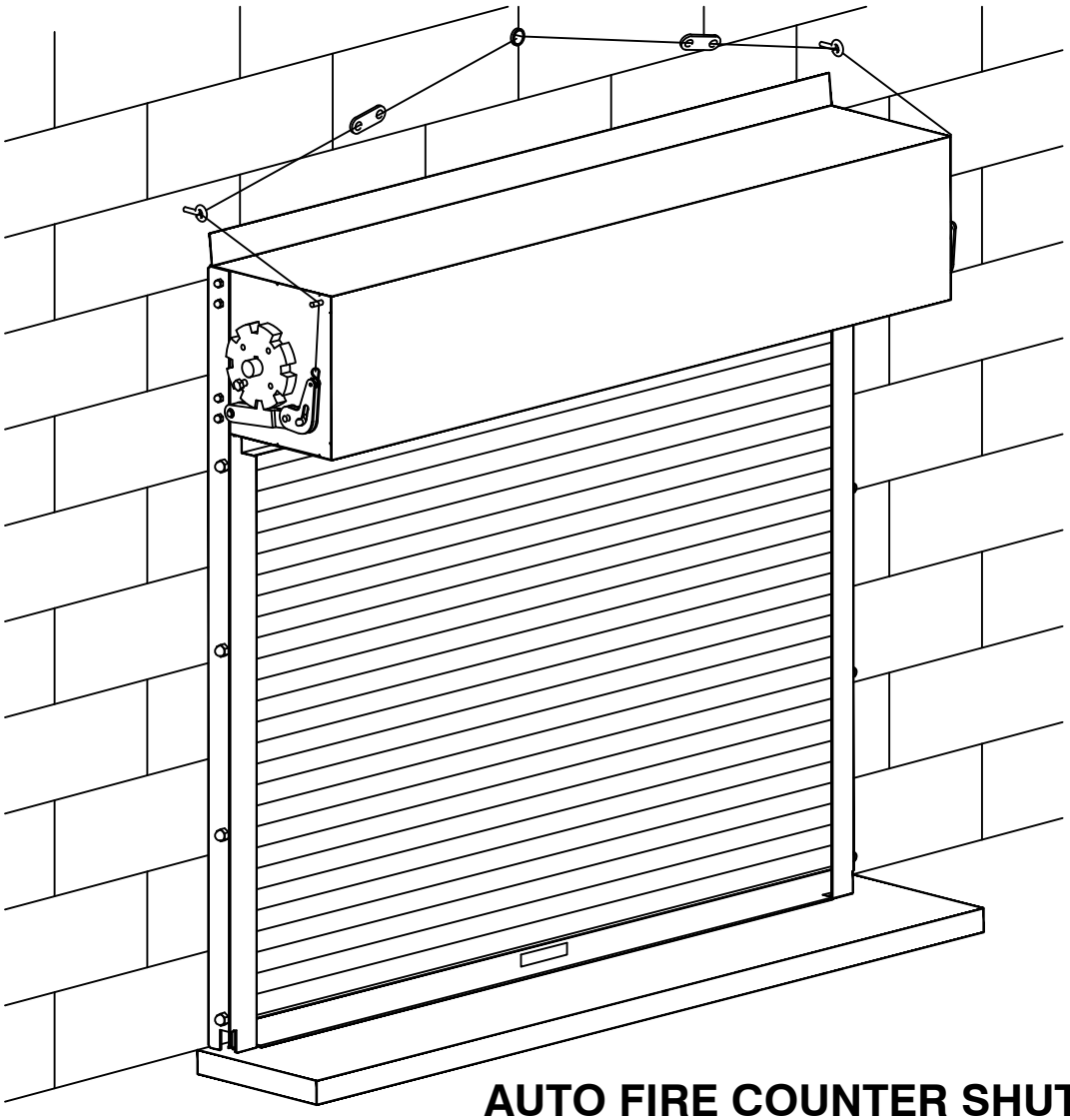
Alpine®
OVERHEAD DOORS, INC.

