

GROUP 3

ENGINE FUEL AND EXHAUST SYSTEMS

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3-1 SPECIFICATIONS, FUEL AND EXHAUST SYSTEMS

a. General Specifications

Gasoline, Grade Required	Premium
Gasoline Tank Capacity (Gal.)	Approx. 20
Gasoline Gauge, Make and Type	AC, Electric
Fuel Pump—Make and Type	AC, Mechanical
Drive	Eccentric at Camshaft Sprocket
Fuel Pump Pressure - At Carburetor Level, Pounds	4 3/4 to 6 1/2
Fuel Filter, in Gas Line	AC, Can-Type Throw-Away
Type, Standard	GF-94
Type, Air Conditioned	GF-96
Fuel Filter, In Gas Tank	Woven Plastic
Carburetor, Make	Carter
Type	Downdraft
Barrels	4
Air Cleaner, Make and Type	AC, Paper Element
Intake Manifold Heat - Type	Hot Exhaust Passage in Manifold
Thermostat Wind/Up @ 70 Degrees F., Valve Closed	1/2 Turn
Idle Speed	500 RPM
Air Conditioned Car (Air Conditioner Off)	Add 50 RPM

b. Carter Carburetor Calibrations—Gran Sport 400 Engine

IMPORTANT: Calibrations are governed by the CODE number.

	400 Eng. Auto. Trans.	400 Eng. Man. Trans.
Model Designation	AFB	AFB
Number of Barrels	4	4
Code Number, for Following Calibrations	3921S	3922S
Bore Diameter, Primary	1 9/16"	1 9/16"
Large Venturi Diameter, Primary	1 3/16"	1 3/16"
Bore Diameter, Secondary	1 11/16"	1 11/16"
Large Venturi Diameter, Secondary	1 9/16"	1 9/16"
Float Level Adjustment	7/32"	7/32"
Float Drop Adjustment	3/4"	3/4"
Float Needle Seat	#38	#38
Low Speed Jet	#65	#68
Idle Discharge Port200" x .030"	.185" x .030"
Lower Idle Port	#52	#52
Metering Jet, Primary	120-256	120-256
Metering Jet, Secondary		
Production	120-158	120-165
High Altitude	120-233	120-165

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b. Carter Carburetor Calibrations—Gran Sport 400 Engine (Cont.)

IMPORTANT: Calibrations are governed by the CODE number.

	400 Eng. Auto. Trans.	400 Eng. Man. Trans.
Metering Rod		
Production	16-219	16-219
High Altitude	16-255	16-255
NOTE: <u>Use High Altitude Kit above 3500 Feet</u>		
Kit Consists of Secondary Jets, Primary Rods and Springs.		
Throttle Bore Vents	#42	#42
Anti-Percolator or Main Bleed Hole	#64	#64
Pump Setting at Closed Throttle	7/16" Center Hole	7/16" Center Hole
Pump Discharge Jet	#72	#70
Vacuum Spark Control Hole	3/32"	.130" x .040"
Choke Coil Housing Number	170BE478S	170AW478S
Choke Thermostat Setting	Index	Index
Choke Suction Hole	#40	#40
Choke Piston Setting (With .026" Wire)105"	.105"
Closing Shoe Clearance020"	.020"
F.I. Cam Setting, Choke Closed	Index	Index
F.I. Cam Number	181-351	181-292
Unloader Opening at Choke Valve Edge	7/32"	7/32"
Initial Idle Speed	1/2 Turn In	1/2 Turn In
Initial Idle Mixture	3/4 Turn Out	3/4 Turn Out
Fast Idle Speed in Drive (Hot, on Low Step)	600 RPM	600 RPM

3-2 DESCRIPTION OF FUEL SYSTEM

Since the Skylark Gran Sport 400

engine is basically the 10.25 to 1 compression ratio 401 cu. in. engine, premium fuel must be used. The 401 engine Type HE fuel

pump is used with a specified pressure of 4-3/4 to 6-1/2 psi at carburetor level. See Figure 3-1.

