

MASTER TECHNICIANS  
SERVICE CONFERENCE

REFERENCE  
BOOK

70-1

THE  
1970  
SERVICE  
ROUNDUP



PLYMOUTH • DODGE • CHRYSLER  
IMPERIAL • DODGE TRUCK

## THEY'RE BETTER THAN EVER, PLUS TWO . . .

Two new models lead the parade in our review of the 1970 servicing highlights. The all-new Barracuda and Challenger introduce a different size category as well as advanced style and construction features. There's greater body and door strength plus added door latch and lock security . . . a new energy-absorbing steering column design and much more.

All models now have a steering column lock that gives greater security along with a reminder if the key is left behind. Also, you'll be pleased to find that an improved version of the electronic voltage regulator introduced last year is now standard across the board.

The Barracuda and Challenger have a newly designed air-conditioning system which does away with linkage adjustments. For these and other models, there is better cooling control with an improved EPR valve plus greater protection against overpressure damage and compressor oil loss.

The roundup of mechanical features includes a new six-cylinder engine and high-performance engine improvements. You'll find some carburetor changes and one completely new carburetor. Along with this, there's a new heated inlet air system, plus special throttle and distributor timing controls for some models.

Details on the new Evaporation Control System (ECS) used on California cars, wider availability of floating caliper disc brakes, a new manual-shift transmission, and rear axle improvements complete the picture for the '70 models.



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## THE 1970 SERVICE ROUNDUP

### BARRACUDA-CHALLENGER FEATURES

The major body changes in the '70 models are in the new Barracuda and Challenger. Both models introduce new collision protection features which should be of general interest to all technicians, especially to body men.

#### DOORS ARE STRONGER

There's a strong, two-piece channel-section beam welded into each door to give extra protection against side impact. This beam, of course, affects door sheet-metal repairs and must be considered when making damage estimates. If door panel damage is minor, the panel alone can be replaced. However, when a side-impact beam is bent, torn, or out of alignment, you'll probably have to replace the door.

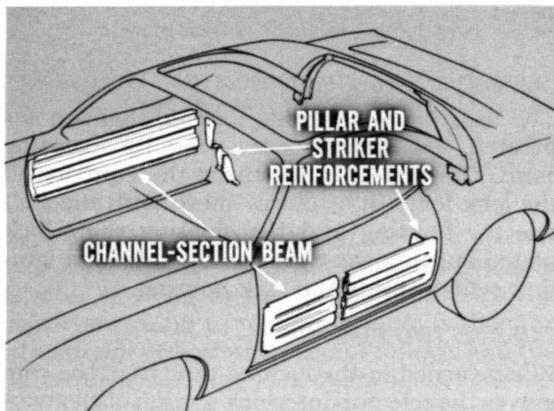


Fig. 1—Body and door reinforcement

#### NEW LATCH STRIKER

Along with the door beams, body lock pillars and latch strikers also have additional reinforcement to resist accidental door opening in a collision. The latch striker has the new spline-type adjusting hole which requires a C-4116 Striker Wrench for proper adjustment. The spline-type design makes possible the correct torquing of the striker (50 inch-pounds) with-

out danger of stripping the hole.

#### ROOF STRUCTURE REINFORCED

There are sturdy box-section support structures built into both sides of the rear roof area to give more rollover protection. Along with this, the windshield header and roof rails are fully boxed to further strengthen the entire roof structure.

#### LIFT TO OPEN

The new flush-mounted outside door latch handle operates by lifting up and out to provide greater protection against accidental door opening. The door lock cylinder is located in a stationary section next to the lift handle. The lock is a conventional type which can be serviced through a hole in the inside door panel under the trim.

#### LOCK LEVER IS CONVENIENT

On the inside, the door lock control is located in the hand-grip recess of the armrest. This new toggle lever control is convenient for the driver and passenger, but the location makes attempts at car theft more difficult. For added safety, the toggle lever must be lifted to unlock and pressed down to lock the door.

#### MORE DOORS WITHOUT VENT WINDOWS

Barracuda and Challenger door glass is the ventless type with guidance tracks and regulator mechanism similar to that introduced on '69 models. The rear quarter windows are also regulator-controlled. The Valiant Duster has ventless door glass but the rear quarter windows are the swing-open type.

### STEERING COLUMN CHANGES

The Barracuda and Challenger have a brand-new steering column with a corrugated impact-absorbing member at the upper end. The corrugations fold one by one to absorb impact energy and also allow the steering wheel to tilt with the body.



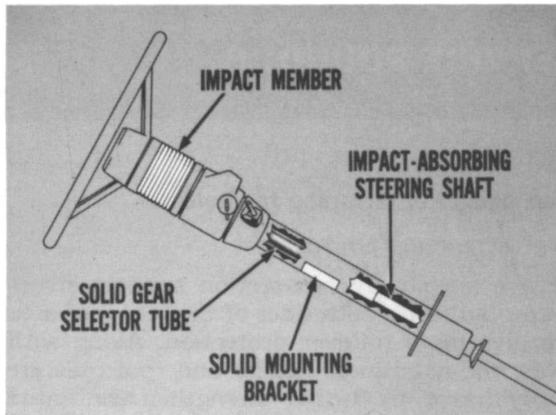


Fig. 2—Impact-absorbing member is at top

### FEWER PARTS TO REPLACE

Servicing the new steering column is simpler than with other types because the impact-absorbing member is at the top, above the gear selector lever. While this design still requires an impact-absorbing steering shaft, it uses a solid gear selector tube and a solid mounting bracket. If the upper member is collapsed but lower steering column parts are not damaged, you can replace the upper member separately. Of course, with complete or partial collapse of the upper member, the steering shaft telescopes and must be replaced to restore its energy-absorbing characteristics.

### USE A PULLER

Removing the upper impact-absorbing member is simple. Three stud nuts attach the steering wheel to the top of the impact section. When the wheel is off, you'll notice that the hub at the bottom has two tapped holes like a regular steering wheel hub. You can use the C-3428 Steering Wheel Puller to do the job without collapsing the steering shaft.

### LOCK-SWITCH COMBINED

All of our '70 models have a combined steering wheel and ignition lock located on the right-hand side of the steering column. As you probably know, the wheel cannot be turned when the key is either in Lock or Accessory position.

