ENGINE COOLING AND LUBRICATION

CONTENTS OF THIS SECTION

COOLING SYSTEM DESCRIPTION

The cooling system consists of the radiator core, cooling fan, pellet type thermostat, water pump and suitable passages for water circulation through the engine.

RADIATOR

Seven different radiators are used on Tempest cars. They may be identified by the radiator core stamped on upper inside right corner of top tank.

CODE	USAGE
151	215 6 cyl. Engine
152	215 6 cyl. A/C
155	326 V-8 SM
153	326 V-8 Auto.
157	326 V-8 A/C
156	326 V-8 H.O.
158	326 V-8 H.O. A/C

The radiator is of the down-flow tube and center type and is constructed of copper. A drain cock is located at the inside lower left corner of the radiator.

A pressure-vent type cap is used on the radiator to allow a build-up of 14-17 psi of pressure in the cooling system. This pressure raises the boiling point of coolant 46°.

CAUTION: As long as there is pressure in the cooling system, the temperature can be considerably higher than the normal boiling temperature of the solution in the radiator without causing the solution to boil. Removal of the radiator cap while the engine is hot and the pressure is high will

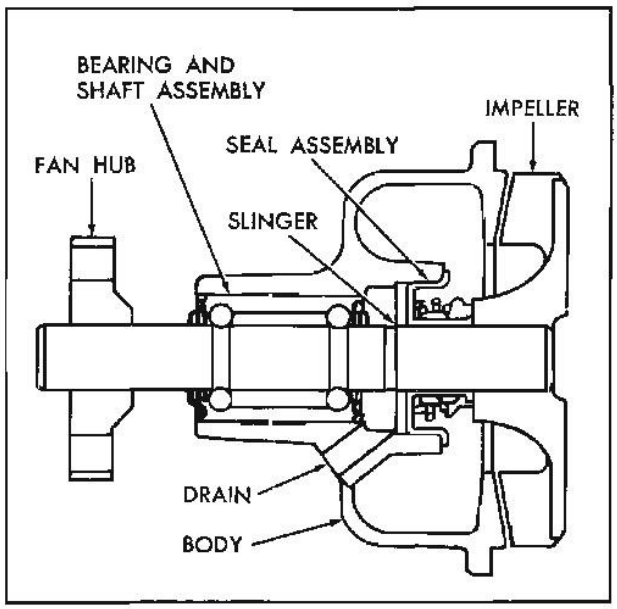

Fig. 6A-1 6 Cyl. Water Pump Cross-Section

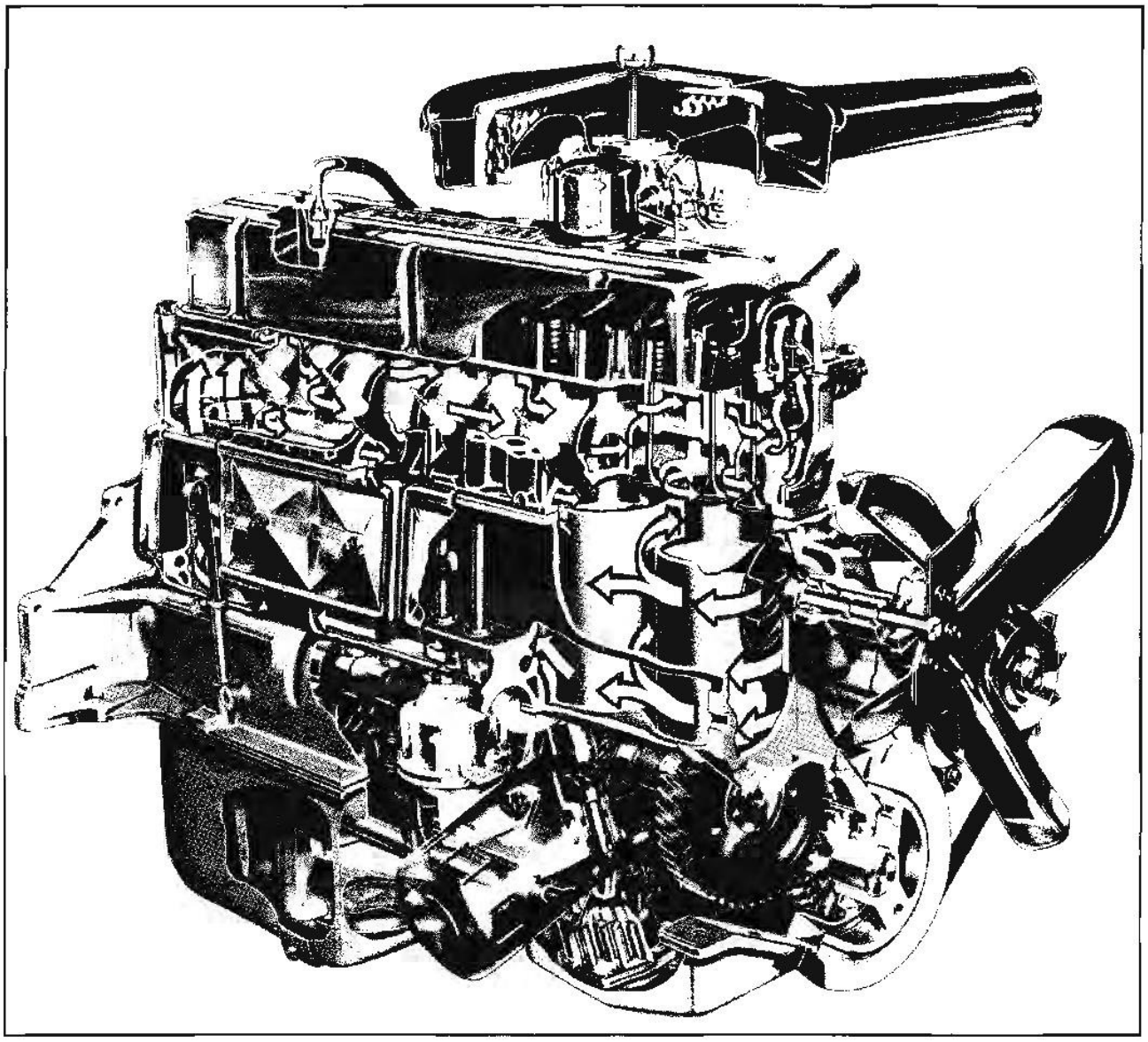

Fig. 6A-2 6 Cyl. Cooling System Circulation

cause the solution to boil instantaneously and possibly with explosive force, spewing the solution over the engine, fenders, and the person removing the cap. If the solution contains inflammable anti-freeze (not recommended), such as alcohol, there is also the possibility of causing a serious fire. When removing filler cap, rotate cap toward left very slowly; if hissing of vapor is encountered, tighten cap immediately and wait for system to cool sufficiently to allow removal of cap. After pressure in the system has been relieved, turn cap more forcibly to left and remove. Turn cap all the way to the right when installing. It should not be necessary to check coolant level unless temperature gauge shows over-heating, and then not until engine is stopped and allowed to cool to normal.

FAN

The fan is used to increase the air flow through the radiator at low speeds.

The standard fan has four blades. A seven bladed fan is used on cars with air conditioners and has curled tips to provide minimum noise.

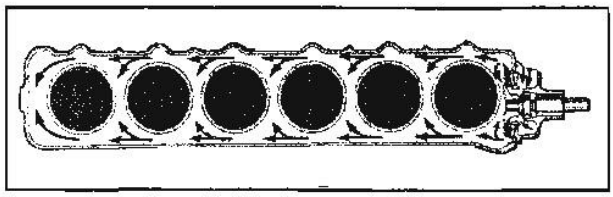

Fig. 6A-3 6 Cyl. Cylinder Block Coolant Circulation

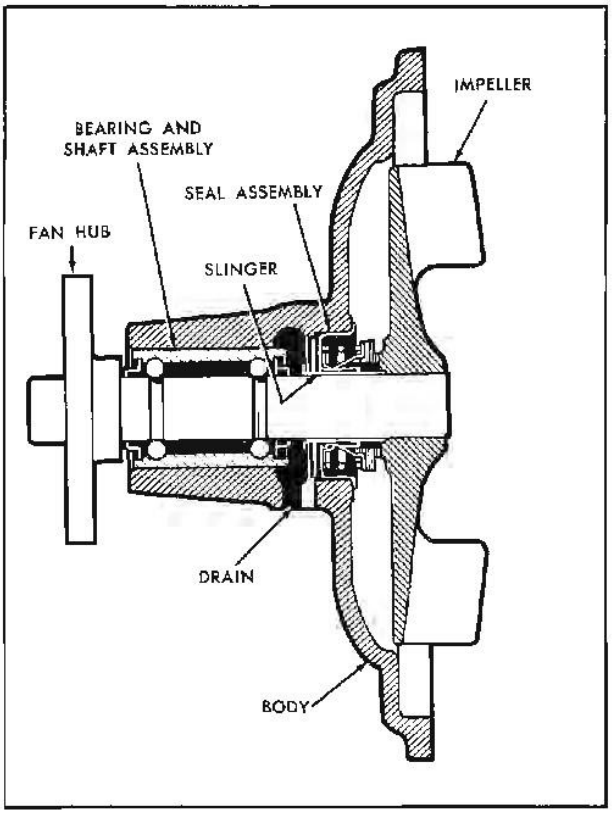

Fig. 6A-4 V-8 Water Pump

THERMOSTAT

A pellet type thermostat is used in the engine water outlet passage. The thermostat controls the flow of coolant to provide rapid engine warm up and regulate coolant temperature. A thermostat is installed as standard equipment.

WATER PUMP—6 CYL. (Fig. 6A-1)

The centrifugal type water pump contains an impeller which turns on a steel shaft which rotates in a ball bearing. A bellows type seal is seated in the water pump body between the bearing and impeller.

The inlet side of the pump is connected to the lower radiator tank by a hose. Above the pump inlet from the radiator is the inlet from the heater core. Located in the coolant outlet at the front of the cylinder head is the outlet to the heater core from beneath the thermostat.

COOLING SYSTEM CIRCULATION— 6 CYL. (Fig. 6A-2)

The water pump discharges coolant into the water jacket chamber between the front face of the block and the number one barrel (Fig. 6A-3). Coolant then flows through the block toward the rear passing through two large cast openings into the cylinder head to cool the valve seats and forward to the front of the head. Coolant then flows through the coolant outlet and the pellet type thermostat to the radiator. Some coolant is directed through a small hole in the cylinder head gasket to an area around each spark plug.