FIRE SHUT®
FIRE DOOR

INSTALLATION AND MAINTENANCE MANUAL



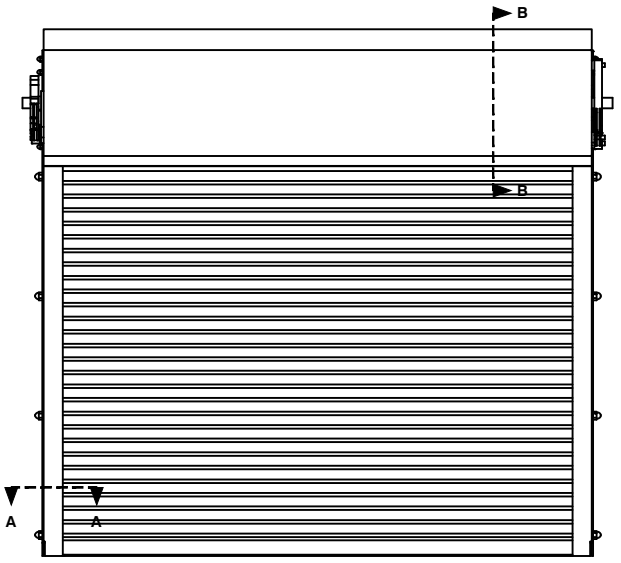
AUTO FIRE COUNTER SHUTTER

Job Name:	Docket #:	Fire Label #:

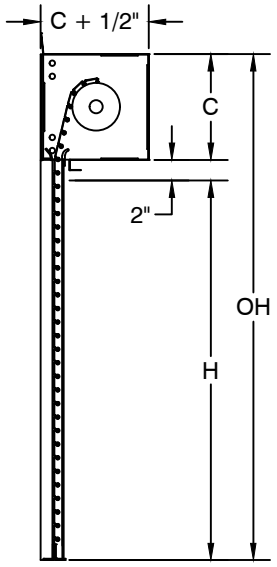
These installation instructions have been prepared to assist you. They are not prepared to alleviate you from complying with local building codes and ordinances and the National Fire Protection Association standards (NFPA).

Keep for reference

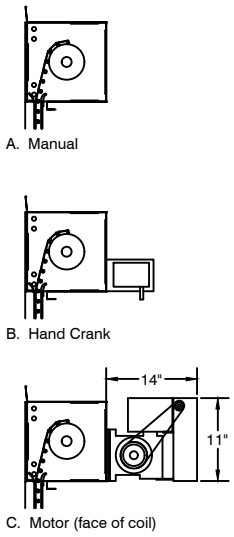
PREPARATION



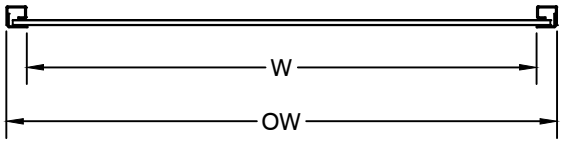
COIL SIDE ELEVATION



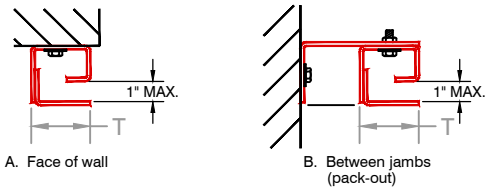
VERTICAL SECTION



OPERATION TYPE - SECT. B-B



GUIDE SECTION



GUIDE TYPE - SECTION A-A

DOOR SCHEDULE

QTY.	MARK	JW JAMB OPENING WIDTH	OPENING SIZE		OVERALL SIZE		C BRACKET HEIGHT	T GUIDE WIDTH	GUIDE TYPE		OPERATION TYPE	DRIVE SIDE
			W OPENING WIDTH	H OPENING HEIGHT	OW OVERALL WIDTH	OH OVERALL HEIGHT			L	R		

INTRODUCTION

Dear Customer,

Congratulations on your purchase of the Alpine AUTO FIRE SHUT fire door. You have selected a product that has been manufactured with the latest and most advanced technology available within the industry. Computer aided design and LASER quality machining have been incorporated into all Alpine products.

SAFETY INSTRUCTIONS

IT IS IMPORTANT TO READ ALL SAFETY INSTRUCTIONS BEFORE BEGINNING INSTALLATION!

UPON ARRIVAL OF THE SHIPMENT TO THE PROJECT LOCATION

1. Check all materials against the packing list. Inspect all materials for any visible or concealed signs of freight damage. Should omissions or freight damage be present, you must file a freight claim.

2. If you have received more than one door, you will notice that all major parts and components of that door are marked with corresponding numbers. A complete door should be composed of all parts bearing the same numbers.

⚠**IMPORTANT**⚠ **Do not interchange door parts from one door to another!**

3. Before leaving the project site, make certain that you have read and have fully complied with the safety checklist. Complete the fire door drop test report and return it to the Alpine office.