### CAR MUST BE STOPPED

The steering wheel can only be locked when the TorqueFlite selector lever is in Park, or the

manual transmission selector lever is in Reverse. This arrangement keeps the steering wheel from locking when the car is moving forward and when the manual transmission is in reverse, the starter cannot be engaged unless the clutch pedal is fully depressed.

The key can be removed only when the switch is in Lock position. If the key remains in the lock when either front door is opened, a buzzer sounds a reminder to remove the key.

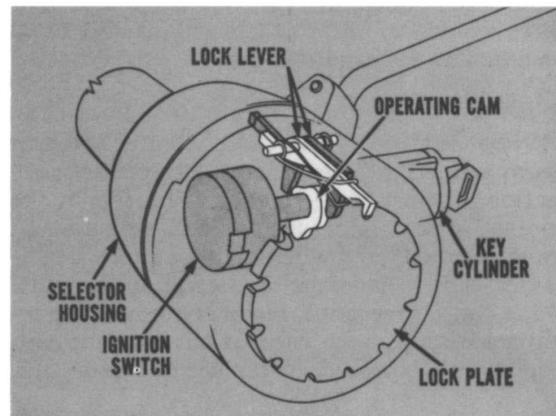


Fig. 3—Lock lever tilts in or out of mesh

### CAM OPERATES LOCK LEVER

The heart of the steering lock mechanism is a pivoted, two-piece lock lever and its operating cam. The key cylinder turns the cam to tilt the lock lever in or out of mesh with the gear selector housing and the steering shaft lock plate. Turning the cam also operates the ignition switch inside the lock housing.

### CAM DOES TWO JOBS

When turned in the locking direction, the cam moves the selector-interlock section of the two-piece lever toward the selector housing wall. This movement spring-loads the steering shaft section of the lock lever and moves it into mesh with the steering shaft lock plate.

### HOUSING BLOCKS LEVER

If the gear selector lever is not in locking position, a raised surface in the selector housing wall blocks movement of the interlock lever. This blocking action limits the rotation of the operating cam and keeps the entire mechanism from going into the lock position.



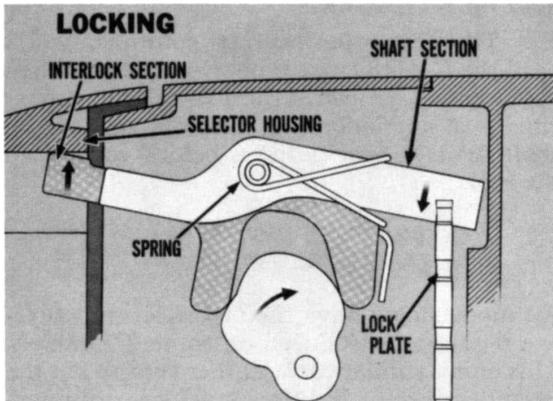


Fig. 4—Cam moves lever into mesh

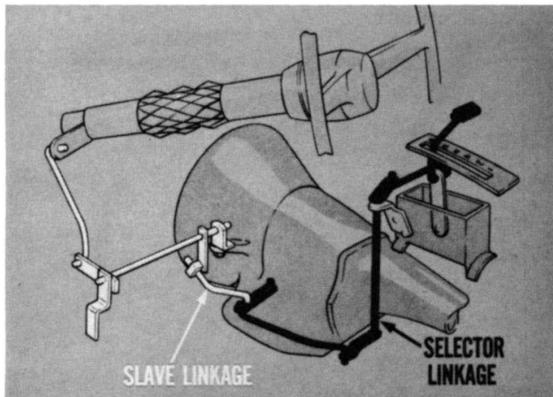


Fig. 5—Adjust selector linkage first

### FLOOR SELECTOR IS DIFFERENT

Cars with a floor-mount selector have a separate slave linkage which moves the column selector housing to the locking position. The important thing to remember here is that the adjustment of both the selector linkage and the slave affects steering lock operation. *If the adjustment of either linkage is off, you may not be able to turn the key to the lock position.*

### TILT-WHEEL HAS SLIDING BOLT

On columns with the tilt-wheel mechanism, the key cylinder turns a toothed sector which causes a sliding bolt to move in or out of the steering shaft lock plate. If the shift selector is in **PARK**, for TorqueFlite models, or **REVERSE**, for manual transmission models, the sector also moves a shift-locking bolt into engagement with a pocket in the selector housing.

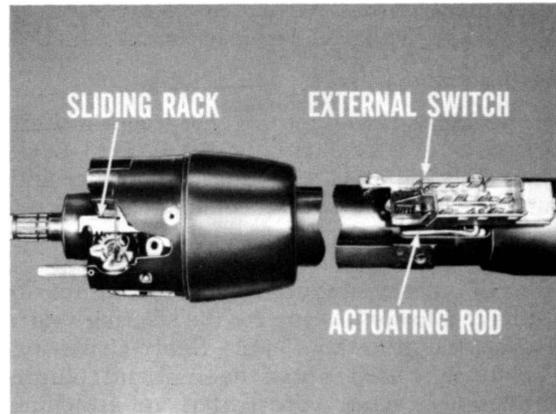


Fig. 6—Rack operates ignition switch

The tilt-wheel column does not have space for the internal-type ignition switch used in our standard columns. Instead, these columns have an external switch operated by the sliding interlock rack through an actuating rod.

### ONE FIXTURE FOR ALL

Because of the steering wheel lock mechanism and other steering column design changes, some new special tools are needed for proper column servicing. The C-4132 Column Holding Fixture is designed for use with all energy-absorbing steering columns, old and new.

