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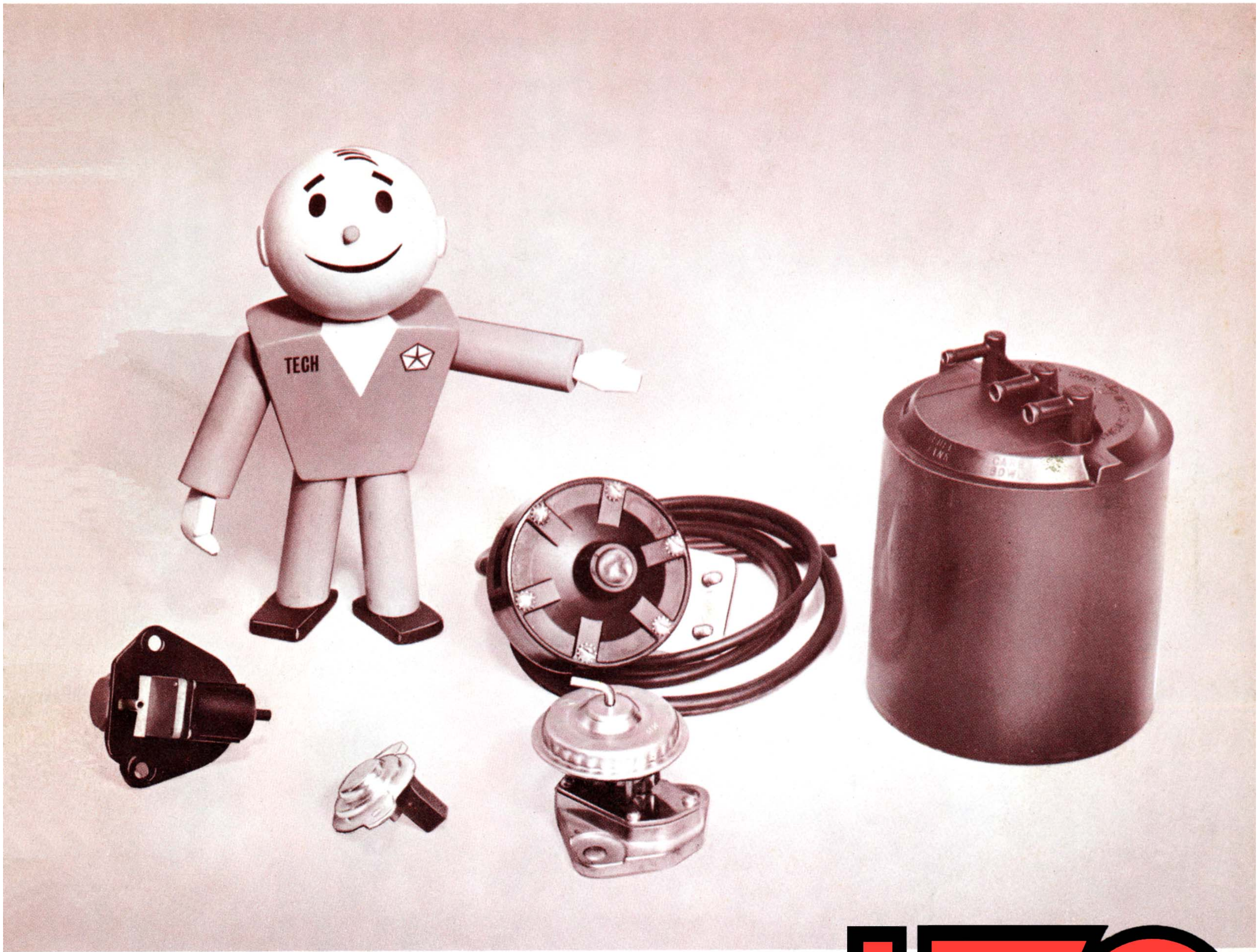
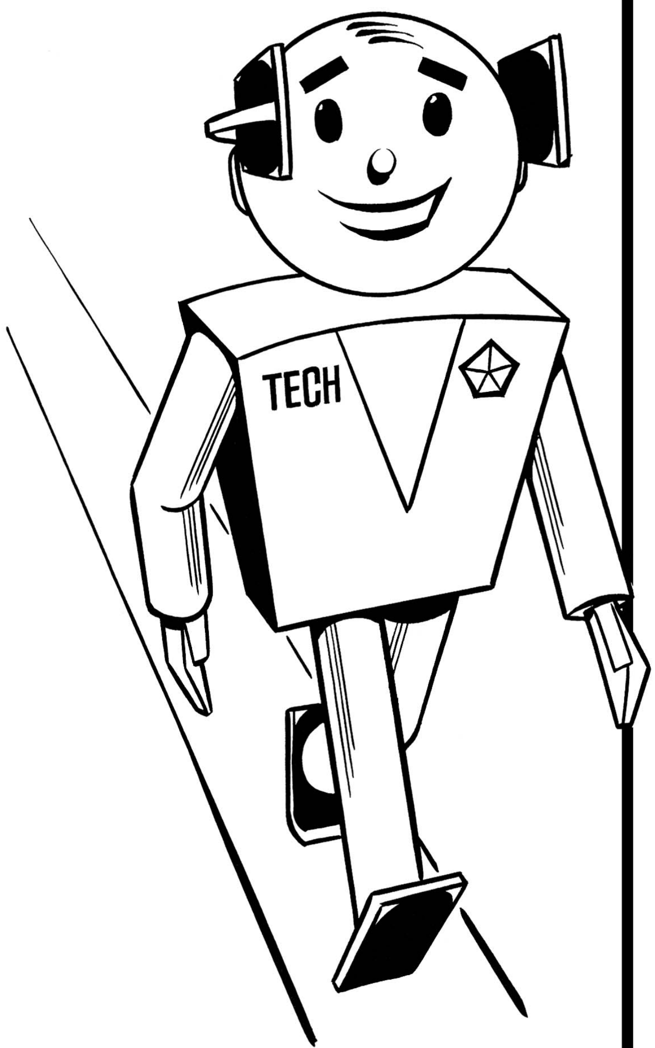


REFERENCE BOOK 1 '73

1973 CLEANER AIR SYSTEM HIGHLIGHTS

PLYMOUTH · DODGE · CHRYSLER · IMPERIAL · DODGE TRUCK

CHRYSLER MOTORS CORPORATION



FOLLOW THE STRAIGHT AND NARROW PATH...

Over the past several years, emission control on Chrysler Corporation vehicles has evolved from a simple crankcase ventilation system into a sophisticated, multi-unit system which is integrated with the engine and its ignition, carburetion, fuel and exhaust systems.

Based on the pattern of emission control system development up to the present, we can expect the need to maintain close adjustment tolerances will continue. It also appears that servicing requirements will become still more demanding as the control system evolves to meet stiffer government regulations slated for coming models.

From all this, it should be obvious that we are well along into a new era of servicing which demands strict adherence to recommended procedures and specification limits. In other words, when emission controls are involved, there are no short cuts. It also means that you'll need a thorough understanding of emission system operation and continued updating to stay on top of the latest developments.

