

TUNE-UP

ENGINE IDENTIFICATION

Engine Code letters are suffix of Engine Identification Number. Number is stamped on a pad, located at right hand side of cylinder block next to distributor.

Application	Code
230" Man. Trans.	OA
230" Auto. Trans.	QN, QL, OB, OD
250" Man. Trans.	PB, PC, PE, PK, PL PP, PQ, OS, OT
250" Auto. Trans.	PD, PM, PO, PW, PX OO, OV, OX, OZ
292" Man. Trans.	RE, RG, RS
292" Auto. Trans.	RR, RA, RB, RC, RD, RQ

MODEL IDENTIFICATION

VEHICLE IDENTIFICATION NUMBER

The Vehicle Identification Number is found on the GVW Rating Plate. Plate is attached to left hand door hinge pillar on "C" and "K" models, on upper left side of dash panel on cowl models and on steering column on "G" and "P" models.

CS139F100043

- First Digit - Chassis Designation.
- Second Digit - Engine Designation.
- Third Digit - GVW Range.
- Fourth Digit - Truck Type.
- Fifth Digit - Model Year 9 (1969).
- Sixth Digit - Assembly Plant.
- Remaining Digits - Sequence Built Number.

COMPRESSION PRESSURE

With air cleaner removed and throttle and choke wide open, crank engine through at least four compression strokes. Compression should be 130 psi with a maximum variation of 20 psi between cylinders.

TUNE-UP NOTES

► **IDLE SPEED ADJUSTMENT CAUTION** - Procedures and specifications for idle speed adjustment must be followed exactly as outlined. See "Hot (Slow) Idle RPM" under Tune-Up.

NOTE - For other items affecting Tune-Up, see CARBURETION Section or EMISSION CONTROL Section.

NOTE - Due to changes and corrections, always refer to Engine Tune-Up Decal in engine compartment before attempting tune-up. In the event of a conflict between specifications given in this manual and decal specifications, decal specifications should prevail.

VALVE TAPPET CLEARANCE

Hydraulic Lifters One turn down from zero lash.

VALVE ARRANGEMENT

E-I-I-E-E-I-I-E-E-I-I-E

SPARK PLUGS

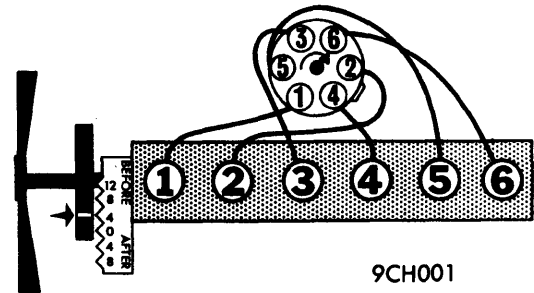
Gap035"
Torque..... 25 ft. lbs.

Spark Plug Type

Application	AC No.
230", 250"	R46N
292"	CR44N

DISTRIBUTOR

Point Gap
New019"
Used016"
Cam Angle..... 31-34°
Breaker Arm Spring Tension 19-23 ozs.
Condenser Capacity 18-.23 mfd.



FIRING ORDER & TIMING MARKS

IGNITION TIMING

Ignition timing is checked or adjusted with engine at normal operating temperature, distributor vacuum line disconnected and plugged, manual transmission in Neutral, automatic transmission in "D" and engine at normal idle.

Application

Timing

All, Man. Trans.	0° BTDC
All, Auto. Trans.	4° BTDC

HOT (SLOW) IDLE RPM

Without Idle Speed Solenoid - Screw idle mixture screw into stop, then back out three turns. Start engine and warm to normal operating temperature. With choke valve and preheater valve wide open, manual transmission in Neutral, automatic transmission in "D" and air conditioning "OFF", adjust idle speed screw to specified RPM. Adjust idle mixture screw until highest steady idle speed is obtained. Turn mixture screw in until engine speed drops 20 RPM, then back out ¼ turn. Readjust idle speed screw to specified RPM if necessary.

With Idle Speed Solenoid - Screw idle mixture screw into stop, then back out three turns. Start engine and warm to normal operating temperature. With choke valve and preheater valve wide open, manual transmission in Neutral, automatic transmission in "D" and air conditioning "OFF", adjust idle speed to 500 RPM by adjusting solenoid plunger with a wrench. Disconnect wire from solenoid, with solenoid de-energized throttle lever should contact carburetor idle screw. Adjust screw to obtain an engine speed of 400 RPM. Reconnect solenoid and adjust idle mixture screw until highest steady idle

TUNE-UP (Cont.)

speed is obtained, then turn mixture screw until engine speed drops 20 RPM and back out $\frac{1}{4}$ turn. Readjust solenoid to obtain specified RPM if necessary.

Idle Speed (RPM)

Application	RPM
All, Man. Trans.	700
All, Auto. Trans.	550

COLD (FAST) IDLE RPM

Place fast idle cam follower on highest step of fast idle cam (automatic choke) and on highest portion of cam (manual choke). Adjust idle speed to 2400 RPM.