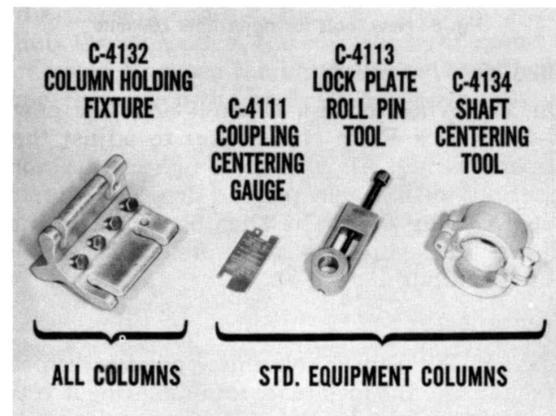


Fig. 7—Special tools for standard columns

### SET IT IN THE MIDDLE

The C-4111 Coupling Centering Gauge is used on our standard columns to adjust the pot coupling at the midpoint of its travel. This



adjustment is required whenever a column is loosened at the firewall or instrument panel.

### **DON'T USE A HAMMER**

Removing or installing the new steering shaft lock plate is tricky without the C-4113 Lock Plate Roll Pin Tool. If you use a hammer and punch for this job you can collapse the shaft.

### **THERE'S NO BEARING**

Some of our new standard steering columns do not have a lower bearing for the steering shaft. Because of this, the C-4134 Shaft Centering Tool must be used to hold the shaft and column in alignment when you tighten the attaching bolts at the toeboard and instrument panel.

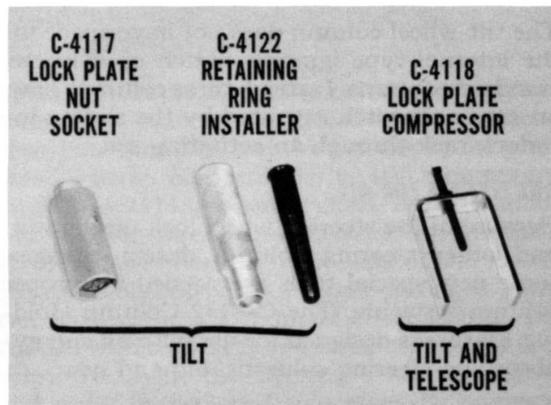


Fig. 8—New tools for adjustable columns

### **THE SOCKET IS A MUST**

On Tilt-Wheel columns, you'll need the new C-4117 Lock Plate Nut Socket to adjust the upper bearing. All you do is tighten the nut carefully until a light preload drag can be felt when turning the shaft. Then back off the nut slowly until you have a no-preload, no-end-play condition.

### **DON'T FORCE IT**

Also on Tilt-Wheel columns, you can distort and damage the lock plate retaining ring if you try to force it on by hand. You can do the job properly by using a C-4122 Retaining Ring Installer. Slide the ring on the tapered inner sleeve of the tool and bottom the wide end of the sleeve on the steering shaft. Then use the outer sleeve to press the ring down evenly until it bottoms in its groove.

### **HOLD THE PLATE DOWN**

For Tilt-Telescope steering columns, you'll need the C-4118 Lock Plate Compressor when you remove or install the lock plate retainer clip. Just remember to lock the telescoping shaft in its lowest position before you install the tool.

## **CHARGING SYSTEM AND ELECTRICAL EQUIPMENT**

All models now have the new electronic voltage regulator introduced on some '69 models. This unit is similar to the earlier version but the circuit connector is different, so it is not interchangeable. Since these regulators do not have moving parts or adjustments, they are serviced by replacement.

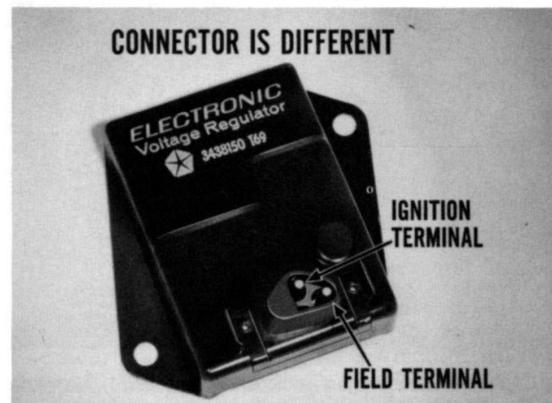


Fig. 9—Connector has two terminals

### **THERE ARE TWO CONNECTIONS**

A new Isolated Field Alternator is used with the electronic voltage regulator. Both field rotor brushes now have separate connector terminals, and there are corresponding changes in the circuit. As with the voltage regulator, this alternator is not interchangeable with the previous model.

### **TESTING IS EASY**

The new C-4133 Electronic Voltage Regulator Tester makes charging system checking quick and easy. This tester can be used to check both previous and current model electronic regulators. It is externally powered from any 110-volt AC source, so you can test a regulator on or off the car.



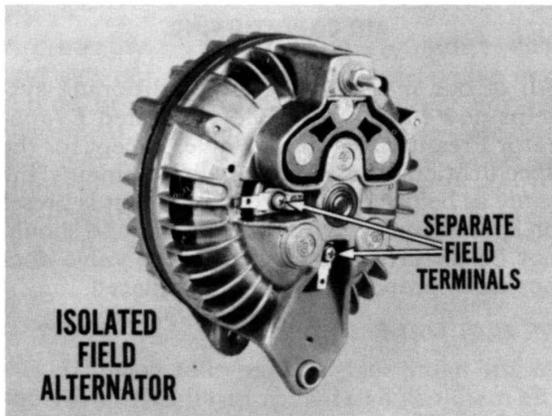


Fig. 10—Not interchangeable with previous model

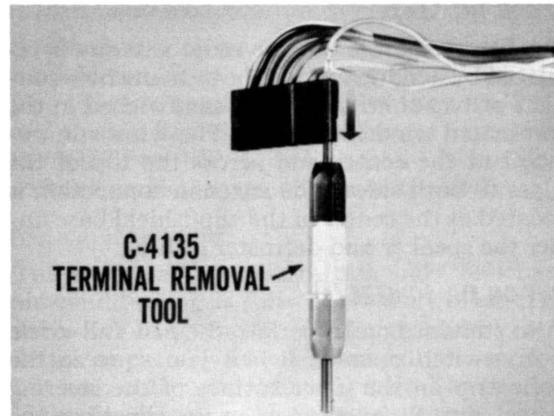


Fig. 12—Tool releases terminal lock tabs

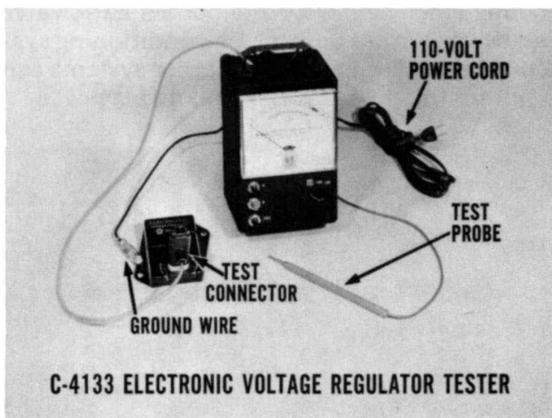


Fig. 11—Check regulator on or off car

### PLUG IN AND TEST

Plug the test connector into the regulator receptacle, clip on the ground wire and plug in the power cord. The simple test steps are described on the tester itself so there's nothing to memorize. The test probe is used for alternator output and other voltage checks.

