Carburetors, Fuel Charging Assemblies and Throttle Bodies

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Idle Emission Testing

Canada and some states or metropolitan areas in the United States require periodic Idle Emission Tests. All Ford products have been certified to pass these tests.

If a Ford product fails an Idle Emission Test, it is probable that the vehicle has idled too long just prior to the test. Too long at idle will trigger the Thermactor Air System to dump Thermactor air into the atmosphere to prevent overheating of the exhaust system.

It is recommended that the following procedure be followed for testing idle emissions on Ford products:

Preceed any measurement of idle emissions by turning off ignition, restarting and operating engine at 2500, \pm 300 rpm, for 30 seconds. Measure idle emissions within 30 seconds after returning to idle.

Complaints of Idle Emission Test failure should be verified by using the above procedure prior to starting any services.

SYMPTOM	POSSIBLE SOURCE	ACTION
● No Start — Cold	No fuel in carburetor bowl.	 Check by actuating accelerator pump. If no fuel discharge is seen, check fuel delivery system. Refer to Group 24 or Section 11.
	 Cold enrichment or choke system not functioning. 	 Check linkage for proper operation and adjustment; clean, service, or replace as required.
	 Venturi valve sticking open, 7200 only. 	Clean and service as required.
	 Clogged air bleeds or idle passages. 	Clean with solvent and compressed air.
	Inoperative ISC motor.	Perform EEC-IV Diagnostics.
	Plugged or inoperative injector.	 Check for fuel injector discharge at the injector. (Use injector tester for EFI Rotunda 113-00001).
	• T.P. sensor stuck at W.O.T.	Crank engine with T.P. unplugged.
		Return to Routine 201.

CA6011-E

SYMPTOM	POSSIBLE SOURCE	ACTION
Hard Start — Cold	Cold enrichment or choke system not functioning.	Check linkage for proper operation and adjustment; clean, service or replace as required.
	 Incorrect choke housing adjustment, lean or rich. 	Adjust choke. If tamperproof, check for correct assembly.
	 Venturi valve sticking open, 7200 only. 	Clean and service as required.
	Hot idle compensator stuck open.	Service as required.
	 Restricted choke vacuum and hot air passages. 	Remove carburetor and clean passages. Blow out with compressed air.
	 Accelerator pump not functioning, check visually for fuel discharge. 	Check and service as required.
	Leaking intake manifold or carburetor gaskets.	Replace leaking gaskets.
	Stepper motor sticking, 7200 only.	Clean and service as required, per Section 3.
	Faulty TCP Valve. Temperature Compensated (accelerator) Pump.	• TCP, Section 3.
		Return to Routine 203.

SYMPTOM	POSSIBLE SOURCE	ACTION
Rough Idle — Cold	Cold enrichment or choke system not functioning.	Check linkage for proper operation and adjustment; clean, service, or replace as required. Check choke pull down adjustment. Check voltage to choke cap.
	Improper curb idle adjustment.	Perform curb idle adjustments.
	Improper fast idle adjustments.	Perform fast idle adjustments.
	Venturi valve sticking open, 7200 only.	Clean and service as required.
	 Venturi valve diaphragm leaking, 7200 only. 	Check and service as required.
	Stepper motor stuck open, 7200 only.	Check and service as required, per Section 3.
	 Hot idle compensator (HIC) stuck open, 7200 only. 	Check and service as required.
	Metering rod bent, 7200 only.	Check and service as required.
	Air cleaner duct vacuum motor damaged open to cold.	Service or replace as required.
	• Idle mixture.	 Perform propane check, adjust if out of specification.
	Injector leaking or inoperative.	Check operation of injector. (Use injector tester for EFI Rotunda 113-00001).
	Injector O-ring seal leaking.	Perform injector/regulator leakage check.
		Return to Routine 204.

CA6013-E

SYMPTOM	POSSIBLE SOURCE	ACTION
• Stall, Stumble, Hesitation — Cold	Cold enrichment or choke system not functioning.	Check linkage for proper operation and adjustment; clean, service or replace as required. Check choke pulldown. Check voltage to choke cap.
	Accelerator pump not functioning, check visually for fuel discharge.	Check and service as required.
	Low fuel pump delivery.	Test fuel pump, service or replace as required. Refer to Group 24 or Section 11.
	Stepper motor malfunction, 7200 only.	Check and service as required, per Section 3.
	Clogged fuel filter.	Clean or replace as required. Find cause.
	Power valve stuck closed.	Replace power valve.
	Improper or obstructed main jets.	Check, clean, or replace as required. For 7200, replace carburetor.
	Air cleaner duct vacuum motor damaged open to cold.	Service or replace as required.
	VV Diaphragm failure, 7200 only.	Replace.
	Faulty TCP valve.	TCP, Section 3.
	T.P. sensor failure.	Perform EEC-IV Diagnostics.
		Return to Routine 202 or 207.

