1975-79 TUNE-UP PROCEDURES
Oldsmobile V8

ENGINE IDENTIFICATION

VEHICLE IDENTIFICATION NUMBER

Engine can be identified by fifth character of Vehicle Identification Number (VIN), located on plate attached to top left side of instrument panel, and visible through windshield.

1975-76 VIN CODES [1]

Application	Codes
260" 2-Bbl.	F
305" 2-Bbl.	H
350" 4-Bbl.	
Omega	L
All Others	R
400" 4-Bbl.	[2]
455" 4-Bbl.	
Toronado	S
All Others	T

[1] - Information for 1975 models not available.
[2] - Information not available from manufacturer.

1977-78 VIN CODES

Application	Codes
260" 2-Bbl.	F
305" 2-Bbl.	U
305" 4-Bbl.	[1] G
350" 4-Bbl. (LM1)	L
350" 4-Bbl. (L34)	R
350" Diesel	[2] N
403" 4-Bbl.	K

[1] - VIN H on 1978 models.
[2] - Used in 1978 models only.

1979 VIN CODES

Application	Codes
260" 2-Bbl.	F
260" Diesel	P
301" 2-Bbl.	Y
305" 2-Bbl.	G
305" 4-Bbl.	H
350" 4-Bbl.	L
350" 4-Bbl.	R
350" Diesel	N
403" 4-Bbl.	K

ENGINE IDENTIFICATION CODE

Engine identification codes are found at the following locations: on right front side of cylinder block, near water pump. On left side of cylinder block, between exhaust manifold and spark plugs one and three. On left valve cover label or stamped to engine oil fill tube.

1975 ENGINE CODES

Application	Codes
260"	
California	TE, TJ, TP, TT
Federal	QA, QD, QE, QJ, QK, QN, QP, QT
350"	
California	PA, PB, TU, TW, TY, TL, TO, TX
Federal	RS, RT, RW, RX, Q2, Q3, Q4, Q5, QL, QO
400"	YH, YJ, YM, YT, YL
455"	
California	VB, VC, VE, VD, VP
Federal	U2, UB, UC, UD, UE, UP

1976 ENGINE CODES

Application	Codes
260" 2-Bbl.	
California	TA, TD, TK, TN, T2, T3, T4, T5, T7, T8, TJ, TP, TT
Federal	QA, QD, QK, QN, Q7, Q8, QB, QC, QP, QT
350" 2-Bbl.	PA, PB
350" 4-Bbl.	
California	PM, PN, TL, TO, TW, TY, TX
Federal	PE, PF, Q2, Q3, Q4, Q5, Q6
455" 4-Bbl.	
California	VE, VD, V5, VB, V3, V4
Federal	UE, UD, U5, UB, UC, U3, U6, U7, U8, U4

1977 ENGINE CODES

Application	Codes
260" 2-Bbl. (VIN F)	QC, QD, QE, QJ, QS, QT, QU, QV
305" 2-Bbl.	
California	CRM, CRS
Federal	CPA, CRL, CPY
High Altitude	CRT
350" 2-Bbl.	CLY
350" 4-Bbl. (VIN L)	
California	CKR
Federal	CHY, CUB
High Altitude	CKM
350" 4-Bbl. (VIN R)	
California	TX, TY, TB, TC, TN, TO, TU, TV
Federal	QK, QL, QN, QO, QP, QQ
403" 42-Bbl.	
California	VA, VB, VJ, VK, VE
Federal	UJ, UK, UL, UN, UE
High Altitude	U2, U3, U6

1978 ENGINE CODES

Application	Codes
260" 2-Bbl. (VIN F)	
California	TK, TJ, TX, TY
Federal	QD, QE, QK, QJ, QN, QL, QU, QT
High Altitude	Q4, Q5
305" 2-Bbl. (VIN U)	
California	CTF, CRY, CRZ
Federal	CTA, CTB, CTH, CRW, CTJ
High Altitude	CTD, CPZ
305" 4-Bbl. (VIN H)	AG, AJ, AK, AH, AM, AR, CPE, C4J, DAC
350" 4-Bbl. (VIN L)	
California	CHJ
High Altitude	CHL, CMC
350" 4-Bbl. (VIN R)	
California	TO, TP, TQ, TS, TT, TU, TV, TW
Federal	QP, QO, QS, QQ
High Altitude	Q2, Q3
350" Diesel (VIN N)	
Federal	QC, QB, QU, QW
High Altitude	Q6, Q7
403" 4-Bbl. (VIN K)	
California	VA, VB, VC, VJ, VK
Federal	UB, UA, UD, UE, UC
High Altitude	U2, U3, U4

1975-79 TUNE-UP PROCEDURES
Oldsmobile V8 (Cont.)

1979 ENGINE CODES

Application	Codes
260" 2-Bbl. (VIN F)	UC, UD, UE, UJ, UK, UL, UN, UO, U5, VC
260" Diesel (VIN P)	UP, UQ, UW, UX, V2, V7, V8, V9
301" 2-Bbl. (VIN Y)	XF, XH, XP, XR, X7, X9
305" 2-Bbl. (VIN G)	DNA, DNB, DNC, DND, DNF, DNH, DNJ, DNK, DNL, DNM, DNR, DNZ DTC, DTD, DTK, DTL, DTM, DTR
305" 4-Bbl. (VIN H)	DNS, DNT, DNU, DNW, DNX, DNY, DTA, DTB, DTF, DTH, DTJ, DTS, DTU, DTX
350" 4-Bbl. (VIN L)	DRA, DRB, DRC, DRD, DRF, DRH DRJ, DRK, DRL, DRW, DRX, DRY, DRZ, DUB, DUC, DUD, DUH, DUJ
350" 4-Bbl. (VIN R)	QN, QO, TW, TX, TY, UA, US UT, UU, UV, UZ, U9, VA, VE, VK
350" Diesel (VIN N)	C2, C3, C4, C5, C6, E2, E3, E4, E5, E6, K2, K3, K4, K5, K6, QP, QQ, QS, QT, QU, QW, QX, QY, T2, T3, T6, UB, U3, VG, VN, VO, VP, VQ, V4, V6
403" 4-Bbl. (VIN K)	GB, B3, QB, QE, QJ, QK, QL, Q3, Q6, TB, TD

TUNE-UP NOTES

NOTE: In order to comply with emission standards, specifications shown on engine compartment Emission Control Tune-Up Decal must be used in all instances.

NOTE: The EPA High Altitude emission standards apply to vehicles sold in certain areas outside California which have an elevation above 4000 feet.

