CHEVROLET

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V-8 Oil Pump Suction Pipe

Whenever the oil pan is removed on a V-8 engine the oil pump suction pipe should be inspected to insure that it is securely retained in the oil pump cover. A loose fitting suction pipe, that is not detected, could eventually cause serious engine damage by becoming disengaged from the pump cover during vibration periods at high engine rpm.

When a loose oil pump suction pipe is encountered it should be replaced by a new one that can be firmly pressed into the oil pump cover. If, in an emergency, the replacement part is not readily available, the existing pipe can be welded to the pump cover after properly indexing the pick-up screen assembly relative to the cylinder case oil pan side rails.

Adjusting Valve Lash on 348 and 409 Engines

On 348 and 409 cu. in. V-8 engines; before performing valve lash adjustment, it is especially important that the engine first be run to normalize all engine components at temperatures within the range required for optimum engine performance. Normalizing the engine will insure that lubricant of proper viscosity is provided at the hydraulic lifters and that each engine component will be at operating temperature and size. When working with a cold engine, it will usually be necessary to run the engine for at least 15 minutes before performing valve lash adjustments.

When performing 348 and 409 engine valve adjustments, with the engine running; the rocker arm nuts should never be tightened ("turned down") in more than ¼ turn increments. To permit the lifter to adjust itself to a changed setting, at least a ten second interval should be allowed between each ¼ turn change in setting.

NOTE: *The rocker arm adjusting nuts should be adjusted to 1 turn tight from zero lash on all 348 and 409 cu. in. engines, except those 1961 model 348 engines that are date stamped T-0728 thru T-0129 and incorporate "long travel" lifters requiring a setting of 2 turns tight from zero lash.*

It is mandatory that the above procedures be followed in order to prevent possible damage to push rods or other engine parts during valve adjustment on 348 and 409 engines. These engines have minimal clearance between valve head and top of piston.

Valve Rocker Arm Stud Replacement

Whenever an engine valve rocker arm stud is replaced it is mandatory that the associated valve stem and push rod be inspected and replaced if found to be bent or peened. If a damaged valve or push rod are not replaced either could cause a case of rocker arm stud cutting to reoccur.

The squareness of the valve stem tip determines the amount of clearance that the stud will have in the stud slot of the rocker arm. A very slight amount of valve peening can cause the edge of the rocker arm slot to contact the stud.

The valve stem contact area on the rocker arm pad is determined by the size of the cylinder head push rod guide slot and the position and straightness of the rocker arm stud. If the push rod guide slot becomes worn or the rocker stud is bent, the rocker arm pallet will not seat evenly on the valve stem. An excessively worn push rod guide slot will require cylinder head replacement.

To realign a rocker arm stud that is slightly out of position, place the head of a plastic hammer or a piece of soft metal against the stud, and carefully rap the plastic hammer with another hammer to restore proper fore and aft stud position. Do not attempt to straighten studs on high performance engines or studs which have been obtained from service stock, as these studs are hardened and may snap off at tbe stud boss.

Corvair Heater Hose Interference

On some Corvair Direct Air Heater installations the blower hot air inlet hose from the left hand duct on the engine may be in error, routed along the left side of the starter solenoid. Proper routing for this hose is above the starter solenoid, as shown in Figure 1.

If a car remains in service with the heater hose routed along the side of the solenoid, the hose may chafe on the "hot" terminal of the solenoid causing the terminal to wear through the hose fabric and contact the reinforcing wire in the hose. This would result in short circuiting and battery discharge.

If a hose is found mispositioned it should be routed over the top of the starter solenoid and the protective sponge rubber sleeve on the hose should be centered directly over the solenoid.

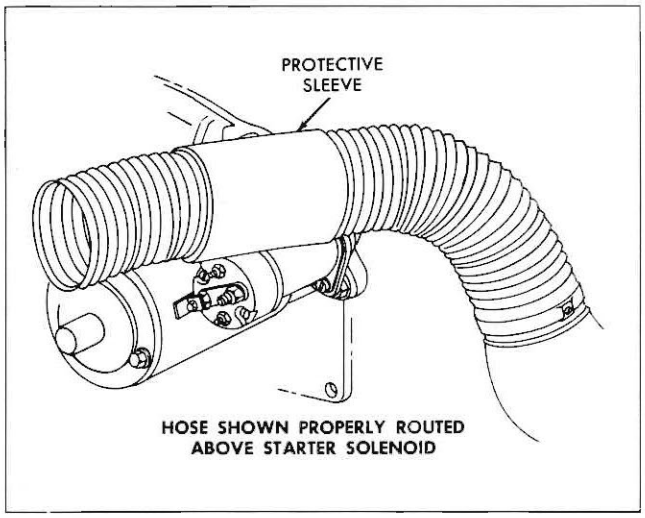

Fig. 1—Corvair Heater Blower Inlet Hose

Corvair Heater Control Seizure

On Corvair and Corvair "95" Direct Air Heaters; if either the operator's control lever marked "HEAT" or "AIR" is seized or requires an unusually high effort to reposition, do not force the lever or damage to control linkage could result. Hard operation of these levers may be caused either by corrosion forming around the pivot shaft of the air diverter door operated by each control cable, or by the cable itself being kinked.

