

GMC MOTOR HOME CHASSIS

GMC – Motor Home Chassis

DESCRIPTION

Air Bellows type rear suspension consists of air bags, height control valves, control arms, an air compressor, an air reservoir, and shock absorbers. Compressed air for system is supplied by an air compressor and stored in an air reservoir. An air bellows is mounted on each side, between two control arms. Air is supplied to air bellows from air reservoir through height control valves. Air bellows absorb road shocks, and also control rear vehicle height. Double-acting, gas filled shock absorbers are mounted to the frame at the bottom and to the top of the control arms. Height control valves automatically maintain constant vehicle height by controlling flow of air into and out of suspension system air bellows. Optional Power Level system is available which allows driver to manually override automatic leveling action.

ADJUSTMENT

WHEEL ALIGNMENT SPECIFICATIONS & PROCEDURES

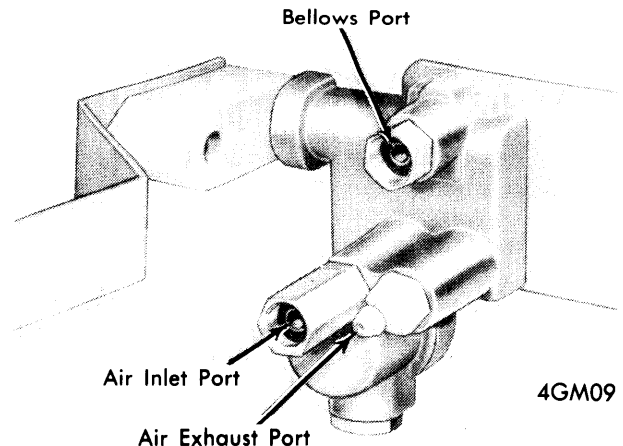
See *Wheel Alignment Specifications & Procedures* in *WHEEL ALIGNMENT* Section.

HEIGHT CONTROL VALVE

NOTE – Silicone fluid should be drained from valve before making adjustments.

Overtravel Lever Center Position – 1) With height control valve mounted in a vise, remove cover from valve. Remove exhaust fitting and screen from control valve, and scribe a line $1\frac{3}{8}$ " below plug end on overtravel lever. Attach vacuum supply hose to exhaust port and an air supply hose to inlet port. Mount a dial indicator to unit with contact tip of indicator touching overtravel lever at scribed mark.

2) Move overtravel lever to full exhaust position (delay piston at top of bore) without overtraveling, and zero dial indicator at this point. Move overtravel lever to full air intake position (delay piston at bottom of bore) and note indicator reading. Divide travel dimension by two, then move lever back this amount to center lever.