NOTE: Before making a compression test or cranking engine with a remote starting switch, disconnect ignition switch connector (Pink wire) from High Energy Ignition (HEI) system distributor.

CAUTION: Do not remove spark plug wires with engine running. High Energy Ignition secondary voltage is higher than standard ignition systems and may inflict harmful electrical shock.

NOTE: Damage to HEI electronic module and/or ignition coil may result if "TACH" terminal, in distributor cap connector, is directly grounded.

NOTE: Adjustment of injectors or internal adjustments of injector pump must be done in a properly equipped injector shop with clean environment.

ENGINE COMPRESSION

Diesel Engines - 1) Ensure batteries are fully charged to avoid run-down. Check engine compression through at least 6 compression strokes to obtain reading.

2) Remove air cleaner. Install air crossover screened cover (J-26996-1). Disconnect electrical lead from fuel solenoid terminal of injection pump. Disconnect glow plug wires. Remove all glow plugs.

3) Use compression tester (J-26999) to test cylinders. Compression should build evenly and rapidly to proper level while rotating engine. If piston rings are worn or cracked, compression will read low on 1st stroke, will rise each stroke thereafter, but will not reach normal level.

Gasoline Engines - Test compression with engine warm, all spark plugs removed and throttle and choke valves wide open. If using a remote starter switch, disconnect the ignition switch connector (Pink wire) at HEI distributor.

ENGINE COMPRESSION SPECIFICATIONS

Application	Specification
Compression Ratio	
260" 2-Bbl.	8.0:1
301" 2-Bbl.	8.2:1
305" 2-Bbl. & 4-Bbl.	8.5:1
350" 4-Bbl.	8.0:1
350" 4-Bbl. (VIN L & R)	8.5:1
350" Diesel	22.5:1
403" 4-Bbl.	8.5:1
455" 4-Bbl.	8.5:1
Recommended Fuel	
Diesel	[1] 2-D
Gasoline	Unleaded (87 AKI Minimum)
Compression Pressure	
Diesel	275 psi
Gasoline	120-160 psi
Maximum Variation Between Cylinders	30%

[1] - Use 1-D for vehicle operation below 20°F (-7°C).

VALVE CLEARANCE

Hydraulic Lifters - Zero lash.

VALVE ARRANGEMENT

260", 301", 350" (VIN N & R), 403"

I-E-I-E-E-I-E-I (Both Banks, Front-to-Rear).

All Others

E-I-I-E-E-I-I-E (Both Banks, Front-to-Rear).

SPARK PLUGS

SPARK PLUG TYPE

Application	AC NO.
1975-76	
Omega & 400"	R45TSX
All Others	R46SX
1977-79	
260"	R46SZ
301"	R46TSX
305" & 350" (VIN L)	R45TS
350" (VIN R) & 403"	R46SZ

SPARK PLUG INSTALLATION

Application	Gap	Torque
1975-76		
Omega & 400"	.060"	15 ft. lbs.
All Others	.080"	25 ft.lbs.
1977-79		
260", 301", 350" (VIN R), 403"	.060"	25 ft. lbs.
305" & 350" (VIN G & L)	.045"	15 ft. lbs.

HIGH TENSION WIRE RESISTANCE

WIRE RESISTANCE

Wire Length	Ohms (Maximum)
1975-76	
0-15"	10,000
15-25"	15,000
25-35"	20,000
1977-79	
Under 24"	30,000
Over 24"	50,000

1975-79 TUNE-UP PROCEDURES
Oldsmobile V8 (Cont.)

Carefully remove ends of wire from spark plug and distributor. Using a ohmmeter, check resistance while gently twisting wire. If resistance is not to specification, or fluctuates from infinity to any value, replace wire.

DISTRIBUTOR

All gasoline models are equipped with High Energy Ignition System. No adjustment is required.

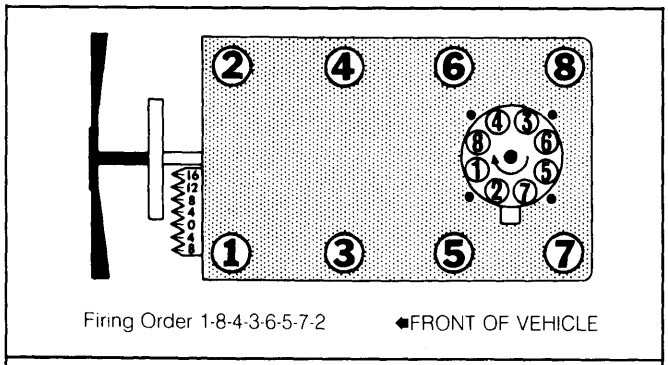


Fig. 1: 305" & 350" (VIN G & L) Firing Order & Timing Marks

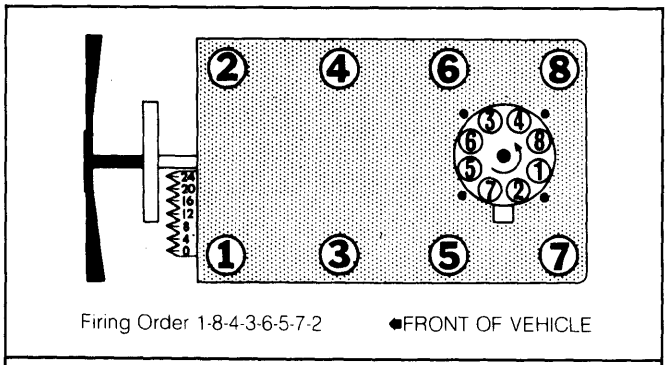


Fig. 2: 260", 301", 350" (VIN R), 400" & 403" Firing Order & Timing Marks

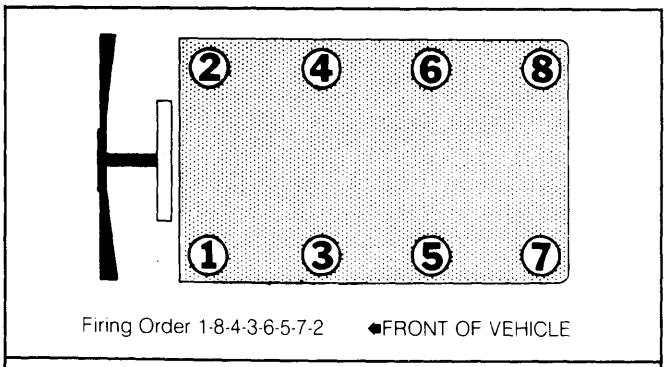


Fig. 3: 260" & 350" Diesel Firing Order

IGNITION TIMING

NOTE: Some engines incorporate a magnetic timing probe hole for use with special electronic timing equipment. Refer to equipment manufacturer's instructions for correct procedures.

