CAPRI 1600 CC TRANSMISSION REGULATED SPARK

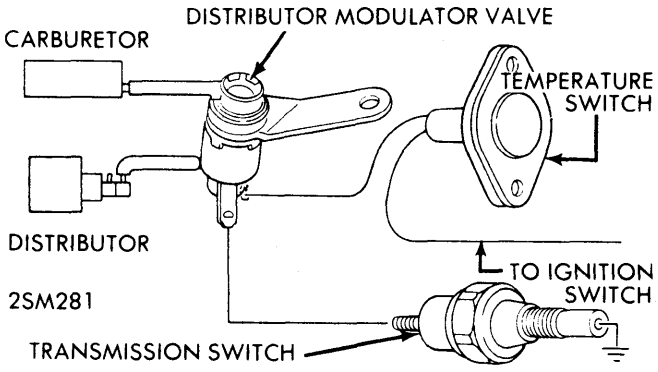
Capri 1600 cc (California Only) (1972)

DESCRIPTION

System consists of a distributor modulator valve, ambient temperature switch, transmission switch, and vacuum hose and electrical connections. System retards distributor vacuum advance when vehicle is in first and second gear. Spark is advanced when vehicle is in high gear only. Although not directly a part of the TRS system, a decel valve is also used in conjunction with the system.

OPERATION

Distributor Modulator Valve – Vacuum advance of the distributor is retarded through the use of this valve. It is located in the vacuum line between the carburetor venturi port and the outer diaphragm of the distributor vacuum advance connection. The valve is normally open and when energized electrically by the transmission switch, it closes to cut off vacuum supply to the distributor.



TRS SYSTEM

Ambient Temperature Switch – Switch is located in the right front door pillar. At temperatures of 49°F or below, the switch contacts are open, and allows normal vacuum advance in all gear ranges. At 65°F or above, the switch contacts close. This closes the circuit to the modulator valve and causes it to energize, cutting off vacuum advance to the distributor when transmission is not in high gear.

Transmission Switch – Located on left side of transmission case, the switch is actuated when shift lever is moved to high gear position. This opens the switch contacts to de-energize the modulator valve. This allows vacuum advance providing that ambient temperature is below 49°F.

Decel Valve – During periods of engine deceleration, manifold vacuum forces diaphragm assembly against spring. This in turn opens the decel valve. This allows existing manifold vacuum to pull a metered amount of fuel and air from the carburetor, through the decel valve and into the intake manifold. Valve is calibrated and pre-set to remain open to continue feeding air and fuel to intake manifold for a certain time.

SERVICE PROCEDURES

System Testing – Connect vacuum gauge to TRS system between modulator valve and distributor. Make sure that temperature switch is above 65°F, and proceed as follows:

1) Start engine in neutral or park. No vacuum should be indicated on the gauge. Increase engine speed to 1000-1500 RPM. Vacuum should remain at zero.

2) Push clutch pedal to the floor and place transmission in high gear. With engine running at 1000-1500 RPM, vacuum reading should be at least 6" Hg.

3) The foregoing tests are for detecting trouble in the vacuum circuits. Should the system fail to function according to the System Test, it is necessary to check the individual components.

Transmission Switch – Disconnect switch lead from distributor modulator valve terminal and connect it in series with a test light to the positive terminal of the battery. With engine and ignition off, move gear lever through all positions. The light should stay on until high gear is selected. If light stays on, the circuit is grounded or the switch is defective. If light does not go on at all, circuit is open or the switch is inoperative.

Temperature Switch – Disconnect temperature switch lead from terminal of distributor modulator and connect in series with a test lamp to a good ground. Turn on ignition and warm temperature switch with a warm sponge. Lamp should light when temperature of switch exceeds 65°F. Cool switch until temperature is below 49°F. Light should go out. Replace switch if defective.

Distributor Modulator Valve – With transmission switch and temperature switch known to be good, repeat the System Test. If vacuum not present when it should be, or vacuum is present when it should not be, either valve is faulty or hoses are pinched, plugged, improperly connected, or there is no vacuum from the carburetor.

Decel Valve – With ignition timing and engine idle correctly set, connect tachometer and connect a vacuum gauge between the carburetor and the decel valve. The length of tube between vacuum gauge and decel valve should not exceed 60". Proceed as follows:

NOTE – On 1600 cc engines, it is necessary to first determine the carburetor model used. Number is stamped on fuel bowl opposite the accelerator pump. A 28 mm venturi is used on early models and is numbered 701W-9510-EA. A 25 mm venturi is used on later models and is numbered 701W-9510-EB.

1) Increase engine speed to 3000 RPM and hold for about 2 seconds. Release the throttle and observe the time interval between throttle release and a zero reading on the vacuum gauge. Time interval should be as shown in chart below.

Decel Valve Test

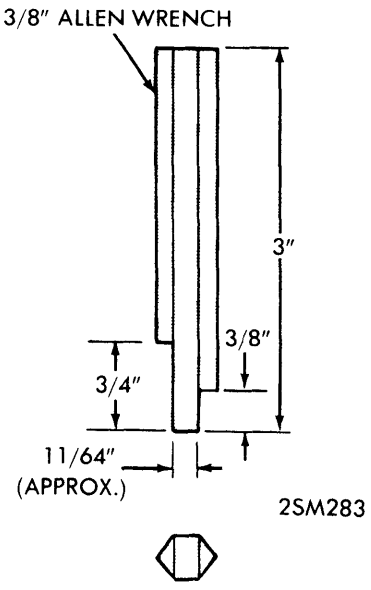
Engine	Seconds
1600 cc (Carb. #701W-9510-EA or D0RY-B)	3-5
1600 cc (Carb. #701W-9510-EB or D2RY-C)	2.5-3.5

2) If decel valve requires adjustment, remove and discard colored cap (if equipped) for access to nylon adjuster. Fabricate tool to adjust valve as shown in illustration. To increase time, back adjuster outward until proper time is observed. To decrease time, turn adjuster inward. One turn of adjuster in either direction will increase or decrease the time approximately .5 second.

