Ferrari 328 Intake Airbox-to-Ascending Coolant Pipe Interference: Inspection & Repair

Carl Rose and David Handa
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Credit for recognition of this potential problem goes to Mr. David Handa, who unfortunately discovered as unusual source of coolant leak. Disassembly procedure is straightforward, just the typical contortion required by engine compartment. Also while in the vicinity this is an excellent opportunity to inspect water pump, accessory drivebelts, right rear brake pads, and replace air filter. Note: 1989 cars from chassis #78068 list a revised airbox base & cover assembly without explanation suggesting modified to prevent interference.

(example shown is late-1988 car but 328 series is identical)

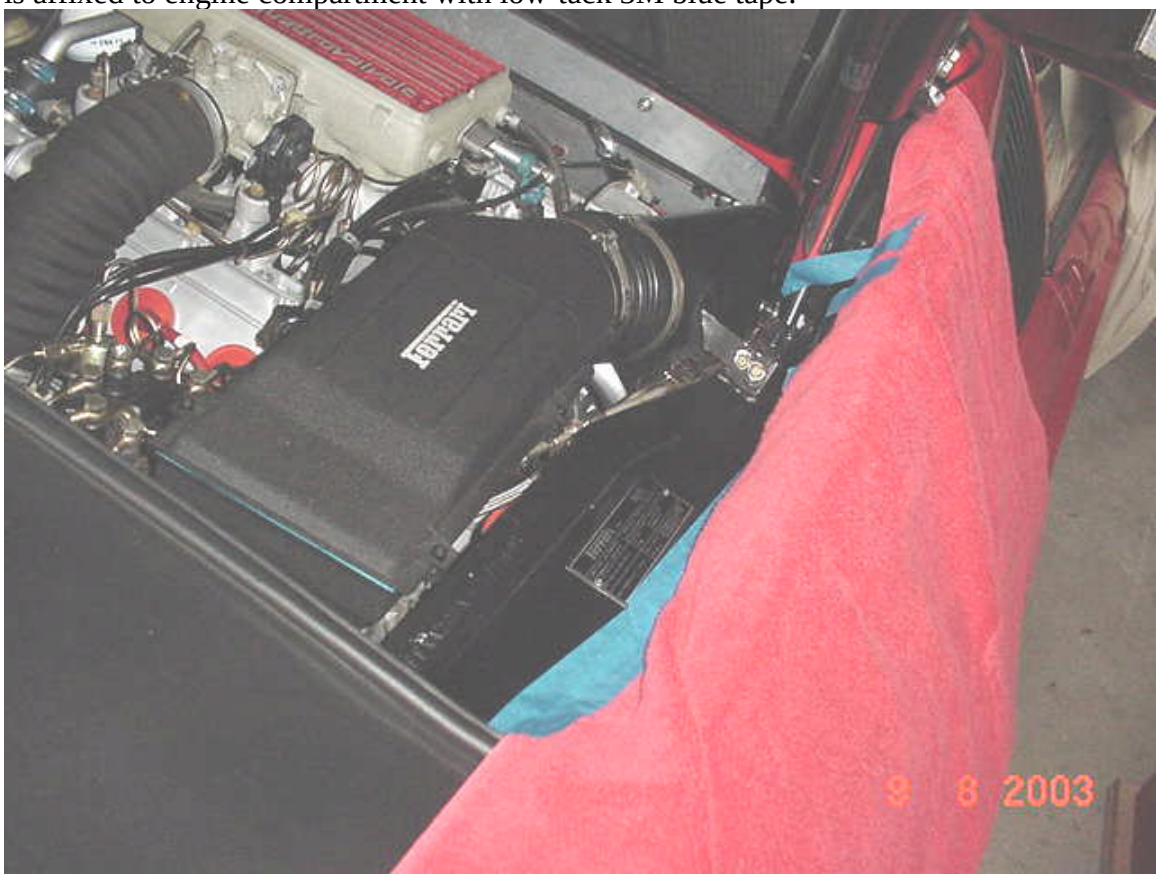
Time required: Approximately 2 hours

Parts: (*hopefully not required!)*

For reference:
UFI air filter #3086700 [Ferrari part #132626]
Ascending coolant pipe #108042
Airbox fiberglass intake duct #61299600 until 5/31/88 then #62500300
Rubber bellows hose #136008
Bellows hose clamps #10301890
[Factory specifies AGIP antifreeze if you have to remove/repair, but dealer recommended Prestone or similar. Mixing green & red flavors inadvisable]