1975-77 Models (Except 1977 Toronado) - Remove air cleaner. Disconnect and plug distributor vacuum advance hose and air cleaner vacuum hose at manifold. Adjust ignition timing to specifications with idle speed at specified RPM and automatic transmission in Drive or manual transmission in Neutral.

1975 IGNITION TIMING SPECIFICATIONS (DEGREES@RPM)

Application	California	Federal
260"		
Man. Trans.	16@1100	16@1100
Auto. Trans.	[1] 16@1100	18@1100
350"		
Omega	12@600	12@600
All Others	20@1100	20@1100
400"	16@650	16@650
455"		
Toronado	12@1100	12@1100
All Others	16@1100	16@1100

[1] - Set ignition timing to 14@1000 on Omega.

1976 IGNITION TIMING SPECIFICATIONS (DEGREES@RPM)

Application	California	Federal
260" 2-Bbl.		
Man. Trans.	14@1100	16@1100
Auto. Trans.	[1] 16@1100	18@1100
350" 2-Bbl.		12@600
350" 4-Bbl.		
Omega	12@600	12@600
All Others	20@1100	[2] 20@1100
455" 4-Bbl.		
Toronado	12@1100	14@1100
All Others	16@1100	[3] 16@1100

[1] - Set ignition timing to 14@1000 with engine codes TE, TJ, T4 and T5.
[2] - Set ignition timing to 22@1000 on models having a 2.41:1 axle ratio.
[3] - Set ignition timing to 22@1000 on models having a 2.41:1 axle ratio.

NOTE: The 1977 Toronado distributor does not use a vacuum advance unit or mechanical advance weights. Spark advance is automatically controlled by distributor, controller, coolant temperature sensor, and crankshaft sensor. DO NOT attempt to set ignition timing by rotating distributor. Use magnetic probe timing method to check ignition timing.

1977 Toronado (With Electronic Spark Timing) - 1) Check distributor position by removing Black/Pink wire from distributor. Remove distributor cap and crank engine until rotor points toward rear of engine and number one piston is almost at TDC of compression stroke.

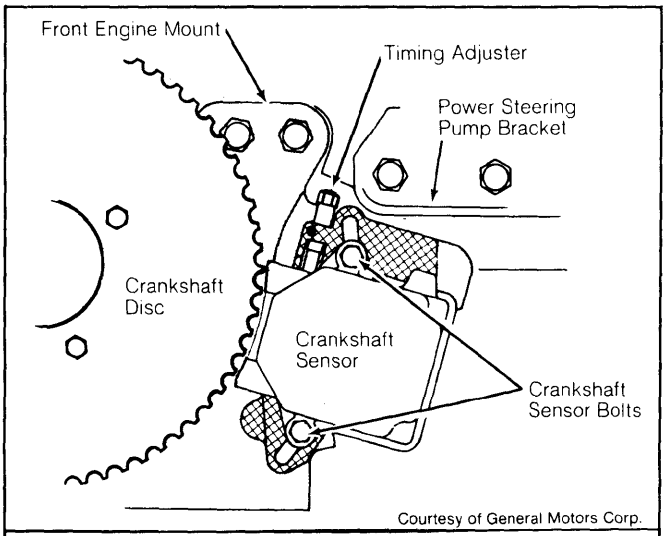


Fig. 4: 1977 Toronado Ignition Timing Adjustment

1975-79 TUNE-UP PROCEDURES
Oldsmobile V8 (Cont.)

2) Use a socket on crankshaft bolt to turn crankshaft to TDC. White mark on side of rotor should align with White mark in distributor. If not, loosen distributor clamp bolt and turn distributor to align marks. Tighten clamp bolt.
3) With distributor adjusted to correct position, connect jumper wire to reference timing connector near control assembly (below glove box), and ground jumper wire. *See Fig. 5.*
4) Connect magnetic probe timing light and tachometer. With transmission in Park, drive wheels blocked, and parking brake applied, start and run engine at 1100 RPM. The "CHECK IGNITION" light on instrument panel will light if ground wire is properly installed. Ignition timing should be 20 degrees.
5) If timing is incorrect, stop engine and loosen crankshaft sensor bolts. *See Fig. 4.* Rotate timing adjuster bolt clockwise to advance timing, counterclockwise to retard timing. One turn on adjuster equals roughly one degree change.
6) Recheck timing and if correct, tighten crankshaft sensor bolts. Remove jumper wire from reference timing connector. The "CHECK IGNITION" light should go out.

1977 IGNITION TIMING SPECIFICATIONS (DEGREES@RPM)

Application	Man. Trans.	Auto. Trans.
260" 2-Bbl.	16@1100	[1] 20@1100
305" 2-Bbl.		
Calif.		6@500
Federal	8@600	[2] 8@500
High Alt.		8@600
350" 2-Bbl.		8@500
350" 4-Bbl. (VIN L)		
Calif.		6@500
Federal		8@500
High Alt.		8@600
350" 4-Bbl. (VIN R)		[3] 20@1100
403" 4-Bbl.		[4] 20@1100

[1] - Set ignition timing to 18@1100 on Cutlass.
[2] - Set ignition timing to 8@600 on Starfire.
[3] - Set ignition timing to 18@1100 on California Omega and 88 models, except Wagon.
[4] - Set ignition timing to 22@1100 on Federal Cutlass Wagon.

1978-79 Models (Except Toronado) - Ignition timing procedures will vary with vehicle model and component application. Refer to Emission Control Tune-Up Decal in engine compartment for correct adjustment procedures.

1978 IGNITION TIMING SPECIFICATIONS (DEGREES@RPM)

Application	Man. Trans.	Auto. Trans.
260" 2-Bbl.		
Federal	18@1100	20@1100
Calif.		18@1100
305" 2-Bbl.		
Federal	4@600	4@500
Calif.		[1] 8@600
High Alt.		8@500
305" 4-Bbl.		4@600
350" 4-Bbl. (VIN L)		
Calif.		8°@500
High Alt.		8°@600
350" 4-Bbl. (VIN R)		
All Models		20°@1100
403" 4-Bbl.		
All Models		[2] 20°@1100

[1] - Set ignition timing to 6@600 on Starfire.
[2] - Set ignition timing to 18@1100 on 88 and 98 models, except Wagon. Set ignition timing to 22@1100 on California Toronado.

