

TUNE-UP

ENGINE IDENTIFICATION

Engine can be identified by the 4th digit of engine Build Date Code, located on a tag attached to the right cylinder head cover. The same code letter is also used as the 4th digit of Vehicle Identification Number (VIN), located on a plate attached to top left corner of instrument panel.

Application	VIN Engine Codes	Code Letter
5.0L (304") 2-Bbl.		H
6.0L (360") 2-Bbl.		N

TUNE-UP NOTES

NOTE — Due to production changes, 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, use the decal specifications.

CAUTION — When performing tune-up on vehicles equipped with a catalytic converter, do not allow or create a condition of engine misfire in one or more cylinders for an extended period of time. Damage to converter from overheating may occur due to loading with unburned fuel.

ENGINE COMPRESSION

Compression Ratio	
5.0L	8.4:1
6.0L	8.3:1
Compression Pressure	120-140 psi
Maximum Pressure Variation	30 psi

Measure compression pressure with engine at normal operating temperature, spark plugs removed, throttle and choke valves wide open and engine at cranking speed.

VALVE CLEARANCE

Hydraulic LiftersZero Lash

VALVE ARRANGEMENT

E-I-I-E-E-I-I-E (both banks, front to rear).

SPARK PLUGS

Application	Gap (In.)	Torque (Ft. Lbs.)
All Models	.035	16-26

Spark Plug Type

Application	Champion No.
All	N-12Y or RN-12Y

HIGH TENSION WIRE RESISTANCE

Do not puncture spark plug wires with any type of probe. Remove spark plug wire and check resistance using an ohmmeter.

Wire Length	Resistance Ohms	Minimum	Maximum
0-15	3000	3000	10,000
15-25	4000	4000	15,000
25-35"	6000	6000	20,000
Over 35"	8000	8000	25,000

DISTRIBUTOR

All models are equipped with Solid State Ignition (S.S.I.) systems and no adjustments are required.

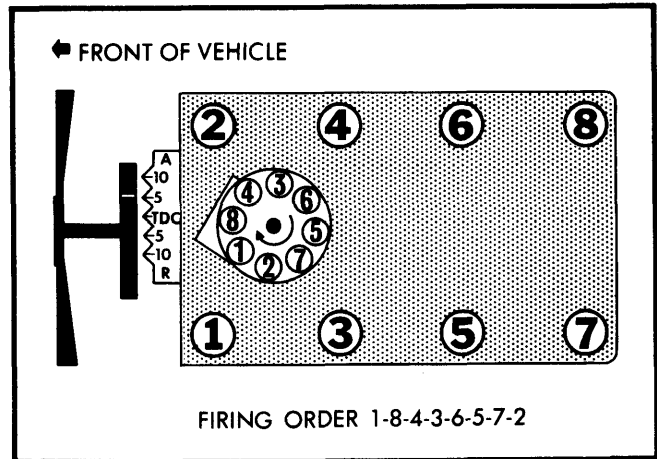


Fig. 1 Firing Order and Timing Marks

IGNITION TIMING

NOTE — Engines are equipped with a receptacle for a magnetic probe timing light, located 9.5°ATDC. Do not use this location for timing with a conventional light.

Warm engine and allow to idle. Disconnect and plug distributor vacuum line, then check ignition timing. Adjust by turning distributor.

Ignition Timing Specifications (Degrees BTDC@RPM)

Application	Man. Trans.	Auto. Trans.
5.0L	8@600 [Ⓛ]	10@600
6.0L	10@600	10@600

[Ⓛ] — 10° on High Alt. models.

HOT (SLOW) IDLE RPM

1) Set parking brake and block drive wheels. Warm engine to operating temperature and place in neutral (manual) or "D" (automatic).

TUNE-UP (Cont.)

2) Turn hex head screw on solenoid carriage to adjust solenoid RPM. Disconnect solenoid wire and adjust idle speed screw to obtain curb idle.

3) If equipped with dashpot, depress stem fully and measure clearance between stem and throttle lever. Turn dashpot to adjust to .032". Tighten locknut and remove test equipment.

Idle Speed RPM

Application	Curb Idle	Solenoid Energized
All Models	500	600

IDLE MIXTURE

NOTE — Be sure idle speed and timing are set before performing idle mixture adjustment. If mixture setting takes more than 3 minutes, run engine at 2000 RPM in neutral for one minute, then resume adjustment.

