

Center Swivel Bearing & Swivel Box Adjustment Procedure

GENERAL

Should it become necessary to separate the bogie from the chassis for shipping or repairs, the following procedure is required to reinstall them to the factory specifications. For reference of item numbers refer to figure 2.

BOGIE PREPARATION

1. Block the chassis end as level as is possible.
2. Check the inside bore diameter in the bogie (contact ASC for proper dimensions).
3. Install the bearing cups (items 5 & 7) into the bogie using a brass drift.
4. Ensure that the cups are bottomed in the bore using a feeler gauge.

SWIVEL BOX PREPARATION

1. Check the bearing area diameter on the swivel tube (contact ASC for proper dimension).
2. Grease the inner seal, O-Ring, bearing cone and the swivel tube (items 1, 2, 3 & 4).
3. Install the seal, o-ring and inner bearing cone onto the swivel tube.

BOGIE INSTALLATION

1. Using an overhead crane, or other suitable lifting device, carefully slide the bogie onto the swivel tube using extreme **caution to not damage the cups or threads on the swivel tube.**
2. Grease and install the outer seal, o-ring and bearing cone onto the swivel tube (items 8, 9 & 10).

3. Screw on the first lock nut (item 11) with the bevel facing out. Use the spanner wrench supplied with the machine (see Figure 1).
4. Using the overhead crane lift and lower the bogie. Watch for movement. All "play" should be eliminated, yet the bogie should pivot readily.
5. Torque the first lock nut to 11,500-12,000 Ft-lbs.

Note: The recommended way to torque the inner nut is to push on the flat spot on the spanner wrench with a Porta Power and pressure gauge plumbed in line. **(Example:** A Port-A-Power with a two inch diameter ram at 4,000 PSI final pressure will give the desired result. *Refer to table 1 for other examples of force applied versus size of ram.*) Lightly tap the spanner wrench with a five-pound hammer while torquing.

6. Install the second lock nut (item 12) with the bevel facing inward. Torque the second lock nut to 11,500-12,000 Ft-lbs.
7. Tack weld the lock tab (item 13) to the swivel tube.
8. After fifty (50) hours of operation, remove the lock tab, loosen the outer lock nut (item 12), and retorque the inner lock nut to 11,500-12,000 Ft-lbs. Then repeat steps 6 and 7.

Table 1 - Ram to Pressure

Ram Diameter	Pressure Required
2"	4,000 psi
2 1/2"	2,500 psi
3"	1,700 psi
3 1/2"	1,250 psi
4"	950 psi

