

TUNE-UP

ENGINE IDENTIFICATION

Engine Code letters are suffix of Engine Identification Number. Number is stamped on a pad on front right hand side of cylinder block.

Application	Code
307" Man. Trans.	THR, THP, THD, TPB, THH, THA
307" Auto. Trans.	THC, THG, THS, TPC, THK, THL
350" Man. Trans.	TAB, TBA, TBD
350" Auto. Trans.	TAA, TBC, TBG
402" Man. Trans.	TKB
402" Auto. Trans.	TKA

MODEL IDENTIFICATION

A combination Vehicle Identification Number and Rating Plate is used on all vehicles. Plate is attached to dash and toe panel on "P" models (except Motor Home Chassis), on air intake plenum panel on cowl models and on left door pillar on all remaining models. Plate location on Motor Home Chassis must be supplied body builder.

CS131F100043

- First Digit - Truck Type.
- Second Digit - Engine Type.
- Third Digit - GVW Range.
- Fourth Digit - Model Type.
- Fifth Digit - Model Year 1 (1971).
- Sixth Digit - Assembly Plant.
- 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 through at least four compression strokes. Compression should be 150 psi with a maximum variation of 20 psi between cylinders.

VALVE TAPPET CLEARANCE

Hydraulic Lifters One turn down from zero lash.

VALVE ARRANGEMENT

- 307", 350"
E-I-E-I-E-I-E-I-E (Both banks, front to rear.)
- 402"
E-I-E-I-E-I-E-I (Left bank, front to rear.)
I-E-I-E-I-E-I-E (Right bank, front to rear.)

SPARK PLUGS

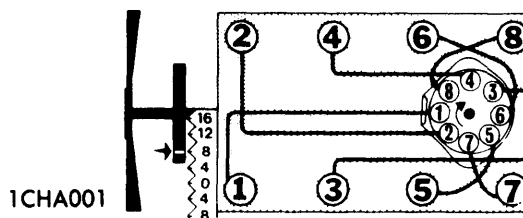
Gap035"
Torque 25 ft. lbs.

Spark Plug Type

Application	AC No.
"G" Models	
307"	R45
350"	R44
All Others	
307"	R45TS
350", 402"	R44TS

DISTRIBUTOR

Point Gap	
New019"
Used016"
Cam Angle.....	28-32°
Breaker Arm Spring Tension	19-23 ozs.
Condenser Capacity18-.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.

Ignition Timing Specifications

Application	Man. Trans.	Auto. Trans.
307"		
1500 Series	4° BTDC	8° BTDC
2500 & 3500 Series	4° BTDC	4° BTDC
350"	4° BTDC	8° BTDC
402"	8° BTDC	8° BTDC

HOT (SLOW) IDLE RPM

1500 Series Gas, All - Disconnect and plug distributor vacuum line. Disconnect "Fuel Tank" line from Evaporation Emission canister. Idle speed is adjusted with engine at normal operating temperature, choke valve open, parking brake on, drive wheels blocked, manual transmission in Neutral and air conditioning "OFF", automatic transmission in "D" and air conditioning "ON" (except for 402" engine that is adjusted with air conditioning "OFF".) Adjust carburetor idle speed screw to obtain an engine speed of 600 RPM (manual transmission), 550 RPM (307" and 350", automatic transmission) or 600 RPM (402", automatic transmission). **NOTE** - DO NOT attempt to adjust CEC solenoid or idle mixture screws.

1500 Series LPG, All - Disconnect and plug distributor vacuum line. Disconnect "Fuel Tank" line from Evaporation Emission canister. Idle speed is adjusted with engine at normal operating temperature, choke valve open, parking brake on, drive wheels blocked and transmission in Neutral. Adjust carburetor idle speed screw to obtain an engine speed of 600 RPM. **NOTE** - DO NOT attempt to adjust CEC solenoid or idle mixture screws.

TUNE-UP (Cont.)

2500 & 3500 Series Gas, All — Disconnect and plug distributor vacuum line. Idle speed is adjusted with engine at normal operating temperature, choke valve open, parking brake on, drive wheels blocked, manual transmission in Neutral, automatic transmission in "D" and air conditioning "OFF". Turn mixture screw lightly into stop then back out four turns. Adjust carburetor idle speed screw to obtain an engine speed of 650 RPM (manual transmission) and 550 RPM (automatic transmission).

