## ZENITH 361V & 361VE 1-BARREL

**Land Rover 4 Cyl. (1971-72)**

### DESCRIPTION

Zenith IV and IVE series carburetors are single barrel downdraft type. The IVE type is an emission control type carburetor which incorporates a fuel shut-off solenoid. This solenoid is not used in the IV type. The carburetor has an integral floatchamber, set close to venturi, which gives a high flooding angle and allows carburetor to give good performance under fast acceleration, harsh braking, or hard cornering.

### OPERATION

#### CHOKE OPERATION

Choke is a manual operated, spring loaded, butterfly type. When choke is closed, throttle is opened a preset amount by an interconnecting link. This is done to provide fast idle during cold starts. Increased vacuum in carburetor upon starting will open choke valve against spring pressure. This allows mixture to be leaned down to prevent over-choking. As engine warms up, choke lever is returned to normal running position and idle speed.

#### IDLING

When throttle is in idling position, fuel is supplied by slow-running jet. Fuel is obtained from metered side of main jet, through a calibrated opening. Fuel is mixed with bleed air from air intake. The resulting mixture is drawn through a passage to an idle hole, which is controlled by an idle mixture screw. Idling is controlled by an idle stop screw and idle mixture screw. Two small holes in carburetor bore, near edge of throttle valve, are connected to idle passage providing additional fuel mixture as throttle is opened. These holes known as progression holes allow fuel to flow into intake before fuel is allowed to come from main fuel outlet.

#### MAIN JET SYSTEM

When throttle is opened above idle speed, increased vacuum in waist of choke tube, on which is located the outlet from emulsion block, will cause fuel to be drawn from outlet tube that is fed by main and compensating jets. As fuel level in passages above jets falls, air will enter top of capacity wells. Air to compensating jet and to passage above main jet is controlled by a full throttle air bleed hole (which remains permanently open), and also at times by larger hole in ventilation screw. The latter hole being controlled by economy diaphragm valve. Fuel from outlet of emulsion block will be a air/fuel mixture when it arrives at outlet, and is further atomized as it meets air passing through choke tube and venturi.

#### ECONOMY VALVE

Located on floatchamber cover next to air intake. Under part throttle cruising manifold vacuum is high. Vacuum is applied on spring loaded side of economy valve diaphragm, thereby lifting valve from its seat, and admitting more air from air intake passage. This air leans out mixture to jets in order to ensure best possible fuel consumption. With valve off its seat, under high manifold vacuum, volume of air for cruising is controlled by ventilation screw. When vacuum in manifold is low, at wide throttle openings, diaphragm valve remains on its seat, and volume of air to jets is restricted to small full throttle air bleed in channel below valve. Action of economy valve is entirely automatic.

#### FUEL CUT-OFF VALVE

Solenoid valve is fitted to IVE type carburetors only. When ignition is shut off, valve cuts off idling fuel supply. This prevents engine from dieseling.

#### ACCELERATOR PUMP

Purpose of pump is to prevent any hesitation in accelerating. When throttle is opened quickly, pump supplies a metered amount of extra fuel to normal mixture. When piston is at top of its stroke, fuel is admitted from float chamber through a non-return valve. When throttle is opened, piston is forced down and fuel is forced through pump jet. Travel of piston may be varied as required, giving a short stroke for summer and a long stroke for winter.

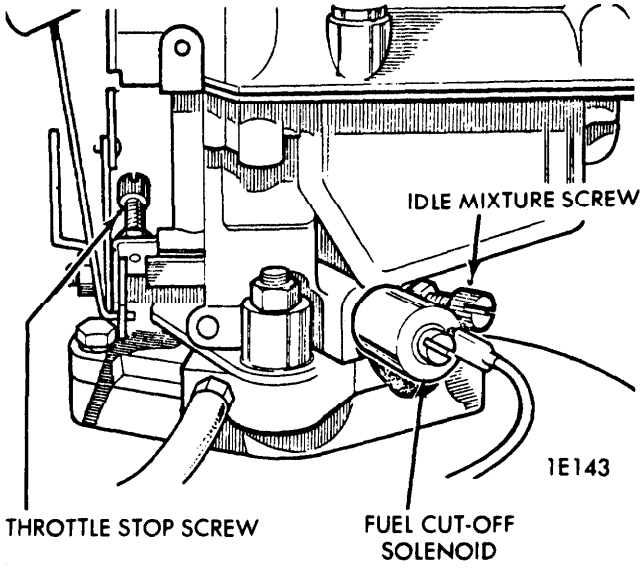
#### AUTOMATIC IGNITION ADVANCE CONTROL

A connection is provided in throttle body for vacuum to distributor. No attempt to change the size or location of hole should be attempted.

