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Kit Instruction— KDDDBK0100

Please Read

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Staph-Guard Brake System Conversion

This conversion is designed to give the machine greater durability and require less maintenance. The approximate time to complete this conversion is 20 man hours, and requires two people. One of the individuals must possess excellent mechanical skills and a complete knowledge of the mechanics of the machine.

Please, inventory the parts received with the kit before beginning the retrofit. Read the entire instructions before beginning any work. Familiarize yourself with all safety precautions in the Washer/Extractor manual before beginning the conversion; PLEASE OBSERVE ALL SAFETY PRECAUTIONS. While working on the Washer/Extractor, tag and lockout power.

The conversion consists of two parts. Part 1 is the installation of the disc brake which is installed on the idler shaft. **Part 2 is the installation of the "second" band brake on the motor drive base and is required for 60044 models only.** Parts 1 and 2 can be completed as separate conversions. Part 1 is the most time consuming. Part 2 can be worked on during those times when Part 1 requires only one person.

Required tools for this retrofit are:

- air impact wrench
- two 2" wrenches for the motor drive base
- belt sander with a medium grade belt
- large punch
- heavy sledge hammer
- 1/2" allen wrench socket
- Bearing sleeve removal tool (which is a 13 1/4" heavy gauge steel pipe with an inner diameter of 4" with a heavy gauge plate welded to one end)
- drill - 1/2" drive
- large cold chisel
- belt tensioning tool
- 1 1/2" wrench
- .003" feeler gauge
- common hand tools.

PART 1

- 1.1
 - a. Remove the drive belt covers from both sides of the machine.
 - b. Remove the cosmetic panels on the right side of the machine.
 - c. Measure and record the location of the drive pulley on the discharge side of the idler shaft.
 - d. Measure and record the location of the bolts that mount on the idler shaft bearing housing assembly.

- e. Measure and record the location of the nuts on the all thread that supports and adjusts the motor drive base.
- f. Tag the air lines that go to the right hand side push downs and drum brake air cylinders. These measurements and tags are needed for reassembly.