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EMISSION CONTROL FOR 1973

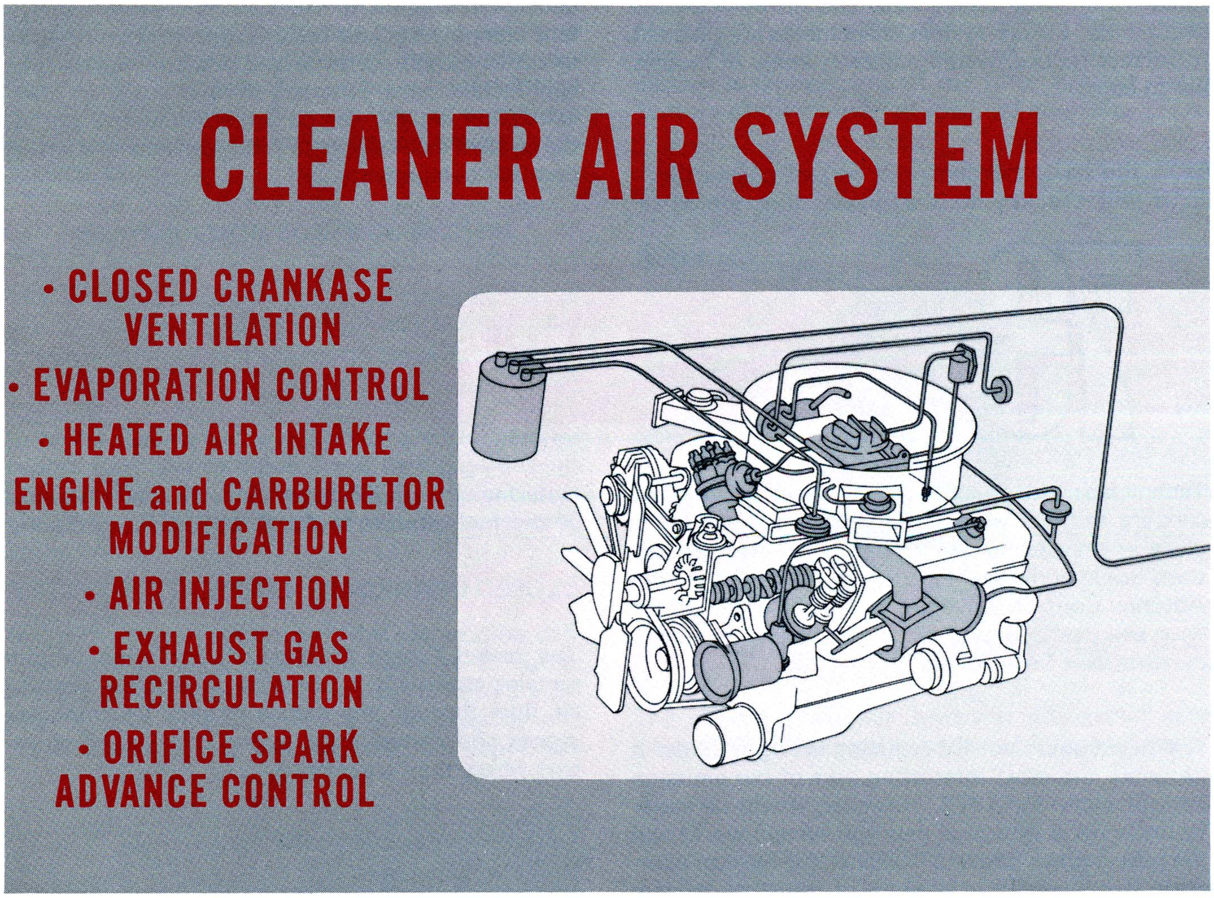


Fig. 1—1973 Cleaner Air System

The 1973 Cleaner Air System marks another milestone in the development of emission controls on Chrysler Corporation vehicles. On previous models, emission of the three major air pollutants was reduced considerably, with the main emphasis directed to the control of unburned hydrocarbons and carbon monoxide. In current models, the reduction of nitrogen oxides moves forward with the addition of new control equipment along with refinements in the existing system.

NO_X IS A SMOG COMPONENT

Nitrogen oxides, or NO_X emissions, contribute largely in the formation of photo-chemical smog. These emissions result mainly from a reaction which occurs at high combustion temperatures, so NO_X control is based on holding peak combustion temperatures below critical levels.

DILUTION LOWERS TEMPERATURES

In the Cleaner Air System, combustion temperatures are lowered by diluting the intake mixture with controlled amounts of exhaust gas along with reduced cooling system operating temperatures. A controlled delay of the ignition vacuum advance action also contributes to temperature reduction.

EMISSIONS ARE GREATLY REDUCED
Compared to cars without emission controls, the action of the Cleaner Air System in our 1973 cars reduces total hydrocarbon emissions about 83%, carbon monoxide about 70%, and nitrogen oxides about 50%. Future system refinements are planned to further reduce overall emission levels of models yet to come.

TUNE-UP IS STILL IMPORTANT
As in the past, thorough and correct engine tune-up is still the key to the proper functioning of vehicles with emission controls. You may remember from earlier sessions that a good engine tune can reduce exhaust emissions considerably, even on older cars which only have positive crankcase ventilation. In any case, old car or new, the engine must be in good mechanical condition for the tune-up to be effective.

THINK ON A SYSTEM BASIS
Because operation of the various Cleaner Air System components and basic engine functions all interact so closely, settings and adjustments must be approached on a complete system basis. In other words, tuning the engine or servicing any one of the system's components must consider the effect on other components.

MTSC '73

CAS SUB-SYSTEMS

Technicians with several years of experience on our cars are familiar with the changes that have taken place in the Cleaner Air System since its introduction. Some components, such as the CAP Vacuum Advance Control Valve are no longer used. Others have been refined, and of course, several new components have been added.

TAKE EACH IN ITS TURN
The new equipment for reducing nitrogen oxides is probably the most interesting part of our emission control story for 1973. However, it will be easier to understand how this new sub-system works and the part it plays in overall Cleaner Air System operation if we cover it in a review of the whole system to see what is carried over, what is changed, and what is new.

THEY ALL WORK TOGETHER
The 1973 Cleaner Air System includes several control sub-systems along with related engine and carburetor modifications. The sub-systems include closed crankcase ventilation, evaporation control, heated intake air, air injection, exhaust gas recirculation, and orifice spark advance control. In the engine, special combustion chamber, intake manifold, and camshaft design features help the sub-systems in their work. Modifications in carburetor metering and choking provide more precise control of the fuel mixture under all operating conditions.

CLOSED CRANKCASE VENTILATION SYSTEM

The sealed Closed Crankcase Ventilation System remains essentially unchanged. It provides positive air flow through the engine to pick up crankcase vapors and deliver them to the combustion chambers where they are burned.

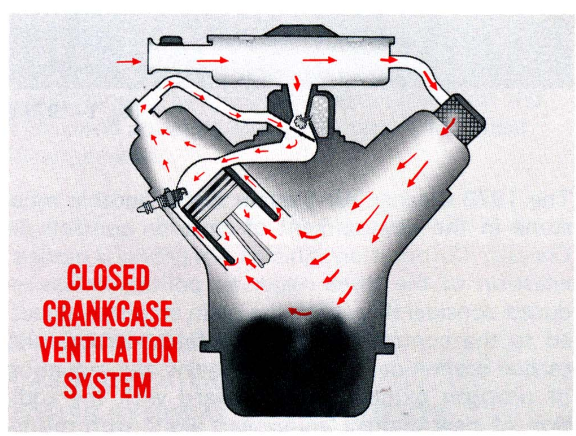


Fig. 2—System prevents emission from crankcase

CRANKCASE VAPORS ARE BURNED

Incoming air first passes through the carburetor air cleaner housing and then enters the engine through the crankcase inlet air cleaner. The vapor-laden air leaves the engine through the PCV valve on its way to the intake manifold where it becomes part of the intake mixture.

VAPORS ARE SEALED IN

If cylinder blowby is excessive for any reason, or the PCV valve clogs, crankcase pressure builds up and causes the vapor to flow back through the carburetor air filter into the carburetor and intake manifold. This reverse flow can load up or clog the air filter but no crankcase vapors can escape to the atmosphere.

EVAPORATION CONTROL SYSTEM

The Evaporation Control System prevents loss of fuel vapors from the carburetor and fuel tank due to evaporation or fuel expansion spillage.

VAPORS COLLECT IN CRANKCASE

In earlier models with evaporation control, gasoline vapors from the carburetor and tank pass through vent lines to the crankcase where they are held until removed by the action of the crankcase ventilation system.

CURRENT MODELS HAVE CANISTER

In 1972 and current models, the evaporation control system works the same way as in earlier models except that the vapors are held in a separate canister located in the engine compartment. When the engine is running, the fuel vapors are purged from the crankcase or canister into the intake manifold and combustion chambers.

SYSTEM HAS FEW CHANGES

Except for a new vapor-holding canister, the Evaporation Control System is carried over from 1972 without major changes. The new canister has only three line connectors and no longer includes a purge line valve. Some higher performance models continue to use the previous model two-stage canister which has a purge valve and four line connectors. The only service required for the current system is replacement of the filter element in the bottom of the canister at required intervals.

