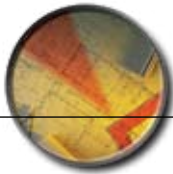


LOCKSMITH LEDGER

International



INSTALLATIONS

INSTALLING A RIXSON MODEL 27 OFFSET HUNG DOOR CLOSER

BY JERRY LEVINE

I was invited to the installation of a Rixson Model 27 Offset Hung Floor Closer to control one door in a secondary entry of an older building. The Rixson Model

27 replaced a Rixson Model 25 installed probably during the 1960s.

This double-door entry had narrowstile aluminum glass storefront doors. An overhang protected the opening and the closers from weather. The old Rixson Model 25 floor closer is a base model, a single-acting closer having a 180-degree opening up to the dead stop. The only adjustment available on this model was closing speed. It did not have back-check, latch speed, or hold open option. To prevent the door from swinging into the wall, a floor stop was located at about 150 degrees.

To determine the model and rough overall condition of the floor closer, the facilities' locksmiths removed the threshold and sent a digital image of the unit to the Rixson factory. Only one

adjustment screw hole was found in the threshold covering the closer, an indication of a Rixson Model 25.

Warranty: 10 years

Time to Install: 1-1/2 to 2-1/2 hours depending upon the conditions of the installation

Tools/Supplies: turkey baster, three foot crowbar, mallet, large straight slot screwdriver, 3/4" combination wrench, 3/8" hex wrench, vacuum, rags, cardboard box, whisk broom and dust pan



View of door and opening.



Dogging the exit device.



View of the knuckle Note 3/4" bolt.



Removing the intermediate pivot left from jamb.



Removing the top pivot set screw.

A brief discussion determined the replacement floor closer for the opening. The first question asked was: Can the door opening be limited to 105 degrees instead of the 180 degrees? With a yes, the Rixson Model 27 became a better choice for this installation. It can be ordered with a door opening of 5, 90, 95, or 105 degrees. It has four adjustments: sweep speed, latch speed, backcheck, and an option for hold open at the same degree of opening as the dead stop. For this application, a Model 27 with 105-degree opening and selective Hold Open was installed. Selective Hold Open (SHO) enables the Hold Open feature to be turned on or off as needed.

The Rixson Model 27 is a single-acting, handed floor closer designed for door widths up to four feet, weighing up to 450 pounds. It has a built-in positive dead stop that prevents the door from swinging beyond the opening degree.

The following are the step-by-step procedures for removing the Rixson Model 25 closer and then installing and adjusting the Model 27 closer.

Note: Each installation has its own unique characteristics. To avoid possible problems, always carry a good selection of sheet metal and machine screws in different sizes and lengths.

REMOVING THE OLD CLOSER

Step 1. Unscrew the Phillips head screw securing the finished arm cap from the bottom arm. Remove the cap. The cap will be used on the Model 27 closer to complete the installation, keeping the appearance the same for both doors.

Step 2. Remove the screws from the portion of the extruded aluminum threshold covering the Rixson Model 25. The threshold covering the closer is two parts.

NOTE: Since the placement of the spindle is the same for both models, the threshold could be used with minimum modification to accommodate the four adjustment valves.

Step 3. Loosen the 3/4" arm bolt securing the closer spindle onto bottom arm. Newer arms are secured using a 3/8" hex bolt.

Step 4. Remove the five Phillips head screws from the intermediate pivot jamb leaf.

Step 5. Screw the top pivot hex finish cap back and forth to release pressure on the setscrew. The setscrew mounted into the top pivot leaf keeps the pivot stud in place.



Removing the stud from the top pivot.



View of the floor closer from the exterior.



Lifting the door from beneath the knuckle.



Prying up the old floor closer.



Inserting the new floor closer.



Installing the new floor closer.



Install spindle arm.



Tightening top pivot door leaf.



Install door.

Step 6. Unscrew the setscrew from the side of the arm. Once the setscrew has been removed, the pivot stud can be removed. The setscrew is only on older top pivots.

Step 7. With the setscrew removed, remove the hex finish cap and the top pivot stud.

REMOVING THE DOOR

At this point, the top, intermediate, and bottom pivots are disengaged, and the door can now be removed from the opening. Be careful as the door must be first tilted out of the opening, then lifted up, off of the bottom pivot spindle to be removed from the opening.

Step 8. With the door closed, place a crowbar over a large screwdriver handle with the tip of the crowbar beneath the knuckle adjacent to the spindle. The screwdriver handle is the fulcrum and the crowbar acts as a lever.

Step 9. Carefully tilt the door slightly out of the opening. With the door in a position to be lifted up several inches, press down on the crowbar using one foot to lift the arm knuckle off the spindle. Carefully move the door to a safe position, laying it down onto the lock edge and leaning it against a wall.

Note: Laying the door down onto the lock edge makes the top, intermediate, and bottom pivots accessible.

REPLACING THE BOTTOM ARM

With the door out of the opening, it is possible to examine the condition of the top and intermediate pivot leaves. For this installation, a decision was made to replace the bottom arm because of improper installation of the original. *Note: When replacing or installing a pivot or arm, Rixson recommends using the blue type of screw thread adhesive.*

Step 10. Remove the four mounting screws securing the floor closer into the cement case.

Step 11. Rap the metal case of the floor closer using a mallet to loosen it from the metal cement case. Over the years, a floor closer case can become almost welded to a metal cement case, making it difficult to separate. Rapping breaks the bond between the floor closer and the metal cement case.