### TOOL UNLOCKS TABS

Another time-saver to make electrical system servicing easier is the new C-4135 Terminal Removal Tool. This tool is designed to fit both the large- and small-size pin-type connectors.

Brace one end of the tool on something solid and press the connector down on the tool to unlock the wire terminal tabs and then pull the wire out of the connector block.

### LANE-CHANGE SWITCH FOR ALL

The Lane-Change Turn Signal is now standard on all models. As before, you move the switch lever full travel to signal a turn. For lane-change signalling, you only apply light pressure on the lever in the desired direction as long as needed and then release it. The lane-change feature is part of the switch design and servicing procedure remains the same as before.

### IT'S A PUSH-PULL TYPE

In all except Chrysler and Imperial models, the Hazard Warning Flasher Switch is moved from the instrument panel to the right-hand side of the steering column, near the steering wheel hub. On all models, the warning light circuit is changed to cause the lights to continue flashing even when the brakes are applied.

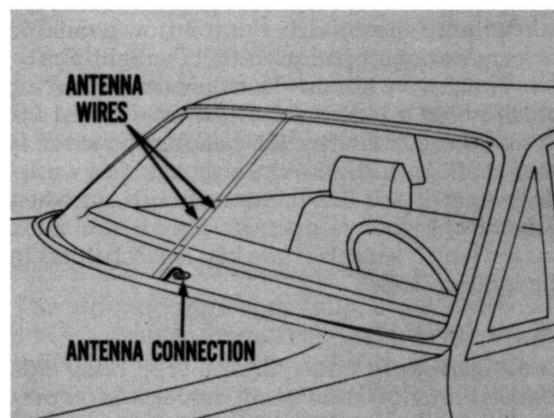


Fig. 13—Wires run between glass layers



### IT'S IN THE GLASS

On Imperials, the outside radio antenna is replaced by a hidden type. The antenna now consists of two concealed wires sandwiched in the laminated windshield glass. The wires run upward at the center and across the top of the glass to both sides. The antenna connection is located at the center of the windshield base under the speaker and defroster grille.

### PUT ON THE SQUEEZE

Also standard on Imperials, the new full-circle horn switch operates when you squeeze the soft strip on the inner surface of the steering wheel rim. Strip contacts in the rim close the circuit when pressed together by squeezing. This feature is optional on all other models.

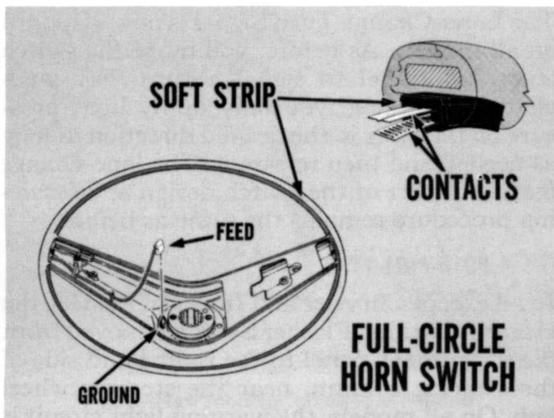


Fig. 14—Finger pressure blows horn

### IT TAKES TIME

A headlamp shutoff delay unit is now available for cars not equipped with the Twilight Sentinel. This device has an electronic timing circuit which holds a built-in shutoff relay closed for about 90 seconds after the headlamp switch is turned off. In addition, the unit sounds a warning buzzer if the headlamp switch is on when either front door is opened. This is the same buzzer which sounds if the key is left behind in the ignition lock.

### THEY'RE ALL LIT UP

Combined lamp and reflector-type body side markers are now used on all models. As on previous models, the lamp housing must be removed for bulb replacement.



## AIR CONDITIONING

All of our manual-type air-conditioning systems now have a new Pilot-Operated Evaporator Pressure Regulator Valve. Except for the specifications, testing procedure remains the same as before. The valve adjustment is preset on special equipment at the factory and should not be disturbed in service. If the valve does not work properly, it must be replaced.

### THE PILOT GOES FIRST

As the name suggests, the pilot valve triggers the main valve to make overall EPR valve operation more sensitive and precise. In effect, the new valve permits evaporator temperature to drop lower without freeze-up to improve cooling efficiency. Only the piloted EPR valve can be used in our current air-conditioning systems, but replacements for earlier systems can be either the piloted or non-piloted type.

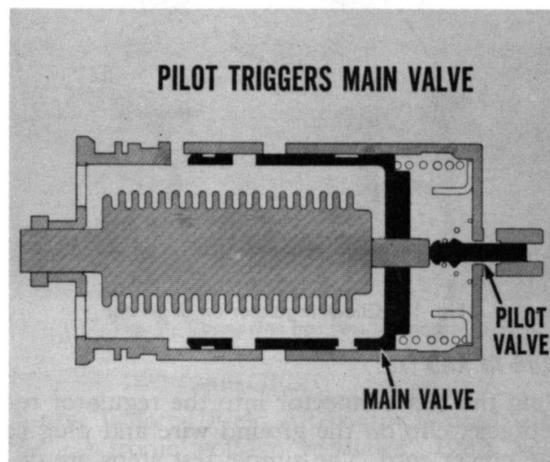


Fig. 15—Piloted EPR valve is more sensitive

### THE PLUG IS GONE

In all our air-conditioning systems, a high-pressure relief valve now replaces the fusible plug. The valve is calibrated to vent between 475 and 550 p.s.i. and closes below these pressures. Instead of complete refrigerant system discharge and possible loss of compressor oil, this valve vents only the amount of refrigerant needed to restore normal system pressure. The relief valve is built into the receiver-drier which can only be replaced as a complete unit.

