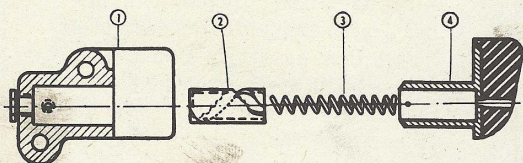


TIMING CHAIN TENSIONER

The tensioner is composed of the body (1), a piston with a spiral groove to take up play (2), a spring (3), and a rubber shoe (4).



The shoe keeps a constant tension on the timing chain by the combined section of:

(a) The spring: free length = $3'' \pm 3/64''$.
Length under the weight of $3\frac{1}{2}$ lbs. = $2'' \pm 1/16''$.

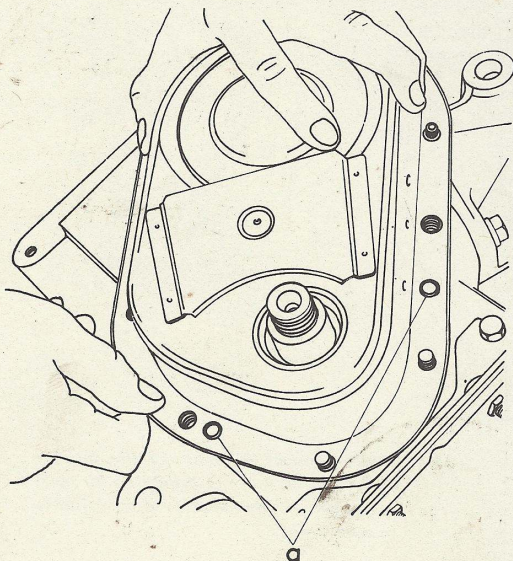
(b) Oil pressure which varies with engine speed:

diameter of the oil orifice in the body
- .8 mm. (.030")
diameter of the orifice in the shoe
- 1.02 mm. (.040")

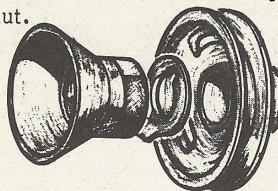
To prevent any clogging of the orifices, a cylindrical filter is installed in the oil feed port.

The filter screen should be cleaned any time these parts are disassembled.

12 - Install the oil slinger, the timing chain cover gasket and the cover centered by two dowels (a).



Install the pulley with its key. Tighten the starting handle grip to about 75 ft. lbs. and lock by bending the lip of the washer against the nut.

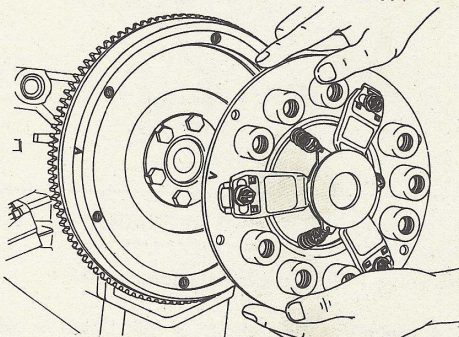


13 - Replace the plastic ring seal and clutch shaft bushing, if necessary, in the flywheel end of the crankshaft. Grease the self-lubricating bushing with graphite grease or motor oil.

NOTE: Never wash this bushing with gasoline or trichlorethylene.

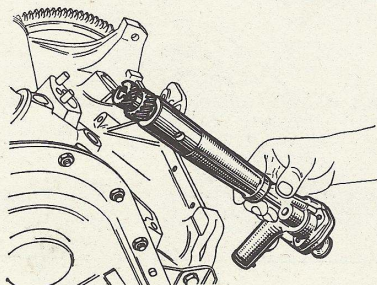
14 - Install the flywheel, noting its markings. Use new locking plate. Torque the bolts to 45 ft. lbs. and bend the tabs of the locking plate over the bolts.

15 - Install the clutch disc and pressure plate aligning the marks applied at the time of removal. Use a clutch shaft to center the clutch disc.

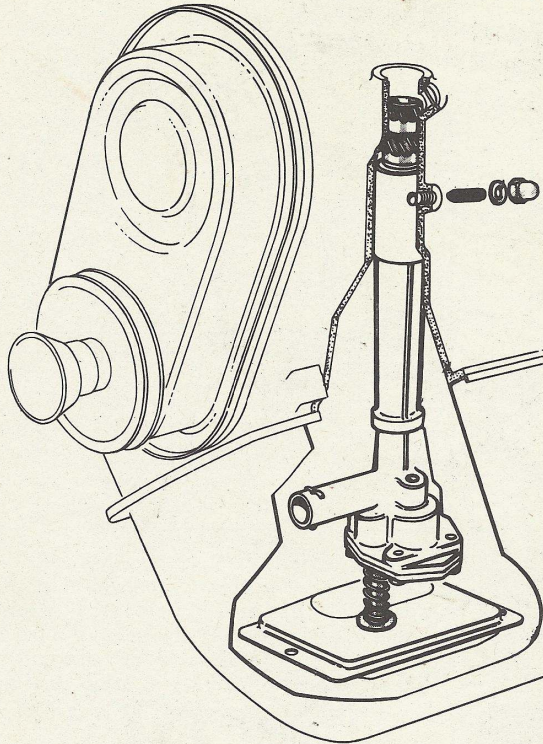


16 - To align and install the oil pump:

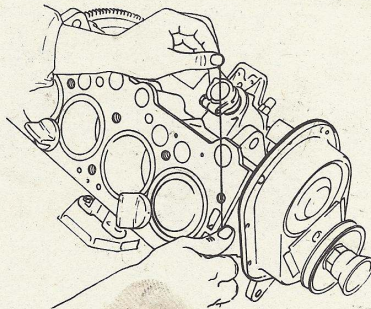
- Turn the crankshaft until piston #4 is at top dead center. (Cams of cylinder #1 closing exhaust and opening intake.)
- Insert the oil pump with the small side of the slotted end toward the outside of the block.



- Attach the pump with the pointed screw and cover with the blind nut.



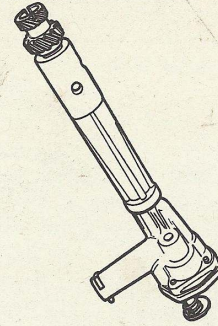
- Check alignment of the pump by sighting through the distributor port. The slot of the pump shaft must line up with the threaded hole of cylinder head bolt #12.



OIL PUMP

The gear type oil pump driven by the camshaft supplies oil under pressure to all internal moving parts of the engine.

The pump is made up of an aluminum alloy body, the shaft which also drives the distributor, the pump gears, the cover with a vent tube, and the relief valve.



The pressures of the pump at various engine speeds are as follows:

620-650 RPM	= 14 psi minimum
1000 RPM	= 21 psi minimum
3000 RPM	= 42 psi maximum
Relief valve setting	= 100 psi

These figures are based upon the use of SAE 20 oil at engine operating temperatures.

OIL FILTER

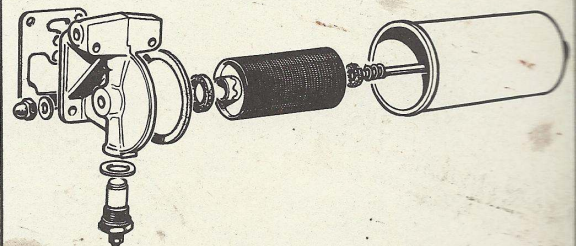
The full flow oil filter is placed horizontally between the pump and the lubrication circuit.

