Expander Pins

Chipdozers and Landfill Compactors

General

Your machine has expander pins installed in key locations. Expander pins are engineered to reduce lug wear. As the fasteners are tightened, washers press the slotted expansion sleeves up the tapered ends of the pin. The sleeves expand, conform to the shape of the lug ears, and lock into place. See Figure 1.

Torque Schedule

The fasteners must be re-torqued at periodic intervals to ensure that the pins are seated properly. After an expander pin is first installed, replaced, or any time the mounting is adjusted, the re-torque sequence shown in Table 1 must be followed. After the 40 hour interval, the fasteners must then be re-torqued monthly, or after 250 hours of operation, whichever occurs first.

Pin Locations

Expander pins may be used on steering cylinders, tilt cylinders (Chipdozers), or the center hinge. Make sure you identify all expander pins used on your machine to ensure you are re-torqueing all expander pins regularly. Consult your dealer, or Allied Systems Service Department (503.625.2560) if you have any questions.

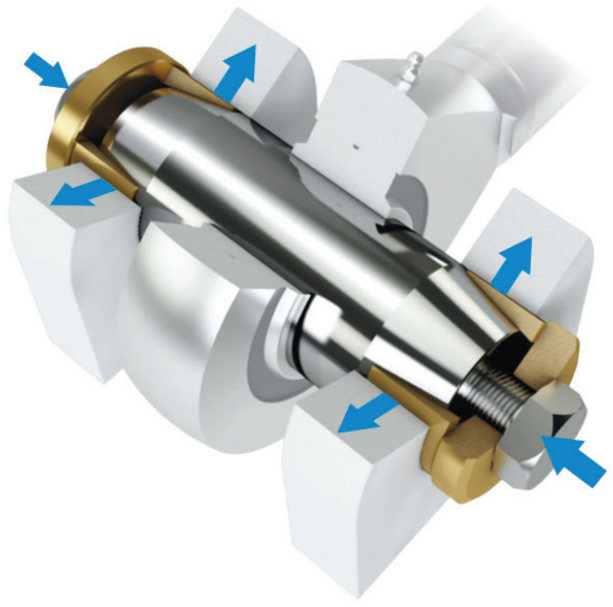

Figure 1 Typical Expander Pin

Torque Values

See Table 2 for the torque values for your expander pins. For the 2” pins, 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. For the 3.5” pins, torque the single fastening element. Tighten until the torque wrench “clicks out” on setting.

Required Gap

The expander pin must be positioned so there is a minimum gap between either the Tension Washer or Spanner Nut and the lug of at least 0.02”. See Figure 2, Figure 3, and Figure 4 for details.

Torque Schedule	
After 1 hour	Initial Installation
After 3 hours	
After 10 hours or 1 day *	
After 40 hours or 4 days*	
Monthly or every 250 hours	Ongoing Periodic Maintenance
* 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.	
If expansion sleeves have not “seated” within one week of operation, call Allied Systems at (503) 625-2560 for instructions.	

Table 1 Torque Schedule

Torque Values			
Pin	**Size**	**Location**	**Value**
601115 603341	2”	Steering/Tilt Cylinders	258 ft-lbs
601804 603340	3.5”	Center Swivel Hinge	443 ft-lbs