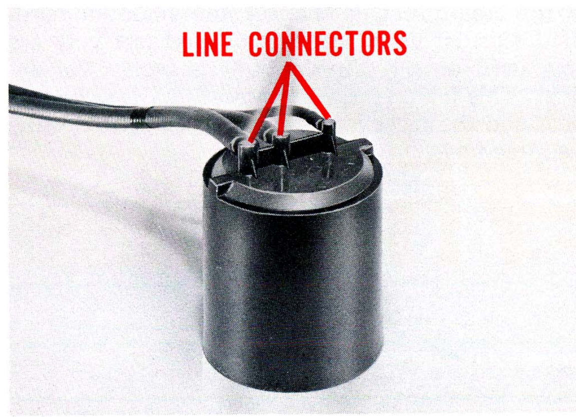


Fig. 4—New canister has three ports

HEATED INTAKE AIR SYSTEM

The Heated Intake Air System is also carried over from 1972. Heating the intake air in cold weather

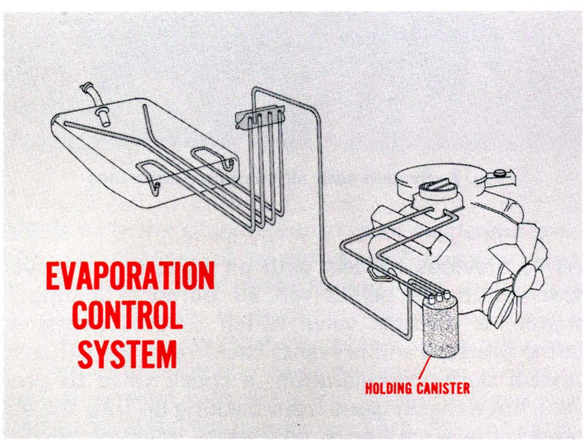


Fig. 3—System has improved canister

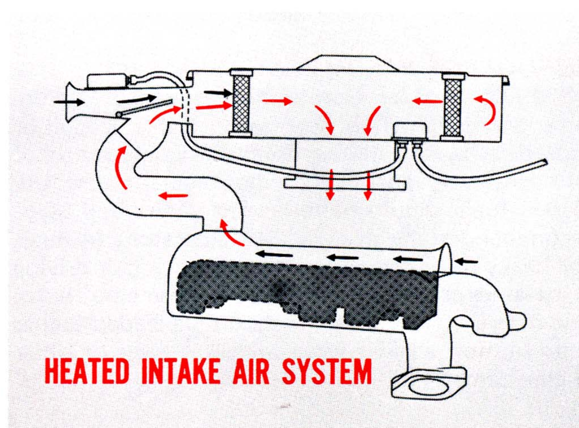


Fig. 5—Heated air provides warm-weather driveability

provides warm-weather driveability with less choking during warmup. As a result, engine design, operating temperatures, ignition timing, and carburetor calibration have all been modified to more closely suit average operating conditions, which means that emissions are reduced during warmup.

TEMPERATURE CONTROLS AIR FLOW

The intake system is operated by manifold vacuum which is controlled by a temperature-sensitive bimetal valve located in the carburetor air cleaner.

ENGINE CHANGES

In the area of engine changes, the induction-hardened exhaust valve seats introduced last year are now used on all Chrysler-built passenger car engines. This feature, as you know, reduces valve seat wear and the recession which can result from using lead-free fuel.

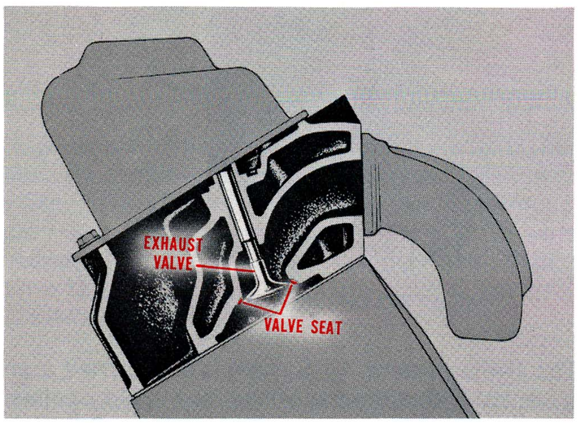


Fig. 6—Hardening extends valve-seat life

FUEL USAGE RECOMMENDATIONS

All 1973 Chrysler Corporation passenger car engines are designed to operate on either leaded or unleaded fuel having a minimum octane rating of 91. However, customers who regularly use unleaded fuels should be reminded of the fuel usage recommendations given in their Operator's Manuals for heavy-duty use such as trailer towing or driving a lot at expressway speeds. For these conditions, one in every four tankfulls should be leaded fuel as a precaution against valve and seat wear or other engine damage.

CAMSHAFT EXTENDS VALVE OVERLAP

The modified camshaft with extended overlap design is also continued. The greater valve overlap produced by this camshaft causes some dilution of the intake mixture to lower peak combustion temperatures and reduce emission of nitrogen oxides.

MANIFOLD IMPROVES PERFORMANCE

The 318 V-8 for '73 has a two-level intake manifold which improves middle-speed performance without reduction of emission control.

THERMO-QUAD USAGE EXTENDED

The Thermo-Quad four-barrel carburetor, which was introduced on the 340 V-8 and some 400 V-8 models, is now also used on all 440 V-8 engines. As you know, the plastic main body of this carburetor reduces heat transfer to the fuel in the bowl so fuel metering and mixture control is more precise than in all-metal carburetors.

AIR INJECTION SYSTEM

The Air Injection System is continued on California models equipped with the 225 Six and 440 Standard V-8 engines, and is now also used on the 360 V-8. This system adds a controlled amount of air at the exhaust ports to reduce hydrocarbon and carbon monoxide emissions.

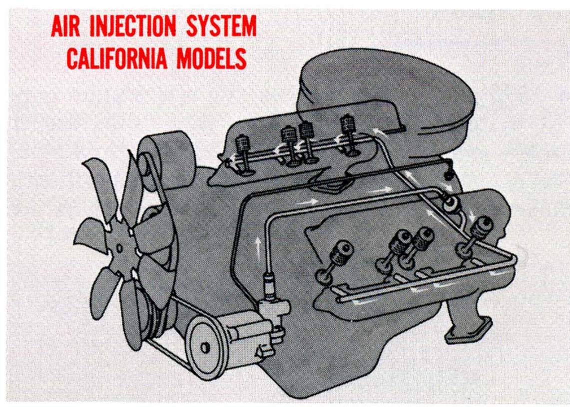


Fig. 7—System adds air to reduce emissions

SYSTEM IS BASICALLY UNCHANGED

As in previous models with air injection, the system includes a belt-driven air pump as a supply source, a diverter valve which relieves excessive pump pressure and prevents backfire in the exhaust system during deceleration, a check valve to prevent hot exhaust gases from backing up into the air pump, the air tubes or nozzles to inject air at the exhaust ports, and the necessary system plumbing.

SERVICE REQUIREMENTS ARE SIMPLE

Servicing the main components of the system is by replacement. The air pump centrifugal fan filter can be replaced separately if it is damaged. Air pump drive belt tension should be checked and adjusted if necessary every 12,000 miles or 12 months, whichever comes first.

MTSC 73 OTHER GENERAL IMPROVEMENTS

Electronic ignition is now standard equipment on all of our passenger-car engines. This system eliminates breaker points and the effects of point wear and tear. If the setting to factory specifications is not disturbed, further adjustment should not be necessary under normal operating conditions.

With this system, spark plug firing is more consistent and the timing stays put under normal conditions, both important factors in keeping emissions within specified limits.

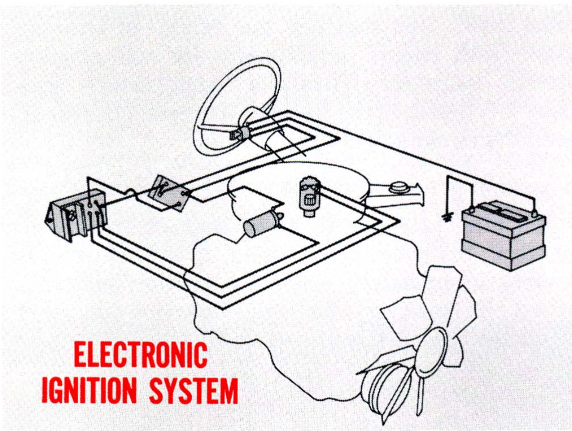


Fig. 8 – System eliminates breaker points

CABLES HAVE GLASS CORE

Along with the other advantages of electronic ignition, the chances of misfiring are further reduced by the use of new glass-filament core spark plug cables. The core is made up of approximately 10,000 fine glass threads which are uniformly covered with carbon crystals to make the core conductive. Special high dielectric strength material is used to insulate the conductive core. The insulator is enclosed in a cotton-glass basket-weave braid to give it extra strength and stretch resistance.