GOVERNOR ADJUSTMENT

Speed Adjustment — To adjust governor for higher speed, rotate adjusting cap counterclockwise. To obtain a lower speed, rotate cap clockwise.

Surge & Stability Adjustment — If a surging condition exists, remove adjusting cap and shaft assembly. Using a suitable hollow wrench (A-24283), hold nut in bore and rotate screw one turn with a suitable hex (A-25264). Now turn nut $\frac{1}{4}$ turn to right without turning screw. If a more sensitive adjustment is required, use same procedure and turn screw and nut to left. Tap lightly on hollow wrench to ensure that nut is seated correctly. Replace shaft assembly and adjusting cap.

CHOKE ADJUSTMENT

Manual Choke — Check that choke valve fully opens and closes as cable is actuated. To correctly adjust cable, push knob into stop on dash and pull out $\frac{1}{8}$ ". Loosen cable clamp at carburetor bracket and adjust cable through clamp until choke valve is fully open. Tighten cable clamp.

Automatic Choke — With air cleaner removed, check that choke valve and rod move freely. Disconnect choke rod at choke lever. Hold choke valve in fully closed position and pull choke rod upward to end of travel. The bottom of choke rod should be even with top of hole on choke lever. To adjust, bend choke rod at offset until it freely enters hole in choke lever. Reconnect rod and install air cleaner.

FUEL PUMP PRESSURE & VOLUME

Pressure (At Idle).....	3-4.5 psi
Volume (At Cranking Speed).....	1 pt. in 30-45 sec.

MANIFOLD HEAT CONTROL VALVE

Check valve for freedom of movement and lubricate with a suitable solvent (GM Manifold Heat Control Valve Solvent).

EMISSION CONTROL

See appropriate article in EMISSION CONTROL Section.

IGNITION

DISTRIBUTOR

Delco Part No.

Application	Man. Trans.	Auto. Trans.
230", 250" G-10	1110465	1110466
250" All Others	1110463	1110464
292"	1110467	1110468

Other Data & Specifications — See Tune-Up and Delco Distributors in ELECTRICAL Section.

IGNITION COIL

Application	Delco Part No.
All	1115202
Resistance	Ohms @ 75°F
Primary	1.41-1.65
Secondary	3,000-20,000
Ballast Resistor Loom.....	1.8

CARBURETION

CARBURETORS

Rochester Model M & MV 1 -Bbl. ①

Application	Carb. No.
230", 250 G-10 (Man. Choke).....	7029007
250" All Others (Man. Choke).....	7029011
292" All (Man. Choke).....	7029012
250" All Auto. Choke).....	7029021
292" All (Auto. Choke).....	7029022

① — M designates manual choke and MV designates automatic choke.

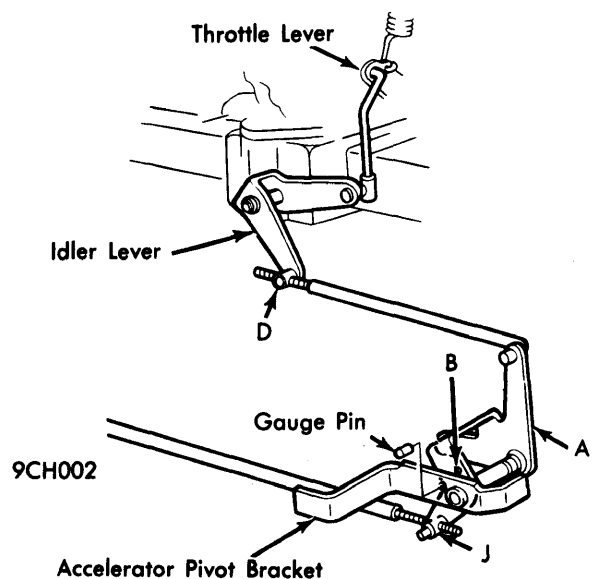
Other Data & Specifications — See Tune-Up or Rochester Carburetors in CARBURETION Section.

ACCELERATOR LINKAGE ADJUSTMENT

All (Exc. "G" Models) — With accelerator pedal depressed to floor and throttle lever in wide open position, adjust swivel on rod until it freely enters hole on throttle lever (P-10), hole in pedal lever (P-20 and P-30) and accelerator control lever (all remaining models).

"G" Models — Disconnect swivels "D" and "J" from their respective levers (see illustration). Insert a $\frac{3}{16}$ " gauge pin in hole "B" on lever "A" and hole in accelerator pivot bracket. Rotate throttle lever to wide open position and adjust swivel "D" until it freely enters hole in idler lever. Depress accelerator pedal until it is $\frac{1}{4}$ " from floorboard and adjust swivel "J" until it freely enters hole in lever. Install clips on swivels and remove gauge pin.

CARBURETION (Cont.)



"G" MODELS ACCELERATOR LINKAGE ADJUSTMENT

THROTTLE VALVE LINKAGE ADJUSTMENT

Powerglide Trans. Only — With accelerator pedal depressed to floor, bell crank on transmission must be in wide open position. Dash control lever must be $\frac{1}{64}$ - $\frac{1}{16}$ " from stop with transmission lever against internal stop in transmission.