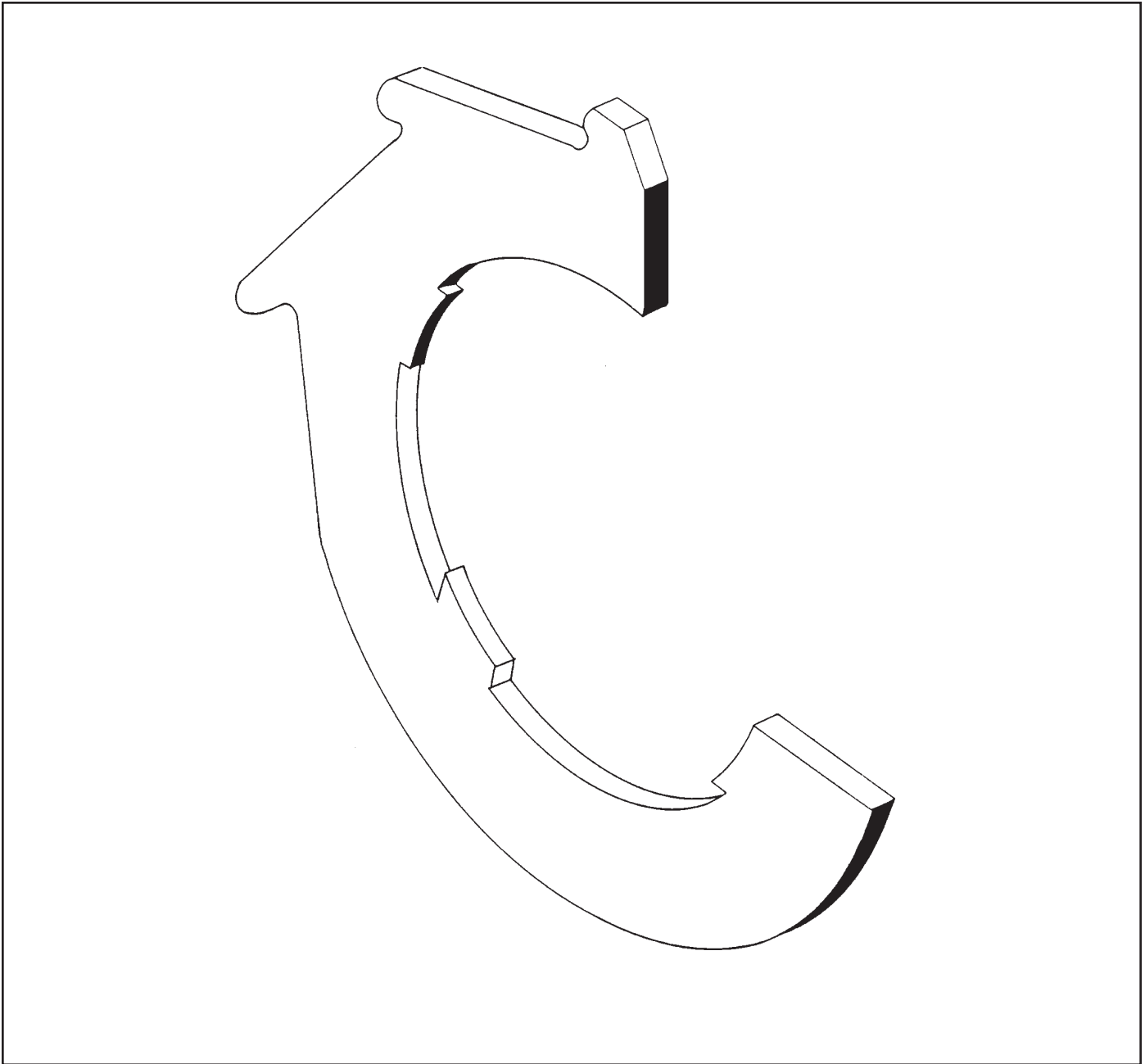


Figure 1 - Spanner Wrench

Use Wrench P/N 556042 for: CC-100, CD-800, CHD-24, CHD-60, CHD-100, CP-90, WD -30, LC-90, LC-120, L-470, L-480, L-490, and L-4120

