# MOTORCRAFT MODEL 740 2-BARREL

## CARBURETOR APPLICATION

**FORD MOTOR CO.**

| Application | Ford Motor Co. Part No.① Man. Trans. | Auto. Trans. |
|---|---|---|
| 1.6L (98") 4-Cylinder | | |
| Nationwide | E1GE-CA;E2EE-EA/JA | |
| Federal | | |
| With A/C | | E1EE-ALA②;E2EE-MA |
| Without A/C | E2EE-GC | E1EE-APA;E2EE-LA |
| With Pow. Str. | | E1EE-ALA② |
| High Altitude | E1GE-DA;E2EE-SA | E2EE-VA/YA |
| California | | |
| With A/C | | E1EE-NA③;E2EE-PA |
| Without A/C | | E1EE-ZA;E2EE-NA |
| With Pow. Str. | | E1EE-NA③ |
| 1.6L (98") 4-Cylinder (High Output) | | |
| Federal | | |
| With A/C | | E2EE-MC |
| Without A/C | | E2EE-LC |
| California | | |
| With A/C | | E2EE-PC |
| Without A/C | | E2EE-NC |

① — Ford basic part number is 9510.
② — Alternate is E1GE-GA.
③ — Alternate is E1GE-EA.

## CARBURETOR IDENTIFICATION

Carburetor part number identification is stamped on a metal tag attached by a bowl cover screw.

## DESCRIPTION

The Motorcraft Model 740 is a 2-stage, dual venturi downdraft type carburetor. It features 5 basic metering systems: choke system, idle system, main metering system, acceleration system and power enrichment system. The carburetor also includes an altitude compensation system that operates between 2500-3000 feet, depending on engine calibration.

The choke system consists of a bi-metallic thermostatic coil with electric heater to improve cold engine starts. Fuel in the fuel bowl is maintained at a preset level by the float and needle. The idle system receives fuel from the fuel bowl to provide air-/fuel mixture for idle and off-idle operation. As throttle opening and vacuum in carburetor venturi increase, the idle system tapers off and the main metering system begins operation.

The main metering system is divided into a primary main metering circuit and secondary main metering circuit. The primary circuit maintains the air/fuel ratio during normal operation. As the throttle plate reaches about 45°, the secondary throttle plate begins to open and the secondary metering circuit provides the fuel necessary to increase engine speed. When the throttle plates are quickly opened, the accelerator pump system supplies the extra fuel required until the main metering system can provide the required air/fuel mixture.

The power enrichment system is divided into primary and secondary circuits. The primary circuit is controlled by intake manifold vacuum. When intake manifold vacuum is high, the power valve is seated by spring pressure. When intake manifold vacuum decreases, the spring pressure overcomes the vacuum and the power valve is unseated to provide extra fuel to richen the air/fuel mixture. The secondary circuit operates by air velocity. As air velocity through secondary bore increases, low pressure draws the extra fuel into the air/fuel mixture to enrichen the mixture. The power enrichment system provides a richer mixture during heavy load operation.

All carburetors are equipped with an idle fuel shut off solenoid. When the ignition switch is on, the solenoid is energized and fuel flows through idle system. When the ignition switch is turned off, the solenoid is de-energized and fuel flow through idle system is shutoff to prevent dieseling. Some models incorporate a decel idle fuel shutoff circuit within the solenoid to shutoff fuel flow to idle system when directed by the computer. This circuit is automatically canceled by the computer when necessary. Some models are also equipped with a wide open throttle A/C cutout switch to disengage the air conditioning compressor clutch at wide open throttle operation. This switch is mounted with an actuating arm that contacts the actuating pin on the fast idle lever at the wide open throttle position to de-energize the compressor clutch. The switch energizes the clutch when wide open throttle is canceled.

## TESTING

**NOTE** — *Before removing air cleaner, be sure to remove No. 3 and 4 spark plug wires from clip attached to air cleaner. Disconnect vacuum, evaporative and air pump hoses and electrical connections.*

### AUTOMATIC ELECTRIC CHOKE

**1)** Bring engine to normal operating temperature and turn off engine. Remove air cleaner and plug vacuum hoses to air cleaner. Check all vacuum hoses, solenoids and choke wires for proper connections. Be sure all linkage operates freely.