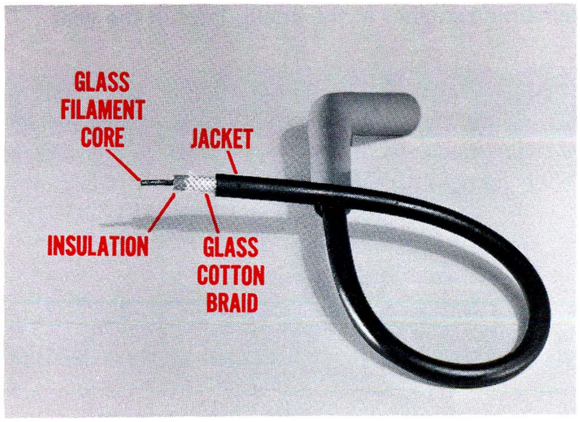


Fig. 9 – Glass filament core resists separation

JACKETING RESISTS HEAT

An outer jacket of heat-resistant hypalon covers the core, insulation, and braid for overall protection. On the 400 and 440 V-8's, special silicone-rubber cable jacketing is used in the high-temperature areas at the rear four cylinders of these engines for extra protection.

Fig. 10 – Solenoid operates only when starting engine

SOLENOID DISTRIBUTOR ONLY ON ONE

The timing-advance solenoid distributor is now used only on the 400 four-barrel V-8 with manual transmission. This solenoid produces additional timing advance when cranking to make starting easier and then returns to its normal running setting to maintain a low emission level at idle.

CRANKING IS FASTER

To improve starting, cold or hot, the 360, 400, and 440 V-8 engines now have a new, higher speed cranking motor which reduces starting time 10 to 20 percent. This new motor will be used on the remaining engines in the lineup later in the year.

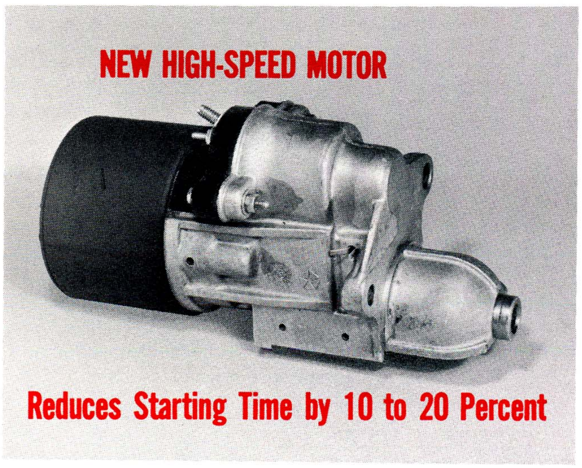


Fig. 11—New motor makes starting easier

FIELD COILS ARE CHANGED

The new cranking motor is essentially the same as the lower speed model except for differences in field coil design and connections. The same gauge windings are used in all four field coils of the new model. They are arranged as two series pairs connected in parallel. In the lower speed model, three heavy-gauge, series-connected field coils are shunted by a fourth, fine-gauge coil, which acts as a speed stabilizer.

IMPROVED CHOKE ACTION

A new Electrical Assist Automatic Choke System is used on all of our 1973 passenger-car engines to eliminate overchoking in warm weather by electrically heating the choke spring. This new system allows the choke opening time to be relatively slow when the surrounding temperature is below 60 degrees, but speeds up the operation when conditions are warmer.

HEATING ELEMENT ADDED

The bimetal choke coil spring remains essentially as before, but it now has a circle-shaped heating element located nearby in the new spring housing.

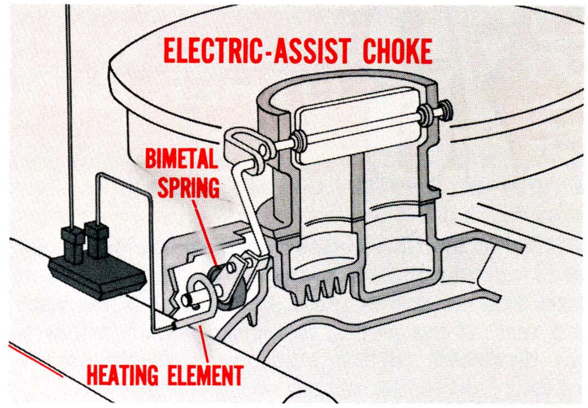


Fig. 12—Heater operates only when needed

SPRING MOVEMENT FOLLOWS TEMPERATURE

During cold-weather warmup, choke spring movement follows engine temperature because it is warmed by heat transfer from the walls of the choke well. This matches the degree of choking closely with engine requirements for cold starting through warmup. When the temperature rises above 60 degrees, the heating element cuts in to speed the remaining choke opening.

HEATER OPERATES WHEN NEEDED

If the temperature is above 60 degrees on the initial start, less choking is needed, so the heater goes to work immediately when the ignition switch is turned on. However, the heater does not operate if the engine is already warmed up.

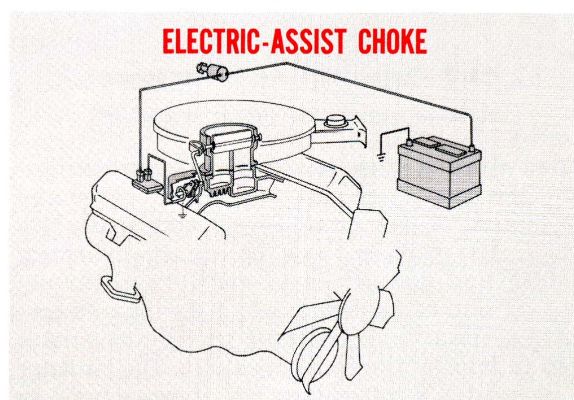


Fig. 13—Prevents overchoking in warm weather

CONTROL UNIT HAS TWO SWITCHES

The control unit for the choke heating element allows a three-ampere current flow during the heating period. The unit has two bimetallic switches connected in series so that either one can open the circuit. One switch feeds power to the heating element when the temperature is warmer than 60 degrees. The second switch has its own heating element which limits the time that the choke heating element remains on. This switch also cuts off heating current when the engine is warmed up.

NO_x EMISSION CONTROLS

To control the output of nitrogen oxides or NO_x, as this emission is also called, all 1973 Chrysler-built passenger-car engines have an Exhaust Gas Recirculating System. EGR, which was introduced on 1972 California models, reduces NO_x generation by recirculating controlled amounts of exhaust gas into the incoming air/fuel mixture. This dilution of the intake mixture lowers the peak combustion temperatures which produce NO_x and does it without seriously affecting performance and driveability.

OVERLAP LEAVES GAS BEHIND

As mentioned earlier, exhaust gas dilution of the mixture also results from the effects of extended valve overlap produced by the specially designed camshafts used in our engines. Here the dilution is caused by the exhaust gas which lags behind in the combustion chambers because scavenging action is not complete.

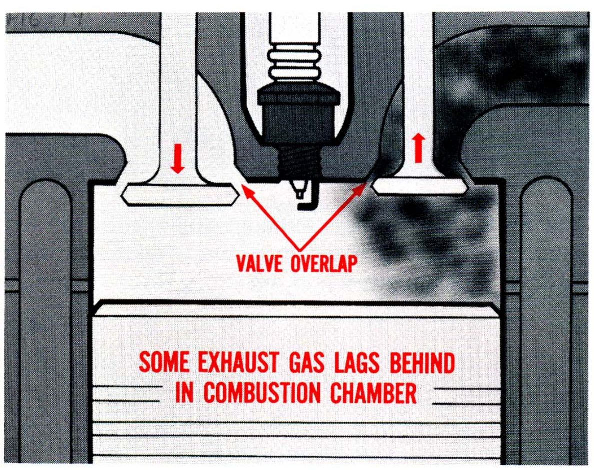


Fig. 14—Valve overlap produces exhaust gas dilution

EGR SYSTEMS DIFFER

Exhaust gas recirculation in our 1973 models is controlled by one of three different systems. Depending on the engine model, EGR is controlled by manifold floor jets, by a venturi vacuum control system, or by a ported vacuum control system.

