KNOWLEDGE BASE

Article Type: Instructions

Mixer Discharge Door Adjustment on models; 30, 42, 54, 81, 108, 135 mixers.

Description:

Instructions on “How to” set-up and adjust the discharge door on Columbia mixers.

WARNING

Never work on, clean or service this unit, control panel or any machine or open or remove any protective cover, guard, grate, door, or maintenance panel until the power or energy sources has been turned off, locked out / tagged out, and all moving parts have come to a complete stop and or blocked to prevent movement. Machinery is dangerous – avoid personal injury and or death by following manufacture, Local, and OHSA safety procedures. Contact Columbia Machine for safety decals, guards, horns and beacons.

Mixer Discharge Door

How to set up and adjust your mixer discharge door.

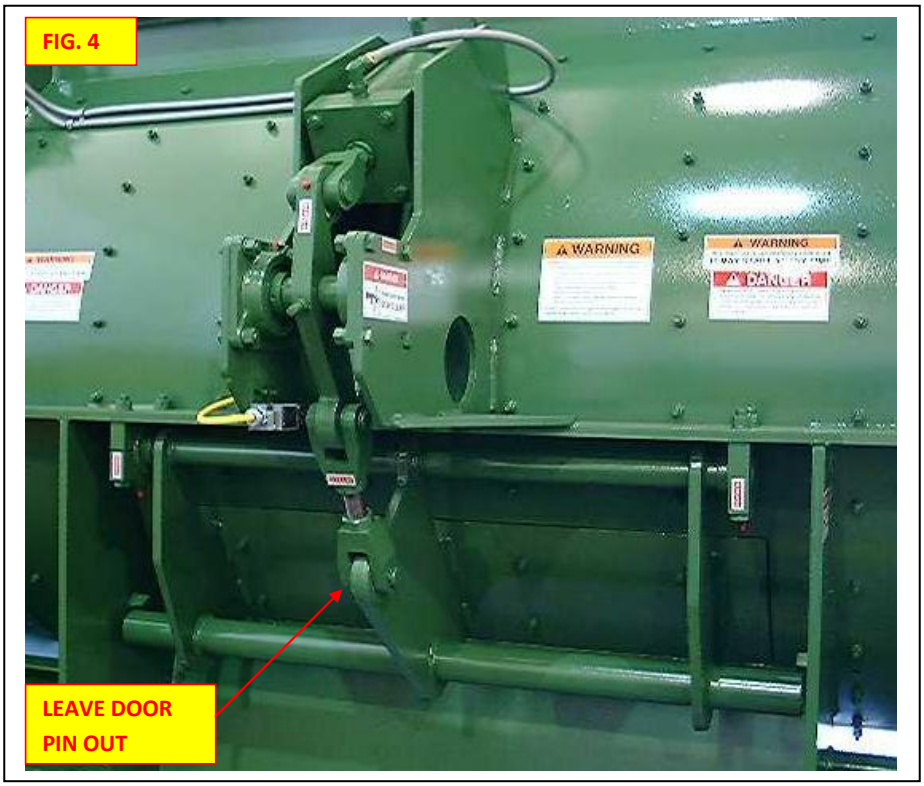
This service tip was developed to help you understand the correct way to adjust your mixer discharge door for optimum performance on 30, 42, 54, 81, 108, 135 Models.

Before shutting system down, open discharge door half way by using the selector switch.