### ADJUSTMENTS

#### IDLE SPEED & MIXTURE

*NOTE — Engine must be at normal operating temperature before adjustments are made to carburetor.*




**CARBURETOR ADJUSTMENTS**

#### IVE TYPE CARBURETOR

1) Loosen mixture screw lock nut, turn screw all the way in, and turn back out 3/4 turn. Adjust throttle screw to 800 RPM. Readjust idle mixture screw to highest RPM at this throttle setting. Readjust throttle stop screw to 800 RPM.

2) Lean down mixture by turning screw clockwise until 750 RPM is reached. Then richen mixture 1/4 of a turn counterclockwise and tighten mixture screw lock nut. Adjust throttle stop screw until a final setting of 800 RPM is reached.

#### IV TYPE CARBURETOR

Adjust throttle stop screw to 500 RPM. Adjust idle mixture screw so engine will idle evenly with no tendency to stall when throttle is snapped shut. Readjust throttle stop screw to idle speed of 500 RPM.

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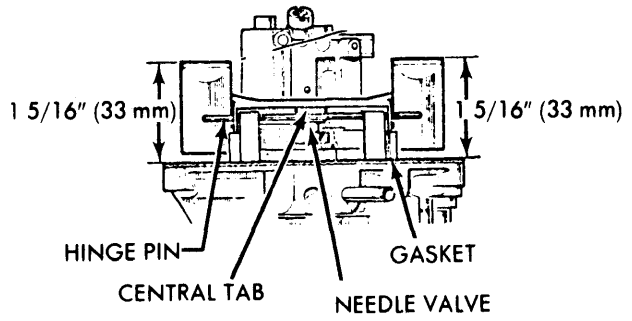
### COLD (FAST) IDLE

Bend interconnecting link between choke valve and throttle valve to achieve fast idle RPM. Make adjustments when choke valve is fully closed.

### FLOAT LEVEL ADJUSTMENT

To check level, remove floatchamber. Invert float so that float arm closes needle valve. Measure from face of gasket to highest point of float. Distance should be 1 5/16 in. (33 mm). Bend only central tab when adjusting.

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**FLOAT LEVEL ADJUSTMENT**

## OVERHAUL

### CARBURETOR REMOVAL

1) Release screws holding clips at air inlet pipe. Unscrew fuel line at top cover. Remove complete choke cable assembly from carburetor. Disconnect hose from PCV valve at carburetor adapter union (IVE type only). Disconnect throttle linkage from throttle lever by releasing clips at spherical joint.

2) Disconnect electric lead at fuel cut-off solenoid (IVE type only). Remove two nuts and washers from mounting studs and remove carburetor.

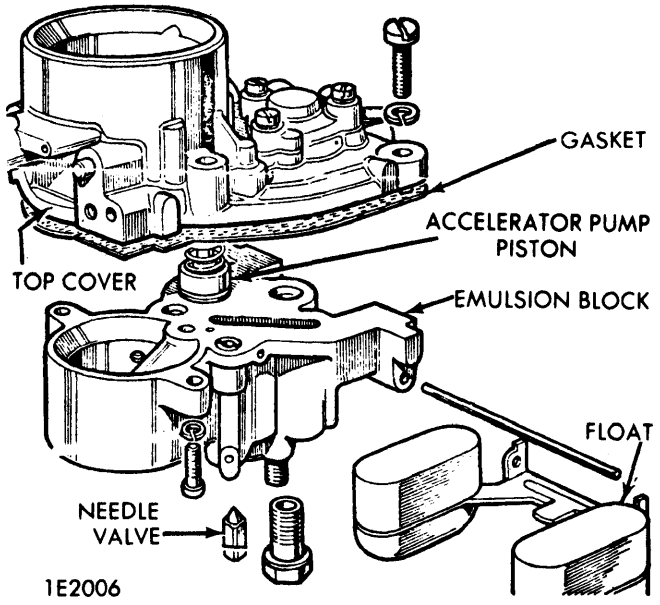
### LINKAGE REMOVAL

Remove two cotter pins and remove innerconnecting link between choke and throttle levers. Remove cotter pin from throttle lever-to-accelerator pump spindle lever. Remove pin and two plain washers. No further linkage dismantling is necessary to disassemble carburetor.