Use wrench P/N 556507 for: CHD-15/28, CD-500 and CHD-17

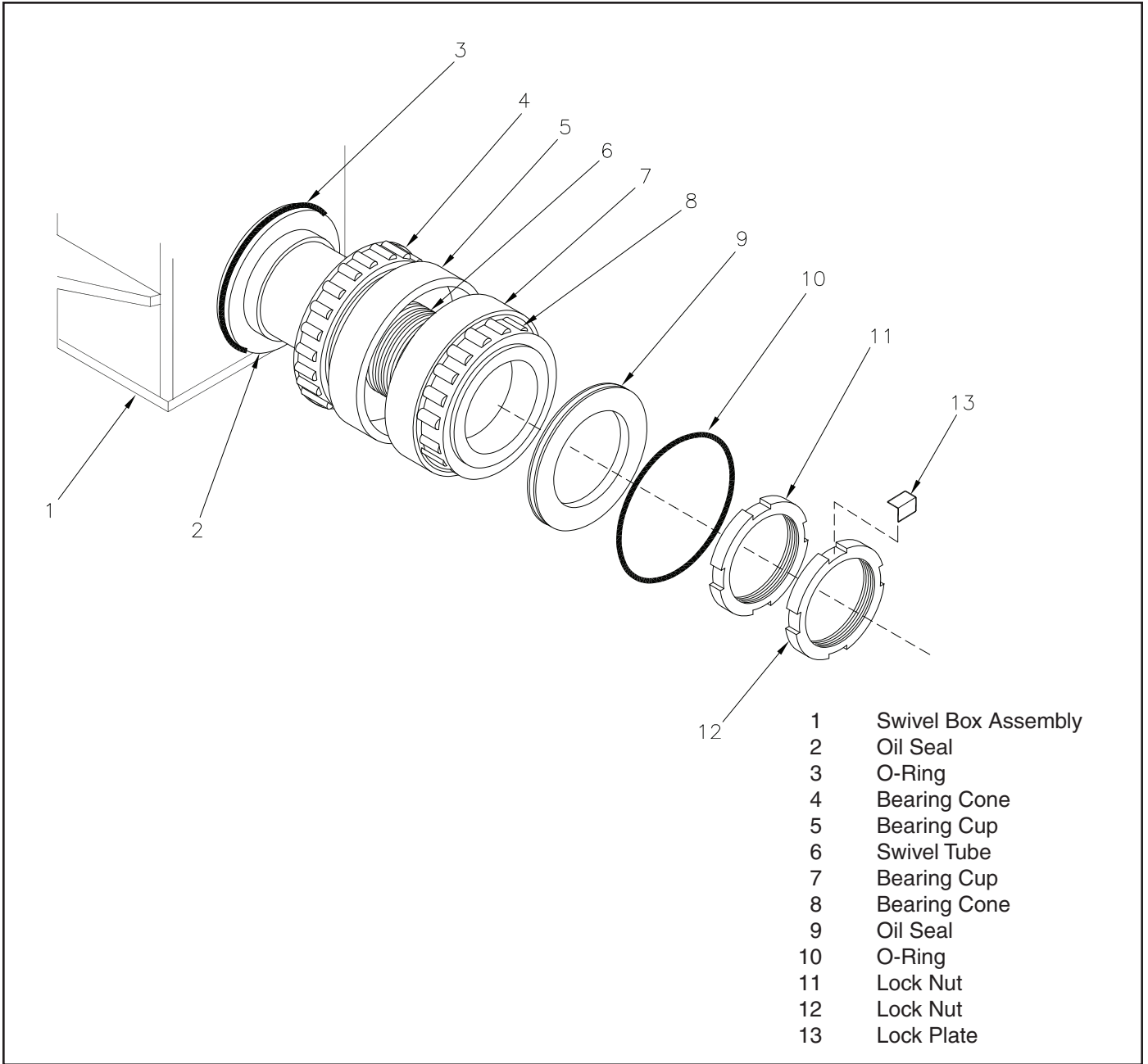


Figure 2 - Swivel Box

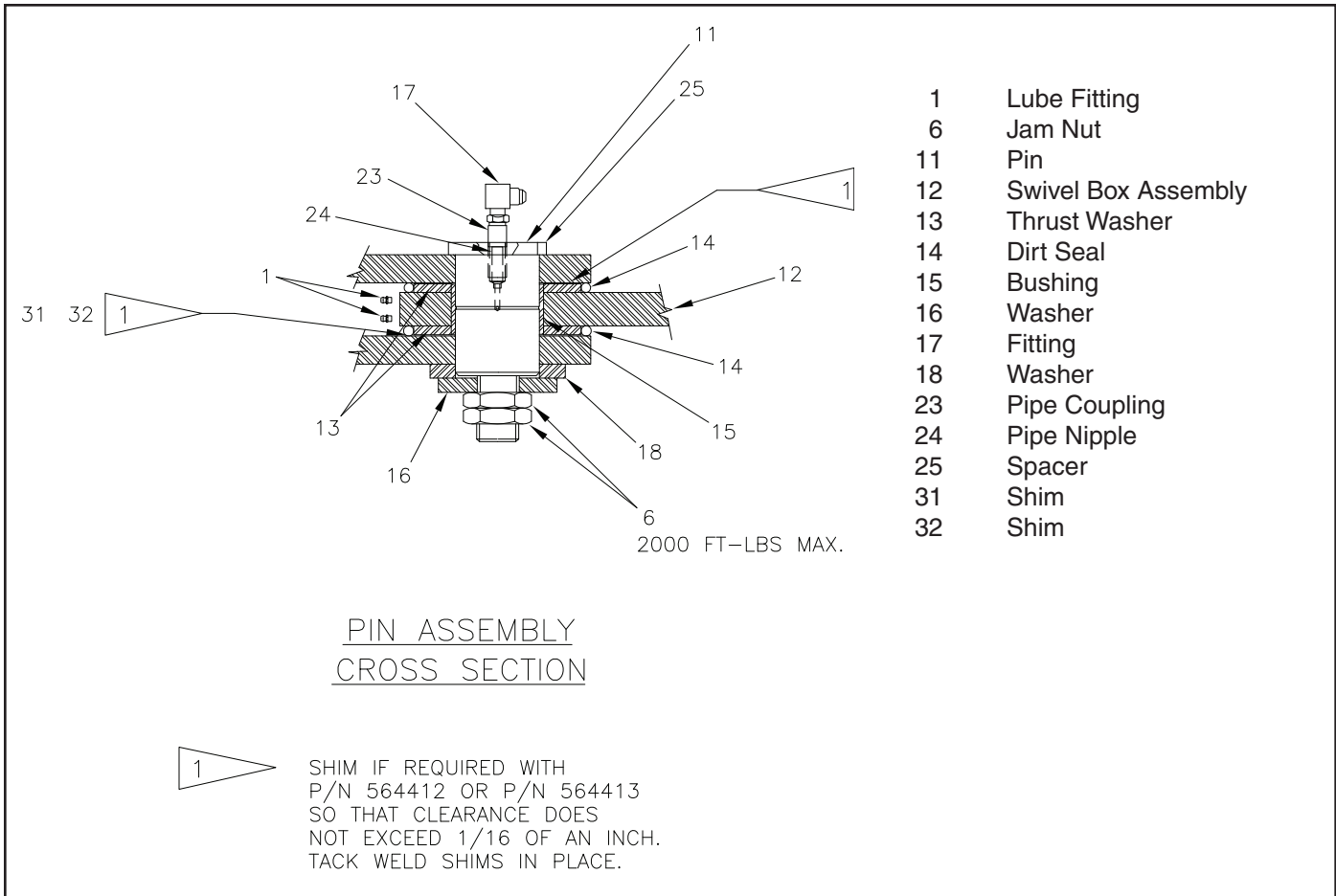


Figure 3 - Swivel Box Pin Assembly Cross-Section for Four-Wheel Drive Logstackers