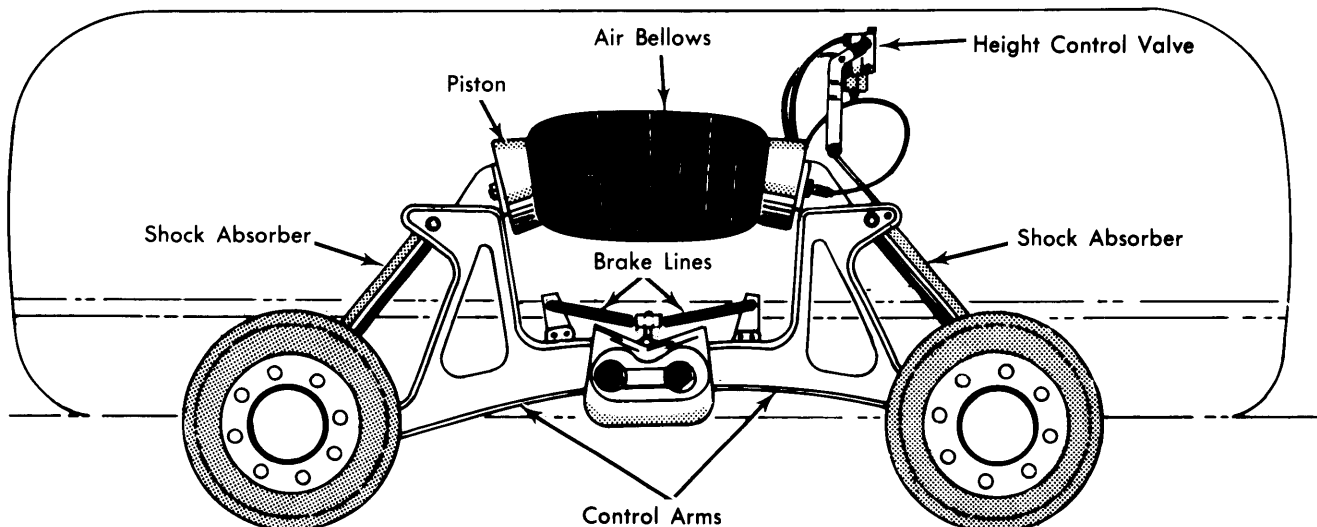


HEIGHT CONTROL VALVE PORT IDENTIFICATION

Air Intake & Exhaust Valve Lever – With overtravel lever center position adjusted, apply 80-110 psi air pressure and vacuum of 15 inches of mercury to control valve. Starting at true center, slowly move overtravel lever until air intake valve just begins to open. Lever movement should be .025-.027". Bend lever to adjust. Repeat procedure for exhaust valve. Lever movement for exhaust valve should be .035-.037". Bend lever to adjust.

Air Inlet Time Delay Check – With air intake and exhaust valve lever properly adjusted, refill valve assembly with silicone fluid and connect air supply hose to valve air inlet port. Move overtravel lever upward quickly and measure time before air starts to escape from bellows port. Delay should be 4-18 seconds. If not within range, repeat valve lever adjustment.

Air Exhaust Time Delay Check – With air intake and exhaust valve lever properly adjusted, refill valve assembly with silicone fluid and connect vacuum supply hose to air exhaust port. Adjust vacuum supply to 15 inches of mercury. Move overtravel downward quickly and measure time before vacuum gauge begins to drop off. Delay should be 10-15 seconds. If not within range, repeat valve lever adjustment.

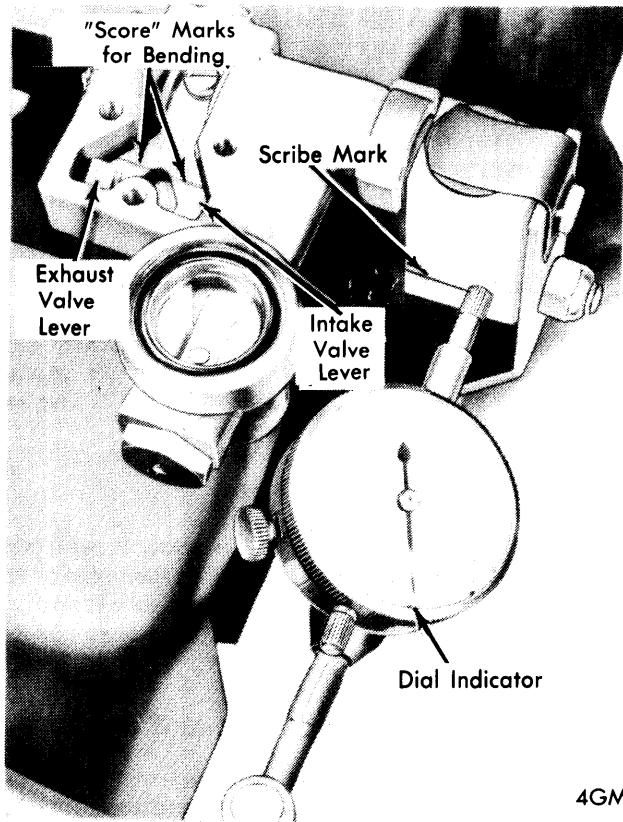


GMC MOTOR HOME REAR SUSPENSION

4GM01

Rear Suspension

GMC MOTOR HOME CHASSIS (Cont.)



