

## TUNE-UP

### ENGINE IDENTIFICATION

Engine can be identified by the eighth digit of Vehicle Identification Number. Number is stamped on metal plate, which is riveted to upper left corner of instrument panel and visible through left side of windshield.

#### VIN Engine Codes

Application	Code
4.2L (255") 2-Bbl. ....	D
5.0L (302") 2-Bbl. ....	F
5.8L (351") M 2-Bbl. ....	G
5.8L (351") W 2-Bbl. ....	W
6.6L (400") 2-Bbl. ....	Z
7.5L (460") 4-Bbl. ....	L

### MODEL IDENTIFICATION

On all models, the model identification can be found on bottom line of Safety Compliance Certification label located on lock face of left front door.

### ENGINE COMPRESSION

Compression Ratio ..... ①

① — Information not available from manufacturer.

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 cylinder.

### VALVE CLEARANCE

Hydraulic Lifters ..... Zero Lash

### VALVE ARRANGEMENT

#### All Models

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

Application	Gap (In.)	Torque (Ft. Lbs.)
7.5L .....	.042-.046 .....	5-10
All Other Engines .....	.042-.046 .....	10-15

#### Spark Plug Type

Application	Autolite No.
5.8L M & 6.6L .....	ASF-52
All Other Engines .....	ASF-42

### 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. Replace any wire with over 5,000 ohms resistance per inch.

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

### TUNE-UP NOTES

**NOTE** — In some applications within this article it will be necessary to refer to the engine calibration number. To determine location of calibration number decal on engine, refer to Ford Motor Co. Vacuum Diagrams in EMISSION CONTROL Section. Most numbers for V8 engines are located on an identification label on front of right valve cover.

**NOTE** — For Tune-Up purposes, "Light Duty" refers to vehicles up to 8500 lbs. "Heavy Duty" refers to vehicles exceeding 8500 lbs.

**NOTE** — When connecting a tachometer to SSI coil, install the alligator clip on tachometer into the "DEC" (TACH TEST) cavity.

**NOTE** — For other items affecting Tune-Up, see FUEL SYSTEMS Section or EMISSION CONTROL Section.

**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.

**CAUTION** — IDLE SPEED ADJUSTMENT: Procedures and specifications for idle speed adjustment must be followed exactly as outlined. See "Hot (Slow) Idle RPM" under Tune-Up.

## TUNE-UP (Cont.)

## DISTRIBUTOR

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

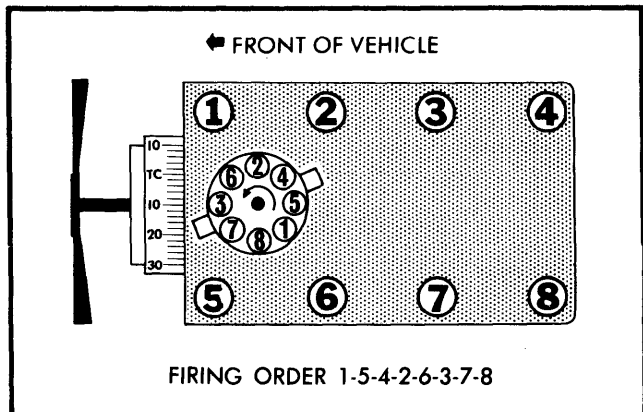


Fig. 1 4.2L, 5.0L & 7.5L Firing Order & Timing Mark Identification

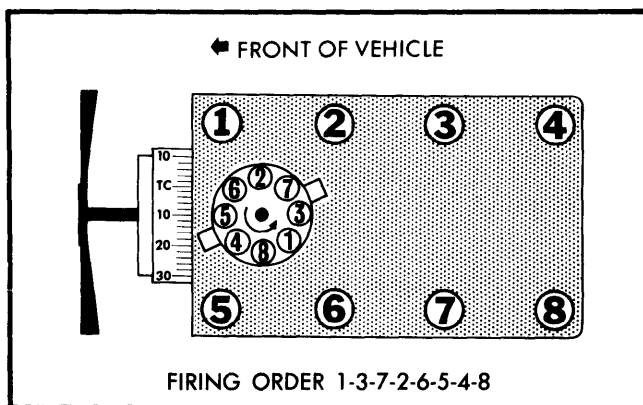


Fig. 2 5.8L & 6.6L Firing Order & Timing Mark Identification

## IGNITION TIMING

**NOTE** — Magnetic probe timing device may be used if instrument is available and engine is so equipped. Timing probe offset is 135°ATDC on all V8 engines.