NOTE: The 1978 Toronado distributor does not use a vacuum advance unit or mechanical advance weights. Spark advance is automatically controlled by distributor, controller, coolant temperature sensor, and 2 separate harnesses. Use magnetic probe timing method to check ignition timing.

1978 Toronado (With Electronic Spark Timing) - 1) Connect jumper wire to reference timing connector near control assembly (below glove box), and ground jumper wire. *See Fig. 5.*
2) Connect magnetic probe timing light and tachometer. With transmission in Park, drive wheels blocked, and parking brake applied, start and run engine at 1100 RPM.
3) The "CHECK IGNITION" light on instrument panel will light if ground wire is properly installed. Ignition timing should be 22 degrees on California models, 20 degrees on all others.
4) If ignition timing is incorrect, loosen distributor clamp bolt and turn distributor clockwise to advance timing or counterclockwise to retard. Tighten clamp bolt, and remove jumper wire.

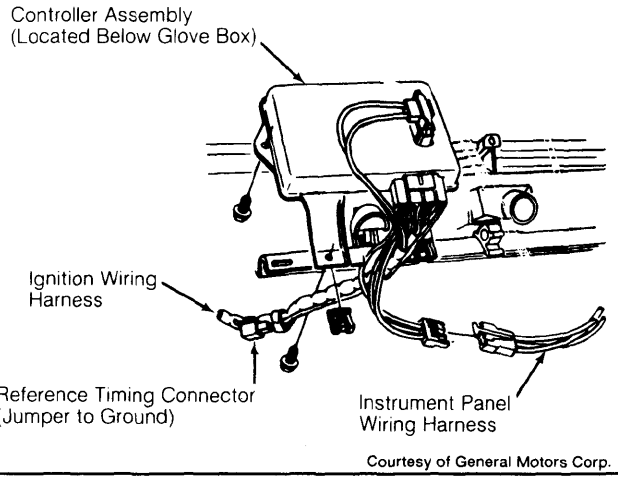


Fig. 5: 1977-78 Toronado EST Contoller Location

1979 IGNITION TIMING SPECIFICATIONS (DEGREES@RPM)

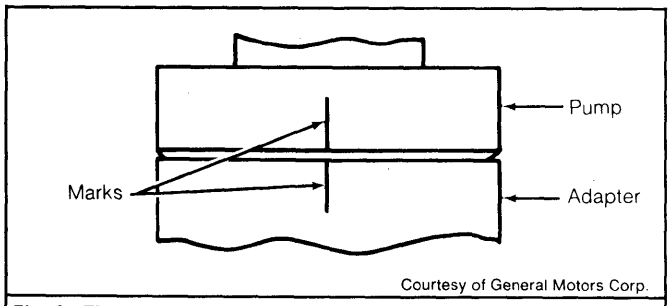
Application	Man. Trans.	Auto. Trans.
260" 2-Bbl.		
Federal	18@1100	20@1100
Calif.		18@1100
301" 2-Bbl.		
Federal		12@650
High Alt.		20@1100
305" 2-Bbl.		
Federal	4@600	4@500
Calif.		2@600
305" 4-Bbl.		
Federal	4@700	4@500
Calif.		4@500
High Alt.		8@600
350" 4-Bbl. (VIN L)		
Calif.		8@500
High Alt.		8@600
350" 4-Bbl. (VIN R)		
All Models		20@1100
403" 4-Bbl.		
All Models		20@1100

INJECTION PUMP TIMING

1978-79 Diesel Engines - 1) With engine off, use wrench (J-26987) to loosen (3) pump retaining nuts. Align timing marks on injection pump with mark on adapter. *See Fig. 6.* Tighten nuts to 35 ft. lbs. Use a 3/4" wrench on the boss at front of injector pump.

1975-79 TUNE-UP PROCEDURES
Oldsmobile V8 (Cont.)

2) Adjust throttle rod with engine off. On cruise control equipped models, remove cruise control rod clip and remove rod from bellcrank. See LINKAGE ADJUSTMENT IN GM DIESEL FUEL INJECTION article in FUEL SYSTEMS section.



Courtesy of General Motors Corp.

Fig. 6: Timing Marks on Injection Pump & Adapter

HOT (SLOW) IDLE RPM

CARBURETED ENGINES

1975 Models - 1) Ensure engine is at normal operating temperature, ignition timing is set to specifications, and is air cleaner removed. Disconnect and plug air cleaner vacuum hoses, vapor canister hose, and EGR valve vacuum hose.
2) Place automatic transmission in Drive. On models without idle speed solenoid, turn A/C off. Adjust carburetor idle speed screw to obtain specified curb idle RPM, then adjust dashpot (if equipped).
3) On models with idle stop solenoid, turn A/C off. Energize solenoid and adjust solenoid plunger to obtain specified solenoid energized RPM. De-energize solenoid and turn carburetor idle speed screw to obtain specified curb idle RPM.
4) On models with idle speed-up solenoid, energize solenoid (turn A/C on and disconnect A/C compressor clutch lead). Adjust solenoid plunger to obtain specified solenoid energized RPM. Turn A/C off and adjust carburetor idle speed screw to obtain specified curb idle RPM.

1975 IDLE SPEED (RPM) SPECIFICATIONS

Application	Curb Idle	Solenoid Energized
260" 2-Bbl.		
Man. Trans.	750	
Auto. Trans.	[1] 550	650
350" 2-Bbl.	600	
350" 4-Bbl.	[2] 600	650
400" 2-Bbl.	650	
400" 4-Bbl.	[3] 650	
455" 4-Bbl.		
Calif.	600	650
Federal	550	650

[1] - On California models, set curb idle to 600 RPM.
[2] - On Federal Cutlass and 88, set curb idle to 550 RPM.
[3] - On Federal 88 Sedan and Wagons, set curb idle to 625 RPM.

