

# 1975-79 TUNE-UP PROCEDURES

## Ford Motor Co. 4-Cylinder

### ENGINE IDENTIFICATION

#### VEHICLE IDENTIFICATION NUMBER

Engine can be identified by fifth character of Vehicle Identification Number (VIN), located on a plate attached to left corner of instrument panel and visible through windshield.

#### VIN CODES

Application	Codes
1975-78 2300cc (140")	Y
1979 2300cc (140")	Y
Standard	Y
Turbocharged	W

### 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:** The EPA High Altitude emission standards apply to vehicles sold in certain areas outside of California which have an elevation above 4000 feet.

**NOTE:** When connecting a tachometer to SSI and Dura-Spark ignition coils, install the alligator clip on tachometer into the "DEC" (tach) cavity.

**NOTE:** 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 of converter with unburned air/fuel mixture.

### ENGINE COMPRESSION

Test compression with all spark plugs removed and engine warm. Crank engine through at least 5 compression strokes before recording pressure.

#### ENGINE COMPRESSION SPECIFICATIONS

Application	Specifications
Compression Ratio	9.0:1
Recommended Fuel	Unleaded (87 AKI Minimum)
Compression Pressure	<sup>1</sup>
Maximum Variation Between Cylinders	25%

<sup>1</sup> - Compression pressure not available from manufacturer.

### VALVE CLEARANCE

#### VALVE CLEARANCE SPECIFICATIONS <sup>1</sup>

Application	Intake	Exhaust
1975-76	.008"	.010"

<sup>1</sup> - 1977-79 models are equipped with hydraulic valve lifters. Lifters are set at zero lash.

### VALVE ARRANGEMENT

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

### SPARK PLUGS

#### SPARK PLUG TYPE

Application	Autolite No.
1975-76	
All Models	AGRF-52
1977	
All Models	AWSRF-42
1978-79	
All Models	AWSF-42

#### SPARK PLUG INSTALLATION

Application	Gap	Torque
All Models	.034"	10-15 ft. lbs.

### HIGH TENSION WIRE RESISTANCE

1) Using pliers (T74P-6666-A), loosen wires from spark plugs by twisting spark plug boot carefully to loosen its seal on spark plug. Turn ignition switch off and remove distributor cap.

**NOTE:** DO NOT remove wires from distributor cap except for replacement.

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

**NOTE:** Whenever a high tension wire is disconnected on 1977-79 models, the interior of the spark plug terminal boot must be coated with dielectric silicone grease before wire is attached.

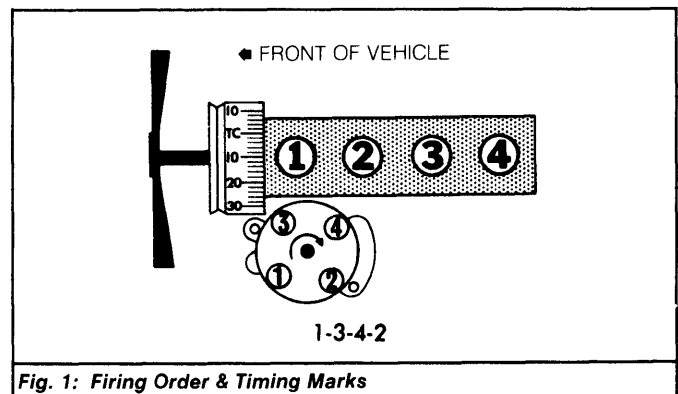
### DISTRIBUTOR

All 1975-76 models are equipped with Solid State Ignition (SSI) system. All 1977-79 models are equipped with Dura-Spark ignition systems. No adjustments are necessary.

### IGNITION TIMING

**NOTE:** If the Dura-Spark two-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 first be greased with silicone grease before it is attached.

**1975-77 Models** - Check or adjust ignition timing with engine at normal operating temperature, distributor vacuum advance hose(s) disconnected and plugged and engine at 600 RPM.



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**1978 Models** - 1) Clean front damper surface and make a White mark on proper degree line on damper and pointer. Disconnect and plug vacuum lines from distributor.

2) If equipped with dual mode timing ignition module, disconnect the 3-pin switch assembly from ignition module. On all models, connect timing light to No. 1 spark plug wire and a tachometer to engine.

**NOTE:** Use only a clamp-on, inductive type timing light and a tachometer compatible with Dura-Spark ignition system.

3) With engine at normal operating temperature, adjust ignition timing to specification. If timing is within 2 degrees of specification, do not adjust timing. Reconnect 3-pin switch connector (if equipped).