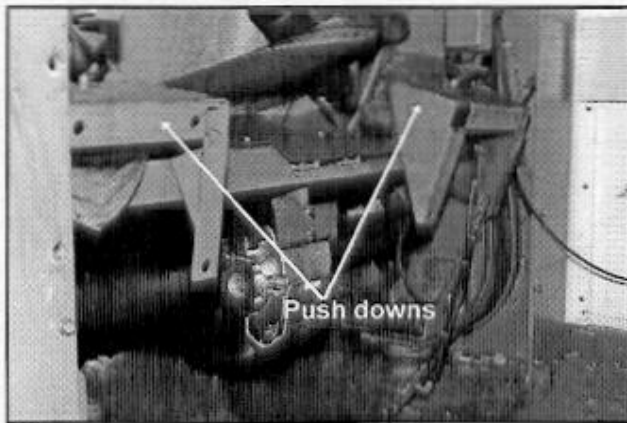


Figure 1

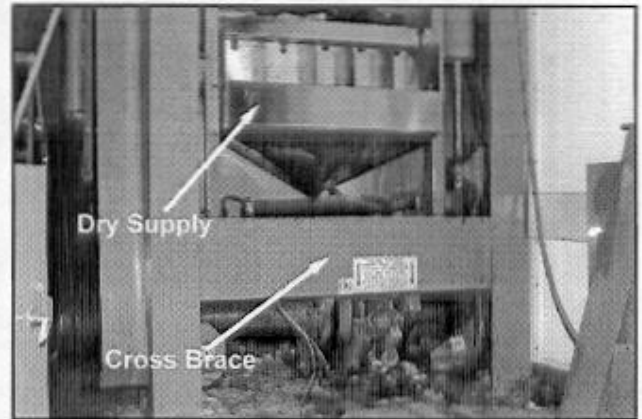


Figure 2

- 1.2
 - a. Unbolt and remove both push downs on the right side of the machine (see figure 1).
 - b. Remove the lower cross brace on the right side of the machine. It may be necessary to bend the dry supply in to remove the cross brace (see figure 2).
 - c. Loosen the idler shaft adjustments and remove the banded belts between the idler shaft and the basket on both sides of the washer/extractor. If necessary, lower the motor drive base enough to remove the banded belt between the jack shaft and the idler shaft.
 - d. Remove the pulley on the discharge side of the idler shaft.
- 1.3
 - a. Disconnect the load side idler shaft bearing adjustment assembly from the shell front. Loosen and remove the drum brake assembly.
 - b. Remove the cover to the idler shaft bearing on the discharge side. Bend back the locking tab on spanner lock washer.
 - c. Remove the spanner nut and the lock washer using a cold chisel and hammer. Using a heavy sledge hammer and the bearing sleeve removal tool, pound the bearing sleeve to loosen it from the shaft and the bearing. This typically takes a great amount of effort. Loosening the bearing sleeve can be accomplished by using a punch and hammer but it will be extremely difficult, if not impossible. The removal of the discharge side idler shaft bearing may even require the bearing to be torched off. If a torch is used to remove the discharge side idler bearing, be careful not to cut into the idler shaft or the bearing housing.
 - d. Remove the idler shaft bearing. Remove the idler shaft from the load side of the machine.
 - e. Use emery cloth of 200 grit or finer to clean the idler shaft of any dirt, rust or burs. The shaft must be clean to install the disc brake assembly.

- 1.4
 - a. Install the caliper cross brace over the two push down brackets. Mark the location of the four holes to be drilled in both push down brackets.
 - b. Remove the caliper cross brace. Drill a total of four holes in each push down bracket using the drill bits supplied in the kit (see figure 3).

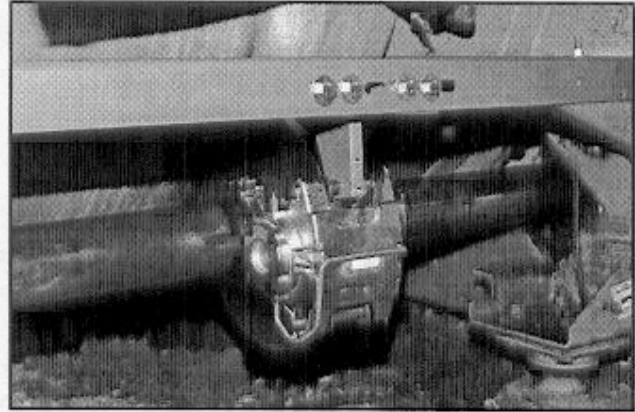


Figure 3

- 1.5
 - a. Put the idler shaft partially through its original hole in the shell front.
 - b. Install the load side idler shaft adjustment assembly. Put the shaft all the way through the discharge side of the machine and bolt the plate (finger tight) that holds the load side bearing housing to the shell front (see figure 4).

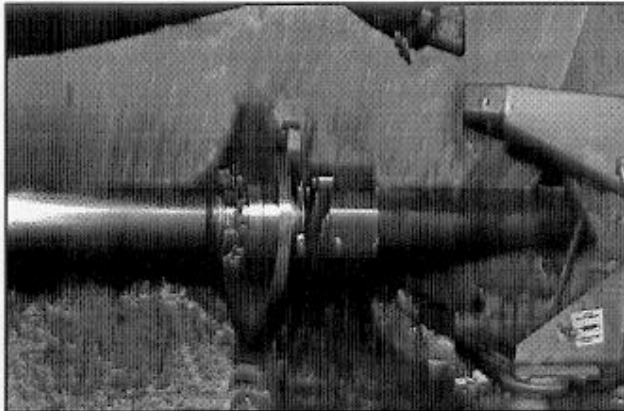


Figure 4

- c. Slide the spanner nut onto the shaft with the beveled side of the nut facing the discharge side of the machine.
 - d. Install the spanner lock washer with tabs bent toward the load side of the machine.
 - e. Slide the disc onto the shaft with the bolt heads facing the discharge side of the machine.
 - f. Slide the caliper sleeve onto the shaft with the threads toward the load side of the machine. Then slide the caliper brass bushing housing onto the shaft with the caliper mounting holes facing the load side of the machine.

