



Single Spring Diamond Dry Freight and Evolution Door Installation Procedures

Purpose The purpose of this document is to communicate the proper installation procedures to ensure a trouble free installation.

Scope This is to encompass the installation of the Dry Freight and Evolution doors.

CAUTION:

READ AND FOLLOW ALL INSTALLATION PROCEDURES BEFORE ATTEMPTING ROLL-UP DOOR INSTALLATION.


Procedure The following steps are to be carefully followed for a proper installation.

ONE:

Review the complete package of roll-up door components upon delivery and make sure that there are no shortages or damages prior to installation. Diamond Manufacturing, Inc. will not be responsible for door components lost and/or damaged during shipping. The following should be included:

- a. Two Roll-Up Door Halves.
- b. Set of vertical track with mounting angle, head plates and bearings.
- c. Set of horizontal track.
- d. Counterbalance consisting of cable drums, spring, shaft, spring anchor bracket and (Extra head plate and bearing if required.)
- e. Side Seals
- f. Hardware Box consisting of roll-up door cables, rollers, catch box, top fixtures and fasteners. Note: See either individual roll-up door part number or standard parts/corresponding numbers list for further information.

***See Figure 1 for roll-up door components**

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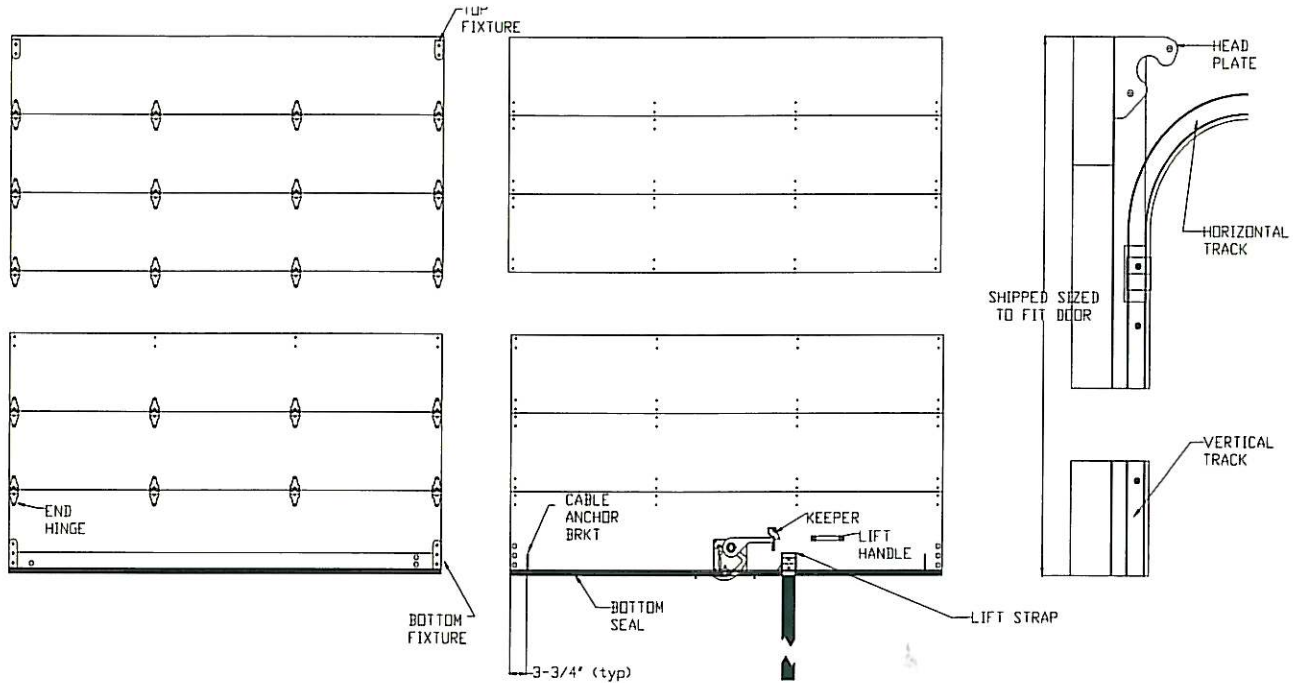


Figure 1

TWO:

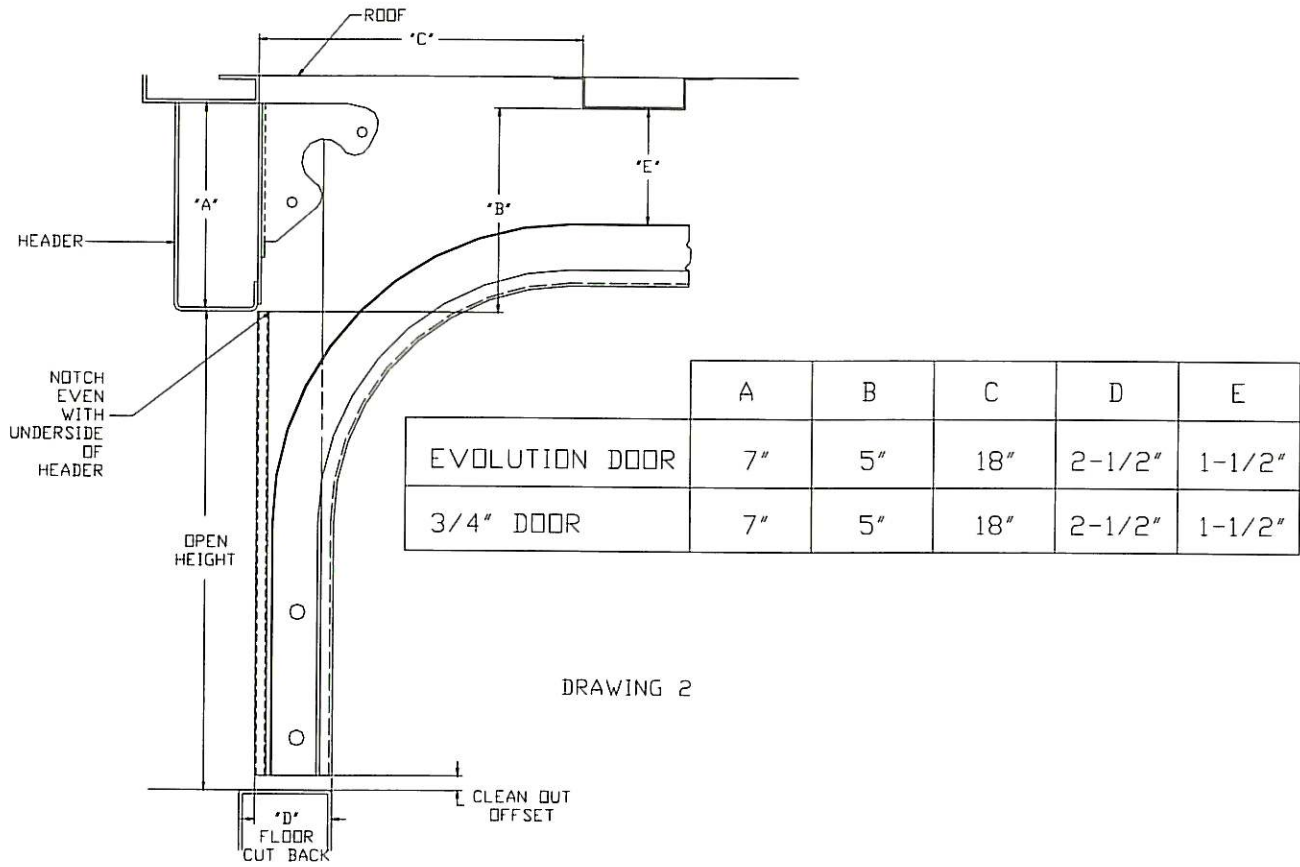
Adequate headroom is required to ensure clearance for the counterbalance and door clearance beneath the roof bows. For a roll-up door utilizing 1" track maintain 1.5" minimum clearance between bottom of roof bow and top of horizontal track.

***See Figure 2 for clearance dimensions.**

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DRAWING 2

Figure 2

THREE:

Side room minimum clearance for a roll-up door utilizing 1" track is 2.5" from the wall to post opening for both posts. If 2.5" can't be obtained, increase the corner post and make sure that the increase remains even with the header.

*See Figure 3 for clearance dimensions.