**1979 Models** - 1) Clean front damper surface and make a White mark on proper degree line of damper and pointer. Turn A/C off and de-energize throttle solenoid positioner, if so equipped. Disconnect and plug vacuum lines from distributor.

2) If equipped with dual mode timing ignition module, disconnect the 3-pin switch assembly from ignition module.

3) On all models, connect timing light to No. 1 spark plug and a tachometer to engine.

4) With engine at normal operating temperature, adjust ignition timing idle speed to specifications. Check initial timing. If ignition timing is within 2 degrees of specification, do not adjust.

5) If more than 2 degrees off, loosen distributor hold down bolt. Adjust ignition timing to specifications by rotating distributor to align marks on damper and pointer. Tighten hold down bolt and recheck timing.

6) For vehicles with dual mode timing ignition module, reconnect the 3-pin switch assembly connector to module and check its function.

## IGNITION TIMING SPECIFICATIONS (DEGREES BTDC@RPM) <sup>1</sup>

Application	Man. Trans.	Auto. Trans.
1977-78		
All Models	6@600	20@600
1979 <sup>2</sup>		
California		
With A/C	6@650	17@600
Without A/C		17@800
Federal	6@550	20@600
High Alt.		20@550
Turbo	2@650	

<sup>1</sup> - On 1975-76 models, see Emission Control Tune-Up Decal under hood for specifications.

<sup>2</sup> - Automatic transmission in Drive, except California models which must have transmission in Neutral.