- 1.6
 - a. Slide the discharge side bearing sleeve over the shaft with the threads facing out. Pack the idler shaft bearing with grease before installing it.
 - b. Put the bearing over the sleeve.
 - c. Slide the spanner lock washer over the shaft with the tabs facing out.
 - d. Slide the spanner nut over the shaft with the beveled side facing in. Gently tap the bearing onto the sleeve.
 - e. Level the idler shaft. This is accomplished by achieving equal distance between the idler shaft and the main shaft on both sides of the machine. When the shaft is level,

use a chisel to tighten the discharge side bearing spanner nut until a clearance of .003 of an inch is achieved between the bearings at top dead center and the outer race.

- f. Lock the spanner nut with one of the spanner lock washer tabs. Bend the rest of the tabs toward the spanner nut. This will reduce any noise that the spanner lock washer could make.
- g. Apply more grease to the newly installed bearing, then install the bearing cover.

- 1.7
- a. Install the torque arm and brackets to the cross brace. The caliper and disc are to be mounted as close to the center of the machine as possible, while the brass bushing housing rides between the two key ways on the idler shaft. Do not fully tighten screws to allow for later adjustments.
 - b. Mount the caliper onto the brass bushing housing.
 - c. Install the caliper cross brace on the push down brackets so that the caliper is as close to the center as possible.
 - d. Install key in the keyway of the shaft and the keyway in the disc sleeve.
 - e. Line up the torque arm and the disc in the center of the caliper. Use a cold chisel to tighten the spanner nut on the disc sleeve. Make certain that the torque arm and the disc are still lined up in the center of the caliper, then lock it with one of the spanner lock washer tabs.

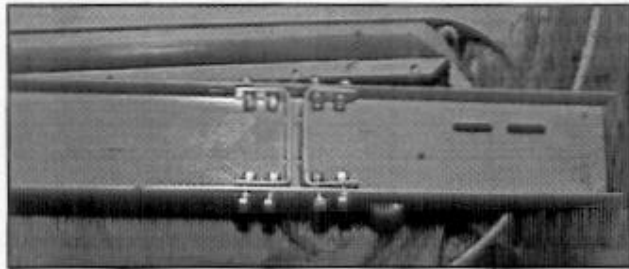
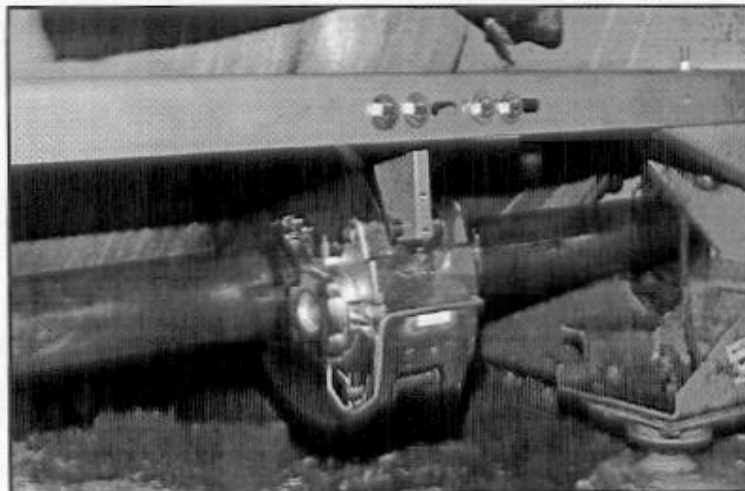
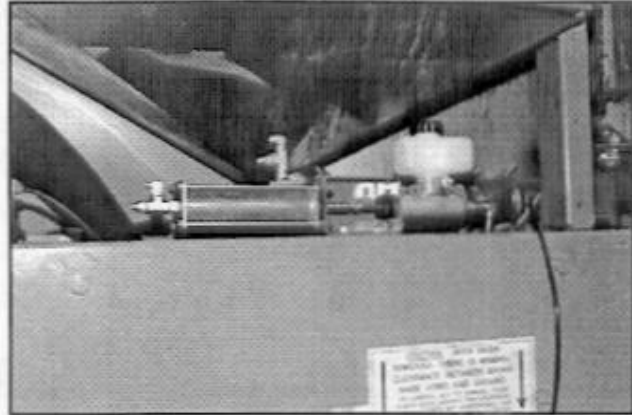


