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
250" Man. Trans.	TCN, TCC, TAB, TCK
250" Auto. Trans.	TNW, TNX, TCB, TCA TAC, TAD, TAC
292" Man. Trans.	TNA
292" Auto. Trans.	TCU, TAF, TAG

MODEL IDENTIFICATION

VEHICLE IDENTIFICATION

The Vehicle Identification Number is found on the GVW Rating Plate. Plate is attached to left hand door pillar on all models except "P" and cowl models. Plate location on "P" and cowl models is determined by body builder.

CE102BZ50001

First Digit – Chassis Designation.
Second Digit – Engine Designation.
Third Digit – GVW Range.
Fourth & Fifth Digits – Truck Type.
Sixth Digit – Assembly Plant.
Seventh Digit – Model Year 0 (1970).
Remaining Digits – Sequence Built Number.

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 prevail.

COMPRESSION PRESSURE

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

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

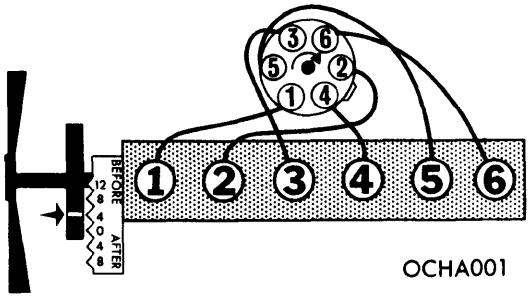
Gap ..... .035"
Torque ..... 25 ft. lbs.

Spark Plug Type

Application	AC No.
250"	R46T
292"	R44T

DISTRIBUTOR

Point Gap
New ..... .019"
Used ..... .016"
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.	TDC
All Auto. Trans.	4°BTDC

HOT (SLOW) IDLE RPM

Preliminary Adjustments – All Models – Idle speed is checked or adjusted with engine at normal operating temperature, choke valve open, air cleaner installed, air conditioning "OFF", hot idle compensator held closed, manual transmission in Neutral and automatic transmission in "D". Disconnect line at vapor canister from fuel tank if equipped with Evaporative Emission System. Check and if necessary adjust dwell and ignition timing. Turn mixture screw lightly in to stop then back out four turns.

1500 Series (Exc. "G" Models) – Adjust idle speed solenoid screw to obtain an engine speed of 800 RPM (manual transmission) and 550 RPM (automatic transmission). Adjust mixture screw in to obtain specified idle RPM. Disconnect wire to solenoid and adjust idle speed screw to obtain an engine speed of 400 RPM. Reconnect wire to solenoid and readjust idle speed solenoid screw to obtain specified RPM if necessary.

2500 & 3500 Series Man. Trans. (Exc. "G" Models) – Adjust idle speed screw to obtain an engine speed of 600 RPM. Adjust mixture screw in until specified RPM is obtained.

TUNE-UP (Cont.)

2500 & 3500 Series Auto. Trans. (Exc. "G" Models) – Adjust idle speed solenoid screw to obtain an engine speed of 550 RPM. Adjust mixture screw in until specified idle RPM is obtained. Disconnect wire to solenoid and adjust idle speed screw to obtain an engine speed of 400 RPM. Reconnect solenoid wire and adjust idle speed solenoid screw to obtain specified idle RPM.

"G" Models Man. Trans. – Adjust idle speed screw to obtain specified idle RPM. Adjust mixture screw in until engine speed drops 20 RPM then back mixture screw out ¼ turn. Check and readjust idle speed screw to specified RPM if necessary.

"G" Models Auto. Trans. – Adjust idle speed solenoid screw to obtain specified idle RPM. Adjust mixture screw in until engine speed drops 20 RPM then back mixture screw out ¼ turn. Disconnect wire to solenoid and adjust idle speed screw to obtain an engine speed of 400 RPM. Reconnect wire to solenoid and adjust idle speed solenoid screw to obtain specified idle RPM.