2500 & 3500 Series LPG, All — Disconnect and plug distributor vacuum line. Idle speed is adjusted with engine at normal operating temperature, choke valve open, parking brake on, drive wheels blocked, transmission in Neutral and air conditioning "OFF". Turn mixture screws lightly into stop then back out four turns. Adjust carburetor idle speed screw to obtain an engine speed of 600 RPM.

COLD (FAST) IDLE RPM

Rochester 2GV 2-Bbl. — Fast idle RPM is correct when slow idle RPM is correctly adjusted. See *Hot (Slow) Idle RPM* in this Section.

Rochester 4 MV 4-Bbl., 1500 Series — Fast idle RPM is checked or adjusted with engine at normal operating temperature, choke valve open, manual transmission in Neutral, automatic transmission in "P" (LPG Models, automatic transmission in "N") and fast idle cam follower on second step of fast idle cam. Adjust fast idle speed screw to obtain specified RPM.

DISTRIBUTOR

Delco Part No.

Application	Man. Trans.	Auto. Trans.
307" 1500 Series.....	1112041	1112040
307" 2500 & 3500 Series	1112043	1112043
350"	1112046	1112047
402"	1112064	1112064

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

CARBURETORS

Rochester Model 2GV 2-Bbl.

Rochester Carb. No.

Application	Man. Trans.	Auto. Trans.
307" G-1500	7041111	7041126
307" C, K & P-1500.....	7041105.....	7041125
307" 2500, 3500 Series ...	7041139.....	7041138

Rochester Models 4MV 4-Bbl.

Rochester Carb. No.

Application	Man. Trans.	Auto. Trans.
350" 1500 Series.....	7041211	7041211
350" 2500, 3500 Series ...	7041208	7041208
402" 1500 Series.....	7041209	7041209
402" 2500, 3500 Series ...	7041206	7041206

Fast Idle Speed RPM

Application	Man. Trans.	Auto. Trans.
All (Exc. LPG Models).....	1350	1500
LPG Models	1350.....	1350

Rochester 4MV 4-Bbl. 2500 & 3500 Series — Fast idle RPM is checked or adjusted with engine at normal operating temperature, transmission in Neutral, choke valve open and fast idle cam follower on second step of fast idle cam. Adjust fast idle screw 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 on choke lever. To adjust, bend choke rod at offset until it freely enters hole in choke lever.

FUEL PUMP PRESSURE & VOLUME

Pressure (At Idle)	
307" 1500 Series.....	5-6.5 psi
All Others	7-8.5 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

IGNITION COIL

Application	Delco Part No.
All	1115238
Resistance	Ohms @ 75°F
Primary	1.77-2.01
Secondary	3,000-20,000
Ballast Resistor Loom	1.8

CARBURETION

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

ACCELERATOR LINKAGE ADJUSTMENT

All (Exc. "G" Models) — Throttle linkage is cable type and is nonadjustable. Inspect all components for wear or damage and replace as necessary.

"G" Models — With accelerator pedal depressed to floor, disconnect accelerator rod at pedal rod. Rotate bellcrank mounted on manifold until carburetor throttle valve is wide open. Adjust accelerator rod at swivel until it freely enters pedal rod and reconnect. Depress accelerator pedal to ensure linkage works freely.

CARBURETION (Cont.)

DOWNSHIFT LINKAGE ADJUSTMENT

Powerglide — Disconnect throttle rod swivel at throttle lever or dash lever. Disconnect throttle valve rod at throttle lever. Position carburetor in wide open position and push throttle valve rod rearward and adjust swivel until it freely enters hole in throttle lever. Connect swivel to the throttle lever and reconnect return spring.

DETENT CABLE ADJUSTMENT

Turbo Hydra-Matic 350 Trans. — 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. — Adjust accelerator linkage if necessary. Rotate throttle lever to wide open position and adjust switch on mount until .05" clearance is obtained between switch and lever.

