TUNE-UP

ENGINE IDENTIFICATION

VEHICLE IDENTIFICATION NUMBER CODE

Engine can be identified by the 8th digit of Vehicle Identification Number. This number is stamped on a plate located on upper surface of dashboard on driver's side.

VIN Engine Code

Application	Code
3.3L (200") 1-Bbl.	B

TUNE-UP NOTES

NOTE — *Due to running changes in production and emission standards, manufacturer recommends that specifications shown on engine compartment emission control tune-up decal be used in all instances.*

NOTE — *If the Dura Spark 2-piece distributor cap must be removed, first remove top portion, then rotor, then bottom portion. If any spark plug wire is disconnected with this system, connection must be first greased with silicone grease before it is reattached.*

NOTE — *When connecting a tachometer to Dura Spark ignition coil, install the alligator clip on tachometer into the "DEC" (TACH TESTING) cavity.*

CAUTION — *On vehicles equipped with catalytic converters, do not allow or create a condition of engine misfire in more than one cylinder for more than 30 seconds. Damage to converter may result due to loading converter with unburned air/fuel mixture.*

ENGINE COMPRESSION

Test compression with all spark plugs removed and engine at normal operating temperature. Crank engine through at least five compression strokes before recording reading. Maximum compression variation should not exceed 25% between highest and lowest cylinders.

VALVE CLEARANCE

Hydraulic Lifters ..... Zero Lash

VALVE ARRANGEMENT

E-I-I-E-I-E-E-I-E-I-I-E (Front to rear).

SPARK PLUGS

Application	Gap (In.)	Torque Ft. Lbs. (N·m)
All Models	.048-.052	11-18 (15-24)

Spark Plug Type

Application	Autolite No.
All Models	BSF-92

HIGH TENSION WIRE RESISTANCE

1) Loosen wires from spark plugs by twisting spark plug boot carefully to loosen seal on spark plug. Remove wires by pulling on plug boot. Remove distributor cap from distributor, leaving wires connected to cap.

NOTE — *DO NOT disconnect wires from distributor cap unless replacement is necessary.*

2) Using an ohmmeter, check resistance of each wire by connecting one ohmmeter lead to spark plug terminal and other lead to distributor cap insert. If more than 5000 ohms resistance per inch, remove wire and test again. If still over 5000 ohms per inch, replace wire.

NOTE — *Whenever a high resistance wire is disconnected, the interior of the spark plug terminal boot must be coated with dielectric silicone grease before reconnection.*

DISTRIBUTORS

All models are equipped with Dura Spark II ignition system and no adjustments are required.

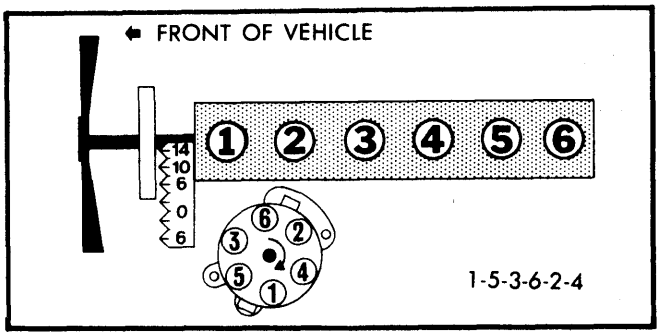

Fig. 1 3.3L Firing Order and Timing Marks

IGNITION TIMING

NOTE — *Timing instrument should be connected to number one spark plug using suitable adaptor or snap-on connector. Do not puncture spark plug wire or boot to make connection.*

NOTE — *A receptacle is provided 135° ATDC for timing with a magnetic timing probe. Do not use this location with a conventional timing light.*

1) Warm engine to normal operating temperature. Disconnect and plug vacuum line at distributor. With engine idling in Neutral, check timing.

2) If timing is within ±2°, do not adjust. If not, loosen distributor hold-down bolt and turn distributor to adjust. Tighten bolt, then recheck timing. Reconnect vacuum line and remove test equipment.

Ignition Timing Specifications (Degrees BTDC@RPM)

Application	Man. Trans.	Auto. Trans.
All Models		
Federal		12@800
Calif		10@900

HOT (SLOW) IDLE RPM

NOTE — *Leave all vacuum hoses attached to air cleaner assembly when relocating air cleaner to perform carburetor adjustment. Air cleaner must be installed when measuring engine speeds.*

CAUTION — *Do not allow engine to idle for extended periods as catalyst overheating may cause excessive underbody temperatures.*

TUNE-UP (Cont.)

1) Warm engine to normal operating temperature, place transmission selector in "D", turn heater on, and set fan to high speed. Adjust curb idle speed, using bolt that contacts solenoid plunger.

2) Turn heater and fan off, then disconnect solenoid wire. Adjust solenoid off RPM, using small screw on carburetor base next to linkage.

3) Accelerate engine briefly, then recheck speed adjustment. Reconnect wire at solenoid and remove test equipment.

Idle Speed Specifications (RPM)

Application	Curb Idle	Solenoid Energized
All Models	450	600

IDLE MIXTURE ADJUSTMENT

IDLE MIXTURE PLUG REMOVAL

Remove carburetor from vehicle. Drain fuel bowl. Drill a 3/32" hole in mixture screw plug. Use a screw extractor to remove plug. Reinstall carburetor and make adjustments. After adjustment, install new mixture plug.