1) Determine specified timing and mark degree line on damper (some vehicles mark both pointer and damper notch). Disconnect vacuum line(s) at distributor and plug lines.

2) Connect tachometer (Rotunda 20362 or equivalent). Connect timing light (Rotunda 270001 or equivalent) to No. 1 spark plug wire. Set timing to specifications if more than  $\pm 2^\circ$  variation is found.

3) To adjust, loosen distributor hold-down bolt and rotate distributor to align marks in step 1). Tighten hold-down bolt and recheck timing.

Ignition Timing Specifications  
(Degrees BTDC@RPM)

Application	Man. Trans.	Auto. Trans.
4.2L .....	4@800 .....	10@800
5.0L (Federal)③ .....	8@800 .....	8@800
5.8L (351") M		
Light Duty .....	10@800 .....	6@800
Heavy Duty .....	10@800 .....	10@800
5.8L (351") W		
F150/350 & Bronco .....	① .....	①
E100 .....	10@600 .....	10@600
E150/250		
Federal .....	10@600 .....	②10@600
Calif. ....	③ .....	③
High Alt. ....	8@800 .....	8@800
E350		
Heavy Duty .....	.....	6@800
6.6L		
F250/350		
Federal .....	6@800 .....	3@800
Calif. ....	6@800 .....	6@800
E250/350		
Federal .....	3@800 .....	3@800
Calif. ....	.....	6@800
7.5L .....	8@800 .....	8@800

① — Information not available from manufacturer.

② — 6@800 on Heavy Duty Emission models.

③ — Calif. 5.0L & 5.8L W engines are equipped with Electronic Engine Control (EEC III) system and no adjustment is required.

## HOT (SLOW) IDLE RPM

**NOTE** — Calif. 5.0L & 5.8L W engines are equipped with Motorcraft 7200VV 2-Bbl. carburetor and the Electronic Engine Control (EEC III) system. Adjustments are computer-controlled.

**NOTE** — On engines that idle smoothly but become rough at 1000-2000 RPM, check for crossed orange and purple primary ignition wires between distributor and module. To check, turn ignition key off and set engine at initial timing mark firing point. One spoke of distributor armature should be opposite stator pole. If pole is between spokes, primary wires are probably crossed.

## 4.2L &amp; FEDERAL 5.0L ENGINES

**Curb Idle** — 1) With transmission in "NEUTRAL" (Man. Trans.) or in "PARK" (Auto. Trans.), start engine and let it run until it reaches normal operating temperature.

2) Place air conditioning and heater in "OFF" position. Disconnect and plug vacuum hose at thermactor air by-pass valve.

3) Place transmission in specified gear position and check curb idle RPM. If adjustment is necessary, adjust to specifications by turning curb idle speed screw.

4) Place transmission in "NEUTRAL" (Man. Trans.) or in "PARK" (Auto. Trans.) and increase engine speed momentarily. Again place transmission in specified gear position, and recheck curb idle RPM. Readjust if necessary. Check and or adjust dashpot clearance to .090-.140".

## TUNE-UP (Cont.)

5) Unplug and reconnect vacuum hose at thermactor air by-pass valve.

**Kicker RPM** — 1) With engine at normal operating temperature, place air conditioner in maximum cooling position and blower in high position.

2) Disconnect air conditioner compressor clutch wire, and place transmission in specified gear position.

3) Check and or adjust air conditioner "ON" (AC-On) RPM to specifications by turning saddle bracket adjusting screw. Reconnect air conditioner compressor clutch wire.