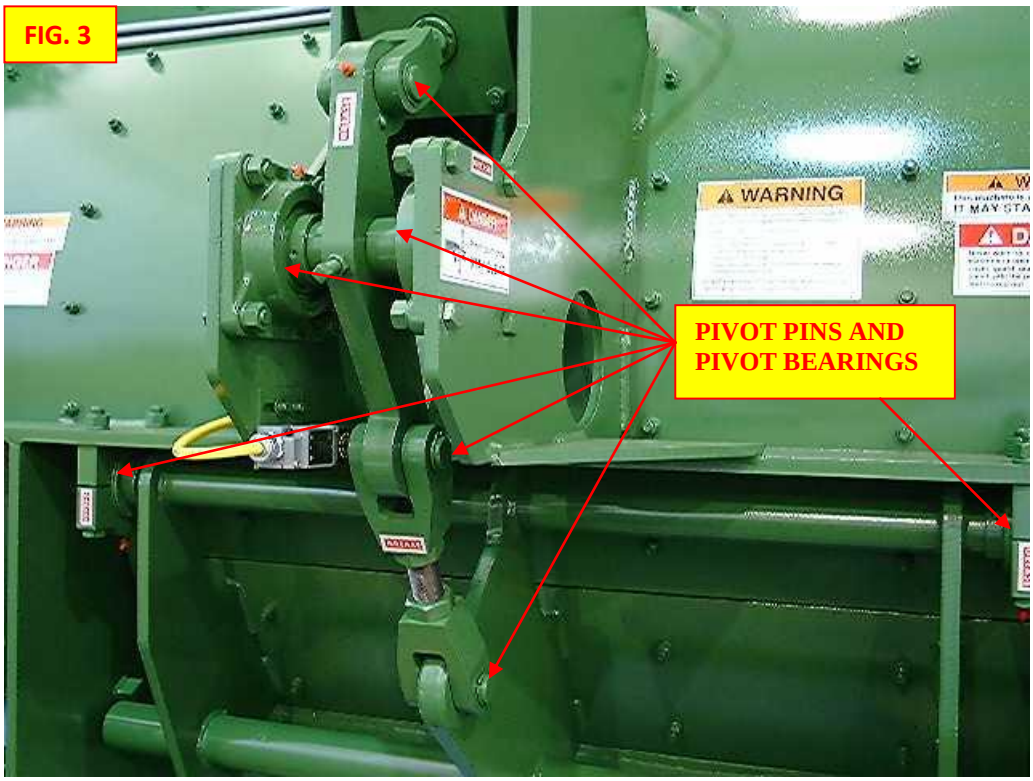
Lock out - tag out mixer before doing any work.

Remove air lines from cylinder. This will allow you to move the door freely.

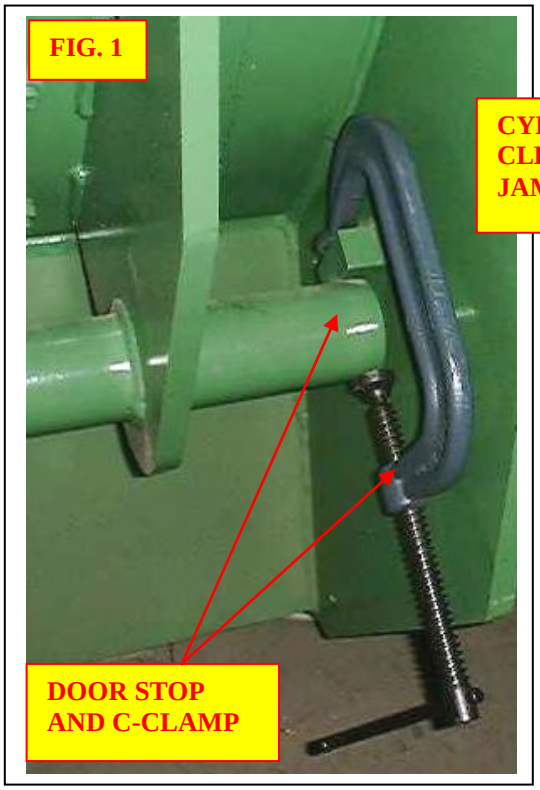
Remove lowest clevis pin so the door can be pushed closed against the door stop blocks. (**See fig. 4)**

