

## TUNE-UP

### ENGINE IDENTIFICATION

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

Application	Code
230" Man. Trans. ....	PK, PA, PE, TF
230" Man. Trans. W/A.I.R. ....	PK
230" Auto. Trans. ....	PU, PO, TI, PW
230" Auto. Trans. W/A.I.R. ....	PL
250" Man. Trans. ....	PI, PV, TF
250" Man. Trans. W/A.I.R. ....	PH, TA, PF
250" Auto. Trans. ....	TB, PW
250" Auto. Trans. W/A.I.R. ....	PJ, TE
292" Man. Trans. ....	UM
292" Man. Trans. W/A.I.R. ....	UH
292" Auto. Trans. ....	UO, UQ
292" Auto. Trans. W/A.I.R. ....	UT, UP

### MODEL IDENTIFICATION

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.

#### CM20DPB10001

- First Digit - Chassis Designation.
- Second Digit - Engine Designation.
- Third & Fourth Digits - GVW Range.
- Fifth Digit - Body Type.
- Sixth Digit - Assembly Plant.
- Seventh Digit - Model Year (1968).
- 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.

### 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.

### 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

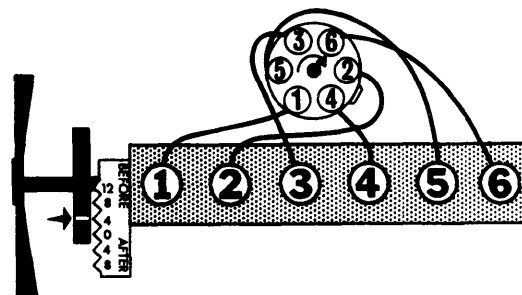
Gap ..... .035"  
Torque.....25 ft. lbs.

#### Spark Plug Type

Application	AC No.
230", 250"	46N
292"	44N

### DISTRIBUTOR

Point Gap  
New ..... .019"  
Used ..... .016"  
Cam Angle.....31-34°  
Breaker Arm Spring Tension ..... 19-23 ozs.  
Condenser Capacity ..... .18-.23 mfd.



8CHA001

### FIRING ORDER & TIMING MARKS

### IGNITION TIMING

Ignition timing is checked or adjusted with engine at normal operating temperature, distributor vacuum line disconnected and plugged and engine at normal idle.

Application	Timing
All W/O A.I.R.....	4° BTDC
All Man. Trans. W/A.I.R. ....	0° BTDC
All Auto. Trans. W/A.I.R. ....	4° BTDC

### HOT (SLOW) IDLE RPM

Start engine and warm to normal operating temperature. Idle speed is checked or adjusted with engine at normal operating temperature, air conditioning "ON", dwell and timing correctly adjusted, air cleaner installed, choke open, manual transmission in Neutral and automatic transmission in "D". If carburetor is equipped with a dashpot, adjust dashpot until contact between plunger and throttle lever is eliminated. Adjust idle speed screw to obtain specified idle RPM. Adjust mixture screw out to obtain maximum idle speed. Now adjust mixture screw in until engine speed drops 20 RPM.

# 1968 GMC 6 Tune-Up

**Idle Speed Solenoid Adjustment (If Equipped)** — With idle speed RPM correctly adjusted, adjust solenoid plunger with a wrench until it just contacts throttle lever. Disconnect solenoid electrical lead and adjust idle speed screw until an engine speed of 400 RPM is obtained. Reconnect solenoid lead. Idle RPM should be as specified.

## Idle Speed RPM

Application	RPM
All W/O A.I.R.	
Man. Trans. ....	500-550
Auto. Trans. ....	450-500
All W/A.I.R.	
Man. Trans. ....	700
Auto. Trans. ....	500

## COLD (FAST) IDLE RPM

Rotate fast idle cam to highest position, bend cam follower tang in or out to obtain specified fast idle speed of 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 ¼ 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 nut is seated correctly. Replace shaft assembly and adjusting cap.

## CHOKE ADJUSTMENT

With air cleaner removed, push choke knob into stop on dash and pull out ½". Loosen cable clamp on carburetor and pull cable through clamp until choke valve is in wide open position. Tighten cable clamp and check that choke valve fully opens and closes as cable is actuated.