### FEDERAL 5.8L (351") W ENGINES LIGHT DUTY VEHICLES

**Curb Idle** — 1) With transmission in "NEUTRAL" (Man. Trans.) or in "PARK" (Auto. Trans.), start engine and let it run until it reaches normal operating temperature.

2) Check purge hose for vacuum on canister side of evaporator purge solenoid and reconnect hose.

3) With transmission in specified gear position, check curb idle RPM. If RPM is not to specification, adjust as necessary by turning curb idle screw.

4) Place transmission in "NEUTRAL" (Man. Trans.) or in "PARK" (Auto. Trans.) and increase engine speed momentarily. Place transmission in specified gear position, and recheck curb idle. Readjust if necessary.

5) Check and adjust TSP (Throttle Solenoid Positioner) to specifications.

### 5.8L (351") & 6.6L (400") ENGINES HEAVY DUTY VEHICLES

**Curb Idle** — 1) With transmission in "NEUTRAL" (Man. Trans.) or in "PARK" (Auto. Trans.), start engine and let it run until it reaches normal operating temperature.

2) Place air conditioner and heater switch in "OFF" position. Disconnect and plug vacuum hose from throttle kicker or from throttle kicker portion of TSP (Throttle Solenoid Positioner)

3) Install a slave vacuum hose from throttle kicker portion of TSP to intake manifold vacuum. Speed up engine momentarily. Check and adjust the decel throttle kicker RPM to specification by turning saddle bracket adjusting screw.

4) Disconnect slave vacuum hose from throttle kicker and intake manifold vacuum. Increase engine speed momentarily and check and adjust curb idle speed (TSP-On) by adjusting bolt sticking out from back of TSP.

5) Disconnect Blue electrical wiring clip connecting TSP to engine wiring harness. Check and adjust TSP-Off RPM to specifications by turning throttle stop adjusting screw on 5.8L (351") W or by turning curb idle screw on 5.8L (351") M and 6.6L.

6) Remove plug and reconnect vacuum hose to throttle kicker or throttle kicker portion of TSP. Reconnect Blue electrical clip to TSP wire.

### 5.8L (351") M & 6.6L ENGINES LIGHT DUTY VEHICLES

**Curb Idle** — 1) With transmission in "NEUTRAL" (Man. Trans.) or in "PARK" (Auto. Trans.), start engine and let it run until it reaches normal operating temperature. Place air conditioner and heater switch in "OFF" position.

2) Disconnect and plug vacuum hose at thermactor air by-pass valve. If thermactor air by-pass valve has 2 hoses, disconnect hose closest to front of vehicle. Install a slave hose between manifold vacuum and thermactor air by-pass valve.

3) Check and adjust curb idle RPM to specification by turning curb idle screw on Man. Trans. models. On Auto. Trans. models, depress dashpot then check and adjust curb idle RPM to specification by turning curb idle screw. Also check and adjust dashpot clearance to specification on Auto. Trans. models.

4) Remove slave vacuum hose between manifold vacuum and thermactor air by-pass valve. Unplug and reconnect thermactor air by-pass valve vacuum hose to thermactor by-pass valve.

### 7.5L ENGINES

**Curb Idle and Decel Throttle Control Speed** — 1) With transmission in "PARK" or "NEUTRAL" and air conditioner in "OFF" position, start engine and let it run until it reaches normal operating temperature.

2) Remove air cleaner. Disconnect and plug decel throttle control kicker diaphragm vacuum hose. Connect a slave vacuum hose from intake manifold vacuum to decel throttle control kicker.

3) Run engine at 2500 RPM for 15 seconds, and then release throttle. If decel throttle control RPM is not within 50 RPM of specified RPM, adjust decel throttle control kicker until specified RPM is reached.

4) Allow engine to return to curb idle by removing slave vacuum hose. Adjust curb idle, if necessary, by turning curb idle adjusting screw.

5) Unplug and reconnect vacuum hose to decel throttle control kicker diaphragm and reinstall air cleaner.