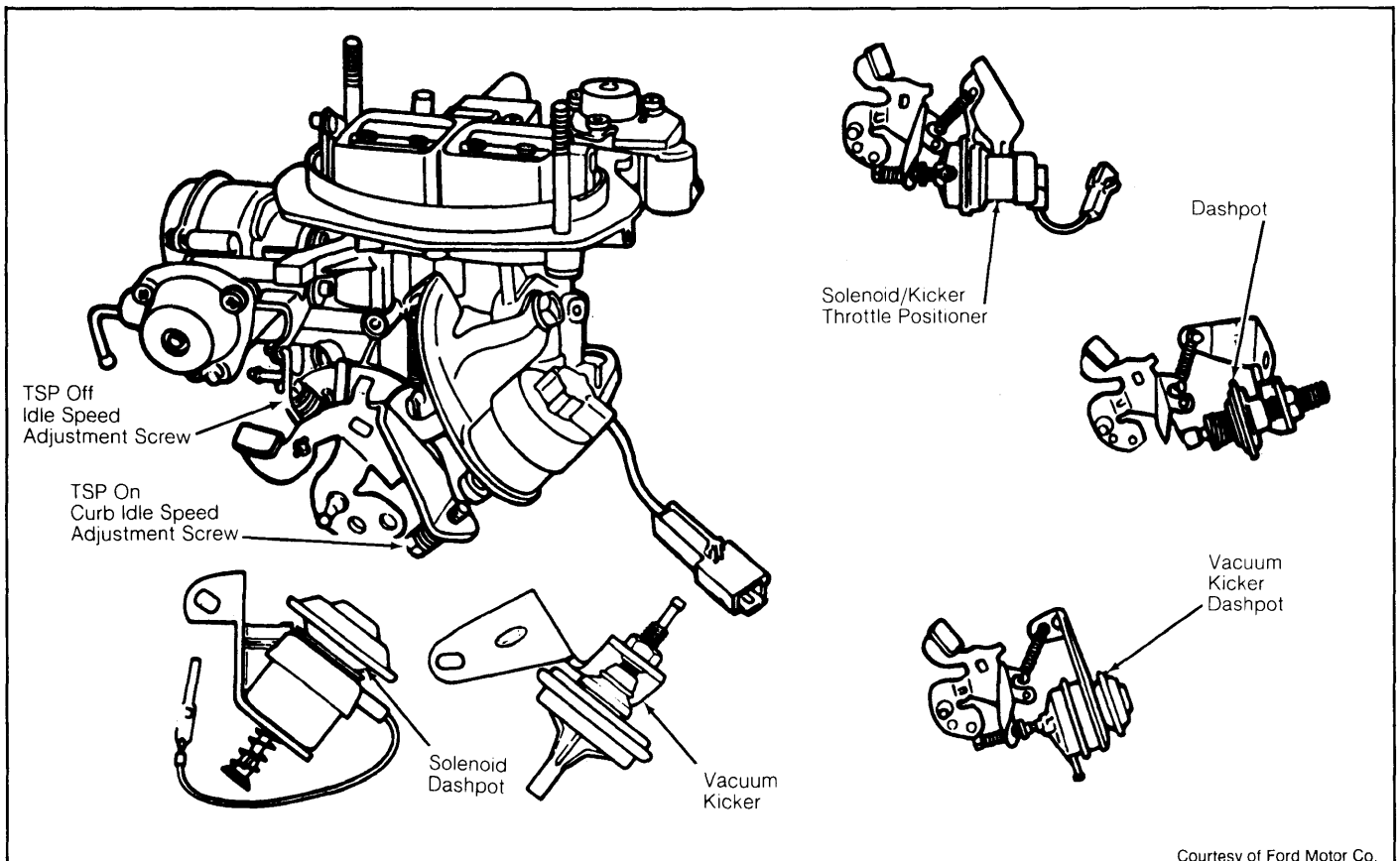
## HOT (SLOW) IDLE RPM

### VEHICLE PREPARATION

**1975-76 Models** - 1) With engine at normal operating temperature, remove air cleaner and plug vacuum lines. Check ignition timing and adjust if necessary. Reconnect distributor vacuum advance hose. Disconnect and plug EGR valve vacuum hose.

2) Remove spark delay valve (if equipped). Route distributor vacuum advance hose directly to the advance side of the distributor. Leave distributor retard hose connected. Disconnect and plug fuel deceleration valve hose at carburetor.

3) Turn off air conditioning. Check and adjust fast idle RPM. Place transmission in Neutral or automatic transmission in Drive. Adjust curb idle speed.



Courtesy of Ford Motor Co.

Fig. 2: Ford Carburetor Throttling Devices (5200 Carburetor With TSP Shown)

# 1975-79 TUNE-UP PROCEDURES

## Ford Motor Co. 4-Cylinder (Cont.)

**NOTE:** Vehicle preparation is not required on 1977 models.

**1978 Models** – 1) All vacuum sensing hoses must remain installed to air cleaner and air cleaner must be installed when checking engine RPM. All adjustments must be made with engine at normal operating temperature.

2) If engine is equipped with air injection, proceed as follows: if equipped with one or 2 vacuum lines at side of dump valve, disconnect and plug the lines.

3) For valves with one vacuum line at top, check line to ensure it is connected to intake manifold. If not, remove and plug line at dump valve. Connect a line from dump valve vacuum fitting to an intake manifold fitting.

4) On all models, disconnect fuel evaporation purge hose at point where vacuum hose can be disconnected. Do not disconnect hose at purge valve. Plug hose and vacuum port. Reconnect all hoses after service.

**1979 Models** – 1) Loosen and relocate air cleaner. Disconnect and plug all hoses to air cleaner. Cleaner must be install when checking engine RPM. Remove vacuum hose at EGR port on carburetor and cap port.

2) If applicable, remove and plug vacuum hose(s) at thermactor dump valve. For single vacuum fitting dump valves, apply manifold vacuum to dump valve. Replace spark delay valve in distributor line(s) with in-line connector(s). Remove and plug spark port vacuum hose from appropriate vacuum switch (three-way catalyst vehicles only). Disconnect wire to idle tracking switch on carburetor.

**NOTE:** In the event, specified engine idle speed cannot be achieved by normal adjustment on 1979 vehicles equipped with cruise control, disconnect accelerator cable at carburetor throttle lever. If specified engine idle speed can be achieved with cable disconnected, check cruise control installation prior to reinstalling accelerator cable.

3) Turn off all lights and accessories. Bring engine to normal operating temperature and check free movement of throttle linkage. Attach tachometer to engine.

4) After adjusting idle speeds, reinstall all hoses, wires, and components to their original positions. Engines equipped with a thermactor extended idle dump system will experience a 50-100 RPM drop in engine idle when vacuum lines are purged with engine running at 2500 RPM for 15 seconds.

### CURB IDLE SPEED

**1975-76 Models** – 1) On models without throttle stop solenoid, adjust curb idle speed screw in or out to obtain specified idle speed RPM. See Emission Control Tune-Up Decal under hood for specifications. With idle speed set, adjust fuel deceleration valve.

2) On models with throttle stop solenoid, energize solenoid to extend plunger. Adjust solenoid plunger contact screw to obtain higher specified RPM. Collapse plunger into solenoid.

3) Adjust lower idle RPM (solenoid de-energized) using screw located on throttle body. Open throttle and allow plunger to extend, then adjust deceleration valve to specifications. See Emission Control Tune-Up Decal under hood for specifications.