CA6014-G

SYMPTOM	POSSIBLE SOURCE	ACTION
No Start — Hot	No fuel in carburetor bowl.	Check by actuating accelerator pump. If no fuel discharge is seen, check fuel delivery sytem. Refer to Group 24 or Section 11.
	Cold enrichment or choke system not functioning.	Check linkage for proper operation and adjustment; clean, service, or replace as required.
	Venturi valve sticking, 7200 only.	Clean and service as required.
	Flooding or loading.	Check float level, adjust as required.
	Inoperative ISC motor.	Perform EEC-IV Diagnostics.
	Injector inoperative.	Check for fuel discharge while cranking engine. (Use injector tester for EFI Rotunda 113-00001).
	T.P. sensor stuck at W.O.T.	Perform EEC-IV Diagnostics and vehicle VIP test.
		Return to Routine 201.

SYMPTOM	POSSIBLE SOURCE	ACTION
Hard Start, Hot	Cold enrichment or choke system not functioning.	Check linkage for proper operation and adjustment; clean, service, or replace as required.
	 Incorrect thermostat housing adjustment, lean or rich. 	 Adjust thermostat housing and choke cap. If tamperproof, check for correct assembly.
	 Venturi valve sticking open, 7200 only. 	Clean and service as required.
	Bowl vents plugged.	Check internal vent for adjustment and external vent for kinked hose.
	 Stepper motor stuck closed, 7200 only. 	Check and service as required, per Section 3.
	Flooding or loading.	Check float level, service as required.
	 Restricted choke vacuum or hot air passages. 	Remove carburetor and clean choke passages and blow out with air.
	 Leaking intake manifold or carburetor gaskets. 	Replace leaking gaskets.
	Excessive fuel pressure.	Clean and service — Fuel return line. Fuel pressure regulator.
	 Contaminated fuel pressure regulator valve and seat. 	Clean and service fuel pressure regulator.
		Check fuel pressure bleed down after engine has been turned off.
		Return to Routine 203.

CA6016-E

SYMPTOM	POSSIBLE SOURCE	ACTION
Rough Idle — Hot	Cold enrichment or choke system not functioning.	Check linkage for proper operation and adjustment; clean, service, or replace as required.
	Venturi valve sticking, 7200 only.	Clean and service as required.
	Improper idle adjustments.	Perform all idle adjustments.
	Throttle plates sticking.	Check and service as required.
	 Choke pulldown diaphragm not functioning. 	Check and service as required.
	 Venturi valve diaphragm leaking, 7200 only. 	Check and service as required.
	Hot idle compensator stuck closed or open.	Service or replace as required.
	• Idle mixture.	Perform propane check, adjust if out of specification.
	Clogged air bleeds or air passages.	Clean with solvent and compressed air.
	Improper fuel level.	Adjust float level.
	Stepper motor, 7200 only.	Check for smooth operation, per Section 3.
	TCP Diaphragm not functioning.	• TCP, Section 3.
		Return to Routine 204.

CA6017-F

SYMPTOM	POSSIBLE SOURCE	ACTION
Stall, Stumble, Hesitation — Hot	Cold enrichment or choke system not functioning.	Check linkage for proper operation and adjustment; clean, service, or replace as required.
	Inoperative accelerator pump. Check visually for pump shot or fuel siphoning.	Service or replace as required.
	Low fuel pump volume.	Test pump; fuel delivery system. Refer to Group 24 or Section 11.
	Stepper motor malfunctioning, 7200 only.	Check and service as required, per Section 3.
	Bowl vents plugged.	Check internal vent adjustments, external for kinked hoses.
	Clogged fuel filter.	Check and replace as required. Check cause.
	Power valve stuck closed.	Replace valve.
	Improper or obstructed main jets.	Check, clean or replace as required. For 7200, replace carburetor.
	VV Diaphragm failure, 7200 only.	Replace.
	TCP Malfunction.	TCP, Section 3.
	DC Solenoid (FBCA) Malfunction.	 Refer to appropriate MCU or EEC Diagnostic procedure.
		Return to Routine 202 or 207.