### ALL MODELS

**NOTE** — If specified idle speed cannot be obtained by normal adjustments on vehicles with speed control, disconnect accelerator cable at carburetor throttle lever. If specified idle speed can now be obtained with linkage disconnected, check speed control installation.

**Engine Service After Speed Checks** — 1) Reconnect all vacuum lines or hoses to their original positions. Reinstall air cleaner assembly. Run engine at 2500 RPM for 15 seconds and recheck curb idle speed.

2) Final curb idle speed check must be made with air cleaner installed. Adjust as necessary and recheck dashpot clearance.

## TUNE-UP (Cont.)

## Curb Idle Speed (RPM)

**NOTE** — Calif. 5.0L & 5.8L W engines are equipped with Motorcraft 7200VV 2-Bbl. carburetor and the Electronic Engine Control (EEC III) system. Adjustments are computer-controlled.

Application	Curb Idle & TSP-Off <sup>①</sup>	TSP-On
4.2L		
Man. Trans. ....	750	
Auto. Trans. ....	575	650
5.0L (Federal)		
Man. Trans. ....	700	
Auto. Trans. ....	575	②650

Application	Curb Idle A/C-On	Curb Idle A/C-Off or Non-A/C
5.8L (351") M		
Man. Trans. ....	650	650
Auto. Trans. ....	625	550
5.8L (351") W (Federal)		
Auto. Trans. ....	625	550

Application	Curb Idle	TSP-Off
6.6L		
Man. Trans. ....	600	
Auto. Trans. ....	600	500
7.5L		
Auto. Trans. ....	650	

- ① — Subtract 50 RPM on engines with less than 100 miles.  
 ② — E100/250 Federal Auto. Trans. — no TSP. Calif. Auto. Trans. models are equipped with EEC III system and have VOTM, not TSP, (VOTM-On = 650 RPM, VOTM-Off = 575 RPM).

## COLD (FAST) IDLE RPM

**NOTE** — Before adjusting Cold (Fast) Idle RPM, perform Hot (Slow) Idle RPM preliminary adjustments.

## 4.2L &amp; 5.0L ENGINES

- 1) With transmission in "NEUTRAL" (Man. Trans.) or in "PARK" (Auto. Trans.), start engine and let it run until it reaches normal operating temperature.
- 2) Disconnect and plug hoses at both EGR valve and thermactor air by-pass valve. Disconnect vacuum hose and electrical connector on EVAP purge solenoid.
- 3) Place fast idle adjusting screw on first step of fast idle cam. Check and or adjust fast idle to specified RPM.
- 4) Reconnect vacuum hoses and electrical connector removed in step 2).

FEDERAL 5.8L (351") W ENGINES  
LIGHT DUTY VEHICLES

- 1) With transmission in "NEUTRAL" (Man. Trans.) or in "PARK" (Auto. Trans.), start engine and let it run until it reaches normal operating temperature.

- 2) On California models, disconnect purge hose on canister and ensure that purge vacuum is present, reconnect hose.

- 3) Disconnect and plug vacuum hose at EGR valve and purge valve. Place fast idle adjusting screw on first step of fast idle cam.

- 4) Check and or adjust fast idle to specified RPM. Unplug and reconnect vacuum hoses removed in step 3).

5.8L (351") W ENGINES  
HEAVY DUTY VEHICLES

- 1) With transmission in "NEUTRAL" (Man. Trans.) or in "PARK" (Auto. Trans.), start engine and let it run until it reaches normal operating temperature.

- 2) Disconnect and plug vacuum hose at EGR valve. Place fast idle adjusting screw on first step of fast idle cam.

- 3) Check and or adjust fast idle to specified RPM by turning fast idle adjusting screw.

- 4) Unplug and reconnect EGR valve vacuum hose to EGR valve.

## 5.8L (351") M &amp; 6.6L ENGINES

- 1) With transmission in "NEUTRAL" (Man. Trans.) or in "PARK" (Auto. Trans.), start engine and let it run until it reaches normal operating temperature.