1976 Models - 1) With engine at normal operating temperature and timing set to specifications, set parking brake and block drive wheels. Disconnnect and plug hose from vapor canister.
2) On all models except 350" 2GC carburetor equipped models, remove air cleaner. Disconnect vacuum hose and plug intake manifold fitting. On 350" 2GC carburetor equipped models, leave air cleaner installed.
3) On manual transmission (2-Bbl.) and all 4-Bbl. equipped models, disconnect and plug EGR vacuum hose. Disconnect and plug vacuum advance hose on all models except 2-Bbl. equipped Omega models.
4) On all models, ensure choke is fully open and automatic transmission is in Drive. On models without idle speed solenoid, turn A/C off. Adjust carburetor idle speed screw to obtain specified curb idle RPM, then adjust dashpot (if equipped).
5) On models with idle speed-up solenoid, energize solenoid (turn A/C on and disconnect A/C compressor clutch lead). Adjust solenoid plunger to obtain specified solenoid energized RPM. Turn A/C off and adjust carburetor idle speed screw to obtain specified curb idle RPM.

1976 IDLE SPEED (RPM) SPECIFICATIONS

Application	Curb Idle	Solenoid Energized
260" 2-Bbl.		
Man. Trans.	750	
Auto. Trans.	[1] 550	650
350" 2-Bbl.	600	
350" 4-Bbl.	[2] 600	650
455" 4-Bbl.		
Calif.	600	650
Federal	550	650

[1] - On engine codes TE, TJ, TP and TT, set curb idle to 600 RPM.
[2] - On Federal Cutlass and 88, set curb idle to 550 RPM.

1977 Models - 1) With engine at normal operating temperature and timing set to specifications, set parking brake and block drive wheels. On all models except those equipped with 2GC carburetor, remove air cleaner. Disconnect and plug air cleaner hose at intake manifold, vapor canister hose, and EGR hose at carburetor.
2) On 2GC carburetor equipped models, disconnnect and plug distributor vacuum advance hose. On all models, ensure choke valve is fully open and automatic transmission is in Drive.
3) On models without idle speed solenoid, turn A/C off. Adjust carburetor idle speed screw to obtain specified curb idle RPM, then adjust dashpot (if equipped).
4) On models with idle speed solenoid, energize solenoid (turn A/C on and disconnect A/C compressor clutch lead). Adjust solenoid plunger to obtain specified solenoid energized RPM. Turn A/C off and adjust carburetor idle speed screw to obtain specified curb idle RPM.

1977 IDLE SPEED (RPM) SPECIFICATIONS

Application	Curb Idle	Solenoid Energized
260" 2-Bbl.		
Man. Trans.	750	
Auto. Trans.	550	650
305" 2-Bbl.		
Calif.	500	700
Federal	[1] 500	[2] 700
High Alt.	600	700
350" 2-Bbl.	500	650
350" 4-Bbl. (VIN L)		
High Alt.	600	650
All Others	500	650
350" 4-Bbl. (VIN R)		
High Alt.	600	700
All Others	550	650
403" 4-Bbl.		
High Alt.	600	700
All Others	[3] 550	650

[1] - Set to 600 RPM on Omega.
[2] - On manual transmission equipped models, set to 600 RPM.
[3] - Set to 600 RPM on California Toronado.

1975-79 TUNE-UP PROCEDURES
Oldsmobile V8 (Cont.)

1978 IDLE SPEED (RPM) SPECIFICATIONS

Application	Curb Idle	Solenoid Energized
260" 2-Bbl.		
Man. Trans.	650	800
Auto. Trans.	500	650
305" 2-Bbl.		
Federal		
Man. Trans.	600	700
Auto. Trans.	500	[1] 600
Calif.	500	[1] 650
High Alt.	600	700
305" 4-Bbl. (VIN L)		
Calif.	500	600
High Alt.	600	650
350" 4-Bbl. (VIN R)		
Federal	550	650
Calif.	550	650
High Alt.	600	700
403" 4-Bbl.		
Federal	550	650
Calif.	[2] 550	650
Altitude	600	700

[1] - 700 RPM on Starfire.
[2] - 600 RPM on Toronado.

1978-79 Models - 1) Idle speed adjustment procedures will vary with vehicle model and component application. See Emission Control Tune-Up Decal under hood for adjustment preparations, then proceed as follows:

2) On models without A/C or idle speed solenoid, place idle speed screw on low step of fast idle cam (305" 2-Bbl. only). Adjust idle speed screw to obtain specified curb idle RPM.

1979 IDLE SPEED (RPM) SPECIFICATIONS

Application	Curb Idle	Solenoid Energized
260" 2-Bbl.		
Federal		
Man. Trans.	650	800
Auto. Trans.	500	625
Calif.	500	625
Altitude	550	650
301" 2-Bbl.	500	650
305" 2-Bbl.		
Federal		
Man. Trans.	600	[1] 700
Auto. Trans.	500	600
Calif.	600	650
305" 4-Bbl. (VIN L)		
Federal		
Man. Trans.	700	----
Auto. Trans.	500	600
Calif.	500	600
Altitude	600	650
350" 4-Bbl. (VIN R)		
Federal	550	650
Calif.	500	600
Altitude	[2] 550	650
403" 4-Bbl.		
Federal	550	650
Calif.	500	600
Altitude	550	650

[1] - Omega only; no solenoid on Starfire.
[2] - On VIN L, set curb idle to 600 RPM.

3) On non-A/C equipped models with idle speed solenoid, energize solenoid, open throttle slightly, and allow solenoid plunger to fully extend. Adjust solenoid screw to obtain specified solenoid energized RPM. Disconnect electrical lead at solenoid. With solenoid de-energized, adjust idle speed screw to obtain specified curb idle RPM.
4) On A/C equipped models, adjust idle speed screw to obtain specified curb idle RPM. Disconnect A/C compressor clutch lead at compressor. Turn A/C on to energize idle speed solenoid.
5) Place automatic transmission in Drive. Open throttle slightly to allow solenoid plunger to fully extend. Adjust idle speed solenoid screw to obtain specified solenoid energized RPM. Reconnect A/C compressor clutch lead.

