

TUNE-UP

ENGINE IDENTIFICATION

Engine Code Letters are suffix of Engine Identification Number. Number is stamped on pad on front right hand side of engine.

Application	Code
350" Man. Trans.	TJM, TJW, TKX, TML, TKM, TMD TJA, TJB, TJC, TJD, TRM
350" Man. Trans. LPG	TMJ
350" Auto. Trans.	TKT, TKU, TKY, TMM, TJU TJY, TKR, TKS, TKW, TMK TMC, TMA, TMB
350" Auto. Trans. LPG	TMH
454" All	TRH, TRJ, TRL, TRT, TRU, TRW, TRX

MODEL IDENTIFICATION

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

TCQ134F100001

- First Digit - Make (GMC Division).
- Second Digit - Truck Type.
- Third Digit - Engine Designation.
- Fourth Digit - Truck Series.
- Fifth Digit - Model Type.
- Sixth Digit - Model Year 4 (1974).
- Seventh 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.

NOTE - For Tune-Up purposes only, Light Duty (L/D) will refer to all 1500 series, Suburban and Rally Van models. Heavy Duty (H/D) will refer to all remaining models.

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

350"
E-I-E-E-I-I-E (Both banks, front to rear.)
454"
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

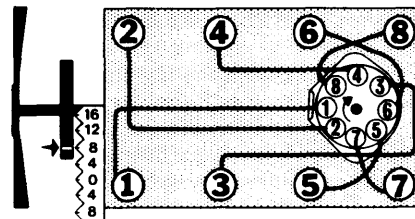
Gap035"
Torque..... 15 ft. lbs.

Spark Plug Type

Application	AC No.
All	R44T

DISTRIBUTOR

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



4CHA001

FIRING ORDER & TIMING MARKS

IGNITION TIMING

Ignition timing is checked or adjusted with engine at normal operating temperature, distributor vacuum line disconnected and plugged, transmission in Neutral and engine at normal idle. On "P" models, use number two cylinder and timing mark tab on bottom of cylinder.

Ignition Timing Specifications

Application	Man. Trans.	Auto. Trans.
350" 2-Bbl.	0°TDC	8°BTDC
350" 4-Bbl. Fed. Light Duty		
Suburban	6°BTDC	12°BTDC
G-2500, 3500 Rally.....	8°BTDC	12°BTDC
All Others	8°BTDC	8°BTDC
350" 4-Bbl. Cal. Light Duty		
Suburban	4°BTDC	6°BTDC
All Others	4°BTDC	8°BTDC
350" Heavy Duty, All	4°BTDC	4°BTDC
454" Light Duty, All	⓪	10°BTDC
454" Heavy Duty, All	8°BTDC	8°BTDC

⓪ - Not available.

HOT (SLOW) IDLE RPM

Idle speed is checked or adjusted with engine at normal operating temperature, air cleaner installed, choke valve open, distributor vacuum line disconnected and plugged, "Fuel

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TUNE-UP (Cont.)

Tank" line to vapor canister disconnected, air conditioning off, manual transmission in Neutral, automatic transmission (light duty vehicles) in "D" and automatic transmission (heavy duty vehicles) in "P". Adjust idle speed solenoid to obtain specified idle speed RPM.

Application	Idle Speed RPM	
	Man. Trans.	Auto. Trans.
350" All		
Light Duty	900	600
Heavy Duty	600	600
454"		
Light Duty	600	800
Heavy Duty	700	700

IDLE MIXTURE ADJUSTMENT

For both Exhaust Analyzer and Lean Drop Idle procedures, Hot (Slow) Idle RPM and Ignition Timing must be correctly adjusted. See appropriate article in this Section. Idle mixture is checked or adjusted with engine at normal operating temperature, distributor vacuum line disconnected and plugged, "Fuel Tank" line from vapor canister disconnected, air cleaner installed, air conditioning off, manual transmission in Neutral, automatic transmission (light duty vehicles) in "D" and automatic transmission (heavy duty vehicles) in "N".

EXHAUST ANALYZER PROCEDURE (PREFERRED)

Connect a suitable CO meter to exhaust system and check CO level. If CO level exceeds specified CO percentage, turn mixture screws clockwise until CO level is at or below adjusted CO percentage specifications.

Application	CO Level Specifications	
	CO%	Adjusted CO%
All	.5	.5 or below

LEAN DROP IDLE PROCEDURE (ALTERNATE)

Using a pair of needle nose pliers, break tab off mixture screw limiter caps. With idle speed solenoid energized and extended, adjust idle speed to higher of two RPM specifications. Back out (richen) mixture screws until maximum idle speed is obtained. Readjust idle speed solenoid to higher RPM specification if necessary. Turn in (lean) mixture screws until lowest of two RPM specifications is obtained.