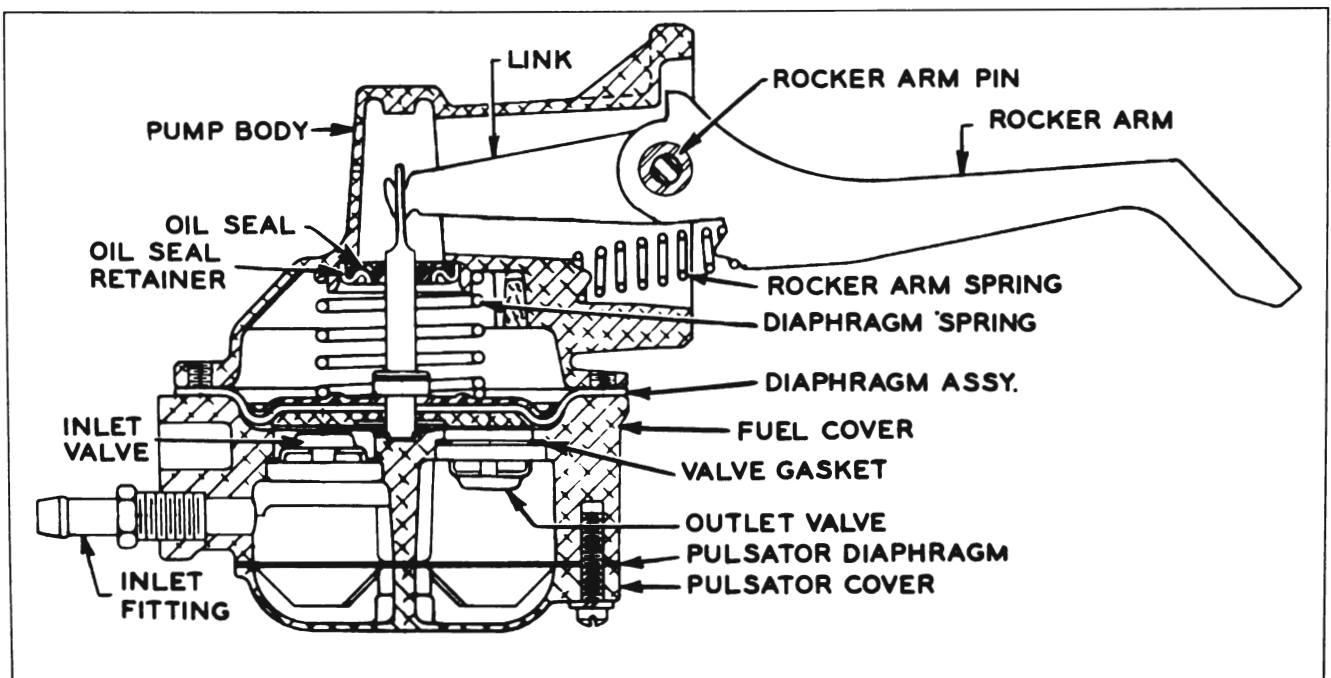


Figure 3-1—Type HE Fuel Pump

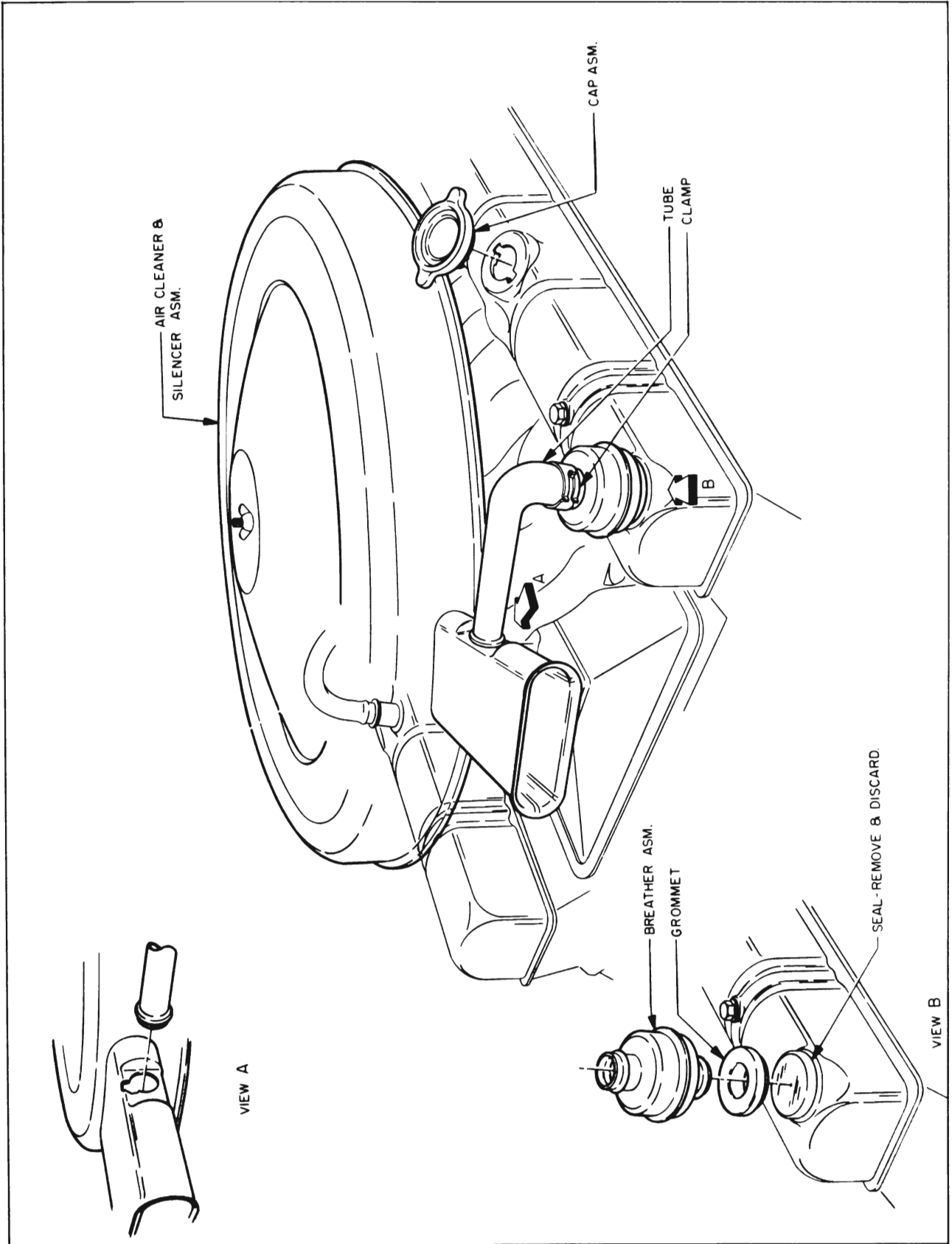