The body and the cover of aluminum alloy hold a metallic screen type element.

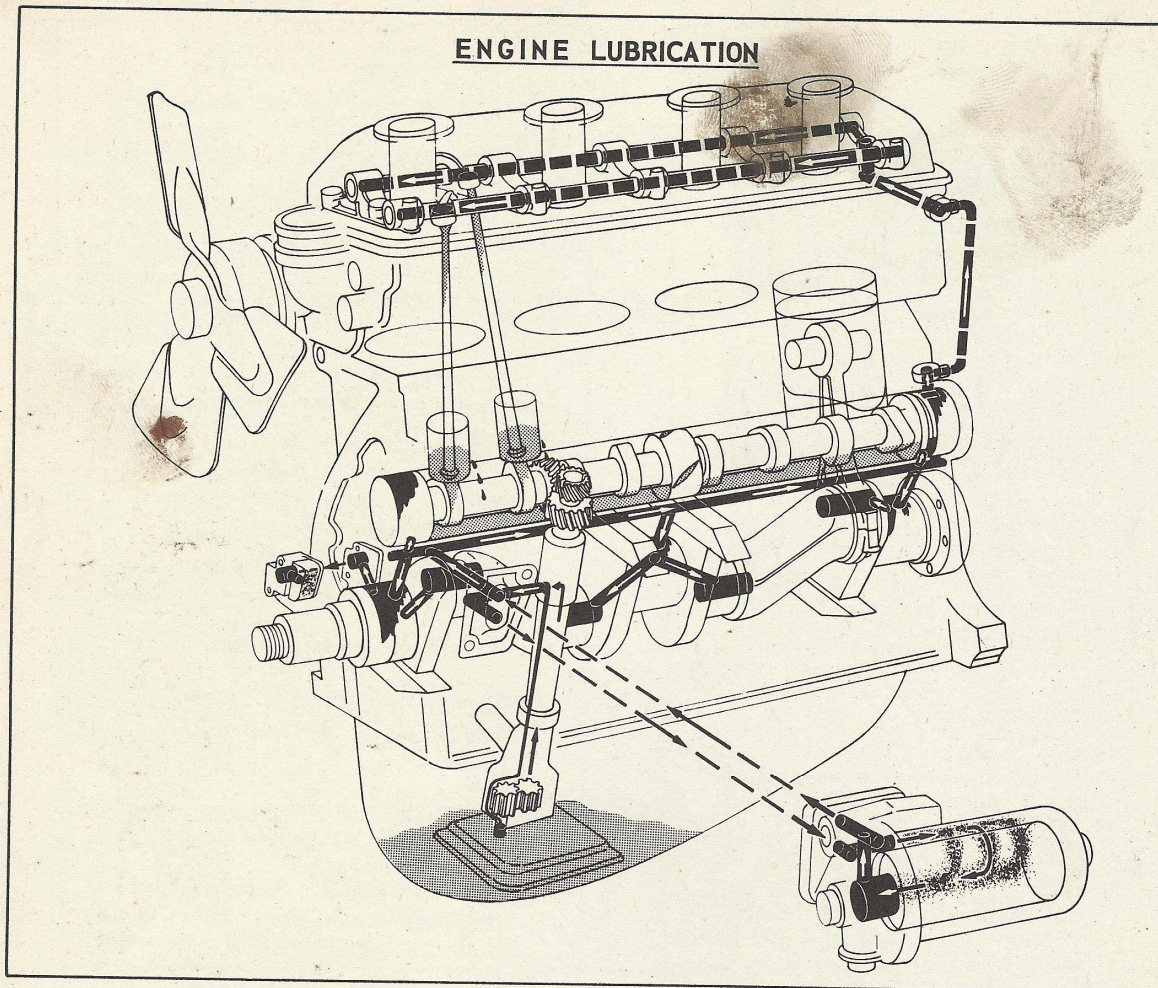
The element provides 35 square inches of filtering surface. The oil is passed through the element from the outside to the inside.

The element must be cleaned at each oil change and new gaskets must be installed. In case the element becomes clogged, a by-pass valve permits oil to continue to feed the system.

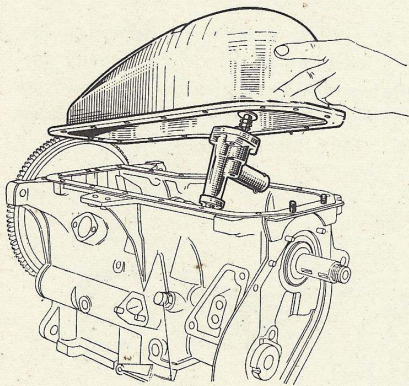
The oil pressure warning light sensing unit is installed in the oil filter body and completes the circuit to the red light on the instrument panel when the oil pressure drops to less than 10 psi.



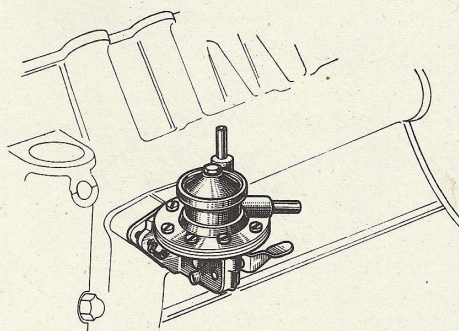
ENGINE

ENGINE LUBRICATION

- 17 - Install the oil pan using a new cork gasket.



- 19 - Install: — the oil filter
— the fuel pump

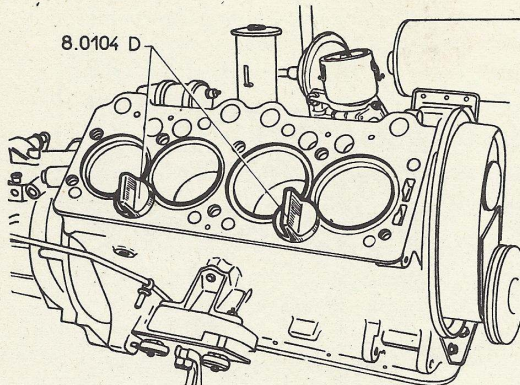


- the breather pipe
- the valve lifters in the order of their removal.

VALVE LIFTERS

The cast valve lifters are the same as used in the 403 engine. They are .9448" in diameter and 2.677" in height. A repair size is available which is .9527" in diameter.

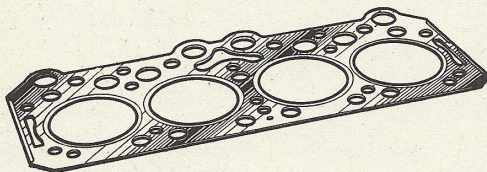
- 20 - To install the cylinder head:
- Remove the cylinder sleeve blocks 8.0104D.



