

FORD MOTOR CO. AUTOMATIC LEVEL CONTROL

Ford
Mercury
Meteor

DESCRIPTION

System is designed to function only after a load of three passengers (or equal weight) is added to the vehicle. As load is added, air sleeve shock absorbers inflate and extend, raising rear of vehicle to proper level. As load is removed, shock absorbers deflate and collapse, to maintain proper level. System consists of vacuum operated compressor, air bleed valve, pressure reservoir, height control valve and link, two air sleeve shock absorbers, and flexible nylon air lines.

TESTING & ADJUSTMENT

COMPRESSOR OUTPUT TEST

Turn climate control system off, if equipped. Place transmission in "N"; run engine until fast idle screw is off fast idle cam. Turn engine off. Release compressed air in system, using tire-type bleed valve at compressor. Remove high pressure line, at compressor, and attach suitable test gauge (T68N-5A681-B). Start engine. Pressure should build to 60-90 psi in a few seconds. If this pressure is not observed, accelerate-decelerate engine to build pressure. Turn engine off. Observe test gauge reading for evidence of compressor air leak. If air leak is present, apply leak-detector fluid at all connections and at diaphragm between first and second stage housings. Tightening of housing thru-bolts may correct diaphragm leak. Apply leak detector fluid at test gauge connections. Correct any leak by tightening screws and/or connections, or by replacing parts. If

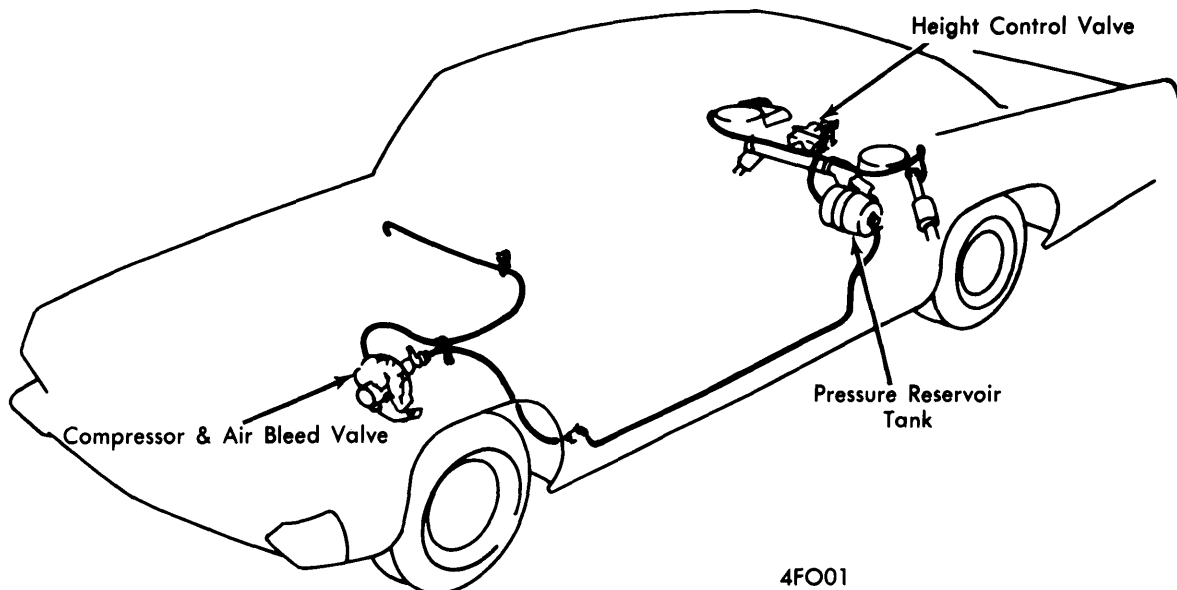
compressor fails to cycle, check vacuum line before removing compressor. Satisfactory pressure buildup indicates problem is in height control valve.

SYSTEM FUNCTIONAL TEST

Measure and record rear fender opening height. Discharge system completely, through compressor bleed valve. Place 400-lb. load in trunk or on tailgate. Again measure and record fender opening height. Start engine and allow to idle. Determine if compressor is operating (feel with hand). If not, check vacuum line for proper connections. If compressor is still inoperative, replace it. If unit is operating, run engine until compressor stops (10-15 min.). Measure and record rear fender opening height. Difference between this measurement and measurement after placing weight on vehicle should be 3/4" minimum. If less than 3/4", accelerate-decelerate engine to determine if measurement changes. Remove load from vehicle. After two minutes, measure and record rear fender opening height. Difference between this measurement and original measurement must not be greater than 1/4".

CONTROL VALVE ADJUSTMENT

Adjustment should be performed with full fuel tank. Raise curb-weight vehicle on platform hoist and support front and rear suspension. Detach link assembly from rear upper control arm. Manually operate lever until only residual pressure is left in air sleeve shocks. Loosen adjusting nut on valve assembly lever arm. Adjust lever arm such that link assembly will require 1/4" downward movement to enter hole in upper arm. Retighten adjusting nut to 70-80 IN. lbs. Attach link to upper arm and perform System Functional Test, as previously described. Readjust plastic block, if necessary.



4FO01

AUTOMATIC AIR LEVELING SYSTEM

FORD MOTOR CO. AUTOMATIC LEVEL CONTROL (Cont.)

