

## SERVICE BULLETIN

**APPLICABILITY**

FORESTER 1999 - PRESENT,  
IMPREZA 1992 - PRESENT,  
LEGACY 1990 - PRESENT (SOHC H-4 ONLY)

**DATE**

12-28-90

**SUBJECT:****LEGACY CYLINDER HEAD R&R, IN-VEHICLE PROCEDURE**

The purpose of this bulletin is to provide an accurate in-car procedure for removing and reinstalling engine cylinder heads in Legacy vehicles. Close attention should be paid to the following outline in order to overcome the limited clearance encountered between engine cylinder heads and vehicle frame. Be sure to refer to the proper section of the applicable model year Legacy Service Manual to support and complement the information supplied in this bulletin.

1. . Disconnect negative battery cable.
2. . Remove air intake duct (non-turbo).  
. Remove air intake resonator chamber (turbo).
3. . Remove bolt securing pitching stopper rod to engine.
4. . Noting their position, disconnect all lines from purge control canister.
5. . Unclamp fuel filter from its holder. With fuel lines still attached, ensure its freedom of movement towards engine.
6. . Drain cooling system into a clean pan and disconnect radiator inlet and outlet hoses from engine.
7. . Perform timing belt removal.
8. . Remove the two bolts securing the power steering pipes to the intake manifold. Then, separate the power steering pump from its bracket by removing the 3 mounting bolts through the access holes in the pump pulley. Lift power steering pump from its mounting bracket and carefully position it on top of the air cleaner assembly.

**NOTE: ON TURBO MODELS IT IS NECESSARY TO DISCONNECT THE COOLANT OVERFLOW HOSE FROM THE INTAKE MANIFOLD PIPING BEFORE REPOSITIONING THE POWER STEERING PUMP.**

9. . Remove the "L" shaped bracket securing rear of air conditioning compressor to top of intake manifold.

10. . Remove all 8 bolts securing intake manifold to cylinder heads. Separate manifold from heads to provide approximately 1/2 inch of clearance between gasket surfaces and support manifold in this position with a block of wood or equivalent.
- NOTE: ALL 8 INTAKE MANIFOLD ATTACHING BOLTS MUST BE REMOVED IF EITHER ONE OR BOTH CYLINDER HEADS ARE BEING SEPARATED FROM THE ENGINE.
11. . Raise vehicle on a lift to gain access underneath.
  12. . Remove front exhaust ("Y") pipe (non-turbo).  
 . Remove front "cross over" pipe assembly, turbo join pipe and turbo charger (turbo).

NOTE: ON TURBO MODELS, IF ONE CYLINDER HEAD IS BEING SEPARATED FROM THE ENGINE, IT IS ONLY NECESSARY TO REMOVE THE FRONT JOIN PIPE FROM IN BETWEEN EXHAUST MANIFOLDS AND THE RESPECTIVE EXHAUST MANIFOLD OF THE AFFECTED HEAD. IF THE RIGHT SIDE CYLINDER HEAD IS THE AFFECTED HEAD, CONTINUE REMOVING THE TURBO JOIN PIPE, ITS BRACKET AND TURBO CHARGER ASSEMBLY. SEE FIGURE 1.

