1973 510, 610 & PICKUP ENGINE MODIFICATION

Datsun 510 Sedan & Wagon (1973)
Datsun 610 Sedan & Wagon (1973)
Datsun Pickup (1973)

NOTE — Air Injection is not used with this sytem.

DESCRIPTION

System consists of a temperature sensing switch, a throttle switch, a gear switch (Man. Trans. only), a relay, and a dual point distributor. A boost controlled deceleration device is also used to provide additional air/fuel mixture during deceleration. All models also use an automatic temperature control air cleaner to permit leaner settings of carburetor. *For additional information, see appropriate story in EXHAUST EMISSION Section.*

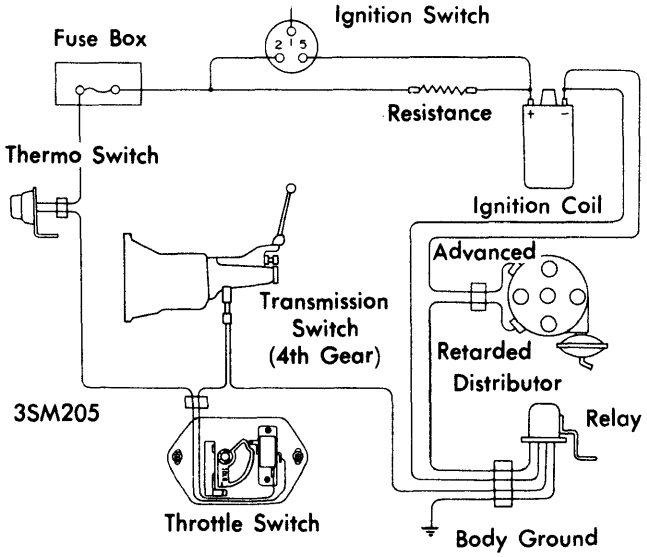
OPERATION

Spark Timing Control System — Ignition timing is retarded when the following conditions are present:

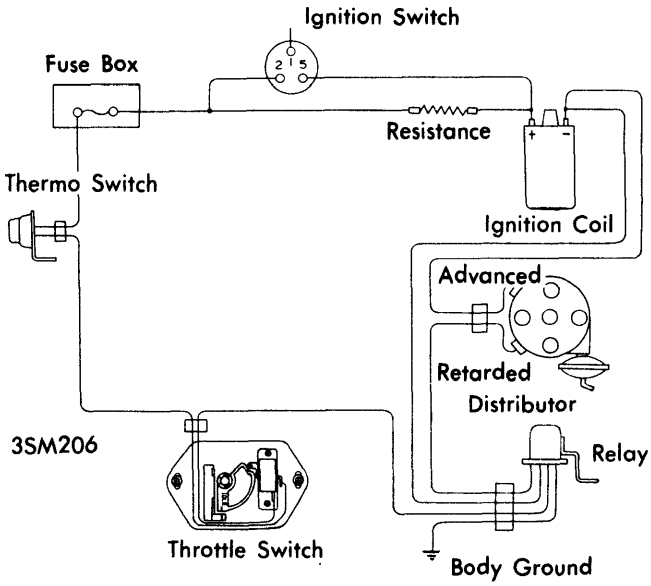
1) Temperature inside the passenger compartment is above 50°F.

2) The carburetor throttle valve is opened below 35° (all with Auto. Trans. exc. 610 models), 40° (all with Man. Trans. exc. 610 models) or 45° (all 610 models).

3) On models with Man. Trans. in all gear positions other than fourth.



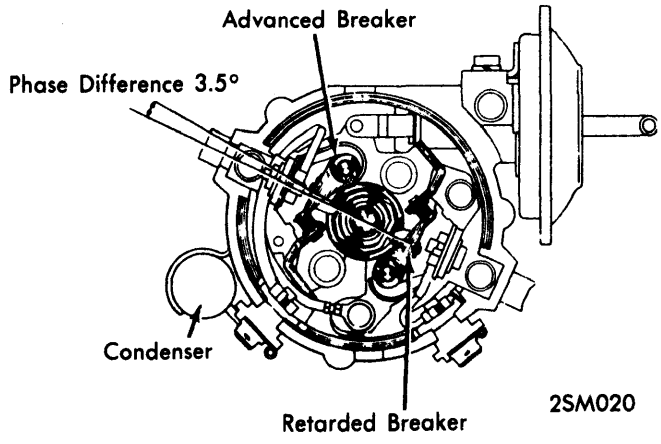
EXHAUST EMISSION CONTROL SYSTEM (MANUAL TRANS.)



