



INSTALLATION INSTRUCTIONS

DexAir Suspension System

K71-983-00: DexAir Suspension Kit

DEXAIR SHOULD ONLY BE INSTALLED BY A QUALIFIED INSTALLER.

These are general directions for installation with tested, effective techniques. These instructions cannot anticipate variations nor provide advice or cautions for them. Personal safety and vehicle integrity must be verified if departing from these instructions. Refer to your trailer manufacturer's manual for additional procedures, techniques, and warnings prior to performing any maintenance or repairs.

The figures shown are examples of typical installations. Installation may need modification for proper support for varying trailer frame designs. The installer is responsible to provide adequate support.

Welding

All welding instructions listed in here are per AWS specifications and should be followed through the entire process. Welder must wear appropriate personal protective equipment and meet 2G position qualifications.

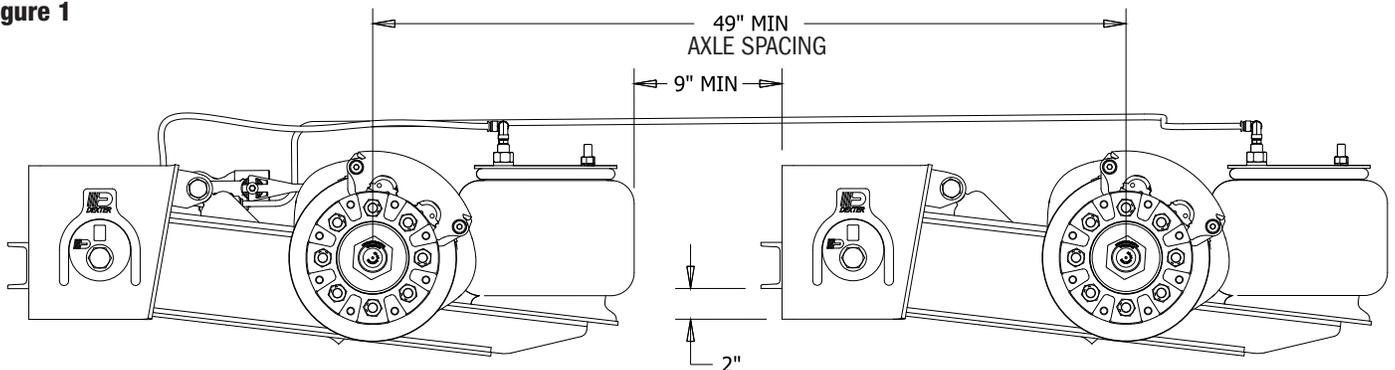
Protect air springs and shock absorbers from weld spatter and grinder sparks. All components must be free of dirt, paint, grease and moisture. Deviating from these specifications affect product life and void warranty.

Weld hardware to trailer axles per one of the specifications below:

Welding Arc Method	Electrode Class	Specifications
Shielded Metal (stick electrodes)	E70XX	A5.1/A5.5
Gas Metal (MIG, solid wire)	ER70S-X	A5.18
Gas Tungsten (TIG)	ER70S-X	A5.18
Flux Cored (tubular wire)	E70T-X	A5.20
Metal Cored (metal wire)	E70C-XX	A5.18

1. The weld tensile strength must be 70,000 psi, strengths either higher or lower than this rating are not acceptable.
2. The best fusion and strength will be obtained using the voltage, current and shielding medium recommended by the electrode manufacturer. If the shielded metal arc method is used, electrodes must be clean, dry, and have been stored per AWS Section 4.5.2.

Figure 1



Suspension to Frame Installation

Customer supplied cross member is required, hangers are not structural components of the trailer. Additional structure is required to support a minimum of 60% of the air spring top plate. A minimum of 1/2" overhang from the outside of the frame to the outside of the hanger is required for installation (Fig. 1). **DO NOT EXPOSE AXLE OR TRAILING ARM ASSEMBLY TO HEAT HIGHER THAN 200 DEGREES FAHRENHEIT**

1. Weld cross members to chassis prior to hanger installation (Fig. 2).
2. Assemble hangers to trailing arms with pivot hardware. Then lift axle and hanger assembly to correct frame rail position (Fig. 2).
3. Ensure hangers and frame are square to each other with a 1/4" tolerance from tow point. Then tack weld hangers ensuring they are not compressed or distorted.
4. Weld hangers to the frame, using a 1/4" fillet.
5. Locate the air spring top plate in proper position on frame rails and cross members (Fig. 3). Then tack weld air spring top plate in place and reconfirm position.
6. Weld air spring top plate to frame, using a 1/8" fillet.