**2)** Be sure choke cap is properly aligned with index mark. Choke plates should be fully open. If not, disconnect electric choke lead from cap terminal and connect to test light. Ground second test light lead. With engine running, if light does not light, suspect faulty alternator or open circuit in choke lead. If light glows, replace choke cap.

**3)** Hold throttle ¼ open and move choke plates to closed position. Release plates. They should return to fully open position. If not, clean or repair choke system.

**4)** Use a Rotunda Choke Tester (14-0206) or similar tool to cool the choke bi-metal coil. Hold throttle open and insert tester into choke housing opening for fast idle screw. Apply cool air for 8 minutes, removing tester for 10 seconds every 2 minutes. Choke plates should seat lightly. If not seated by 8 minutes, clean and repair system.

**5)** Hold choke plates ¼ open and remove tester. Allow throttle to close. Choke plates should remain partially open and throttle will be in kickdown position. Without touching throttle, start and run engine. Open throttle momentarily and then release it. Choke plates should be vertical and engine speed should drop to normal idle. If not, check for binding parts, broken torsion spring, or replace electric choke cap unit.

**6)** Turn off engine, remove test equipment and reinstall all components.

### FUEL BOWL VENT

**1)** Apply parking brakes and block wheels. Remove air cleaner. Remove bowl vent hose from canister. Check fuel bowl

## MOTORCRAFT MODEL 740 2-BARREL (Cont.)

vent solenoid for external damage and electrical connections. Attach a Rotunda T75L-9487-A tool or equivalent to end of canister hose.

**2)** Turn ignition switch off and hold choke plates open. Force air into fuel bowl vent system by squeezing tool's rubber bulb. If no fuel is displaced through metering system, start engine and run for 2 minutes. Turn off engine, and repeat test.

**3)** If fuel is still not displaced, remove test lamp and reconnect solenoid electrical lead. Remove carburetor air horn. Switch ignition on and off. Solenoid plunger should retract when switch is on and extend when off. If so, replace bowl vent plunger seal. If not, replace solenoid, plunger, seal and plunger spring. Reassemble carburetor.

**4)** With ignition switch on and tool still connected, again force air into fuel bowl vent system. If rubber bulb resists rapid squeezing (pressure build up), bowl vent is working properly. If not, disconnect electrical lead to bowl vent solenoid and connect it to test light. Ground second test light lead.

**5)** Turn ignition switch on. If test light does not glow and battery is okay, solenoid lead has an open circuit. Repair or replace. If light glows, remove test light and reconnect lead to solenoid. Remove all test equipment and reassemble all components. Install air cleaner and check all hose connections. Start and run engine at 2500 RPM for 15 seconds and turn off engine.

## ADJUSTMENTS

### HOT (SLOW) IDLE RPM

*See appropriate TUNE-UP SERVICE PROCEDURES article.*

### IDLE MIXTURE

*See appropriate TUNE-UP SERVICE PROCEDURES article.*

### COLD (FAST) IDLE RPM

*See appropriate TUNE-UP SERVICE PROCEDURES article.*

### FLOAT LEVEL

**1)** Hold air horn upside down at 45° angle with air horn gasket in place. Float tang should rest lightly on inlet needle. Using suitable drill bit or pin gauge, measure clearance between float toe and air horn casting. See *Fig. 1*.

**2)** To adjust, remove float assembly and bend float level adjusting tang. Do not damage or scratch float tang during adjustment.

### FAST IDLE CAM POSITION

NOTE — *Rivets are used to hold choke cap in position. Ensure mandrel is well below rivet head. Then, drive mandrel down or out with a 1/16" punch. Using a 1/8" (No. 30) drill bit, drill out rivets. Drive rivets out with a 1/8" punch. Remove standard screw, retainer and choke cap.*

**1)** Set fast idle screw on kickdown step of cam against shoulder of high step. Manually close choke plate, and measure distance between air horn wall and lower edge of choke plate.