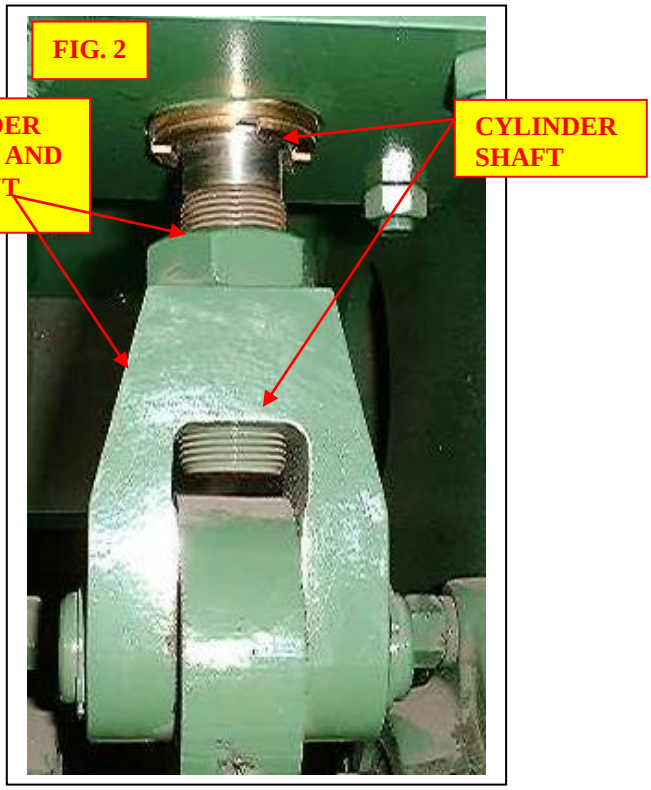


Check the movement of the door, bearings and mounting brackets for smooth operation. Tighten or replace brackets if needed. Make sure door opening is clean with no build up. (**See fig. 3)**



Push door to closed position, using two c-clamps; clamp the door closed against the stop blocks. This will allow you to work on the door safely. **(See fig. 1)**





Inspect cylinder for air by-pass: 1) Hook cylinder to air using the base port, leave rod end port open. 2) Extend cylinder, once cylinder shaft has bottomed out listen for leakage. This will check one piston seals for wear. Moving the hose to the rod end port and retract the cylinder, again listen for leakage, this will check the piston and rod seals.

Make sure cylinder clevis is threaded onto cylinder shaft all the way, with some threads showing on clevis side. Leave jam nut loose at this time. **(See fig. 2)**

