

# Exhaust Emission Systems

## 1970 DATSUN PICKUP ENGINE MODIFICATION

Datsun Pickup (1970)

NOTE - Air Injection is also used with this system.

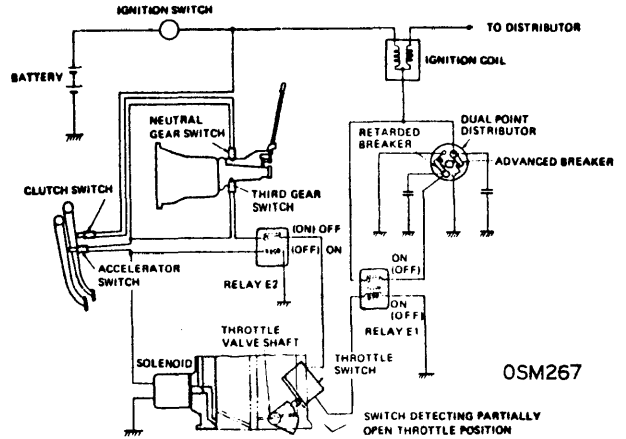
### DESCRIPTION & OPERATION

**Solenoid Valve** - During periods of deceleration, solenoid valve is activated as long as clutch and accelerator pedals are not depressed and with transmission in any gear except neutral.

**Ignition Distributor** - Retarded side of dual point distributor is activated when clutch pedal is not depressed, transmission is in 3rd. gear and accelerator pedal is depressed (accelerator switch "OFF") causing throttle valve to be open no more than 35° from its idle position.

NOTE - Solenoid valve and retarded side of distributor cannot operate at the same time.

Throttle switch is located on carburetor body. Following table shows operational condition of each unit according to engine and driving condition.



CONTROL SYSTEM SCHEMATIC

Engine or vehicle operations	Neutral gear switch	Clutch switch	Accelerator switch (Detecting close throttle position)	Relay E <sub>2</sub>	Third gear switch	Throttle switch (Detecting wide open throttle position)	Relay E <sub>1</sub>	Solenoid valve current	Spark timing	
									Advanced	Retarded
Engine starting & warming up with choke	OFF	ON	OFF	ON	OFF	ON	OFF	OFF	O	—
Engine starting without choke (Hot restarting)	OFF	ON	ON	ON	OFF	ON	OFF	OFF	O	—
Idling	OFF	ON	ON	ON	OFF	ON	OFF	OFF	O	—
Engine racing	OFF	ON	ON → OFF → ON	ON	OFF	ON or ON → OFF → ON	OFF	OFF	O	—
Cruising or accelerating in 3rd gear with the partially open throttle	ON	ON	OFF	ON	ON	ON	ON	OFF	—	O
Cruising or accelerating in 1st, 2nd and 4th gear with partially open throttle	ON	ON	OFF	ON	OFF	ON	OFF	OFF	O	—
Cruising or accelerating with wide open throttle	ON	ON	OFF	ON	ON (3rd) or OFF (1st, 2nd, 4th)	OFF	OFF	OFF	O	—
Coasting	ON	ON	ON	OFF	ON (3rd) or OFF (1st, 2nd, 4th)	ON	OFF	ON	O	—
Remarks	When the shift lever is in neutral gear position, this switch is "OFF". And when the lever is in another gear position, the switch is "ON".	When the clutch pedal is depressed, this switch is "OFF". And when the pedal is released, the switch is "ON".	When the accelerator pedal is "OFF". And when the pedal is released, the switch is "ON".	This relay has the characteristic of "normal close".	When the shift lever is in 3rd gear, this switch is "ON". And when the lever is in another gear position, the switch is "OFF".	When the throttle valve is partially opened, this switch is "ON". And when the valve is wide open, the switch is "OFF".	When the relay E <sub>1</sub> is "ON", the primary ignition circuit from the ignition coil to "retarded" breaker point is closed. So the "retarded" spark timing is provided.	When the solenoid valve current is "ON", the fuel and air passage is opened and excessive mixture is supplied to reduce HC emission.	When the "retarded" spark timing is provided, HC emission is reduced.	

OSM268

THE RELATION OF OPENING AND CLOSING OF SWITCHES

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## 1970 DATSUN PICKUP ENGINE MODIFICATION (Cont.)

**Clutch Switch** - Disconnect the test light wire from the throttle valve switch. Connect the test light wire to the main terminal of the clutch switch. With the ignition key ON, check to be sure that the lamp is turned on when the clutch pedal is pressed down and is not turned on when the clutch pedal is not pressed down.

**Vacuum Switch** - Disconnect the test light wire from the clutch switch and connect it to the main terminal of the vacuum switch. Connect a vacuum gauge into the manifold vacuum line. Use a tee fitting with the same diameter as the line. Start and warm up the engine, and race the engine and close the throttle valve rapidly. Manifold vacuum will rise and the light will go on. At recovery the switch should be activated on and the lamp should be on with the gauge indicating 20.9 to 21.6" Hg.

### ADJUSTMENT

**Transmission Neutral Switch** - There is no adjustment on this switch. If the switch itself is not working well, replace it with a new one.

**Throttle Valve Switch** - Set the switch in a position where the throttle arm depresses the contact arm of the accelerator switch approximately 0.02".

**Clutch Switch** - Set the switch in a position where the clutch pedal arm depresses the contact arm of the clutch switch approximately 0.02".

**Vacuum Switch** - If the vacuum switch does not operate correctly, replace it with a new one. There is no adjustment on this switch.

### SERVICE PROCEDURE

**Idle Speed And Mixture** - Warm up the engine thoroughly with the transmission in neutral position. Connect ignition tachometer and timing light. Remove air cleaner and adjust screws on throttle valve switch bracket so that throttle valve switch contact point does not touch throttle arm. Install air cleaner and set the idle speed at 700 RPM (by adjusting the throttle adjusting screw). Set the ignition timing at TDC. Adjust the idle adjusting screw and throttle adjusting screw until the most satisfactory 750 RPM engine speed is obtained. Turn the idle adjusting screw clockwise for a leaner mixture until you reach 700 RPM. Recheck the ignition timing. Readjust throttle valve switch.

**Idle Vacuum Check** - The idle vacuum must be 19.3 to 20.2" Hg. (except new engine condition). If vacuum is not within the above limits, recheck idle speed, ignition timing, and tighten intake manifold.