

Automatic Level Control

1968-71 CONTINENTAL & 1972-73 FORD, MERCURY, METEOR AUTOMATIC LEVEL CONTROL

Ford (1972-73)
Lincoln (1968-71)
Mercury (1972-73)
Meteor (1972-73)

DESCRIPTION

System is designed to function only after a load equal to three passengers 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 retract, 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.

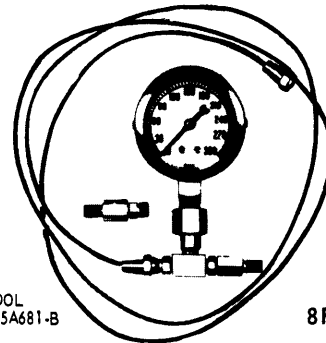
TESTING & ADJUSTMENT

SYSTEM FUNCTIONAL TEST

- 1) Measure and record rear fender opening height. Discharge system completely, through compressor bleed valve. Place a 400-lb. load in trunk or on tailgate. Again measure and record fender opening height.
- 2) 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.).
- 3) 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.
- 4) 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".

COMPRESSOR OUTPUT TEST (1968-69)

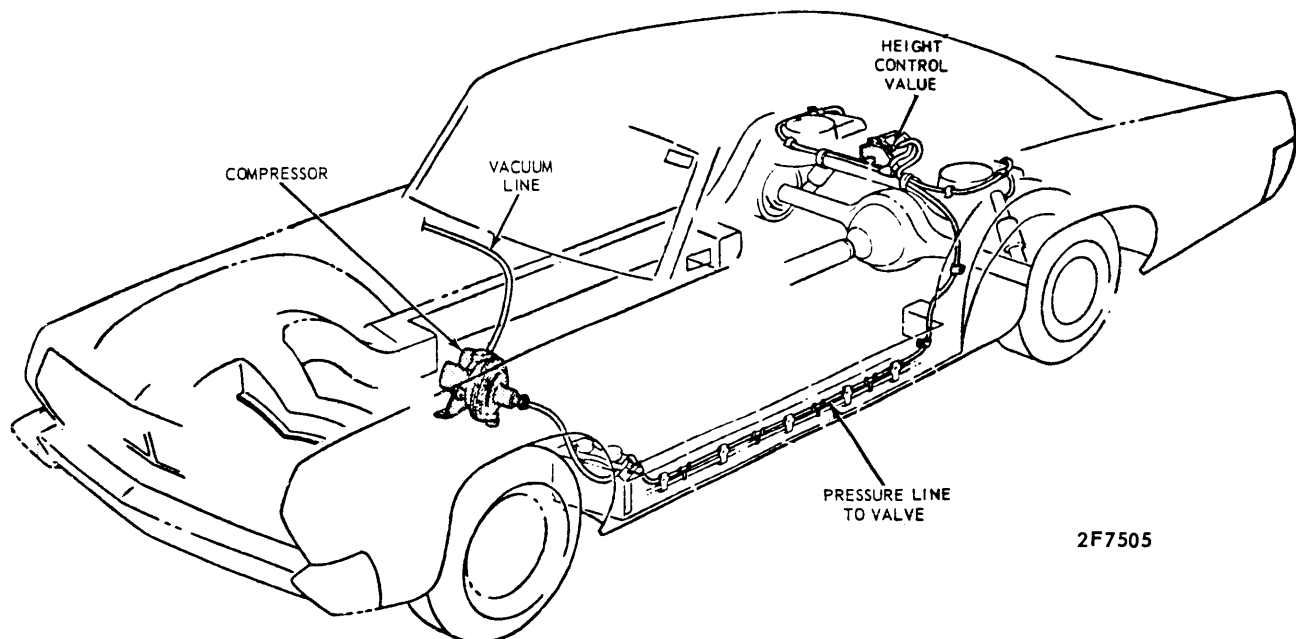
Disconnect output line from compressor and connect a suitable gauge (T68N-5A681-B) to output line fitting. Start engine and note reading on gauge. It should read 60-80 psi in one minute. If compressor output is below normal, check vacuum supply at compressor to make certain that it is adequate. Check primary filter for obstructions before replacing compressor.



AIR PRESSURE GAUGE TOOL SET

COMPRESSOR OUTPUT TEST (1970-73)

- 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.
- 2) 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.



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AUTOMATIC AIR LEVELING SYSTEM

1968-71 CONTINENTAL & 1972-73 FORD, MERCURY, METEOR AUTOMATIC LEVEL CONTROL (Cont.)