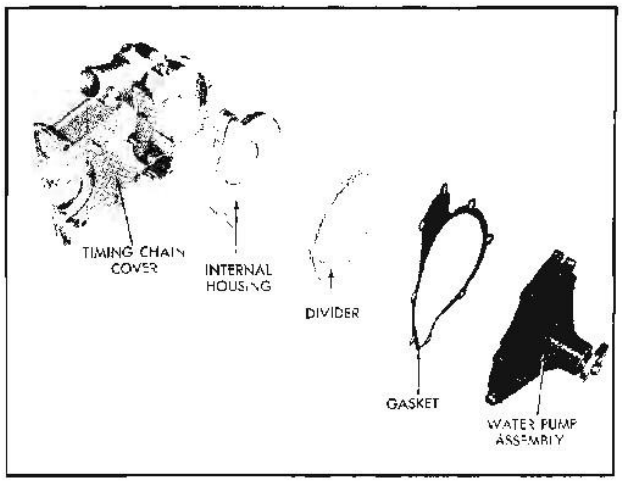

Fig. 6A-5 V-8 Water Pump Assembly and Timing Chain Cover Exploded View

During engine warm-up, when the thermostat is closed, water is redirected to the engine.

WATER PUMP V-8 (Fig. 6A-4)

The centrifugal type water pump, divider, internal housing and aluminum timing chain cover are all part of the coolant circulation system (Fig. 6A-5).

The water pump impeller turns on a steel shaft mounted on a double row permanently lubricated, sealed ball bearing (Fig. 6A-4). A bellow type seal is seated in the water pump body between the bearing and impeller. The seal surface is a phenolic washer which is held by the spring loaded bellows against a machined surface on the impeller.

The inlet side of the pump is connected to the lower radiator tank by means of a hose. A water leg, in the intake manifold connects to the timing chain cover to provide recirculation of water when the thermostat is closed. The timing chain cover also has a heater water return connection.

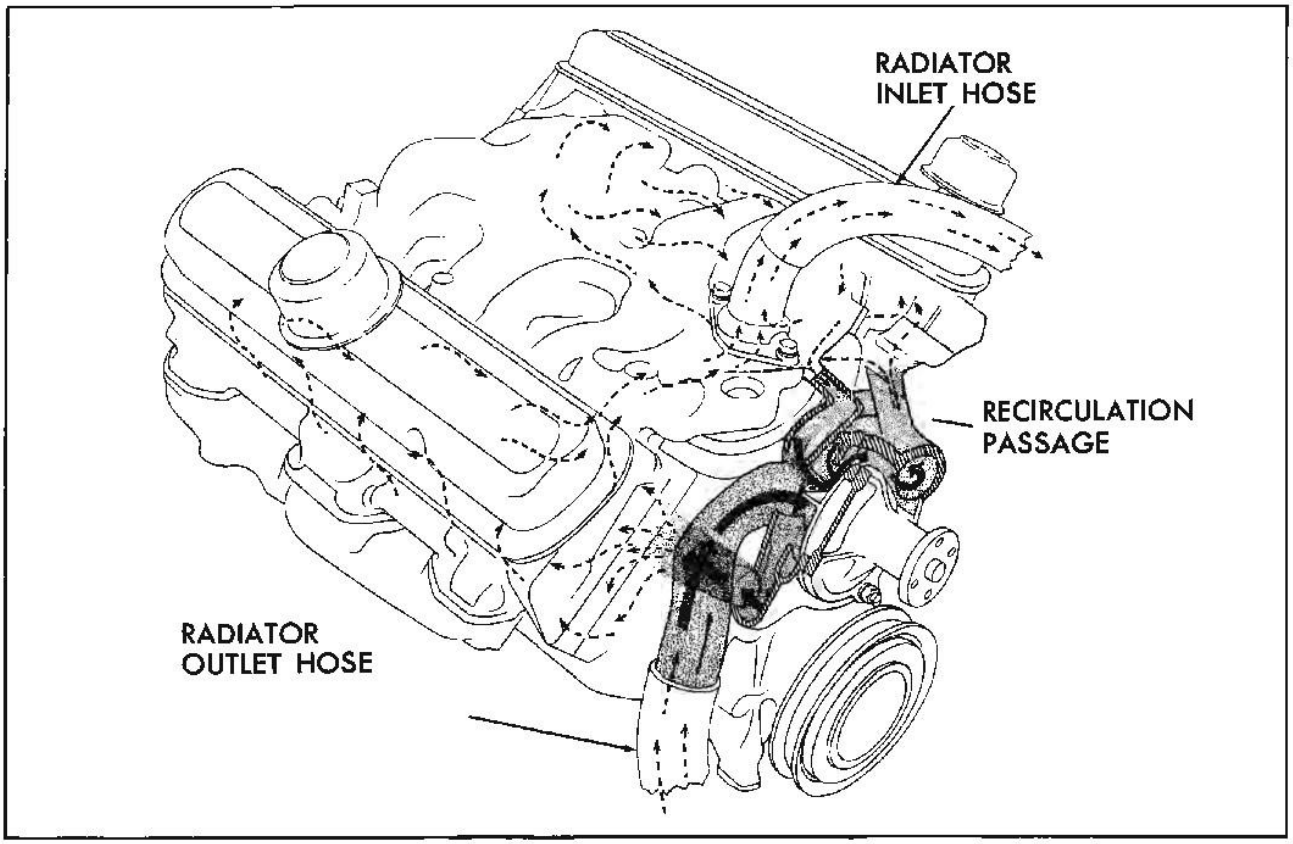

Fig. 6A-6 V-8 Cooling System Circulation

COOLING SYSTEM CIRCULATION— V-8 ENGINE

Water circulation (Fig. 6A-6) is provided by a single impeller, specially designed water pump which provides flow of water into the cylinder block.

Water circulation during warm-up (thermostat closed) is from the pump to the cylinder block, up into the cylinder head, into the front of the intake manifold, and back to the inlet of the pump, via the timing chain cover, which acts as a pump body. The inlet side of the pump has a heater water return connection.

After normal operating temperatures are reached (thermostat open), part of the water will recirculate as outlined above. A major portion of the water, however, will pass into the radiator via the outlet passage and hose above the thermostat. It will then circulate back to the pump inlet. The water pump and the water transfer holes between the block and cylinder head have been designed to provide the proper flow of coolant to provide temperature balance within the engine bank and its cylinder head.

LUBRICATION SYSTEM DESCRIPTION

OIL FILTER—6 CYL. AND V-8

A full flow oil filter is standard equipment on the engine. The filter is mounted on a machined boss on the right front side (6 cyl.) and right rear side (V-8) of the engine block (Figs. 6A-7, 6A-8).

All oil from the pump passes through the filter before going to the engine oil galleries. In the filter, the oil passes through a filtering element where all dirt and foreign particles are removed.

A by-pass valve is located in the filter base casting to insure ample lubrication in case the filter element becomes restricted. Thus, if required, oil will flow directly from the inlet through the spring loaded by-pass valve to the outlet without any possibility of washing accumulated dirt off the filter element.

OIL PUMP—6 CYL. AND V-8 ENGINE— (Figs. 6A-9, 6A-10)

Oil is circulated under pressure by a spur gear type pump. The pump is mounted on the right front

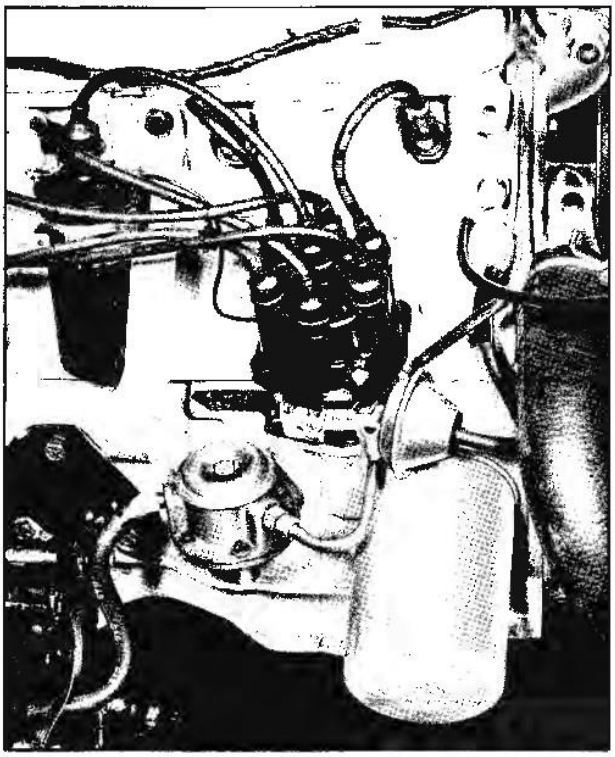

Fig. 6A-7 6 Cyl. Oil Filter Location

(6 cyl.) right rear (V-8) lower face of the cylinder block and is driven by the distributor drive gear. Maximum oil pressure is regulated by a spring loaded, ball type, pressure regulator valve. No adjustment of the pressure regulator valve is provided.

Oil is taken into the pump through a stationary type oil intake. All oil entering the floating intake passes through a screen. As a safety precaution a large hole is provided in the middle of the screen. During normal operation no oil can pass through this hole since the grommet around the hole is seated against the baffle. If the screen should become plugged, however, pump suction will cause the screen to move away from the baffle, and oil will flow through the large center hole.

OIL CIRCULATION—6 CYL. (Fig. 6A-11)

Oil from the pump is directed through the full flow oil filter and then to the main gallery. The main gallery intersects the lifter bores and serves as both the main and lifter gallery where oil holes direct oil through passages to camshaft bearings and main bearings. Drilled passages in the crankshaft direct oil from the main bearings to connecting rod bearings. Oil from each lifter is directed up through

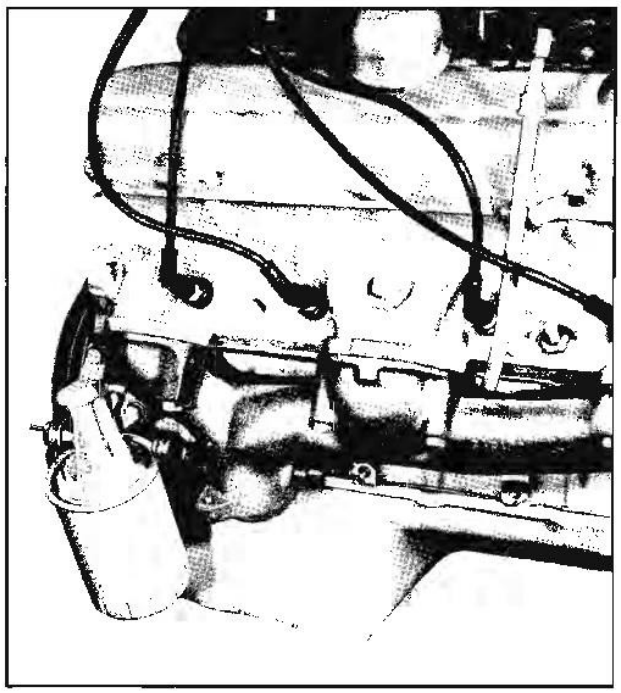

Fig. 6A-8 V-8 Oil Filter Location

hollow push rods to rocker arms. Oil then passes through a hole in the push rod contact area of the rocker arm and fills it. This supply lubricates the rocker arm ball. Over flow lubricates the top of the valve stem and other valve train surfaces (Fig. 6A-12).