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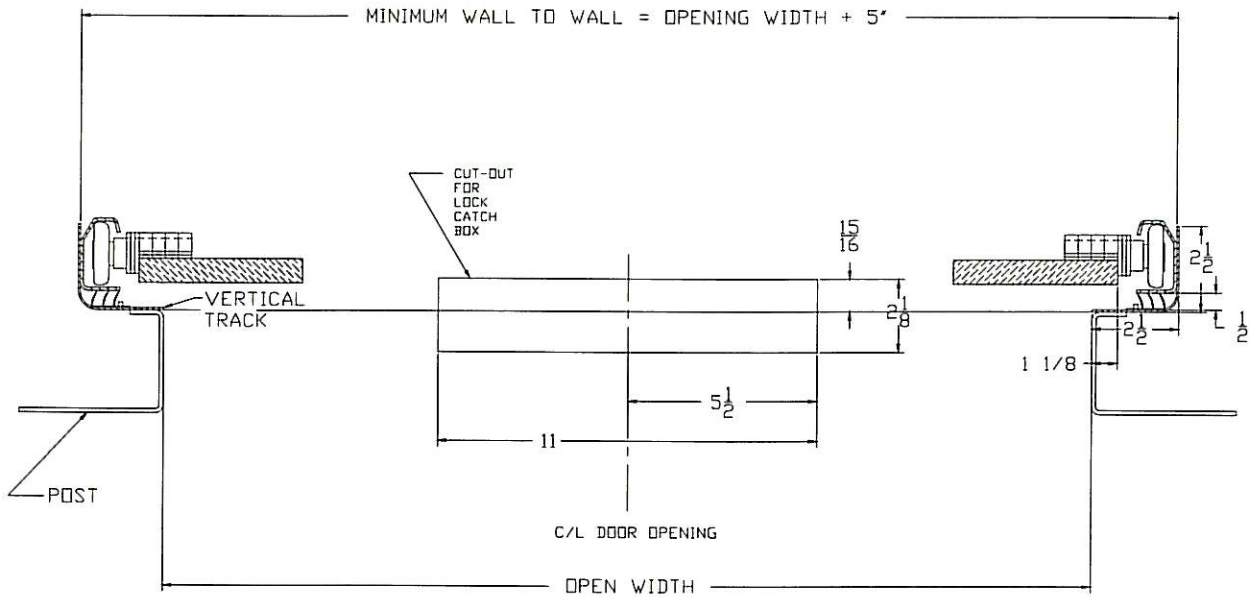


Figure 3

Note:

Both headroom and side room clearance dimensions must be maintained to ensure a proper roll-up door installation. To establish the opening height measure the dimension from header to sill. The width is established by measuring the post-to-post dimension.

FOUR:

Before installing the vertical track/mounting angle it is imperative that the rear structure be checked for square. A dimensional check should be done diagonally, also check the width in several locations. If the rear structure is out of square then the vertical track will be out of square when installed. Stop at this point and take measures to right the rear structure.

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Clamp vertical track/mounting angle to the corner post, the mounting angle needs to be even with the inner edge of the corner post from header to sill. The notch in the mounting angle needs to line up with the bottom of the header. *See Figure 2. Starting at sill weld the vertical track/mounting angle to the post on 12" to 15" centers.

FIVE:

The same dimension or distance held between the vertical tracks must be kept between the horizontal tracks. Install the horizontal tracks 90 degrees with the vertical tracks. Make sure that 1.5" minimum is maintained between the top of the horizontal tracks and the bottom of the roof bow as previously discussed.


Horizontal tracks should be properly affixed to attachment point for maximum support of the door. Weld the track couplers the full length of the coupler to properly join the horizontal and vertical track. Like the vertical track it is important to maintain the same width dimension between the horizontal tracks, if needed, use shims to maintain the same width dimension.

SIX

Unbolt the bearing assembly from the right hand head plate on the vertical track and slide the bearing assembly onto the right hand end of the counterbalance shaft. Insert the left hand end of the counterbalance shaft into the bearing assembly on the head plate on the left hand vertical track. Reposition the bearing assembly on the right hand head plate and bolt securely.

Locate the spring anchor bracket on the inside of the header. It may be necessary to shim the bracket to ensure the shaft does not rub on the anchor casting. The spring will increase in length during the winding procedure. Approximately 4 to 5" is the minimum for spring growth.

For units that are 102" wide an additional head plate bracket and bearing will be required. Install the extra bracket using the same method as the spring anchor plug bracket mentioned above.

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SEVEN:

Using the rivets, hinge pins or bolts join the two door halves together. Take the anchor pin and cotter pin and attach the door cable to the cable anchor bracket. Place the top fixture slide onto the top fixture base plate located on the top panel of the door, use the bolt and flat washer provided in the hardware kit. A roller is provided for each end hinge including the top fixture; place each roller stem in each end hinge and top fixture.