If inspection shows that hard operation of the "HEAT" or "AIR" control levers is due to sticking of the diverter doors that are located in the heater blower inlet housing; perform the following steps to ease heater control operation:

1. With vehicle on lift, disconnect the control cables from the "AIR" and "HEAT" door crank arms and attempt to move doors.
2. If a door cannot be moved, tap the door pivot shaft at both ends lightly with a hammer (it will be necessary to use a bar about 18-24 inches long to reach the shafts), then manually move the door several times.
3. Using a pressure oiler, lubricate the shafts at both ends (bearing points).
4. If the control cable is kinked, either remove the kink or replace the cable assembly.

Partial Engine Assemblies

Upon Chevrolet assembly of partial engines and fitted cylinder blocks, these units available for service replacement, are now sealed in a special paper covering. This special wrapping not only prevents entrance of dirt, but also acts as a moisture barrier to forestall corrosion of machined surfaces.

To aid in reducing the time that these service cylinder block assemblies are held in storage, the month and year in which the unit was assembled

is now stamped on the end of the shipping crate. It is recommended that dealership personnel refer to this date stamp to rotate stock of these assemblies so that they may be put into service as soon as practical.

When building-up an engine assembly using a partial engine or fitted block from parts stock, it is important to thoroughly clean and inspect all other engine parts intended for re-use with this partial engine. It is especially important that the oil pump suction pipe and screen assembly be thoroughly cleaned before re-use. If the oil suction pipe is loose fitting in the pump cover, or other damage to the pipe or screen is evident, the assembly should be replaced.

If consideration is given to re-use of an oil pump that has been in service, the pump should be disassembled, cleaned, operating clearances checked to detect parts wear, and all parts inspected for damage. If there is any doubt as to the ability of a used oil pump to perform satisfactorily over a long period, by all means install a new oil pump in the engine, this will avoid costly come backs later.

Loss of Truck Caster/Camber Shims

Reports have heen received stating that the caster/camber shims have fallen out shortly after the front end has been aligned on some 1960-61 trucks, Series 10 through 40. If loss of shims is experienced, it is probably due to the upper control arm pivot shaft attaching bolts not being properly torqued on completion of wheel alignment. A false torque reading will be obtained if the attaching bolt is not properly aligned in its frame bracket hole.

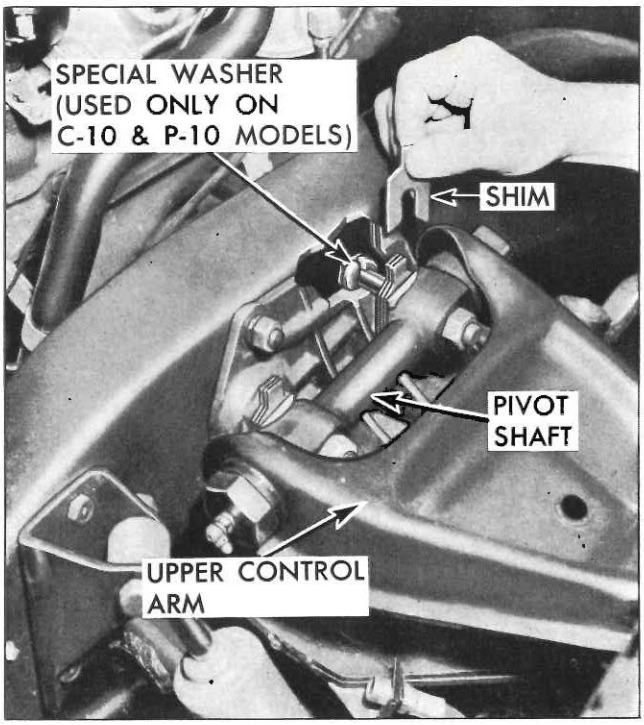

Fig. 2–Pivot Shaft Attachment (Typical)

The head of the pivot shaft attaching bolt has a spherical seat that nests into a depressed mating surface on the inner side of the upper control arm frame bracket (Fig. 2). When the pivot shaft nuts are loosened to change the shim pack, the upper control arm moves upward and rearward causing the bolt head to be misaligned. If the bolt is tightened in this position, it will later shift and fall into its seat on the first severe road shock or panic stop. This would result in the loss of the caster/camber shims.

Correct pivot shaft bolt alignment and torque may be achieved using the following procedure. First, raise the front of the vehicle so that the wheels hang free. Torque the nut on the pivot bolts to 30-40 ft. lbs. Rap the front and rear flange of the upper control arm, near the pivot shaft, using a one pound hammer. When the bolts are properly seated, increase nut torque to applicable specification shown in the following chart.