3) 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 through-bolts may correct diaphragm leak.

4) Apply leak-detector fluid at all 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.

REGULATOR ADJUSTMENT (1968-69)

NOTE — Regulator may be adjusted if regulator pressure is under 100 psi with reservoir pressure at a minimum of 140 psi. If regulator pressure exceeds 130 psi, regulator must be replaced. To adjust regulator, remove boot and reposition sleeve and retainer deeper into body of regulator, using a deep socket. If regulator pressure remains under 100 psi, replace regulator.

CONTROL VALVE ADJUSTMENT (1968-69)

1) Adjustment should be performed with a full fuel tank (or equivalent load). Raise vehicle on hoist and support rear axle. Load rear of vehicle to achieve a riding height measurement of 6.44", as measured from axle to frame, at axle rebound bumper.

2) Remove shock absorber line at control valve. Connect a suitable fill valve (part of tool T68N-5A681-B) to shock absorber line. Inflate shock absorber to 8-15 psi, and jounce vehicle to equalize suspension.

3) Connect test gauge to shock absorber adapter on control valve and attach 80-110 psi air source. Loosen overtravel lever adjusting nut and hold overtravel body down in exhaust position until air escapes from exhaust valve port. Slowly move overtravel body and tighten nut at point of minimum air bleed. With nut tightened, a slight continuous air bleed should be noticeable.

CONTROL VALVE ADJUSTMENT (1970-71)

1) Adjustment should be performed with full fuel tank and the equivalent of a three passenger load. Raise vehicle and support front and rear wheels.

2) Disconnect shock absorber line from height control valve and connect test gauge to end of line. Attach air pressure source to test gauge and maintain 8-15 psi pressure in shock absorbers. Jounce vehicle to equalize rear suspension.

3) Loosen overtravel lever adjusting nut and lower valve arm until air escapes from exhaust port. Slowly move valve arm up until air bleed stops, then tighten adjusting nut. Remove test gauge and air supply, reconnect line to control valve.

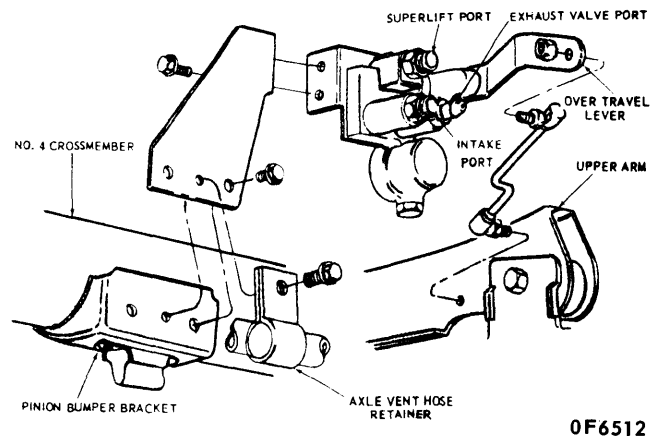
CONTROL VALVE ADJUSTMENT (1972-73)

1) 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.

2) 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

1/16" downward movement, on 1972 models, or 1/4" downward movement, on 1973 models, to enter hole in upper control arm.

3) Retighten adjusting nut to 70-80 INCH lbs. Attach link to upper arm and perform System Functional Test, as previously described. Readjust plastic block, if necessary.



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HEIGHT CONTROL VALVE INSTALLATION

CONTROL VALVE TEST

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, using tire-type valve, to 90-100 psi.

2) 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 the above, replace control valve.

3) 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 Test, as described.

TIME DELAY CHECK

1) Disconnect overtravel lever from link and lines at shock air intake ports. Connect test gauge to intake valve port and apply 95 psi. Move overtravel lever one inch down from neutral position, as measured from end of lever. Quickly move lever upward two inches.

2) The delay before air starts to escape from the port should be 4-30 seconds. Remove test gauge and plug intake port with fill valve (female end).

3) Connect test gauge to air sleeve port and repeat above test, for downward position of lever. If either delay is not within specifications, there has been a loss of silicone fluid or valve has lost its adjustment due to damage or wear.

HEIGHT CONTROL VALVE TEST

1) Remove height control valve. Clean exterior of valve, then connect test gauge and air pressure source to intake adaptor.

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2) Apply 80-100 psi. Submerge unit in water. No air should escape if overtravel lever is in neutral position. If air escapes, replace valve. Shut off air pressure and detach test gauge from air intake port.

3) 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.