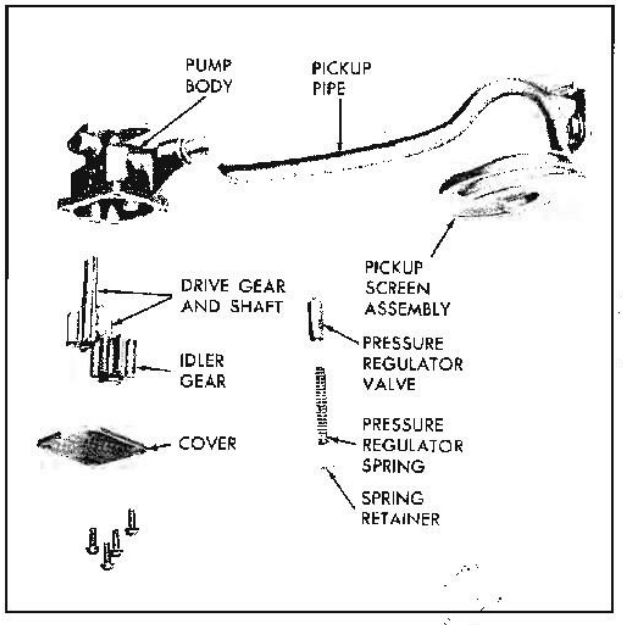

Fig. 6A-9 6 Cyl. Oil Pump Assembly

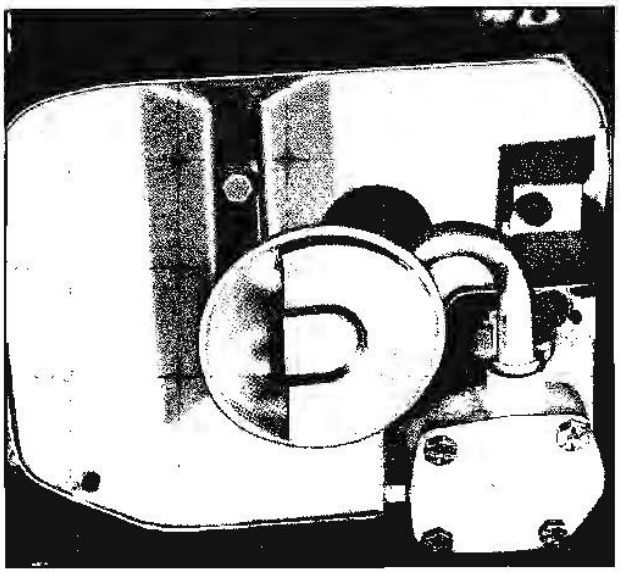

Fig. 6A-10 V-8 Oil Pump Assembly

Timing gears are lubricated by oil which is supplied through a passage from the front of the camshaft to a calibrated nozzle above the crankshaft gear (Fig. 6A-13).

Cylinder walls are lubricated with oil splash from connecting rods and crankshaft as they rotate.

OIL CIRCULATION—V-8 (Fig. 6A-14)

The positive pressure system delivers oil under pressure to the crankshaft, connecting rod, and camshaft bearings and to the valve train parts. Spray from main and connecting rod bearings lubricates the cylinder walls, piston pins and bushings. Timing chain and sprockets receive metered jet lubrication as do the fuel pump eccentric and rocker arm. A hole in the block from the push rod gallery through the distributor boss lubricates the distributor shaft and bushings.

Oil flow through the engine is as follows: Oil is first supplied by the pump and filter to two parallel oil galleries drilled in the block on each side of the camshaft. Oil travels from rear to front in the left gallery and from front to rear in the right gallery. The rear crankshaft and camshaft bearings receive oil from a hole drilled through the passage connecting the filter to the left gallery. All other crankshaft bearings receive oil from holes drilled to the left hand gallery. The remaining four camshaft bearings are supplied by a hole drilled vertically from each crankshaft bearing journal to camshaft bearing journal.

Hydraulic valve lifters are fed by holes drilled from each lifter boss to the oil gallery. Oil is fed under pressure from a hole in the push rod seat of the valve lifter up through the hollow push rod to provide pressure lubrication of both ends of the push rod.

Oil is also positively fed to the cylinder head to lubricate all valve train surfaces. An oil gallery in the head is fed from the front center camshaft journal. Oil from cylinder head gallery flows up holes in each rocker arm ball stud and out through a 1/16" hole drilled into the side of the stud to index with the ball. This oil lubricates the ball seat and also flows out through grooves in the top of the ball to fill the rocker arm with oil. Overflow from the rocker arm passes over the end onto the valve stem to lubricate the contact area between the rocker arm and the end of the valve stem.

Lubrication of the camshaft thrust plate, timing chain and sprockets, and fuel pump eccentric and rocker arm is provided for by a passage in the front of the camshaft. A lateral hole in the front bearing journal indexes with the camshaft bearing oil supply hole in the block once each revolution.

An oil jet then squirts out of the horizontal hole in the end of the camshaft toward the front of the engine. Part of this oil is projected straight forward, against the camshaft thrust plate. Another part of the oil is projected downward through the grooves in the block and thrust plate to the crankshaft timing chain sprocket (Fig. 6A-14). Oil passing down the groove also is forced out the hole in the thrust plate. The jet of oil from this hole is timed to pass through one of the openings in the camshaft sprocket and strike the fuel pump eccentric and rocker arm.

POSITIVE CRANKCASE VENTILATION SYSTEM

The function of the positive crankcase ventilation system is to reclaim unburned fuel, prevent dilution and contamination of lubricating oils, and reduce the amount of harmful and irritating gases discharged into the atmosphere. The positive crankcase ventilation system utilizes the vacuum in the intake manifold to remove blow by gases from the crankcase and return them to the combustion chambers to be burned. The crankcase vent pipe is replaced by a valve (Fig. 6A-15) and rubber hose, which carry the gases from the crankcase to the intake manifold.

The valve automatically meters the flow of gases so that the normal operation of the engine is not

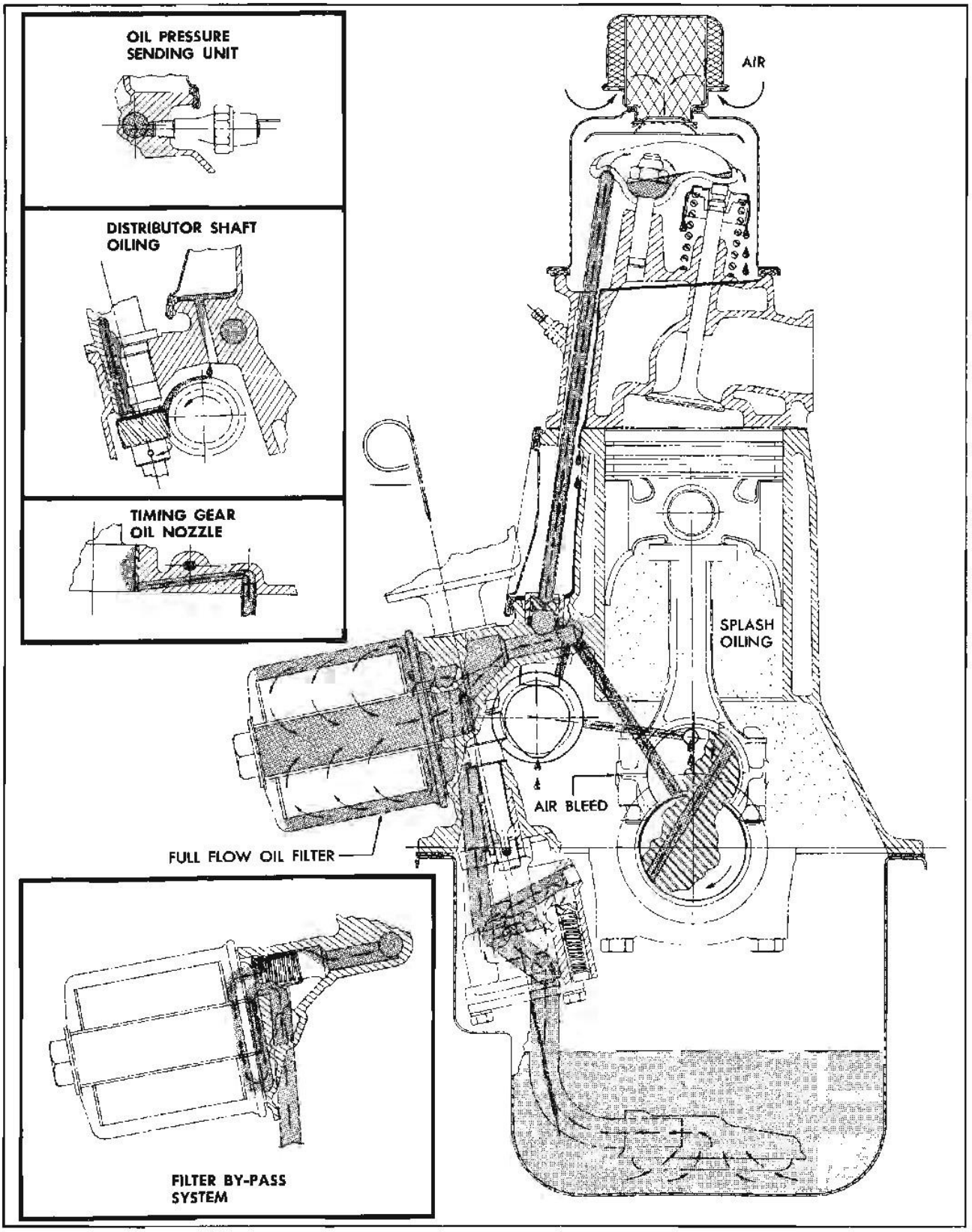

Fig. 6A-11 6 Cyl. Oil Circulation

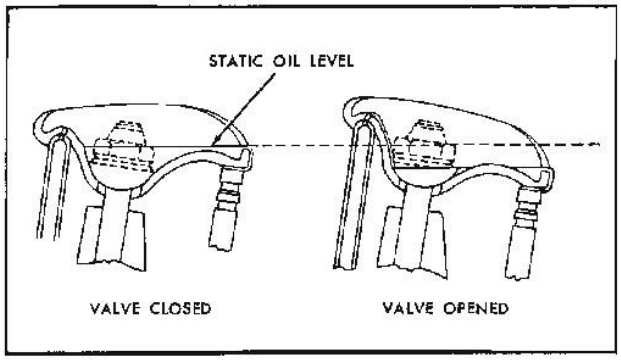

Fig. 6A-12 6 Cyl. Upper Valve Train Lubrication

disturbed. Valve is designed to vary its flow in proportion to manifold vacuum to handle increasing amounts of blowby as manifold vacuum decreases, (load and blowby increases). Should the engine backfire, the valve is automatically held closed by the reverse air flow to prevent fuel vapor from entering crankcase.