⚠**IMPORTANT**⚠ **INSTALLATION OF THIS DOOR MUST BE PERFORMED BY AN EXPERIENCED INSTALLER!**

NOTE TO THE INSTALLER:

In order to assure your customer that this door has been installed in a safe and efficient manner, Alpine recommends that you thoroughly check the following areas before leaving the project site.

1. Make certain that the proper amount of tension has been applied to the torsion spring assembly, in order to counterbalance the weight of the curtain.

2. Make sure that the tension wheel is securely fastened in place.

3. Make sure that all keys have been installed in any sprockets or gears that require them. Make sure that all set screws have been installed and are properly tightened.

4. Check all fasteners that hold the guides to the building structure.

5. Check all fasteners used in assembling the various door components.

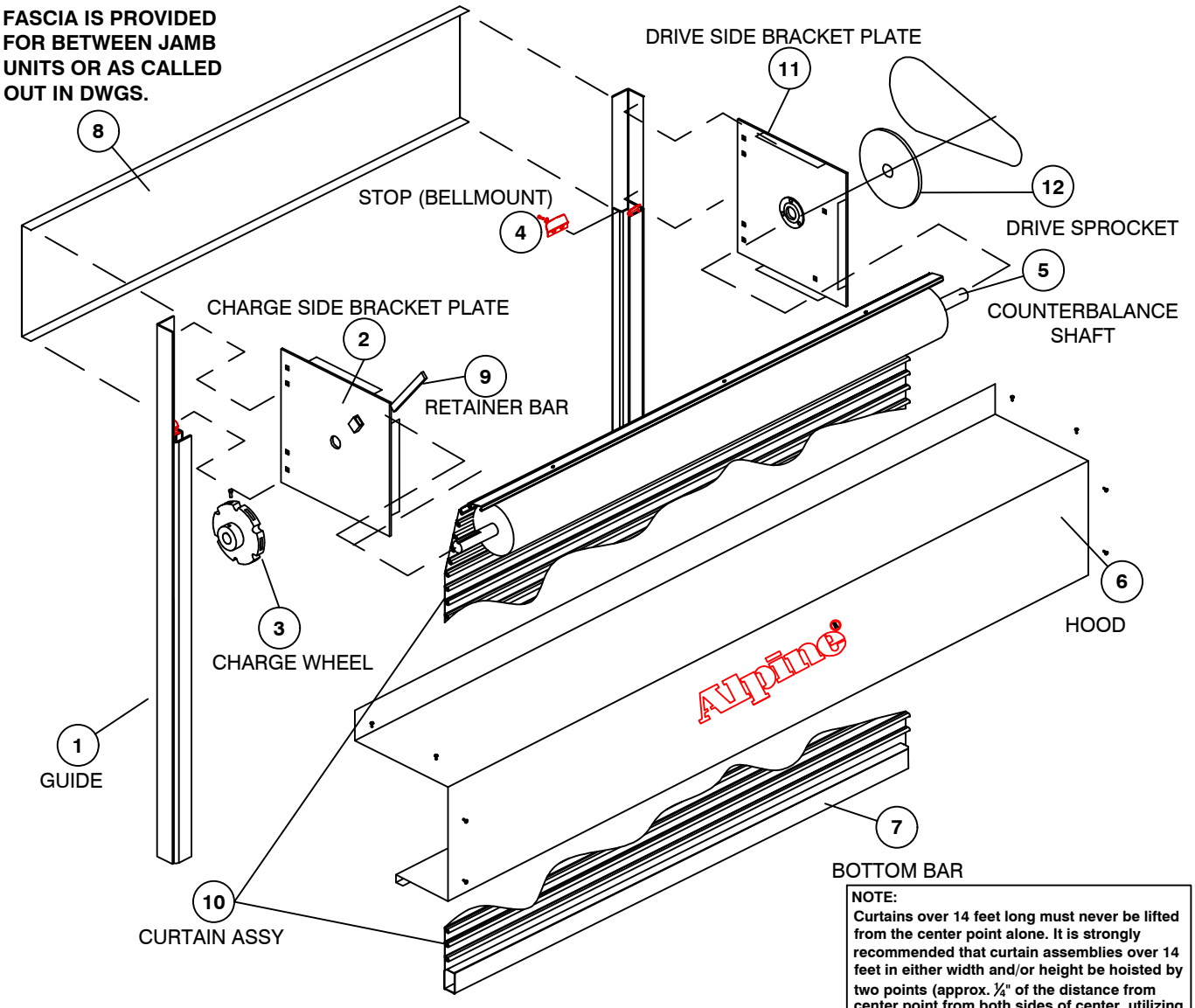
6. Be sure that the door has been drop tested and reset to it's exact position that existed prior to the successful drop test and the drop speed is in accordance with NFPA 80.