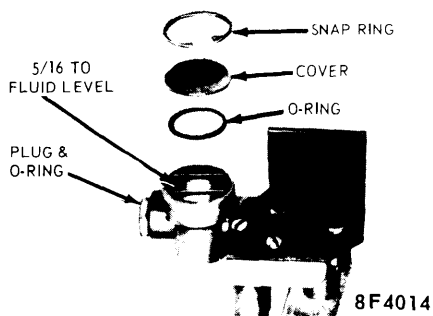
SILICONE FLUID REPLACEMENT

1) Remove control valve and clean exterior of valve. Position valve with delay plug on top. Remove delay plug and drain silicone fluid from chamber. Remove and discard "O" ring from chamber (see illustration). Remove cover plate retaining ring. Remove the delay cover from valve body. Extract "O" ring from chamber. Discard ring.

2) Place a new "O" ring over the delay plug and install plug. Torque plug to 20-30 INCH lbs. Pour silicone fluid into delay piston chamber until fluid level is 5/16" below top edge of the body.

3) Hold control valve body in a vise, with delay chamber slightly elevated. Carefully operate the lever, to purge trapped air from the fluid. Install a new "O" ring, install cover, and secure with snap ring.

4) Place control valve vertically in a vise, with delay chamber down. Move the overtravel lever up and down for one minute, to vent air from delay piston chamber. Perform Time Delay Check off the vehicle. If delay is not within 4-30 second specification range, recheck fluid level in chamber. If level is proper, replace valve.



REPLACING SILICONE FLUID

LINES & FITTINGS LEAK TEST

Disconnect overtravel lever from link. Start engine and allow to idle. Pressurize system, using an external source, to 90-100 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 50-60 psi, using fill valves. Submerge in water and check for leaks. Replace leaking sleeves.

REMOVAL & INSTALLATION

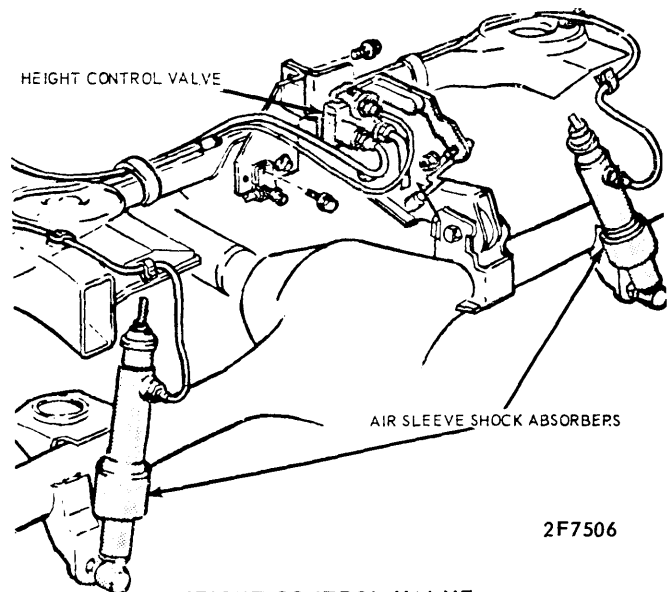
COMPRESSOR

Removal – Disconnect vacuum hose and high pressure line from compressor. Remove three nuts connecting compressor and bracket to front fender apron. Remove compressor and bracket assembly. Remove two nuts securing compressor to bracket.

Installation – Reverse removal procedure.

HEIGHT CONTROL VALVE

Removal – Exhaust all air from system and disconnect two air lines from valve intake and shock absorber ports. Disconnect link from overtravel lever by removing one nut and lock washer. Remove one screw securing the axle vent hose to bracket. Allow retainer and hose to hang loose. Remove two screws securing height control valve and bracket to crossmember and remove valve and bracket.



HEIGHT CONTROL VALVE
AND SHOCK ABSORBER INSTALLATION

Installation – Reverse removal procedure.

AIR SLEEVE SHOCK ABSORBERS

Removal – Raise vehicle and place jack stands under axle, to compress shock absorber. Disconnect lines at each shock, to release air from the system. Remove shock attaching nut, washer, and insulator from upper stud at top side of coil spring upper seat. Compress shock and free from mounting hole. Disconnect shock from lower mounting and remove shock from vehicle.

Installation – Reverse removal procedure.

RESERVOIR

Removal – Exhaust all system air through compressor. Disconnect hose fittings at ends of reservoir. Remove two reservoir bracket-to-crossmember bolts. Remove reservoir.

Installation – Reverse removal procedure.