

# Commercial Door Opener Installation Instructions

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## Please Note:

All of the pneumatic connectors are the "push to fit" variety this means to connect the tubing you only need to push the tubing into the connector until it stops. To remove the fitting hold the blue collar down toward the fitting to pull the tubing out.

The compressor connector will thread into any standard compressor port.

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## Planning the installation

The commercial opener is straightforward to install and adjust; this document covers the overall installation, however specific parts such as the closer and the timer have their specific documentation. Please refer to those instructions for information about those parts.

When installing the opener the main planning that takes place is the position of the switches, where to plug the transformer, and position of the compressor and running the tubing from the compressor.

The transformer does not need to plug in right next to the opener, it can be plugged in anywhere (often near the compressor) and a low voltage line is run to the door opener.

The compressor can be located anywhere up to 200 feet from the opener when only using 5/32 inch tubing. If it is further away than this a 1/4 inch header line will need to be run.

The tubing run from the compressor can be either in or out of a conduit; the tubing is durable nylon and can work in any setting or environment. The only thing to watch out for is kinking or pinching of the tubing.

If the opener is used with switches, these can be located anywhere and are connected to the timer module via low voltage wire, there is no current run through the switches and they need to be attached to the normally open and common terminals of the timer module.

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## Mounting of the opener.

To mount the opener and run all the lines the cover should be removed from the main body and replaced when everything is up and running.

These instructions are for both left and right opening door openers but the left swing will be used for instructions (if you have a right swing opener just replace left with right in the instructions). Also the term hinge-side may be used referring to the side of the door with the hinges. A left swing door has the hinges on the left and a right swing door has the hinges on the right. (From the vantage point of the push side of the door).

The door opener only mounts on the push side of the door, and when activated it pushes the door open.

When mounted the internal closer is on the bottom with the stainless actuating cylinder on the top.

The left edge of the internal door closer (left side of the opener where the closer body lines up with the edge of the mounting plate) should be 5 inches from the hinges. Secure the opener to the doorframe putting screws in the mounting holes of the closer and through the mounting plate (there are a total of three holes) Add more screws if necessary. Make sure the closer is low enough for the closer arm to clear the doorframe when the door opens. Refer to the closer instructions for this dimension.

## Attaching the closer arm

Attachment of the closer arm is different for this opener than what is discussed in the instructions for the closer. It has to be attached and mounted this way for the opener to open all the way.

The main closer arm is the flat metal piece that attaches to the closer. The shoe arm is the piece that will attach to the door and is connected to the Main arm at an elbow joint.

Attach the main closer arm to the closer body using the mounting screw. The closer main closer arm should be perpendicular (90 degrees) to the small arm that the actuator is attached to at the top of the closer.

To attach the shoe arm to the door, line up the left screw of the shoe with the main pivot of the closer. It should be inline with this so the shoe arm comes away from the door at around 45 degrees.

Before attaching the shoe arm to the main arm, lengthen the shoe arm so that when you attach the two, there is very little preload on the closer. The main arm should only move 1/4 inch towards the door. This is sufficient to keep the door closed. Open the all the way and release it. Adjust the closer according to the closer instructions so the door closes properly.

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## Adjusting the door opener for automatic operation.

Once you have the door closing properly, you can hook up the air and power to the opener and adjust it for automatic operation.

### Attaching Power and Air

There will be two leads marked for 24VAC power, attach power from the transformer to these two leads. For information on the timer module please refer to the timer instructions and schematic. (The solenoid should be prewired).

Attach air to port one of the solenoid. The solenoid is the black and blue unit with a push to fit fitting on one side (port one) and a brass regulator on the other side (port two). On the outlet port of the regulator (brass fitting with stainless knob on top) there is a flow control (which can be adjusted with a slotted screw driver) from there a tube runs to the inlet port of the actuating cylinder.