CONTROL VALVE TEST

Disconnect overtravel lever from link. Exhaust air from shocks by holding lever down until air sleeves deflate. Start engine and run at idle. Pressurize system with external source, using tire-type valve (90-100 psi). Hold lever down, in exhaust position, until air sleeves deflate. If sleeves do not deflate, remove exhaust adaptor from control valve and hold lever down to deflate sleeves. If sleeves now deflate, replace adaptor, "O" ring, and filter. If defective condition is not corrected by any of the above, replace control valve. Hold lever up, in intake position, until sleeves inflate. If sleeves inflate and hold, proceed to Time Delay Check. If sleeves inflate, then leak down, check lines, fittings, and sleeves for air leaks. If sleeves still do not inflate, perform Height Control Valve Leak Test.

TIME DELAY CHECK

- 1) Discharge system completely by bleeding air through air bleed valve at compressor. Disconnect link and hold height control valve lever down to exhaust air sleeve shocks. Disconnect lines at intake and exhaust ports of height control valve. Connect external air source to inlet port and apply 90 psi. Move valve lever one inch down from neutral position. Quickly move valve lever upward two inches. The delay before air starts to escape should be 4-30 seconds. This checks air intake time delay. Remove air source and plug intake port.
- 2) Connect external air source to exhaust port and apply 90 psi. Move valve lever up one inch from neutral position. Quickly move valve lever down two inches. Delay before air starts to escape should be 4-30 seconds.
- 3) If either delay is not within specifications, there has been either a loss of silicone fluid from height control valve or valve has lost its internal adjustment due to damage or wear. Replace height control valve in either case.

HEIGHT CONTROL VALVE LEAK TEST

Remove height control valve. Clean exterior of valve and connect test gauge and air pressure source to intake adaptor. Apply 80-100 psi. Submerge unit in water. No air should escape if overtravel lever is in neutral position. If bubbles escape, replace valve. Shut off air pressure and detach test gauge for air intake port. Plug intake port with fill valve (female end). Repeat above test. If bubbles escape from exhaust port, replace valve. If air escapes around edge of cover plate, replace gasket. After removing unit from water, actuate overtravel lever to expel any water.

LINES & FITTINGS LEAK TEST

Disconnect over travel lever from link. Start engine and allow to idle. Pressurize system, using external source, to 90 psi. Hold lever up in intake position for two minutes. Leak check all connections with leak detector fluid.

AIR SLEEVE LEAK TEST

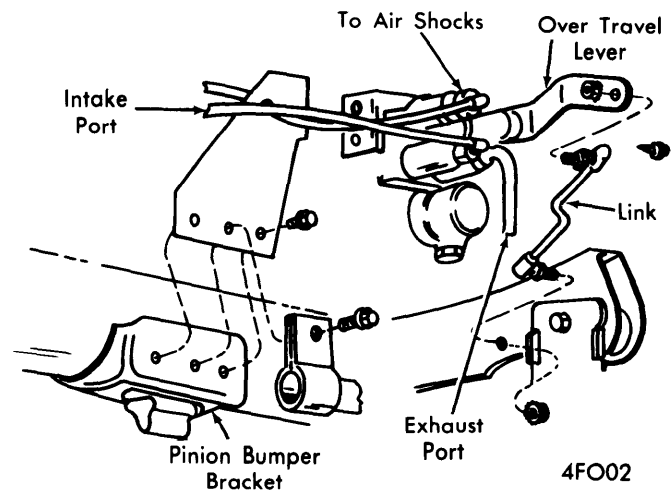
Remove air sleeve shock absorbers. Inflate air sleeves individually to 90 psi, using fill valves. Submerge in water and check for leaks. Replace leaking sleeves.

REMOVAL & INSTALLATION

COMPRESSOR

Removal — Discharge system by bleeding air through air bleed valve. Disconnect vacuum hose and flexible line from compressor. Remove three nuts securing compressor and bracket assembly to front fender apron. Remove compressor and bracket assembly.

Installation — Apply suitable sealer (ESB-M4G-113A) around holes in left inner fender apron and install compressor and bracket assembly. Tighten nuts. Connect vacuum hose and line. Tighten fitting and pressurize system, using an external air source, to 90 psi. Check fitting for leaks.



HEIGHT CONTROL VALVE INSTALLATION

HEIGHT CONTROL VALVE

Removal — Discharge all air from system and disconnect lines at intake and exhaust ports of valve. Disconnect link from valve lever at rear axle upper control arm. Remove screws from bracket. Remove height control valve and bracket assembly from vehicle.

Installation — Reverse removal procedure.

AIR SLEEVE SHOCK ABSORBERS

Removal — Discharge all air from system. Disconnect lines from rear shocks and remove shock absorber attaching nut, washer and insulator from upper stud at top side of spring upper seat. With shock compressed, clear the hole in spring seat and remove inner insulator and washer from upper attaching stud. Remove self-locking attaching nut and disconnect shock absorber lower stud from mounting bracket on rear axle housing.

Installation — Reverse removal procedure.

RESERVOIR

Removal — Discharge all air from system and disconnect line fittings at ends of reservoir tank. Remove reservoir bracket-to-crossmember bolts and remove reservoir.

Installation — Reverse removal procedure.