CA6018-G

SYMPTOM	POSSIBLE SOURCE	ACTION
Stalls on Decel or Quick Stop	Idle speed low.	Check and adjust as required.
	Throttle positioner not functioning.	Check and service as required.
	 Venturi valve sticking, 7200 only. 	Check and service as required.
	Stepper motor malfunctioning, 7200 only.	Check and service as required, per Section 3.
	Clogged air bleeds or idle passages.	Remove and clean with solvent and compressed air.
	VV diaphragm leaks, 7200 only.	Replace diaphragm.
	Leaking intake manifold or carburetor gaskets.	Replace leaking gaskets.
	Defrost failure.	Replace dashpot.
		Return to Routine 206.

CA6019-F

SYMPTOM	POSSIBLE SOURCE	ACTION
Lack of Power	Sticking venturi valve or leaking diaphragm, 7200 only.	Check, clean and service as required.
	 Venturi valve limiter out of adjustment, 7200 only. 	Adjust as required.
	 Accelerator pump not functioning or improper adjustment. Check visually for fuel discharge. 	Check and service as required.
	 Control vacuum regulator off specification (high), 7200 only. 	Check and adjust as required.
	Plugged pump discharge nozzle.	Clean nozzle with compressed air.
	Leaking fuel at pump discharge nozzle screw gasket.	Replace gasket.
	Improper float setting.	Adjust float level.
	 Main metering system plugged, contaminated fuel. 	Clean fuel system as required.
	• VV Diaphragm failure, 7200 only.	Replace
	Stepper motor, 7200 only.	Check for smooth operation, per Section 3.
	Fuel filter.	Check fuel delivery. Refer to Group 24 or Section 11.
	TCP Malfunction.	TCP, Section 3.
	DC Solenoid (FBCA) Malfunction.	Refer to appropriate MCU or EEC Diagnostic procedure.
		Return to Routine 209.

CA6020-G

SYMPTOM	POSSIBLE SOURCE	ACTION
Poor Mileage, But Drives Alright	Stepper Motor Malfunction, 7200 Only.	Check and service as required.
	DC Solenoid (FBCA) Malfunction.	Refer to appropriate MCU or EEC Diagnostic Procedure.
		Return to Routines 213, 219

CA6338-D

SYMPTOM	POSSIBLE SOURCE	ACTION
● Reduced Top Speed/Power	Venturi valve sticking, 7200 only.	Check, clean and service as required.
	 Incorrect venturi WOT opening, 7200 only. 	Adjust as required.
	Binding throttle linkage.	Clean and service as required.
	 Venturi valve diaphragm leaking, 7200 only. 	Check and service as required.
	Low fuel pump volume.	Test fuel delivery system. Refer to Group 24, or Section 11.
	Metering rods bent, 7200 only.	Service as required.
	Incorrect float drop.	Adjust as required.
	Clogged fuel filter.	Replace as required. Check cause.
	Power valve stuck closed.	Replace power valve.
	Improper or obstructed main jets.	Clean or replace as required. For 7200, replace carburetor.
	 Inoperative secondary system on 4-V carburetor. 	 Check shaft and plate alignment, binding linkage, service as required.
	Plugged injectors EFI/CFI.	 Check for fuel injector discharge at injector. (Use injector tester for EFI Rotunda 113-00001).
	Damaged pressure regulator EFI/CFI.	Refer to Group 24.
	Stepper motor.	Check for smooth operation.
	DC solenoid (FBCA) Malfunction.	Refer to appropriate MCU or EEC Diagnostic procedure.
		Return to Routine 209.

CA6021-E

SYMPTOM	POSSIBLE SOURCE	ACTION
• Surge at Cruise	Plugged fuel filter.	Replace filter.
	Improper fuel level.	 Adjust float level and drop, check float hinge pin for binding; service and adjust as required.
	 Low fuel pump volume or pressure. 	Test fuel delivery system. Refer to Group 24 or Section 11.
	Contaminated fuel.	Drain fuel, clean as required.
	 Damaged metering rods, 7200 only. 	Replace.
	Stepper motor.	Check for smooth operation.
	Blocked air bleeds.	Clean and service as required.
	Fuel leaks around carburetor.	Service as required.
		Return to Routine 210.

CA6022-E

SYMPTOM	POSSIBLE SOURCE	ACTION
• Flooding	Float problem.	Service as required.
	 Damaged fuel inlet or sticking needle. 	Service as required.
	Excessive fuel pressure.	Check fuel pressure.
		 Service fuel return line, and/or fuel pressure regulator.
	 Injector stuck open, or O-ring seal leaking. 	 Check operation of injector. (Use injector tester for EFI Rotunda 113- 00001).
		Perform leakage check.