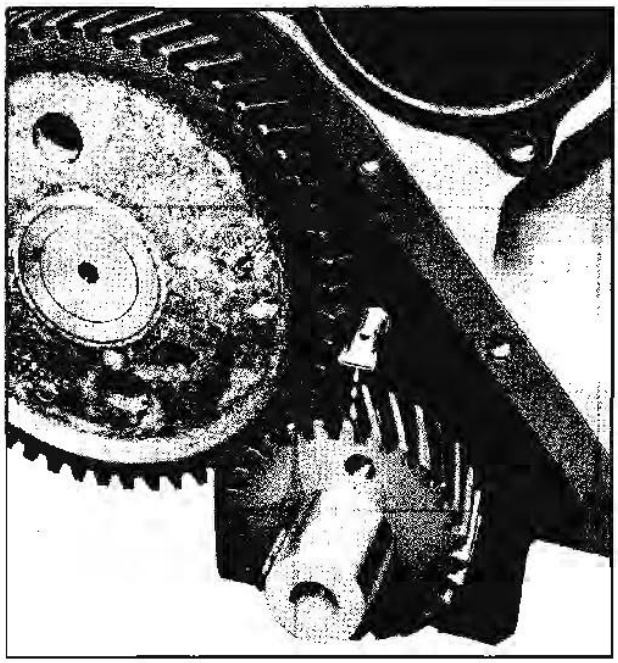

Fig. 6A-13 6 Cyl. Timing Gear Lubrication (Same as 6-5)

SERVICE OPERATIONS

CHECKING AND FILLING COOLING SYSTEM

The Tempest cooling system requires little care except for maintaining an adequate coolant level. If GM ethylene glycol type inhibited engine coolant is used, it is not necessary to drain the coolant for

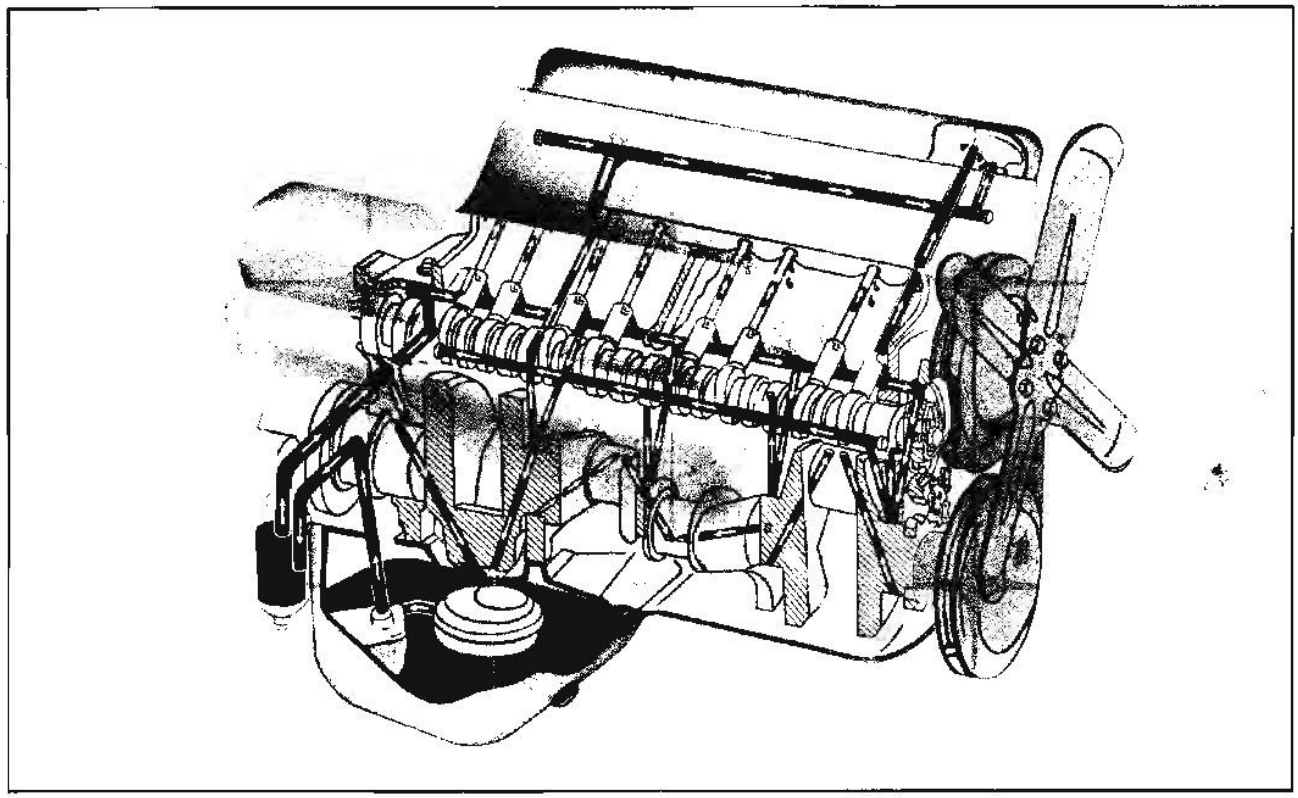

Fig. 6A-14 V-8 Oil Circulation

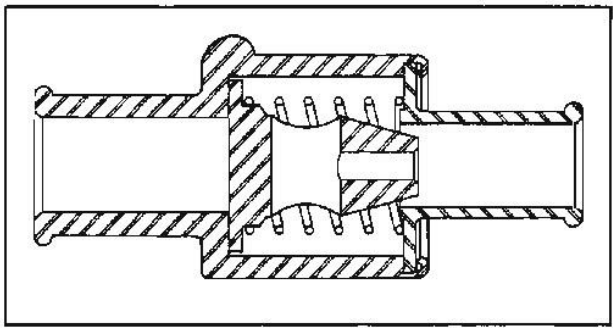

Fig. 6A-15 Positive Crankcase Ventilation Valve

summer driving because this coolant has been especially formulated to last 24 months in the cooling system. After service for 24 months, drain the system, flush it with water, and refill with an inhibited year-round coolant meeting the GM 1899M specification. If other than Pontiac approved inhibited glycol-type anti-freeze solution is used, the cooling system should be drained, flushed and refilled for the summer months. When water is used, a good corrosion inhibitor must be added to the system. Failure to use an inhibited coolant may result in severe corrosion damage to the cooling system components.

FLUSHING COOLING SYSTEM

1. Drain radiator and block by opening drain plug on radiator lower tank and removing plug on left side of 6 cylinder engine block and on both sides of V-8 engine block.

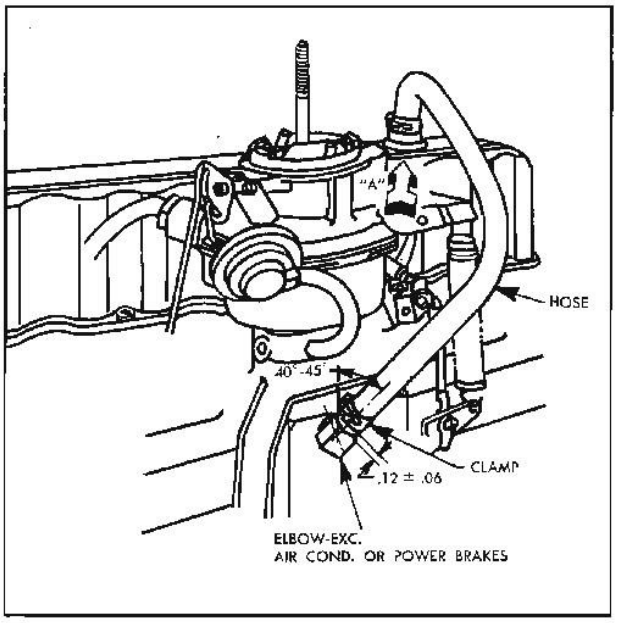

Fig. 6A-16 Positive Crankcase Ventilation
6 Cyl. 1 Bbl. Carb.

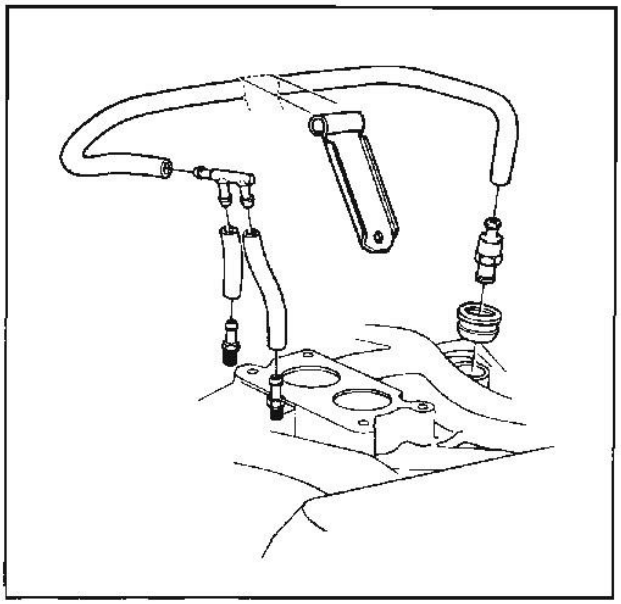

Fig. 6A-17 Positive Crankcase Ventilation
V-8 2 Bbl. Carb.

