

15.0 CHUTES AND LINERS

When installing liners in chutes and installing chutes, follow this procedure:

1. Support the chute on a short stub shaft for the assembly:
 - a. Mount a short (1 1/2 inch long) stub shaft on a structural support.
 - b. Mount the chute on the stub shaft.



Stud Shaft (Typical)



Mounted

FIG 15-1 SUPPORT CHUTE

2. Prepare liner for installation:
 - a. Bring liner and fasteners to assembly area.



Components

- b. Use a Bessey clamp in the center of the chute to pull the liner into position.



Clamped

FIG 15-2 LINER PREPARATION

3. Secure liner to the chute:
 - a. Use a punch or drift to align the mounting bolt holes on each end of the liner.



Aligning

- b. Install mounting bolts at the center of the liner.



Center Fastener

- c. Install the remaining mounting bolts.



Fasteners

- d. Tighten mounting bolts to their specified torque.

NOTE

Carriage headed fasteners are used to mount the liner to the chute. The square shaped head is designed to dig into the liner to keep the bolt from turning when tightening.



Tightening

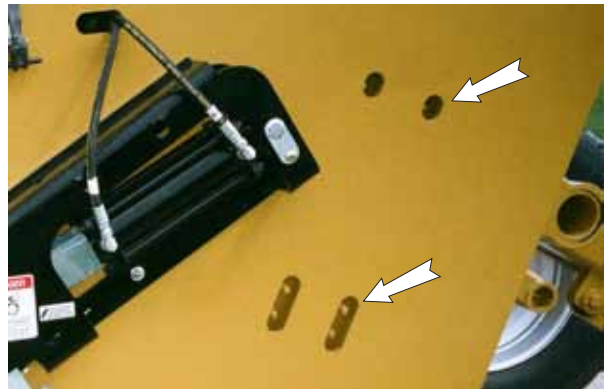
- e. Visually check the condition of the head of the bolt. it must be flush with the liner to function properly.
 - f. Use a hammer to seat the head of the bolt if required and re-tighten.



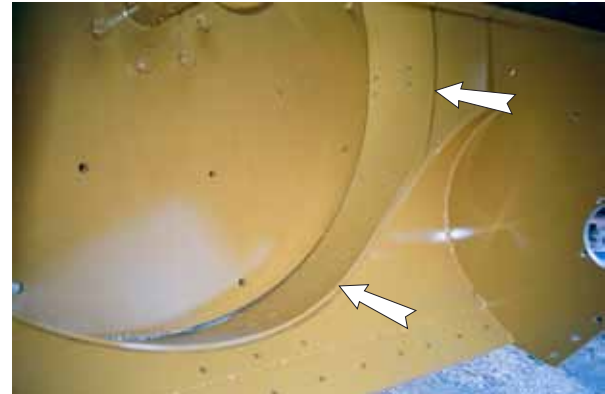
Installed

FIG 15-3 SECURE LINER

4. Replacing fan liner:
 - a. Remove liner mounting bolts.
 - b. Remove liner.
 - c. Install replacement liner.
 - d. Secure by tightening mounting bolts to their specified torque.



Lower Frame Mounting Bolts (Typical)



Lower Fan Wear Liner

FIG 15-4 FAN LINER

5. Install grease fitting in hinge:
 - a. Mount grease fitting in the hinge.
 - b. Tighten to its specified torque.



Hinge



Tightened

FIG 15-5 GREASE FITTING

6. Move chute to machine:
 - a. Attach lifting clamp to the top of the chute.



Clamp

- b. Lift chute off the stub shaft.

NOTE

It is recommended that the assembler manually help lift the chute off the stub shaft to prevent binding.



Lifting

- c. Move chute over to machine.



Machine

FIG 15-6 MOVING CHUTE

7. Prepare hinge pin for installation:
- a. View the hinge pin hole on the rear of the frame for the interference.



Rear Hole

- b. View the front of the frame for the interference.



Front Interference

- c. Support pin in a vise.
- d. Use a grinder to remove the part of anchor bracket that causes the interference.



Bracket

- e. Use a grinder to bevel the end of the hinge pin to allow for installation.



Bevel

FIG 15-7 HINGE PIN PREPARATION

8. Apply grease to chute mounting tube:

a. Front end.



Front

b. Rear end.



Rear

FIG 15-8 GREASE

9. Install and secure the chute in the frame:

a. Position chute over the frame.



Positioning

b. Align anchor pin mounting holes.



Aligning

c. Install hinge pin.



Installing

d. Install hinge pin lock bolt.



Lock Bolt

e. Tighten lock bolt to its specified torque.



Tightened

FIG 15-9 INSTALL CHUTE

10. Repeat installation procedure for the right chute and liner.



FIG 15-10 RIGHT CHUTE

11. Prepare to install link bracket between chutes:
 - a. Remove lift link bracket from top chute.



Link Removed

- b. Attach lift link to right chute.



Installed

- c. Raise chute.



Lifted

FIG 15-11 LIFTING CHUTE

12. Mount link bracket between chutes:

- a. Bring link and anchor pin components to assembly area.



Components

- b. Slide hair pin retainer and a heavy washer over one end of each anchor pin.



Pins

- c. Mount pin and link with one pin.



Pin Installed

- d. Install pin through other chute bracket.



Both Pins

- e. Secure with heavy washer and hair pin retainer on end of both pins.



Mounted

FIG 15-12 LINK BRACKET

13. Install chute position cylinder:

- a. Bring cylinder, fittings and anchor pins to assembly area.



Components

- b. Slide hair pin retainer and a heavy washer over one end of each anchor pin.



Pins

- c. Mount rod end to right chute bracket and secure with an anchor pin.



Rod Pin

- d. Attach barrel end of cylinder to center chute and secure with an anchor pin.



Barrel Pin

- e. Secure with heavy washer and hair pin retainer on end of each pin.



Installed

FIG 15-13 CHUTE CYLINDER

14. Connect hydraulic lines to cylinder:

a. Remove plugs from ports.



Plugs

b. Install fittings in cylinder and tighten to specified torque.



Fittings

c. Attach hydraulic lines and tighten to specified torque:

- Connect the fitting on the barrel end to the end port on the valve.



Barrel End

- Connect the ram end to the top port on the valve.



Ram End

d. Tighten all fittings to their specified torque.



Connected

FIG 15-14 HYDRAULIC LINES

15. Check gate fit/seal:

- a. View position of gate seating against the left end of stroke. There should be no gap.



Gate Gap

- b. Adjust by moving yoke on the end of the gate position cylinder:

- Loosen set screw in yoke.
- Remove anchor pin.
- Turn yoke in or out as required.
- Re-pin yoke and check gate seating.
- Adjust again if required.
- Tighten set screw to its specified torque.



Set Screw

FIG 15-15 GATE SEATING

16. Attach a hydraulic power source to Ditcher and cycle all hydraulic systems several times to fill all components and remove the air.

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