Figure 3-2—Gran Sport Air Cleaner

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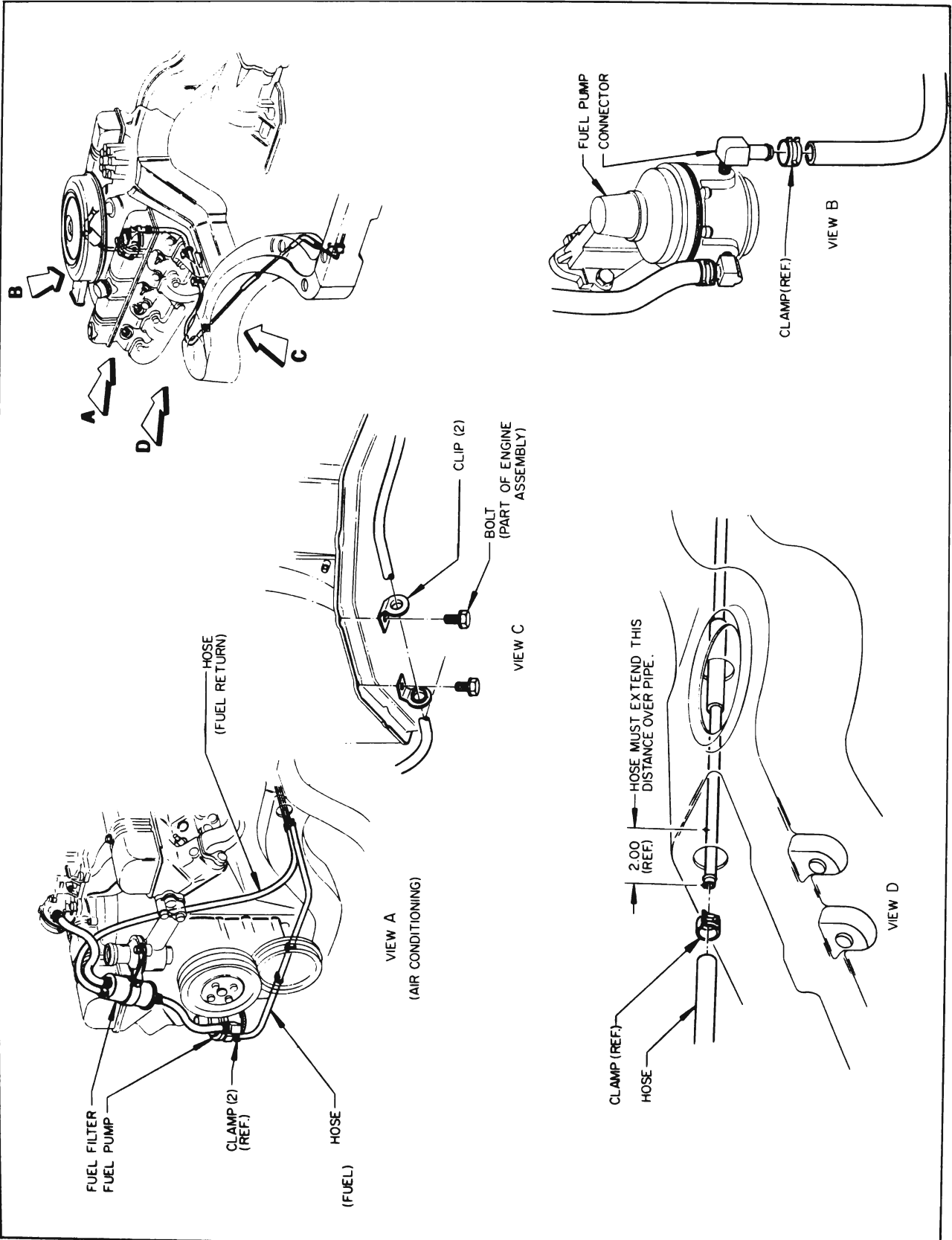