**1977 Models** – 1) With engine at normal operating temperature, set parking brake and block drive wheels. Connect tachometer to engine. Remove air cleaner and plug vacuum lines. Turn off all accessories.

2) On throttle stop solenoid or solenoid/dashpot assembly equipped vehicles, collapse solenoid plunger by forcing throttle lever against plunger. Check solenoid de-energized RPM. Adjust RPM to specification, if necessary, by turning throttle adjustment screw.

3) On all models, run engine to 2500 RPM for 15 seconds. Allow engine to return to curb idle and place automatic transmission in Drive. Check curb idle speed RPM and adjust if necessary.

**NOTE:** If specified curb idle RPM cannot be obtained on vehicles with dashpot, ensure clearance exists between dashpot plunger and throttle lever.

4) If curb idle adjustment was required on vehicles with dashpot, check dashpot clearance and adjust if not within specifications. On all vehicles, reinstall air cleaner. Recheck curb idle RPM. Final curb idle speed reading must be taken with air cleaner installed.

**1978 Models Without Idle Speed Solenoid** – Adjust throttle stop screw until specified curb idle RPM is obtained. Make sure screw is against stop. Dashpot (if equipped) clearance must be checked and adjusted. Collapse dashpot plunger and check clearance between plunger and pad on throttle lever.

**1978 Models With Idle Speed Solenoid & Dashpot** – 1) Adjust solenoid idle speed screw (opposite solenoid plunger) to obtain specified curb idle RPM. Dashpot clearance adjustment is not required. It is controlled by the idle speed solenoid.

2) With engine running, force throttle lever pad against solenoid to collapse plunger. Now adjust throttle stop screw until specified solenoid de-energized RPM is obtained.

**1978 Models With Idle Speed Solenoid Or Idle Speed Solenoid & Vacuum Throttle Modulator** – Adjust solenoid idle speed screw (opposite solenoid plunger) to obtain specified curb idle RPM. With engine running, force throttle lever pad against solenoid to collapse plunger. Now adjust throttle stop screw until specified solenoid de-energized RPM is obtained.

**1978 Models With Vacuum Throttle Modulator (A/C Only)** – Loosen vacuum modulator lock nut until clearance is obtained between modulator stem and throttle lever pad. Adjust throttle stop screw until specified curb idle speed is obtained. Adjust modulator until stem contacts throttle lever pad. Tighten lock nut.

**1978 Models With Vacuum Throttle Modulator & Dashpot (A/C Only)** – 1) Adjust throttle stop screw until specified curb idle speed is obtained. Make sure screw is against stop. If idle cannot be adjusted low enough, back off vacuum throttle modulator adjustment screw on throttle lever pad.

2) Dashpot clearance must be checked and adjusted. Collapse throttle modulator plunger and check clearance between stem pad and throttle modulator adjustment screw in throttle lever. Turn screw until specified clearance is obtained.

**NOTE:** Specified dashpot adjustment clearance not available from manufacturer on 1978 vehicles. See Emission Control Tune-Up Decal under hood.

### 1977-78 IDLE SPEED (RPM) SPECIFICATIONS

Application	Curb Idle	Solenoid De-Energized
Auto. Trans.		
Calif. ....	750	600
Federal ....	800	600
High Alt. ....	750	550
Man. Trans.		
Calif. ....	850	800
Federal ....	850	.....
High Alt. ....	850	550

**1979 Models** – 1) Curb idle speed is controlled by various throttling devices, including throttle solenoid positioner, solenoid/kicker and solenoid/dashpot. Check throttle lever pad adjusting screw for proper adjustment and operation and correct any interference found.

2) If curb idle speed is controlled by other throttling devices, adjust throttle stop adjusting screw and check for adjustment, proper operation, and possible interferences.

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## Ford Motor Co. 4-Cylinder (Cont.)

- 3) Run engine at 2500 RPM for 15 seconds in Neutral. Then place throttle in normal idle position. Check engine speed in Neutral for manual transmission or Drive for automatic transmission vehicles.
- 4) Repeat step 3) and measure curb idle speed 3 times to determine average speed. Measure average speed after engine has stabilized. If not within specifications, adjust either throttle stop screw according to steps 1) and 2).