7. A successful drop test is characterized by a break in any of the fusible links and the door completely closes without interruptions to its downward travel. (NFPA 80 chapter 6)

8. Do not perform a drop test by any manual methods, for example, physically releasing each drop-arm mechanism at the same time.

PARTS

Thoroughly inspect parts for shipping damage as soon as they are received. You must immediately document and save crating or packaging materials for all freight damage claims.

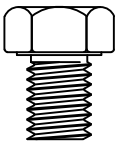


NOTE:
Curtains over 14 feet long must never be lifted from the center point alone. It is strongly recommended that curtain assemblies over 14 feet in either width and/or height be hoisted by two points (approx. ¼" of the distance from center point from both sides of center, utilizing cushioned cradles or minimum 8" wide strap and NO choke slinging. ie: 18 feed divided by 4 equals 4.5 feet. From center of curtain measure out 4-½ feet in opposite directions and these are the proper lift points for installing the curtain assembly without causing creased and /or dented slats.

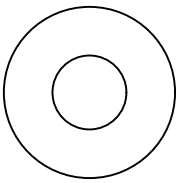
PREPARATION

STANDARD PARTS:

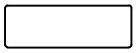
Hardware Package



3/8"x 1/2"
Hex Head Bolt

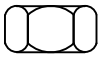


3/8" Hot Dipped
Galvanized, Vinyl or
Fiber Washer

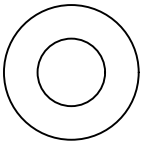


1/4"sq x 3/4" Key

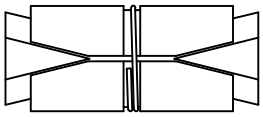
#10 x 3/8"
Sheet Metal Screw



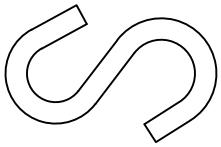
5/16" Nut



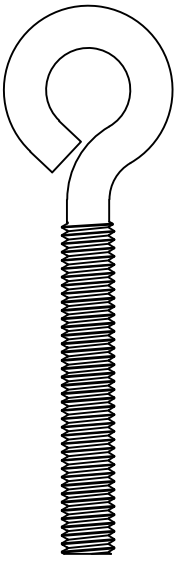
5/16" Hot Dipped
Galvanized, Vinyl or
Fiber Washer



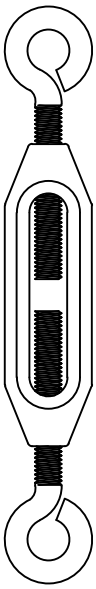
5/16" Expansion Nut



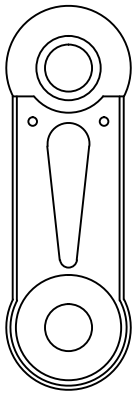
#8-10 Ga S-Hook



5/16" Eye Screw



Turnbuckle



160° F - Fusible Link
3 pcs for interior mounted
2 pcs for exterior mounted

Sash Chain

1 Wall / Guide Assembly

Verify the opening size, width and height, and mounting condition of the opening. Your opening must comply with NFPA 80 standards.

⚠IMPORTANT⚠ Determine your mounting configuration to ensure compliance with fig. 3 through fig. 7, for proper mounting conditions, in accordance with NFPA 80 (latest edition)