EXHAUST EMISSION CONTROL SYSTEM (AUTOMATIC TRANS.)

Transmission (Fourth Gear) Switch — Switch is operated by movement of fork rod in transmission. Switch should be OFF in fourth gear and ON in all other gear positions.

Dual Point Distributor — Two spark timings, "Advance" and "Retard", are provided. They can be used independently and provide seven crankshaft degrees phase difference. The "Retard" condition serves to prevent air pollution, while the "Advance" condition provides for better engine performance and fuel economy. The two breaker points are placed in parallel in the primary ignition circuit. The retarded breaker point works when relay is on, the advanced breaker point works when relay is off.



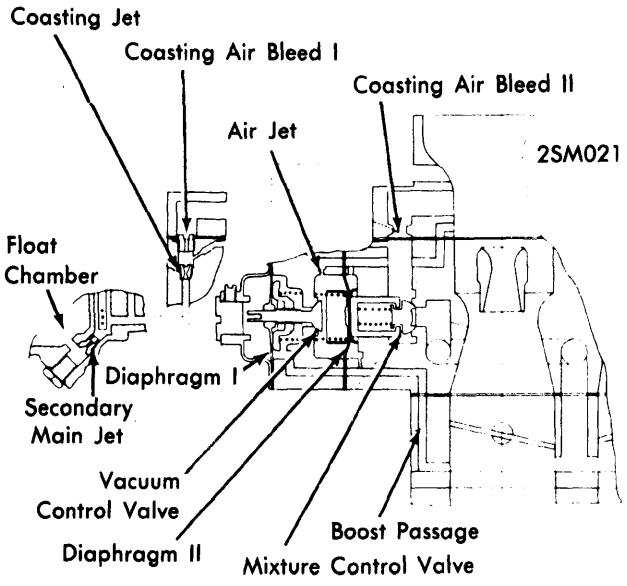
DUAL POINT DISTRIBUTOR

Throttle Switch — Switch is set on bell-crank of accelerator linkage and operates together with accelerator pedal. Switch is ON when throttle is opened wide.

1973 510, 610 & PICKUP ENGINE MODIFICATION (Cont.)

		Throttle SW	Fourth gear SW	Spark timing	
				"Advance"	"Retard"
Engine start		ON	ON	–	O
Idling		ON	ON	–	O
4-speed gear	Partial O.T.	ON	OFF	O	–
	Wide O.T.	OFF			
Except 4-speed gear	Partial O.T.	ON	ON	–	O
	Wide O.T.	OFF		O	–

3SM207 **SPARK CONTROL SYSTEM OPERATION (MANUAL TRANS.)**



BOOST CONTROLLED DECELERATION DEVICE

Boost Controlled Deceleration Device – When manifold vacuum exceeds a pre-determined value, (when throttle is suddenly closed) device provides an additional air/fuel mixture and delivers it below the carburetor throttle valve. This has the effect of delaying the drop of engine RPM. It should take 4-5 seconds for engine speed to decrease from 3000 to 1000 RPM. The amount of vacuum required to activate the device (and thus the time delay) can be varied by means of an adjusting screw in the end of the device.

NOTE – Following tables show operation of each control switch under vehicle operating conditions. Two charts are shown; one for manual transmissions with gear switches and another for automatic transmissions without gear switches.

TESTING

Transmission (Fourth Gear) Switch – Disconnect lead wires at switch and connect ohmmeter. Ohmmeter should read infinity when shift lever is in fourth gear position and zero when in all other gear positions, including neutral.

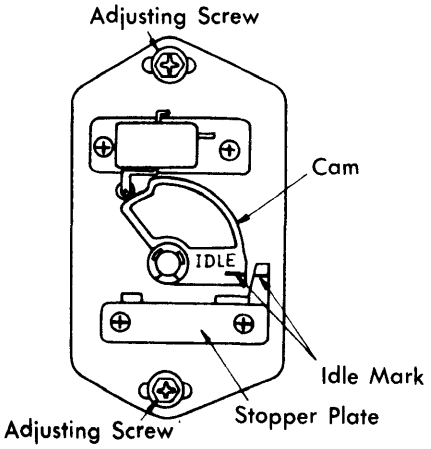
	Throttle SW.	Spark timing	
		"Advance"	"Retard"
Engine start	ON	–	O
Idling	ON	–	O
Partial throttle opening	ON	–	O
Wide throttle opening (and high speed crousing)	OFF	O	

3SM208 **SPARK CONTROL SYSTEM OPERATION (AUTOMATIC TRANS.)**

1973 510, 610 & PICKUP ENGINE MODIFICATION (Cont.)