PROPANE ENRICHMENT PROCEDURE

1) Connect tachometer and timing light. Ensure hot idle compensator is closed (if equipped). Disconnect fresh air duct from air cleaner, and insert propane hose 3/4 way into air cleaner duct.

NOTE – *Leave all vacuum lines attached to air cleaner. Air cleaner may be positioned aside for adjustments, but must be in place during speed checks.*

2) Revise air injection dump valves as follows: If valve has 2 vacuum fittings, disconnect and plug the hoses. If only 1 vacuum fitting, disconnect and plug hose, then run a vacuum hose from fitting to manifold vacuum.

3) Check and adjust curb idle and engine timing. Remove PCV valve from grommet and allow to draw fresh air. Run engine briefly at 2500 RPM.

4) With engine idling, open propane valve slowly and watch for RPM gain. When RPM begins to drop off, note maximum speed gain. If gain is within "RPM Gain" specifications, do not adjust.

5) If not within specifications, remove carburetor and mixture screw plug. Reinstall carburetor and run engine until warm, then accelerate briefly to 2500 RPM. Proceed with adjustment.

6) If measured speed gain was higher than specified, turn mixture screw counterclockwise (rich) slightly, then repeat propane procedure until gain matches "Reset RPM".

7) If measured speed gain was lower than specified, turn mixture screw clockwise (lean) slightly, then repeat propane procedure until gain matches "Reset RPM".

8) Reconnect PCV valve and other disconnected hoses. Readjust idle speed if necessary, then remove test equipment.

Idle Mixture Adjustment Specifications

Application	RPM Gain	Reset RPM
All Models	10-30	20

COLD (FAST) IDLE RPM

1) Warm engine to normal operating temperature, then disconnect and plug vacuum lines at EGR and canister purge valve.

2) Place fast idle screw on 2nd step of fast idle cam and adjust fast idle RPM. Reconnect vacuum lines and remove test equipment.

NOTE – *See Emission Control Decal in engine compartment for fast idle specifications.*

AUTOMATIC CHOKE

All models are equipped with tamper-proof choke covers that are riveted on. No adjustment is possible.

FUEL PUMP

Check fuel pump pressure and volume with pump installed on engine, operating temperature normal, transmission in "N" and engine running at curb idle speed. When making pressure test, pinch off pump-to-tank return fuel line.

Application	Specification
Pressure	5.0-7.0 psi
Volume	1 pint in 20 seconds

EXHAUST EMISSION SYSTEMS

See EXHAUST EMISSION SYSTEMS section.

GENERAL SERVICING

IGNITION

DISTRIBUTOR

All models are equipped with Motorcraft Dura Spark II ignition system.

IGNITION COIL

Coil Resistance (Ohms@75°F)

Application	Primary	Secondary
All Models	1.13-1.23	7700-9300
Ballast Resistor (@75°F)		1.05-1.15 ohms
Coil Output (@75°F)		8 KV Max.

GENERAL SERVICING (Cont.)

CARBURETION

CARBURETORS

Application	Model
All Models	Holley 1946

ELECTRICAL

BATTERY

Application	Standard Amps	Optional Amps
All Models	36, 45	54

STARTER

Motorcraft positive engagement type.

Application	Volts	Amps	Test RPM
All Models			
4" Armature	12	80	6700 Min.
4½" Armature	12	85	7380-9356

ALTERNATOR

Motorcraft external regulator alternator.

Application	Standard Amps	Optional Amps
All Models	40, 60, 65	70, 100

ALTERNATOR REGULATOR

Motorcraft Solid State Electronic Regulator, calibrated and preset by manufacturer. No adjustment is required or possible on this unit.

REPLACEMENT INTERVALS

Component	Interval (Miles)
Oil Filter	7,500
Air Filter	30,000
PCV Filter	30,000
Fuel Filter	50,000
Spark Plugs	30,000

COOLING CAPACITIES

Application	Quantity
Capri & Mustang	8.4 qts.
All Other Models	
Standard	8.4 qts.
With A/C	8.5 qts.

BELT ADJUSTMENT

Tension (Lbs.) Using Strand Tension Gauge

Application	New Belt	Used Belt
"V" Belts		
¼"	50-80	40-60
Air Pump	90-130	90-120
All Others	120-160	90-120
Ribbed Belts①		
5K	130-170	120-150
6K	140-180	130-160

① — 5K or 6K indicates number of ribs per inch.

TRANSMISSION & DIFFERENTIAL CAPACITIES

Application	Quantity
Auto. Trans. (Dexron II)	8.0 qts.
Rear Axle (Hypoid Gear Lube)	
6.75" Axle	2.5 pts.
7.5" Axle	3.2 pts.

OIL & FUEL CAPACITIES

Application	Quantity
Crankcase (Includes Filter)	5.0 qts.
Fuel Tank	
Capri & Mustang	15.4 gals.
Thunderbird & XR-7	21.0 gals.
All Other Models	
Standard	16.0 gals.
Optional	20.0 gals.