### 1979 CURB IDLE SPEED SPECIFICATIONS

Application	A/C Off RPM <sup>1</sup>	A/C On RPM
California		
Man. Trans. ....	850	
Auto. Trans. ....	750	
Decals AAP <sup>2</sup> , ADE & Federal		
Man. Trans. ....	850	1300
Auto. Trans. ....	800D	
High Alt. ....	800	
Turbo ....	900	1300

<sup>1</sup> - Non-A/C same as A/C off. On vehicles with A/C and TPS, de-energize A/C compressor clutch.  
<sup>2</sup> - The "Decal" 3-letter designation may be found on lower right-hand side of Ford's Vehicle Emission Control Information Label, attached to engine valve cover.

### THROTTLE SOLENOID POSITIONER (TSP) OFF IDLE SPEED

- 1979 Models - 1) For vehicles with throttle solenoid positioner, solenoid/kicker or solenoid/dashpot, TSP off idle speed is controlled by throttle stop adjusting screw. Check that throttle control device is adjusted and operating properly without interference.
- 2) Run engine at 2500 RPM for 15 seconds in Neutral. Then place shift lever in Neutral for manual transmission or Drive for automatic transmission vehicles.
- 3) Manually collapse solenoid. Measure average speed after engine has stabilized. Repeat 2500 RPM "cleanout" and check engine speed 3 times to determine average RPM. If not within specifications, adjust throttle stop adjusting screw and repeat procedure until speed is correct.

### 1979 TSP OFF IDLE SPEED SPECIFICATIONS

Application	TSP Off Idle RPM ± 50 RPM
California	
Man. Trans. ....	600
Auto. Trans. ....	600
Federal ....	600
High Altitude ....	550

### AIR CONDITIONER ON IDLE SPEED

- 1979 Models - 1) For vehicles with throttle kicker, speed is controlled by kicker position. For vehicles with kicker/dashpot or solenoid/kicker, there is no adjustment as the throttle lever pad adjusting screw controls other functions.
- 2) Check kicker, kicker/dashpot or solenoid/kicker for proper adjustment, operation and freedom from interference. Run engine at 2500 RPM for 15 seconds in Neutral. Then, place transmission shift lever in Neutral for manual transmission or Drive for automatic transmission vehicles.
- 3) Air cleaner must be installed on carburetor, A/C should be on (kicker extended) and A/C compressor clutch wire should be disconnected. Measure average RPM after engine has stabilized.
- 4) Repeat 2500 RPM "cleanout" and let engine stabilize. Measure engine speed 3 times to determine average RPM. If not within specifications, adjust kicker position and repeat test until speed is correct.

### IDLE MIXTURE

**NOTE: If adjustments to the air/fuel mixture are made that require removing the idle limiter caps, it is imperative that the Blue service limiter caps be installed. Idle mixture should be adjusted only during carburetor repair or when necessary as a result of government inspection laws.**

### EXHAUST GAS ANALYZER PROCEDURE

- 1975 Federal Models - 1) With engine at normal operating temperature, ensure timing and idle speed are set to specification and that idle limiter cap is in full rich position.
- 2) Place heater control lever in maximum heat position. On vehicles equipped with Dual Spark Delay Valve (DSDV), disconnect and plug DSDV hose to manifold. Disconnect air cleaner-to-vapor canister hose and leave air cleaner installed. Disconnect air injection by-pass valve air hose at check valve.
- 3) Connect exhaust gas analyzer to vehicle. Place manual transmission in Neutral or automatic transmission in Drive. Increase engine RPM and allow throttle to return to idle position. Allow 10 seconds to pass before reading meter, but complete readings within 30 seconds.
- 4) If CO level is not within specifications, remove air cleaner and idle mixture screw limiter cap. Adjust mixture screw as required to obtain correct CO level. Readjust idle speed if necessary (with air injection connected). Check and adjust deceleration valve as required.

### OPTIMUM IDLE METHOD

**NOTE: This procedure is to be used only when propane enrichment equipment is not available.**

- 1977 California Models - 1) Connect tachometer and bring engine to normal operating temperature. Disconnect vapor canister hose from air cleaner. Using pliers (75L-9500-A), remove idle mixture screw limiter cap.
- 2) Run engine at 2500 RPM for 15 seconds. Place automatic transmission in Drive. Adjust idle speed to specified curb idle RPM, plus the specified optimum idle speed range RPM. See Emission Control Tune-Up Decal under hood.
- 3) Adjust idle mixture screw to obtain maximum idle RPM, leaving mixture screw in the leanest position that will maintain maximum idle RPM. Now turn mixture screw in the lean direction until specified curb idle RPM is obtained. Install a new limiter cap and recheck idle speed to ensure that cap installation did not change setting. Remove tachometer and reconnect vapor canister hose.
- 1978 California Models - 1) Air cleaner must be installed and all hoses attached. Apply parking brake and block wheels. Warm engine to normal operating temperature. Turn off engine and connect tachometer.
- 2) Trace canister purge valve vacuum hose from valve (on canister) to first connection. Disconnect hose and plug all openings. DO NOT disconnect hose at purge valve. Disconnect canister purge hose from air cleaner and cap air cleaner opening. Disconnect and plug PVC system hose from air cleaner.
- 3) If engine is equipped with air injection, proceed as follows: if equipped with one or 2 vacuum lines at side of dump valve, disconnect and plug lines. For valves with one line at top, check line to see if it is connected to intake manifold. If not, remove and plug line at dump valve and connect a slave line from dump valve vacuum fitting to an intake manifold vacuum fitting.