Check pivot bearings and pins for wear. Replace if worn. **(See fig. 3)**

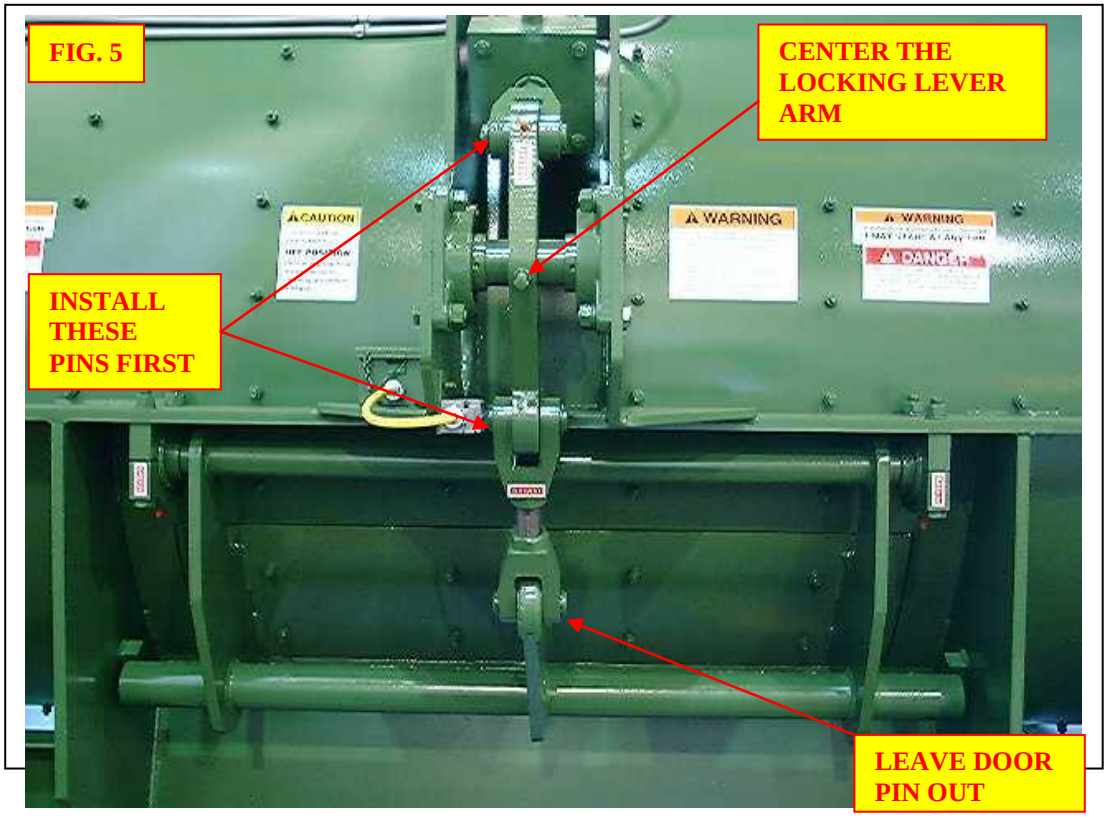
The four-bolt flange bearing should also be inspected for free movement, replace if not easily rotated. Make sure all bolts are tight. **(See fig. 3)**

Reinstalling the cylinder and locking lever arm assemblies, plus adjusting of the over center locking of discharge door.

Re-install cylinder. Now install all pivot pins except for the pin in the door. (**See fig.4)**

Re-install air lines to cylinder. Turn air on, using valve fully retract the cylinder.

Install locking lever arm. Center locking lever arm on the pivot shaft between flange bearings. Use the square headed bolt, secure locking lever arm in position. (**See fig. 5)**



Install cylinder pivot pin, and the pin holding the clevis assembly to locking lever arm.

Leave the door clevis pin out and assemble clevis loose. This will allow you to line up the lower clevis assembly with the hole in door. Visually inspect hole for line up of clevis with the hole in the door. When the holes are aligned install pivot pin. If holes don't align, adjust clevis as needed to complete alignment. (**See fig. 5)**

Now remove c-clamps holding door closed.

Using the pneumatic system, open and close the door, watch the movement of the door. The door should open smoothly. When the door is closing, the door should close all the way, the locking lever arm should make a slight snapping sound when it passes over center, thus locking the door closed. If the door closes and there is no snap you will need to open the door half way and remove the cylinder pivot pin. Now rotate the clevis only half a turn counter clockwise, this will move the clevis down on the threads or lengthen the rod assembly, Reinstall clevis pin. (**See fig. 2)**

Using the selector switch, open and close the door. It may be necessary to repeat this adjustment to get the door to lock closed. (**See fig. 6)**

The side plates where the bearings for the locking lever are mounted will flex slightly when closing the door. If they flex too much the tension on locking lever arm needs to be adjusted. Shorten the rod assembly to relieve tension. Over time too much tension will crack the welds. (**See fig. 6)**

Once you have the door properly adjusted you should be able to turn off the air, using a large soft hammer hit the locking lever arm; the door should not open. This will insure the door is locked and will not open under a load. (**See fig. 7)**

Finally, check the door to see if it is completely closed by using a piece of paper. Try to slide it in between the stop bar on the door and the stop block on the mixer frame. If there is a gap the door is not adjusted correctly. Re-adjust as necessary. (**See fig. 8)**