Table 2 Torque Values

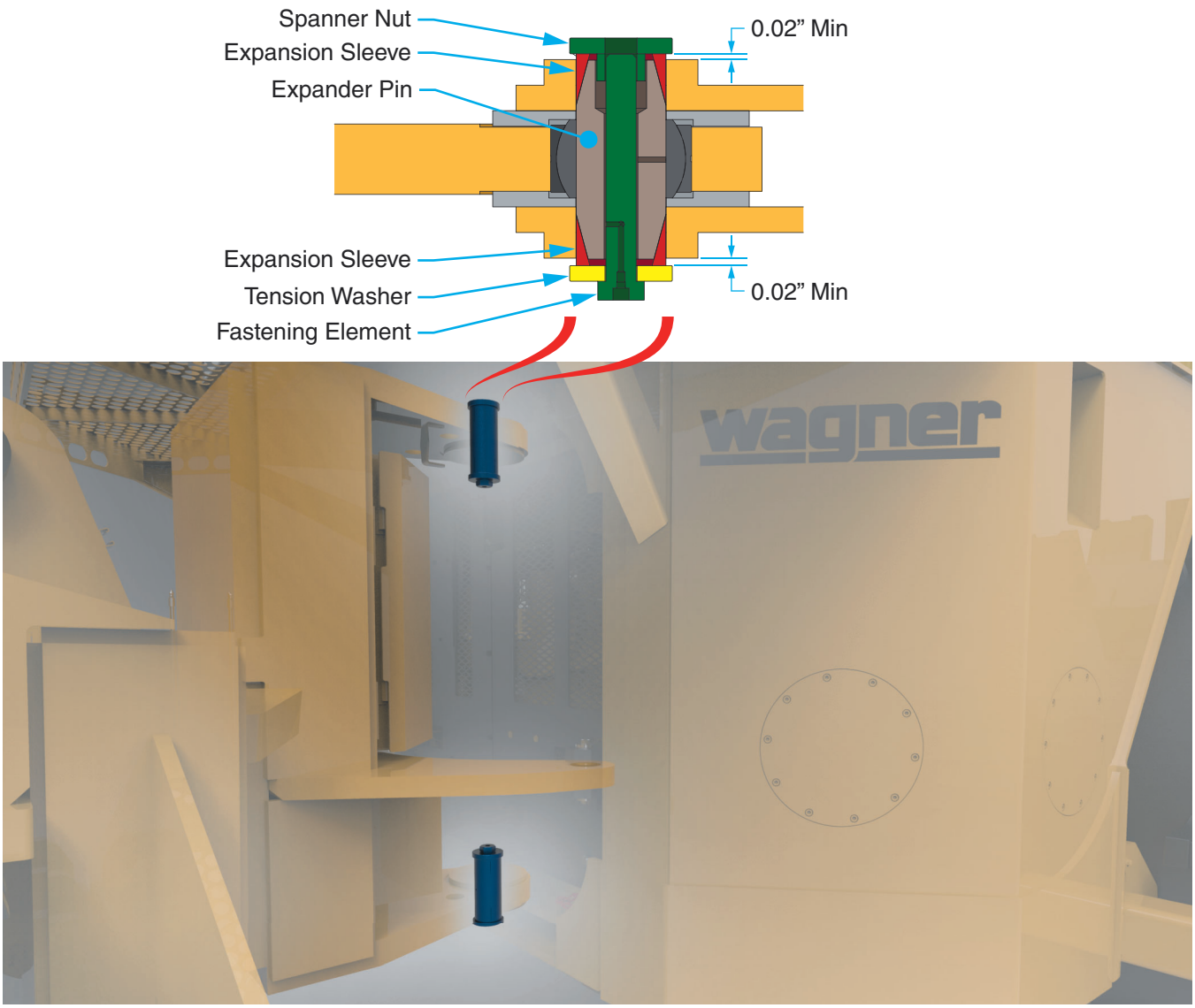

Figure 2 Center Swivel Hinge Pins (LC120 Installation Shown)

Center Swivel Hinge Pins

Figure 2 shows an installation with expander pins at the top and bottom locations on the swivel box at the center swivel hinge. The fastening elements must be re-torqued per the schedule in Table 1 to the torque value in Table 2. It may help to articulate the machine fully left or right to improve access to the pins. Remove the grease line at the fastening element if necessary.

Every time the fastener is re-torqued, check the gaps between either the Tension Washer or Spanner Nut and the lug. The gap must be a minimum of 0.02”. If the Tension Washer or Spanner Nut is touching the lug, reposition the expander pin so that the gap on both sides is maintained.