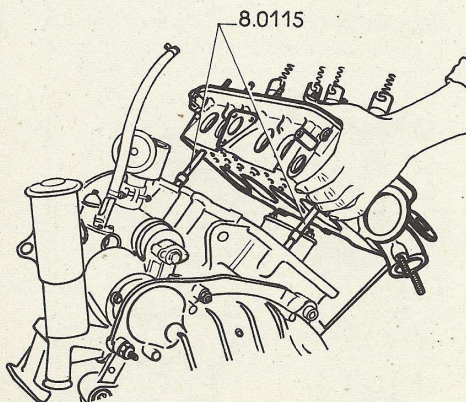
- Coat the two sides of the new cylinder head gasket with linseed oil.
- Place the gasket onto the block with the word "dessus" up. The crimped edges down against the block.

CYLINDER HEAD GASKET

The head gasket is made up of a sheet of reinforced asbestos, clamped between two sheets of galvanized steel. The corners have been cut off to permit measurement of the thickness with the head bolts torqued which should be $.061'' \pm .004''$.



- Center the gasket with the cylinder head guides 8.0115 in the two end bolt holes 8 and 12.
- Fit the head into position over the guides engaging the rod of the block water drain valve in its bracket.

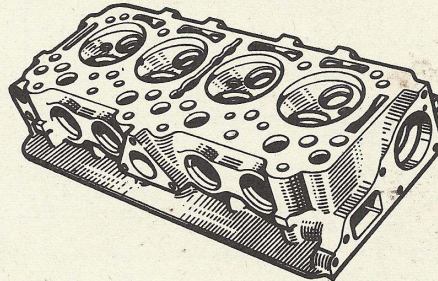


CYLINDER HEAD

The cylinder head is cast in aluminum alloy "Alpax" with offset spherical combustion chamber domes.

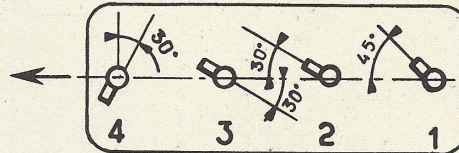
Height of the cylinder head is $3.642'' \pm .005''$.

The maximum deformation from a plane surface allowed is $.002''$. If more than this amount is found, the gasket surface may be planed up to $.040''$. Thus the minimum height of the cylinder head is $3.602''$. No further cut is permitted.



SPARK PLUG PROTECTOR TUBES

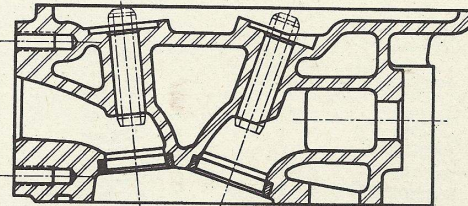
In case one or more of the spark plug protector tubes are replaced; they must be pressed in so that the plug covers face the position shown. Use Permatex #1 to prevent leaks.



VALVE SEATS AND GUIDES

The valve seats and guides of cast iron are removed and installed by immersing the cylinder head in boiling water. They are available in standard and oversizes. The head must be reamed to a diameter of $.003''$ smaller than the replacement guide or seat. After new guides are installed, they must be reamed to 8.5 mm., then fitted to allow $.008''$ valve stem clearance with an adjustable reamer.

After new valve seats are installed, they must be faced to angles of 30° intake and 45° exhaust. The chamfered edge of the seat should not exceed $1/16''$.

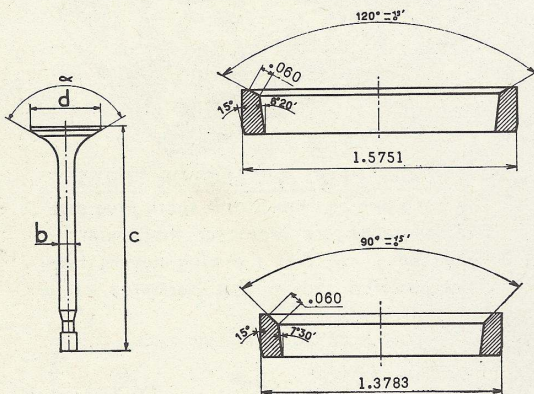


VALVES

The valves are nickel chrome steel. The stem of the exhaust valve is chromed along its bearing surface.

Specifications of the Valves

Valve	Angle	Diameter Of Head (d)	Diameter Of Stem (b)	Total Length (c)
Intake	30°	1.535"	8.52 mm. or .3354"	4.7"
Exhaust	45°	1.319"	8.5 mm. or .3346"	4.4"

**VALVE SPRINGS**

Each valve is held by two springs, an outer spring and an inner spring, both interchangeable among the intake and exhaust valves.

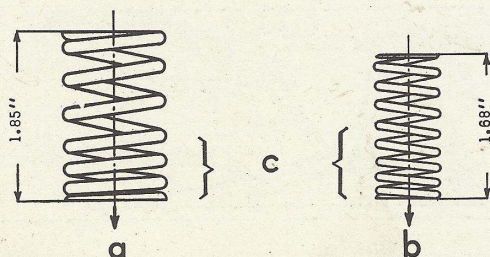
Specifications of the Valve Springs

Outer Spring: Free height: 1.85"
Height under 80 lbs. of weight: 1.33"

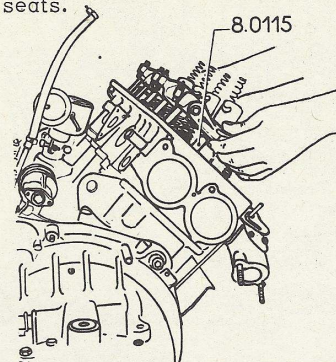
Inner Spring: Free height: 1.68"
Height under 50 lbs. of weight: 1.16"

The end with the compressed coil (c) should be placed toward the cylinder head.

NOTE: The valve springs are protected against oxidation by a synthetic varnish. Use only gasoline or oil products to clean them.



- 21 - Insert the pushrods. The longer are exhaust and the shorter are intake. Install the rocker arm assemblies guiding the pushrods into their seats.

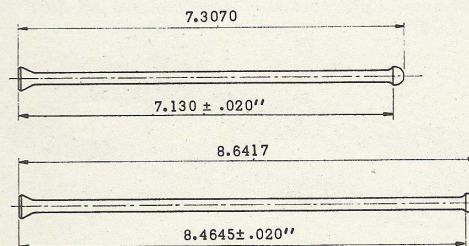
**PUSH RODS**

The push rods are made of special steel with cyanide steel ends.

The length of the intake push rod is 7.3070".

The length of the exhaust push rod is 8.6417".

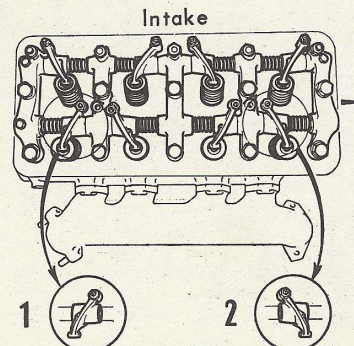
The maximum bend permitted in a push rod is .016".

**ROCKER ARMS**

The forged steel rocker arms are positioned on the shaft by eight springs with a free height of 1.81".