FLOOR JET EGR SYSTEM

The manifold floor jet EGR system is simpler than the two vacuum control systems because it has no external control units. This system meters exhaust gas into the intake manifold through two stainless-steel jets threaded into the manifold floor directly under the carburetor primary bores.

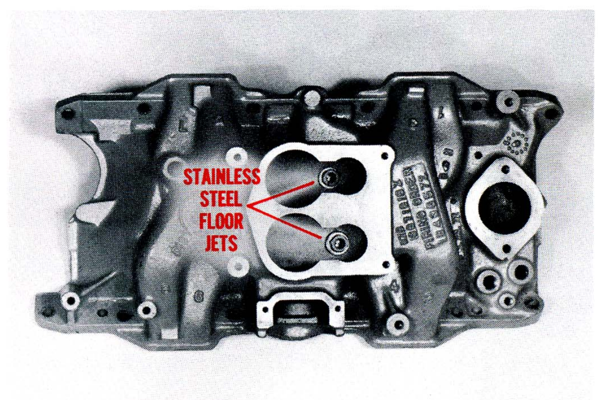


Fig. 15—Manifold Floor Jet EGR System

VACUUM CAUSES GAS FLOW

Intake vacuum causes continuous exhaust gas flow through both floor jets while the engine is running. The amount of gas flow is controlled by the size of the jet orifices, the degree of intake vacuum, and the amount of exhaust back pressure.

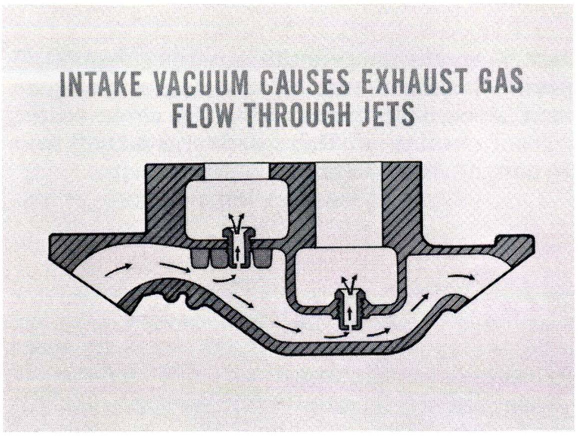


Fig. 16—Jet size affects exhaust gas flow

INSPECT JETS VISUALLY

Servicing the floor jets consists mainly of inspection. The jet orifices should be checked after every 12,000 miles of operation, and can be viewed through the carburetor primary bores by removing the air cleaner and holding the choke and throttle valves wide open. Use a small flashlight to illuminate the inspection area. Clean or replace the jets if they are plugged.

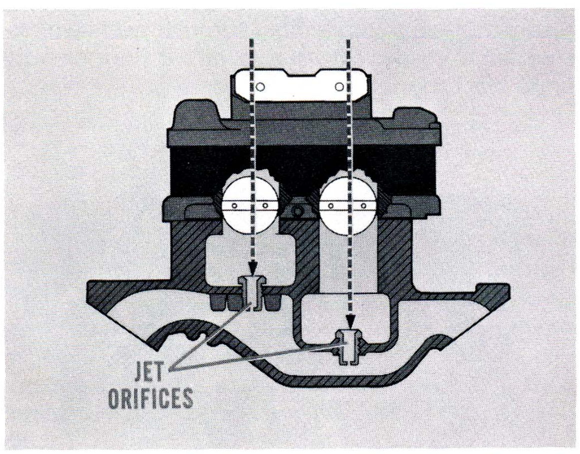


Fig. 17—Inspect floor jets through carburetor bores

VACUUM-CONTROLLED EGR SYSTEMS

In contrast to the fixed metering of the floor jet system, both of the vacuum control EGR systems modulate the flow of exhaust gas into the intake manifold through a vacuum-operated EGR control valve. These systems differ however, in the means used to control the valve operating vacuum.

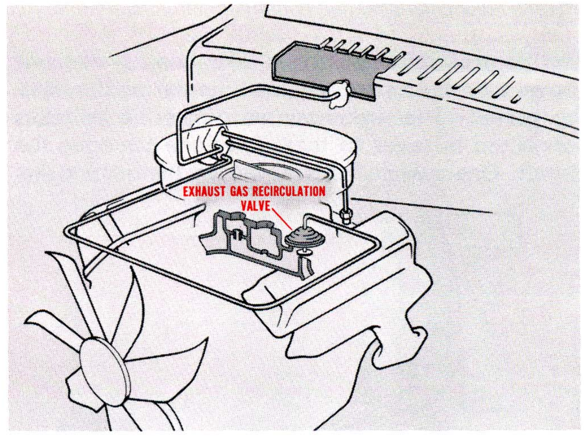


Fig. 18—EGR valve modulates exhaust gas flow

VACUUM OPERATES EGR VALVE

The EGR valve is essentially the same in both systems. It is a simple poppet type which is opened by controlled manifold vacuum and closed by a spring in the vacuum actuator section of the valve. The valve is designed to close when operating vacuum drops to the level that is normal during wide-open throttle operation.

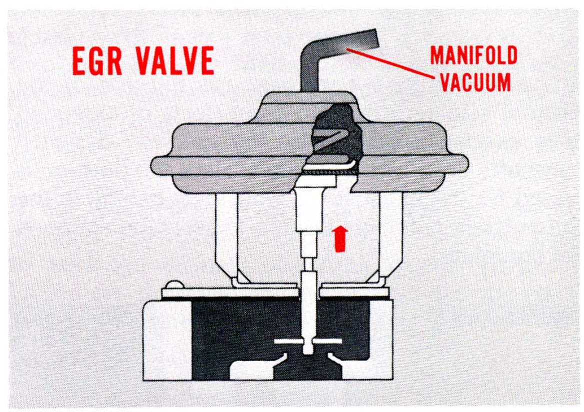


Fig. 19—Manifold vacuum opens valve

VALVE CONTROLS GAS FLOW

The EGR valve directs exhaust gases from the exhaust cross-over passage into the intake manifold through a passageway and manifold floor openings.

FLOOR OPENINGS ARE SIMPLE PORTS

The size of the floor openings in this system does not control gas flow. The threaded insert in the floor section on one side is only a core plug with a square opening. The other side simply has a drilled hole in the floor.

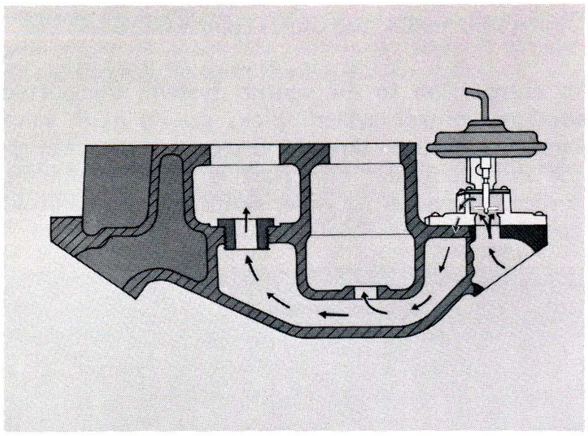


Fig. 20—Valve directs flow into intake manifold

VENTURI VACUUM CONTROL EGR SYSTEM

As mentioned earlier, the two vacuum control systems differ in the way that EGR valve operating vacuum is controlled. In the venturi control system, valve operating vacuum is controlled by a vacuum signal sensed at the carburetor venturi. A vacuum amplifier is needed in this system because the venturi vacuum signal is too weak to operate the EGR valve.

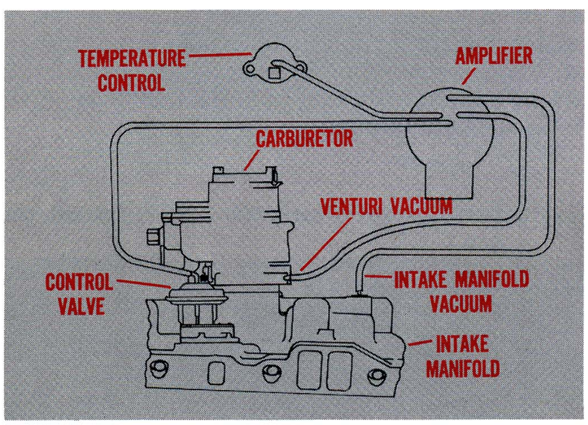


Fig. 21—Amplifier increases signal strength

AMPLIFIER FOLLOWS VENTURI SIGNAL

The vacuum amplifier is basically a balanced-diaphragm-type regulator valve which uses the relatively low venturi signal vacuum to control the stronger intake manifold vacuum that operates the EGR valve. A built-in relief valve "dumps" EGR valve operating vacuum in the amplifier when the throttle is opened wide. As a result, the EGR valve closes and cuts off gas recirculation under these conditions. The vacuum amplifier is serviced by complete replacement.