2. After system is empty, with drains open, run water into radiator. Engine should be running and occasionally accelerated to aid in circulating water and dislodge rust and scale.

CAUTION: Do not introduce cold water into a hot

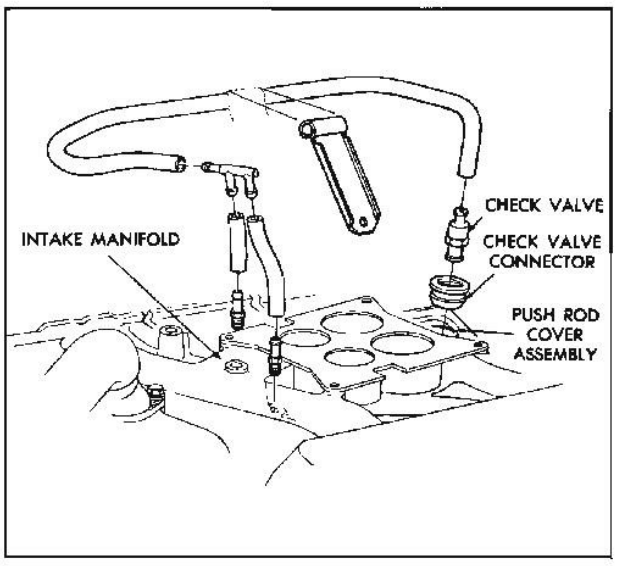

Fig. 6A-18 Positive Crankcase Ventilation
V-8 4 Bbl. Carb.

engine or block may be cracked. Allow engine to cool, then add water with engine running.

3. Where there is difficulty in getting water to run clear or there is an excessive amount of rust and scale, the cooling system should be cleaned with a cleanser (reputable source) supplied for that purpose. If force flushing equipment is used it should be used on the radiator only (engine to radiator inlet and outlet hoses removed) as any reverse flushing of the block with the water pump in place may cause the water pump seal to leak, if flushing pressure is excessive.

PREPARING COOLING SYSTEM FOR COOLANT

The cooling system should be properly prepared for the addition of coolant every two years.

To properly prepare cooling system:

1. Bring engine up to operating temperature.

2. Flush out cooling system as instructed previously.

3. Tighten all hose connections on radiator, heater and defroster. Replace any deteriorated hose. Check to see that radiator hold down bolts are tightened properly.

4. Fill system with water and operate engine, checking for water leaks at radiator core, hose connections, water pump seal and gaskets, heater and defroster connections, and head to block joint.

5. Drain sufficient water to allow addition of proper quantity of coolant.

DO NOT OVER FILL. COOLANT SHOULD BE ½—1" BELOW FILLER CAP OPENING

CAUTION: A pressure radiator cap is used to provide the best cooling. When removing, rotate the cap to the left very slowly. If a hissing noise is heard, stop and allow pressure to decrease before removing cap completely.

To assure most effective heater performance, the Tempest has been equipped with a 180°F. thermostat. Therefore, the use of Pontiac approved inhibited ethylene glycol type engine coolant gives best heater performance.

Alcohol base coolant should not be used in Tempest automobiles.

INHIBITORS

When only water is in the system, a cooling system corrosion inhibitor must be used.

TESTING COOLANT

In using a hydrometer to determine the freezing point of radiator solution, make sure the correct hydrometer markings are read. Unless hydrometer is provided with means for temperature correction, test should be made at the temperature at which hydrometer is calibrated, for if the solution is warmer or colder large errors may result (in some cases as much as 30° F.) Most good hydrometers are equipped with a thermometer and temperature correction scale which allows an accurate test of freezing point over a range of temperatures.

THERMOSTAT—REMOVE AND REPLACE

1. Drain radiator level to below thermostat and disconnect upper hose and remove water outlet assembly from cylinder head (6 cyl.), intake manifold (V-8).

2. Remove thermostat. Unless obviously defective, test the thermostat as follows, before replacing with new one:

a. Immerse the unit and a thermometer in a container of water over a heater. While heating the water do not rest either the thermometer or thermostat on bottom of container as this will cause them to be at higher temperature than the water.

b. Agitate the water to insure uniform temperature of water, thermostat and thermometer.

A new thermostat (180°) valve should start to open (.002") at a temperature of 177°F. to 182°F., and should be fully (.380") or more at a temperature not in excess of 202°F. A used thermostat can be about 7°F. above or below this setting (170°-190°F.) without adverse effect and should not be replaced. If thermostat does not operate at specified temperatures, it should be replaced as it cannot be adjusted.

3. Install thermostat with pellet or cartridge projecting down into water passage in intake manifold.

4. Using new gasket, install water outlet fitting. Tighten bolts to 18-23 lb. ft. (6 cyl.), 20-35 lb. ft. (V-8).

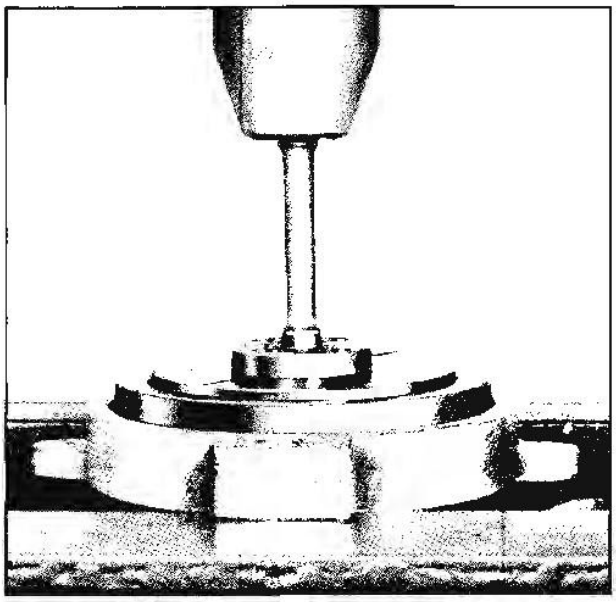

Fig. 6A-19 Pressing Pump Shaft From Hub (6 Cyl.)

5. Connect upper radiator hose.

6. Refill radiator to 1/2"-1" below filler cap opening.

WATER PUMP—6 CYL.— REMOVE AND REPLACE

1. Drain radiator and remove water inlet hose from pump. Remove fan belt.

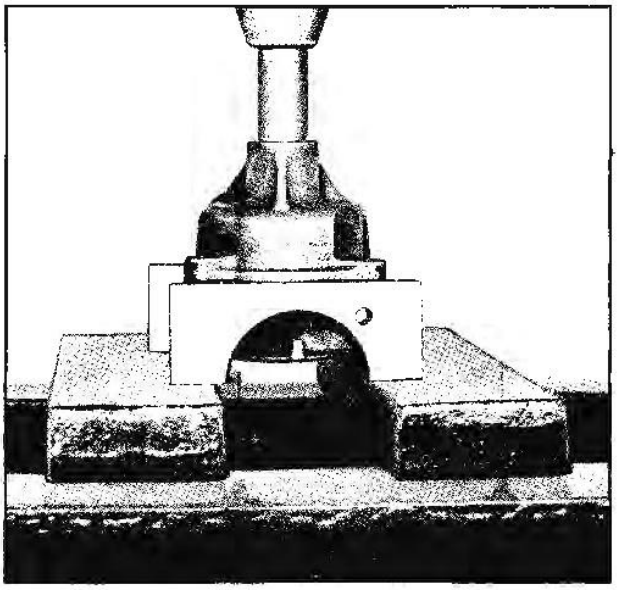

Fig. 6A-20 Pressing Shaft, Bearing and Impeller Assembly From Pump Housing

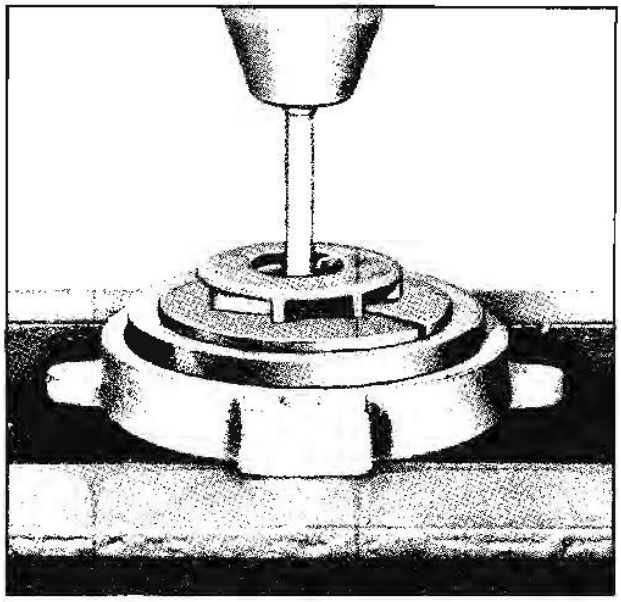

Fig. 6A-21 Pressing Shaft and Bearing Out of Impeller

2. Remove heater hose from pump housing.

3. Remove water pump to cylinder block attaching bolts and remove pump from engine.

CAUTION: Pull pump straight out of cylinder block to avoid damage to impeller and shaft.

4. Remove fan and pulley by removing four retaining bolts.

5. Support fan hub in an arbor press with press plates J-9156 and J-6407. Press pump shaft out of hub. A 1/2" x 2" bar will allow the shaft to be pushed through the hub. See Figure 6A-19.

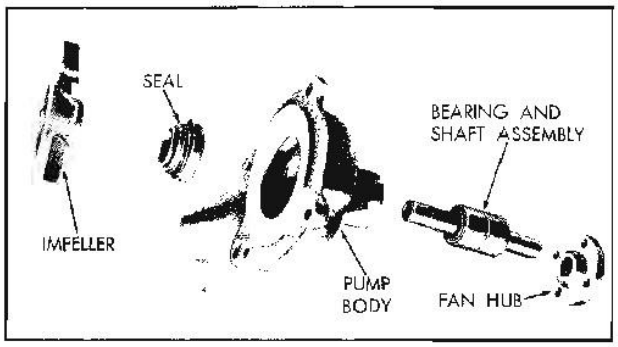

Fig. 6A-22 Water Pump - Exploded View (6 Cyl.)

6. Support pump in an arbor press as shown in Figure 5. Press shaft bearing and impeller assembly out of pump, applying pressure on the outer race of the shaft bearing only (Fig. 6A-20).