There are two symmetrical types of rocker arms:

- 1st Type: Intake 2 and 4 and Exhaust 1 and 3
2nd Type: Intake 1 and 3 and Exhaust 2 and 4



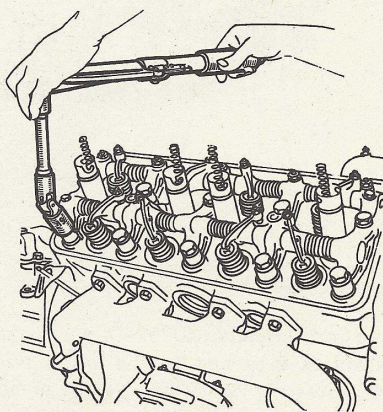
ROCKER ARM ASSEMBLY

Two rocker shafts are held by five supports. Each support is held by two cylinder head bolts, which assures an equal pressure distribution.

The supports #2 and #4 are interchangeable. Upon installation of the shafts, position the oil holes to the center of the assembly; that is, facing each other.

22 - Begin to mount the head following this order: (Do not torque at this time)

- head bolts #3 and 7
- #1, 2, 4, 6, 9, 11
- Rocker assembly nuts, tighten moderately.
- Remove the guides 8.0115 and replace with head bolts #8 and 12.

**HEAD BOLT TORQUING SEQUENCE**

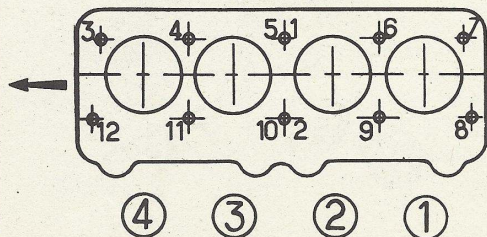
The head bolts must be torqued in two stages, with a torque wrench in the order indicated.

First Torque: 35 ft. lbs.

Final Torque: 60 ft. lbs.

600 miles after installation of the head the bolts must be torqued again to 60 ft. lbs. with the engine cold. The valves must be then readjusted.

Torque Sequence



23 - Follow the sequence shown and torque the head bolts first to 35 ft. lbs., then to 60 ft. lbs. Use a torque wrench and a 19 mm. socket.

NOTE: Use a universal joint to torque #6 and 7.

24 - Adjust the valves:

Intake: .005"

Exhaust: .012"

NOTE: After 600 miles of driving the head must be retorqued with the engine cold and valves readjusted to:

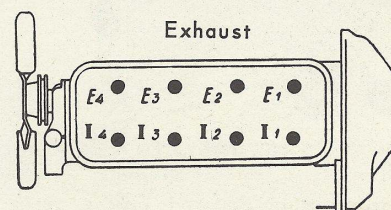
Intake: .004"

Exhaust: .010"

ADJUSTMENT OF THE ROCKER ARMS

The normal adjustment of valve play is intake .004" and exhaust .010". When an engine is assembled the play is set at intake .005" and exhaust .012".

With This Valve At Full Open Position	Adjust These Valves	
Ex 1	In 3	Ex 4
Ex 3	In 4	Ex 2
Ex 4	In 2	Ex 1
Ex 2	In 1	Ex 3



25 - Install all accessories, adjust the control cables, connect hoses and wires. Reconnect the battery and reset the electric clock.

26 - Install oil and water.

THEORETIC ADJUSTMENT OF VALVE TIMING

With a temporary clearance of .028" in the intake and exhaust valves of a given cylinder:

	Flywheel Angle	Piston Position
Intake opening (advance)	0° TDC	0° TDC
Intake closing (retard)	30° 30' ABDC	2.720" From TDC
Exhaust opening (advance)	35° BBDC	2.689" From TDC
Exhaust closing	4° 30' ATDC	.007" From TDC

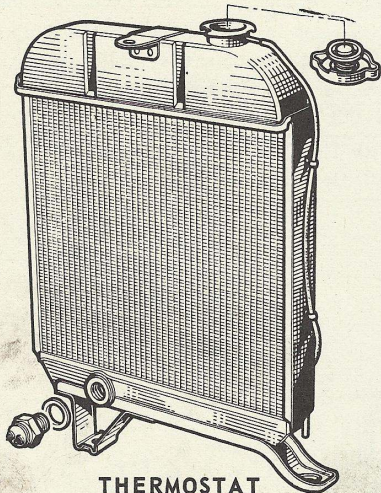
ENGINE COOLING

The cooling system consists of a radiator, a thermostat and a centrifugal type water pump with an automatic clutch engaged fan, maintaining the engine at its optimum operating temperature.

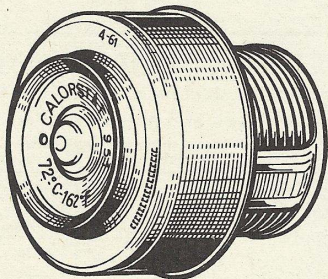
Radiator

The coolant capacity of the radiator is 2½ quarts and the cooling surface is 178 square inches.

Starting with Serial #4079240, the 404 uses a pressurized cooling system. The radiator cap pressure valve is set at 4 p.s.i. which raises the boiling point of the coolant to 224° F.



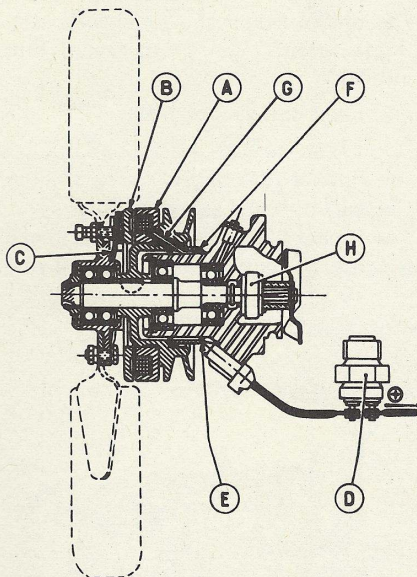
The thermostat, located in the pump outlet hose, may be one of two temperature ranges. Calorstat #951 starts to open at 162° F. and is in its fully open position at 176° F. Calorstat #944 starts to open at 190° F. and is fully open at 206° F. A 1/16" hole in the valve permits circulation to heat the bellows according to the temperature of the water when the valve is closed. The valve opens to 3/8 inch.

**ENGINE****AUTOMATIC FAN CLUTCH**

The engaging of the fan is controlled by the thermocontact (D) operated by the temperature of the engine coolant.

The fan clutch, made up of:

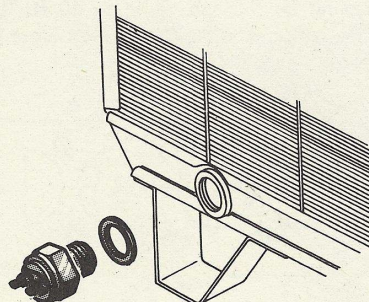
- an electro-magnet (A) which is a part of the water pump pulley,
- an armature (B) supported by three arms (C) onto the fan hub,
- the fan on the fan hub with three gap adjustment screws.