**NOTE: Some engines may experience normal RPM variances at idle, causing changes in engine speed measurements. If this occurs, use average speed.**

# 1975-79 TUNE-UP PROCEDURES

## Ford Motor Co. 4-Cylinder (Cont.)

4) Remove idle mixture screw limiter caps. Check curb idle speed and adjust if necessary. With engine idling, place transmission in specified position for propane enrichment check. See Emission Control Tune-Up Decal under hood. Adjust engine RPM to alternate idle speed change RPM as shown on decal. Note new idle speed on tachometer.

**NOTE: If specification calls for "0", the above idle speed adjustment is not necessary. Also note that on automatic transmission equipped vehicles, transmission position may differ from that used for idle fuel mixture check. Be sure to use correct position.**

5) Adjust idle mixture screw lean or rich and adjust idle speed screw until best idle is obtained at new idle speed RPM. Turn idle mixture screw clockwise (lean) until engine speed drops by specified alternate idle speed change RPM. Do not perform if specified change is "0".

6) Turn off engine. Install new limiter caps with tangs at maximum rich stop. Avoid changing mixture screw settings. If settings are changed, repeat procedure starting at step 4). Reconnect all hoses to original fittings. Remove test equipment.

### PROPANE ENRICHMENT PROCEDURE

**NOTE: See Emission Control Tune-Up Decal under hood for Propane Enrichment specifications.**

**1975 California Models & 1976-77 Models - 1)** With engine at normal operating temperature and idle speed correct, disconnect air cleaner-to-vapor canister hose. If applicable, disconnect PCV-to-air cleaner hose and plug air cleaner connection.

2) Plug propane enrichment set (Rotunda T75L-9600-A) into air cleaner canister purge nipple. Place manual transmission in Neutral or automatic transmission in Drive.

3) With engine at idle speed, richen mixture (using bottled propane) to obtain maximum RPM. Continue to richen mixture until RPM drops. If RPM gain is within specifications, remove propane enrichment set and reconnect all hoses. Recheck idle, deceleration valve, and mixture settings.

4) If RPM gain was HIGHER than specified, richen mixture screw (without injecting propane) until RPM increase is equal to the excess increase. For example, if increase was 80 RPM and desired increase is 50 RPM, adjust mixture screws rich for a 30 RPM increase. Readjust idle speed after each mixture screw adjustment.

5) If RPM gain was LOWER than specified, lean mixture screw (without injecting propane) until RPM decrease is equal to the RPM lag. For example, if increase was zero RPM and desired increase is 20 RPM, adjust mixture screw lean for a 20 RPM loss. Readjust idle speed after each mixture screw adjustment.

**1978 Models - 1)** Block wheels and apply parking brake. Connect tachometer to engine and bring engine to normal operating temperature.

2) Disconnect and plug canister purge hose from air cleaner or PVC line tee. Disconnect crankcase vent hose from air cleaner and cap air cleaner hole. Check curb idle speed and reset if necessary.

3) If engine is equipped with air injection, proceed as follows: if equipped with one or 2 vacuum lines at side of dump valve, disconnect and plug lines. For valves with one line at top, check line to see if it is connected to intake manifold. If not, remove and plug line at dump valve and connect a slave line from dump valve vacuum fitting to an intake manifold vacuum fitting.

4) Plug propane enrichment set (Rotunda T75L-9600-A) into air cleaner canister purge nipple. With engine idling, slowly open propane bottle valve until engine speed reaches a maximum and then begins to drop (note maximum amount of speed increase). If speed will not drop, check propane supply. If necessary, repeat procedure with new propane bottle.

5) If speed increase is within specification, reconnect vacuum and emission control lines to original fittings.

6) If increase is higher than specification, enrich mixture (without propane) by turning mixture screws clockwise in equal amounts

until RPM increases as necessary. Repeat propane enrichment procedure.