DIESEL ENGINES

1978-79 Models - 1) Use magnetic pick-up tachometer (J-26925) to check idle speed. Insert probe in timing indicator hole. Block driving wheels and engage parking brake. Start engine.
2) Adjust slow idle screw on injection pump to obtain 575 RPM on 350" engine and 565 RPM on 260" engine. Automatic transmission should be in Drive and A/C off. *See Fig. 7.*

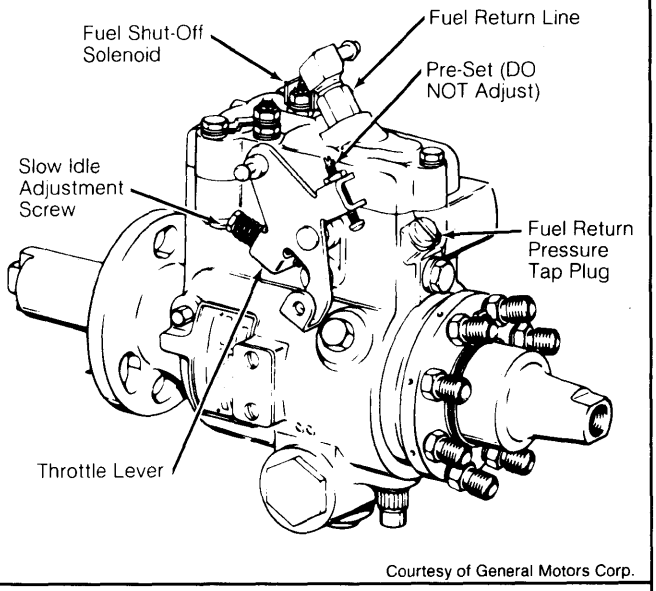


Fig. 7: Diesel Injection Pump Adjustment Locations

IDLE MIXTURE

NOTE: Idle mixture screws on all 1979 Rochester carburetors are covered by hardened steel plugs. Manufacturer recommends plug removal and idle mixture adjustment only after major carburetor overhaul, throttle body replacement or emissions failures.

MIXTURE SCREW PLUG REMOVAL

1) Remove carburetor from engine, invert carburetor and drain fuel. Place carburetor on holding fixture with manifold side up.
2) Place a punch between the 2 locator marks on throttle body beneath mixture screw plug (manifold side) and break out throttle body to gain access to plug.
3) Use punch to drive out mixture screw plug. If hardened steel plug shatters, remove loose pieces.
4) Repeat steps **2)** and **3)** to remove remaining plug (if equipped).

1975-79 TUNE-UP PROCEDURES
Oldsmobile V8 (Cont.)

TACHOMETER (LEAN DROP) PROCEDURE

1975-76 Carbureted Engines - 1) Adjust hot (slow) idle. Break or cut tabs off idle mixture screw limiter caps on 2GC and M4MC carburetors. On 2MC carburetor, remove caps from idle mixture screws.

2) Lightly seat idle mixture screws, then back out screws specified number of turns. Connect vacuum gauge to intake manifold on all M4MC equipped models except Omega. Start engine and place automatic transmission in Drive.

3) On 2MC carburetor equipped models, back off dashpot (if equipped) so throttle lever will not make contact. Adjust carburetor idle speed screw to obtain higher specified RPM. Lean idle mixture screws 1/2 turn at a time until lower specified RPM is obtained. Readjust dashpot (if equipped).

4) On 2GC carburetor equipped models, equally richen idle mixture screws until maximum RPM is obtained. Reset idle speed to higher specified RPM, then lean idle mixture screws until lower specified RPM is obtained.

5) On M4MC carburetor equipped models, equally richen idle mixture screws until maximum RPM is obtained and note vacuum gauge reading (except Omega). Adjust idle speed screw to obtain higher specified RPM. Equally lean idle mixture screws until lower specified RPM is obtained. If vacuum reading changed more than 2 in. Hg, repeat procedured.

1975 IDLE MIXTURE RPM SPECIFICATIONS

Application	Initial Setting (Turns)	Idle RPM (Higher/Lower)
2GC		
350"	5	680/600
400"	5	730/650
2MC		
Man. Trans.	6	1075/750
Auto. Trans.	5	[1] 610/550
M4MC		
Calif.	4	625/600
Federal	3	580/550

[1] - 700/600 RPM on California models.

1976 IDLE MIXTURE RPM SPECIFICATIONS

Application	Initial Setting (Turns)	Idle RPM (Higher/Lower)
2GC	4	680/600
2MC		
Man. Trans.	6	1075/750
Auto. Trans.	5	[1] 700/600
Federal	5	610/550
M4MC		
Omega		680/600
All Others		
Calif.	4	625/600
Federal	4	580/550

[1] - 700/600 RPM on California models.

1977 Carbureted Engines - 1) With engine at normal operating temperature and A/C off, set parking brake and block drive wheels. Remove air cleaner to gain access to carburetor, keeping vacuum hoses connected.

2) On models equipped with automatic level control, disconnect and plug vacuum hose at compressor. On all models, disconnect and plug hoses as directed by Emission Control Tune-Up Decal under hood.

3) Connect tachometer to engine. Disconnect and plug distributor vacuum advance hose. Check ignition timing and adjust if necessary. Reconnect vacuum advance hose.

4) Carefully remove limiter caps from idle mixture screws. Lightly seat idle mixture screws, then back out screws equally just enough so engine will idle. Place automatic transmission in Drive or manual transmission in Neutral.

5) Back out idle mixture screws 1/8 turn at a time until maximum idle speed is obtained. Turn idle speed adjustment screw until specified higher RPM is obtained. See 1977 IDLE MIXTURE RPM SPECIFICATIONS table.

6) Turn idle mixture screws in, 1/8 turn at a time, until specified lower RPM is obtained. Now turn idle speed adjustment screw to obtain specified curb idle RPM. Reconnect hoses and install air cleaner.

1977 IDLE MIXTURE RPM SPECIFICATIONS

Application	Higher RPM	Lower RPM
260" 2-Bbl.		
Man. Trans.	1075	750
Auto. Trans.	610	550
305" & 350" 2-Bbl.		
Man. Trans.	650	600
Auto. Trans.	530	500
350" 4-Bbl. (VIN L)		
Calif.	650	600
Federal	550	500
High Alt.	650	600
350" 4-Bbl. (VIN R)		
Calif.	575	550
Federal	580	550
High Alt.	625	600
403" 4-Bbl.		
Calif.	575	550
Federal	580	550
High Alt.	625	600

PROPANE ENRICHMENT PROCEDURE

1978-79 Carbureted Models - 1) With engine at normal operating temperature, choke fully open and air conditioning "OFF" (if equipped), set parking brake and block drive wheels. Disconnect and plug hoses as directed on the Emission Control Tune-Up Decal under hood.

2) Connect tachometer to engine. Disconnect vacuum advance and set timing to specification. Reconnect vacuum advance. Disconnect crankcase ventilation tube from air cleaner. Insert hose with rubber stopper (J-26911) from propane valve into positive crankcase ventilation tube opening in air cleaner.