### DISC PROTECTS VALVE

A protective plastic disc keeps humidity, dirt, and salt out of the pressure relief valve and should be replaced if it is ruptured. For replacement, remove all traces of the damaged disc and apply a new disc cut from adhesive mylar or similar material. Masking or electrical insulation tape should not be used because it will not stick.

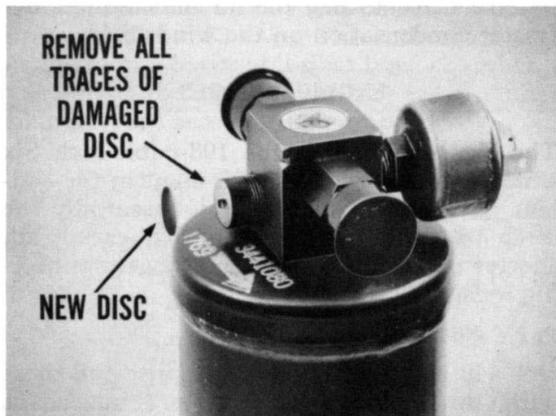


Fig. 16—Make sure disc adheres properly

### LOW PRESSURE OPENS SWITCH

In addition to the new pressure relief valve, all of our receiver-driers also have a low-pressure limit switch. This switch opens to interrupt the compressor clutch circuit if system pressure drops below 23 pounds. This stops the compressor to protect it against damage if the system is suddenly discharged.

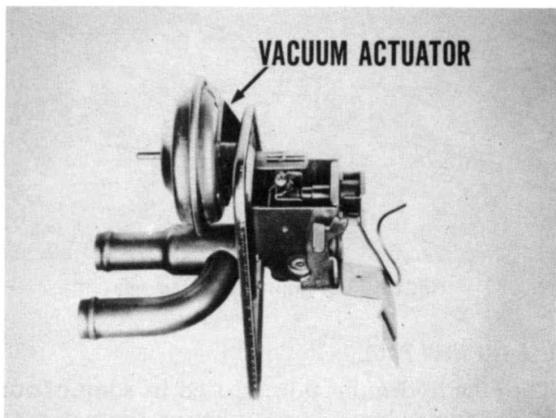


Fig. 17—Cable and vacuum controls valve

### IT'S HALF AND HALF

A new water valve for our intermediate-size models combines cable and vacuum control. The vacuum actuator overrides the cable control to stop flow through the heater core when the OFF or MAX A/C button is in. This reduces condensation on the evaporator.

### FULL CABLE CONTROL

The water valve for Barracuda and Challenger air conditioning is fully cable controlled. The valve has the same flow-through and by pass design as the valve used in our full-size models but has no vacuum actuating unit. The operating cable has a self-adjusting feature which makes setting easy.



Fig. 18—Barracuda and Challenger water valve

### SETUP FOR ADJUSTMENT

To adjust valve travel, first set the temperature lever of the panel control in mid-position. Then with the cable disconnected, slide the self-adjusting clip on the cable to give one-half inch clearance between the clip and the end of the cable housing. Hook the clip to the water valve lever and snap the cable into its attaching clip with the housing flush with the valve lever bracket. Finally, move the panel control to Full-Heat to adjust the valve lever travel.

### FORGET LINKAGE ADJUSTMENT

The air-conditioning installation in Barracuda and Challenger models is brand new. The main difference is in the evaporator-heater assembly which has four direct-acting air-door actuators and NO linkage adjustments. The internal air-flow pattern also differs from other models.



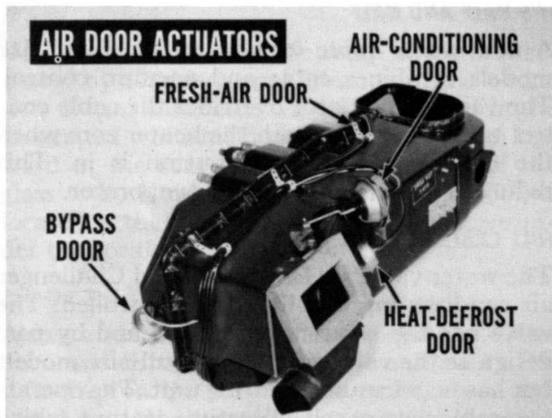


Fig. 19—No linkage adjustment required

### ONE HOSE OR TWO

The heat-defrost door actuator is spring-loaded to move the door in the defrost direction, so only a single vacuum hose is used. In comparison, the double-action air-conditioning door actuator has two hoses because it is vacuum-operated in both directions.

### SPRING CLOSES—VACUUM OPENS

On the front face of the assembly, the bypass door actuator spring closes the door when the panel control is in Heat or Defrost position. Setting the control in OFF, MAX A/C or A/C position causes the vacuum actuator to open the bypass door.

### VACUUM BOTH WAYS

At the opposite end of the housing, the double-

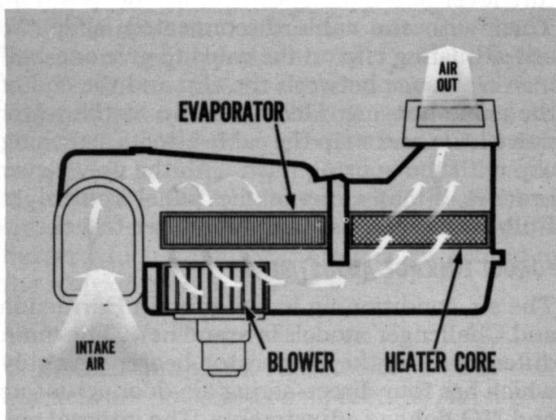


Fig. 20—Flow path helps dry the air

acting vacuum actuator closes the fresh-air door when the panel control is in the OFF or MAX A/C position. The actuator opens the air door in all other control positions.