4GM08

ADJUSTING AIR VALVE LEVER GAPS

REMOVAL & INSTALLATION

AIR COMPRESSOR/PRESSURE SWITCH

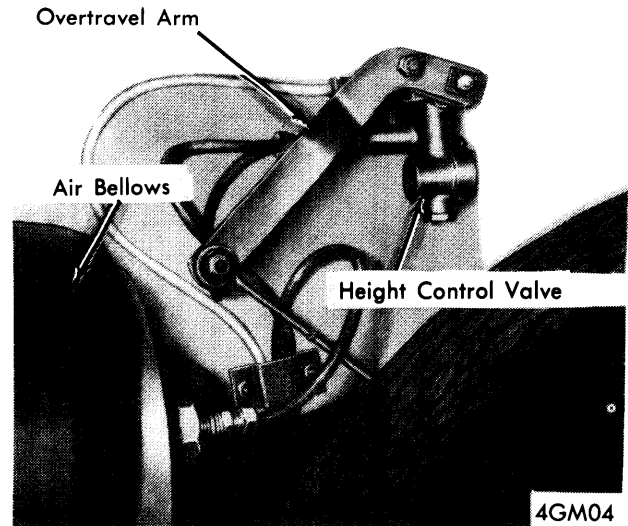
Removal — Raise and support left front corner of vehicle. Release pressure from air reservoir, and remove air line and wiring at pressure switch assembly. Remove compressor bracket attaching bolts, and remove compressor and pressure switch assembly from vehicle. Disconnect motor lead in pressure switch, and ground wire from mounting bracket. Remove four compressor-to-mounting bracket attaching bolts and remove compressor from bracket. Disconnect pressure fitting at mounting bracket and remove switch assembly from bracket.

Installation — To install, reverse removal procedure. Run compressor to pressurize suspension system.

HEIGHT CONTROL VALVE

Removal — Raise vehicle slightly, and support under frame to prevent vehicle from lowering when air is released from suspension system. Expel all air from air supply system by opening drain cock on air reservoir. Disconnect overtravel lever from valve link. Hold lever down until air is released from air bellows. Disconnect air lines from height control valve, remove control valve attaching nuts, and remove valve from vehicle.

Installation — **CAUTION** — Do not use sealing compound on threads, as it may cause valves to stick. To install, reverse removal procedure, build up air pressure in system, and check riding height.

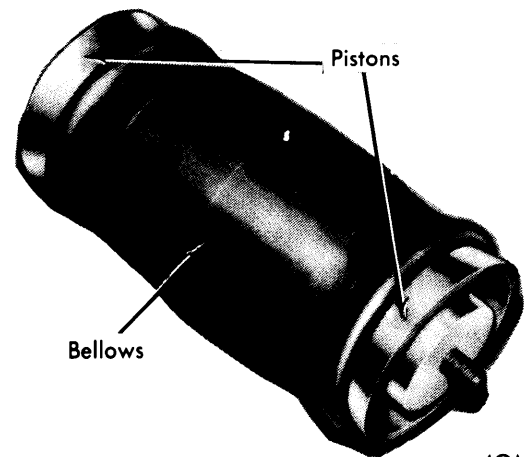


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HEIGHT CONTROL VALVE

AIR BELLOWS

Removal — Raise and support vehicle under frame. Disconnect height control valve link, and hold overtravel lever down to release all air from air bellows. Disconnect air supply line at bellows, and remove two air bellows retaining nuts and washers from ends of bellows. Remove bellows from vehicle.



4GM02

AIR BELLOWS ASSEMBLY

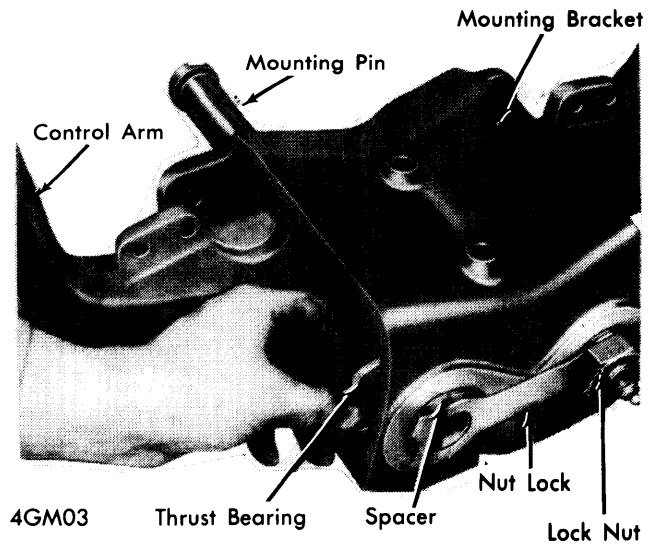
Installation — If pistons were removed from air bellows, proceed as follows: Place air bellows piston on floor with cone section pointing up. Position air bellows in piston with open end pointing up. Place air nozzle in open end of bellows and apply air while pushing down on bellows. Release air pressure, and bellows should fold over piston. Position second piston over top of bellows and repeat procedure. Raise rear wheels to bring tops of control arms close together and block in this position. Place air bellows into position and install washers and lock nuts. Connect air line to bellows and raise overtravel lever to fill bellows. Connect height control valve link to overtravel lever, lower vehicle and check riding height.

