

1971 Chevrolet V8 Tune-Up

TUNE-UP

ENGINE IDENTIFICATION

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

| Application | Code |
|-----------------------------|---|
| 307" Man. Trans. | TDA, TDB, TRA, TAD, TJR, TJT, TJX, TDT, TAK |
| 307" Auto. Trans. | TAL, TDL, TDP, TAH, TAJ, TJP, TJS, TLP, TDX, TJW |
| 350" Man. Trans. | TBL, TFH, TDD, TDG, TRK, TRH, TLD, TLW, TFA, TDW, TRD |
| 350" Man. Trans. LPG | TDH |
| 350" Auto. Trans. | TFD, TFJ, TDJ, TDR, TRL, TRJ, TLX, TFB, TDY, TRG |
| 350" Auto. Trans. LPG | TDK |
| 402" Man. Trans. | TKA, TKW, TKM |
| 402" Auto. Trans. | TKB, TKX, TKM |

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 by body builder.

CS131F100043

First Digit - Truck Type.
Second Digit - Engine Type.
Third Digit - GVW Range.
Fourth Digit - Model Year.
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-I-E-E-I-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

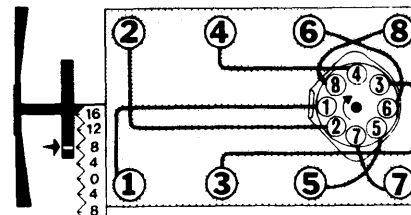
Gap035"
 Torque 25 ft. lbs.

Spark Plug Type

| Application | AC No. |
|------------------|--------|
| 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.



1CHA001

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" 10 Series | 4° BTDC | 8° BTDC |
| 307" 20 & 30 Series | 4° BTDC | 4° BTDC |
| 350" | 4° BTDC | 8° BTDC |
| 402" | 8° BTDC | 8° BTDC |

HOT (SLOW) IDLE RPM

10 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

TUNE-UP (Cont.)

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.**

10 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.**

20 & 30 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 in to 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).

20 & 30 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 in to 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 4MV 4-Bbl, 10 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.

Fast Idle Speed RPM

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

Rochester 4MV 4-Bbl. 20 & 30 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" 10 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

DISTRIBUTOR

| Application | Delco Part No. | |
|---------------------------|----------------|--------------|
| | Man. Trans. | Auto. Trans. |
| 307" 10 Series..... | 1112041 | 1112040 |
| 307" 20 & 30 Series | 1112043 | 1112043 |
| 350" | 1112046 | 1112047 |
| 402" | 1112064 | 1112064 |

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

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 |

1971 Chevrolet V8 Tune-Up

CARBURETION

CARBURETORS

Rochester Model 2GV 2-Bbl.

| Application | Rochester Carb. No. | |
|-----------------------------|---------------------|--------------|
| | Man. Trans. | Auto. Trans. |
| 307" G-10 | 7041111 | 7041126 |
| 307" C-10, K-10, P-10 | 7041105 | 7041125 |
| 307" 20, 30 Series | 7041139 | 7041138 |

Rochester Model 4MV 4-Bbl.

| Application | Rochester Carb. No. | |
|--------------------------|---------------------|--------------|
| | Man. Trans. | Auto. Trans. |
| 350" 10 Series | 7041211 | 7041211 |
| 350" 20, 30 Series | 7041208 | 7041208 |
| 402" 10 Series | 7041209 | 7041209 |
| 402" 20, 30 Series | 7041206 | 7041206 |

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.

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 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-20 & 30 | 42 | 1100839 |
| Opt. All | 61 | 1100849 |

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

ALTERNATOR REGULATOR

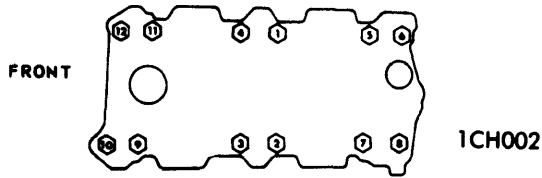
| Application | Delco Part No. |
|-------------|----------------|
| All | 1119515 |

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

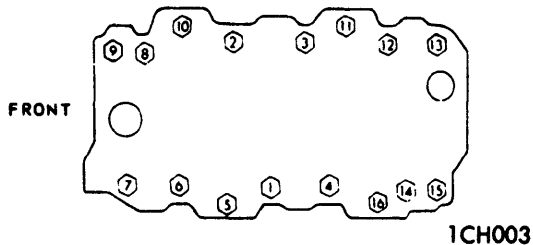
ENGINE

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 |

FILTERS & CLEANERS

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

CAPACITIES (EXCEPT COOLING)

| Application | Quantity |
|------------------------------|--------------|
| Crankcase | ① 4 qts. |
| Auto. Trans. | |
| Powerglide | ② 9 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 | |
| "C" Models | ④ 24.5 gals. |
| Panel, Suburban & Blazer | |
| 10 Series | 20.5 gals. |
| 20 Series | 23.5 gals. |
| "C" & "K" Models, All Others | |
| 10 Series | 20.2 gals. |
| 20 & 30 Series | 21 gals. |
| P-10 | 17 gals. |
| P-20 & 30 | 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 gals. if equipped with anti-overfill.

COOLING CAPACITIES

| Application | Quantity |
|------------------|-----------|
| 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.