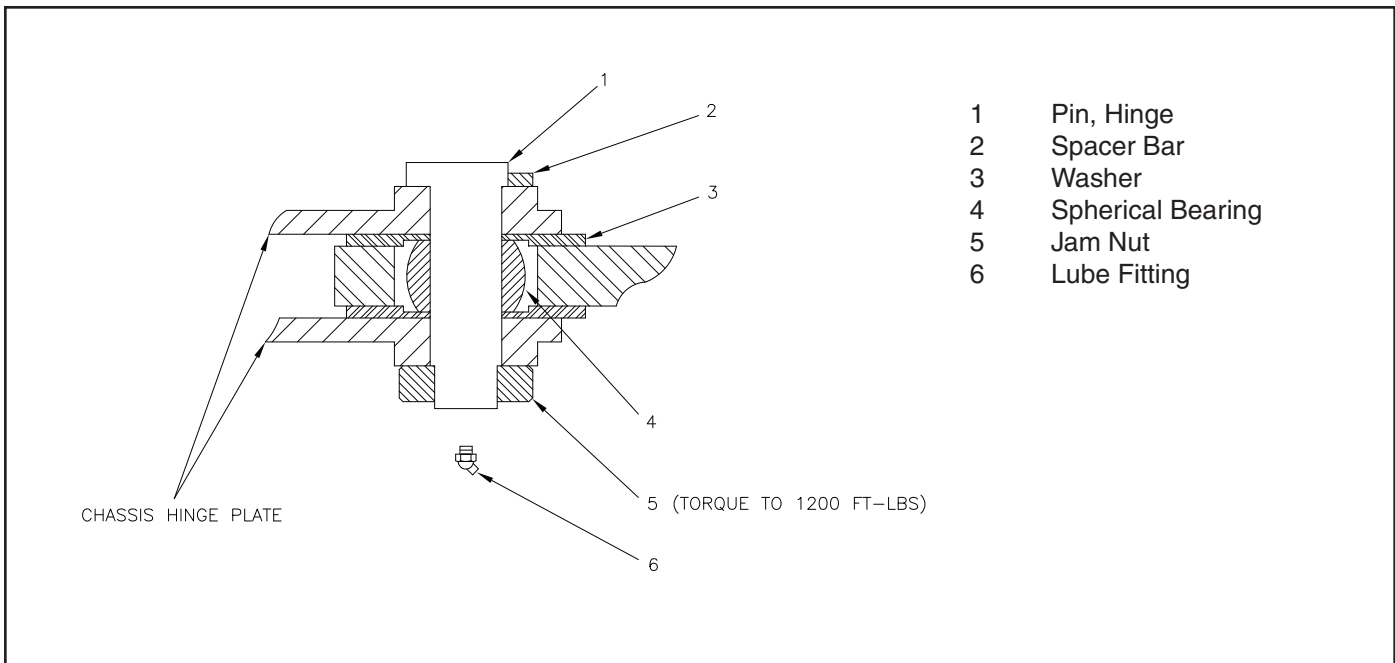


Figure 4 - Swivel Box Pin Assembly (Top) Cross-Section for Chipdozers/Coaldozers

Short-Neck Swivel Box Bearing Retainer Installation (Chassis Side)