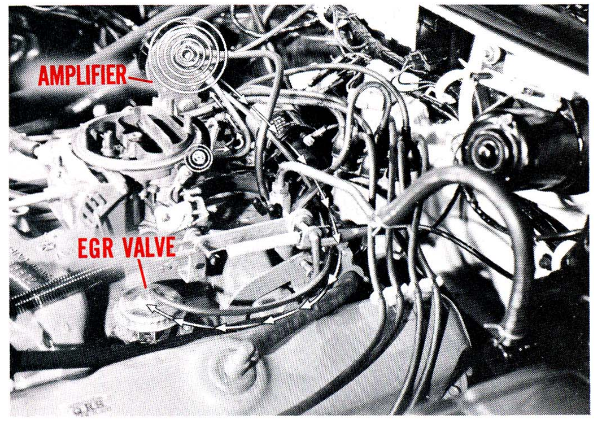


Fig. 22—Venturi Vacuum — EGR System

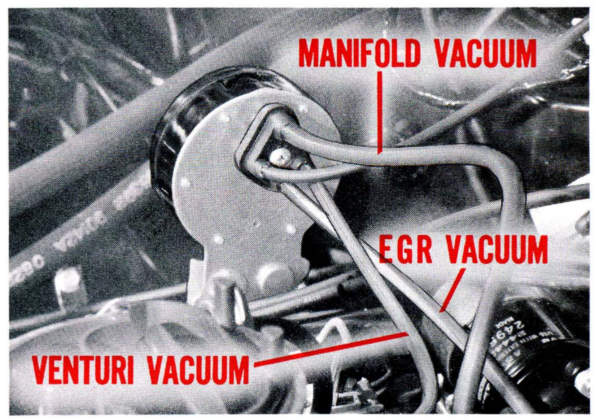


Fig. 23—Vacuum amplifier hose connections

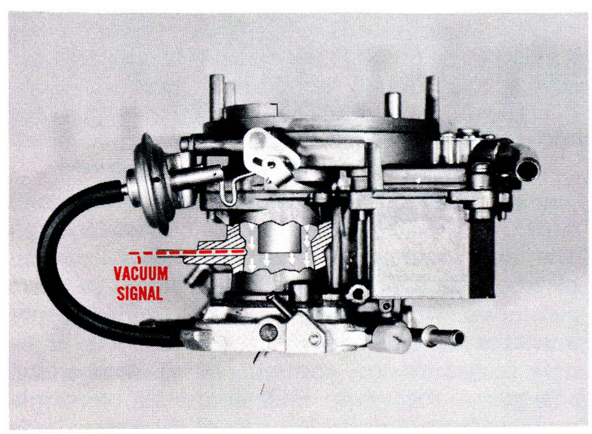


Fig. 24—Venturi air flow produces control signal

VALVE DOES NOT OPEN AT ALL SPEEDS
The degree of EGR valve opening, and therefore the proportion of exhaust gas flowing into the intake manifold is controlled by the engine intake air flow through the carburetor venturi. However, at idle and at wide open throttle, or when the surrounding air temperature is low, exhaust gas recirculation is cut off by the EGR valve to permit maximum engine performance.

VALVE OPENING IS PROPORTIONAL
At idle, the venturi signal is low, so operating vacuum from the amplifier does not open the EGR valve. As the throttle is opened from idle position, the venturi signal becomes stronger and the EGR valve is opened in proportion. At full throttle however, the relief valve in the amplifier reacts to the resulting low manifold vacuum and allows the EGR valve to close.

TEMPERATURE VALVE BLEEDS OFF VACUUM
In addition to vacuum amplifier action, a plenum-mounted temperature control valve opens when surrounding temperature is about 68 degrees or lower. This bleeds off EGR valve operating vacuum and allows the valve to close, the same as it does at idle or at full throttle. The temperature control valve is used in both vacuum control systems.

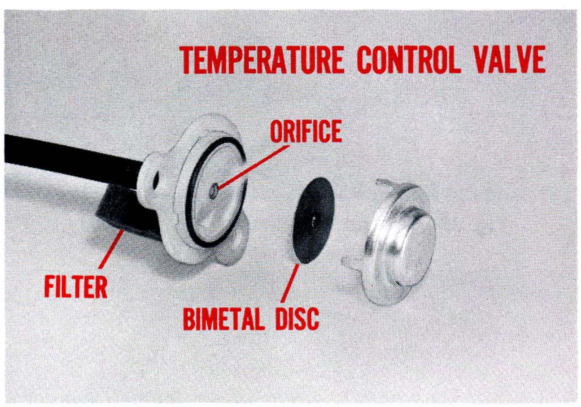


Fig. 25—Bimetal disc operates temperature valve

DISC REACTS TO TEMPERATURE CHANGE
The temperature control valve is essentially an air-bleed orifice which is opened and closed by a temperature-sensitive bimetal disc. A resilient center insert in the disc opens or seals the orifice as the disc expands or contracts with temperature changes. A foam-type filter at the air bleed inlet protects the valve and the rest of the system from outside contaminants.

PORTED VACUUM CONTROL EGR SYSTEM

In comparison to the venturi system, the ported vacuum control system picks up its EGR valve operating vacuum directly at a port in the carburetor throttle body. This port is closed when the throttle valve is at idle position, so manifold vacuum to the EGR valve is low.

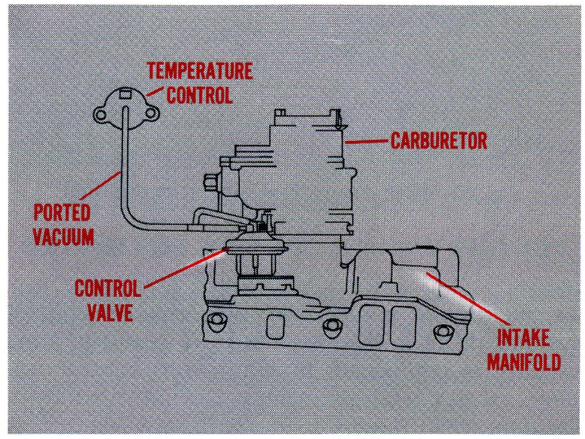


Fig. 26—Ported Vacuum — EGR System

THROTTLE POSITION CONTROLS VACUUM
As the throttle valve opens, it exposes the port slot or holes to manifold vacuum and as a result, vacuum at the EGR valve increases in proportion to the degree of throttle opening. This vacuum is strong enough to operate the valve so no amplifier is needed with this system.

VALVE CLOSES WHEN VACUUM IS LOW
In the ported system, as in the venturi system, gas

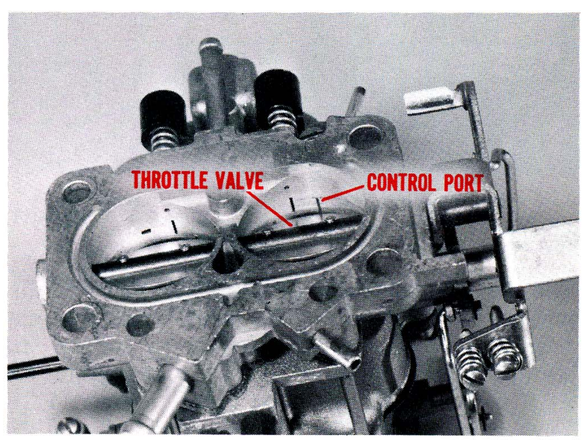


Fig. 27—Port vacuum operates EGR valve

recirculation cuts off at idle or when the throttle is wide open because the manifold vacuum at the port is too low to hold the EGR valve open.

ELIMINATE VALVE WHEN TESTING
Checking either of the EGR vacuum control systems or EGR valve operation alone is quick and easy. Of course, the surrounding temperature must be above 68 degrees to be sure that the temperature control valve does not operate and interfere with the test.

