping-and-paint-starting-to-spatter-from-nozzle" area, so started both can covers off with fresh cans and had two half-cans left over.

DO EXACTLY AS IT SAYS ON THE TIN! Believe them, they know what they are talking about. When you start spraying the stuff, you NEVER would believe how the final finish shall look.

The spray is a very fine mist and I found it got just about everywhere in the garage, so cover up everything in sight and don't spray near any cars parked on the drive!

After painting, just lock up the garage and FORGET the covers for three days. After then, I very carefully scraped off the raised silver bits with a modelling knife. I didn't aim for a perfect finish, but the paint is nice and flexible and I could thus reduce the later sanding off effort.

After about 8 days, I started sanding off the raised bits. I got a piece of flat alloy bar, some double-sided adhesive tape, and some 320 wet-or-dry and made up my own "emery boards".

After sanding off, before any oxidation occurred, I painted over the silver bits with a 2-pack clear laquer and a small modelling paintbrush so they should stay silver.



Freshly painted:



Drying and Darkening:



et voilà!



Refit

Refit is the same back-stretching, knuckle grazing process of removal, but in reverse.

The consumables I used are as follows:

1 x 150076 Gasket between Phase Sensor Housing and End Plate. Note, this gasket has different hole sizes due to mounting sleeves in two positions € 3,17
2 x 150075 Gasket 4-Hole gasket on End Plates same LH & RH bank. € 5,90
1 x 150074 Gasket € 6,49
1 x 149917 Oil Seal in Phase Sensor Housing € 9,22
1 x 150078 Cam Cover 3-Piece Gasket € 52
1 x 150084 Cam Cover 3-Piece Gasket € 52

I got some new domed nuts in stainless steel from the local hardware store.

I also used significant quantities of well placed silicone sealant following the advice from the dealer. Especially around the front cam bearing "O" rings where they fit into the cam cover recesses.