Application	Idle Mixture RPM	
	Man. Trans.	Auto. Trans.
350" 2-Bbl.	1000/900	650/600
350" 4Bbl. Fed. Light Duty		
Versavan	950/900	630/600
Suburban	950/900	630/600
G-2500, 3500 Rally	950/900	630/600
All Others	950/900	650/600
350" 4-Bbl. Cal. Light Duty		
All	950/900	630/600
350" Heavy Duty	750/600	750/600
454" Light Duty	850/800	630/600
454" Heavy Duty	800/700	800/700

COLD (FAST) IDLE RPM

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

Rochester Model 4MV 4-Bbl. — Fast idle speed is checked or adjusted with engine at normal operating temperature, choke valve open, transmission in Neutral, EGR vacuum line disconnected, distributor vacuum line disconnected and plugged (manual transmission only) and fast idle lever on high step of fast idle cam. Adjust fast idle screw to obtain specified fast idle speed.

Application	Fast Idle Speed (RPM)	
	Man. Trans.	Auto. Trans.
Light Duty	1300	1600
Heavy Duty	1600	1600
Motor Home Chassis	1600	1600

CHOKE ADJUSTMENT

With air cleaner removed, check that choke valve and rod move freely. Disconnect choke rod from choke lever and hold choke valve closed. With rod pushed down to bottom of travel, top of rod should be even with bottom of hole in choke lever. To adjust, bend rod at offset point in rod.

FUEL PUMP PRESSURE & VOLUME

Pressure (At Idle)	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.
350" 2-Bbl.	
Man. Trans.	1112843
Auto. Trans.	1112844
350" 4-Bbl. 1500 Series	
Suburban, Man. Trans.	1112832
All Others, Man. Trans. Federal	1112093
All Others, Man. Trans. California	1112543
All, Auto. Trans.	1112094
350" 4-Bbl. 2500 & 3500 Series.....	1112097
454"	
1500 Series.....	1112113
Suburban, 2500 Series.....	1112504
All Others, 2500 & 3500 Series.....	1112097

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

CARBURETION

CARBURETORS

Rochester Model 2GV 2-Bbl.

Application	Rochester Carb. No.	
	Man. Trans.	Auto. Trans.
350"		
C & K-1500	7044113	7044114
G-1500.....	7044123	7044124

Rochester Models 4MV 4-Bbl. (Federal)

Application	Rochester Carb. No.	
	Man. Trans.	Auto. Trans.
350" C & K-1500 Exc. Suburban		
All	7044203	7044202
350" G-1500 & 2500 Exc. Rally Van		
All	7044219	7044218
350" Suburban	7044503	7044502
350" Rally Van	7044219	7044224
350" 2500 & 3500 Series		
C & K Heavy Duty	7044213	7044213
P-2500 & 3500	7044216	7044216
G-3500 Heavy Duty	7044214	7044214
350" Motor Home	7044215	7044215
454" Light Duty		
C-1500	①	7044223
C-2500	①	7044220
454" Heavy Duty		
C-2500 & 3500	7044212	7044212
P-3500.....	①	7044217
454" Motor Home	7044212	7044212

① — Not available.

Rochester Models 4MV 4-Bbl. (California)

Application	Rochester Carb. No.	
	Man. Trans.	Auto. Trans.
350" C & K-1500 Exc. Suburban		
All	7044503	7044502
350" G-1500 & 2500 Exc. Rally Van		
All	7044519	7044518
350" Suburban	7044503	7044502

Rochester Model 4 MV 4-Bbl. (California Cont.)

Application	Rochester Part No.	
	Man. Trans.	Auto. Trans.
350" Rally Van.....	7044519	7044518
350" 2500 & 3500 Series		
C & K Heavy Duty	7044513	7044513
P-2500 & 3500.....	7044516	7044516
G-3500 Heavy Duty	7044514	7044514
350" Motor Home	7044515	7044515
454" Light Duty		
C-1500	7044512	7044500
C-2500	①	7044520
454" Heavy Duty		
C-2500 & 3500	①	7044512
P-3500.....	①	7044517
454" Motor Home	①	7044512

① — Not available.

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

ACCELERATOR LINKAGE ADJUSTMENT

Throttle linkage is cable type and is nonadjustable. Inspect all components for wear or damage and replace as necessary.

DETENT CABLE ADJUSTMENT

Turbo Hydra-Matic 350 Trans. — Remove air cleaner and pry up on each side of snap lock to release it. Compress locking tabs and disconnect lock assembly from bracket. Position carburetor in wide open position and pull rearward on cable housing until internal stop on transmission is felt. With cable and throttle in this position, push snap lock on cable until it is flush with top. Install air cleaner.

DETENT SWITCH ADJUSTMENT

Turbo Hydra-Matic 400 & 475 Trans. — Adjustment is required only if switch is removed or replaced. Install switch and press plunger as far forward as possible. This will preset switch for adjustment. Switch will now adjust itself when accelerator pedal is depressed to wide open position.