Magnetic Clutch Fan Thermocontact

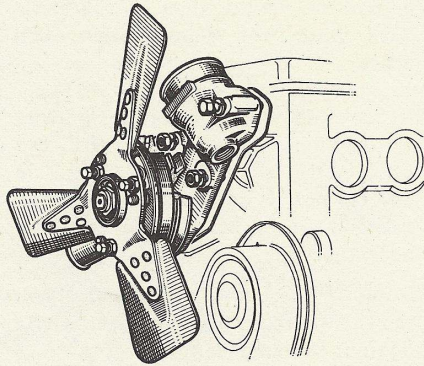
Up to Serial Number 4079240, the thermocontact is attached to the water pump body. Starting with this serial number the switch, of a different rating, is fitted to the lower tank of the radiator.

	Early Model	Late Model
Contact temperature	183° F	180° F
Cut-off temperature	167° F	155° F
Tolerances ± 3°		



WATER PUMP REMOVAL

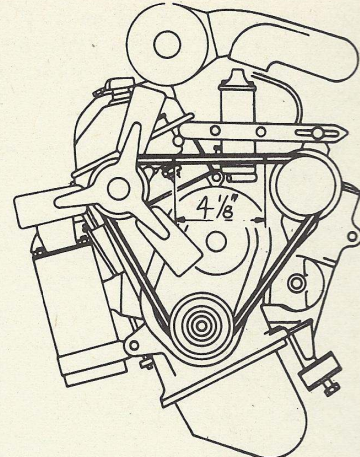
- 1 - Install fender covers, disconnect battery, and drain cooling system.
- 2 - Remove the water outlet hose and the fan belt.
- 3 - Disconnect
 - the lower (inlet) hose and the heater hose
 - thermocontact wire #57 or the brush holder, depending on the type of water pump.
- 4 - Remove the five attachment screws and remove the pump.

**WATER PUMP INSTALLATION**

- 1 - Carefully clean the mating surfaces of the water pump and the head.
- 2 - Apply Permatex #2 on both sides of the new gasket.
- 3 - Proceed in the reverse order of removal.

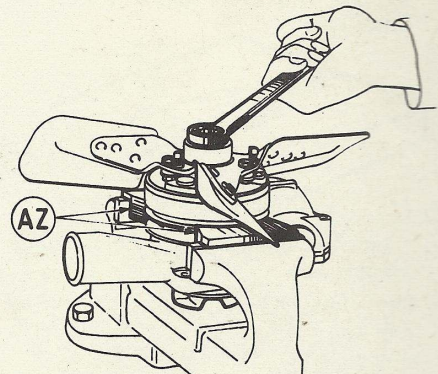
Fan Belt Tension

Before installing the fan belt, draw two marks on the top of the belt, four inches apart. After tightening the belt, the mark should be no more than 4-1/8 inches apart, even though it may seem loose.

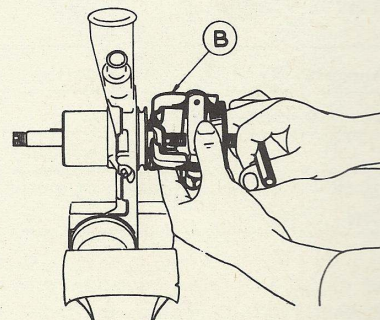
**WATER PUMP DISASSEMBLY**

- 1 - Hold the pulley in a vise with tool 8.0107 AZ. Unlock and remove the center nut.
- 2 - Hold the pump body by hand and tap the end of the shaft with a mallet. Remove the half-moon key from the shaft.

NOTE: Do not rest the pulley on the bronze collector ring.

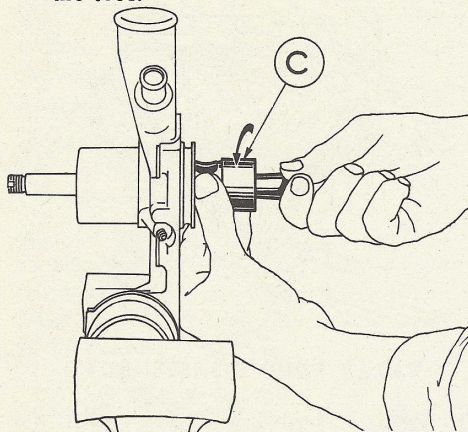


- 3 - Remove the impeller with puller 8.0107 B.

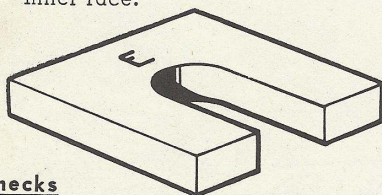


ENGINE

- 4 - Insert a few drops of oil under the collar of the seal. Using extractor 8.0107 C, remove the seal, rotating the tool.



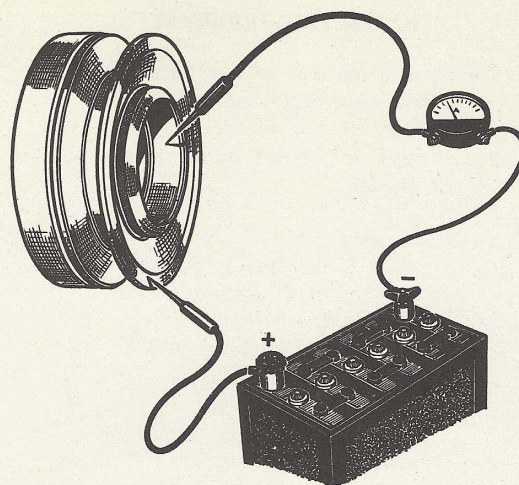
- 5 - Remove the front bearing snapping.
- 6 - Place the pump body in boiling water for about a minute. Then remove the shaft with its two bearings on a press.
- 7 - If necessary, the front or rear bearing may be pressed off the shaft with a fork plate (e) to catch the inner race.

**Checks**

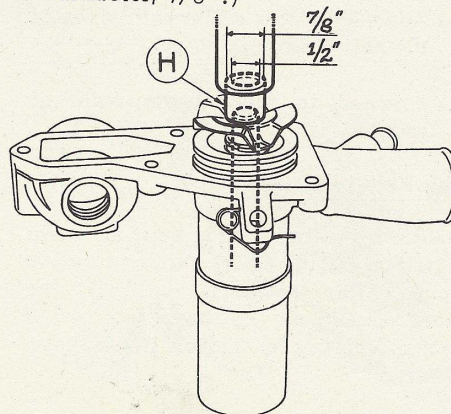
- Check the condition of the bearings and the seal.
- The clutching surface of the pulley may show signs of seizure which is normal.
- Check the electromagnet with an ammeter and a 12-volt battery - one lead to the collector ring and the other to the pulley.

Ammeter Reading	Indication
.6 amps	Normal
0	Open winding
more than .6 amps	Short or grounded circuit

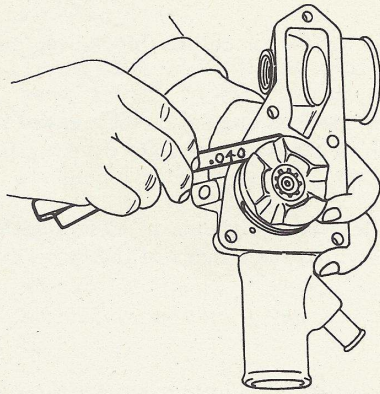
This check may also be made with an ohmmeter which should indicate 20 ohms.