### FLOW TRAVEL DRIES AIR

As for the internal air-flow pattern, cowl intake air flows through the evaporator to the blower. From there it passes through the heater core out into the passenger compartment. This flow pattern helps to dry the air and reduces defroster condensation on the windshield.

### ENGINE CHANGES

The big news here is the 198-cubic-inch Six which is now standard equipment in the Valiant and Dart. This engine is essentially the same as the 225-cubic-inch Six, except for shorter crankshaft throw and longer connecting rods.

### PARTS MUST MATCH

Our 440 High-Performance engines and those with three 2-barrel carburetors now have heavier connecting rods and piston pins along with a vibration damper and torque converter, or flywheel balanced to match. *None of these parts can be used separately without upsetting the engine balance.*



Fig. 21—Tool grips tappet securely

### USE THE NEW TOOL

The new hydraulic tappet used in some of our 1970 engines has a larger plunger diameter, so you'll need the new C-4129 Tappet Removing



and Installing Tool. This tool can also be used on previous tappets, and does a good job where it cannot be aligned with the tappet bore.

The 426 Hemi engine now has hydraulic tappets. This results in a quieter engine and reduced maintenance.

### FUEL SYSTEM FEATURES

You'll find a new Holley two-barrel carburetor on some of our 383 V-8's. This carburetor has a conventional horizontal float bowl chamber, a vacuum-piston-operated power valve, and a plunger-type accelerating pump.

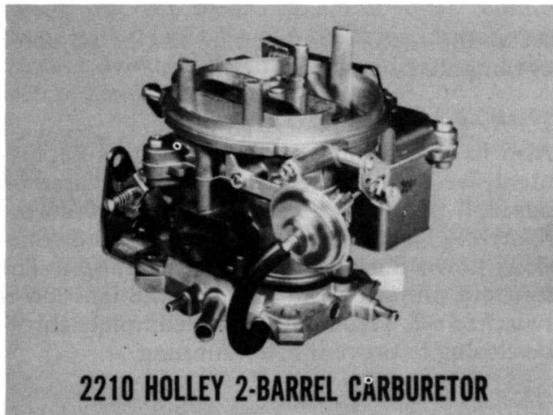


Fig. 22—New Holley carburetor

### SPEED SCREW IS CONTACT

A new feature of this carburetor is the switch

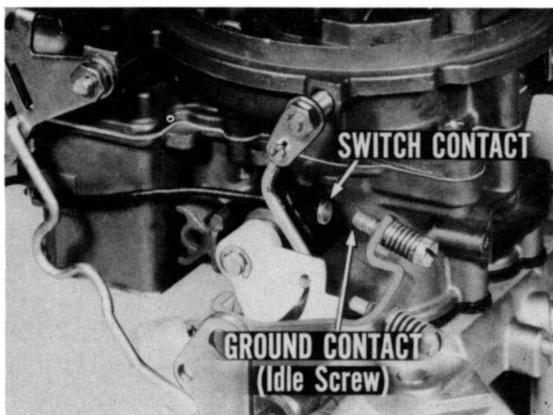


Fig. 23—Switch operates distributor solenoid

for the distributor retard solenoid. The curb idle adjusting screw acts as the ground contact of this switch, completing the circuit when the throttle closes. Details of the retard solenoid are covered farther on in this book and in your Service Manuals.

### GO EASY ON THE TUBES

When you service this carburetor, remember that the idle tubes are pressed in and can be bent or damaged if the air horn is not handled carefully. To remove the self-sealing air horn gasket, soak the part in solvent and clean off any gasket fragments with a fiber scraper. A trim stick from the body shop makes a good scraping tool. *Metal scrapers will damage sealing surfaces.*

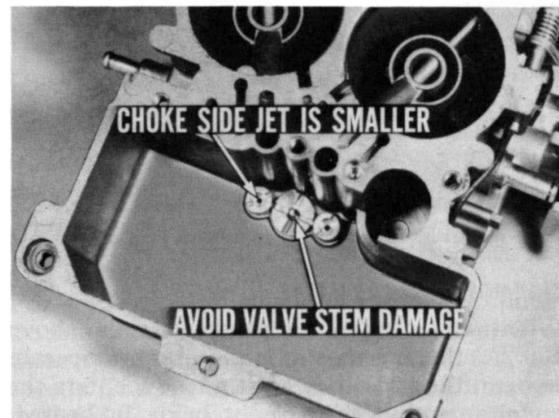


Fig. 24—Install main jets correctly

### SPECIAL TOOLS ARE NEEDED

The power valve operating plunger is staked in place and must be properly seated and restaked if the plunger is removed for any reason. For power valve service, use a wide-blade tool with a center relief slot to avoid valve damage. And be careful to get the main jets into their proper holes. The jet on the choke side of the fuel bowl is two size numbers smaller than the one on the other side.

### EMISSION CONTROLS REFINED

Several changes in our 1970 models improve exhaust emission control and driveability.

Most of our engines now have a heated inlet air system to permit a leaner warmup mixture.



In effect, this system reduces the amount of choking needed for good warmup driveability.

### MANIFOLD HEATS AIR

If temperature in the carburetor air cleaner is below 100° F., direct air intake is blocked by a vacuum-actuated air valve which is controlled by a thermostat in the air cleaner. Inlet air then comes in through an exhaust stove, where it is heated on its way to the air cleaner.

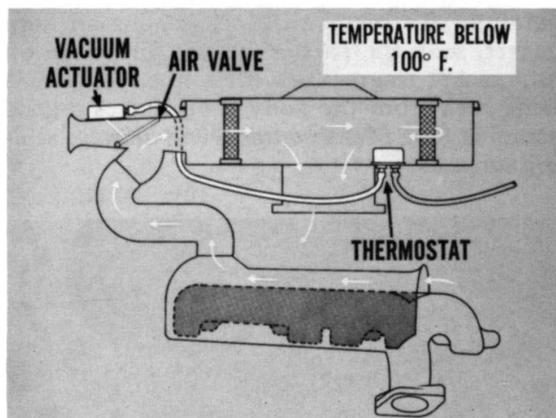


Fig. 25—Exhaust manifold heats inlet air

### THERMOSTAT OPENS VALVE

When air cleaner temperature rises above 100° F., the thermostat and actuator operate to open the air valve. Inlet air now enters the air cleaner directly without being preheated. Dual snorkel air cleaners have a door and actuator for each inlet pipe.