- 2) Disconnect and plug vacuum hose at thermactor by-pass valve. If valve has vacuum hoses, disconnect and plug hose closest to front of vehicle. Install a slave vacuum hose between thermactor by-pass valve and intake manifold vacuum.

- 3) Disconnect and plug vacuum hose that connects carburetor spacer plate to purge valve. Plug nipple on carburetor spacer plate. Disconnect and plug vacuum hose at EGR valve.

- 4) Disconnect and plug vacuum hose at throttle kicker or at throttle kicker portion of TSP.

- 5) Place fast idle adjusting screw on first step of fast idle cam and adjust fast idle to specified RPM by turning fast idle adjusting screw.

- 6) Unplug and reconnect all vacuum hoses removed in steps 2), 3) and 4).

## 7.5L ENGINES

- 1) With transmission in "PARK" or "NEUTRAL" and air conditioner in "OFF" position, start engine and let it run until it reaches normal operating temperature. Remove air cleaner.

- 2) Disconnect and plug throttle decel control diaphragm vacuum hose and EGR valve vacuum hose.

- 3) Depress throttle lever and turn fast idle cam, by hand, until fast idle adjusting screw sets on first step of fast idle cam. Adjust fast idle to specified RPM by turning fast idle adjusting screw.

- 4) Unplug and reconnect all vacuum hoses removed in step 2), and reinstall air cleaner.

## TUNE-UP (Cont.)

### Fast Idle Speed (RPM)①

Application	Man. Trans.	Auto. Trans.
4.2L .....	2200 .....	2000
5.0L		
Federal .....	2200 .....	2000
Calif. ....	.....	1350
5.8L (351") M		
Light Duty .....	2000 .....	2000
Heavy Duty .....	1750 .....	2000
F150/250 & Bronco Hi. Alt. ....	.....	2200
5.8L (351") W		
Federal .....	1700② .....	2000
Calif. ....	1700② .....	1650②
Heavy Duty .....	.....	1700
6.6L .....	1750 .....	2000
7.5L .....	.....	1600

① — Set fast idle speed screw on highest step of cam.

② — Set fast idle speed screw on kickdown step of cam.

### DASHPOT ADJUSTMENT

With idle speed and mixture properly adjusted, remove air cleaner and loosen dashpot lock nut. With choke open, hold throttle plate closed (idle position), and check clearance between throttle lever pad and dashpot plunger tip. Plunger MUST be completely collapsed to check clearance. Turn dashpot in or out to obtain .090-.140" clearance. Tighten lock nut.

### IDLE MIXTURE

**NOTE** — No idle mixture adjustment is possible on vehicles with 7200VV 2-Bbl. carburetors. If engine performance is unsatisfactory, see Ford Electronic Engine Control in EMISSION CONTROL Section.

**NOTE** — If adjustments to the air/fuel mixture are made that require removing the idle limiter caps, BLUE Service Limiter Caps must be installed. Idle mixture should be adjusted only during carburetor repair or when necessary as a result of government inspection laws.

### PROPANE ENRICHMENT PROCEDURE

1) Leave all vacuum signal hoses attached to air cleaner assembly when relocating air cleaner for carburetor adjustments. Air cleaner MUST be installed for engine speed checks.

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

2) Apply parking brake and block wheels. Disconnect automatic brake release and plug vacuum connections. Connect tachometer (Rotunda 20362 or equivalent).

3) Disconnect and plug fuel evaporative purge valve return hose at engine. Disconnect evaporative emission purge hose at air cleaner. Plug nipple.

**NOTE** — Check and make sure correct PCV valve is installed and that air cleaner element is clean, as an excessively dirty air cleaner element could cause an erroneous propane reading.

4) Disconnect flexible fresh air tube from air cleaner duct or adapter. Insert hose from propane enrichment tool (Rotunda T75L-9600-A) into duct or fresh air tube.