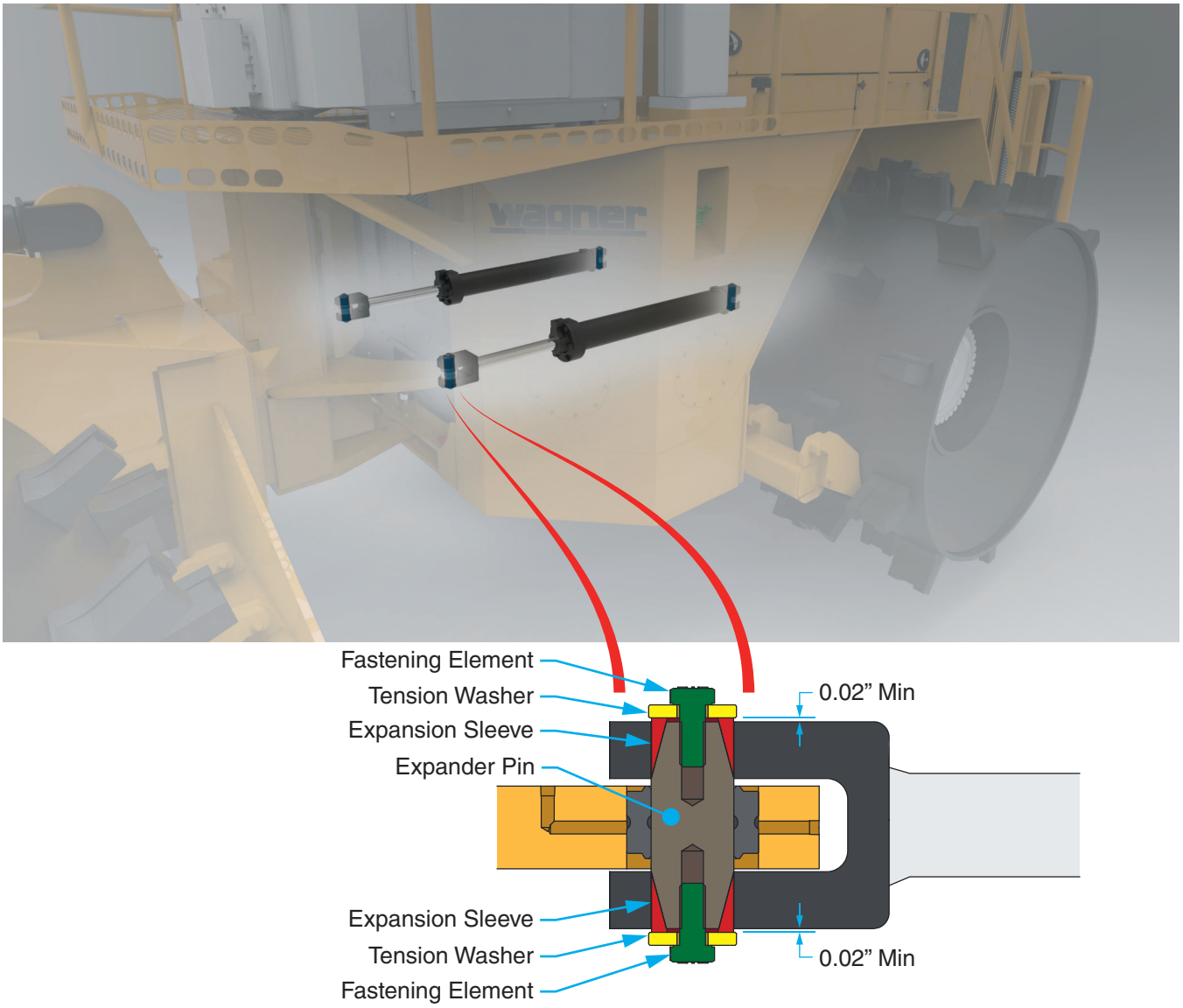

Figure 3 Steering Cylinder Pins (LC120 Installation Shown)

Steering Cylinder Pins

Figure 3 shows an installation with expander pins at the base end and stem end of the steering cylinders. The fastening elements must be re-torqued per the schedule in Table 1 to the torque value in Table 2. On landfill compactors, remove the lower chassis guarding to access the base end of the cylinders.

Every time the fasteners are re-torqued, check the gaps between the Tension Washers and the lugs. The gap must be a minimum of 0.02”. If either Tension Washer is touching the lug, reposition the expander pin so that the gap on both sides is maintained.