### CHOKE WARMS UP FASTER

Along with the heated air inlet system, the automatic choke coil is housed in a stainless-steel cup to improve heat transfer. This cup helps the coil warm up faster so the choke can open sooner, further reducing the exhaust emission level.

### HANDLES RICH MIXTURES

A carburetor hot-idle compensator is now used on all of our cars with air conditioning. As on earlier Imperial installations, this compensator leans out the rich mixture caused by high underhood temperatures. It helps to prevent hot stalls, improves hot starts, and reduces idle exhaust emissions. The compensator is pre-

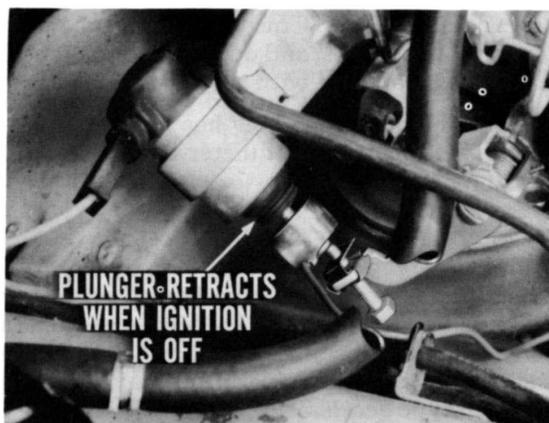


Fig. 26—Solenoid holds throttle partly open

set at the factory and should not be adjusted or tampered with.

### SOLENOID RAISES IDLE SPEED

Also in the exhaust emission control department, we have a new throttle stop solenoid on our high-performance engines. It maintains the relatively high-idle speed needed to hold emissions down during idle and deceleration. The solenoid plunger retracts when the ignition is switched off. This allows more complete throttle closing to prevent after-running.

### CONTACT IS ON PLUNGER

The throttle stop solenoid on our standard 440 V-8 also includes a switch contact for the timing retard solenoid. As on the new Holley two-barrel carburetor, the ground contact of this switch is the curb-idle speed adjusting screw.



Fig. 27—Solenoid retards timing at idle



### TIMING RETARD AT IDLE

All of our 383- and 440-cubic-inch engines, except the 440 with three 2-barrel carburetors, have a timing retard solenoid on the distributor vacuum advance assembly. This solenoid retards the timing for emission control at idle without limiting the advance needed for good starting and driving.

### DISCONNECT TIMING CONTROL

Operating current for the timing retard solenoid flows to ground from the ignition primary circuit only when the throttle is closed. When setting basic timing, you remove the vacuum advance unit hose to prevent any timing advance, but the retard solenoid must remain connected. However, for checking distributor contact dwell, both the vacuum hose and the solenoid must be disconnected.

### ECS IS NEW

The 1970 Chrysler Corporation cars sold in California have a new Evaporation Control System (ECS). Even though most of these cars will operate in that area, some may turn up in other sections, so you may as well be up to date on this new system.

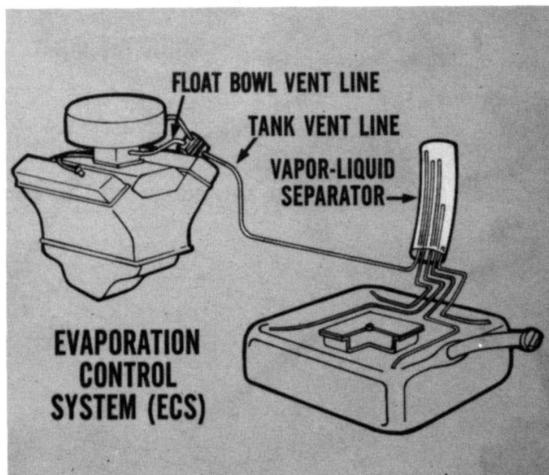


Fig. 28—Closed system reduces fuel vapor loss

### NO EXTERNAL VENTS

This is a closed venting system for the carburetor float bowl and fuel tank, which reduces the loss of fuel vapor. The basic system is quite simple and requires no regular maintenance.

### CARBURETOR HAS VENT LINE

When the engine is shut off, fuel vapor from the carburetor float bowl passes through a vent line to the crankcase air cleaner and settles in the crankcase where it dissolves in the engine oil. After the engine starts, the vapors are purged from the crankcase and drawn into the intake manifold by the positive crankcase ventilation system.

### FUEL TANK FILLER IS SEALED

The fuel tank vent line also leads to the crankcase air cleaner. To keep liquid fuel out of the tank vent line, a vapor-liquid separator traps any liquid coming from the tank vents and returns it to the tank. The tank filler tube is closed off with a sealed cap so no vapor can escape at this point.

### ONE VENT LINE STAYS OPEN

Four tank lines provide venting regardless of the car's attitude in parking or driving. A small fill-limiter-tank located inside the main tank is designed to prevent heat expansion from forcing liquid fuel out of the tank.

## TRANSMISSION FEATURES

For some 1970 models, the standard manual transmission is the new A-230 model. This three-speed unit is synchronized in all forward speeds. The low-speed synchronizer eliminates the need for the previously used clutch interlock. Both shift forks and the shift interlock are located in the shift housing cover for easier servicing.

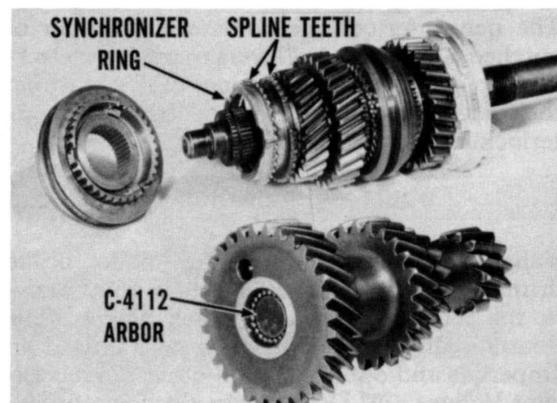


Fig. 29—Synchronizers prevent gear clash



To prevent unwanted car movement, when the selector is in reverse position, manual transmission cars are equipped with a clutch safety switch. This switch interrupts the circuit to keep the starter from engaging until the clutch pedal is fully depressed.