3) When nylon adjuster is flush with top of threaded collar, the maximum adjustment is 1 full turn inward or 9 turns outward (approximately .5").

4) When adjustments are completed, snap in new service replacement colored cap in the top of the decel valve. Remove vacuum gauge and connect tube.

CAPRI 1600 CC TRANSMISSION REGULATED SPARK (Cont.)



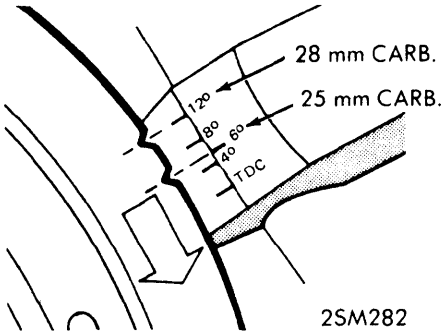
DECEL VALVE ADJUSTING TOOL

ADJUSTMENT

Correct ignition timing and carburetor idle adjustment is important to maintaining correct emission levels and to proper running of vehicle. *See Tune-Up Charts for ignition and carburetor adjustment specifications.*

Ignition Timing

With engine at normal operating temperature, connect tachometer and timing light. Disconnect both distributor vacuum lines and plug intake manifold line. Make sure that engine idle is set to 600 RPM. Rotate distributor housing to set ignition timing. Set vehicles with 28 mm carburetor (701W-9510-EA or D0RY-B) to 12° BTDC. Set vehicles with 25 mm carburetor (701-9510-EB or D2RY-C) to 6° BTDC.



1600 cc ENGINE TIMING MARKS

Idle Speed

With engine at normal operating temperature and tachometer attached, disconnect throttle solenoid lead at wiring harness and adjust curb idle speed screw to 500 RPM. *NOTE — It may be necessary to turn adjusting nut on throttle solenoid as well as idle adjusting screw if solenoid plunger interferes with lever.* Reconnect throttle solenoid lead and manually extend throttle lever slightly to allow solenoid plunger to extend. Set to 900 RPM by turning solenoid adjuster.

1972 CAPRI DECEL VALVE

Capri (All Engines) (1972)

DESCRIPTION & OPERATION

Valve is mounted on intake manifold adjacent to carburetor. Purpose of valve is to meter an additional amount of air/fuel to engine during periods of deceleration. When decelerating, manifold vacuum forces diaphragm assembly against the spring which in turn raises (opens) decel valve. With valve open, existing manifold vacuum pulls a metered amount of air/fuel from the carburetor and travels through the valve body assembly into the intake manifold.

SERVICE PROCEDURES

NOTE — On 1600 cc engines, it is necessary to first determine carburetor model used. Number is stamped on fuel bowl opposite accelerator pump. A 28 mm venturi is used on early models and is numbered 701W-9510-EA. A 25 mm venturi is used on later models and is numbered 701W-9510-EB.

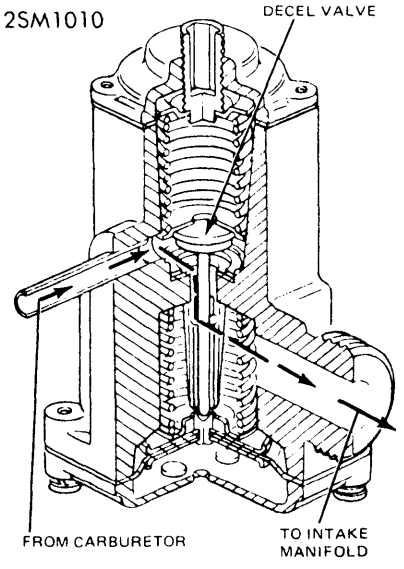
Connect a tachometer and install a vacuum gauge between carburetor and decel valve. Length of tube connecting vacuum gauge should not exceed 60". With engine at normal operating temperature, ignition timing and idle RPM set to specifications, proceed as follows:

1) Bring engine to 3000 RPM and maintain for about 2 seconds. Release throttle and note time interval between throttle release and a zero reading on the vacuum gauge. Time interval should be as follows:

Engine	Seconds
1600 cc (Carb. 701W-EA)	3-5
1600 cc (Carb. 701W-EB)	2.5-3.5
2000 cc (Manual Trans.)	2.5-3.5
2000 cc (Auto. Trans.)	1.5-3.5
2600 cc (All)	1.5-3.5

2) If adjustment required, remove and discard colored cap (if equipped) for access to nylon adjuster. Using a suitable tool, back adjuster outward to increase time or turn adjuster inward to increase time. One turn of adjuster, in either direction, will increase or decrease time approximately 1/2 second.

3) When nylon adjuster is flush with top of threaded collar, the maximum permissable adjustment is 1 full turn inward or 9 turns outward. When adjustments are completed, snap in new service replacement colored cap in top of valve.



CAPRI DECEL VALVE