GMC MOTOR HOME CHASSIS (Cont.)

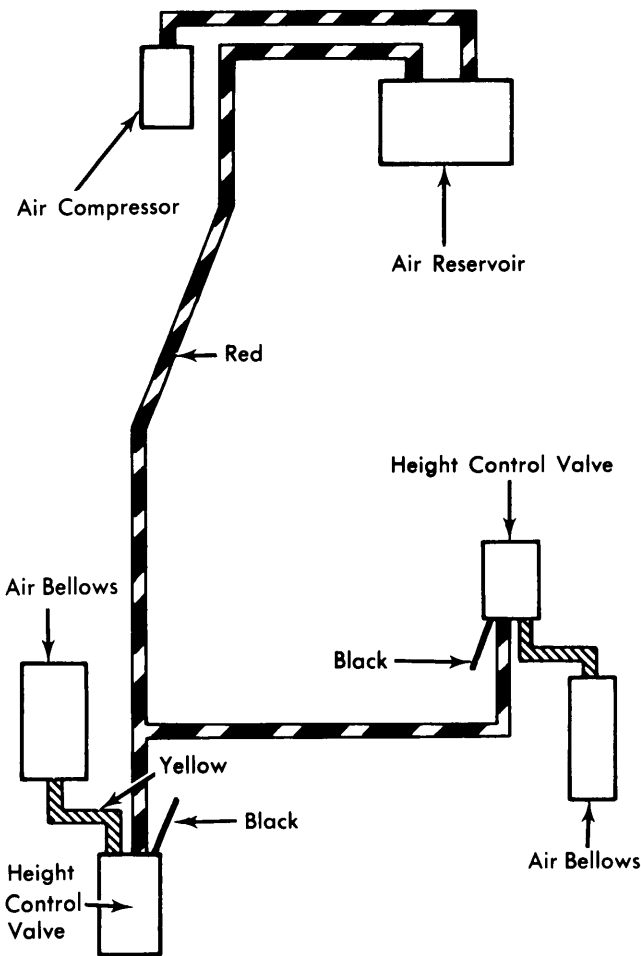
CONTROL ARMS

Removal - 1) Raise and support vehicle, and remove wheels. Remove air bellows (see Air Bellows Removal), and disconnect shock absorber from control arm mounting. Disconnect brake lines at center mounting bracket and each brake backing plate, and unbolt lines from all control arm mounting points. Remove brake drum dust cap, cotter pin, and castilated nut, then remove drum, hub, and bearings as a unit.

2) Remove brake backing plate retaining nuts and remove backing plate from control arm. Support control arm mounting bracket with a suitable jack and remove two bolts holding mounting bracket to crossmember. Remove four bolts holding mounting bracket to frame rail, and lower suspension unit to floor. Remove mounting pin nuts from mounting brackets, and remove Allen head retaining screws from back side of bracket. Press out control arm mounting pins, and remove control arms. Press spindles from control arms.

