FORD MOTOR CO.

Ford
Mercury

DESCRIPTION

The automatic level control system is designed to function after a load of three passengers (or equal weight) is added to the vehicle. As the load is added, air sleeve shock absorbers inflate and extend, raising rear of vehicle to proper level. The system consists of the following components: Vacuum operated compressor located on the left inner fender apron, Air bleed valve located on the compressor, Pressure resevoir tank attached to the left rear side of the number 4 crossmember, Height control valve and linkage attached to the center of the number 4 crossmember, Air sleeve shock absorbers installed in place of standard shocks, and Flexible ¼ " nylon tubing to connect the various components.

TESTING & ADJUSTMENT

SYSTEM FUNCTIONAL TEST

1) Measure and record height of rear fender opening. Discharge system completely at compressor bleed valve. Place 400 lb. load in trunk or on tailgate. Again measure and record height of rear fender opening. Start and idle engine. Feel compressor to determine if it is operating; if not, check rubber vacuum line for blockage or improper connections. If compressor is still inoperative, replace it. If unit is operating, let it run for 10-15 minutes until compressor stops.

2) Measure and record height of rear fender opening. Difference between this measurement and measurement after placing weight on vehicle should be ¾ " minimum. If less than ¾ ", accelerate-decelerate engine to determine if measurement changes. Remove load from vehicle. After two minutes, measure and record height of rear fender opening. Difference between this measurement and original measurement must not be greater than ¼ ".

COMPRESSOR OUTPUT TEST

1) Turn climate control system off, if equipped. Place transmission in "N", and 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, race engine a few times to build pressure.

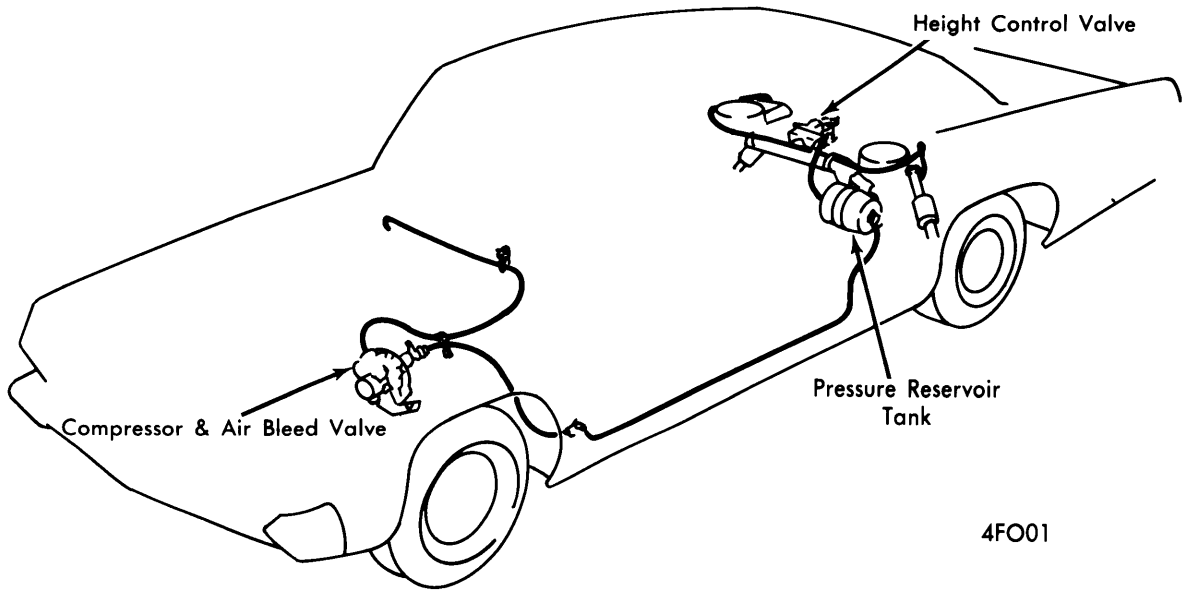
2) If compressor fails to function, check rubber vacuum line for obstructions and proper connections. If compressor still fails to function or if compressor output is low, the distributor valve pivot screw may be loose or compressor may need servicing. *See Servicing in this article.*

3) 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 1st and 2nd stage housings. Tightening of housing through-bolts may correct diaphragm leak. Correct leaks by tightening screws and connections, or by replacing parts.