1978 PROPANE ENRICHED RPM SPECIFICATIONS

Application	Propane Enriched
260" 2-Bbl.	
California	530-550
Federal	
Man. Trans.	560-580
Auto. Trans.	780-800
305" 2-Bbl.	
California	520-540
Federal	
Man. Trans.	700-740
Auto. Trans.	535-550
High Alt.	620-640
305" 4-Bbl.	540-560
350" 4-Bbl. (VIN L)	
California	530-570
High Alt.	630-670
350" 4-Bbl. (VIN R)	
California	565-585
Federal	625-645
403" 4-Bbl.	
California	565-585
Federal	625-645
Toronado	605-625

1975-79 TUNE-UP PROCEDURES
Oldsmobile V8 (Cont.)

NOTE: Too much propane will cause engine speed to drop.

3) Propane cartridge must be in a vertical position. Slowly open propane control valve until maximum engine speed is reached with transmission in Drive (Neutral for manual transmission).
4) Observe propane flow meter to ensure propane cartridge is full. With propane flowing, adjust idle speed screw to the enriched RPM. See 1979 PROPANE ENRICHED RPM SPECIFICATIONS table. Readjust propane flow to be certain of maximum engine speed and adjust idle speed if necessary.
5) Turn off propane. Place transmission in Neutral and run at 2000 RPM for 30 seconds. Put transmission in Drive (Neutral for manual transmission). Check idle speed. If idle mixture is correct, go to step **8)**.

NOTE: It may be necessary to remove air cleaner to reach idle mixture screws. Reinstall air cleaner to check speed.

6) If idle speed is too low, carefully remove cap(s) from mixture screw(s) and back screw(s) out 1/8 turn at a time until specified speed is reached. If speed is too high, turn mixture screws in 1/8 turn at a time until specified speed is reached.
7) Turn propane on again to check maximum engine idle speed. If speed is different from specification, readjust idle speed screw to enriched RPM with propane flowing. Turn off propane and accelerate engine to 2000 RPM for 30 seconds and recheck idle speed. Idle speed should be to specification. If not, repeat procedure starting with step **6)**.
8) If idle is unusually rough, turn mixture screws in until lightly seated. Back screws out equally to average previous position and repeat propane idle test starting with step **2)**. If idle is correct, turn engine off and remove propane set. Connect positive crankcase ventilation and reconnect all other hoses.

1979 PROPANE ENRICHED RPM SPECIFICATIONS

Application	Propane Enriched
260" 2-Bbl.	
California	530-550
Federal	
Man. Trans.	560-580
Auto. Trans.	780-800
301" 2-Bbl.	530
305" 2-Bbl.	
California	640-660
Federal	
Man. Trans.	710-750
Auto. Trans.	520-540
305" 4-Bbl.	
California	520-560
Federal	
Man. Trans.	800-850
Auto. Trans.	530-570
High Alt.	630-670
350" 4-Bbl. (VIN L)	630-670
350" 4-Bbl. (VIN R)	
California	565-585
Federal	625-645
High Alt.	590
403" 4-Bbl.	
California	565-585
Federal	625-645
High Alt.	590

COLD (FAST) IDLE RPM

1975-76 Carbureted Models - Adjust fast idle with automatic transmission in Park, A/C off, EGR valve vacuum hose disconnected and plugged. Set cam follower on low step of fast idle cam (on high step on 1976 350" Omega).

1975 FAST IDLE RPM SPECIFICATIONS

Application	RPM
2GC	Preset
2MC	900
M4MC	
350" Omega	1800
350" Cutlass & 88	
Calif.	1000
Federal	900
400"	1800
455"	
Calif.	800
Federal	900

1976 FAST IDLE RPM SPECIFICATIONS

Application	RPM
2GC	Preset
2MC	
Calif. (Man. Trans.)	1000
All Others	900
M4MC	
350" Omega	1800
350" Cutlass & 88	
Calif.	1000
Federal	900
455"	
Calif.	800
Federal	900

1977 Carbureted Models - **1)** On 305" and 350" 2-barrel carburetor equipped engines, no adjustment is necessary. Cold (fast) idle RPM adjustment is automatically set when hot (slow) idle RPM adjustment is made.
2) On all other engines, ensure engine is at normal operating temperature. Disconnect and plug vacuum hose at EGR valve. Position cam follower on highest step of fast idle cam. Turn fast idle speed screw to obtain specified fast idle RPM.

1977 FAST IDLE RPM SPECIFICATIONS

Application	RPM
260" 2-Bbl.	900
305" & 350" 2-Bbl.	Preset
350" 4-Bbl. (VIN L)	1600
350" 4-Bbl. (VIN R) & 403"	
California & High Altitude	1000
Federal	900

1978-79 Carbureted Models - See Emission Control Tune-Up Decal under hood for correct procedures for setting fast idle RPM.

1978 FAST IDLE RPM SPECIFICATIONS

Application	Auto. Trans.	Man. Trans.
260" 2-Bbl.		
Federal	800	750
Calif.	800	800
High Alt.	900	900
305" & 350" (VIN L)	1600	1600
350" (VIN R) & 403"		
Calif.	1000	1000
Federal	900	900
High Alt.	1000	1000

1975-79 TUNE-UP PROCEDURES
Oldsmobile V8 (Cont.)

1979 FAST IDLE RPM SPECIFICATIONS

Application	Auto. Trans.	Man. Trans.
260" 2-Bbl.		
Calif.	800	
Federal	800	750
High Alt.	900	
301" 2-Bbl.	2000	
305" 2-Bbl.		
Calif.	1950	
Federal	1600	1300
305" & 350" 4-Bbl. (VIN L)		
Federal	1600	1300
Calif.	1600	
Altitude	1750	
350" 4-Bbl. (VIN R), 403" 4-Bbl.		
Federal & Altitude	900	
California	1000	

FAST IDLE SOLENOID

1978-79 Diesel Engines - 1) Block driving wheels and engage parking brake. Start engine. Disconnect A/C compressor clutch lead. On non-A/C equipped models, disconnect electrical lead at solenoid. Connect jumper wires to solenoid terminals. Connect one jumper wire to ground and the other to battery.

2) With solenoid energized, adjust solenoid plunger until engine speed is 650 RPM on 350" engine or 640 RPM on 260" engine, with transmission in Drive and A/C on.

NOTE: Fast idle solenoid on 1979 and earlier Diesel engines is designed to de-energize whenever A/C is on, for 5-8 seconds after each start-up, or when coolant temperature is less than 140°F. If solenoid remains energized when one of the above conditions exist, solenoid is improperly being activated by current flow into the thermistor circuit. Check thermistor system as follows: If engine will not come off fast idle, disconnect 2-wire lead at alternator. If solenoid de-energizes, replace capacitor in alternator with 1.5 mfd (microfarad) capacitor (Part No. 830890).