### TOP COVER & EMULSION BLOCK REMOVAL

1) Remove two long and two short set screws and lock washers located at corners of top cover. Remove top cover and emulsion block from carburetor body.

2) Push out float hinge pin and remove float, taking care not to bend float. Remove needle valve, unscrew needle valve housing and remove sealing washer. Unscrew and remove set screws and lock washers. Separate emulsion block from top cover assembly. Take care not to drop accelerator pump. Remove gasket.

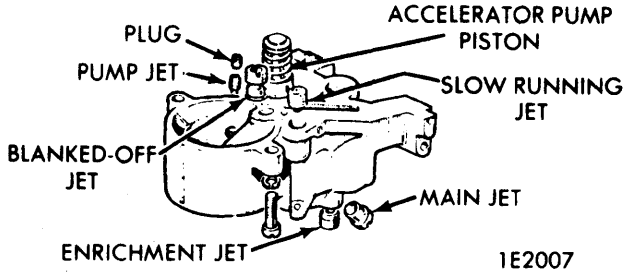



**TOP COVER & EMULSION BLOCK**

### EMULSION BLOCK DISASSEMBLY

1) Lift out accelerator pump piston assembly. At base of accelerator pump housing bore is a ball valve retained by a circlip. To clean, wash with gasoline and use an air blast to remove sediment. Unscrew slow running jet from emulsion block upper face and use air blast to clean jet.

2) Remove blanked-off jet body from emulsion block upper face. Unscrew pump jet tapping plug from side of emulsion block, followed by pump jet. Unscrew and remove main and enrichment jets from block. These jets are cadmium in the IVE type carburetor and must not be replaced with brass finished type.



