

## 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, OM
230" Man. Trans. W/A.I.R. ....	OK
230" Auto. Trans. ....	OB, ON
230" Auto. Trans. W/A.I.R. ....	OL
250" Man. Trans. ....	PA, PL, PK
250" Man. Trans. W/A.I.R. ....	PC, PP
250" Auto. Trans. ....	PX, PM
250" Auto. Trans. W/A.I.R. ....	PE, PW
292" Man. Trans. ....	RE
292" Man. Trans. W/A.I.R. ....	RS, RG
292" Auto. Trans. ....	RA, RB
292" Auto. Trans. W/A.I.R. ....	RR, RD, RQ

### 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.

**CM20DPA10001**

- First Digit - Chassis Designation.
- Second Digit - Engine Designation.
- Third & Fourth Digits - GVW Range (Series Designation).
- Fifth Digit - Truck Type.
- Sixth Digit - Assembly Plant.
- Seventh Digit - Model Year (1969).
- 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

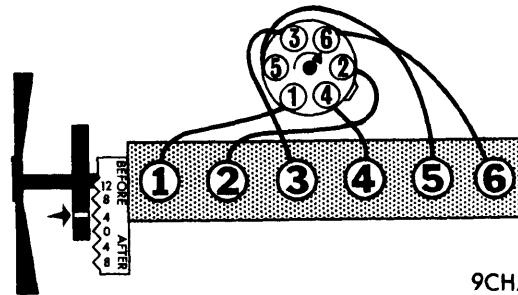
Gap ..... .035"  
Torque ..... 25 Ft. Lbs.

### Spark Plug Type

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

### 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 (Exc. Man. Trans. W/A.I.R.).....	4° BTDC
All Man. Trans. W/A.I.R. ....	TDC

### 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.

**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. ....	500
All W/A.I.R.	
Man. Trans. ....	700
Auto. Trans. ....	550

## TUNE-UP (Cont.)

### 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 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 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" .....	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 .....
<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 & MV 1-Bbl.⓪

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

⓪ - M designates manual choke and MV designates automatic choke.

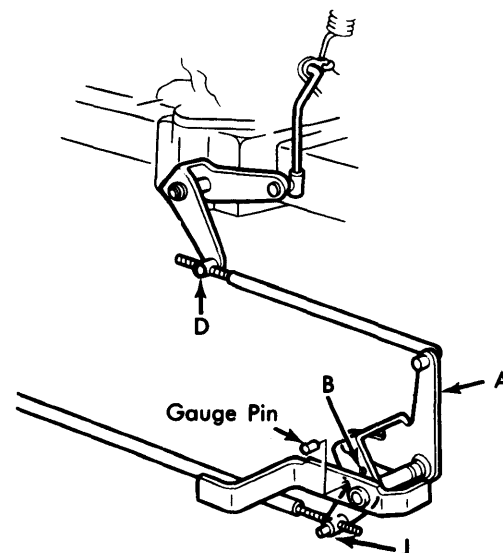
Other Data & Specifications - See Tune-Up or Rochester Carburetors in CARBURETION Section.

### 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 in throttle lever or pedal lever.

"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

pedal until it is 1/4" from floorboard and adjust swivel "J" until it freely enters hole in lever. Install clips on swivel and remove gauge pin.



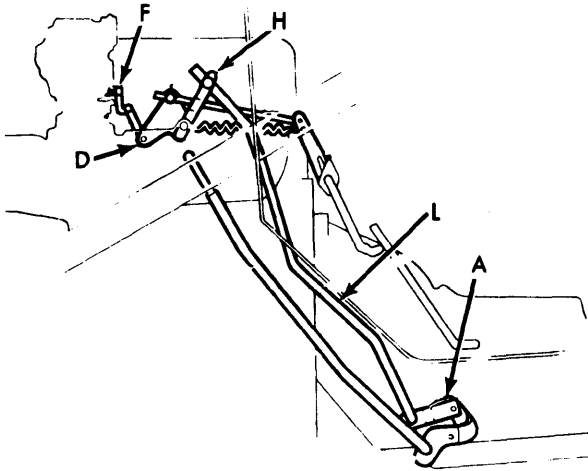
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"G" MODELS ACCELERATOR LINKAGE ADJUSTMENT

## CARBURETION (Cont.)

## THROTTLE VALVE LINKAGE ADJUSTMENT

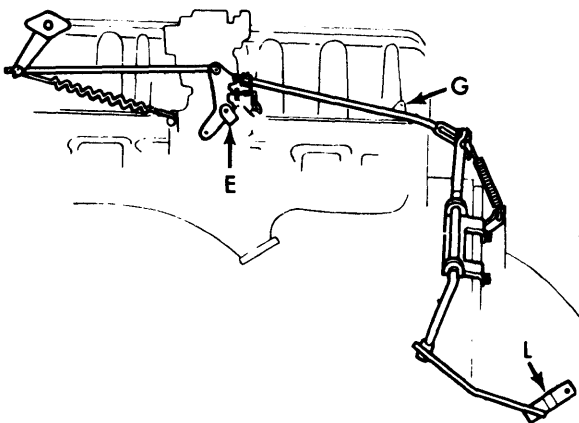
**C-1500 & 2500** - To check linkage adjustment, place linkage in idle position then rotate to wide open position by rotating lever "F" (see illustration). Push down on Lever "A" and check that rod "L" does not flex. If rod flexes, disconnect from lever "D". Rotate lever "F" to wide open position and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