5) For vehicles equipped with thermactor, disconnect and plug hoses of dump valves equipped with two fittings. If valves have one fitting, remove and plug hose at valve. Connect slave hose to dump valve and intake manifold vacuum source.

6) Be sure idle mixture limiter(s) is set to maximum rich position (counterclockwise against stop). Check curb idle speed or A/C "OFF" RPM and set as specified. Remove PCV valve from grommet, leaving connection open.

**NOTE** — If idle mixture limiter caps have been previously removed from 2-Bbl. or 4-Bbl. carburetors, shut off engine, turn mixture screws clockwise until seated and then back (counterclockwise) 2 turns. Start engine and proceed to step 7).

7) With shift lever in "NEUTRAL" (Man. Trans.) or "PARK" (Auto. Trans.), run engine at 2500 RPM for 15 seconds before each mixture check.

8) With engine idling at normal operating temperature, place transmission shift lever in "NEUTRAL" (Man. Trans.) or "DRIVE" (Auto. Trans.). Gradually open propane tool valve and watch for engine speed gain on tachometer. When speed reaches maximum and begins to drop off, note amount of speed gain.

**NOTE** — If engine speed will not drop off, check bottle gas supply. If necessary, repeat test with new bottle.

9) Compare measured speed gain to specifications. If idle mixture adjustment is necessary, adjust to "Reset RPM." If speed increase is within "RPM Gain" specification, proceed to step 16).

10) If measured speed gain is zero RPM and minimum speed gain specification is zero RPM, proceed to step 13).

11) If measured speed gain is GREATER than specification, turn mixture screw(s)/limiter(s) counterclockwise in equal amounts and repeat steps 6) through 9) until measured speed rise meets "Reset RPM" specifications. After final adjustment, proceed to step 16).

12) If measured speed gain is LESS than specification, turn mixture screw(s)/limiter(s) clockwise in equal amounts and repeat steps 6) through 9) until speed rise meets "Reset RPM" specifications. After final adjustment, proceed to step 16).

13) If there is ZERO increase in RPM and the minimum speed gain specification is zero RPM, perform the following speed drop test. While watching tachometer, adjust mixture screw(s)/limiter(s) clockwise by number of turns specified. Note drop in engine speed.

14) If measured speed is EQUAL TO or drops off MORE THAN speed drop specifications, return mixture limiter(s) to maximum rich position or mixture screw(s) to position prior to adjustment. Then proceed to step 16).

15) If measured speed drop is LESS THAN the specified minimum, leave mixture limiter(s) in adjusted position and

16) Check curb idle speed and remove all test equipment. Install PCV valve in grommet. Reconnect and/or install all components and reinstall air cleaner.

**NOTE** — Idle mixture adjustment by propane enrichment not required for heavy duty vehicles.

## TUNE-UP (Cont.)

### Idle Mixture Specifications

Application	RPM Gain/Reset RPM
4.2L	
Man. Trans. ....	10-80/40
Auto. Trans. ....	20-100/60
5.0L	
Man. Trans. ....	10-50/30
Auto. Trans.	
Federal ....	20-100/60
Calif. ....	N/R
5.8L (351") M	
Man. Trans. ....	20-80/50
Auto. Trans. ....	30-100/60
F150/250 High Alt. Auto. Trans. ....	40-110/60
5.8L (351") W	
Man. Trans. ....	N/R
Auto. Trans.	
Federal ....	30-80/50
Calif. ....	N/R
6.6L ....	N/R
7.5L ....	N/R

### FUEL PUMP

Check mechanical fuel pump at curb idle RPM with engine at normal operating temperature and transmission in "NEUTRAL."

Pressure .....	6-8 psi
Volume .....	One pint in 20 seconds

## GENERAL SERVICING

### IGNITION

#### DISTRIBUTORS

All units are equipped with Motorcraft Dura-Spark II Ignition system. Units are self-contained and require no outside adjustments.