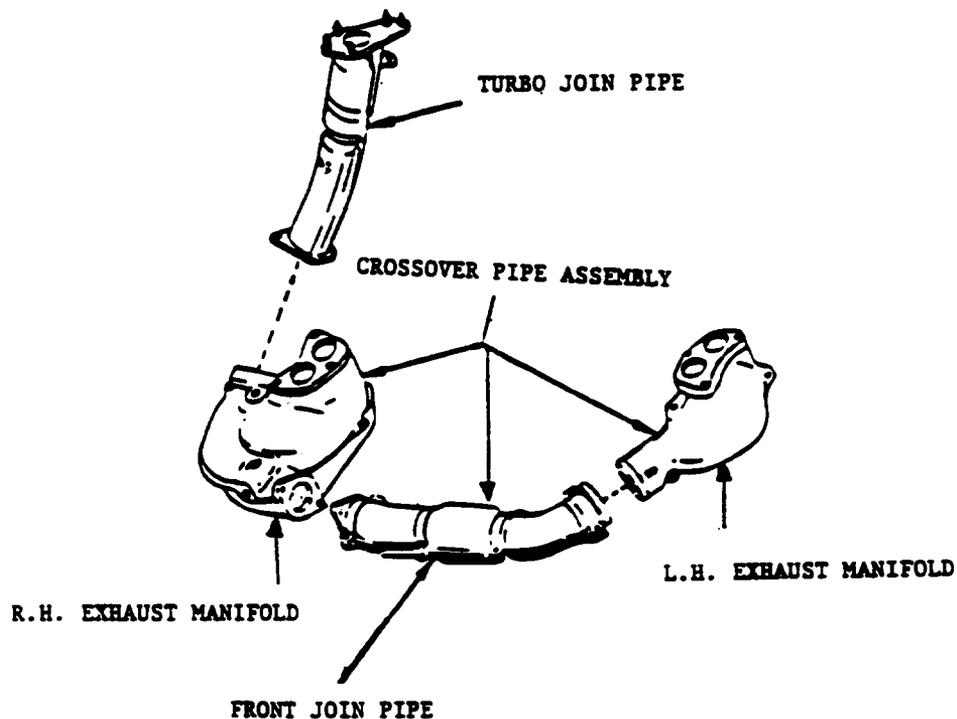


Figure 1. Turbo Model Exhaust System

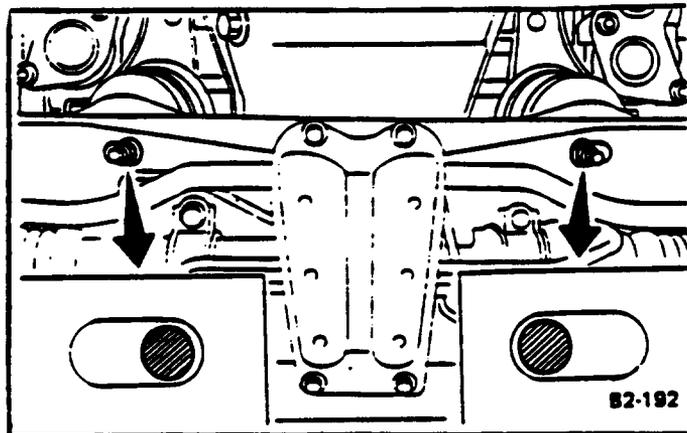
13. . Remove valve covers.
14. . Remove both lower engine mount nuts.
15. . Place a transmission jack under the engine oil pan being sure to avoid the drain plug. Using thick cardboard or a block of wood as a cushion between the transmission jack plate and the bottom surface of the oil pan, carefully jack up the engine until the engine mount studs are approximately 1/4" above their mounting surface on crossmember.

16. . With the engine raised, slowly move the transmission jack with supported engine a maximum of 5/8" to the left or right. This will provide sufficient clearance for the respective cylinder head being removed.
17. . Loosen cylinder head bolts in proper sequence and unthread them completely. Cylinder head and bolts can now be removed as a unit.

### CYLINDER HEAD INSTALLATION

1. . Clean all gasket surfaces with 3M Scotchbrite Pad for aluminum or equivalent.
2. . Install new head gaskets making sure they are suspended on engine block by head alignment dowels.
3. . Install cylinder head, with all headbolts in place, to engine block and torque cylinder head bolts in proper sequence.
4. . After reinstalling cylinder heads, lower engine back into the crossmember. Locate the engine mount studs to the innermost part of the elliptical holes in the crossmember and torque engine mount nuts. See Figure 2.

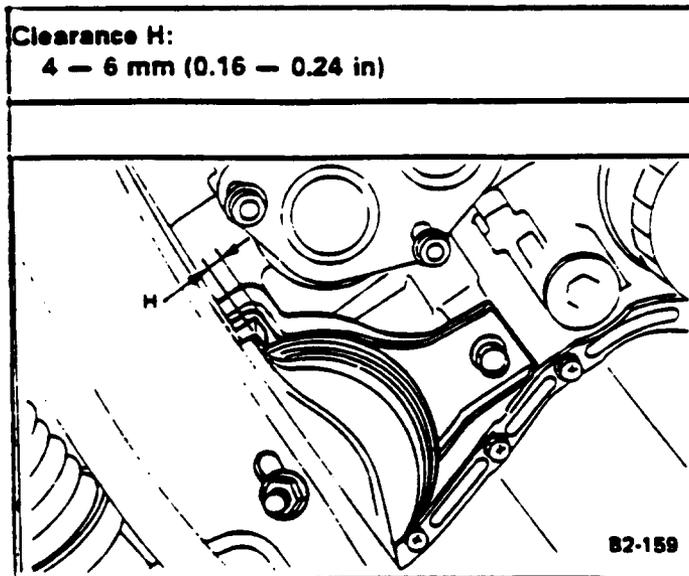
#### ENGINE MOUNT TIGHTENING TORQUE (40-61 FT. LBS.)



Proper location of the engine mount studs in the crossmember.

Figure 2

- 5. . Check each engine mount to ensure proper clearance "H". See Figure 3.



Checking Clearance "H"

Figure 3

- 6. . Follow steps 1-16 in reverse order for reassembly procedures.

**NOTE: BEFORE REINSTALLING INTAKE MANIFOLD BOLTS, BE SURE TO CLEAN MANIFOLD GASKET SURFACES THOROUGHLY, USING 3M SCOTCHBRITE PAD FOR ALUMINUM OR EQUIVALENT. REPLACE INTAKE MANIFOLD GASKETS AS A SET, TO ENSURE AGAINST VACUUM LEAKS.**

For Warranty information, please refer to the 1990/91 Warranty Flat Rate Manual, Section 2, Page 2-19.

### CAUTION

**VEHICLE SERVICING PERFORMED BY UNTRAINED PERSONS COULD RESULT IN SERIOUS INJURY TO THOSE PERSONS OR TO OTHERS.**

Subaru Service Bulletins are intended for use by professional technicians ONLY. They are written to inform those technicians of conditions that may occur in some vehicles, or to provide information that could assist in the proper servicing of the vehicle. Properly trained technicians have the equipment, tools, safety instructions, and know-how to do the job correctly and safely. If a condition is described, DO NOT assume that this Service Bulletin applies to your vehicle, or that your vehicle will have that condition.