1970-71 510 & PICKUP ENGINE MODIFICATION (MAN. TRANS.)

Datsun 510 with Manual Transmission (1970-71)
Datsun Pickup with Manual Transmission (1971)

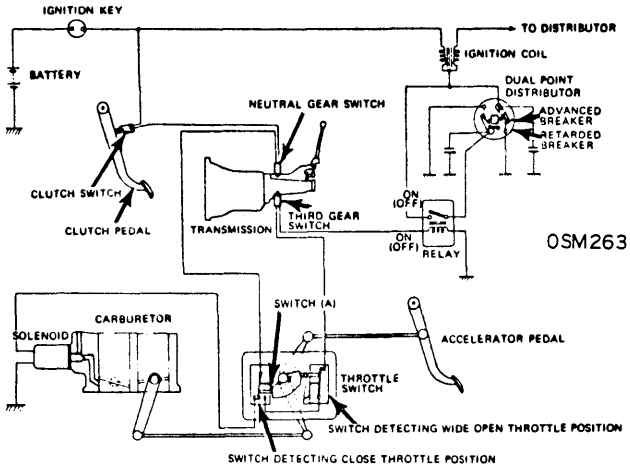
NOTE – Air Injection is also used with this system.

DESCRIPTION & OPERATION

System is designed to control operation of carburetor and dual point distributor under the following conditions:

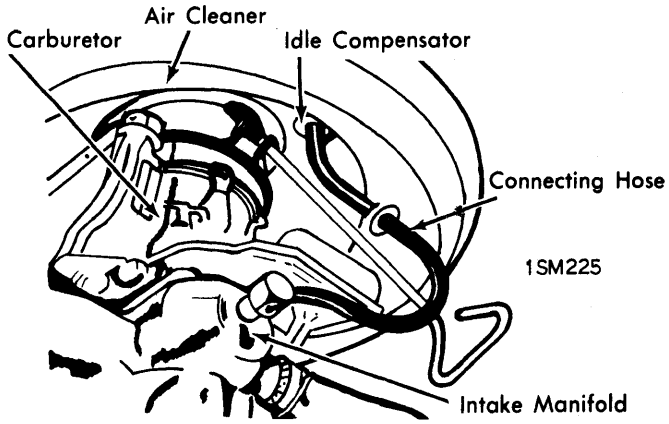
Solenoid Valve – During periods of deceleration, solenoid valve is activated as long as clutch and accelerator pedals are not depressed and transmission is in any gear except neutral.

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 causing throttle valve to be open no more than 35° from its idle position.



CONTROL SYSTEM SCHEMATIC

NOTE – Solenoid valve and retarded side of dual point distributor cannot operate at the same time.



IDLE COMPENSATOR

Idle Compensator – This unit serves as a means of delivering proper air/fuel mixture to engine in case of an overheated engine. If engine is overheated, bimetal thermostat in air cleaner will become heated by intake air. This will cause idle compensator valve to open, allowing fresh air into intake manofold. While valve is opened, engine will run somewhat above normal idle speed. Idle compensator valve begins to open at 126-136° F. and opens fully at 149° F. Valve is adjusted at factory and is not servicable, other for replacement.

Following table shows operational condition of each unit according to engine and driving conditions.

Engine or vehicle operations	Clutch switch	Neutral gear switch	Throttle switch		Third gear switch	Relay	Solenoid valve current	Spark timing	
			Switch detecting close throttle position	Switch detecting wide open throttle position				"Advanced"	"Retarded"
Engine starting & warming up with choke	ON	OFF	OFF	ON	OFF	OFF	OFF	O	—
Engine starting without choke (Hot restarting)	ON	OFF	ON	ON	OFF	OFF	OFF	O	—
Idling	ON	OFF	ON	ON	OFF	OFF	OFF	O	—
Engine racing	ON	OFF	ON → OFF → ON	ON or ON → OFF → ON	OFF	OFF	OFF	O	—
Cruising or accelerating in 3rd gear with partially open throttle	ON	ON	OFF	ON	ON	ON	OFF	—	O
Cruising or accelerating in 1st, 2nd and 4th gear with partially open throttle	ON	ON	OFF	ON	OFF	OFF	OFF	O	—
Cruising or accelerating with wide open throttle	ON	ON	OFF	OFF	ON (3rd) or OFF (1st, 2nd, 4th)	OFF	OFF	O	—
Coasting	ON	ON	ON	ON	ON (3rd) or OFF (1st, 2nd, 4th)	OFF	ON	O	—
Remarks	When the clutch pedal is depressed, this switch is "OFF". And when the pedal is released, the switch is "ON".	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 throttle valve is nearly closed, this switch is "ON". And when the valve is even slightly opened 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 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 relay 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.	

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THE RELATION OF OPENING AND CLOSING OF SWITCHES

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