HEIGHT CONTROL VALVE

Function Testing – **1**) 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 to 90 psi. Hold lever down in exhaust position until 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 these replacements, replace height control valve.

2) Hold lever up in intake position until sleeves inflate. If sleeves inflate and hold, proceed to Time Delay Test. If sleeves inflate, then leak down, check lines, fittings, and sleeves for air leaks. If sleeves still do not inflate, perform Leak Test.



AUTOMATIC AIR LEVELING SYSTEM

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Time Delay Test – 1) Discharge system completely by bleeding air at bleed valve on 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.

2) Connect external air source to exhaust port and apply 90 psi. Move valve 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 valve in either case.

Leak Test – 1) Remove height control valve. Clean exterior of valve and connect test gauge and air pressure source to intake adaptor. Apply 90 psi. Submerge unit in water. No air should escape if overtravel lever is in neutral position. If bubbles escape, replace valve. If air escapes around the edge of valve cover plate, gasket must be replaced.

2) Shut off air pressure and detach test gauge from air intake port. Plug intake port with fill valve. Repeat test described in step 1). 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.

Adjustment – 1) Adjustment should be performed with full fuel tank. Raise 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.

2) Adjust lever arm so that link assembly will require ¼" downward movement to enter hole in upper arm. Retighten adjusting nut to 70-80 INCH lbs. Attach link to upper arm and perform System Functional Test. If necessary, readjust lever arm.

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

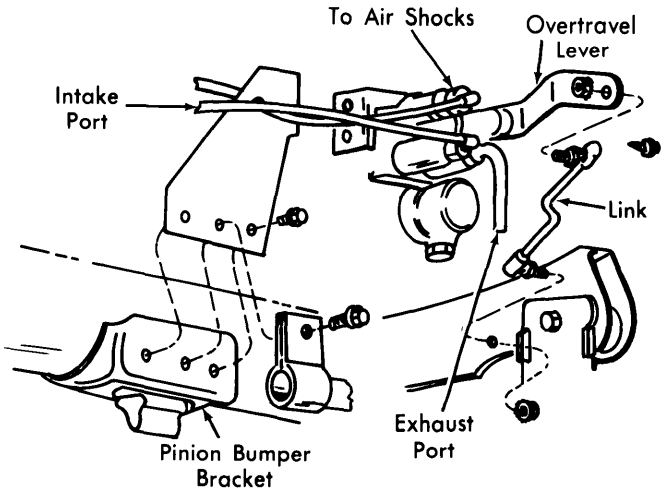
Remove air sleeve shock absorbers. Inflate air sleeves individually to 90 psi, using fill valves. Submerge in water and check for leaks. Replace leaking sleeves.

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.

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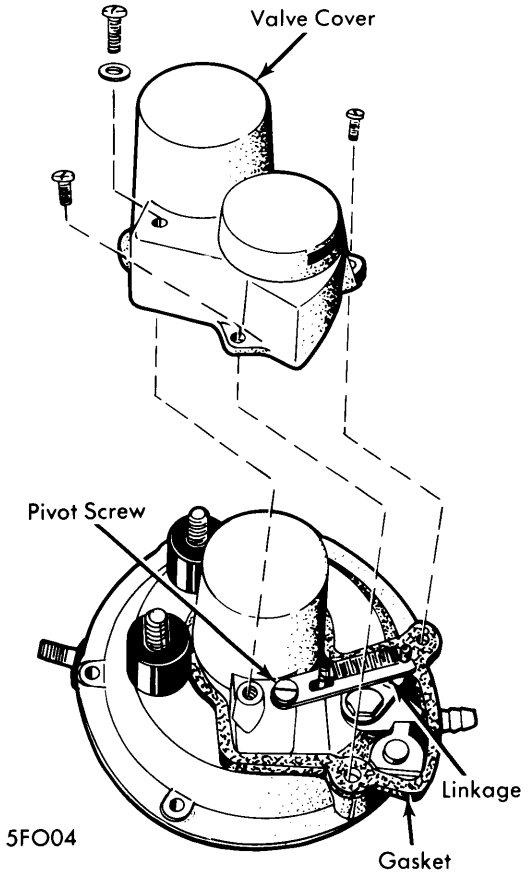
SERVICING