**WATER PUMP REASSEMBLY**

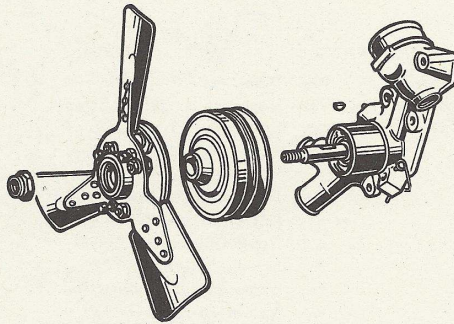
- 1 - Coat the bearings with multi-purpose grease and install them on the shaft with their open sides facing each other.
- 2 - Place the pump body in boiling water for a minute. Then install the shaft with a press or a drift. Be careful not to cock the shaft in the housing while starting to seat the bearings.
- 3 - Position the bearing snapping. Then tap the shaft until the bearing seats against the snapping.
- 4 - Lubricate the rear end of the shaft.
- 5 - Install a new seal on the shaft. Engage the impeller into the driving fingers of the seal and over the splines on the shaft. Press the impeller on gently with a bushing (H). (Inside diameter 1/2", outside diameter, 7/8".)



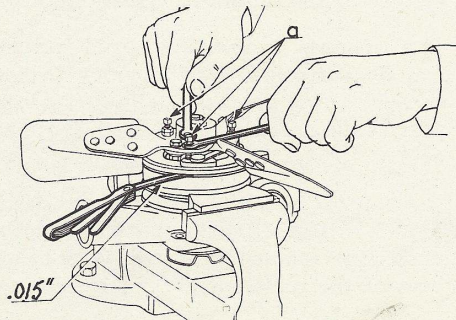
- 6 - Check and reset, if necessary, the position of the impeller. The impeller should rotate without run-out, with a maximum clearance of .040" between impeller blades and the pump collar.



- 7 - At the front end of the shaft, install the half-moon key, the electro-magnet pulley and the fan.



- 8 - Torque the center nut to 25 ft. lbs. and stake the nut while holding the pulley with 8.0107 AZ in a vise.
- 9 - Check the gap between the fan and the magnet. The clearance at all points around the hub should be set at .015" by turning the 3 adjustment screws. Lock the screws.



- 10 - The proper functioning of the fan clutch may be tested on the bench by connecting the positive terminal of a battery to the brush wire and the negative terminal to the pump body.

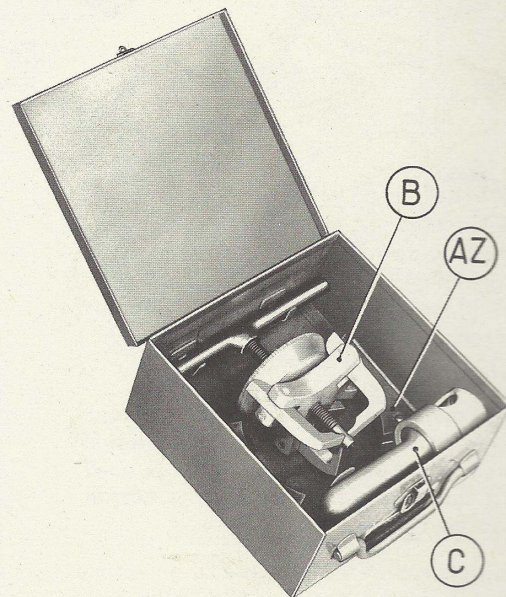
- 11 - After installation on the car, start the engine to allow the temperature to reach 183° F. At this point, the fan should be engaged and should disengage when the temperature falls to 167° F.

In case of failure, to operate:

- Check fuse F3 under the dashboard.
- Short circuit the two terminals of the thermocontact. If the fan engages, replace the thermocontact.
- If the fan engages out of the above temperature limits, replace the thermocontact.

SPECIAL TOOLS

In order to facilitate the overhaul of the water pump, a special tool kit #8.0107Y can be ordered from the distributor.



The tool kit includes:

- AZ = Jaws - Pulley holder
- B = Puller - Impeller
- C = Puller - Seal

ENGINE

ENGINE CARBURETION AND EXHAUST

The 404 engine was designed with balanced breathing in both the intake of the fuel and air and the exhaust of burned gases.

The length of the entire air induction system from the air cleaner inlet to the valve seats is designed so that the resonant frequency of the column of air contained is perfectly tuned to the valve frequency at the maximum torque speed of the engine.

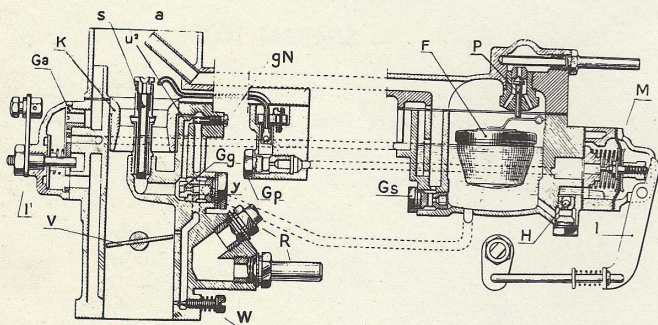
At 2250 RPM an additional force, produced by the sound waves of the air column, packs the air-fuel mixture into the cylinder, increasing the torque.

This phenomenon enables the maximum torque to be obtained at a lower engine speed and the torque curve to be very flat. The flat or even torque curve in turn allows the horsepower to continue to rise until the maximum engine speed of 5400 RPM.

A closed resonator located at the front end of the exhaust manifold not only aids in silencing the engine with a minimum loss of power, but aids the breathing by absorbing the shocks of the valve outlets and maintains an even pressure on the outlet ports.

CARBURETOR

The SOLEX, Type 32 PBICA, downdraft carburetor is heated by water circulating through the cooling system, which eliminates the possibility of "icing up", caused by cold and humid weather conditions.



- a Air metering jet
- F Float
- Ga Enricher jet (air)
- Gg Main jet
- Gp Pump jet
- Gs Enricher jet (gas)
- gN Idle jet
- H Pump ball check
- K Venturi
- I Pump control lever
- Il Enricher control lever
- M Pump diaphragm
- P Needle valve
- R Water circuit connection
- s Emulsion tube
- U² Calibrated orifice for idling air bleed
- V Throttle butterfly
- W Volume control screw
- Y Main jet holder

Air Intake

The air required for the idle speed, enricher, main jet mixture, and for ventilating the float bowl is drawn from the main air intake of the carburetor and thus through the air filter.

Enricher

The manually operated enricher insures proper starting and driving carburetion during cold weather operation. It is used until the engine has reached its normal operating temperature.

The richness of the mixture can be varied with the control cable on the dashboard. Full richness of the mixture is obtained when the control cable is pulled all the way out from the dashboard.

During the warm-up period, the control cable is pushed back in half way.

Idle Speed

For idle speed, feeding of the engine is insured by the jet gN.

The richness of the idle speed mixture can be corrected with accuracy by the volume control screw (W), allowing a very precise adjustment of the speed of the engine.

Air intake is supplied through a calibrated orifice (U²) in the body of the carburetor located in a recessed space beneath the venturi (K).