NOTE: A TOTAL OF TWO SPACER WASHERS SHOULD BE INSTALLED AT FOUR LOCATIONS ON THE DOOR. ON THE FIRST JOINT RIGHT AND LEFT DOWN FROM THE TOP AND THE FIRST JOINT RIGHT AND LEFT UP FROM THE BOTTOM, PLACE FOUR SPACER WASHERS ON ALL FOUR ROLLER STEMS. THE SPACER WASHERS KEEP THE DOOR SQUARE IN THE TRACK AND UP TO TWO SPACER WASHERS CAN BE REMOVED IF THE DOOR OPERATES TIGHT DURING OPERATION.

Pull the door cables up tight against the door face and over the top panel so the cables hang over to the inside of the door. A piece of masking tape will help hold the cable in place during door installation.

Place two blocks either 1 X 4 X 4 or 2 X 4X 4 near the vertical track, the blocks will allow a light or lamp into the area once the door has been installed and also keep the door even in the track during the counterbalance winding procedure.

Carefully roll door into the vertical tracks and lower it into the vertical tracks until the door rests on the two blocks that were placed on the corner of the sill near the vertical track. The top fixtures can be disassembled and the top panel can be lowered on the inside of the unit to have easier access for the cable assembly process and/or easier final adjustments to the door. Install the track stop bolts on the ends of the horizontal track.

Remove the masking tape from the roadside cable and attach the cable end into the slot located on the right side of the cable drum. Keep the cable tight against the cable drum ear making sure that the cable is positioned in the first groove and wind the cable drum towards you. The cable should be tracking each successive groove on the drum. Make sure there is no slack remaining! The cable drum must be against the bearing for proper cable alignment! Now tighten both setscrews on the cable drum.

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Place a pair of vice grips on the counterbalance shaft making sure that they rest tight against the ceiling of the unit. The same procedure must now be followed with the curbside drum and cable. The vice grips will keep the cable tight through the remaining cable/drum assembly and counterbalance winding procedures.

NOTE: Both cable drums need to be tight against the bearing assembly and the cable must be tracking each successive groove. Equal tension is needed on both cables and the setscrews must be tight on both cable drums.


EIGHT:

The formula to determine the correct number of winds on the counterbalance spring is Height divided by ten plus three. Example: 100" opening divided by 10 plus 3 equals 13 winds.

Your will need two 1/2" X 18" cold rolled steel bars to wind the counterbalance spring. Make sure that the vice grips are tight against the ceiling and tight on the shaft to maintain cable tension.

Using chalk or paint, draw a straight line the full length of the spring. Take a 1/2" X 18" cold rolled steel winding bar and place it in the winding hole on the spring winding plug. Lift the bar upward as far as possible while maintaining a firm grip on the winding bar. Place the second bar in the hole below the first and wind in the same upward direction while simultaneously removing the first winding bar. Repeat this procedure until the correct number of winds are on the counterbalance spring. Count the chalk or paint stripes to make sure the correct number of winds are on the counterbalance spring.

Tighten both winding plug setscrews and remove the vice grips from the counterbalance shaft, both cables must be equally tensioned.

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Reassemble the top fixture slides with rollers and adjust the top panel so that it is perpendicular with the rest of the door panels.

NINE:

Cut a hole in the sill to install the latch plate or catch box. Make certain the alignment marks in the lock back plate and the mark on the latch plate/catch box are properly aligned.

***See Figure 3 for catch plate installation.**


TEN:

If your door was ordered with side seals, insert the seal in the retaining lip of the vertical mounting angle. Secure the seal at the bottom with the drive rivet provided in the hardware kit. Stretch the seal upward making sure the seal is firmly seated in the retaining lip of the vertical mounting angle and secure behind the lances. Keep the seal tight and secure the top drive rivet. Remove any excess seal.

Lubricate the hinges, rollers shafts, bearings and spring with a lightweight lubricating oil. Do not use grease. Make sure all nuts and screws are tight.

NOTE: A properly installed door when raised two feet from the sill should stop and remain at that location. A gentle push at two feet should carry the door upward into the horizontal tracks. If the door moves upward by itself from the sill when the lock is disengaged then the counterbalance has too many winds on it. Adjust by removing winds. If the door will not stay at two feet and wants to roll back down to the sill then adjust by adding winds.

Conclusion

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