## FUEL PUMP PRESSURE & VOLUME

Pressure (At Idle)..... 3-4.25 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"		
"G" Models.....	1110438.....	1110437
P-10.....	1110436.....	1110433
250"		
"G" Models.....	1110441.....	1110440
All Others.....	1110439.....	1110399
292"		
All.....	1110442.....	1110433

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

### IGNITION COIL

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

## CARBURETION

### CARBURETORS

#### Rochester Model M 1-Bbl.

Application	Part No.
230" W/O Gov. ....	7028006
230" W/Gov. ....	7028010
250" W/O Gov. ....	7028007
250" W/Gov. ....	7028011
292" All 10 Series.....	7028012
292" All Others.....	7028013

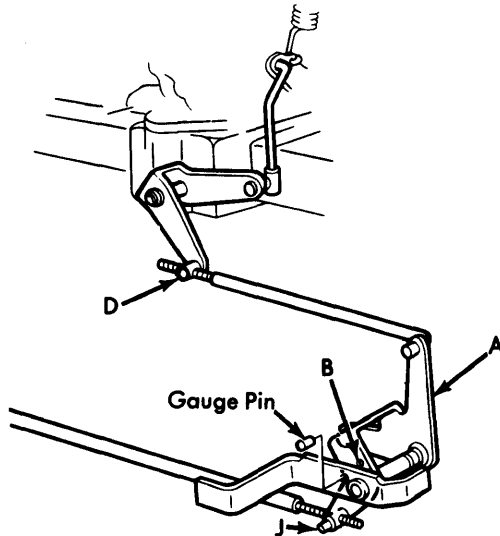
**Other Data & Specifications** — See Tune-Up and Rochester Carburetors in ELECTRICAL Section.

### 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 in throttle lever (P-1500), pedal lever (P-2500 and P-3500) and accelerator control lever (all remaining models).

## CARBURETION (Cont.)

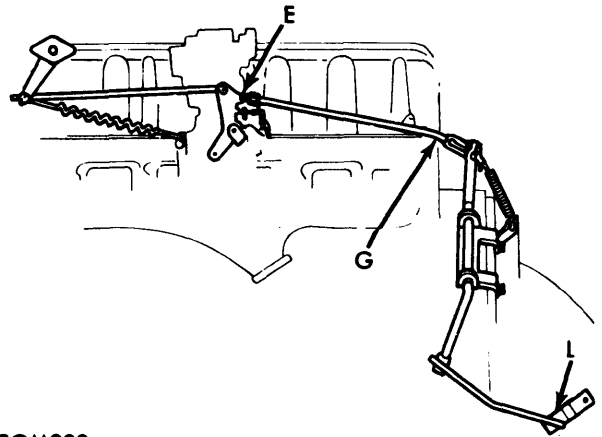
**"G" Models** — Disconnect swivels "D" and "J" from their respective levers (see illustration). Insert a  $\frac{3}{16}$ " diameter gauge pin in hole "B" on lever "A" and accelerator pivot bracket. Rotate throttle lever to wide open position and adjust swivel "D" until it freely enters hole in idler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



8GM006

### "G" MODELS ACCELERATOR LINKAGE ADJUSTMENT

**P-1500** — To check adjustment, place linkage in idle position then rotate 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" from lever "E". Pull forward on rod until internal stop on transmission is felt. Adjust swivel until it freely enters hole in lever "E". Check and adjust accelerator linkage if necessary. See *Accelerator Linkage Adjustment*.