Idle Speed RPM

Application	RPM
1500 (Exc. "G" Models)	
Man. Trans.	750
Auto. Trans.	500
1500 & 2500 (Exc. "G" Models)	
Man. Trans.	550
Auto. Trans.	500
"G" Models	
Man. Trans.	700
Auto. Trans.	550

COLD (FAST) IDLE RPM

Fast idle RPM is checked or adjusted with TCS solenoid disconnected, transmission in Neutral, engine at normal operating temperature and choke valve wide open. Position fast idle lever on highest step of fast idle cam and bend fast idle lever as required to obtain an engine speed of 2400 RPM.

CHOKE ADJUSTMENT

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 in 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

Application	Delco Part No. Man. Trans.	Auto. Trans.
"G" Models	1110465	1110466
All Others 250"	1110463	1110464
All Others 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.
250"	
1500 Series (Exc. "G")	7040021
G-1500	7040007
2500 & 3500 Series	7040025
292"	
1500 Series	7040022
2500 & 3500 Series	7040026

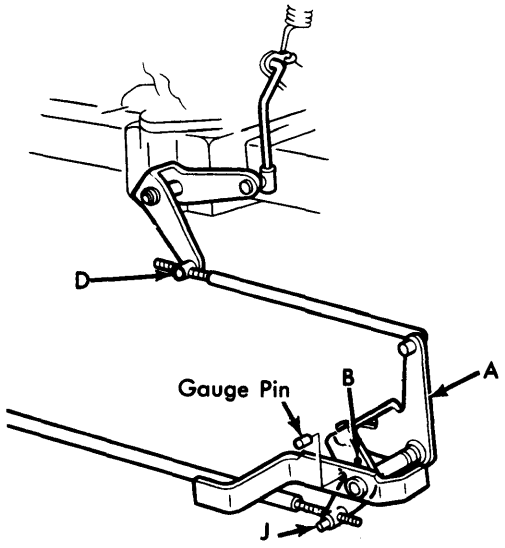
Other Data & Specifications – *See Tune-Up and Rochester Carburetors in CARBURETION Section.*

ACCELERATOR LINKAGE ADJUSTMENT

"G" Models – Disconnect swivels "D" and "J" from their respective levers (see illustration). Insert a 3/16" diameter gauge pin in hole "B" in lever "A" and accelerator pivot bracket. Rotate throttle lever to wide open position and adjust swivel "D" until it freely enters hole in idler lever. Depress accelerator

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 in throttle lever or pedal lever. pedal until it is ¼" from floorboard and adjust swivel "J" until it freely enters hole in lever. Install clips on swivel and remove gauge pin.

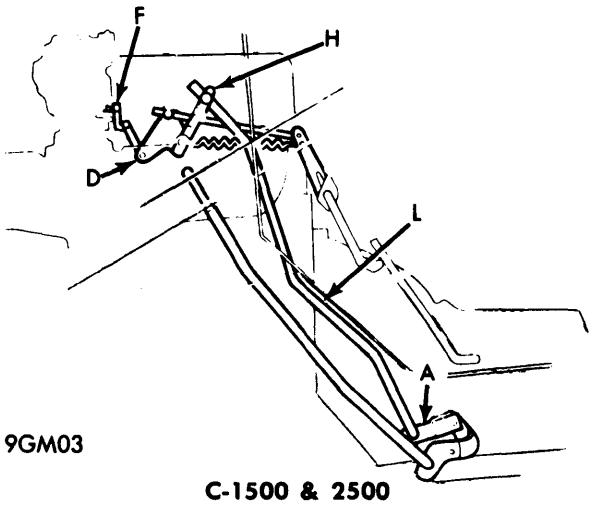
CARBURETION (Cont.)