**2)** To adjust, bend right fork of choke bi-metal shaft (engages fast idle cam) up or down.

NOTE — *After adjustment, choke cap and retainer must be installed with rivets (supplied in service kit) and standard screw.*

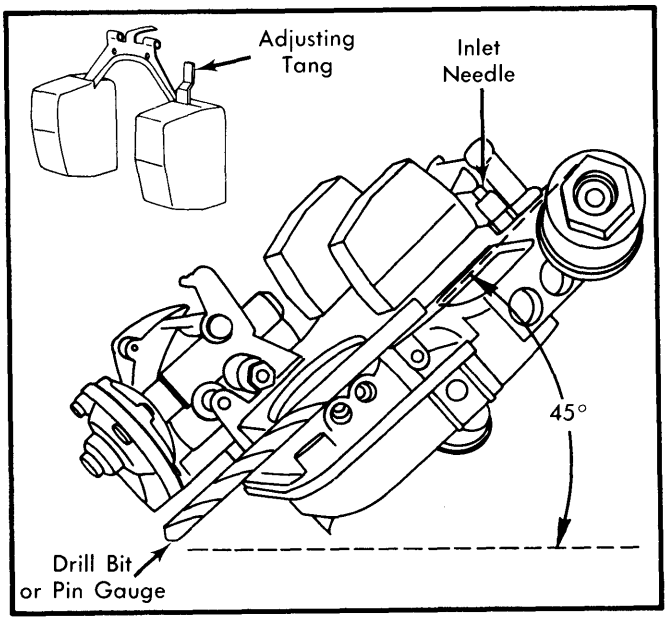


*Fig. 1 Adjusting Float Level*

### CHOKE VACUUM KICK (CHOKE PULLDOWN)

**1)** Remove choke cap and retainer as previously described. Place fast idle adjusting screw on high step of fast idle cam by opening throttle lever and rotating choke bi-metal shaft lever counterclockwise until choke plates are fully closed.

**2)** Using an outside vacuum source, apply 17 in. Hg to vacuum channel next to primary bore on carburetor base. With vacuum applied, spring should not be compressed. Measure clearance between air horn wall and lower edge of choke plate with a drill bit or pin gauge.

**3)** To adjust, remove choke diaphragm cover and adjusting screw plug. Install cover, and turn adjusting screw in or out until specification is obtained. Remove cover and reinstall plug. Install choke cap and retainer as previously described.

### SECONDARY THROTTLE STOP SCREW

The secondary throttle stop screw is preset at the factory and staked in position. No adjustment is required.

### AUTOMATIC CHOKE

Adjustment is made by removing choke cap and retainer as previously described and rotating cover until specification is correct. Install choke cap, retainer and rivets.

### WIDE OPEN THROTTLE A/C CUTOUT SWITCH

**1)** Position fast idle lever in wide open throttle position. Using a feeler gauge, measure distance between fast idle lever actuating pin and switch actuating arm. Also measure distance between fast idle lever and cutout switch. See *Fig. 3*.

**2)** If either measurement is less than .120" (3 mm), bend cutout switch support bracket until distance is correct.

## OVERHAUL

### DISASSEMBLY

NOTE — *To prevent damage to throttle plates, install carburetor legs or four 2 1/4" bolts into base, using eight nuts. Use*