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**C-1500 & 2500  
THROTTLE VALVE LINKAGE ADJUSTMENT**

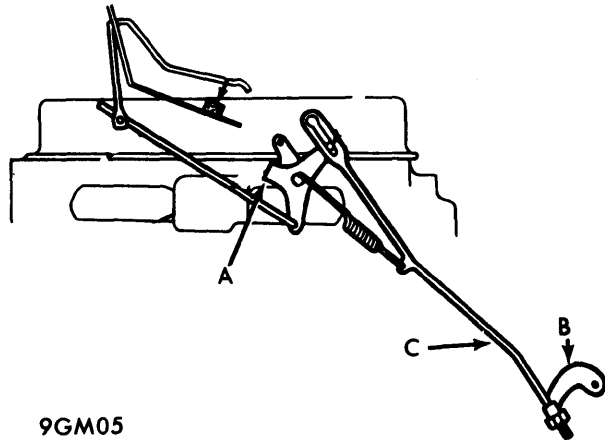
**P-1500** - To check adjustment, place linkage in idle position then rotate to wide open position by rotating lever "E" (see illustration). Push down on lever "L" and check that rod "G" does not flex. Disconnect swivel on rod "G" from lever "E". Pull forward on rod until internal stop in transmission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



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**P-1500 THROTTLE VALVE LINKAGE ADJUSTMENT**

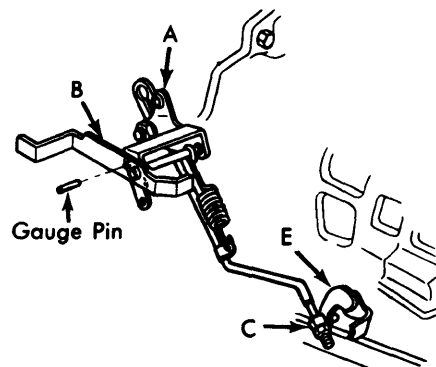
**P-2500** - To check adjustment, place linkage in idle position then rotate to wide open position by rotating lever "A" (see illustration). Push down on Lever "B" and check that rod "C" does not flex. If rod "C" flexes, disconnect rod from lever "B". Rotate levers "A" and "B" to wide open positions. 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 Adjustment*.



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**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  $\frac{3}{16}$ " 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 until it freely enters hole in lever "E", then lengthen rod by turning swivel three turns. Remove gauge pin and connect swivel to lever.



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**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
<b>"G" Models</b>		
Standard	Y55	2300
Sportvan	R69	3150
<b>All Others</b>		
250" Standard	Y59	2350
292" Standard	R59	2900
Optional	R69	3150

### STARTER

Application	Delco Part No.
<b>"G" Models</b>	1108365
<b>Remaining Models</b>	
250" Man. Trans.	1108368
292" Man. Trans.	1108360
250" Auto. Trans	
<b>"P" Models, Pow-R-Flo</b>	1108367
<b>All Others, Pow-R-Flo</b>	1108365
Turbo Hydra-Matic	1107372
292" Auto. Trans.	1108361
Optional All	1108372
Optional All	1108363

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

### ALTERNATOR

Application	Amps.	Delco Part No.
<b>"G" &amp; P1500</b>	37	1100834
<b>"C" &amp; "K"</b>	37	1100838
<b>P-2500 &amp; 3500</b>	42	1100839
<b>Optional</b>		
<b>"G" &amp; P-1500</b>	42	1100839
<b>"C" &amp; "K"</b>	42	1100842
<b>"G"</b>	61	1100843
<b>"C", "K" &amp; "P"</b>	61	1100849
<b>All</b>	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 30 ft. lbs.

### FILTERS & CLEANERS

Filter & Cleaner	Service Interval (Miles)
Oil Filter	Replace 12,000
Air Cleaner	
Oil Bath Type	① Check 12,000
Element Type	② Replace 24,000
Foam Type	Clean 12,000
Crankcase Ventilation Filter	③ Clean 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	Quantity
230" All	11 qts.
250"	
P-1500 Man. Trans.	12 qts.
P-2500 & 3500 All	13 qts.
G-1500 & 2500 All	12 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.

### 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 GMC 6 Tune-Up

## ENGINE (Cont.)

<b>CAPACITIES (EXCEPT COOLING)</b>	
<b>Application</b>	<b>Quantity</b>
<b>Crankcase</b>	
230" & 250" .....	① 4 qts.
292" .....	① 5 qts.
<b>Auto. Trans.</b>	
Pow-R-Flo .....	9 qts.
Turbo Hydra-Matic .....	9.5 qts.
<b>Manual Transmission</b>	
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
<b>Fuel Tank</b>	
"C" & "K" Models .....	22 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.	