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

#### IGNITION COIL

##### Resistance

Primary .....	1.13-1.23 ohms
Secondary .....	7,700-9,300 ohms
Resistor Wire .....	1.05-1.15 ohms

**Reserve Voltage** ..... 28 Kv minimum

## FUEL SYSTEMS

### CARBURETORS

Application	Model
All 4.2L, 6.6L & Federal 5.0L & 5.8L (351") W .....	Motorcraft 2150 2-Bbl.
Calif. 5.0L & 5.8L (351") W .....	Motorcraft 7200VV 2-Bbl.
7.5L .....	Holley 4180-C 4-Bbl.

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

### AUTOMATIC CHOKE ADJUSTMENT

Loosen choke cover screws and turn choke cover in desired direction as indicated on cover to specified setting.

#### Automatic Choke Specifications

Application	Setting
4.2L .....	⓪
5.0L	
All Except Calif. Auto. Trans. ....	⓪
Calif. Auto. Trans. ....	Rich
5.8L (351") M	
All Except Heavy Duty Models .....	⓪
Heavy Duty Models .....	3 Rich or "V"
5.8L (351") W	
E150/250 High Alt. ....	Index
Heavy Duty Auto. Trans. ....	3 Rich or "V"
All Other Models .....	⓪
6.6L	
Calif. F250 Heavy Duty	
Man. Trans. ....	2 Rich or "V"
All Other Models .....	3 Rich or "V"
7.5L .....	5 Rich

⓪ — Non-Adjustable

### EMISSION CONTROL

See appropriate article in *EMISSION CONTROL* Section.

### ACCELERATOR LINKAGE ADJUSTMENT

**All Models** — Linkage is cable type and no adjustment is necessary.

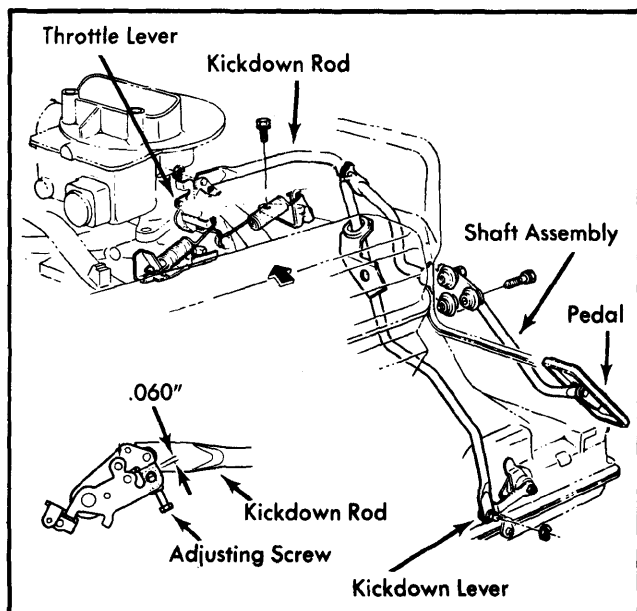


Fig. 3 View of Typical Accelerator Linkage

## GENERAL SERVICING (Cont.)

### DOWNSHIFT LINKAGE ADJUSTMENT

With accelerator linkage correctly adjusted, hold throttle lever in wide open position. Place a .060" feeler gauge between throttle lever and adjusting screw. Loosen adjusting screw lock nut and turn adjusting screw until downshift lever on transmission is against internal stop. Tighten adjusting screw lock nut.

### ELECTRICAL

#### BATTERY

Application	Amp. Hr.
Maintenance Free .....	36, 45, 48, 54, 63, 71
Conventional .....	77 & 81

#### STARTER

Motorcraft positive engagement type with either a 4" or 4½" armature.

Application	Cranking RPM	Cranking Amps.
4" Armature .....	180-250	150-200
4½" Armature .....	150-290	150-180

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

#### ALTERNATORS

All Models use Motorcraft Alternator

I.D. Color	Rated Amp. Output
Rear Terminal	
Orange .....	40
Green .....	60
Side Terminal	
Black .....	70
Red .....	100

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

#### ALTERNATOR REGULATOR

Motorcraft Electronic Regulators are externally mounted. Two different models are color coded as they are not interchangeable, but similar in appearance.