Swivel Box Assemblies with short necks require the use of a bearing adapter, (see Figure 5), in applications where it

is being used to replace long-neck Swivel Box Assemblies. See Figure 5 below:

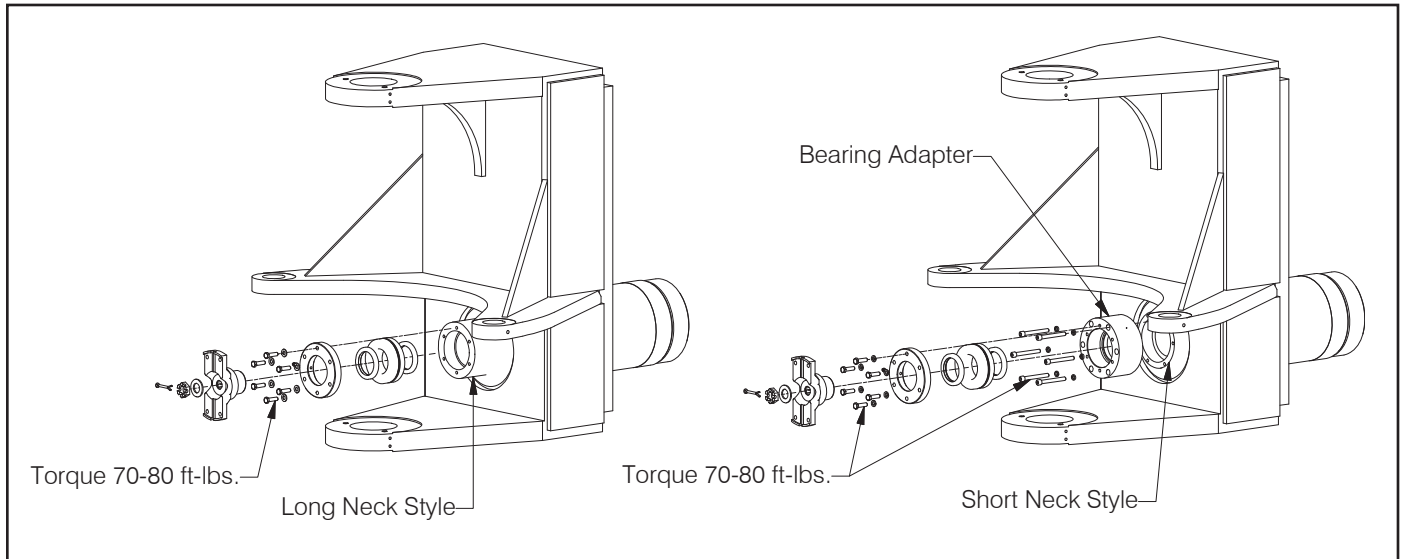


Figure 5 - Bearing Adapter, used on short-neck Swivel Box Assemblies

Installation and Dismounting Instructions for the Optional Expander Pivot Pin System