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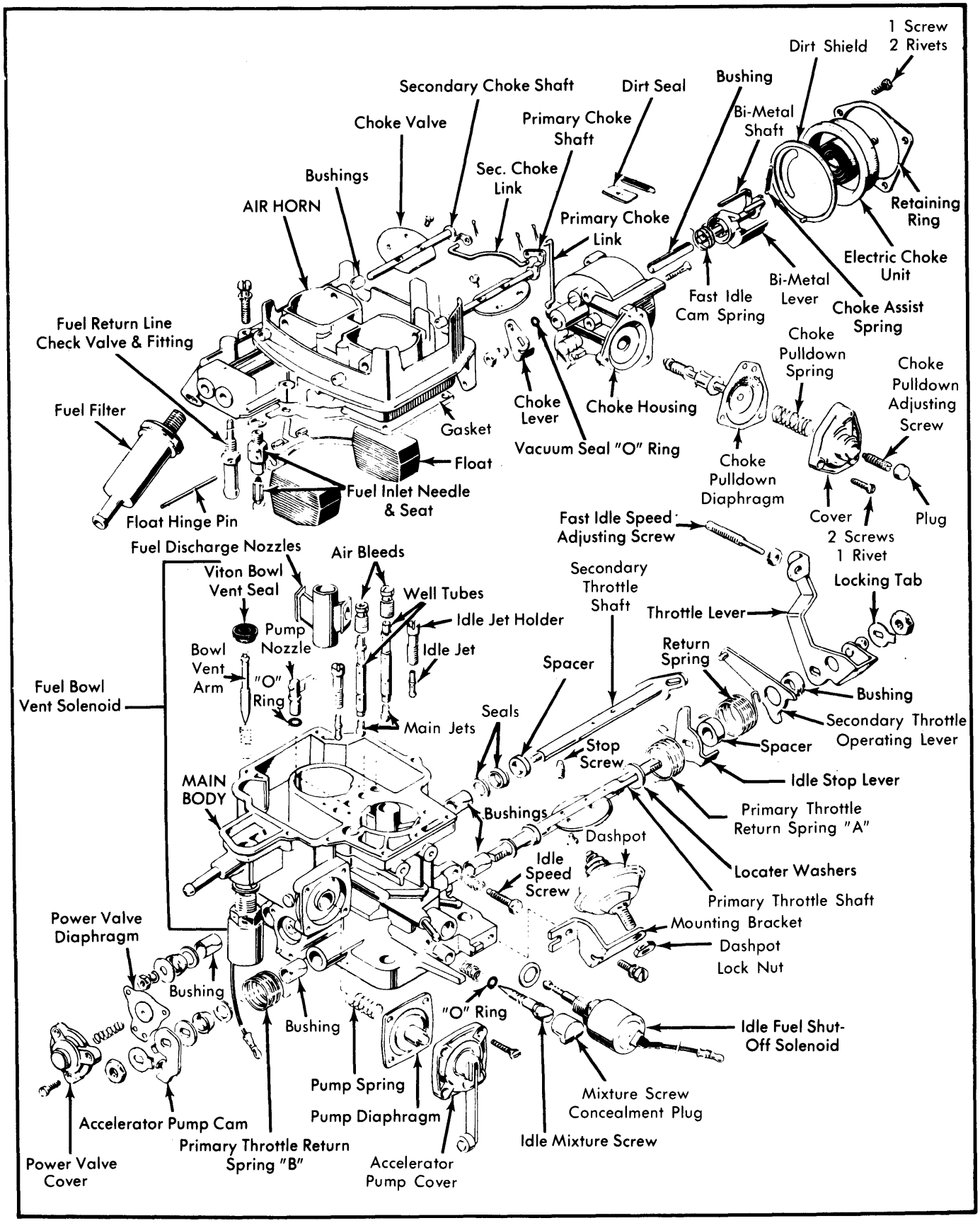


***Fig. 2 Exploded View of Motorcraft Model 740 2-Bbl. Carburetor***

## MOTORCRAFT MODEL 740 2-BARREL (Cont.)

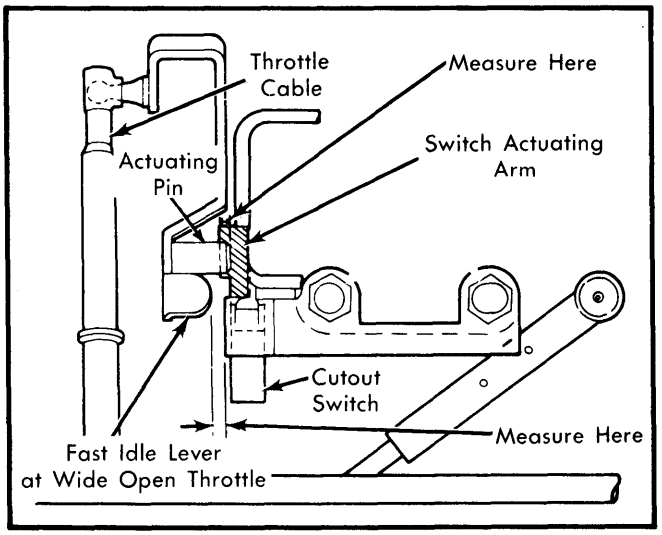


***Fig. 3 Wide Open Throttle A/C Cutout Switch Adjustment***

*separate containers for parts removed from various assemblies.*

**Air Horn – 1)** Remove fuel filter. Remove air horn screws and washers. Open throttle enough to clear fast idle screw and carefully lift air horn with gasket off main body. Turn air horn upside down.

**2)** Remove float hinge pin, float and inlet needle. Remove inlet needle seat and gasket, bowl cover gasket and fuel return line check valve and fitting.

**3)** Remove choke cap rivets, retainer and choke cap as previously described. Remove electric choke cover assembly and choke housing index shield. Remove 3 choke housing screws. Slide housing away from air horn and disengage primary choke link. Remove "O" ring from vacuum passage.