Figure 2

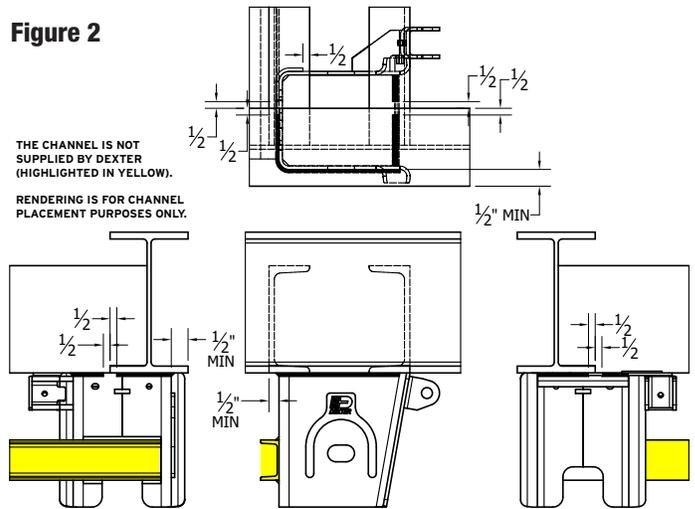
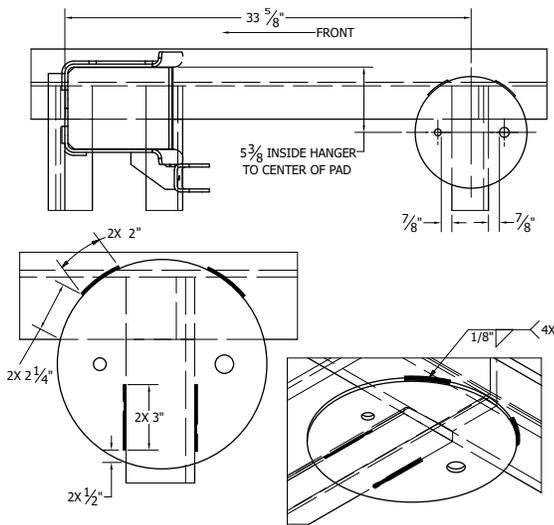


Figure 3

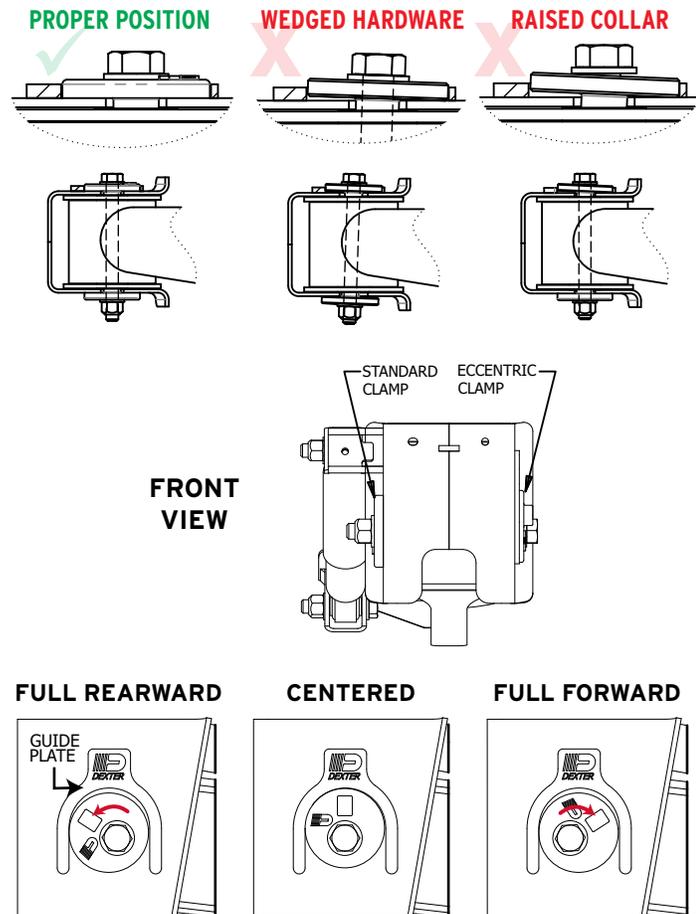


Eccentric Collar Pivot Connection

Rotating the eccentric collar (outboard side of hanger) forward or rearwards causes the axle to move respectively during an alignment.

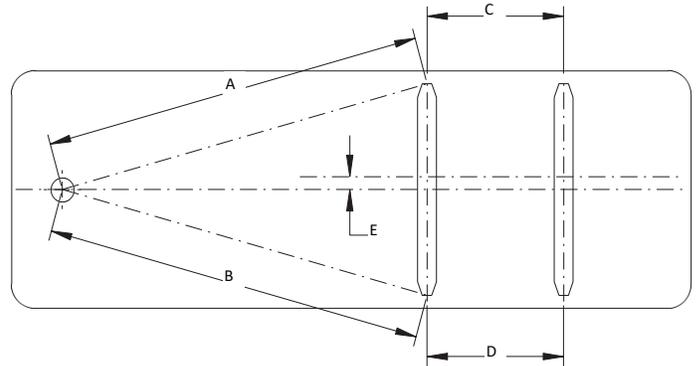
Insert a 7/8" bolt with two flanged collars into slots on each side of the hanger. The eccentric collar must remain flat against the hanger throughout the alignment process. If fasteners are too loose, the eccentric collar may raise up on the alignment guide and become wedged or raised, resulting in improper alignment. (Fig. 4). Ensure clamp load through the bushing to prevent premature failure. Lock nut and pivot bolt must follow torque requirements on page 3.