DETENT CABLE ADJUSTMENT

Turbo Hydra-Matic 350 Trans. Only — Remove air cleaner and loosen detent cable clamp. Adjust accelerator linkage if necessary. With choke valve wide open, position throttle lever in wide open position and pull detent cable rearward until internal stop in transmission is felt. Cable must be pulled through transmission detent to reach wide open position. Tighten cable clamp and check linkage for correct operation.

DETENT SWITCH ADJUSTMENT

Turbo Hydra-Matic 400 Trans. Only — Accelerator linkage must be correctly adjusted before adjusting detent switch. See *Accelerator Linkage Adjustment*. Rotate throttle lever to wide open position and adjust switch on mount until .05" clearance is obtained between switch and lever.

ELECTRICAL

BATTERY

Application	Delco Part No.	Cranking Power Watts @ 0°F
"G" Models.....	Y-55.....	2300
250" All Others.....	Y-59.....	2350
292" All.....	R-59.....	2900
Optional All.....	R-69.....	3150

STARTER

Application	Delco Part No.
230", 250" Man. Trans. (3-Speed).....	1108368
230", 250" Opt. Man. Trans.	1108372
230", 250" Auto. Trans.(Powerglide).....	1108365
250" Opt. Auto. Trans. (Powerglide).....	1108363
250" Auto. Trans. (Turbo Hydra-Matic).....	1107372
292" Man. Trans.	1108360
292" Auto. Trans. (Turbo Hydra-Matic).....	1108361

Other Data & Specifications — See *Delco Starters in ELECTRICAL Section.*

ALTERNATOR

Application	Amps.	Delco Part No.
"G" Models.....	37.....	1100834
C-10.....	37.....	1100838
C-20, C-30.....	42.....	1100839
All W/Pwr. Str.	42.....	1100841
Optional All.....	42.....	1100842
Optional All.....	61.....	1100849
Optional All.....	62.....	1117782

Other Data & Specifications — See *Delco Alternators in ELECTRICAL Section.*

ALTERNATOR REGULATORS

Application	Delco Part No.
All (Exc. 62 Amp Alt.).....	1119515
62 Amp Alt.	1116378

Other Data & Specifications — See *Delco Alternator Regulators in ELECTRICAL Section.*

ENGINE

INTAKE MANIFOLD TIGHTENING

Tighten center clamp bolts to 30 ft. lbs. and end bolts to 20 ft. lbs.

BELT ADJUSTMENT

Tension (Lbs.) Using Strand Tension Gauge

Application	New Belt	Used Belt
Water Pump.....	125±5.....	75±5
Power Steering.....	125±5.....	75±5
Air Conditioning.....	140±5.....	95±5
A.I.R. Pump.....	75±5.....	55±5

1969 Chevrolet 6 Tune-Up

ENGINE (Cont.)

FILTERS & CLEANERS

Filter or Cleaner	Service Interval (Miles)
Oil Filter.....	Replace 12,000
Air Cleaner	
Oil Bath Type	⓪Check 12,000
Element Type	ⓉReplace 24,000
Foam Type.....	Clean 12,000
Crankcase Ventilation Filter.....	⓪Clean 6,000
Crankcase Breather	Clean 6,000
P.C.V. Valve.....	Replace 12,000
Governor Filter	Replace 12,000
Turbo-Hydra-Matic Sump Strainer	Replace 24,000
Fuel Filter.....	Replace 12,000
Distributor Cam Lubricator.....	Replace 24,000

- ⓪ — Clean and replace with SAE 50 oil.
- Ⓣ — Replace if dirty, do not clean.
- ⓓ — If equipped, clean and replace with SAE 20 oil.

COOLING CAPACITIES

Application	⓪Quantity
230"	
"G" Models.....	12 qts.
P-10.....	10 qts.
250"	
"C" & "K" Models	11.5 qts.
"G" Models.....	12.5 qts.
P-10.....	11 qts.
P-20 & 30.....	12 qts.
292"	
C & K-20 & 30.....	11.5 qts.
All Others	12 qts.

- ⓪ — Add one quart if equipped with heater or heavy duty radiator.

CAPACITIES

(EXCEPT COOLING)

Application	Quantity
Crankcase	
230", 250"	⓪4 qts.
292"	⓪5 qts.
Auto. Trans.	
Powerglide	Ⓣ9 qts.
TH 350.....	10 qts.
TH 400.....	9.5 qts.
Man. Trans.	
3-Speed.....	1.75 pts.
Heavy Duty 3-Speed.....	3.5 pts.
4-Speed.....	8 pts.
Overdrive5 pt.
Four-Wheel Drive	
Transfer Case.....	.5 pts.
Knuckle Ends.....	.5 pt.
Power Take-Off	1 pt.
Drive Axles.....	ⓓ
Fuel Tank	
Panel, Suburban & "G" Models.....	24.5 gals.
"C" & "K" Models	20 gals.
P-10.....	20.5 gals.
P-20 & 30.....	30 gals.

- ⓪ — Add one quart with filter change.
- Ⓣ — Add one pint if equipped with oil cooler.
- ⓓ — Fill to bottom of filler plug hole.