"G" MODELS ACCELERATOR LINKAGE ADJUSTMENT

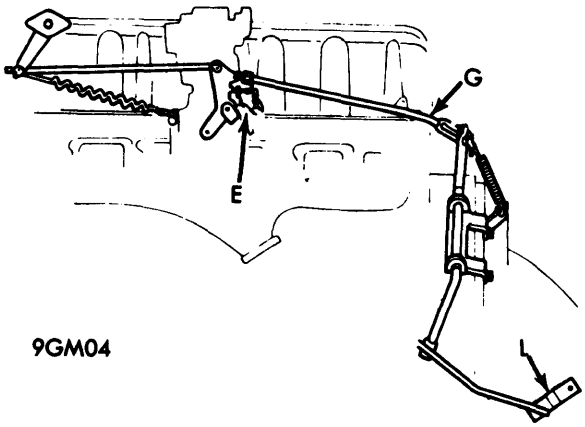
THROTTLE VALVE LINKAGE ADJUSTMENT

C-1500 & 2500 – To check linkage adjustment, place linkage in idle position then rotate to wide open position by rotating lever "F" (see illustration). Push down on lever "A" and check that rod "L" does not flex. If rod flexes, disconnect from lever "D". Rotate lever "F" to wide open position and adjust swivel "H" until it freely enters hole in lever. Check and adjust accelerator linkage adjustment if necessary. *See Accelerator Linkage Adjustment.*



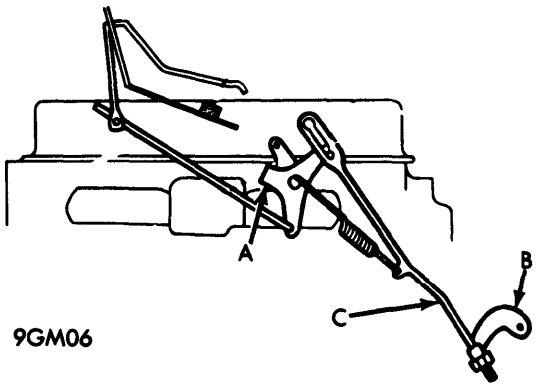
C-1500 & 2500
THROTTLE VALVE LINKAGE ADJUSTMENT

P-1500 – To check adjustment, place linkage in idle position then rotate to wide open position by rotating lever "E" (see illustration). Push down on lever "L" and check that rod "G"does not flex. Disconnect swivel on rod "G" lever "E". Pull forward on rod until internal stop in transmission is felt. Adjust swivel until it freely enters hole in lever "E". Check and adjust accelerator linkage if necessary. *See Accelerator Linkage Adjustment.*



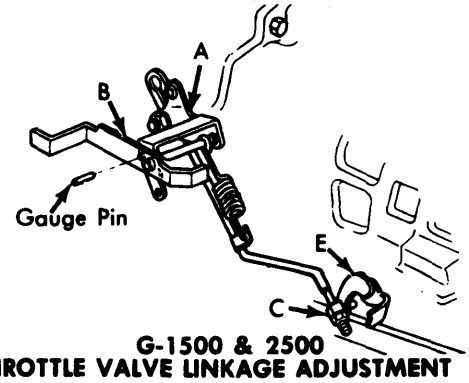
P-1500 THROTTLE VALVE LINKAGE ADJUSTMENT

P-2500 – To check adjustment, place linkage in idle position then rotate to wide open position by rotating lever "A" (see illustration). Push down on lever "B" and check that rod "C" does not flex. If rod "C" flexes, disconnect rod from lever "B". Rotate levers "A" and "B" to wide open positions. Push rod "C" up until slot is against pin and adjust swivel until it freely enters hole in lever "B". Check and adjust accelerator linkage if necessary. *See Accelerator Linkage Adjustmement.*



P-2500 THROTTLE VALVE LINKAGE ADJUSTMENT

G-1500 & 2500 – Check and adjust accelerator linkage. *See Accelerator Linkage Adjustment.* To adjust throttle valve linkage, insert a 3/16" gauge pin in hole in lever "A" (see illustration) and bracket "B" with lever "E" turned counterclockwise to internal stop in transmission. Adjust swivel "C" on rod until it freely enters hole in lever "E", then lengthen rod by turning swivel three turns. Remove gauge pin and connect swivel to lever.