NOTE: *To torque pivot shaft nut it will be necessary to use a socket to hold the head of the bolt from inside the frame.*

UPPER CONTROL ARM SHAFT NUTS

1960 SPECIFICATIONS

TRUCK SERIES	10	10 and 20	30 and 40
Bolt	7/16-20	1/2-20	9/16-18
Torque (ft. lbs.)	60-75	85-100	120-155

1961-62 SPECIFICATIONS

TRUCK SERIES	10 and 20	30 and 40
Bolt	1/2-20	9/16-18
Torque (ft. lbs.)	70-90	90-120

Shock Absorber Diagnosis

Many passenger car and truck double-action shock absorbers have, in the past, been incorrectly classified as defective by service technicians. This article therefore presents basic shock absorber test information that should be useful in determining whether or not replacement of a particular shock absorber is necessary.

A great number of drivers seem to feel that various chassis noises that they cannot readily pinpoint, must originate in a shock absorber. When a customer reports weird noises eminating from the vehicle, a check ride made with the owner in

the car may be the quickest way to find the source of the noise.

Many problems involving noisy shock absorbers are actually the fault of the shock absorber mounts becoming worn or loose. This should then be one of the first areas to be inspected and corrected by the technician. If the mounts are in good condition and properly installed, check the shock absorber, using the following procedure:

Disconnect the lower mount or, if necessary remove the "shock," so that it can be compressed and extended through its full travel. Holding the "shock" vertically (or in installed attitude), pump the shock absorber with a rapid change of stroke. If a lag is felt when changing the direction of the stroke, the unit will probably be noisy on the vehicle.

A second test is made by completely extending the "shock," then attempting to pull it further. If spring tension is felt, this shock absorber will be noisy and should be replaced.

Both preceding conditions will probably cause a heavy thumping noise with the shock installed.

A squeaky or grunting type noise may also be encountered. Hand pump the "shock" at different rates of speed. If a noise is heard that changes from a deep grunt to a high pitch squeak, the unit should be replaced.

Sometimes a shock absorber will squeal during the first few strokes after being inoperative for an extended period. This noise should disappear after the first few strokes and is not a cause for replacement.

NOTE: *The shock absorber should never be pumped in the horizontal plane for test purposes. Operating the unit in any position other than with the rod or shield end up, will result in an erroneous feel.*

Another reason sometimes used for removal of a shock absorber is that classified as a "weak" or a "strong" unit. It is usually very difficult to determine if a shock absorber is weak or strong by hand pumping, even when the unit is held properly. The best method of testing a low mileage shock absorber is to compare the questionable unit with its mate from the opposite side of the vehicle, that is; compare a front "shock" with the other front "shock" and a rear "shock" with the other rear "shock." If both shock absorbers respond equally during this test, it is unlikely that a defective shock absorber exists.

Another frequently misleading sign is oil on the shock absorber. More often than not, the oil comes from some external source such as an overspray during lubrication. To check the shock absorber for a leak, wipe the oil from the unit and take the vehicle for a short test drive or, if possible, allow the vehicle to remain overnight. A true leak condition may be assumed if the shock again becomes coated with oil.

Cool Pack Control Switch Replacement

To replace the blower or the thermostatic switch on a 1961 Passenger Car "Cool Pack" air conditioner, it is not necessary to discharge the system or even loosen the evaporator at its instrument panel mounting. The plastic evaporator drain pan is flexible and can be lowered sufficiently with the evaporator installed, to allow replacement of either control switch assembly. Perform switch replacement as follows:

1. Disconnect battery cable.
2. Detach the switch control knobs and air outlet grille from the evaporator face.
3. Remove all drain pan to evaporator case attaching screws, except the one screw that is not easily accessible at the back of the unit.
4. Carefully force the drain pan downward to create an opening between the pan and the evaporator case. Retain this gap between the pan and evaporator case by inserting a block of wood.
5. Using a ratchet and 1/4" socket, remove the switch attaching screws, as shown in Figure 3.
6. Working through the evaporator grille opening, and between the lowered drain pan and case, remove any quick-disconnect switch leads that would be too short to permit the switch to be pulled out between the pan and evaporator case.
7. Remove switch assembly through the opening between the evaporator case and the lowered drain pan. Remove the remaining switch leads, noting the switch terminal location for each lead.
8. Install replacement switches by performing the above steps in reverse order.

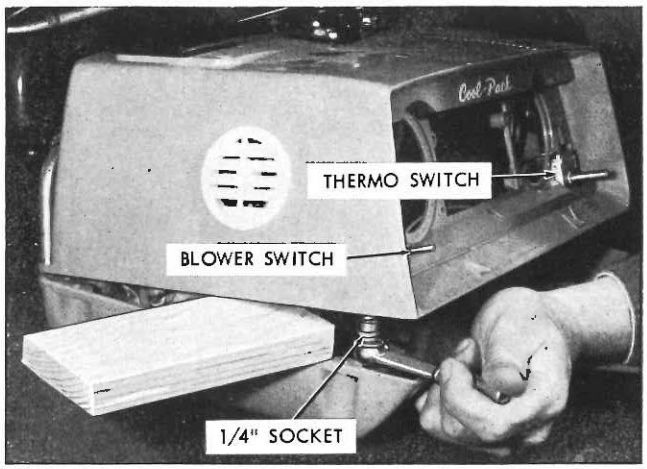

Fig. 3—Cool Pack Control Switch Removal