### NO CLASH OR GRIND

All gears, including reverse, are in constant mesh so gear clash is eliminated. In shifts, the synchronizer ring picks up the desired gear and brings it up to matching speed. Spline teeth on the ring keep the gear from engaging until the rotating speeds are equalized. The countershaft in this new transmission is longer than in previous models so you'll need the new C-4112 Arbor when installing shaft bearing rollers.

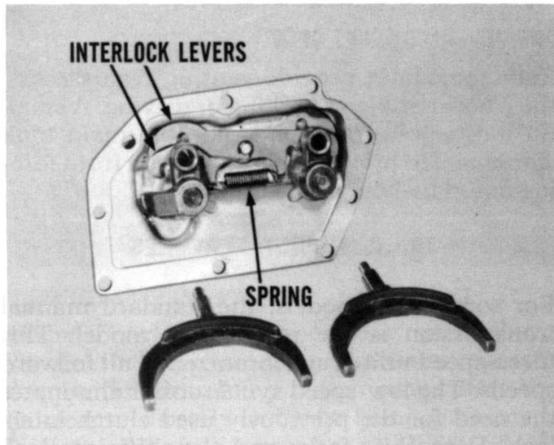


Fig. 30—Spring and lever action ease shifting

### INTERLOCK HELPS SHIFTING

The new interlock mechanism uses a pair of notched, spring-loaded levers to prevent selecting two gears at the same time. When shifting, the over-center spring and cam action of the interlock levers helps the gear shifts.

### DRUM AND DISC BRAKES

Valiant and Dart six-cylinder model brake drum diameter is now 10 inches in front and 9 in the rear, along with 14-inch wheels. The floating-caliper disc brake is now standard on Imperials and optional on all other models except Valiant and Dart. Brake servicing procedures are the same as on previous models.



### WHERE TO TAKE IT OFF

A new method of gauging is used when machining the floating caliper brake discs. Since disc wear can be greater on the inner side of the disc, it is important to determine how much material can be safely removed from each side.

### GAUGE HAS TWO PARTS

The new C-4114 Thickness Checking Gauge is used, along with a micrometer, for checking disc thickness and machining limits. The two-piece gauge includes a large steel ball and a gauge plate. The extended side of the plate is for checking discs on full-size models; the straight side is for the intermediates.

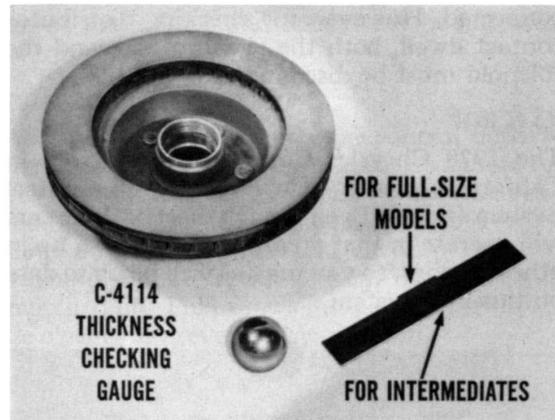


Fig. 31—Gauge plate is two-sided

### MEASURE THE GAP

To make the check, put the gauge ball in the



Fig. 32—Inner surface removal gauging

inner bearing cup and the gauge plate over the ball center so you can check the clearance with a feeler gauge. As an example, let's say the gap measures 0.020". This is the amount of material you can remove from the inner disc surface.

**YOU'LL NEED A MIKE**

Measure the disc thickness with a micrometer. For our example, assume that you get a mike reading of 1.245". From this measurement we subtract the 1.200" minimum disc thickness limit specified for these models, and get a 0.045" total removal limit.

**INNER FROM TOTAL GIVES OUTER**

To determine the outer disc surface removal limit, take the 0.045" total limit figure and subtract the 0.020" inner surface removal limit we got with the ball and gauge plate. This leaves

a 0.025" removal limit for the outer surface of the disc.

**BE SURE TO TAKE IT OFF**

When you bleed these floating caliper disc brakes with a pressure tank, the plunger in the new metering valve must be held out to keep the valve from operating. Simply compress the C-4121 Metering Valve Bleeding Tool and engage it in the push rod groove. Be sure to remove the tool when you're finished. If the tool is not removed the valve will not operate.

**REAR AXLE SPECIAL TOOLS**

The rear axle servicing story is mainly concerned with new special tools since the servicing procedures are unchanged.

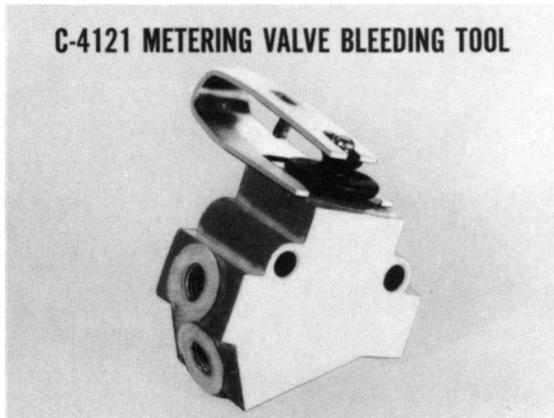


Fig. 33—Tool holds valve open

8 1/4" AXLES	
Tool No.	Name
C-293-44	DIFFERENTIAL CASE BEARING REMOVER BLOCKS
C-4107	DIFFERENTIAL CASE BEARING INSTALLER
C-4130	SHAFT SEAL INSTALLER (LARGE BORE)
C-4131	SHAFT BEARING REMOVER (LARGE BORE)
C-4137	SHAFT BEARING INSTALLER (SMALL BORE)
C-4138	SHAFT SEAL INSTALLER (SMALL BORE)
C-4139	SHAFT BEARING INSTALLER (LARGE BORE)
8 3/4" AXLES	
C-3095	PINION REAR BEARING INSTALLER
C-4109	PINION SEAL INSTALLER



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