Figure 5



Installed Brake

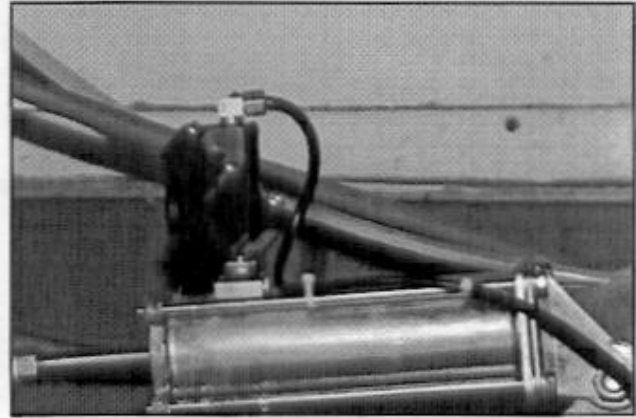
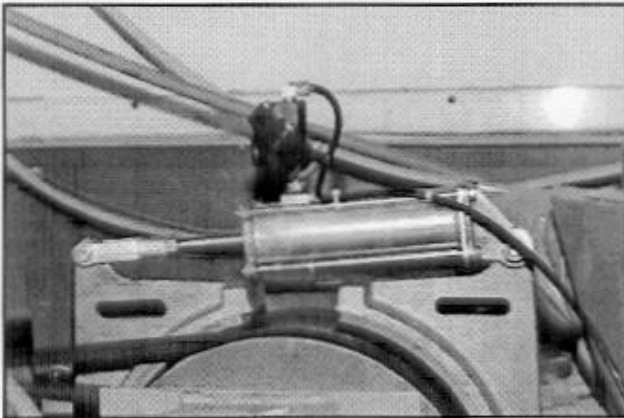
- 1.8
 - a. Mount the master cylinder assembly on the caliper cross brace.
 - b. Connect the hydraulic brake hose to the bottom of the master cylinder.
 - c. Secure the hydraulic brake hose, using the hose clamps supplied, so that the hose cannot come in contact with any moving parts.
 - d. Reinstall the push downs.
 - e. Reconnect the air lines to the push downs.
 - e. Install the air lines on the new air cylinder in the same location that the air lines came off the old drum brake air cylinders.
 - f. Install the second brake airline onto the end of the air cylinder.
 - g. Install the brake release on the side of the cylinder.
 - h. Reinstall the lower cross brace.
- 1.9
 - a. Reinstall the pulley on the idler shaft. Put the belts back on the machine, using a pry bar to lift the idler shaft. Tighten belts as specified by the belt tensioning chart for the machine.
 - b. Reinstall the belt covers.



PART 2

(FOR 60044 MODELS ONLY)

- a. Use a belt sander and belt of grit 200 or finer to sand down the outer diameter of the clutch drum that is mounted to the jack shaft. Sand down to bare metal, being careful not to remove any metal from clutch drum.
- b. Install the auxiliary second brake. The brake goes around the outer diameter of the clutch drum. Center the brake bands in the available surface area.
- c. Use the brass tee supplied to splice into the air line on the end of the disc brake air cylinder.



- d. Fill the disc brake master cylinder reservoir with DOT 3 brake fluid, or better.
- e. Bleed the brake system. Bleed both sides of the caliper. While in manual outputs, turn the brake output on and off three times. While the manual output is off, open (loosen) one of the nipples on the highest point on one side of the caliper to allow air to escape. Once the air has escaped, close (tighten) the nipple.
- f. Repeat this process (e) for the other side of the caliper. Continue to repeat the entire process until all of the air has escaped (the process may need to be repeated many times).
- g. After bleeding the brake caliper, refill the brake reservoir.

If you should have any questions, please call Milnor Technical Support. (504) 467-9591 ext. 276.