### Main Adjustments

Power – adjust the regulator by turning the knob clockwise to increase pressure to the actuator. Activate the door and turn the knob until the door opens to 90 degrees. Do not worry about the speed of the door opening at this point just that the door opens all the way. If the door slams open decrease the pressure by turning the knob on the regulator counter clockwise. Once the door opens properly you can now adjust the speed.

Speed adjustment – adjust the opening speed by turning the screw on the flow control (on the outflow port of the regulator). Turn in

clockwise to slow the door down, turn counter clockwise to speed up the opening.

## Speed of the door

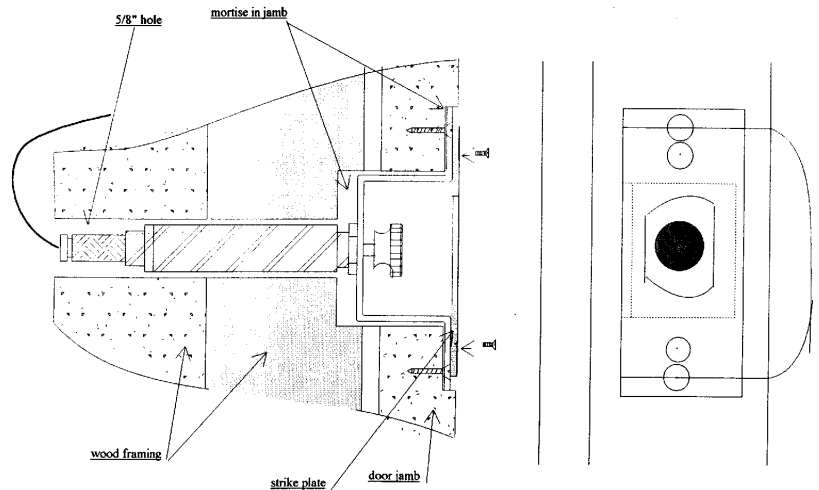
For normal handicap settings the door should open no faster than 5 seconds from close to fully open.

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## Optional Pneumatic strike release.

There is a strike release option to unlatch the door before it opens. Using a knife cut the tube that runs from the pressure regulator to the cylinder and push the T on each side. On the third port of the T, insert another length of tube that runs to the latch and attach it to the latch release cylinder.

## Mounting of the latch release cylinder



*Diagram of Door Latch Release Installation*

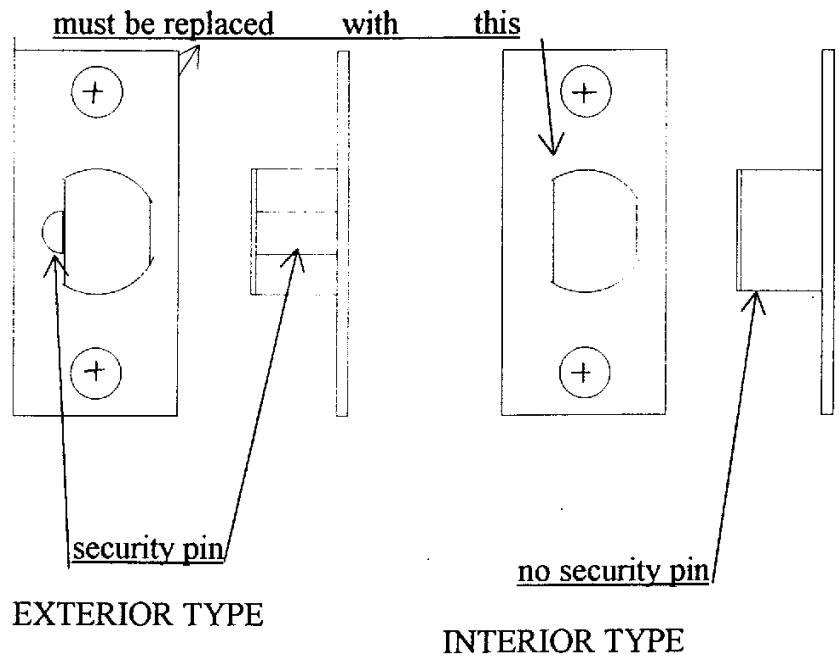
Determine how much if any, the existing strike plate needs to move to allow the existing door to latch perfectly. Mark the location of the new set of holes for the strike plate. Then:

1. Remove and save the existing strike plate
2. Remove and save the 2 special stainless steel screws from the latch release assembly.