7) When specification is met, remove propane enrichment set and reconnect all vacuum and emission hoses to original fittings. Set curb idle speed to specification. If curb idle speed was readjusted, check internal fuel bowl vent clearance. Turn off engine and disconnect tachometer.

**1979 Models - 1)** Leave all vacuum hoses attached to air cleaner assembly when relocating air cleaner for carburetor adjustments. Air cleaner must be installed for engine checks.

2) Apply parking brake and block wheels. Disconnect automatic brake release and plug vacuum connection. Connect tachometer (20362) to engine. Be sure tachometer is rated compatible with Dura-Spark ignition system.

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

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

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

6) Be sure idle mixture limiter(s) is set to maximum rich position (counterclockwise against stop). Check curb idle speed RPM and set to specifications. With shift lever in Neutral, run engine at 2500 RPM for 15 seconds before each mixture check.

7) With engine idling at normal operating temperature, place transmission shift lever in Neutral for manual transmission or Drive for vehicles with automatic transmissions. Gradually open propane 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. Repeat if necessary with new bottle.**

8) Compare measured speed gain to specifications. If idle mixture adjustment is necessary, adjust to reset RPM. If speed increase is within RPM gain specification, go to step 15).

9) If measured speed gain is zero RPM and minimum speed gain specification is zero RPM, proceed to step 12).

10) If measured speed gain is greater than specification, turn mixture screw(s)/limiter(s) counterclockwise in equal amounts and repeat steps 6) through 8) until measured speed rise meets reset RPM specification. After final adjustment, proceed to step 15).

11) If measured speed gain is less than specifications, turn mixture screw(s)/limiter(s) clockwise in equal amounts and repeat steps 6) through 8) until speed rise meets reset RPM specifications. After final adjustment, proceed to step 15).

12) 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 on decal. Note drop in engine speed.

13) If measured speed drop is equal to or drops off more than speed drop specification, return mixture limiter(s) to maximum rich position or mixture screw(s) to position prior to adjustment. Then proceed to step 15).

14) If measured speed drop is less than the specified minimum, leave mixture limiter(s) in adjusted position and repeat steps 6) through 13).

15) Check curb idle speed and remove all test equipment. Reconnect all components and reinstall air cleaner, if removed.

### COLD (FAST) IDLE RPM

**NOTE: Before making cold (fast) idle RPM adjustments, prepare vehicle as outlined under HOT (SLOW) IDLE RPM.**

# 1975-79 TUNE-UP PROCEDURES

## Ford Motor Co. 4-Cylinder (Cont.)

1-65

**1976 Models** – 1) Set fast idle with engine at normal operating temperature, timing set, heater control in maximum heat position, and EGR vacuum disconnected and plugged.

2) Disconnect and plug fuel deceleration valve hose (if equipped) at carburetor. Remove spark delay valve (if equipped). Route distributor vacuum advance hose directly to the advance side of the distributor.

3) Turn air conditioner off (if equipped) and place transmission in Neutral. Place fast idle adjustment screw on kickdown step of fast idle cam. Adjust screw until specified fast idle RPM is obtained.

**1977 Models** – 1) With engine at normal operating temperature, remove air cleaner and plug vacuum lines. Remove spark delay valve (if equipped). Route distributor vacuum advance hose directly to the advance side of the distributor.

2) Disconnect and plug fuel deceleration valve hose (if equipped) at carburetor. On models without EGR/PVS valve, leave EGR connected otherwise remove and plug EGR vacuum line at EGR valve. Turn off all accessories.

3) With choke valve fully open, place fast idle adjustment screw on kickdown step of fast idle cam. Adjust screw until specified fast idle RPM is obtained. Reconnect all vacuum hoses, reinstall spark delay valve and fuel deceleration valve (if equipped).

### FAST IDLE RPM SPECIFICATIONS

Application	RPM
1976-78	
California	
Man. Trans. ....	1500
Auto. Trans. ....	1800
Federal	
Man. Trans. ....	1500
Auto. Trans. ....	2000
High Altitude .....	2000
1979 <sup>1</sup>	
Federal	
Man. Trans. ....	1600
Auto. Trans. ....	2000
Decal AAP & ADE .....	1800
California .....	1800
High Altitude .....	2000
Turbo .....	1800

<sup>1</sup> – Set fast idle cam on 2nd highest step.