CA6023-D

SYMPTOM	POSSIBLE SOURCE	ACTION
● Engine Diesels	Incorrect idle speed adjustment.	Perform all idle adjustments.
	Not coming off fast idle cam.	Check linkage for proper operation and adjustment; clean, service, or replace as required.
	Vacuum leaks.	Check all vacuum lines and connections.
		Return to Routine 211.

CA6024-D

Idle Speed Setting Procedures

PASSENGER CAR

2.3L EFI Turbo

Instructions

This procedure is to be performed only if the curb idle is not within the 900 \pm 75 rpm specification.

NOTE: Curb idle speed (RPM) is controlled by the EEC-IV processor and the idle speed control air bypass valve assembly (Fig. 1). If engine curb idle rpm is not within specification after performing this procedure, it will be necessary to perform the appropriate 2.3L EFI Turbo EEC-IV diagnostics.

- 1. Place the transmission in neutral, turn the A/C-Heat selector to the Off position.
- 2. Bring the engine to normal operating temperature and turn Off.
- 3. Disconnect the idle speed control air bypass valve power lead.
- 4. Start engine and operate at 2,000 rpm for 120 seconds.
- 5. If electric cooling fan comes on during idle speed set procedure, wait for the fan to turn off before proceeding.
- 6. Let engine idle and check base idle rpm (750 \pm 50 rpm).
- 7. Adjust engine rpm to specification by adjusting throttle plate stop screw (Fig. 1).
- 8. Shut engine off and reconnect.
 - Power lead to idle speed control air bypass valve.
 - Electric cooling fan.
- 9. Verify throttle plate is not stuck in the bore by exercising throttle plate.

NOTE: If excessive engine idle speeds are experienced when driving the vehicle on the idle system, turn the ignition switch to Off position and restart.

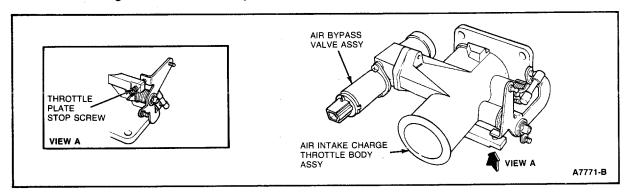


Figure 1 2.3L Turbo w/Electronic Fuel Injection

Idle Speed Setting Procedures

PLEASE REFER TO TSB **86-19-15** FOR: 1985 RANGER 2.3L EFI IDLE SPEED SETTING PROCEDURE. REVISED SHOP MANUAL PROCEDURE.

TRUCK, UNDER 8500 GVW

2.3L OHC EFI

Instructions

This procedure is to be performed only if the curb idle is not within the 700 drive (A/T), 650 (M/T) \pm 75 rpm specification.

NOTE: Curb idle speed (RPM) is controlled by the EEC-IV processor and the idle speed control air bypass valve assembly (Fig. 1). If engine curb idle rpm is not within specification after performing this procedure, it will be necessary to perform the appropriate 2.3L EFI EEC-IV diagnostics.

- 1. Place the transmission in Neutral, turn the A/C-Heat selector to the Off position.
- 2. Bring the engine to normal operating temperature and turn Off.
- 3. Disconnect the idle speed control air bypass valve power lead.
- 4. Start engine and operate at 1500 rpm for 20 seconds.
- 5. Let engine idle and check base idle speed (575 \pm 25 rpm).

NOTE: Engine may stall when ISC is disconnected. This is acceptable as long as the throttle plate is not stuck in the bore.

- 6. Adjust as follows:
 - Disconnect throttle cable.
 - Adjust engine rpm to within range in Step 5 by turning the throttle plate stop screw.
 - Reconnect throttle cable and repeat Step 5.
- 7. Shut engine off and reconnect power lead to idle speed control air bypass valve.
- 8. Verify throttle plate is not stuck in the bore by exercising throttle plate.

NOTE: If excessive engine idle speeds are experienced when driving the vehicle on the idle system, turn the ignition switch to Off position and restart.

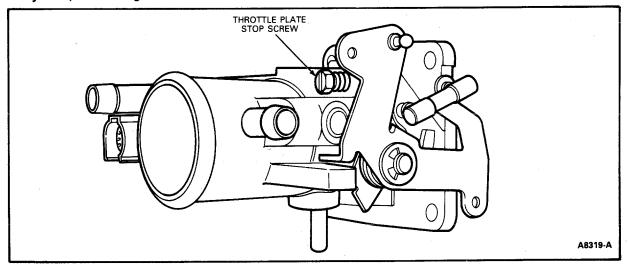


Figure 1 2.3L OHC EFI Engine