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ELECTRICAL

BATTERY

12 Volt - Negative Ground.

Application	Delco Part No.	Cranking Power Watts @ 0°F
350" Standard.....	R89.....	2900
454" Standard.....	R89W.....	3750
All Optional.....	R89W.....	3750

STARTER

Application	Delco Part No.
350"	
P-3500.....	1108360
Motor Home.....	1108502
All Others.....	1108427
454"	
Motor Home.....	1108502
All Others.....	1108430

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

ALTERNATOR

Application	Amps.	Delco Part No.
All		
Standard.....	37.....	1100934
Optional.....	42.....	1100573
Optional.....	55.....	1102367
Optional.....	61.....	1100597

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

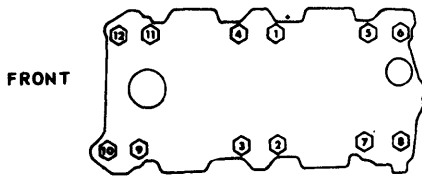
ALTERNATOR REGULATORS

Delco - Nonadjustable, integral with alternator.

ENGINE

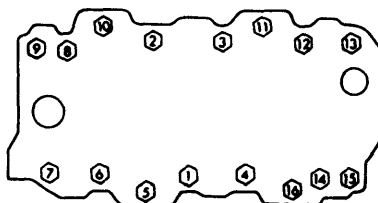
INTAKE MANIFOLD TIGHTENING

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



4CH002

350" INTAKE MANIFOLD TIGHTENING SEQUENCE



4CH003

454" 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

CAPACITIES (EXCEPT COOLING)

Application	Quantity
Crankcase	
All.....	① 4 qts.
Automatic Transmission	
TH-350	
Refill.....	5.0 pts.
Total.....	10.0 qts.
TH-400	
Refill.....	7.5 pts.
Total.....	9.5 qts.
Manual Transmission	
"G" Models.....	5.0 pts.
3-Speed.....	3.5 pts.
465 4-Speed.....	7.0 pts.
Transfer Case	
Conventional.....	5.0 pts.
Full Time.....	8.25 pts.
Power Take-Off.....	1.0 pt.
Drive Axles.....	②
Fuel Tank	
"G" Models	
Standard.....	21 gals.
Optional.....	36 gals.
"C" & "K" Models (Exc. Short W.B., Suburban & Jimmy)	
Main Tank, Right Side.....	20 gals.
Auxiliary Tank, Left Side.....	20 gals.
"C" & "K" Models, Short W.B.	16 gals.
"C" & "K" Models, Suburban	
Standard.....	31 gals.
Optional.....	40 gals.
Jimmy	
Standard.....	24 gals.
Optional.....	30 gals.
P-1500.....	22 gals.
P-2500 & 3500.....	30 gals.

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

ENGINE (Cont.)

COOLING CAPACITIES

Application	Quantity
G-1500, 2500 & 3500	
With Heater ^①	16.0 qts.
Without Heater ^①	15.0 qts.
Air Conditioning	18.0 qts.
C-1500 350"	
Man. Trans.	15.8 qts.
Auto. Trans. & Heavy Duty Cooling	16.2 qts.
Air Conditioning	17.7 qts.
C-2500 & 3500 350"	
Man. Trans.	16.2 qts.
Auto. Trans. & Air Conditioning	17.7 qts.
Heavy Duty Cooling	18.2 qts.
K-1500 & 3500 350"	
Man. Trans. & Heavy Duty Cooling.....	16.5 qts.
Auto. Trans. & Air Conditioning	17.9 qts.
P-2500 & 3500 350"	
Man. Trans.	16.8 qts.
Auto. Trans. & Heavy Duty Cooling	18.5 qts.
All Models 454"	
Man. Trans. & Heavy Duty Cooling.....	18.5 qts.
Auto. Trans. & Air Conditioning	21.0 qts.

① — Add one quart if equipped with Heavy Duty Cooling.

FILTERS & CLEANERS

Filter or Cleaner	Service Interval (Miles)
Oil Filter	
Motor Home	Replace 6,000
All Others	Replace 12,000
Air Cleaner	
Element Type	Replace 12,000
Polyurethane Wrap Type.....	Clean 24,000
Oil Bath Type	①Check 12,000
Crankcase Ventilation Filter.....	②Replace 24,000
PCV Valve.....	Replace 24,000
TH-400 Sump Strainer.....	Replace 24,000
Fuel Filter	
Carburetor Inlet Type.....	Replace 12,000
In-Line Filter Type	Replace 24,000
Distributor Cam Lubricator.....	Replace 24,000
Fuel Evap. Canister Filter	Replace 24,000

① — Check oil level and add SAE 50 oil if necessary.
 ② — Located in air cleaner.