CAUTION: Shaft and bearing assembly must not be pushed out of housing by applying force on shaft, or bearings will be damaged. Use a 7/8" deep socket or piece of tubing 1-1/8" O.D. Shaft and bearing assembly should be pressed out of rear of pump only.

7. Support impeller with press plates J-9156 and J-6407. Press shaft with bearing out of impeller using 1/2" O.D. bar (Fig. 6A-21).

8. Wash all parts except pump shaft bearing in cleaning solvent, Figure 6A-22 shows the water pump disassembled.

NOTE: Pump shaft bearing is permanently sealed and lubricated and should not be washed in cleaning solvent.

9. Inspect shaft and bearing assembly for roughness or excessive end play. Remove any rust or scale from shaft with fine emery cloth. The bearing should be wrapped in cloth while this operation is performed to prevent emery dust from entering bearing.

10. Inspect seat for thrust washer on impeller for pit marks or scoring. If seat for thrust washer is scored or pitted, the impeller should be replaced.

ASSEMBLY AND INSTALLATION

1. Install pump shaft and bearing assembly into pump body bearing bore, applying pressure to outer race until it is flush with front of pump body (Fig. 6A-23).

CAUTION: Apply pressure to outer race only.

2. Lightly coat O.D. of new seal with a sealing compound, mount in J-7818 and press into place with 1-1/4" socket or other suitable tool (Fig. 6A-24).

3. Press on fan hub. Check fan hub location, as this is very critical and has a definite bearing on fan belt operation, as shown in Figure 6A-25. Measure from pump body gasket surface to outer or front side of hub using tool J-9583.

4. Support pump on front or hub end of shaft and press on impeller. Press to obtain .010" to .035" clearance between impeller vanes and pump body (Fig. 6A-26).

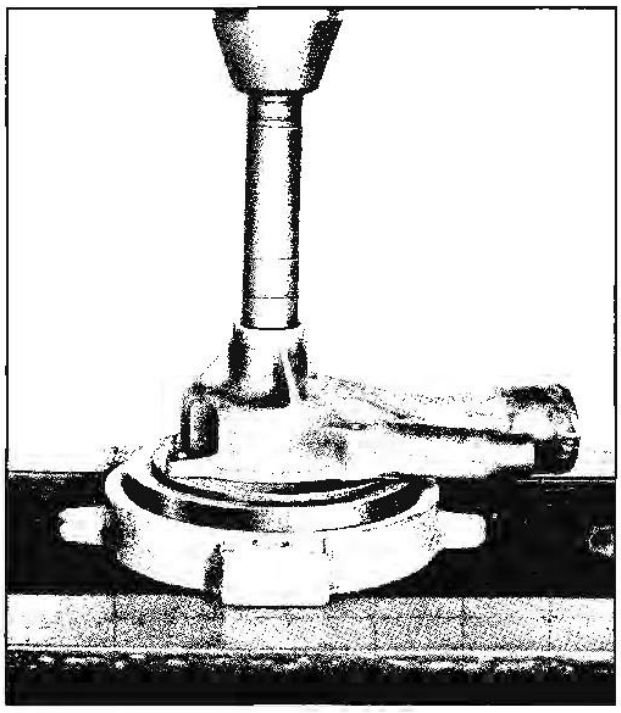

Fig. 6A-23 Pressing Pump Shaft and Bearing Into Pump Body Bearing Bore

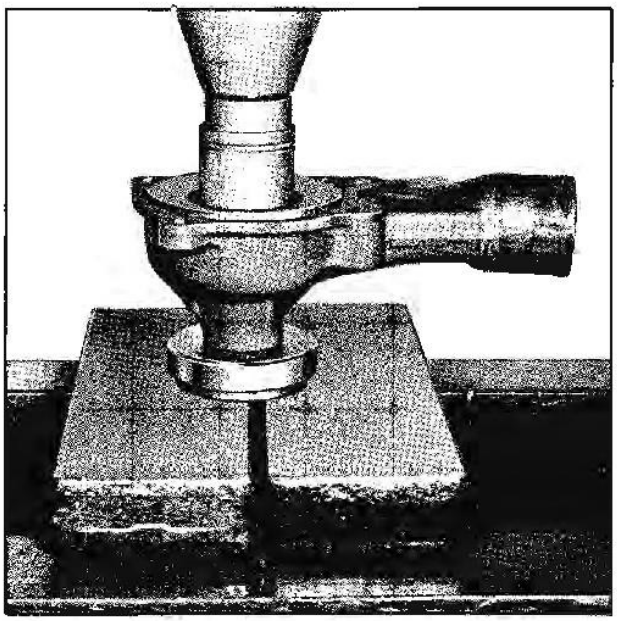

Fig. 6A-24 Installing Pump Seal

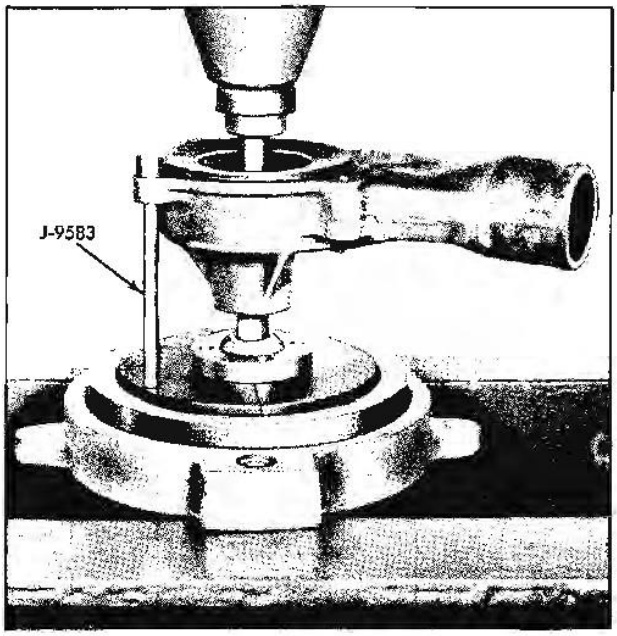

Fig. 6A-25 Installing Fan Hub Using Locating Tool J-9583

5. Install pump cover and gasket with a light coat of gasket sealer and install screws, then tighten all six diagonally.

6. Install pump pulley and fan on pump hub and tighten bolts securely.

7. Install pump assembly on cylinder block and tighten bolts securely. Use a new pump to block gasket. Install belt and adjust tension. See Fig. 6A-32.

8. Install hoses and fill cooling system.

WATER PUMP—V-8

NOTE: Water pump is serviced only as an assembly.

1. Drain radiator and engine block.

2. Loosen generator at adjusting strap and remove fan belt from fan pulley.

3. Remove fan and pulley.

4. Remove pump.

5. Install pump by reversing above steps. When pump is installed on engine, drain hole will be at bottom. Tighten water pump attaching nuts to 15 lb. ft. torque. Adjust belt for proper tension on chart. (Fig. 6A-33)

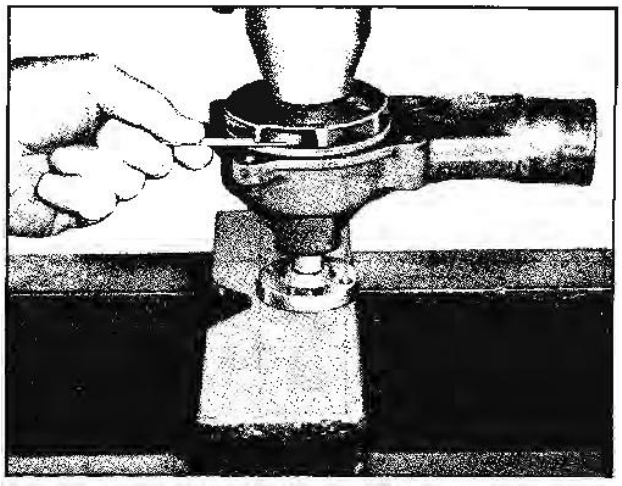

Fig. 6A-26 Checking Impeller to Pump Body Clearance

RADIATOR—6 CYL. AND V-8—REMOVE AND REPLACE

1. Drain radiator.

2. Disconnect overflow, upper and lower radiator hoses.

3. Remove radiator fan shield (Fig. 6A-27).

4. Remove radiator.

5. To install radiator, reverse above procedure.

OIL FILTER 6 CYL. AND V-8—REMOVE AND REPLACE

Install a new oil filter at the first oil change and then each six months or each 6,000 miles thereafter, whichever occurs first.

1. Unscrew filter by hand from engine block base at right front (6 cyl. only) (Fig. 6A-28). Turn hex nut on bottom of filter counterclockwise to unscrew filter from base (V-8 only) (Fig. 6A-29).

NOTE: This operation can be done from above on the 6 cyl.