Figure 3-3—Gran Sport Fuel System

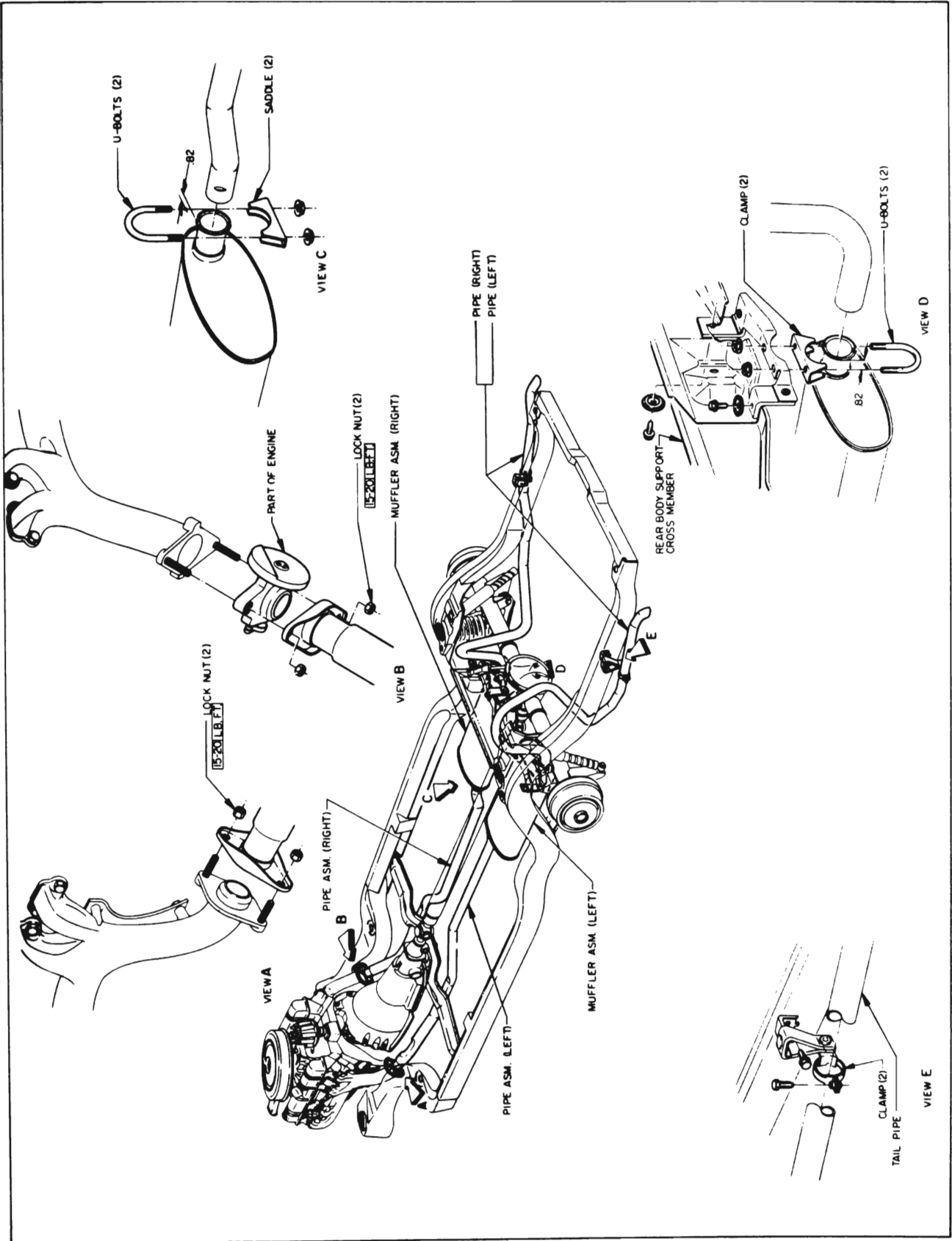


Figure 3-4—Gran Sport Exhaust System

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Although Carter and Rochester 4-barrel carburetors are used optionally on 401 engines for other models, all Skylark Gran Sport 400 engines will be equipped with Carter 4-barrel carburetors. These carburetors are identical with all 401 engine Carters; part number and specifications are the same. Idle speed is 500 RPM in Drive, the same as in 401 engines.

There are two air cleaners used on Gran Sport 400 engines: one for the standard 400 engine and one for the closed positive crankcase ventilation system engine for California use. These air cleaners are of the same shape and type as were used on 1964 Rivas; the same replaceable paper element is used (Type A85C). See Figure 3-2.

The Skylark Gran Sport fuel system is identical with that of the regular Skylark from the fuel tank to the front frame cross member. A special hose is used from the fuel pipe to the fuel pump; this is required because the fuel pump is located on the right side of the engine. This hose is supported by two clips attached to engine oil pan bolts. See Figure 3-3.

3-3 DESCRIPTION OF EXHAUST SYSTEM AND THROTTLE LINKAGE