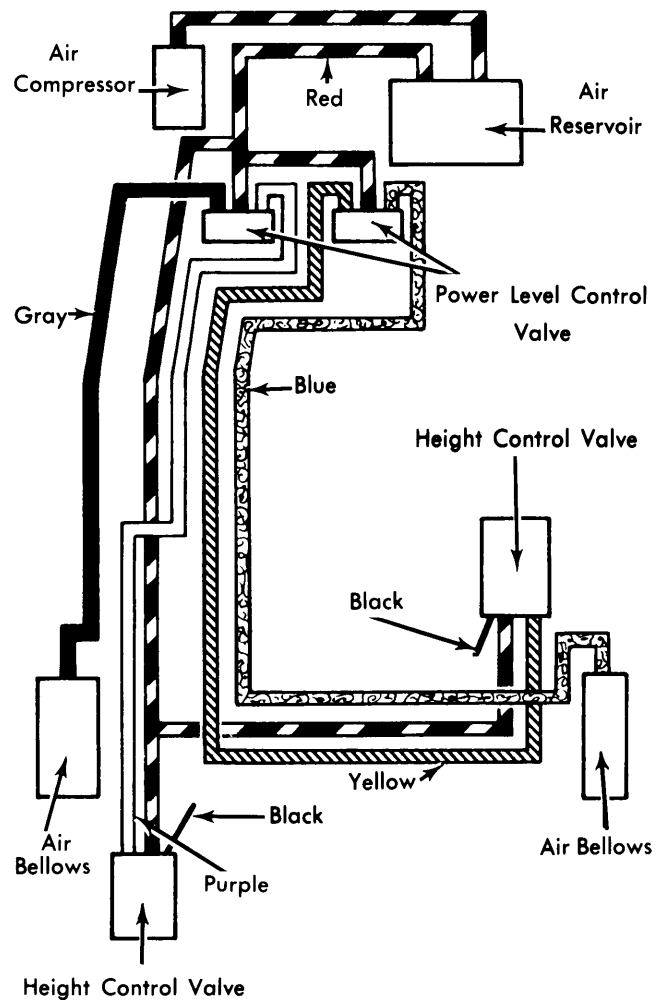


CONTROL ARM MOUNTING



4GM06

AIR LINE ARRANGEMENT W/O POWER LEVEL



4GM07

AIR LINE ARRANGEMENT W/POWER LEVEL

Rear Suspension

GMC MOTOR HOME CHASSIS (Cont.)

Installation — 1) Using a hammer, tap hat section spacers back in mounting bracket to provide additional clearance for control arms. Position control arms in mounting bracket, and install thrust pack journal bearing between arms and mounting bracket. Press control arm mounting pins into position, place nut locks on mounting pins, and install control arm lock nuts. Tighten control arm lock nuts to press hat section spacers into correct position, then back off nuts until control arms move freely, and retighten lock nuts. Press spindles into position.

2) Using a suitable jack, position control arm and bracket assembly on vehicle, and install mounting bracket-to-frame attaching bolts. Install brake backing plates on control arms, and install brake drums and hubs on spindles. Attach shock absorbers to control arms, connect all hydraulic brake lines, and install brake line mounting brackets. Install air bellows assembly, connect height control valve link, and apply air pressure to air bellows. Install wheel, then lower vehicle, and check riding height. Bleed brakes. See *Hydraulic Brake Bleeding* in **BRAKE SYSTEMS** Section.

POWER LEVEL VALVE

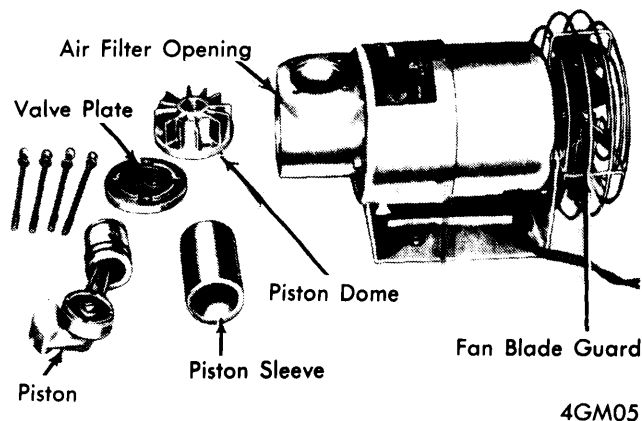
Removal — Expel all air from air reservoir and place control valve in "LOWER" position. Remove mounting panel from vehicle, and remove control knobs from panel. Remove valve-to-panel attaching screws, disconnect fittings from back of each valve, and remove valves from vehicle.

Installation — To install, reverse removal procedure, and run compressor to pressurize suspension system. Check riding height.

OVERHAUL

AIR COMPRESSOR

Disassembly — 1) With compressor removed from vehicle, remove piston dome. Remove valve plate and gasket, then remove exhaust valve from valve plate, and intake valve from top of piston. Remove piston sleeve from top of compressor, and air filter from end of housing. Rotate eccentric until piston is at bottom of stroke, and loosen Allen head screw at top of eccentric.



AIR COMPRESSOR

2) Remove eccentric from output shaft, and remove piston assembly through air filter opening. Remove piston rings and expanders from piston. Remove fan blade guard from compressor, and remove fan blade from compressor shaft.

Reassembly — To assemble, reverse disassembly procedure, replacing defective parts as necessary.

TIGHTENING SPECIFICATIONS

Application	Ft. Lbs.
Control Arm Mounting Bracket-to-Frame	65-85
Control Arm Mounting Bracket-to-Crossmember	50-60
Height Control Valve Link-to-Arm Nut	60-90
Control Arm Lock Nut	15-20
Air Bellows Retaining Nut	50-60