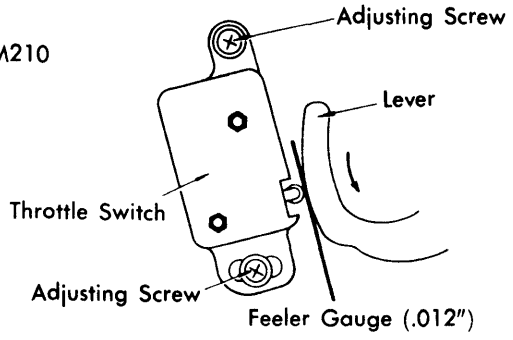
Throttle Switch – Remove cover from switch on 510 and 610 models. When accelerator pedal is depressed a clicking sound can be heard. Check insulation between terminals of switch and base plate. On 510 and 610 models check that idle mark of cam and stopper plate are properly aligned. If not, loosen adjusting screws and rotate switch until correct alignment is achieved, then retighten adjusting screw. On Pickup models, check that clearance between throttle switch and lever is .012" (.3 mm) with accelerator pedal and micro switch fully depressed. If clearance is not correct, loosen adjusting screws, rotate switch until clearance is correct and retighten adjusting screws. Connect ohmmeter to switch terminals. Meter should read infinity when accelerator pedal is fully depressed and zero when pedal is released or partially depressed. If switch does not function correctly, replace. On 510 and 610 models, replace switch cover.

3SM209



THROTTLE SWITCH ADJUSTMENT (510 & 610 MODELS)

3SM210



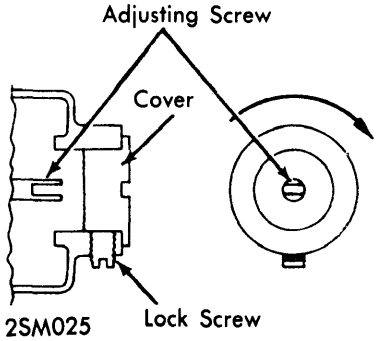
THROTTLE SWITCH ADJUSTMENT (PICKUP MODELS)

Boost Controlled Deceleration Device – 1) With engine at normal operating temperature, manual transmission in "N" or automatic transmission in "D", connect vacuum gauge and tachometer to engine. Increase engine speed to 3000-3500 RPM and quickly release throttle. At this moment manifold vacuum should read above 21.7" (550 mm) Hg and gradually fall to about 16.5" (420 mm) Hg at idle. This change in vacuum should take about four or five seconds.

2) If device is set to actuate at vacuum which is higher than desired level, the delay in returning to idle will be less than the specified 4-5 seconds. If device is set to actuate at vacuum which is lower than the desired level, the delay will be more than the specified 4-5 seconds.

3) Set device to operate at 19.7 ± .787" (500 ± 20 mm) Hg (Man. Trans.) or 18.9 ± .787" (480 ± 20 mm) Hg (Auto. Trans.) by turning adjusting screw.

NOTE – Turning adjusting screw ⅛ turn in either direction will cause a change of .79 in. Hg of vacuum needed to operate device. Turn screw clockwise to decrease vacuum required (increasing delay) or counterclockwise to increase vacuum required (decreasing delay).



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ADJUSTING OPERATING PRESSURE

ADJUSTMENT

With air cleaner installed, engine at normal operating temperature, connect a tachometer and a timing light.

1) Set idle speed at 800 RPM (Man. Trans. in "N") or 650 RPM (Auto. Trans. in "D") and adjust ignition timing to 5° BTDC.

2) Reset idle speed to 800 RPM with transmission in "N". Adjust idle adjusting screw to obtain CO value of 1.5 ± .5%. Repeat adjustment as necessary to achieve 1.5 ± .5% CO at 800 RPM.

3) On automatic transmission models, shift into "D" and check that CO is 1.5 ± .5% at 650 RPM. Readjust speed and mixture screws as necessary to achieve this condition.