G-1500 & 2500
THROTTLE VALVE LINKAGE ADJUSTMENT

DETENT SWITCH ADJUSTMENT

Turbo Hydra-Matic Trans. Only – With carburetor in wide open position, adjust switch on mount until .050" clearance is obtained between switch plunger and carburetor lever.

ELECTRICAL

BATTERY

12 Volt – Negative Ground.

Application	Delco Part No.	Cranking Power Watts @ 0°F
Standard		
All (Exc. "G")	Y59	2350
"G" Models	Y77	2300
Optional		
All (Exc. "G")	R59	2900
All	R69	3150

STARTER

Application	Delco Part No.
"G" Models	1108365
All Others	
250" Man. Trans.	1108368
292" Man. Trans.	1108360
250" Auto. Trans.	
Pow-R-Flo	1108365
Turbo Hydra-Matic	1108425
292" Auto. Trans.	1108361
Optional	
For Starter No. 1108368	1108372
For Starter No. 1108365,361	1108363

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

ALTERNATOR

Application	Amps.	Delco Part No.
"G" & P-1500	37	1100834
"C" & "K"	37	1100838
P-2500 & 3500	42	1100839
Optional		
"G" & P-1500	42	1100839
"C" & "K"	42	1100842
"G"	61	1100843
"C", "K" & "P"	61	1100849
All	62	1117782

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

ALTERNATOR REGULATOR

Application	Delco Part No.
All (Exc. For Alt. No. 1117782)	1119515
For Alt. No. 1117782	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

COOLING CAPACITIES

Application	①Quantity
"G" Models	12 qts.
All Others 250"	
P-1500	11 qts.
P-2500 & 3500	12 qts.
All Others	11.5 qts.
292"	
P-2500 & 3500	12 qts.
All Others	
Man. Trans.	11.5 qts.
Auto. Trans.	12.5 qts.
Heavy Duty Radiator	12 qts.

① – Add one quart if equipped with heater.

CAPACITIES (EXCEPT COOLING)

Application	Quantity
Crankcase	
250"	①4 qts.
292"	①5 qts.
Automatic Transmission	
Pow-R-Flo	②9 qts.
TH 350	10 qts.
TH 400	9.5 qts.
Manual Transmission	
3-Speed	1.75 pts.
Heavy Duty 3-Speed	3.5 pts.
4-Speed	8 pts.
Power Take-Off	1 pt.
Four Wheel Drive Transfer Case	5 pts.
Drive Axles	③
Fuel Tank	
C & K-1500/3500 Panel,Suburban & Jimmy	23.5 gals.
C-3500 Cowl Models	20 gals.
C & K-1500/3500 All Others	21 gals.
P-1500	20.5 gals.
P-2500 & 3500	30 gals.
"G" Models	24.5 gals.
"G" Models	④22 gals.

① – Add one quart with filter change.

② – Add one quart if equipped with oil cooler.

③ – Fill to bottom of filler plug hole.

④ – Equipped with Evaporative Emission System.

ENGINE (Cont.)

FILTERS & CLEANERS

Filter or Cleaner	Service Interval (Miles)
Oil Filter	Replace 12,000
Air Cleaner	
Oil Bath Type	①Check 12,000
Element Type	②Replace 24,000
Foam Type	Clean 12,000
Crankcase Ventilation Filter	③Clean 6,000
Crankcase Ventilation Valve	Replace 12,000
Governor Filter	Replace 12,000
A.I.R. Filter	Clean 12,000
Turbo Hydra-Matic Sump Strainer	Replace 24,000
Fuel Filter	Replace 12,000
Distributor Cam Lubricator	Replace 24,000

① — Clean and replace with SAE 50 oil.

② — Replace if dirty, do not clean.

③ — If equipped, clean and replace with SAE 20 oil.