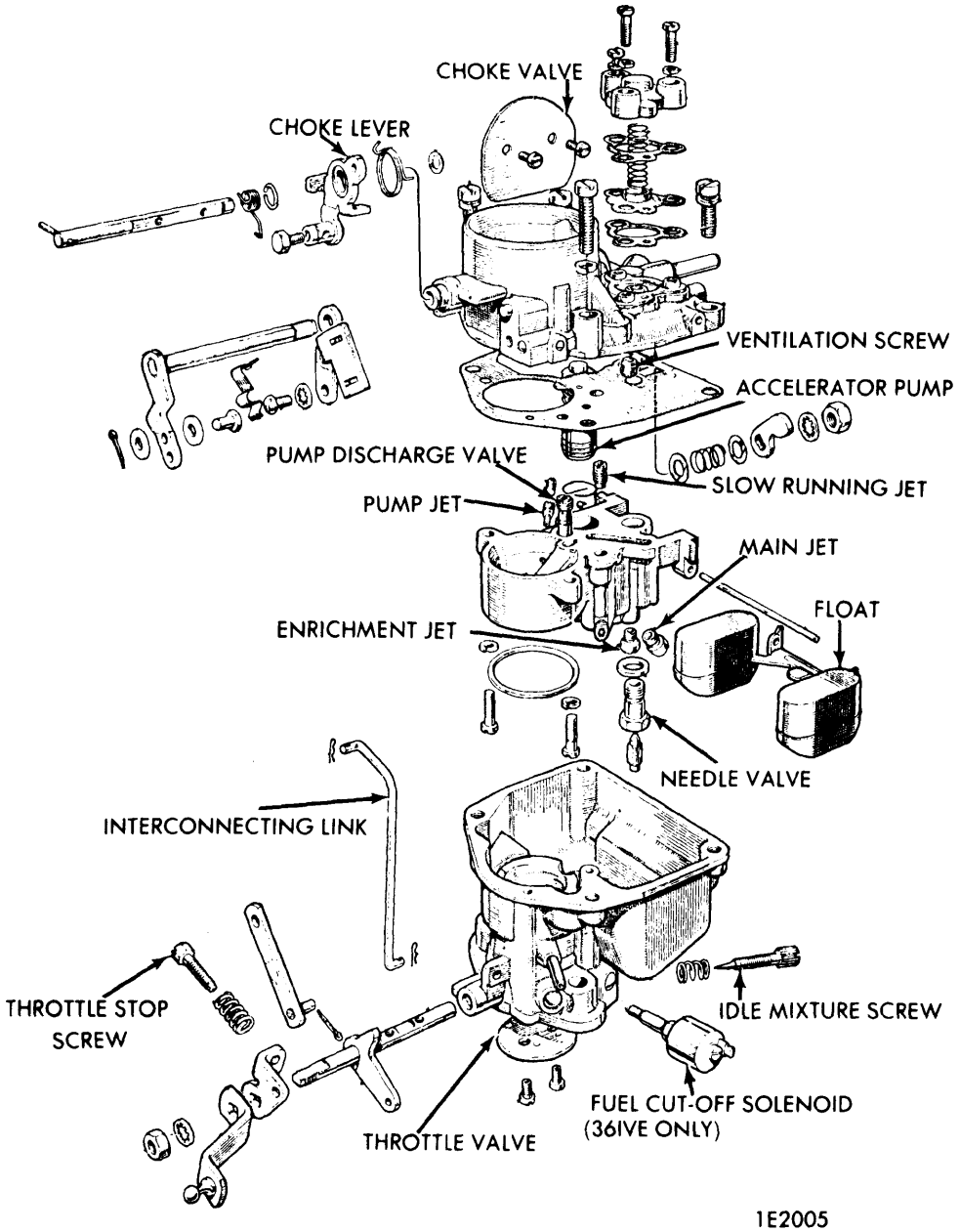

**EMULSION BLOCK DETAILS**

### CARBURETOR BODY DISASSEMBLY

1) Unscrew idle mixture screw and examine tapered end for wear. Any sign of wear on tapered end will be cause for replacement. Unscrew fuel cut-off solenoid valve from housing. No disassembly of solenoid is possible.

2) Remove two nuts and lock washers and separate adapter from carburetor body. If necessary to remove throttle butterfly from carburetor, remove two special screws (on spindle), remove butterfly valve, and slide spindle out of carburetor body. *NOTE – Two new screws must be used for reassembly of butterfly valve to throttle spindle.*

## ZENITH 361V & 361VE 1-BARREL (Cont.)




**36IV & 36IVE CARBURETOR**

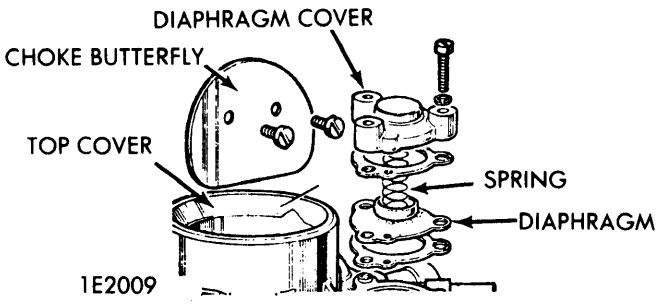
## ZENITH 361V & 361VE 1-BARREL (Cont.)

### TOP COVER DISASSEMBLY

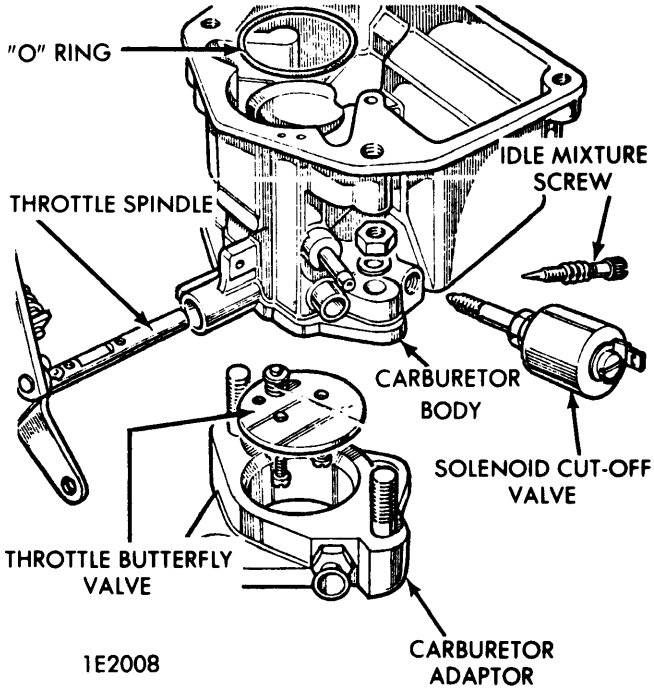
1) Unscrew three screws and lock washers from economy valve cover. Remove spring and cover. Ease diaphragm gasket away from locating bosses and remove.

2) If required to remove choke spindle, detach end of large spring from choke operating tab. Remove choke butterfly screws and take out butterfly. Withdraw spindle from housing and take care not to lose thin washer. *NOTE — Two new screws must be used for reassembly of butterfly valve to spindle.*

3) Remove ventilation screw from angled tapping in top cover lower face.




**TOP COVER DETAILS**




**CARBURETOR BODY DETAILS**