Driving Speed

For driving speed, the fuel is provided by the main jet (Gg) and the air by the venturi (K). The correct balance is automatically obtained by the air passing through and being calibrated by the air metering jet (a).

The emulsion tube (S) is located underneath the air metering jet. It should be removed and cleaned at every carburetor overhaul. The calibration of this part should not be changed.

Pump

The pump injects a certain amount of supplementary fuel at the time of acceleration.

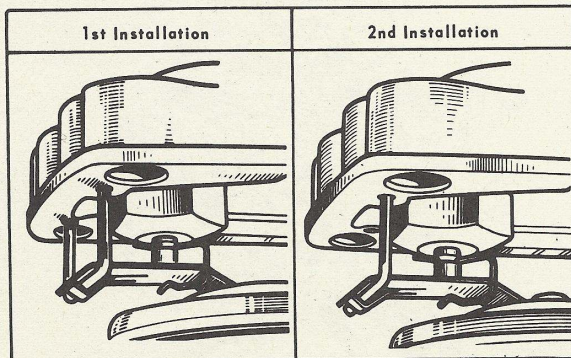
The throttle is closed in idling position, the diaphragm (M), held in position by a spring, allows a supply of fuel to be built up.

The diaphragm (M) is connected to the accelerator through the throttle shaft and the lever (I). When the throttle is opened, the diaphragm is pushed which forces the fuel from the supply through the pump jet (Gp) into the nozzle and in the venturi.

The dimension of the pump jet (Gp) controls the rate of discharge.

When cleaning the carburetor, check and clean the screen located on the pump ball check (H).

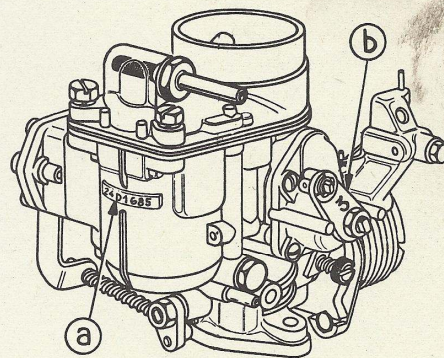
The needle valve linkage was modified from "U" shape to "L" shape starting with Serial #4068228.



The last three figures (a) stamped on the bowl indicate modifications and changes of adjustment in carburetor.

	(682)	(683/4/5/6)
Venturi	25	25
Main Jet	130	130
Air Metering Jet	160	170
Idle jet (gas)	55	50
Idle jet (air)	150	220
Idle (air) on float chamber bowl	180	0
Enricher Jet	110	110
Choke (air)	6.5	6.5
Emulsion Tube	19	19
Acceleration pump Jet	45	45
Acceleration pump Injector	50	50
Float Weight	5.7 g	5.7 g
Needle Valve	1.7	1.7

The 686 type carburetor has a new carburetor body to reduce fuel consumption at low rpm.



The number stamped on the choke control level (b) indicates the model vehicle for which the carburetor is adjusted.

The number 3 is used for the 404 left hand drive model.

ENGINE

Removal of Carburetor

- 1 - Loosen the air intake silencer hose clamps and remove hose.
- 2 - Remove the fuel line hose.
- 3 - Remove the vacuum advance hose.
- 4 - Remove the water intake and water outlet hoses using care not to release the coolant.
- 5 - Disconnect the accelerator cable.
- 6 - Disconnect the choke control cable by loosening the set screw.
- 7 - Remove the carburetor attaching nuts at the flange.
- 8 - Remove the carburetor assembly.

Disassembly of Carburetor

- 1 - Remove the float chamber cover, by removing the three bolts.
- 2 - Remove the float from cover by releasing the needle valve lock clip and sliding the float arm off pivot pin.
- 3 - Remove the needle valve assembly from the cover.
- 4 - Remove the pump injector tube with a screw driver.
- 5 - Remove the correction jet and emulsion tube.
- 6 - Remove the enricher jet.
- 7 - Remove the pilot jet.
- 8 - Remove the main jet carrier and jet.
- 9 - Remove the pump jet.
- 10 - Remove the pump ball check valve. (Check for a stuck ball.)
- 11 - Remove the enricher air jet.
- 12 - Remove the volume control screw.
- 13 - Remove the choke control cover.
NOTE: Choke lever has identifying number (3).
- 14 - Remove the accelerator pump housing with a screw driver. (Remove control rod cotter pin.)
NOTE: Operations 15 to 18 are used only for replacements of parts.
- 15 - Remove the nut on throttle valve spindle.
- 16 - Remove the throttle butterfly set screws.
- 17 - Remove the throttle butterfly.
- 18 - Remove the valve spindle.

Reassembly of the Carburetor

Clean all parts with compressed air, check the flanges for clean even surfaces, and install new gaskets.

Use reverse order, being certain that each jet is in its proper location.

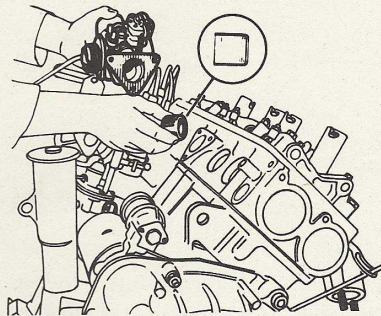
NOTE: Do not interchange the pump ball check and the enricher jet.

Installation of the Carburetor

Install the diffuser with the small inside diameter in the cylinder head.

Install the carburetor with a new gasket.

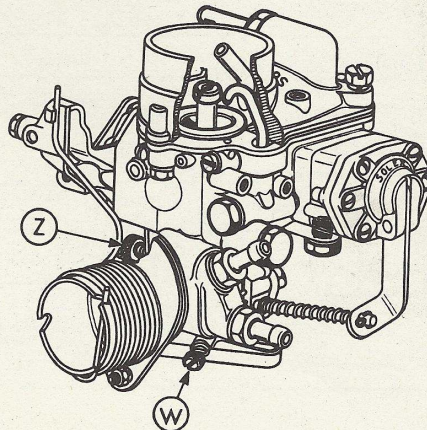
Reconnect the fuel line, the vacuum hose, the enricher cable and the accelerator cable, with a play of 1/16".

**Idle Adjustment**

The engine must be at normal running temperature, with the spark plugs and points in good condition and properly adjusted.

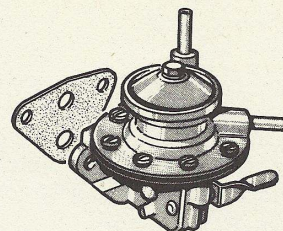
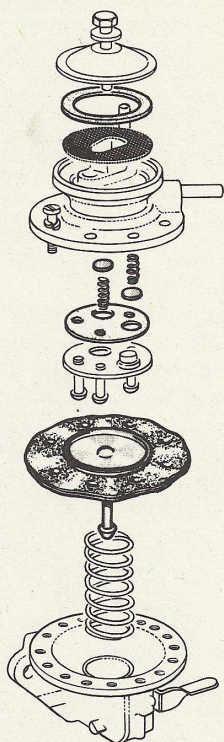
- 1 - Tighten slightly the stop screw (Z) of the throttle in order to increase the RPM of the engine.
- 2 - Loosen the volume control screw (W) until the engine starts to idle roughly; then tighten the volume control screw slowly until the engine idles smoothly.
- 3 - Loosen stop screw (Z) slowly to adjust the idle at approximately 620 RPM.

