



WORKHORSE P SERIES CHASSIS MAINTENANCE TIPS

FRONT SUSPENSION AND STEERING

GENERAL DESCRIPTION

Workhorse custom chassis incorporates an independent coil spring front suspension system. The control arms are unequal length, short (upper)/long (lower). The coil springs are located between the lower control arms and the cross member; thus the lower control arms are the load-carrying members. Double acting shock absorbers are also attached to the lower control arms and connect to the frame. All Workhorse chassis are equipped with air bag cylinders to increase the load-carrying capacity of the front suspension. These air cylinders are positioned in the center of the coil springs.

The 1999 Workhorse chassis are available in 12,300lbs GVWR with a 4880lbs front GAWR or in 14,800lbs and 16,500lbs GVWR with a 5,500lbs front GAWR. All 1999 chassis have a 69.7" track width (measurement at center of front tires). The NEW 2000 Chassis are available in 15,000lbs, 17,000lbs, and 18,000lbs GVWR's with a 6000lbs front GAWR and the new front wide track suspension measuring 82.95" (measurement taken at center of front tires). Note: Workhorse offered special ordering for all 1999 chassis in the 2000 model year.

MAINTENANCE AND INSPECTION

The front suspension must be lubricated periodically in accordance with the maintenance schedule. Grease fittings are indicated in the lubrication section of the maintenance manual. The suspension should be inspected during lubrication for signs of damage or wear. Leakage from shock absorbers may also indicate a need for replacement.

AIR BAG CYLINDER MAINTENANCE AND INSPECTION

The air bag cylinders should be inspected periodically for signs of deterioration, damage, or leaks. To verify possible leaks the air bag should be checked by a qualified technician. Replacement of faulty air bags is a relatively easy job.

The new wide track suspension with 6,000lbs suspension utilizes a thicker higher-pressure bag than the earlier chassis. Inflation pressures should be maintained at 40psi minimum to avoid chafing. Under load 50psi is recommended for a 4,880lbs suspension, 90psi for a 5,500lbs suspension, and 110



psi is recommended for the 6,000lbs wide track suspension. Air bag pressures can be adjusted for personal comfort within outlined recommendations.

Service Tip - (For units that appear somewhat low in front due to operating at near front suspension capacity.) 1. Jack up the motor home by the middle of the front cross member and allow the wheels to hang. 2. Remove the air from the air bag and reinflate the air bag to the proper pressure. 3. Lower the unit and bleed off air (as necessary) to maintain proper air bag pressure. This may provide some ride height improvement as the air bag tends to stretch lengthwise slightly with this procedure.

Note: Workhorse only supplies front air bags cylinders, any rear air bags are aftermarket or body manufacturer installed.

SHOCKS AND ANTI-SWAY BAR

Workhorse uses heavy-duty 35mm hydraulic shocks standard on all 12,300lbs, 14,800lbs, and 16,500lbs GVWR chassis. The 15,000lbs, 17,000lbs, and 18,000lbs GVWR chassis come standard with Blistein high-pressureurized gas charged shocks with a 1.81" working diameter piston. The anti-sway bar is standard on all models. Sway bar diameter is 1 1/4" on all 12,300lbs, 14,800lbs and 16,500lbs GVWR chassis (standard track suspension). Sway bar diameter is 1 1/2" on all 15,000lbs, 17,000lbs, and 18,000lbs GVWR chassis (wide track suspension) and includes polyurethane bushings.

STEERING

The steering system consists of the steering linkage, steering gear, steering pump, hoses, and the steering column and wheel. Rotation of the steering wheel rotates the input shaft (wormshaft) on the steering gear, which transfers motion to the output shaft of the steering gear. The output shaft controls direction of the front wheels through a series of arms and levers referred to as the steering linkage.

The steering linkage is located forward of the front cross member. Steering effort is transmitted to left-hand and right-hand

adjustable tie rods through a relay rod. The relay rod is connected to the idlers suspended by steering supports (bell cranks). The right idler also connects to one end of the steering stabilizer shock the other end is connected to a frame extension. The left idler is connected to the pitman arm by the intermediate shaft. The pitman arm is connected to the output shaft of the steering gear.

MAINTENANCE AND INSPECTION

The steering linkage under normal conditions should be lubricated with any water-resistant EP-type chassis lubricate every 3,000 miles or three months, whichever occurs first. Inspect linkage for looseness and/or damage during lubrication.

Power steering inspection should include fluid level/condition, belt condition, and check for leaks from the pump, hoses, or steering gear. Other factors that can affect power steering effectiveness are loose components, loose pump pulley, and/or excess front axle weight.

STEERING SUPPORTS (bell cranks)

The steering supports should be greased and inspected for correct adjustment as part of your normal steering linkage lubrication. Refer to maintenance schedule.

STEERING STABILIZER

The steering stabilizer is located on the right side of chassis between the idler arm and the frame extension, sometimes referred to as the bumper. Early failure may be due to the vehicle being in storage for a long time as rust can form on the shaft. Inspect shaft for rust and clean rod before moving vehicle if present. Fluid leakage from the stabilizer shock may indicate a need for replacement. Workhorse uses a heavy-duty hydraulic steering stabilizer shock on all 12,300lbs, 14,800lbs, and 16,500lbs GVWR chassis. The 15,000lbs, 17,000lbs, and 18,000lbs GVWR chassis come standard with Blistein high-pressureurized gas charged steering stabilizer shock.