TACHOMETER (LEAN DROP) PROCEDURE

NOTE — Idle mixture adjustment is not part of a regular tune-up. DO NOT adjust mixture unless carburetor has been disassembled or vehicle fails emissions testing.

1) Warm engine to normal operating temperature. Turn idle mixture screws to full counterclockwise position, note position of screw slot, and remove limiter caps. If screw moved during cap removal, adjust to prior position.

2) Start engine and run in neutral (manual) or "D" (automatic). Turn mixture screw clockwise (leaner) until engine speed begins to drop. Then turn screw counterclockwise (richer) until highest RPM reading is obtained. This is lean best idle. Finally, turn screw clockwise until specified "Lean Drop" is obtained.

NOTE — If final RPM differs more than 30 RPM from specified curb idle speed, reset curb idle and repeat mixture adjustment.

3) Carefully install new limiter caps with tabs positioned against full rich stop. Press caps fully into place.

GENERAL SERVICING

IGNITION

DISTRIBUTOR

Motorcraft Breakerless Solid State

Other Data & Specifications — See Tune-Up & Motorcraft Distributors in ELECTRICAL Section.

IGNITION COIL

Resistance

Primary 1.13-1.23 ohms
Secondary 7700-9300 ohms

Lean Drop RPM

Application	Man. Trans.	Auto. Trans.
All Models	50	20

COLD (FAST) IDLE RPM

Disconnect EGR vacuum line and plug carburetor port. With engine idling at normal operating temperature, place fast idle screw on second step of fast idle cam and against shoulder of high step. Adjust screw to set fast idle RPM.

Fast Idle Speed RPM

Application	Man. Trans.	Auto. Trans.
All Models	1500	1600

AUTOMATIC CHOKE SETTING

To adjust automatic choke, loosen cover retaining screws and rotate cover in direction indicated by arrow on face of cover. Adjust to specified setting.

Automatic Choke Setting

Application	Man. Trans.	Auto. Trans.
5.0L	2NR [Ⓢ]	1NR
6.0L	2NR	2NR

[Ⓢ] — 1NR on High Alt. models.

FUEL PUMP PRESSURE & VOLUME

Pressure (at Idle)	5.0-6.5 psi
Volume (at Idle)	1 pint in 30 seconds
Vacuum (at Idle)	10 In. Hg (Minimum)

EMISSION CONTROL

See appropriate article in EMISSION CONTROL Section.

Coil Output 24 KV min.

FUEL SYSTEMS

CARBURETORS

Application	Model
5.0L	Motorcraft 2150 2-Bbl.
6.0L	Motorcraft 2150 2-Bbl.

Other Data & Specifications — See Tune-Up and Motorcraft Carburetors in FUEL SYSTEMS Section.

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GENERAL SERVICING (Cont.)

ELECTRICAL

BATTERY

Application	Cold Cranking Amps@0° F	Reserve Capacity Minutes
Standard	380	75
Optional	450	90
Police	440	135

STARTER

Motorcraft..... Positive Engagement

Starter Specifications

Application	Volts	Amps	Test RPM
All Models	12	77	8900-9600

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

ALTERNATORS

Delco Solid State, Integral Regulator

Application	Rated Amp. Output
Standard	42
Optional	63,70
Police	85

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

ALTERNATOR REGULATORS

Delco Solid State, Integral With
Alternator (Non-Adjustable)

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

BELT ADJUSTMENT

Tension (Lbs.) Using Strand Tension Gauge

Application	New Belt	Used Belt
All Belts.....	125-155.....	90-115

REPLACEMENT INTERVALS

Component	Interval (Miles)
Oil Filter	7500
Fuel Filter	15,000
Air Filter	30,000
PCV Valve	30,000
Charcoal Canister Filter	30,000
Spark Plugs	30,000

CAPACITIES

Application	Quantity
Cooling System	
5.0L	13.0 qts.
6.0L	14.0 qts.
Crankcase (Includes Filter)	5.0 qts.
Man. Trans. (SAE 85W-90)	
SR4	3.0 pts.
T176	3.5 pts.
T18	6.5 pts.
Auto. Trans. (Dexron)	
Refill	8.5 pts.
Overhaul Fill	17.0 pts.
Transfer Case	
CJ Series (SAE 85W-90)	4.0 pts.
Quadra-Trac (SAE 10W-30)	4.0 pts.
All Others (SAE 10W-30)	6.0 pts.
Drive Axles	Fill to bottom of filler plug hole
Fuel Tank	
CJ Series	14.8 gals.
Cherokee & Wagoneer	20.3 gals.
Truck	19.0 gals.