**1978 Models** – 1) Remove spark delay valve. Route distributor vacuum advance hose directly to the advance side of the distributor. Trace the EGR valve vacuum signal hose from the EGR valve to the carburetor, then proceed as follows:

2) If an EGR/PVS valve or a cold weather modulator is found in hose, disconnect and plug hose at EGR valve. If these components are not found in vacuum hose, leave vacuum hose connected to EGR valve.

3) On models equipped with Holley (Weber) 6500 carburetor, disconnect vacuum hose at cold start vacuum switch. Apply a minimum of 5 in. Hg to cold start vacuum switch.

4) With engine at normal operating temperature and choke valve fully open, place manual transmission in Neutral and automatic transmission in Park. Place fast idle lever on specified cam step. Adjust fast idle speed RPM. Run engine at 2500 RPM for 15 seconds and recheck fast idle RPM.

**1979 Models** – 1) Check fast idle screw for proper adjustment, operation and possible interference.

2) Run engine at 2500 RPM for 15 seconds in Neutral. Place shift lever in Neutral for manual transmission or Drive for automatic transmissions. Position fast idle lever on 2nd highest step of fast idle cam.

3) Repeat step 2) and measure fast idle speed 3 times to determine average speed. Measure average speed when engine has stabilized. If speed is not within specifications, adjust fast idle screw and repeat procedure until speed is correct.

## AUTOMATIC CHOKE

### AUTOMATIC CHOKE SETTING

Application	Setting
1976	
Federal (Auto. Trans.) .....	Index
All Others .....	1NL
1977-78	
California	
Man. Trans. ....	3NR
Auto. Trans. ....	Index
Federal	
Man. Trans. ....	2NR
Auto. Trans. ....	1NR
High Altitude .....	Index
1979	
Man. Trans. ....	2NR
Auto. Trans. ....	1NR

## DECELERATION VALVE ADJUSTMENT

**NOTE:** If vehicle is equipped with transmission interlocked deceleration system, ensure that interlock is functioning properly and then disconnect one wire from solenoid vacuum valve.

**1975-77 Models** – 1) Ensure engine temperature is normal and that timing and idle are correct. Remove air cleaner. Using a "T" fitting, connect a vacuum gauge between deceleration valve and carburetor.

2) With transmission in Neutral, raise engine speed to 3000 RPM for 5 seconds. Release throttle and measure the time required for vacuum to drop to zero. If time is not within 3-4.5 seconds, adjust valve to obtain this time. If time cannot be adjusted to specification, replace valve.

## DASHPOT ADJUSTMENT

**1979 Models** – For vehicles with dashpot devices, adjust clearance after idle speed tests are completed. To adjust dashpot, adjust dashpot position. To adjust kicker/dashpot, adjust throttle lever pad adjusting screw. For solenoid/dashpots, there is no adjustment as throttle lever pad adjusting screw controls curb idle.

## FUEL PUMP

Make all tests with engine at normal operating temperature and at idle speed with transmission in Neutral. When making pressure test pinch off pump-to-tank fuel return line.

### FUEL PUMP SPECIFICATIONS

Application	Specifications
Pressure .....	15.0-7.0 psi
Volume (Minimum) .....	One pint in 25 seconds.

<sup>1</sup> – Specification is 3.5-5.5 psi on 1975 models.

## IGNITION

All 1975-76 models are equipped with Solid State Ignition (SSI) system. All 1977-79 models are equipped with Dura-Spark ignition systems. No adjustments are necessary.

**Other Data & Specifications** – Also see Motorcraft distributors in DISTRIBUTORS & IGNITION SYSTEMS section.

# 1975-79 TUNE-UP PROCEDURES

## Ford Motor Co. 4-Cylinder (Cont.)

### IGNITION COIL

#### IGNITION COIL SPECIFICATIONS

Application	Specification
1975-77	
Primary Resistance (At 75°F) .....	1.0-1.2 ohms
Secondary Resistance (At 75°F) .....	7000-13,000 ohms
Resistor Wire (At 75°F) .....	1.3-1.4 ohms
1978-79	
Primary Resistance (At 75°F) .....	1.13-1.23 ohms
Secondary Resistance (At 75°F) .....	7700-9300 ohms
Ballast Resistor (At 75°F) .....	1.05-1.15 ohms

### CARBURETION

#### CARBURETORS

Application	Model
1975-76	
All Models .....	Motorcraft 5200
1977	
All Models .....	Holley 5200
1978-79	
California Bobcat & Pinto .....	Holley 6500
All Others .....	Holley 5200

**Other Data & Specifications** - Also see Holley or Motorcraft carburetor articles in FUEL SYSTEMS section.