ELECTRICAL

BATTERY

12 Volt — Negative Ground.

Application	Delco Part No.	Cranking Power Watts @ 0°F
307" "G" Models.....	Y-86.....	2300
307" All Others.....	Y-88.....	2350
350" & 402" All.....	R-88.....	2900
Optional All.....	R-88W.....	3750

STARTER

Application	Delco Part No.
307" "G" Models, Man. Trans.	1108338
307" All Others, Man. Trans.	1108368
307" All, Auto. Trans.	1108367
350" Man. Trans.	1108360
350" Auto. Trans.	1108338
402" Man. Trans.	1108385
402" Auto. Trans.	1108418
Optional For Starter No. 1108338.....	1108350
Optional For Starter No. 1108368.....	1108372
Optional For Starter No. 1108367.....	1108363

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

ALTERNATOR

Application	Amps.	Delco Part No.
Std. (Exc. "P" Models).....	37.....	1100834
Std. P-2500 & 3500.....	42.....	1100839
Opt. All.....	61.....	1100849

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

ALTERNATOR REGULATOR

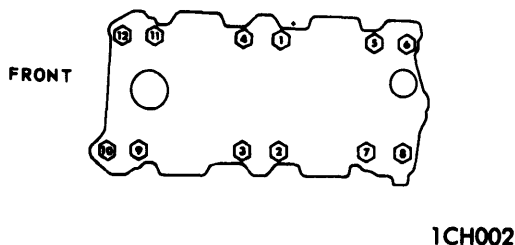
Application	Delco Part No.
All.....	1119515

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

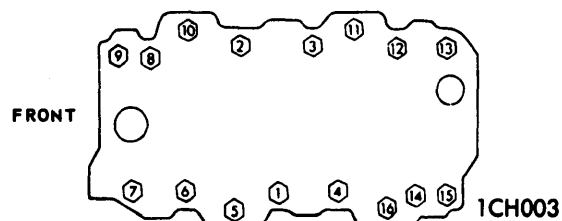
ENGINE

INTAKE MANIFOLD TIGHTENING

Tighten bolts to 30 ft. lbs. in sequence shown in illustration.



**307" & 350"
INTAKE MANIFOLD TIGHTENING SEQUENCE**



**402"
INTAKE MANIFOLD TIGHTENING SEQUENCE**

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.....	90±5

1971 GMC V8 Tune-Up

ENGINE (Cont.)

FILTERS & CLEANERS

Filter or Cleaner	Service Interval (Miles)
Oil Filter.....	Replace 12,000
Air Cleaner	
Element Type	①Check 12,000
Oiled Element Type	①Check 12,000
Polyurethane Wrap Type.....	Clean 12,000
Oil Bath Type	②Clean 12,000
Crankcase Ventilation Filter.....	③Clean 12,000
PCV Valve.....	Replace 24,000
TH-400 Sump Strainer.....	Replace 24,000
Fuel Filter.....	Replace 24,000
Distributor Cam Lubricator.....	④Replace 24,000

- ① — Replace if dirty, do not clean. Rotate 180° at 12,000 miles and replace at 24,000.
- ② — Clean and replace with SAE 50 oil.
- ③ — Located in air cleaner, if equipped. Replace at 24,000 miles.
- ④ — Rotate 180° at 12,000 miles.

COOLING CAPACITIES

Application	①Quantity
307"	
"C" Models	
Man. Trans.	14.8 qts.
Auto. Trans.	15.2 qts.
"K" Models	
Man. Trans.	15.1 qts.
Auto. Trans.	15.5 qts.
"P" Models	
Man. Trans.	17.7 qts.
Auto. Trans.	18.1 qts.
350"	
"C" & "K" Models	
Man. Trans.	15.2 qts.
Auto. Trans.	15.5 qts.
"P" Models.....	18.1 qts.
402"	
"C" Models	
Man. Trans.	22.2 qts.
Auto. Trans.	23.7 qts.
① — Add one quart if equipped with heater, heavy duty radiator or air conditioning.	

CAPACITIES (EXCEPT COOLING)

Application	Quantity
Crankcase	①4 qts.
Auto. Trans.	
Powerglide	②9 qts.
TH 350.....	10 qts.
TH 400.....	9.5 qts.
Man. Trans.	
3-Speed.....	3.5 pts.
4-Speed.....	7 pts.
Four-Wheel Drive	
Transfer Case.....	5 pts.
Power Take-Off	1 pt.
Drive Axles.....	③
Fuel Tank	
"G" Models.....	④24.5 gals.
Panel, Suburban & Jimmy	
1500 Series.....	20.5 gals.
2500 Series.....	23.5 gals.
"C" & "K" Models, All Others	
1500 Series.....	20.2 gals.
2500 & 3500 Series	21 gals.
P-1500.....	17 gals.
P-2500 & 3500.....	30 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 — 22.5 gals. if equipped with anti-overfill.