3. Line up the tapped holes in the latch release assembly with the existing holes in the doorjamb left by the strike plate screws or the new holes as marked above.
4. Be sure to use the holes that will line the strike plate up for a perfect latch fit as discussed above.
5. Mark the outline of the strike release BOX. (Note: Do not start to drill yet.)
6. Hold the latch release assembly sideways and mark the outline of the wood to be removed to allow the strike release box to recess into the door jamb
7. Drill 4 holes using the 5/8-inch drill bit in the corners of the outline and deep enough to accommodate the strike release box.
8. Using a sharp wood chisel slowly cut out and removes the wood between the holes. Note the box should fit slightly snug so that the assembly may be firmly attached to the jamb and the original strike plate reattached. When installed this assembly should be hardly noticeable.
9. Drill another 5/8<sup>inch</sup> hole in the center for the newly cut rectangular opening. The pneumatic cylinder mounted to the strike release box will recess into this hole. This hole must extend past all framing and into the hollow wall chamber.
10. Trial fit the strike release assembly. Chisel or drill to allow the assembly to easily slide into position.
11. Mark the “ears” of the latch release assembly both above and below the mounting hole. With a sharp chisel, carefully remove a thin section of wood so that when the latch release assembly is installed the original strike plate will mount on top and will be flush with the doorjamb.
12. Drill a 3/8-inch hole in the wall approximately 5 inches from the doorjamb face and in line with the hole for the latch release cylinder. This hole must extend into the same hollow wall as the cavity as the cylinder hole. Its purpose is to accommodate the tubing, which will connect the back of the latch release cylinder. The position of this hole is not as critical as long as a common hollow wall cavity is accessed. The location may be adjusted as necessary.
13. “Fish” the tubing from this hole through the hole in the doorjamb. A short piece of copper electrical wire works well. A hook or loop bent into the end of the wire may help.
14. Push the tubing firmly into the fitting on the end of the strike release cylinder, feeling for the tubing to “bottom out”. The tubing should insert about 3/8 of an inch into the fitting. Test by pulling backwards on the tubing, it should hold even with a firm tug. Note: Do not Crimp the tubing. Crimps in the tubing restrict the airflow and interfere with the operation of the door.
15. Insert the strike release into the prepared cavity while pulling firmly on the tubing fed through the wall. Secure the Strike Release with the 2 screws, which formerly were used for the original strike plate.
16. Attach the strike plate to the strike release box using the 2 special screws saved from the initial step. After attaching the plate, make sure that the door still latches easily. Make any adjustments to the plate or door as necessary.
17. Cut the tubing. About 7 feet is sufficient if the tee is going to be placed along the door molding. If a different tubing route is to be

used. Consult the tubing diagram and measure the necessary length.

- Slip the grommet onto the tubing so that it may be pushed into the 3/8-inch hole in the wall to protect the tubing so that it may be pushed into the 3/8-inch hole in the wall to protect the tubing and to protect the hole drilled into the wall. Note the knurled brass nut can be adjusted. Loctite thread is used during assembly and you will have to heat this nut with a cigarette lighter to make adjustments.



If existing latch is of the interior type shown at right, no further action is required. If existing latch is of the exterior type shown at left, it must be replaced with an interior type (i.e. without security pin) of the proper backset.

Addition Information – Upon examination of the two latches pictured you will notice the presence of a small pin which when depressed, prohibits the latch itself from being depressed. This pin provides a small measure of security against break in by offering resistance against movement by a credit card, screwdriver, or similar object. This is exactly what the latch release is designed to do so an exterior type latch is incompatible with this system.

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## Contact Information

If you have any questions about installation of the commercial door opener please contact **Disability Systems, Inc. at 303-995-9008**