AUTOMATIC CHOKE

Loosen choke cover retaining screws and place cam follower on highest step of fast idle cam. Rotate choke cover against coil tension until choke valve just closes. Continue rotating cover until reference mark on cover is aligned with specified mark on choke housing. Tighten cover retaining screws.

1975 AUTOMATIC CHOKE SETTINGS

Application	Setting
260"	1NR
350"	
Omega	1NR
Cutlass & 88	2NR
400"	Index
455"	
California	2NR
Federal	2NR

1976 AUTOMATIC CHOKE SETTINGS

Application	Setting
2GC	1NR
2MC	
17056456, 17056457 & 17056459	Index
All Others	1NR
M4MC	
17056546	Index
17056246, 17056551 & 17056556	1NR
All Others	2NR

1977 AUTOMATIC CHOKE SETTINGS

Application	Setting
260" 2-Bbl.	[1] 1NR
305" 2-Bbl.	
California	1NL
Federal	Index
High Altitude	Index
305" 2-Bbl.	Index
350" 4-Bbl. (VIN L)	2NL
350" (VIN R) & 403" 4-Bbl.	2NR

[1] - Setting on 88 is 2NR.

1978 AUTOMATIC CHOKE SETTINGS

Application	Setting
260" 2-Bbl.	2NR
305" 2-Bbl. (VIN U)	
California	1/2NL
Federal	Index
High Altitude	Index
305" 4-Bbl. (VIN H)	2NL
350" 4-Bbl. (VIN L)	2NL
350" (VIN R) & 403" 4-Bbl.	2NR

1979 AUTOMATIC CHOKE SETTINGS

Application	Setting
260" & 301" 2-Bbl.	2NR
305" 2-Bbl.	1NR
305" 4-Bbl.	[1] 1NR
350" 4-Bbl. (VIN L)	
Calif.	2NR
High Alt.	1NR
350" (VIN R) & 403" 4-Bbl.	2NR

[1] - Setting on Cutlass is 2NR.

DASHPOT ADJUSTMENT

1976-77 2MC Carburetor Equipped Models - With hot (slow) idle set, depress dashpot plunger and adjust dashpot in or out to obtain a .040" clearance between throttle lever and dashpot.

1975-76 M4MC Carburetor Equipped Models - With hot (slow) idle set, adjust dashpot inward until it contacts throttle lever. Turn dashpot an additional 2 1/2 turns.

FUEL PUMP

FUEL PUMP PRESSURE

Diesel Engines - 1) Remove air crossover. Install screened covers (J-26996-2). Remove fuel return pressure tap plug from side of injection pump. *See Fig. 7.*

2) Screw pressure tap adapter (J-28526) into pump housing. Be sure to use seal from tap plug on tap adapter before installing. Connect a low pressure gauge to adapter.

3) Connect magnetic pickup tachometer (J-26925). Place transmission in Park. Start engine. Raise engine speed to 1000 RPM and note pressure. If pressure is incorrect, replace fuel return line connector assembly.

4) Remove tachometer, gauge and adapter. Install new pressure tap plug screw seal on plug. Install plug in housing. Remove screened covers. Install air crossover and torque bolts to 22 ft. lbs.

Gasoline Engines - When testing pump, disconnect and plug fuel return line on models so equipped.

1975-79 TUNE-UP PROCEDURES
Oldsmobile V8 (Cont.)

NOTE: Some 1978 and earlier Diesel engine equipped models may experience an intermittent no-start condition. This problem may be due to an inoperative check valve in engine fuel pump. This often occurs after engine has been running, then stopped for a short time. Fuel drains past inoperative check valve back into fuel tank. To correct this condition, replace fuel pump.

FUEL PUMP SPECIFICATIONS

Application	Specification
Pressure	
Diesel	4-10 psi
Gasoline	5.5-6.5 psi
Volume (Gasoline)	One pint in 30 seconds.

INJECTION NOZZLES

Diesel Engines - 1) If engine starts, but idles roughly, check injection nozzles. Start engine. Loosen injection line fitting at each nozzle, one at a time. Be sure to direct fuel away from ignition sources.

2) If, when an injection line is loosened, idle speed or quality does NOT change, replace that injection nozzle and repeat test. Torque nozzle clamp bolt to 25 ft. lbs.

IGNITION

DISTRIBUTOR

All gasoline engines use a Delco-Remy, High Energy Ignition system. Module must be replaced as a unit. A liberal coat of silicone grease MUST be applied to the surface on which module will be mounted. Toronado models are equipped with Electronic Spark Timing (EST).

NOTE: Some 1977 Oldsmobile engines may stop running for no apparent reason, but upon restart, engine may appear to operate normally. Intermittent condition may be caused by broken Black ground wire at distributor module terminal.

NOTE: Some 1977 Oldsmobile Toronado models may experience erratic engine operation at 40-50 MPH. Excessive paint on EST distributor may be causing this condition. Remove Tan and Black wire terminals from distributor connector. Remove paint from terminals, if any.

IGNITION COIL SPECIFICATIONS

Application	Specification
Primary Resistance (at 75°F)	[1] 0-1.0 Ohms
Secondary Resistance(at 75°F)	6000-30,000 Ohms
Coil Output (Minimum)	[2] 25,000-35,000 Volts

[1] - Resistance is 0.4-0.5 ohm on 1976-77 models.
[2] - Replace if below 25,000 volts.

Other Data & Specifications - Also see Delco Ignition Systems in DISTRIBUTORS & IGNITION SYSTEMS section.

FUEL SYSTEMS

CARBURETION

CARBURETORS

Application	Model
1975-76	
260"	Rochester 2MC 2-Bbl.
350" (VIN H)	Rochester 2GC 2-Bbl.
350" (VIN J & R), 400" & 455"	Rochester M4MC 4-Bbl.
1977-78	
260"	1Rochester M2MC 2-Bbl.
350" (VIN U)	Rochester 2GC & 2GE 2-Bbl.
All Others	Rochester M4MC & M4ME 4-Bbl.
1979	
260" & 305"	Rochester M2MC 2-Bbl.
All Others	Rochester M4MC 2-Bbl.

Other Data & Specifications - Also see Rochester Carburetors in FUEL SYSTEMS section.

DIESEL FUEL INJECTION

A mechanical, gear driven fuel pump is used.

Other Data & Specifications - See General Motors Diesel Fuel Injection article in FUEL SYSTEMS section.