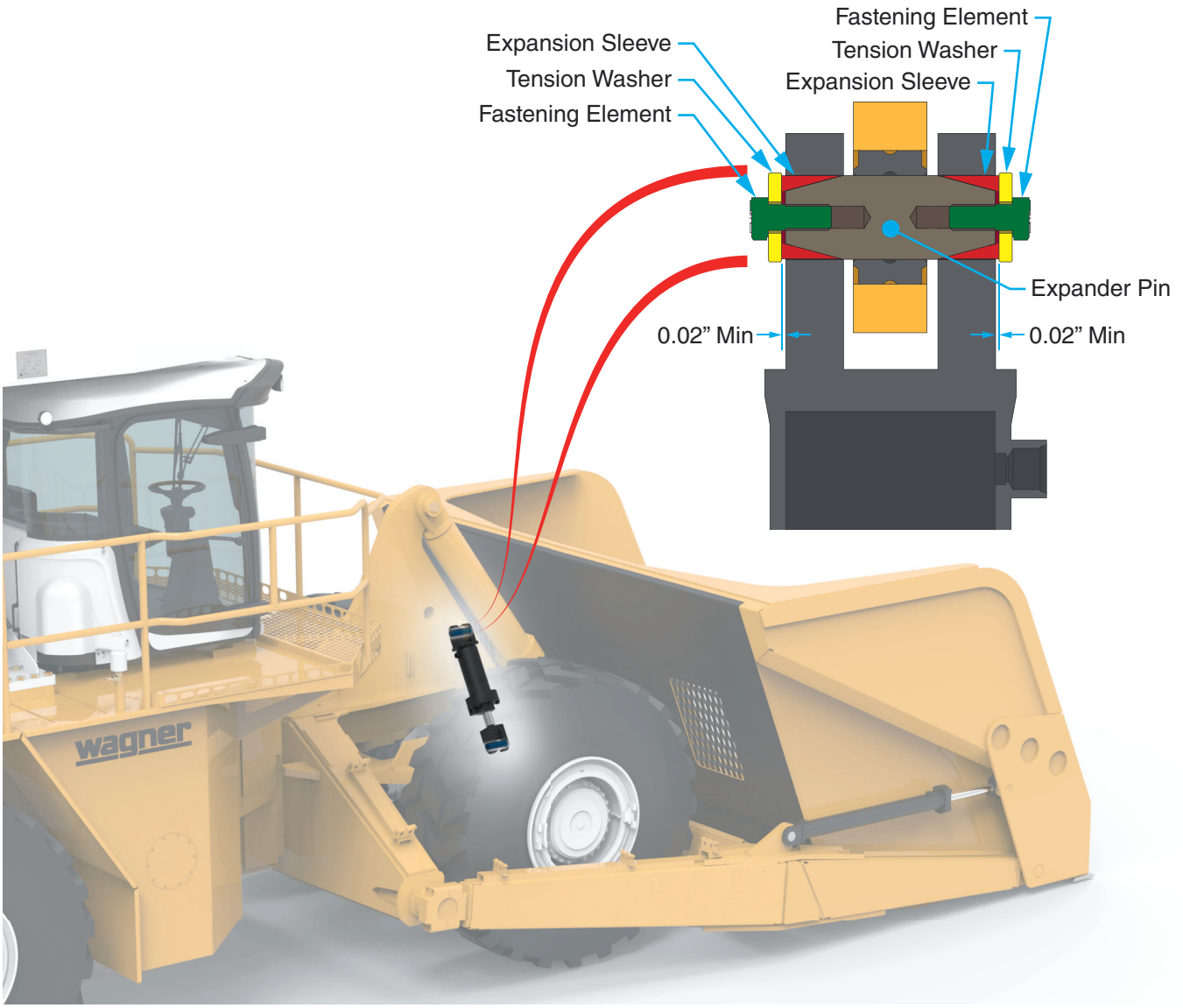

Figure 4 Tilt Cylinder Pins (CHD100 Installation Shown)

Tilt Cylinder Pins

Figure 4 shows an installation with expander pins at the base end and stem end of the tilt cylinder on a Chipdozer. The fastening elements must be re-torqued per the schedule in Table 1 to the torque value in Table 2.

Every time the fasteners are re-torqued, check the gaps between the Tension Washers and the lugs. The gap must be a minimum of 0.02”. If either Tension Washer is touching the lug, reposition the expander pin so that the gap on both sides is maintained.

Repositioning the Pin

Should it become necessary to reposition the expander pin:

1. Unscrew the fastening element(s), spanner nut (if applicable), and remove the washer(s) on both sides of the assembly.
2. Tap the axle alternatively on both sides until the tension on the sleeves is released (use a piece of pipe between the axle and the mallet/hammer to not damage the threads). Remove the sleeves. Do not damage the threads.
3. Position the expander pin so that it is centered relative to the lugs.
4. Reinstall the sleeves, tension washer(s), fastening element(s), and spanner nut (if applicable) and hand tighten.
5. For the 2” pins, 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. For the 3.5” pins, torque the single fastening element, making sure that the pin remains centered.
6. Refer to Table 2 for torque values. Tighten until the torque wrench “clicks out” on setting.
7. Follow the torque schedule in Table 1 to make sure the expander pin seats properly.

Removing the Pin

Should it become necessary to remove the expander pin:

1. Unscrew the fastening element(s), spanner nut (if applicable), and remove the washer(s) on both sides of the assembly.
2. Tap the axle alternatively on both sides until the tension on the sleeves is released (use a piece of pipe between the axle and the mallet/hammer to not damage the threads). Remove the sleeves and axle. Do not damage the threads.

Installing a New Pin

If the expander pin is completely removed in order to be replaced:

1. Inspect and repair any structural damage to the cylinder ears, mounting lugs, swivel box ears, etc.
2. Thoroughly clean the bores and mounting surfaces.
3. Grease the sleeves and expander pin with bearing grease. Do not grease the threads.
4. Position the expander pin so that it is centered relative to the lugs.
5. Install the sleeves, tension washer(s), fastening element(s), and spanner nut (if applicable) and hand tighten.
6. For the 2” pins, 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. For the 3.5” pins, torque the single fastening element, making sure that the pin remains centered.
7. Refer to Table 2 for torque values. Tighten until the torque wrench “clicks out” on setting.
8. Follow the torque schedule in Table 1 to make sure the expander pin seats properly.

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