COMPRESSOR

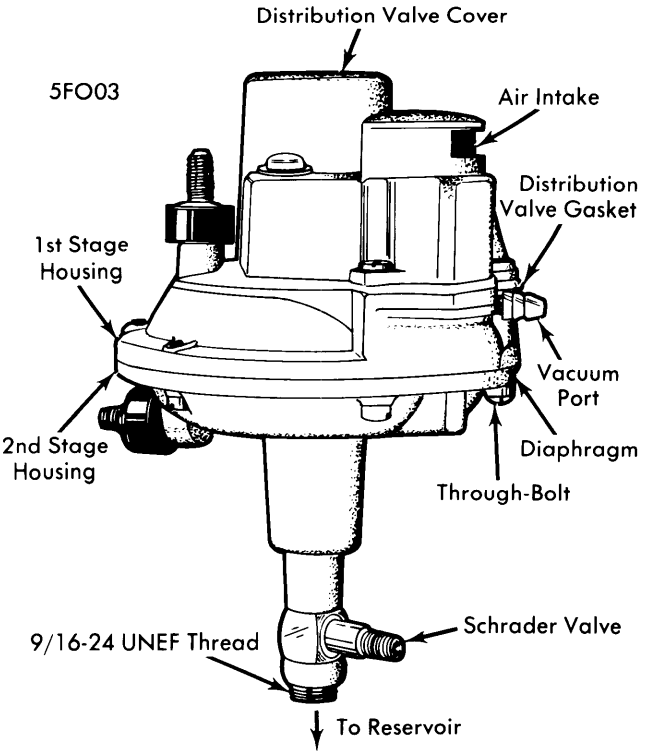
Distribution Valve Pivot Screw – 1) If compressor does not function, or functions with no output pressure, distributor valve pivot screw may have fallen out. To check, remove compressor from vehicle. Remove the three screws that attach distribution valve cover to 1st stage housing. If pivot screw is in place, remove. Apply a drop of Loctite to screw and reinstall. Torque to 10-14 INCH lbs.



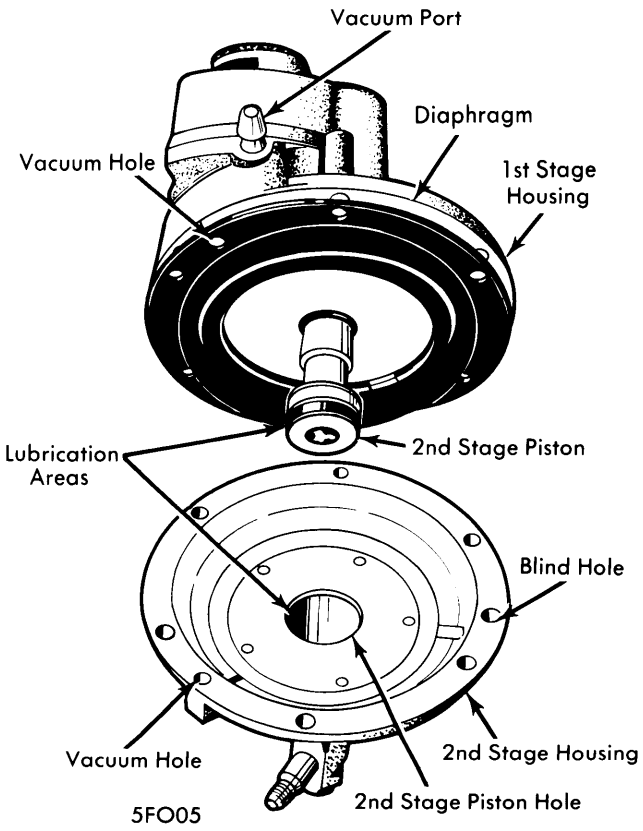
DISTRIBUTION VALVE PIVOT SCREW LOCATION

2) Reassemble compressor and torque screws to 30-50 INCH lbs. Test compressor using Compressor Output Test. If compressor still does not function, replace. If compressor functions, but output is low, see Compressor Lubrication.

Lubrication – If compressor functions, but output pressure is low, the second stage cylinder surface and piston felt ring may need lubrication. To lubricate, remove compressor from vehicle. Remove six through-bolts and carefully separate the two halves of compressor. Apply lubricant to felt ring and cylinder wall. Reassemble compressor and re-test. If unit still fails to function, replace.



COMPRESSOR ASSEMBLY



2ND STAGE PISTON & PISTON BORE