FASTER BUT NOT TOO FAST
For the EGR system test, the engine should be warmed up and running at idle. When ready to test, open the throttle quickly to run the speed up to about 2,000 but not over 3,000 r.p.m.

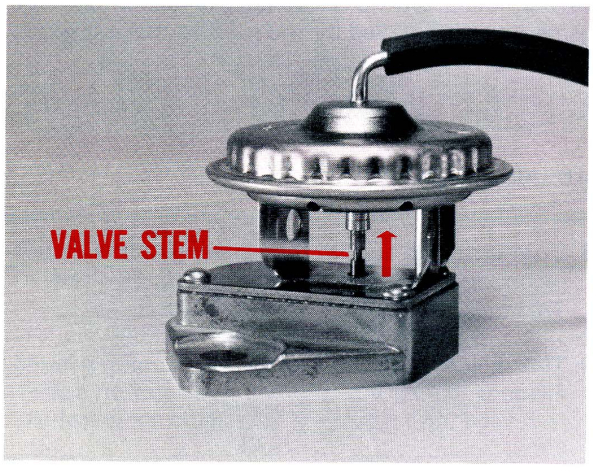


Fig. 28—Valve stem should move upward in test

VALVE MOVES UP WITH ENGINE SPEED
As the engine speeds up, the EGR control valve stem should move upward. Watch the groove on the valve stem and repeat the test several times to be sure the stem is moving.

GAS FLOW LOWERS IDLE SPEED
To check the exhaust gas flow, continue with the engine running at idle. Remove and plug the hose at the EGR valve and connect the valve to an external vacuum source of at least ten inches of mercury to hold the valve wide open. If idle speed then drops about 150 r.p.m. or more as the valve opens, the exhaust gas recirculation is okay. When there is no change in idle speed, the valve may be clogged and require servicing.

ORIFICE SPARK CONTROL SYSTEM

Along with an exhaust gas recirculation system, all of our '73 passenger-car engines also have an Orifice Spark Advance Control System for additional NO_x emission control. For convenience, we can call this the OSAC system.

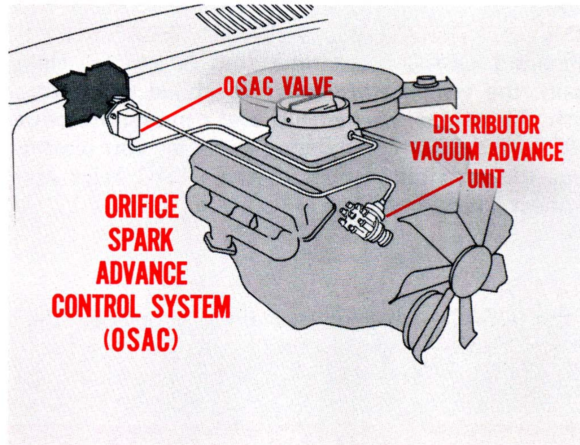


Fig. 29—OSAC System adds extra NO_x emission control

ORIFICE SLOWS VACUUM CHANGES
The heart of the OSAC system is a temperature-controlled orifice valve which delays changes in spark advance vacuum when the throttle is opened from closed position, as when accelerating from idle to cruising speeds. As with the EGR systems, the OSAC valve does not operate when surrounding temperatures are low.

DELAY LOWERS PEAK TEMPERATURE
On acceleration, the orifice control valve delays the vacuum spark advance action for about 15 seconds. If the timing were to advance normally under these conditions, both the peak combustion temperature and NO_x emission would increase.

VACUUM DELAY IS ONE-WAY
When moving back from part-throttle to idle during deceleration, the orifice valve does not restrict vacuum advance changes, so there is no delay.

HIGH-TEMPERATURE PROTECTION
In addition to the OSAC valve, some models also have a temperature-operated vacuum bypass valve to reduce the possibility of engine overheating when operating under high temperature or load conditions.

BYPASS VALVE GIVES FULL ADVANCE

When engine coolant temperature reaches 225 degrees, the valve automatically bypasses the OSAC system to produce full vacuum advance. This advance in timing reduces cylinder heat transfer and also raises the idle speed to increase engine cooling. OSAC system operation resumes when the coolant temperature drops to normal.

CONNECT GAUGE WITH ENGINE RUNNING

Checking OSAC valve operation is simple. Here again, the temperature must be above 68 degrees with the engine warmed up and running at about 2,000 r.p.m. With the engine running, you disconnect the distributor hose at the OSAC valve and connect a vacuum gauge in its place.

POINTER SHOULD MOVE GRADUALLY

If the OSAC valve is operating properly, the vacuum indication will increase gradually to a stabilized level in about 15 seconds. When the gauge pointer pops up immediately, or does not show any increase at all, the valve is defective and must be replaced.

. . . AND IN CONCLUSION . . .

In this brief coverage of the subject, we have seen that the Cleaner Air System retains many emission control features from our 1972 models, that some carry-over items are refined and improved and of course, you should now be more familiar with the workings of the new equipment for controlling emission of nitrogen oxides. As a parting thought, keep in mind that each new component added to the system further narrows the tolerances of settings and adjustments more than ever before. As mentioned earlier, where emission control is involved, there are no short cuts or cover-ups. The game must be played by the rules to make it work.

TEST QUESTIONS

1. The main difference between the new higher-speed cranking motor and the lower-speed model is in:
   - *A. Solenoid coil resistance.*
   - *B. Field coil design and connections.*
   - *C. Reduction gear drive ratio.*

2. The OSAC System delays distributor vacuum advance changes when:
   - *A. Accelerating and decelerating.*
   - *B. Decelerating only.*
   - *C. Accelerating only.*

3. A properly operating OSAC valve causes a gradual vacuum indication increase to a stabilized level in about:
   - *A. Three seconds.*
   - *B. Fifteen seconds.*
   - *C. Immediately.*

4. The 1973 Evaporation Control System vapor-holding canister in all models is the same as in the 1972 models.
   True ______________ *False* ______________

5. Uninterrupted use of unleaded gasoline is not recommended when trailer towing is involved.
   True ______________ *False* ______________

6. The Electric Assist Automatic Choke heating element warms up whenever the ignition switch is turned on, regardless of engine temperature.
   True ______________ *False* ______________

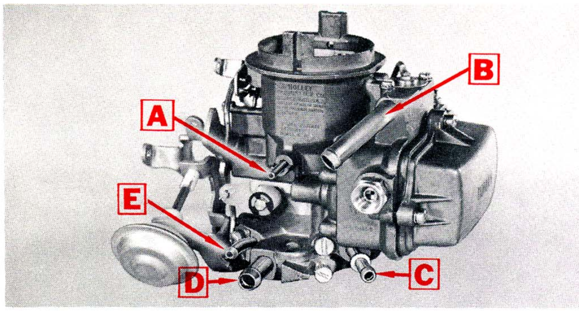
7. Extended valve overlap produces mixture dilution because it results in incomplete scavenging of exhaust gases.
   True ______________ *False* ______________

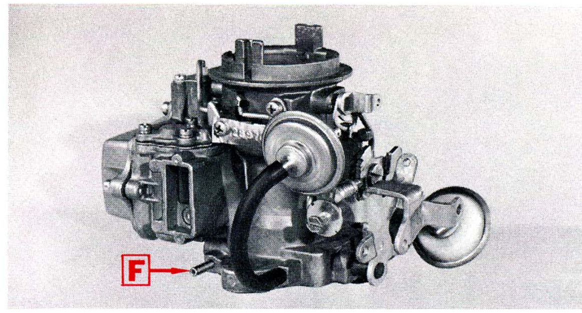
8. The EGR valve does not open at all engine speeds.
   True ______________ *False* ______________

9. In the ported vacuum control EGR system, EGR valve operating vacuum is high when the throttle valve is at idle position.
   True ______________ *False* ______________

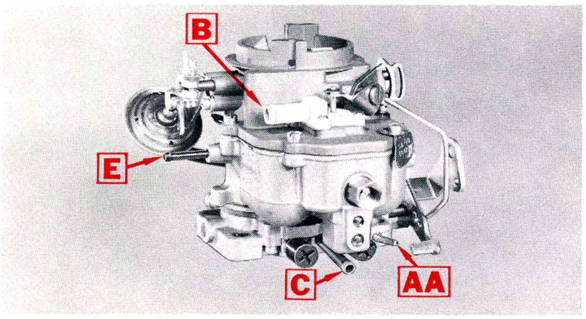
10. The EGR vacuum control system should not be checked when surrounding temperatures are low.
    True ______________ *False* ______________