Application	Color of Plate
Vehicles with Ammeters .....	Blue
Vehicles with Indicator Lights .....	Black

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

### BELT ADJUSTMENTS

#### Tension (Lbs.) Using Strand Tension Gauge

Application	New Belt	①Used Belt
¼" Belt .....	50-80	40-60
All Other Belts .....	120-160	90-120

① — Any belt operated for 10 minutes or more.

### REPLACEMENT INTERVALS

Component	Interval (Miles)
Oil Filter	
"F" & "E" Models .....	10,000
Bronco .....	①15,000
Air Filter .....	30,000
Fuel Filter .....	15,000
PCV Valve .....	30,000
Spark Plugs .....	30,000

① — Change filter after first 7,500 miles.

### OIL & FUEL CAPACITIES

Application	Quantity
Crankcase (including filter)	
All Engines .....	①6.0 qts.
Fuel Tank	
F100/150 & F150/250 Super Cab	
Short Wheel Base	
Standard .....	16.4 gal.
Auxiliary .....	19.0 gal.
All Other "F" Models	
Standard & Auxiliary .....	19.0 gal.
Bronco	
Standard .....	25.0 gal.
Auxiliary .....	32.0 gal.
E100 Van & Club Wagon, E150 Van (W/124" W.B.)	
Standard .....	18.0 gal.
Auxiliary .....	18.0 gal.
All Other "E" Models	
Standard .....	22.1 gal.
Auxiliary .....	18.0 gal.

① — Use engine oil dipstick for exact refill capacity.

# 1981 Ford V8 Tune-Up

## GENERAL SERVICING (Cont.)

### TRANSMISSION & DIFFERENTIAL CAPACITIES

Application	Quantity
Man. Trans. (SAE 80W-90)	
3-Speed Ford .....	3.5 pts.
4-Speed New Process 435	
With Extension .....	7.0 pts.
Without Extension .....	6.5 pts.
4-Speed Warner T-18 .....	7.0 pts.
4-Speed Overdrive .....	4.5 pts.
Auto. Trans. (Motorcraft Dexron II Series D)	
C-4	
2-WD Only .....	19.2 pts.
C-6	
2-WD .....	23.8 pts.
4-WD .....	26.8 pts.
Rear Axle (Hypoid Gear Lube)	
Ford Standard & Traction-Lok .....	6.5 pts.
Dana 60 .....	5.0 pts.
Dana 61-1 .....	6.0 pts.
Dana 61-2 .....	6.0 pts.
Dana 70	
Standard & Heavy Duty .....	6.5 pts.
Front Axle (Hypoid Gear Lube)	
Dana 44-IFS	
F150 & Bronco .....	3.9 pts.
F250 .....	3.8 pts.
Dana IFS .....	4.1 pts.
4-WD Transfer Case (Motorcraft Dexron II Series D)	
Warner 1345 .....	6.5 pts.
New Process 208 .....	7.0 pts.

### COOLING CAPACITIES

Application	Quantity
4.2L V8	
F100	
Standard or Extra Cooling .....	13.0 qts.
Super Cooling .....	14.0 qts.
5.0L V8	
F150/350 & Bronco	
Standard or Extra Cooling .....	13.0 qts.
Super Cooling 14.0 qts. E100/250	
Standard Cooling .....	15.0 qts.
Extra Cooling .....	17.5 qts.
Super Cooling .....	18.5 qts.
5.8L (351") W V8	
E100/250 Calif. Only	
Standard or Extra Cooling .....	20.0 qts.
Super Cooling .....	21.0 qts.
5.8L (351") M V8	
F150/350 & Bronco	
Standard or Extra Cooling .....	15.0 qts.
Super Cooling .....	16.0 qts.
6.6L V8	
F250/350 & Bronco	
Standard Cooling .....	15.0 qts.
Super Cooling .....	16.0 qts.
7.5L V8	
E350	
All Models .....	28.0 qts.