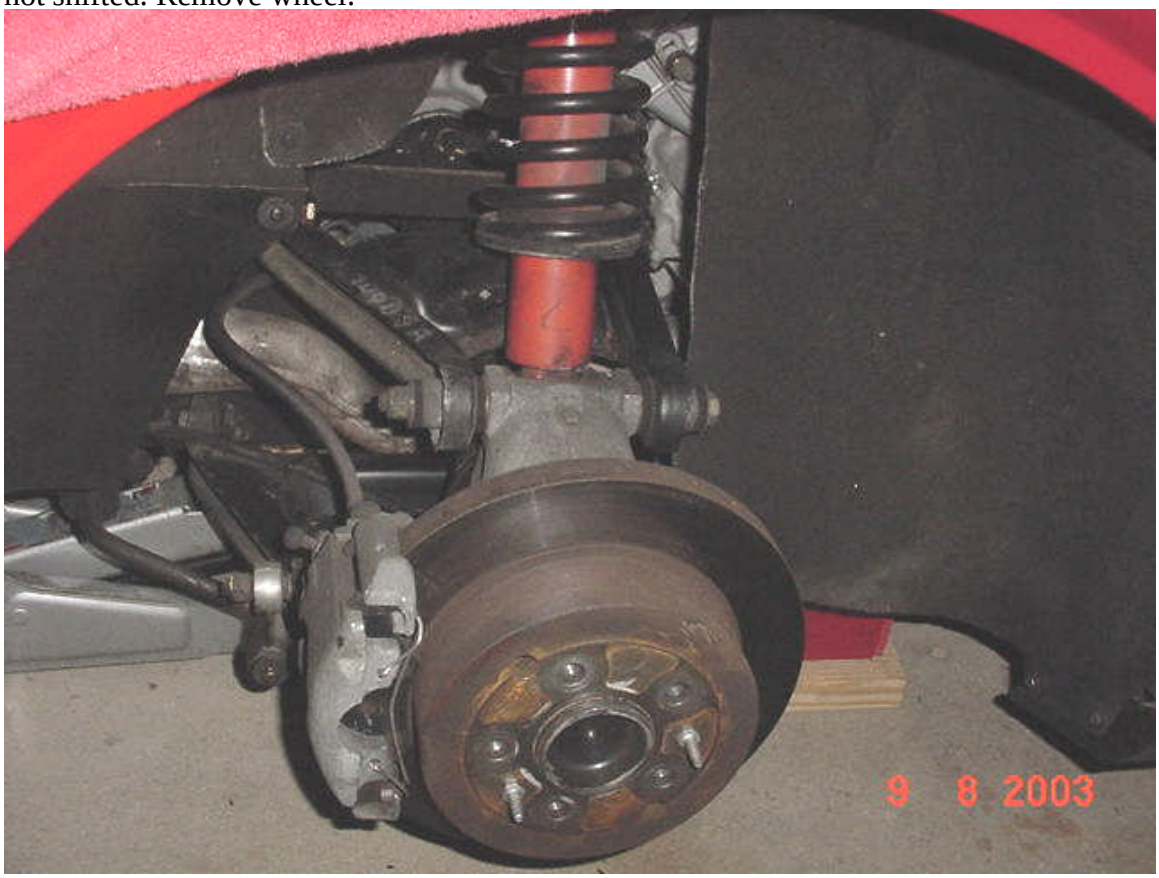
Tools:
Thick towels to protect car
Jack & stand(s)
Wheel blocks
Phillips screwdriver (medium)
¼” 6-pt sockets: (short) 6,7,10mm (deep) 7,10mm
¼” socket wrench with 8” extension and universal fitting
¼” screwdriver socket driver
Wheel lug nut socket (22mm), breaker bar, and torque wrench
5mm allen socket (or L-wrench) for airbox lid
Awl
8 & 10mm combination wrenches
Droplight