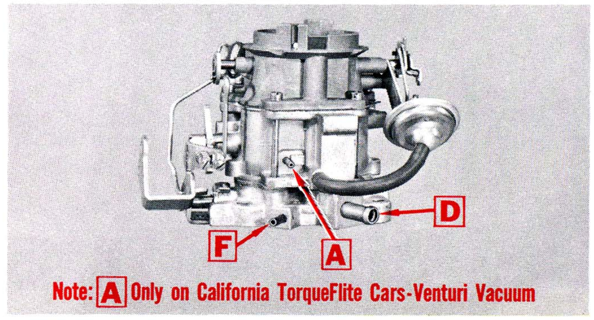
CARBURETOR HOSE CONNECTION CHART



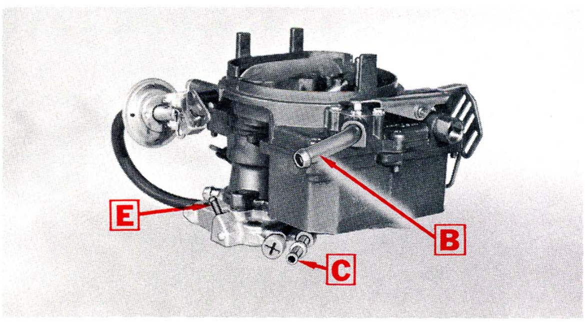


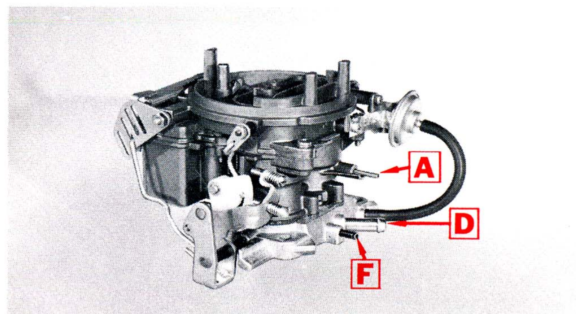
Holley 1-BBL: 198 & 225 Sixes — Venturi Vacuum



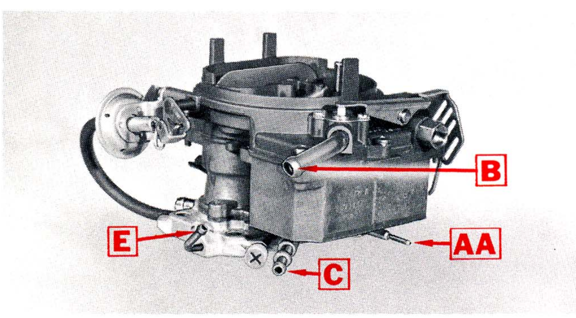


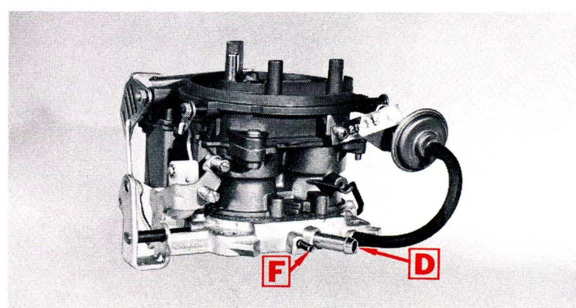
Carter 2-BBL: 318 V-8's — Ported Vacuum





Holley 2-BBL: 360 V-8's — Venturi Vacuum



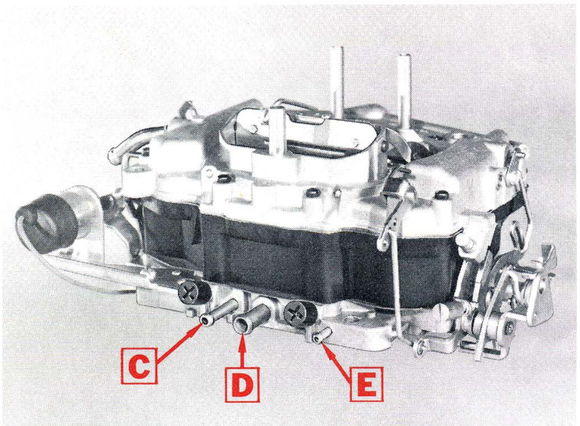


Holley 2-BBL: 400 V-8's — Ported Vacuum

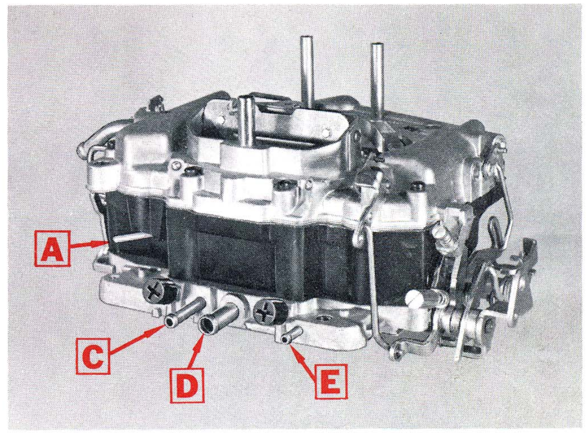
HOSE DESTINATION AND COLOR CODE

- A — EGR Amplifier (Black w/yellow stripe)
- AA — EGR and Temperature Control Valve Tee (Black w/yellow stripe)
- B — Canister Bowl Vent Port (Black)
- C — Canister Purge Port (Black w/red stripe)
- D — PCV Valve (Black)
- E — OSAC Valve (Black)
- F — Air Cleaner (Black)

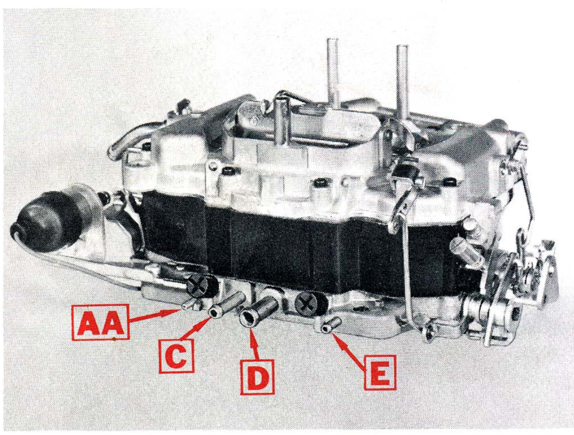
CARBURETOR HOSE CONNECTION CHART



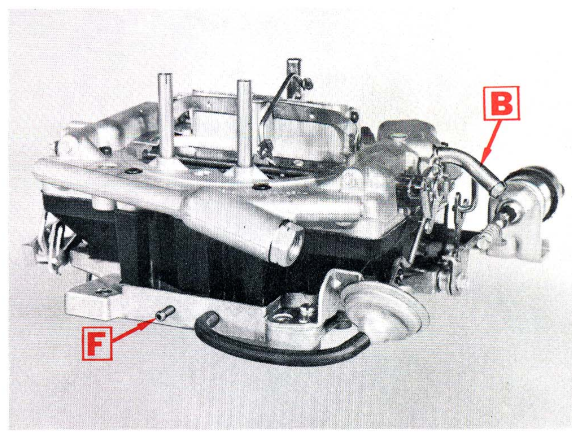
Carter 4-BBL: 340 & 400 V-8's — Floor Jets



Carter 4-BBL: 440 V-8 Std. — Venturi Vacuum



Carter 4-BBL: 440 V-8 HP — Ported Vacuum



Carter 4-BBL: Rear View — All Models

HOSE DESTINATION AND COLOR CODE

- A EGR Amplifier (Black w/yellow stripe)
- AA EGR and Temperature Control Valve Tee (Black w/yellow stripe)
- B Canister Bowl Vent Port (Black)
- C Canister Purge Port (Black w/red stripe)
- D PCV Valve (Black)
- E OSAC Valve (Black)
- F Air Cleaner (Black)

MASTER TECHNICIAN

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