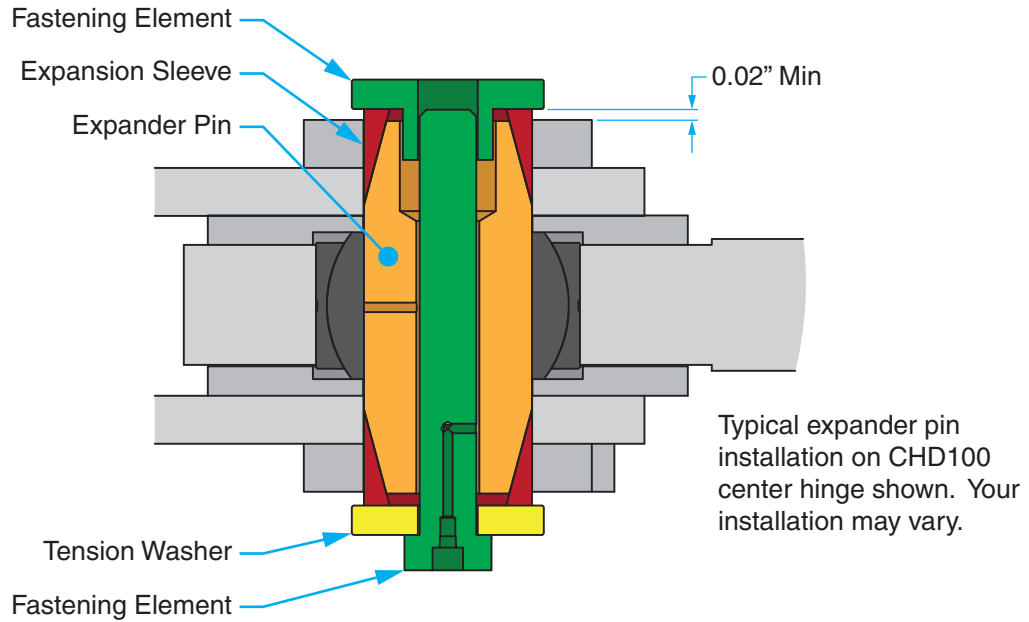


Figure 6 - Typical Expander Pin System (Center Hinge Pivot Pin and Steering Cylinder Anchor Pins)

Important

Do not install your Expander System until you have read and understood the information contained in these instructions. For questions, call Allied Systems at (503)625-2560.

Below are instructions for installation and maintenance of your Expander Pivot Pin System. Following the procedures detailed herein will ensure that the System is installed correctly. It will also ensure that the assembly will be removable for access to the bushing or when other service is required.

3. **Torque the fastening elements alternately and equally** in order to maintain an equal clearance between the tension washers and the mounting lugs on both sides of the Expander Pivot Pin System. Torque the fastening elements per values shown in Table 2. Tighten until the torque wrench “clicks out” on setting. **Important:** The tension washer located between the fastening element and the end of the expander pin should **never** come in contact with the pivot lug. If this occurs on only one side of the pin, go back to Step 2 of this section.

Installation

1. Lubricate the pin and the expansion sleeves with bearing grease for easy insertion. First, insert only the expander pin into the bore, then install the sleeves, tension washers, and fastening elements. Be sure not to damage the thread or the tapered ends of the expander pin.
2. Hand tighten the assembly centered in it's final position in the pivot.

Torque Values			
Pin	Size	Location	Value
250368	6"	Center Hinge	664 ft-lbs
251171	2.5"	Steering Cylinders	369 ft-lbs
255069	1.5"	Steering Cylinders	129 ft-lbs
596132	6"	Center Hinge	664 ft-lbs
601115 603341	2"	Steering/Tilt Cylinders	258 ft-lbs
601538 603340	3.5"	Center Hinge	443 ft-lbs

Table 2

4. Lubricate the pivot according to the operator’s manual specification before operating the machine. Proper lubrication maintenance will greatly extend the life of the Expander Pivot Pin System.
5. Once the initial torque regiment and pivot lubrication have been completed, start the machine and move the unit back and forth. Tighten again until torque wrench “clicks out” on settings. This procedure ensures that the expansion sleeves have properly seated.
6. **Important: Initial torque and re-torque is an intricate part of the installation and crucial to the success of the pin system. Make sure to follow the torque schedule in Table 3 below*.**

***Note:** The machine must be fully articulated in order to torque the top fastening element on the lower hinge bar. The top fastening element on the upper hinge bar has to be reached through the pin access hole on top of the machine’s rear deck. Tools: A 2-5/8 inch socket with appropriate extension and torque wrench.

Torque Schedule	
After 1 hour	* When you re-torque and the wrench “clicks out” on setting without additional torque, you have successfully “seated” the expansion sleeves and the installation process is complete.
After 3 hours	
After 10 hours or 1 day *	
After 40 hours or 4 days*	
If expansion sleeves have not “seated” within one week of operation, call Allied Systems at (503) 625-2560 for instructions.	

Table 3

Maintenance Intervals

1. **Important: After initial torque is achieved, check the torque at 250 hour service intervals.** Apply appropriate torque (see page 6, step 3). Tighten until the torque wrench “clicks out” on setting.

Disassembly Instructions

1. Unscrew the fastening elements on both sides of the assembly and remove the washers.
2. Reinstall only fastening elements. Thread the stud all the way down until it contacts the pin axle body before tapping it.
3. Tap the fastening elements alternately on both sides until the expansion sleeves come loose. Use only soft mallets/hammers for tapping.
4. Remove the expansion sleeves with channel lock pliers or a similar tool.
5. Remove the Expander pin.