Step 12. Tilt out the floor closer using two large tools that will provide enough leverage starting at the end opposite the spindle (floor closer end closest to the lock edge of the door). For this installation, a crowbar and a large flat blade screwdriver were used to remove the floor closer from the cement case.



Install top pivot stud.



Install intermediate pivot leaf.



View of spindle arm knuckle.



Check spacing top pivot.



Adjust intermediate pivot.

Step 13. Clean out, tap and lubricate the screw threads in the cement case. This will help to ensure the new brass mounting screws will secure the new floor closer. *NOTE: Do not use steel mounting screws.*

Step 14. Clean out any debris or excess material from the cement case.

INSTALLING THE NEW CLOSER

Step 15. Carefully insert the new closer by first inserting the spindle end into the opening.

Step 16. Make sure the floor closer seats flush into the cement case.

Step 17. Install the four new mounting screws to secure the floor closer.

Step 18. With the new bottom arm installed and the arm locking screw loosened, place a crescent wrench onto the spindle. Snug the crescent wrench.

Step 19. Place the door into the opening with the bottom arm knuckle resting on the crescent wrench.

Step 20. Carefully rotate the spindle using the crescent wrench until the knuckle begins to slide down onto the spindle.

Step 21. Carefully slide the crescent wrench off the spindle. Make sure the spindle arm knuckle accepts the spindle.

Step 22. Slide the stud into both halves of the top pivot to keep the door within the opening. Carefully swing the door to make sure the knuckle seats completely onto the spindle. There is no need to lubricate the top pivot as the stud is manufactured of oil impregnated steel.

Step 23. Use a crowbar and flex the door along the intermediate pivot to enable the jamb pivot leaf to slide into place in the jamb. Once the pivot slides into place, re-install the mounting screws.

Step 24. Take a shim and place it between the top and bottom knuckles of the top pivot. If there is sufficient space between the knuckles for the shim to slide into the opening, a shim must be installed beneath the door closer arm.

For this installation, no shim was required. However, when installing a shim, the flat inside of the shim slides along the flat side of the spindle.

Step 25. Carefully tighten the hex bolt securing the spindle to the knuckle using a 3/8" hex wrench. To ensure proper operation of the floor closer, open and let the closer close the door a number of times.

Step 26. After the door has been opened and closed a number of times, attempt to tight the 3/8" hex bolt to ensure the spindle is properly seated.



Adjust floor closer.



Drill four adjustment holes.



Install threshold plate.



Old vs new arm cap.



Make sure the Hold Open is not engaged when adjusting the Rixson model 27 floor closer. For a right hand door, the adjustment is on the right side closest to the lock edge of the door. The adjustment pointing towards the spindle is "OFF",

Step 27. Check the adjustment of the intermediate pivot. The intermediate pivot needs adjustment to the point that this pivot's leaf is just snug, but does not carry the weight of the door. Test the operation of the floor closer by opening and letting the closer close the door.

FLOOR CLOSER ADJUSTMENTS

The next series of steps will discuss the adjustment of the floor closer, the installation of the threshold, and installation of a door stop. The Rixson Model 27 has four adjustments. The Model 25 has only one adjustment. In order to simplify adjustments, drill four 3/8" diameter holes through the threshold. This way, should the floor closer ever need adjustment, the adjustments can be made through the holes in the threshold. To drill the holes, a floor plate for the Model 27 was made available to be the drill guide.

Make sure the Hold Open is not engaged when adjusting the Rixson model 27 floor closer. For a right hand door, the adjustment is on the right side closest to the lock edge of the door. The adjustment pointing towards the spindle is "OFF", whereas the adjustment pointing towards the interior of the build is "ON".

Because the door weighs significantly less than the maximum recommended, there is no need to adjust the spring force of the floor closer.

Open the door, and let it close. Does the lock latch when the door closes? If yes, open the door and walk through the opening at a normal speed. Does the door hit the rear of your shoes. If not, the door is closing at a reasonable speed. *Note: If you are in a situation that there are a number of elderly or disabled person, you may want the door to close a bit slower.*

The next step is to check the latch speed.

You want the door to latch and close completely. You do not want the door to slam shut. Adjust as necessary.

The final step is the backcheck adjustment. This floor closer is designed to stop at 105 degrees. This model of floor closer should begin to slow down its open beginning at about 90 degrees. You never want to fully close the backcheck valve as this will cause excess pressure on all of the seals in the floor closer.

Once the door closes properly, install the threshold plates. Make sure the screws do not scrape along the bottom of the door.

The final step is to install the arm cap using a Phillips head screw. Test the operation of the door.


To complete this installation, the floor stop was removed as the door could no longer open to 150 degrees. A floor stop will eventually be installed at 105 degrees. It is never a good idea to use the backcheck to act as a door stop. The backcheck moves the fluid to slow the door's progress, not to stop the door's progress.

SHOPPING LIST

The Rixson Model 27 can be ordered in different configurations. For this installation, the closer was ordered as 27105SRHLAP.

New arm was installed because of improper original installation. The part number for the replacement 3/4" offset arm is 275177.

A few different screw types and sizes were required to complete the installation.

For more information, contact your local locksmith wholesaler or Rixson Specialty Door Controls, 9100 West Belmont Avenue, Franklin Park, IL 60131. Telephone: 866-474-9766. Fax: 847-671-9273. Web site: www.rixson.com. 

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