Figure 4



Axle Alignment

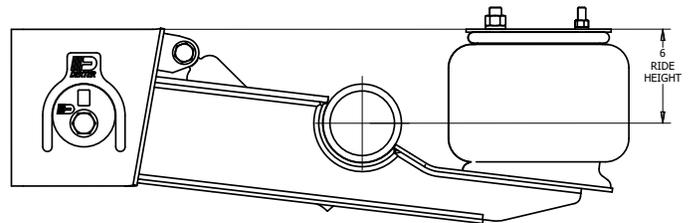
It is recommended that you have a qualified trailer mechanic check the alignment at first service inspection. Trailer has to be towed to allow suspension to settle before alignment adjustments.



- **Lateral Centerline (E)** - Determine lateral centerline of trailer body and axles by measuring distance E between trailer and axle centerlines first, and correct so that distance E is 1/4" or less for each axle.
- **Thrust Angle (A, B)** - Measure distances A (curbside) then B (roadside) from the gooseneck coupler to the front of the axle extension or axle centers. These must be equal to within 0.1 degree or 1/8" of each other ($A = B \pm 1/8"$). Ensure the lateral tension (pulling force) applied to measuring tape is the same for both A and B measurements. Use a tensioning device scale or optical (laser) to ensure accuracy.
- **Scrub Angle (C, D)** - Measure distances C (curbside) then D (roadside) between axles, measuring from front of axle extension to front of axle extension, or axle center to center. Adjust the rear axle so it aligns to the front axle. These also must be equal to within 1/16" of each other ($C = D \pm 1/16"$). This measurement should be as close to zero as possible. The smaller the offset, the lower the rolling resistance and the better the fuel economy.

If adjustments are required, lift and support the trailer, according to the trailer manufacturer's instructions. Then loosen pivot hardware and rotate eccentric collar. Follow torque requirements on page 3, then lower trailer.

Ride Height



- Install only one height control valve (K71-095-00) per trailer on the forward-most axle.
- When air is provided by towing vehicle, a pressure control valve and filter should be installed (not provided).
- Install a check valve into the system (not provided) to prevent complete air loss in the event of air supply failure.

Recommended Service Intervals

- First use inspection
- First service inspection between 1,000-3,000 miles
- Preventative maintenance inspection every 6,000 miles
- During replacement of any service parts
- Upon discovery of any loose components

Inspection Points

- Loose or missing fasteners
- Damaged hangers
- Axle connection brackets and welds
- Axle and trailing beam alignment
- Loose fasteners or movement in the pivot connection, if needed, replace with pivot hardware kit (K71-987-00)
- Pivot bushing is centered in bushing tube housing, if needed, replace with new bushing kit (K14-207-00)
- Pivot bushing tube (part of trailing arm), if worn, trailing arm and axle need replaced
- Verify torque using chart:

Fastener	Ft. Lbs.	N-m
7/8" Pivot Bolt Lock Nut	425-440	575-595
3/4" Shock Absorber Lock Nut	150-175	205-240
1/2" Lower Air Spring Bolt	25-30	28-40
3/4" Upper Air Spring Nut	40-45	55-60
VALUES ARE WITH CLEAN AND DRY FASTENERS.		

CAUTION

Failure to maintain the specified torque values and replace worn parts can cause failure.

Troubleshooting

Symptom	Remedy
Not pulling straight	Check alignment
	Ride height may be incorrect due to sloping trailer or frame deflection
Axles not equalizing	Height control valve may be improperly adjusted
	Ensure correct air springs are installed
	Check for blockage/leakage in air lines
Trailer lean	Check axle connection welds
	Trailing beams could be installed out of parallel
	Pivot bushing may require replacement
Bushing walk <i>Indicated by the trailing beams shifting off the bushings</i>	Check axle alignment
	Trailing beams could be installed out of parallel
	Hangers are not centered to the trailing beams
	Overloading or excessive wear
Breaking or cracking hangers	Check axle alignment
	Hangers are not centered to the trailing beams
	Insufficient support and/or gussets
	Alignment washer welds could be broken or missing
	Overloading or extreme use
Fasteners	<i>Loose fasteners need immediate attention</i>
	Check components for wear and be sure holes are not worn or egg shaped
	Use clean and undeformed threads, replacing damaged fasteners
	Use the same grade bolt and torque connections appropriately
Pivot Connection	Ensure proper installation/torque procedures are followed
Shocks	<i>Overextension or compression can cause failure</i>
	Check the mounting bolts to be sure no damage to the mounts has occurred
	Ensure that the correct shock has been installed
	Leaking (dripping) shocks need to be replaced

**SCAN BELOW FOR
INFORMATION ON DEXAIR**

