



INSTALLATION INSTRUCTIONS

PART NUMBER	153-8407
PART DESCRIPTION	BUFFER BRUSH ASSEMBLY
REV DATE	2/08/2002
MACHINE MODELS	PXS-B / PX-8 / SM II



Basic knowledge of the lane machine including mechanical and electrical

TOOLS NEEDED:

¼ Allen wrench

Flathead screwdriver

3/16 Allen Socket w/ Ratchet



TECHNICAL NOTE

Please thoroughly read the instructions prior to performing the installation of this assembly.

To avoid any potential problems, if at any time during the process you have a question, stop and contact our Tech Support department at the numbers listed below.

Please visit our growing library of videos to see if these instructions are available!



www.youtube.com/user/KegelBowling81



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1. The Phoenix and the Phoenix-S/Sanction Machine II should have the buffer brush in the raised position. This will loosen the belt and allow for easy removal. If the brush is down, access the Test I/O Menu and press the Output ^ key until Output 205 (Brush Lift) appears on the screen. Press the ON (or SET) key on the keypad to rotate the motor ½ turn. Then unplug the machine.
2. With the power off, raise the machine to the transport or upright position.
3. Begin on the left side (7-pin side) of the machine. Loosen the two set screws that hold the brush shaft into the bearing collar. These will require a 1/8" allen wrench.
4. Move to 10-pin side of the machine and remove the shoulder bolt on the inside of the machine that is holding the lifting link to the bearing. This bolt requires a 3/16" allen wrench socket for quick removal.
5. Remove the shoulder bolt on the outside of the panel that is holding the brush bearing. This bolt has one or two washers on it. **Do Not** lose these washers...they must be replaced.
6. As the bearing becomes loose the right side of the brush will drop down.
7. Pull the other end of the brush out of the left side bearing, while working the belt off of the pulley. If needed, pry between the pulley and the bearing with a long screwdriver to free the brush from the left side.
8. When the brush is out of the machine, pull the right side bearing off the old brush. Slide it on the right side of the new brush.
9. Place the belt around the buffer brush.
10. Slide the brush into the left bearing collar. There should be a 1/8" gap between the pulley and the right side bearing after it is positioned inside the machine. After checking this adjustment, tighten the two set screws on the left bearing collar.
11. There are two different shoulder bolts used to hold the bearing inside the machine, one has a shorter thread length than the other. The shorter is used to connect the lifting link to the bearing. (The threads are shorter so it doesn't rub the side panel as it pivots up and down.) The bearing is machined for the link to pivot freely.
12. Use a fastener adhesive similar to red loctite when securing the bolt that holds the link to the bearing.
13. Use the bolt with the longer threads on the outside of the machine. Be sure to replace the washer(s) on this bolt. Again, it is a good idea to use a drop of red loctite on the threads. Place it through panel and tighten it to the tapped bearing.
14. Check to see if belt is still around the pulley and check for proper alignment. If belt is out of



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alignment, correct the problem by adjusting the position in the left side bearing collar. (The pulley should come from the factory as close to the brush fibers as possible.)

15. After the brush is secured in the machine and the set screws are tight on both sides, set the machine down in the operating position.
16. Plug in the power cord and press the Output ^ key until Output 205 appears in the Test I/O Menu.
17. Lift the brush up and down a few times. Set the bearing against panel so it moves freely with no drag. This bearing should not scrape the wall. Tighten the two small set screws in the bearing collar.
18. The brush crush must be adjusted when installing a new brush. The typical amount of crush on the lane should range from **3/32"** to **3/16"**.
19. Measure the amount of crush to the lane by using a straight edge from the drive wheel across the brush to the LDS wheel. The recommended amount of crush is **1/8"**. Too much crush will increase amp draw and may prevent the motor from running. If an amp meter is available, use it to monitor the motor when running the new brush. The typical amp draw of the motor alone should range from 5 to 6 amps when the brush is running on the lane. Place the amp meter on the 14 AWG red wire to the buffer motor.
20. Adjust the crush to the lane by moving the LDS blocks on the rear of the machine until **1/8"** of the brush fibers extend beyond the straight edge.
21. Make sure the LDS blocks are level after any adjustments. The counter shaft must spin freely for proper machine operation. Tighten the outside two blocks and spin the shaft before locking down the center pillow block. (It is also a good idea to check the end play of the counter shaft, making sure it is about **1/16"**.)
22. Check the brush adjustment to the transfer roller. Examine the amount of gap that the transfer roller leaves in the brush fibers as the brush is turned against it. This gap on the **Phoenix** should range from **3/16"** to **1/8"**. On the **Phoenix-S/Sanction Machine II** set the crush on the bottom roller from **5/32"** to **1/8"**. This is another adjustment area to check if the amp draw on the buffer motor is excessive. If a change is made to the transfer roller be sure the final adjustment is parallel to the brush and square in the machine. The wicks on the Phoenix should pull away from the transfer roller only about **1/8"**.
23. Run several lanes with the machine allowing the new brush to break-in before beginning your regular conditioning run.
24. Listen to the buffer motor as the machine travels down the lane. Clicking noises from the buffer motor indicates excessive amp draw. If the motor wants to stall out or is noisy, re-check the adjustments in steps 19-22. The goal of these adjustments is to get the best pattern on the lane without creating too much of a load on the motor.



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