2. Wipe filter base with clean cloth.

3. Make sure filter base attaching screws are tight (V-8 only).

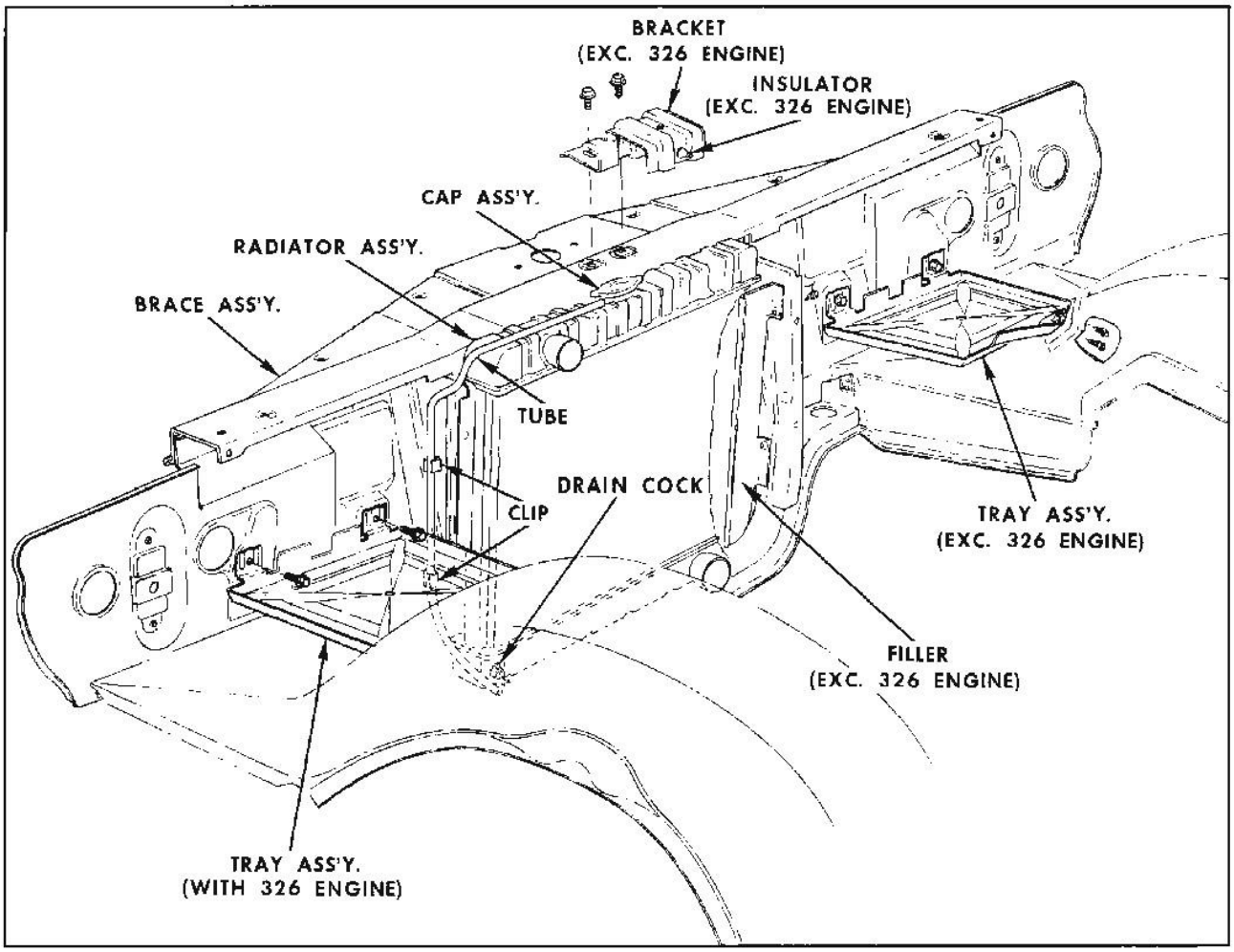

Fig. 6A-27 Radiator and Front End Sheet Metal

4. Apply light grease or oil on new gasket furnished in filter package and place gasket firmly in groove at open end of filter.

5. Hand tighten filter on hollow oil filter connector until gaskets contact filter base, then complete tightening with additional 2/3 turn of filter. Do not over tighten. Use care when tightening to prevent pinching of gasket. Do not use wrench to tighten filter.

6. Add oil to bring to "full mark" on dipstick.

7. Run engine and check for leaks at filter to base gaskets. Re-check crankcase oil level. If necessary, add oil to bring level to "full mark" on dipstick.

OIL FILTER CONNECTOR REMOVE AND REPLACE

1. Remove oil filter by unscrewing from connector.

2. Unscrew connector from engine block using 1/2" Allen wrench (Fig. 6A-30).

3. Replace by reversing above procedure.

OIL FILTER BY-PASS VALVE ASSEMBLY REMOVE AND REPLACE

1. Remove oil filter.

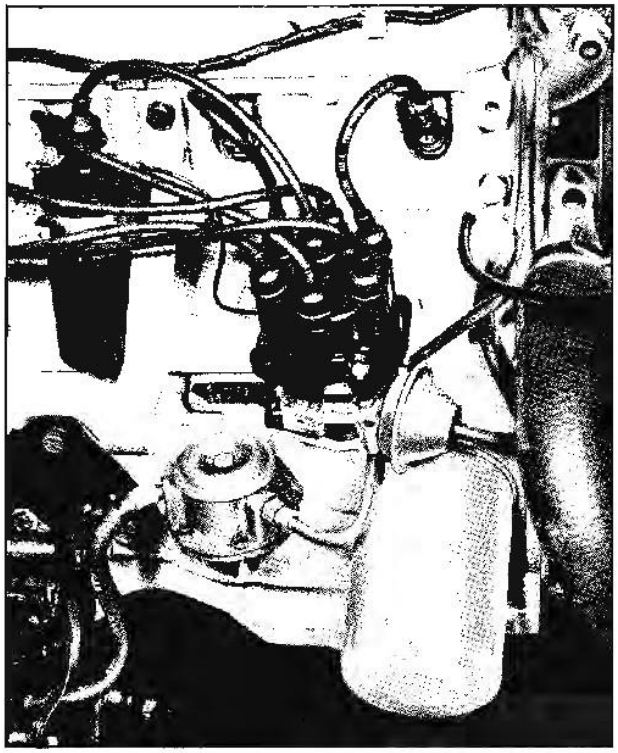

Fig. 6A-28 Oil Filter Location 6 Cyl.

2. Pry valve from engine block with large screwdriver (Fig. 6A-31).

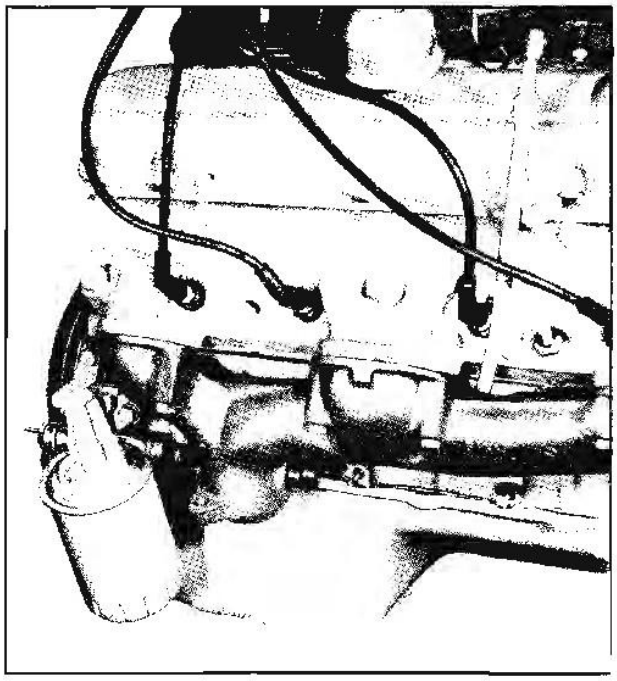

Fig. 6A-29 Oil Filter Location V-8

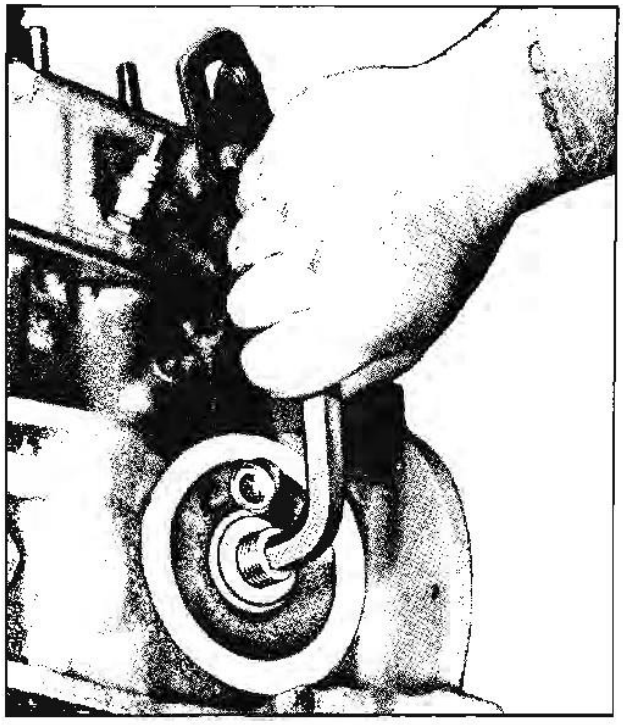

Fig. 6A-30 Removing Oil Filter Connector

3. Align new valve in opening and tap into position using suitable socket for driver.

4. Install oil filter.

POSITIVE CRANKCASE VENTILATION SYSTEM
SEE GENERAL LUBRICATION SECTION

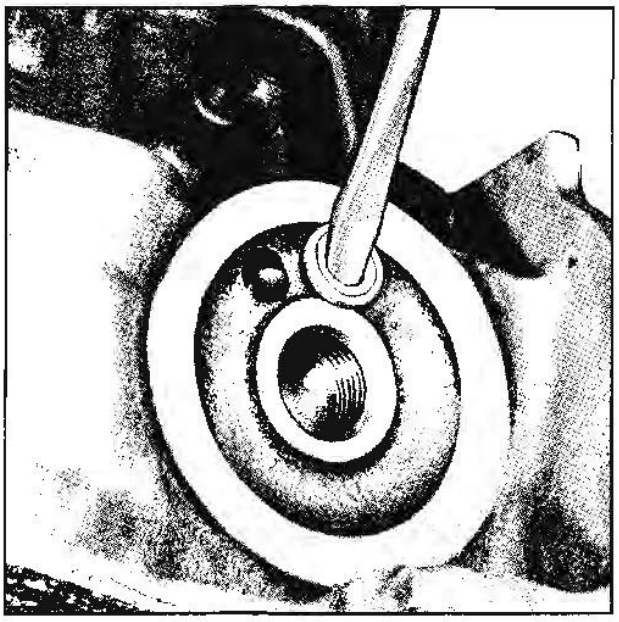

Fig. 6A-31 Removing Oil Filter By-Pass Valve

TROUBLE DIAGNOSIS

SYMPTOM	CAUSE
Cooling system loses water.	1. Make sure owner is not trying to keep radiator filled to top, and is not filling while cold. The expansion and contraction of water during operation will cause level to drop to several inches below the top of the filler neck. Once the level becomes stabilized it will not change appreciably during operation.
	2. If cooling system has excess soluble oil, drain and refill.
	3. Check for leaks from radiator or hose connections, including heater.
	4. Check for crack in block. Pull engine oil dipstick to check for water in crankcase.
	5. Remove rocker arm cover and check for cracked cylinder head.
	6. Remove cylinder head and check gasket. While head is off, check for crack in head or block.
Buzzing noise from radiator cap.	This is caused by the relieving of excessive pressure when radiator boils. Check causes of overheating.
Overheating (coolant actually boils).	1. Check engine thermostat.
	2. Check for driving conditions which may cause overheating. Prolonged idling, start and stop driving in long lines of traffic on hot days, climbing steep grades on hot days, etc. will occasionally cause coolant to boil.
	3. Check engine operation to make sure tune-up is not needed. Timing retarded past TDC may cause overheating. NOTE: Timing must be set with vacuum advance line disconnected.
	4. Check fan belt for excessive looseness.
	5. Clean debris from radiator.
	6. Clean cooling system.
	7. Remove cylinder head and check water passages in head and block for obstructions.

