

TUNE-UP

ENGINE IDENTIFICATION

Number is stamped in pad at front right hand side of cylinder block. Engine cubic inch displacement is stamped at start of engine serial number. The 305" engine is stamped 305-E.

MODEL IDENTIFICATION

VEHICLE IDENTIFICATION NUMBER

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 Digit** - GVW Range.
- Fifth Digit** - Body 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 125 psi with a maximum variation of 20 psi between cylinders.

VALVE TAPPET CLEARANCE

Application	Intake	Exhaust
All	.012" (Hot)	.018" (Hot)

VALVE ARRANGEMENT

E-I-E-I-E (Left side, front to rear.)
E-I-E-I-E (Right side, front to rear.)

SPARK PLUGS

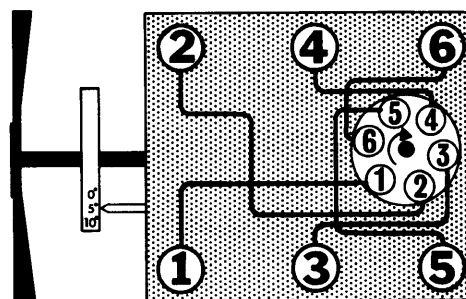
Gap	.035"
Torque	25 ft. lbs.

Spark Plug Type

Application	AC No.
305"	R45NS

DISTRIBUTOR

Point Gap	
New	.019"
Used	.016"
Cam Angle	31-34°
Breaker Arm Spring Tension	19-23 ozs.
Condenser Capacity	18-25 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 and engine at normal idle.

Application	Timing
305"	7.5° BTDC

HOT (SLOW) IDLE RPM

Preliminary Adjustments - All Models - Idle speed and mixture adjustment is checked or adjusted with engine at normal operating temperature, air conditioning "OFF", dwell and timing correctly adjusted, choke open, manual transmission in Neutral and automatic transmission in "D".

1500 Series - Adjust idle speed screw to obtain specified idle RPM. Adjust idle mixture screws evenly to obtain highest steady idle speed. Now adjust mixture screws in until engine speed drops 30-50 RPM. Check idle speed and readjust to specifications if necessary.

2500 & 3500 Series W/CCS - 1) Disconnect and plug line to vacuum idle stop. Adjust idle speed screw to obtain an engine speed of 350 RPM. Reconnect line to vacuum idle stop. Idle speed RPM should be as specified. If idle speed is not as specified, adjust plunger on vacuum idle stop until specified RPM is obtained.

2) Connect a vacuum gauge to intake manifold and turn both mixture screws in evenly until engine slows down or runs rough. Now adjust mixture screws out evenly until highest steady reading on vacuum gauge is obtained. Readjust vacuum idle stop plunger until an engine speed of 675 RPM (manual transmission) and 575 RPM (automatic transmission) is obtained. Now turn mixture screws in equally until specified idle RPM is obtained.

2500 & 3500 Series W/O CCS - Adjust idle speed screw to obtain specified idle RPM. Connect a suitable vacuum gauge to intake manifold. Turn both mixture screws in evenly until engine slows down or runs rough. Now adjust mixture screws out evenly until highest steady reading on vacuum gauge is obtained. Check idle speed and readjust to specifications if necessary.

1969 GMC V6 Tune-Up

TUNE-UP (Cont.)

Idle Speed (RPM)

Application	RPM
Without CCS	
Man. Trans.	500
Auto. Trans.	550
With CCS	
Man. Trans.	650
Auto. Trans.	550

COLD (FAST) IDLE RPM

Fast idle RPM is correctly adjusted when Hot (Slow) Idle RPM and choke are correctly adjusted.

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 to right with a suitable hex wrench (A-25264). Now turn nut ¼ turn to right without turning screw. If a more sensitive adjustment is required, use same procedures and turn screw and nut to left. Tap lightly on wrench securing nut to ensure nut is seated correctly. Replace shaft assembly and adjusting cap.

CHOKE ADJUSTMENT

Manual type choke is used. Check that choke valve fully opens and closes as cable is actuated. To correctly adjust cable, loosen cable clamp at carburetor bracket, push knob into stop and pull out ⅛". Hold choke valve wide open and tighten cable clamp.

FUEL PUMP PRESSURE & VOLUME

Pressure (At Idle)..... 5-6 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.
305"	
1500 Series.....	1110472
2500 & 3500 Series.....	1110471

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

Bendix-Stromberg Model WW 2-Bbl.

Application	Bendix-Stromberg No.
305"	381261, 381288

Other Data & Specifications — See Tune-Up and Bendix-Stromberg Carburetors in CARBURETION Section.

ACCELERATOR LINKAGE ADJUSTMENT

Disconnect accelerator return spring and throttle rod at pedal lever. Depress accelerator pedal to floor and place carburetor in wide open position. Adjust swivel on rod until it freely enters hole in pedal lever. Reconnect rod and spring.

DETENT SWITCH ADJUSTMENT

With carburetor in wide open position, adjust switch on mount until .050" clearance is obtained between switch and carburetor lever.

ELECTRICAL

BATTERY

12 Volt - Negative Ground.

Application	Capacity (Amps.)
Standard	
305"	53
351"	62
Optional, All	70

STARTER

Application	Delco Part No.
Man. Trans.	1107375
Auto. Trans.	1108361
Optional For No. 1107375	1107371
Optional For No. 1108361	1108372

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

ALTERNATOR

Application	Amps.	Delco Part No.
Standard.....	37	1100838
Optional.....	42	1100842
Optional.....	61	1100849
Optional.....	62	1117782

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

ALTERNATOR REGULATOR

Application	Delco Part No.
For 37, 42, 61 Amp. Alt.	1119515
For 62 Amp. Alt.	1116378

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

ENGINE

INTAKE MANIFOLD TIGHTENING

Tighten intake manifold bolts to 20-25 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

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.

CAPACITIES

Application	Quantity
Crankcase	①5 qts.
Automatic Transmission	
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.
SM330 3-Speed	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.
Cowl Models.....	20 gals.
Cooling System③	
Man. Trans.	31.5 qts.
Auto. Trans.	32 qts.

- ① - Add one quart with filter change.
- ② - Fill to bottom of filler plug hole.
- ③ - Add one quart if equipped with heater.