NOTE: The volume control screw should never be completely tightened.



Fuel Pump

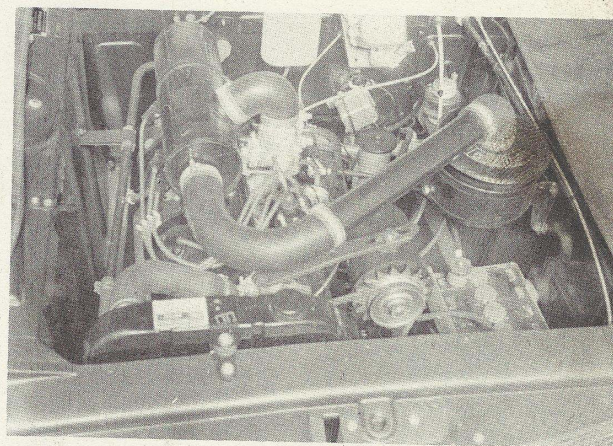
The full flow of the fuel pump is 6.5 gallons an hour under 1 P.S.I. between 2000 and 4000 RPM's.

**Air Filter**

The oil bath air cleaner and silencer are part of the balanced breathing system. The oil bath element and the cleaner body should be cleaned at the time of engine oil change. The oil should be renewed with SAE #30 or #40 engine oil. The silencer requires no periodic service.

In case of an abnormal fuel consumption, check the static pressure of the pump following this procedure:

Install a pressure gauge rated from 0. to 7 P.S.I. in the fuel line. The pressure should not exceed 3 P.S.I. The pressure can be lowered by installing one or more gaskets between the pump flange and the block.

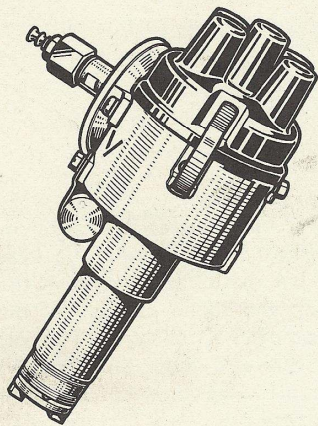


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ENGINE - ELECTRICAL

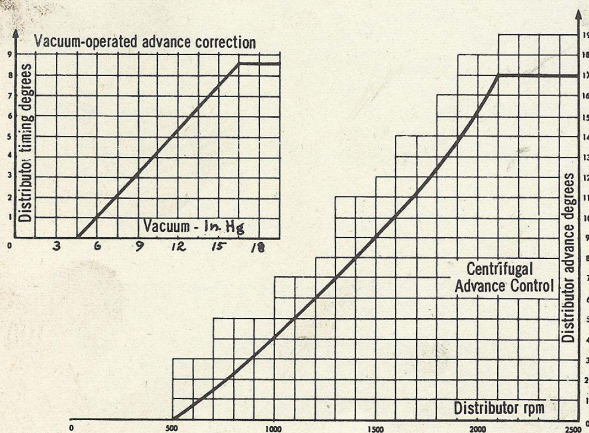
Distributor

The Ducellier type distributor contains automatic centrifugal and vacuum advance mechanism. An initial advance is set at 11° of the flywheel, which corresponds to a piston position of .033" below top dead center.



With the recommended point opening of .020", the cam angle should be $57^\circ \pm 2^\circ$. The point opening may be varied by .002" to obtain the proper cam angle.

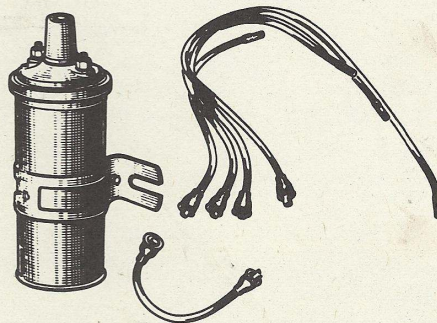
The distributor may be tested for operation of the advance mechanisms on a distributor test bench, using the charts. An accurate adjustment of the cam angle may be obtained on a test bench.



The contact points are self cleaning for a long life. The vacuum diaphragm linkage places the movable contact in a new position on the stationary contact with any change in vacuum. The serrated cam adjustment on the linkage should never be attempted except on a test bench. To locate the correct position of the cam: when properly set, the distributor will have the same dwell angle at no vacuum as at 18 inches Hg. vacuum. At intermediate points, the dwell angle may drop from one to five degrees.

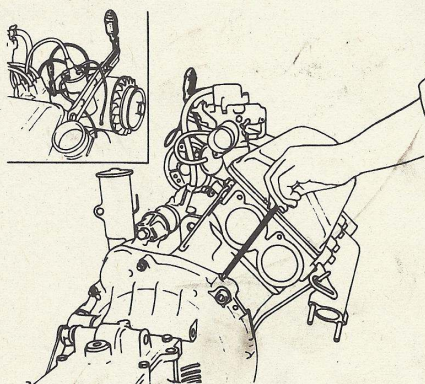
High Tension Wiring

The coil and spark plug wires are resistance controlled to reduce radio and television interference. They should never be cut or spliced and additional radio filters should not be installed in the secondary circuit. If any damage or cracks are found in the outer cover of the wire, the complete section of the wire should be replaced.

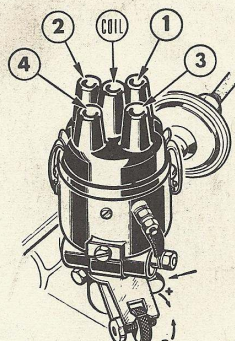


Ignition Timing

- 1 - After having set the points opening at .020" or the dwell angle at $57^{\circ} \pm 2^{\circ}$ on the bench, install the distributor into the support equipped with knurled knob and collar. Face the vacuum fitting toward the fuel pump. Turn the rotor to engage the shaft into the slot of the drive gear.
- 2 - Insert an 8 mm. rod (spark plug wrench handle) into the hole on the top right side of the clutch housing. Turn the engine slowly with the starting crank. At the firing point of cylinder 1 or 4 the rod will drop into the slot on the flywheel.
- 3 - Connect one lead of a test lamp to wire #3 on the distributor terminal and the other lead to ground. Turn on the ignition switch.



- 4 - Turn the distributor body to the left. The test lamp will be off. Rotate the distributor slowly to the right. At the point where the lamp lights, tighten the adjustment collar.
- 5 - Remove the rod and re-check the setting by turning the engine. The rod should drop into the slot at the exact moment that the lamp goes on. Now any slight adjustment may be made by turning the knurled knob.
- 6 - Lock the collar nut.
- 7 - Install the distributor cap with the spark plug wires. Cylinder wire #1 is nearest the vacuum advance fitting.

**Spark Plugs**

Replacement spark plugs may be of the following types:

- AC 44F
- Champion L8 - L10
- Autolite AE6

The correct gap between electrodes is: .025".

Before Installation:

- Clean the thread of the socket and smear with lubriplate.
- Install a new washer gasket on each spark plug.
- Torque the spark plugs to 15 ft. lbs.