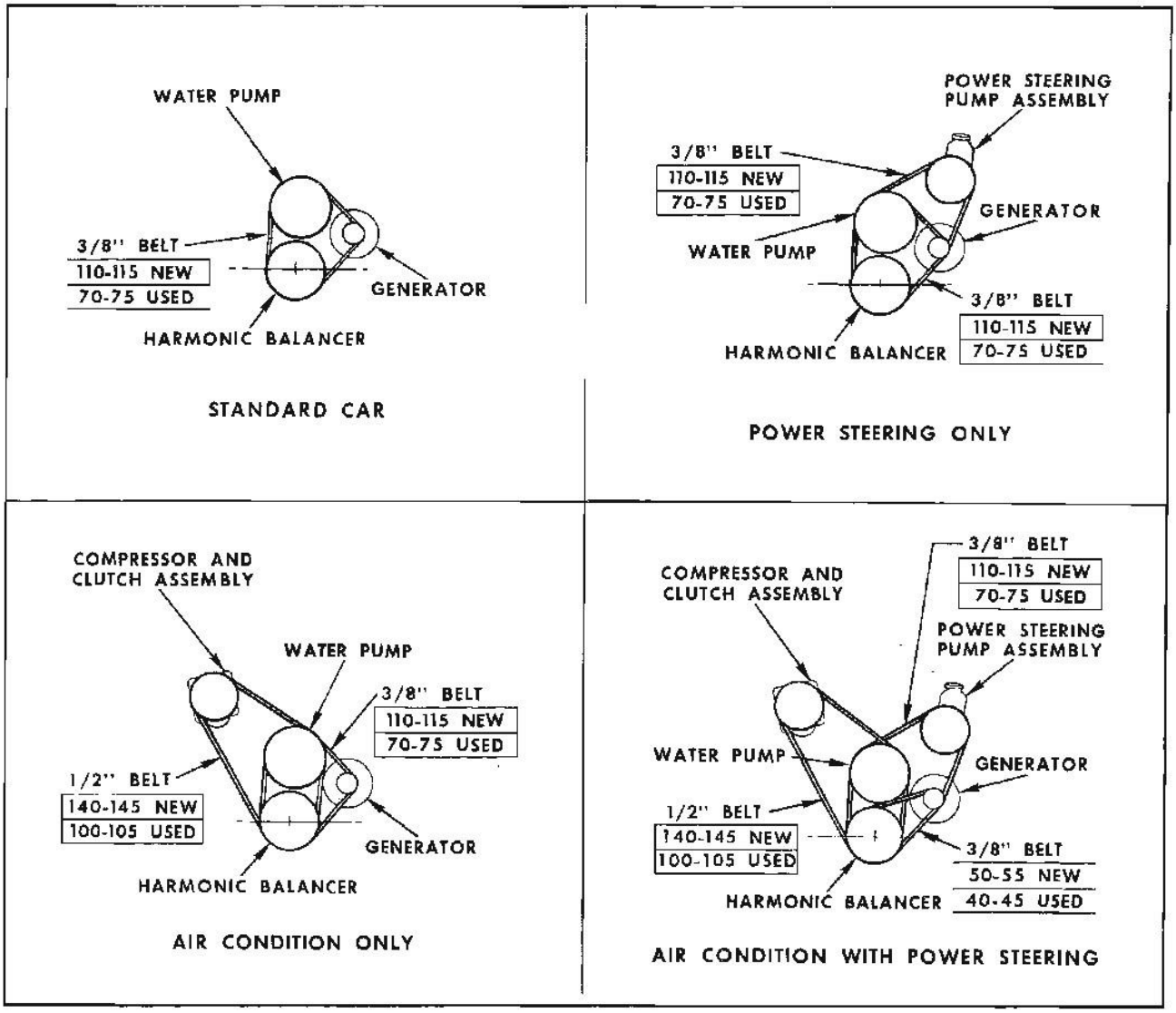

Fig. 6A-32 Belt and Pulley Diagrams - Six Cylinder Engine

DRIVE BELTS FOR PONTIAC TEMPEST ENGINE AND ACCESSORY DRIVE COMBINATIONS

Belt Width	Belt Name	Burroughs Gauge New	Used
3/8"	Water Pump and Alternator Belt (6 cyl. and V-8 Engine)	110-115 Lbs.	70-75 Lbs.
3/8"	Power Steering Pump Belt (6 cyl. and V-8 Engines)	110-115 Lbs.	70-75 Lbs.
1/2"	Air Conditioning Comp. Drive Belt (6 cyl. and V-8 Engines)	140-145 Lbs.	100-105 Lbs.

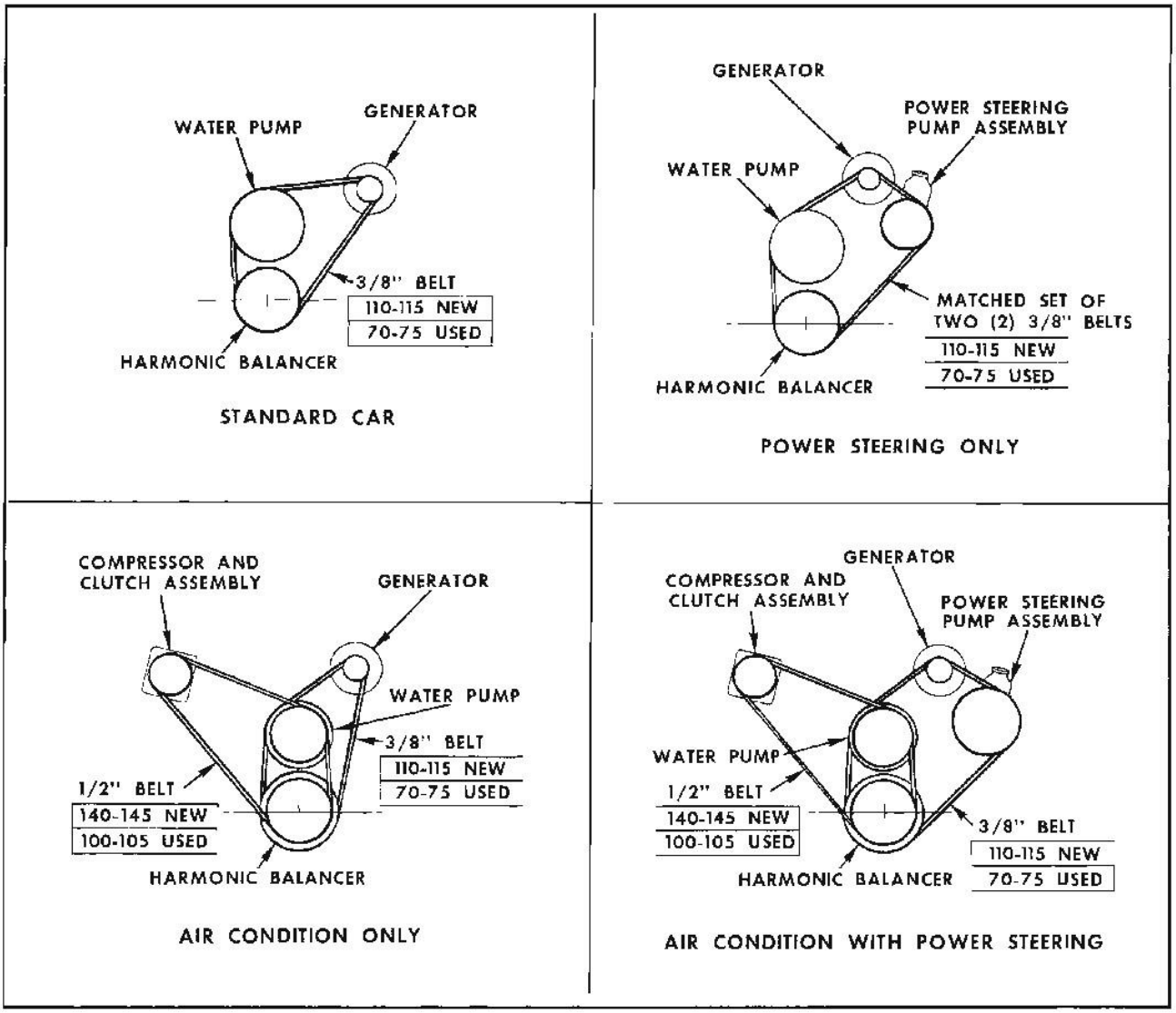

Fig. 6A-33 Belt and Pulley Diagrams - V-8 Engine

SPECIFICATIONS

COOLING SYSTEM

Type	Pressure with vent
Operating Pressure	15 psi
Pump Type	Centrifugal
Pump and Fan Drive	V-Belt
Pump Bearings	Sealed Ball Bearings
Radiator	Tube and Center
Core Area	6 cyl. Std. 323
	6 cyl. A/C 357
	V-8 391 sq. in.

COOLING SYSTEM (Continued)

Thermostat . . . . . 180°

Fan Diameter—Standard . . . . . 6 cyl.--17.62" V-8—17"

Fan Diameter—w/Air Conditioning

6 cyl. Engine . . . . . 18"

V-8 Engine (w/fan clutch) . . . . . 18"

Number of Blades—Standard Fan 4

Number of Blades—Air Conditioning Fan 7

Cooling System Capacity 6 cyl.

With Heater . . . . . 11.28 qts.

Without Heater . . . . . 10.12 qts.

With Air Conditioning . . . . .

Cooling System Capacity V-8 . . . . . 20.5 qts.

LUBRICATION

Type . . . . . Pressure

Oil Pressure . . . . . 6 cyl. . . . . 45 psi @ 2000 rpm

V-8 . . . . . 30-40 psi @ 2600 rpm

Lubricant Capacity When Refilling . . . . . 4 qts.
(5 qts. if filter element is changed)

Oil Pump Type . . . . . Spur Gear

TEMPEST RADIATOR USAGE

MODEL	CODE*	CORE THICKNESS
215 6 Cyl. Engine	151	1.26"
215 6 Cyl. Engine with A/C	152	2.00"
326 V-8 Engine SM	155	2.00"
326 V-8 Engine Auto.	153	2.00"
326 V-8 Engine with A/C	157	2.00"
326 H.O. V-8 Engine	156	2.00"
326 H.O. V-8 Engine with A/C	158	2.62"

*Code number is stamped on inside upper right corner of radiator assembly.