Dual exhaust is standard in the Skylark Gran Sport. Larger diameter exhaust pipes (2-1/4 inches), larger tail pipes and higher flow mufflers are used than on the regular Skylark. Larger U-bolts and clamps are required; however, the same hangers are used

as on regular Skylarks. See Figure 3-4.

The manifold heat control valve is the same as used on 401 engines.

The setting of the exhaust manifold valve thermostat may be checked when the engine is at room temperature of approximately 70°F. Unhook the outer end of thermostat from anchor pin on the manifold and hold the valve in the closed position. To bring the end of thermostat to the anchor pin will then require approximately 1/2 turn wind-up of the thermostat as shown in Figure 3-5.

The thermostat is not adjustable and should never be distorted or altered in any way as this will affect its calibration. If the thermostat does not have the proper setting, or is damaged, it should be replaced.

Fully open and fully closed positions of the exhaust manifold valve may be checked by the position of the heavy section of the manifold valve weight. If the

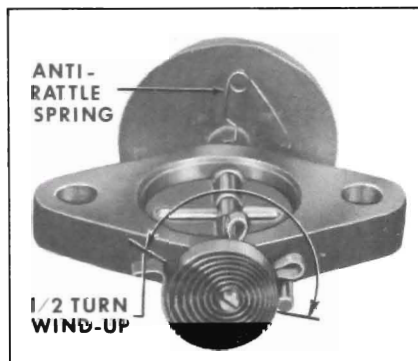


Figure 3-5—Manifold Valve Thermostat Wind-Up

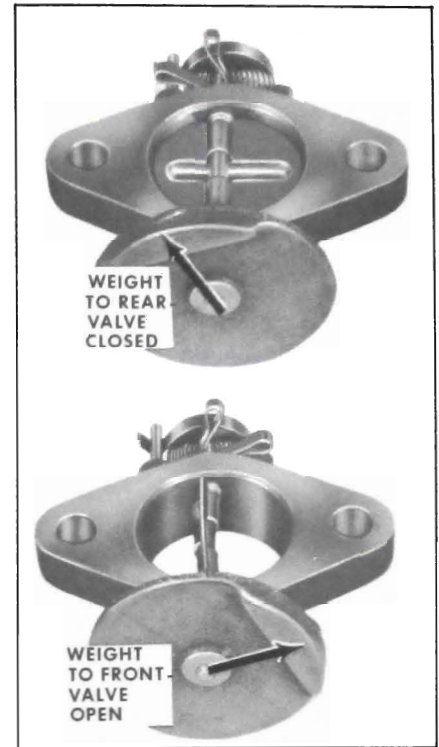


Figure 3-6—Manifold Heat Control Valve Positions

heavy section is to the rear and approximately 45 degrees up, the valve is fully closed; if the heavy section is forward and approximately 45 degrees up, the valve is fully open. See Figure 3-6.