Block front wheels and open decklid. Drape thick towel over rear fender; in pictures this is affixed to engine compartment with low-tack 3M blue tape:

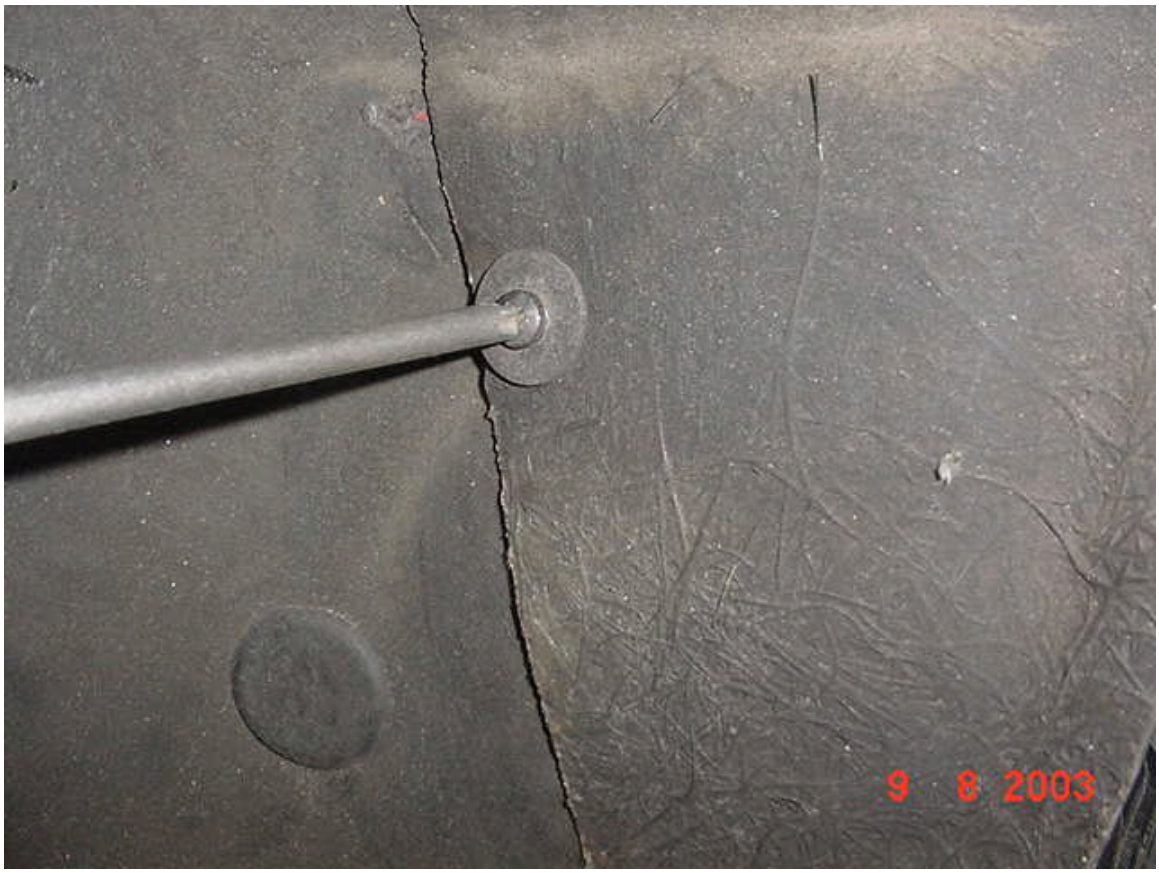


Loosen right rear lug bolts while car is still on ground. Jack right rear up until wheel clears ground and place stand under right rear frame rail. Ensure front wheel blocks have

not shifted. Remove wheel:



Remove forward portion of inner wheelwell fiberglass shield: three hex screws & large washers at front & top followed by four Phillips screws & washers at rear: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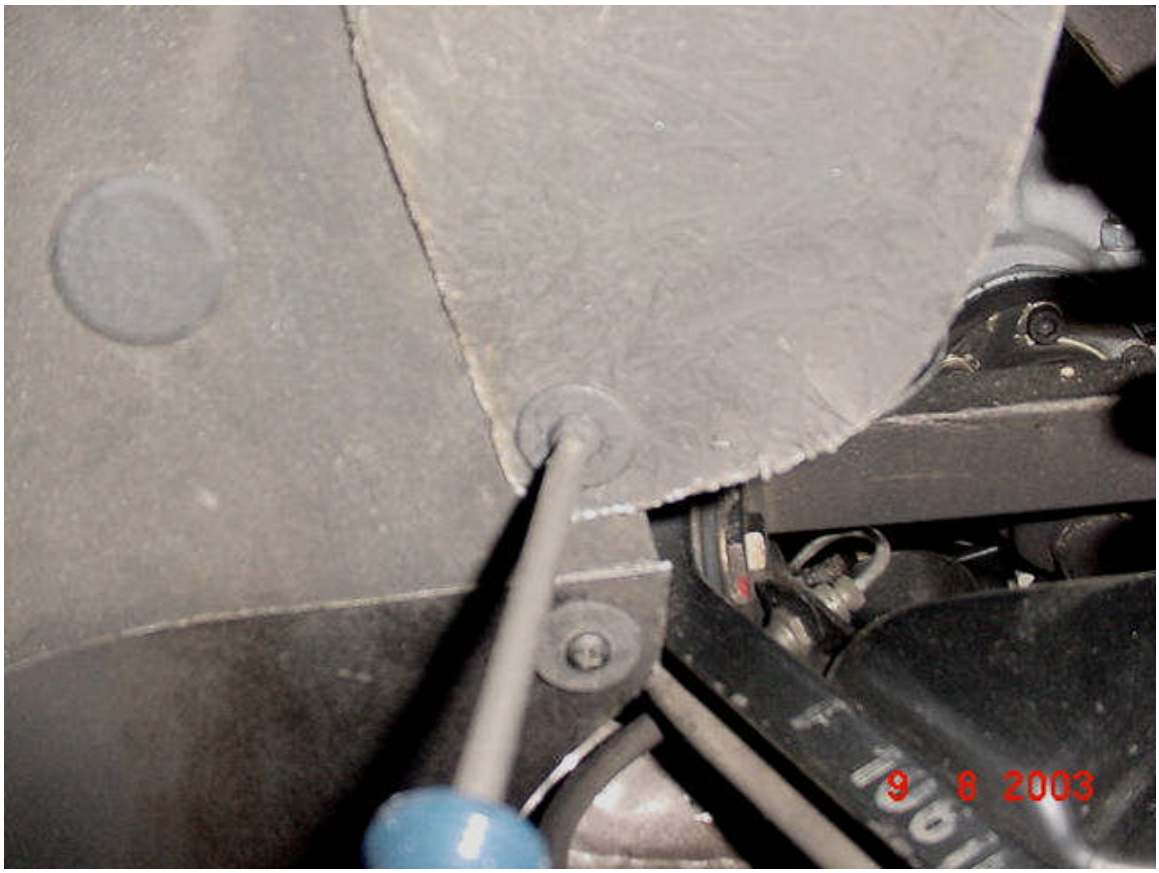
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Maneuver shield out:

Lower fiberglass intake airscoop ducting can be seen in this picture: proximal end fits over inner fender continuation of external intake, is secured by a small screw underneath rear chassis understructure, then turns upward & connects to airbox via rubber bellows hose:


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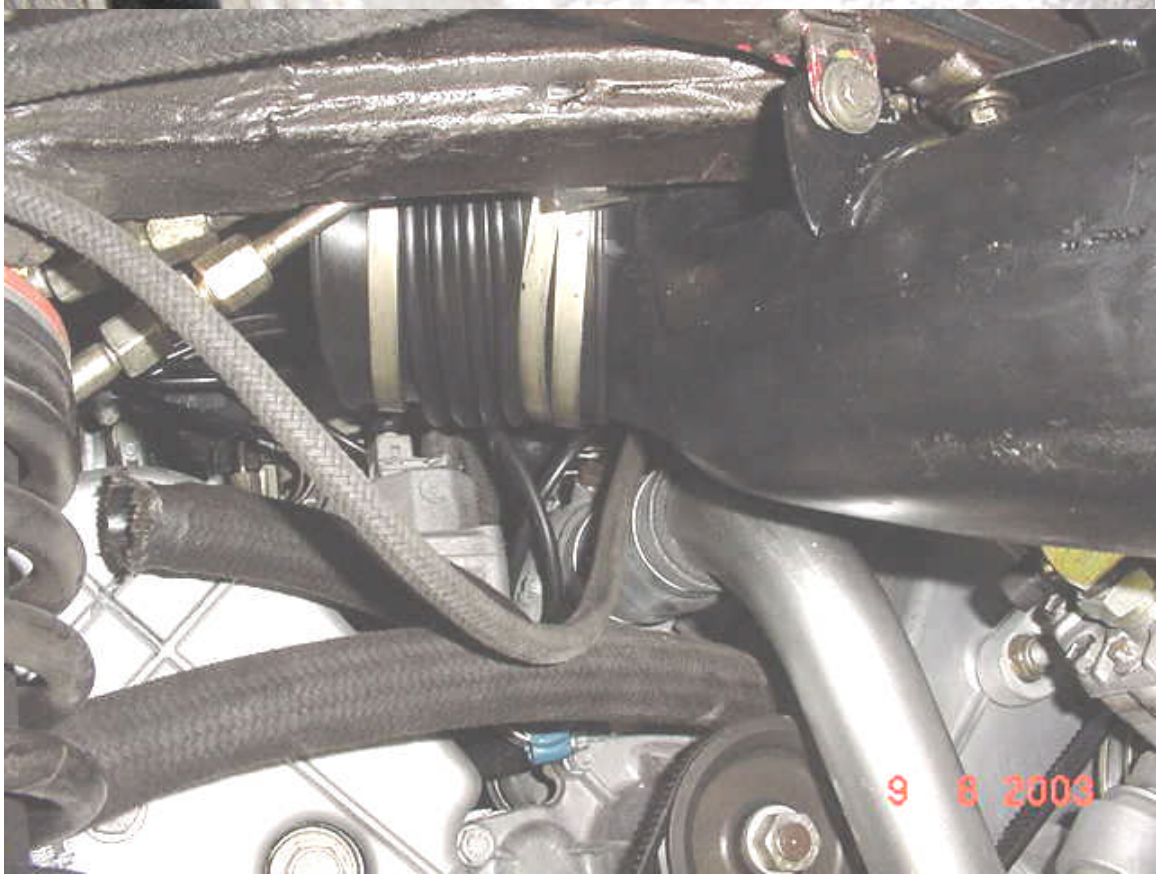
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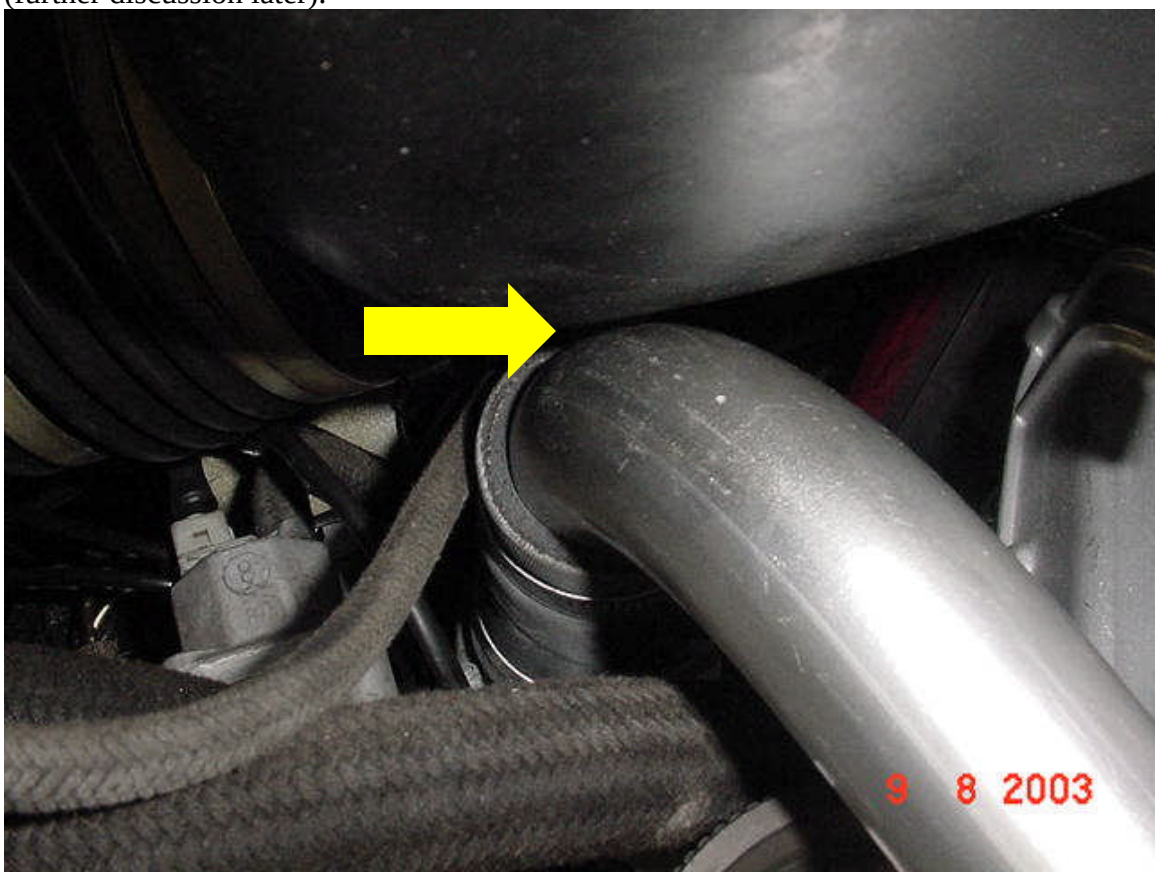
Note the minimal clearance between ascending coolant pipe at terminal bend into water pump and lower aspect of intake ducting. My car had approximately 3-4mm air gap (further discussion later):