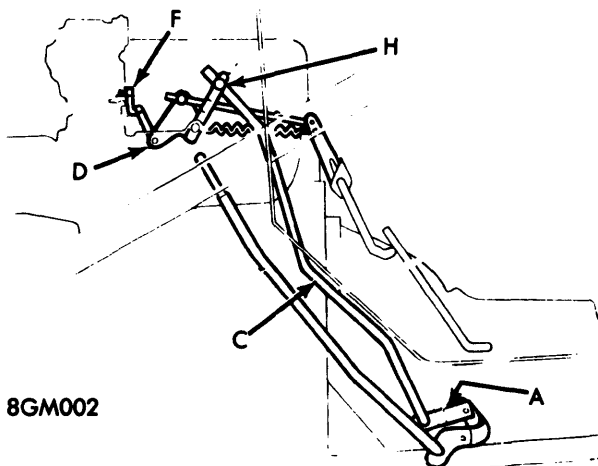


8GM003

### P-1500 THROTTLE VALVE LINKAGE ADJUSTMENT

### THROTTLE VALVE LINKAGE ADJUSTMENT

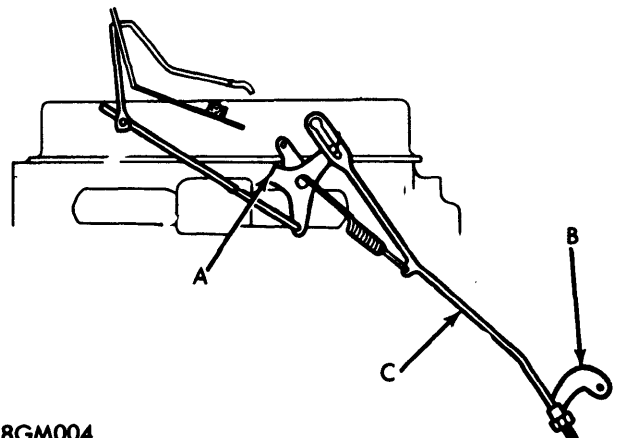
**C-1500 & C-2500** — To check linkage adjustment, place linkage in idle position then rotate to wide open position by rotating lever "F" (see illustration). Push down on lever "A" and check that rod "L" does not flex. If rod flexes, disconnect rod from lever "B". Rotate lever "F" to wide open position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



8GM002

### C-1500 & 2500 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 Adjustment*.

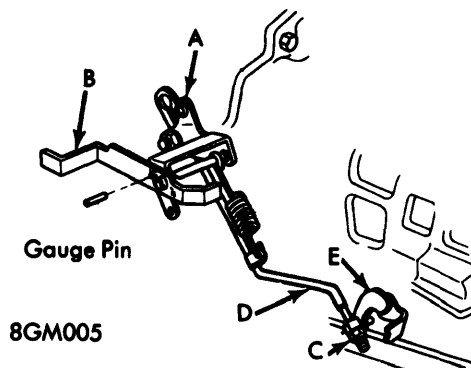


8GM004

### P-2500 THROTTLE VALVE LINKAGE ADJUSTMENT

## CARBURETION (Cont.)

**G-1500 & 2500** - Check and adjust accelerator linkage. See *Accelerator Linkage Adjustment*. To adjust throttle valve linkage, insert a  $\frac{3}{16}$ " 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 "D" 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
"G" Models		
Standard	Y55	2300
Sportvan	R69	3150
All Others		
250" Standard	Y59	2350
292" Standard	R59	2900
Optional	R69	3150

### STARTER

Application	Delco Part No.
"G" Models & "P" Models W/230"	
Standard	1108365
Optional	1108363
All Others	
250" Man. Trans.	1108368
250" Auto. Trans.	
Pow-R-Flo	1108367
Turbo Hydra-Matic	1107372
292" All	
Standard	1108360
Optional	1108372

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

### ALTERNATOR

Application	Amps.	Delco Part No.
"G" Models	37	1100695
C & K-1500	37	1100693
C & K-2500 & 3500, P-1500		
Standard	37	1100794
Optional	42	1100795
P-2500 & 3500	42	1100795
Optional		
Exc. "P" Models	42	1100696
All	61	1100750
Exc. "G" Models	62	1117782

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

### ALTERNATOR REGULATORS

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

## ENGINE (Cont.)

### FILTERS & CLEANERS

Filter & 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.

### COOLING CAPACITIES

Application	①Quantity
230" All .....	11 qts.
250"	
P-1500 Man. Trans. ....	12 qts.
P-2500 & 3500 All .....	13 qts.
G-1500 & 2500 All .....	13.5 qts.
All Others .....	12.5 qts.
292"	
P-2500 & 3500.....	13 qts.
All Others .....	12.5 qts.

- ① - Add one quart if equipped with heater or heavy duty radiator.

### CAPACITIES

#### (EXCEPT COOLING)

Application	Quantity
Crankcase	
230" & 250" .....	①4 qts.
292" .....	①5 qts.
Auto. Trans.	
Pow-R-Flo .....	9 qts.
Turbo Hydra-Matic .....	9.5 qts.
Manual Transmission	
3-Speed.....	2 pts.
Heavy Duty 3-Speed.....	2.75 pts.
Heavy Duty 3-Speed with O.D. ....	3.25 pts.
Borg Warner 3-Speed .....	3.5 pts.
4-Speed.....	8 pts.
New Process 4-Speed .....	7 pts.
Four Wheel Drive Transfer Case.....	5 pts.
Drive Axles.....	②
Fuel Tank	
"C" & "K" Models .....	22 gals.
"C" & "K" Suburban & Panel Models .....	23.5 gals.
"G" Models.....	24.5 gals.
Cowl Models.....	20 gals.
P-1500.....	20.5 gals.
P-2500 & 3500.....	30 gals.

- ① - Add one quart with filter change.
- ② - Fill to bottom of filler plug hole.