The throttle rod in a Skylark Gran Sport is not interchangeable with the regular Skylark throttle rod. The throttle lever, dash pot, idle stator switch and detent (down-shift) switch are interchangeable. The detent switch, however, requires a special mounting bracket in a Gran Sport. All throttle linkage and transmission switch adjustments are the same as in a regular Skylark. See Figure 3-7.

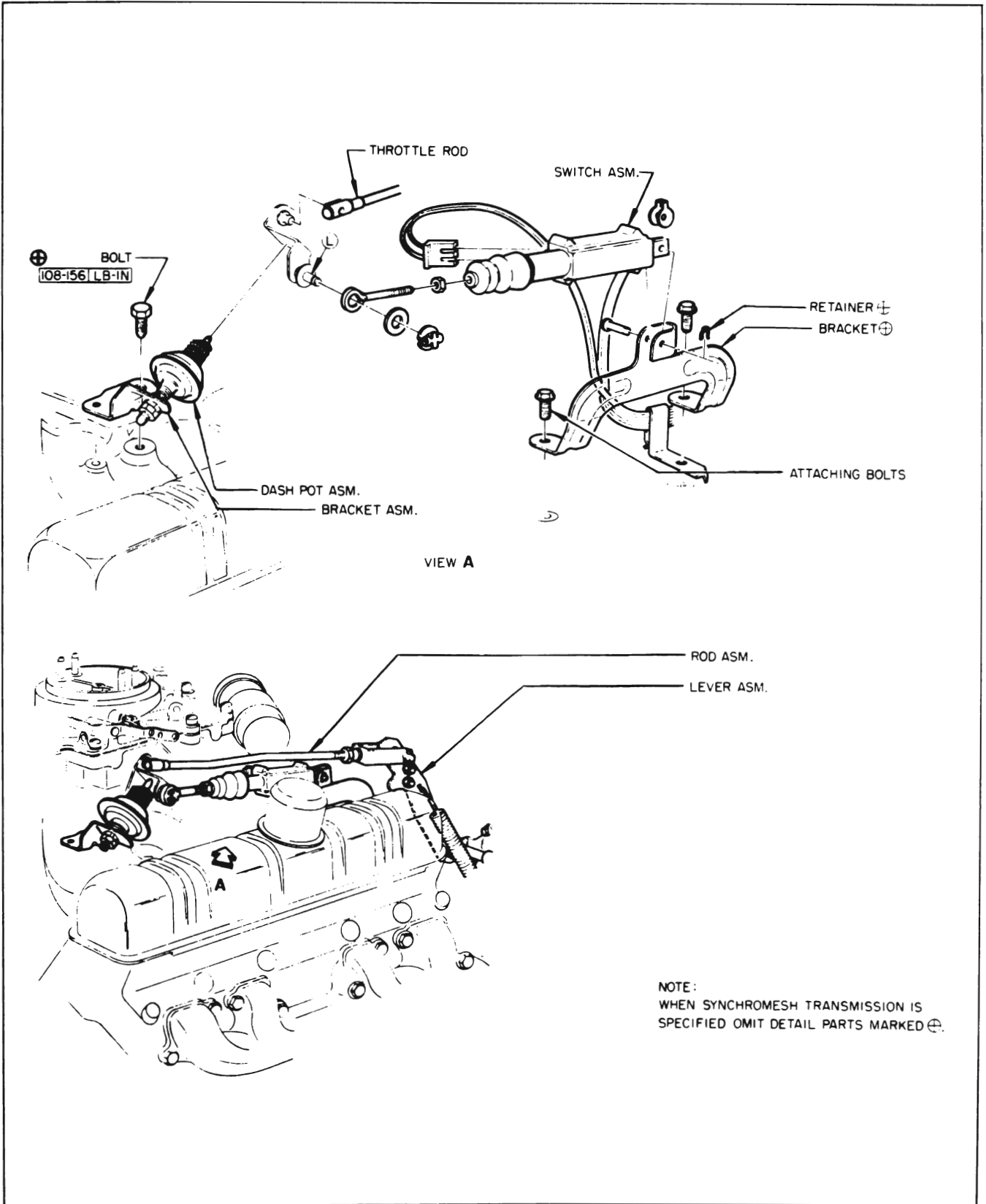


Figure 3-7—Gran Sport Throttle Linkage