**4)** Remove choke pulldown cover retaining screws, pulldown cover and spring. Disengage choke assist spring from choke housing. Remove choke bi-metal shaft nut and lock washer. Remove choke lever.

**5)** Slide choke bi-metal shaft and lever outward. Pull choke pulldown diaphragm assembly outward until shaft bottoms on plastic retaining collar. Depress plastic clip, and carefully slide diaphragm assembly out.

**Main Body – 1)** Remove vacuum throttle kicker (if equipped). Remove 4 accelerator pump cover screws, pump cover, pump diaphragm and pump return spring. Using needle nose pliers, remove accelertor pump nozzle.

**2)** Remove idle fuel shutoff solenoid and washer. Remove fuel bowl vent solenoid and washer. Remove 3 power valve cover screws, valve cover, spring and diaphragm. Remove dashpot (if equipped).

**3)** Using a 3/32" drill bit, drill through hardened steel idle mixture concealment plugs and plastic inner plug. Remove plugs with screw extractor. Turn mixture screws in until lightly seated. Count the number of turns required to seat screw (to nearest 1/16 turn). Remove mixture screws, springs and "O" rings.

**4)** Remove primary and secondary fuel discharge nozzles. Carefully mark for reassembly reference. Be sure to note top and bottom ends. Remove primary and secondary jet holders and high speed air bleeds.

**NOTE** – *Idle jets are located in bottom of holders. The air bleeds, main well tubes and main jets are a press fit assembly, but may be removed and assembled by hand.*

### INSPECTION

Thoroughly clean all parts and use compressed air to clean jets and fuel ports. Do not use wire brush. Check parts for wear or damage and replace plastic or rubber parts if questionable. Check all diaphragms for cracks or other defects.

### REASSEMBLY

To assemble, reverse disassembly procedure and note the following: Do not intermix parts. Replace gaskets, seals and "O" rings with new ones. Check that all linkage moves freely without binding or sticking. Do not overtighten attaching screws. After all adjustments have been completed, install choke cap rivets and idle mixture concealment plugs.

**CARBURETOR ADJUSTMENT SPECIFICATIONS**

| Application | Float Level Setting | Float Drop Setting | Fast Idle Cam Setting | Choke Vacuum Kick Setting | Choke Unloader Setting | Auto. Choke Setting |
|---|---|---|---|---|---|---|
| **Ford Motor Co.** | | | | | | |
| E1EE-NA | .246" | ..... | .079" | .157" | ..... | INL |
| E1EE-ZA | .246" | ..... | .079" | .157" | ..... | INL |
| E1EE-ALA | .246" | ..... | .079" | .157" | ..... | INL |
| E1EE-APA | .246" | ..... | .079" | .157" | ..... | INL |
| E1GE-CA | .246" | ..... | .079" | .118" | ..... | Index |
| E1GE-DA | .246" | ..... | .079" | .118" | ..... | Index |
| E1GE-EA | .246" | ..... | .079" | .157" | ..... | INL |
| E1GE-GA | .246" | ..... | .079" | .157" | ..... | INL |
| E2EE-EA | .246" | ..... | .079" | .138" | ..... | Index |
| E2EE-GC | .246" | ..... | .079" | .138" | ..... | Index |
| E2EE-JA | .246" | ..... | .079" | .138" | ..... | Index |
| E2EE-LA | .246" | ..... | .079" | .138" | ..... | Index |
| E2EE-LC | .246" | ..... | .079" | .177" | ..... | Index |
| E2EE-MA | .246" | ..... | .079" | .138" | ..... | Index |
| E2EE-MC | .246" | ..... | .079" | .177" | ..... | Index |
| E2EE-NA | .246" | ..... | .079" | .138" | ..... | Index |
| E2EE-NC | .246" | ..... | .079" | .177" | ..... | Index |
| E2EE-PA | .246" | ..... | .079" | .138" | ..... | Index |
| E2EE-PC | .246" | ..... | .079" | .177" | ..... | Index |
| E2EE-SA | .246" | ..... | .079" | .138" | ..... | Index |
| E2EE-VA | .246" | ..... | .079" | .138" | ..... | INL |
| E2EE-YA | .246" | ..... | .079" | .138" | ..... | INL |