Remove the upper airbox by loosening the large circumferential clamp holding to Bosch FI metering body. Access can be quite challenging depending on orientation of the clamp hex screw; mine was parallel to inner wall of engine compartment. I was most successful using a short ¼” 6pt 10mm socket with universal joint on 8” extension & approaching from below:

Once loosened, lift the airbox slightly upward. Remove the two hoses that attach to fittings on bottom of airbox: larger uses 7mm hex nut clamp while smaller uses 6mm: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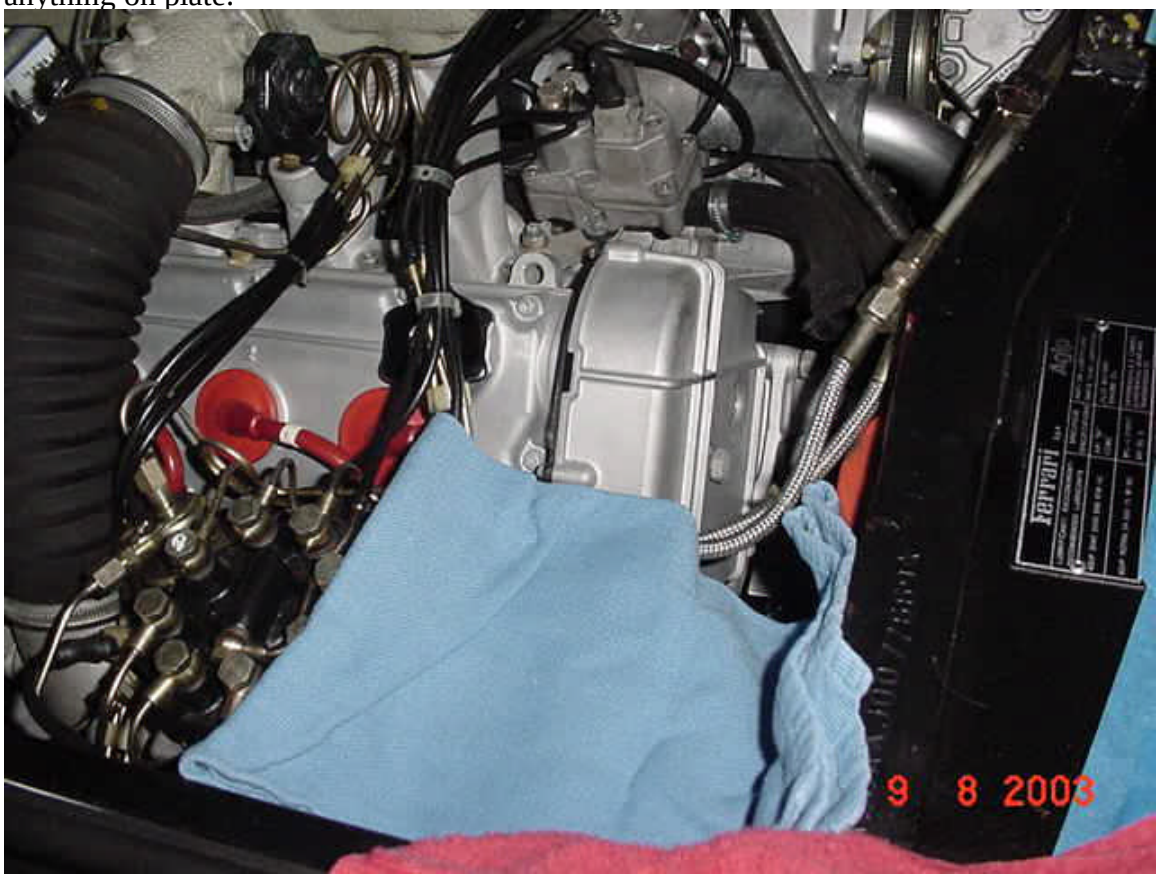
I was able to successfully wiggle the airbox throat from the bellows hose without having to disassemble either cotter-pin circumferential clamp. If very tight, you might be able to compress the cotter pin ends and pull them straight out to disengage clamp band. Remove the airbox & set aside. Place a towel over the metering body intake to prevent dropping anything on plate:



Remove the lower screw and two upper bracket screws & maneuver the intake ducting out from above: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At this point I considered cutting a short segment (perhaps 2 inches) of old radiator hose lengthwise & zip-tying circumferentially over cooling pipe at bend to prevent possible future damage. Another option would be to cement a flat rubber strip to the underside of the intake ducting. Picture shows previous area of abrasion on bottom of ducting:


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However on reassembly I was able to maintain the 3-4mm “air gap” which I considered sufficient clearance to prevent future interference (confess I’m also preoccupied with preserving “factory original” and drive the car infrequently so functional modifications are not a priority). Not certain how much this would be affected by running engine vibration.

[should your cooling pipe already be worn through, you’ll have to drain the cooling system prior to removal. Mr. Handa was able to successfully repair his original by having hole welded shut locally. Repaint silver to prevent rust & reinstall. If any of the larger coolant hoses require replacement Gates green-stripe 1.5” ID (or NAPA gold-stripe) is preferred. Refill cooling system with 50/50 antifreeze/distilled H_20.]

Now is an excellent time to inspect/re-tension the engine accessory drivebelts & right rear brake pads. Check water pump for any signs of coolant leakage. To replace the air filter, unscrew the four allen bolts holding the airbox lid & lift filter out. Install new filter & tighten bolts to “snug”. I elected to repaint the two ducting brackets (originally semi-flat black without primer):

Finally, my car had recently undergone 30K service & was missing lower ducting bracket-to-chassis screw; originally appears to have been a sheetmetal thread-cutting type (unsure of finish/head) but I replaced with the short bolt, washers, and nylon locking nut seen in the pictures (perfectly functional, but I would be interested in the “proper” screw

type if anyone can confirm?). Remainder is reverse of disassembly. I found an awl to be invaluable in locating the chassis holes for the upper wheelwell liner screws. The lug stud guide in the picture – simplifying wheel reinstallation - is courtesy of FC member Mr. Foley:

Lower car & remember to torque lug bolts to 72ft/lbs; pictures illustrate Snap-On aluminum-lined socket with plastic freezer bag to protect finish:


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