A. Face of wall mounting

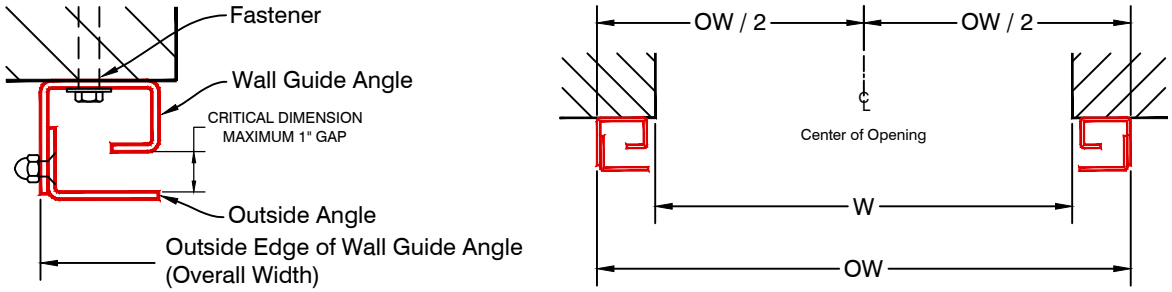


Fig. 1

1) ***Locate and mark the center of the opening (℄). Divide the OW dimension by 2 (OW/2). Measure the OW/2 distance from the center mark to the face of the wall, this is the location of the outside edge of the wall guide angle as shown in Fig.1. Mark a level and plumb line through this point at each jamb.***

2) ***Remove the outside angle from the guide assembly. Place mounting angle against the marked line and locate the mounting holes.***

⚠IMPORTANT⚠ THE TOP OF EACH WALL/GUIDE ASSEMBLY MUST BE LEVEL AND SQUARE.

B. Between Jamb mounting

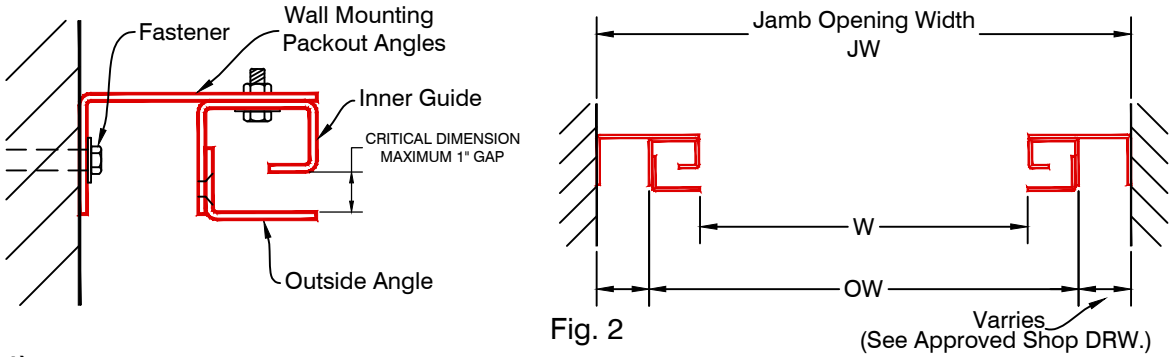


Fig. 2

1) ***Add the OW dimension plus the width of the packout angles and compare it to the jamb opening width, these measurements should be equal. Position the guides as shown in Fig. 2.*** **NOTE: Upon completion, if any gaps or spacing exists between the tube and jamb, an approved method of fire proofing must be applied.**

2) Take apart the guides and packout angles by removing the bolts. Locate the wall angle on the adjacent wall, making sure they are in line with each other, then bolt the inner and outer guide to the wall mounting packout angles.

⚠IMPORTANT⚠ THE TOP OF EACH WALL/GUIDE ASSEMBLY MUST BE LEVEL AND SQUARE.

INSTALLATION

3) a. ***When fastening to masonry (brick, block or concrete) using expansion anchors, anchorage depth is not to be less than 8 times the bolt dia. and not less than 6 times the bolt dia. from the edge of the opening, as shown in Fig. 3. Fasten using a minimum of 3/8" dia. fasteners equal to that specified in the latest edition of NFPA 80 section 6-4.1.3.***

b. When fastening through a wall to masonry (brick, block or concrete) drill holes completely through the wall with a 1/2" dia. masonry drill. Fasten with a minimum 3/8" dia. threaded rod, as shown in Fig. 4.

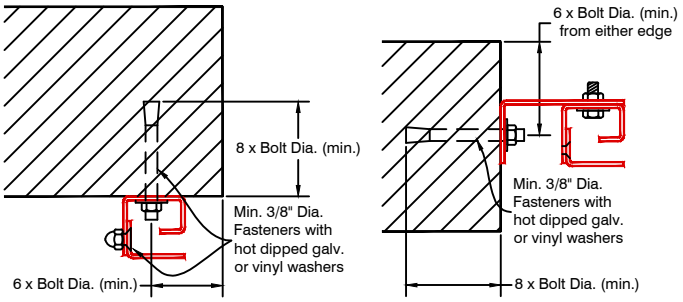


Fig. 3

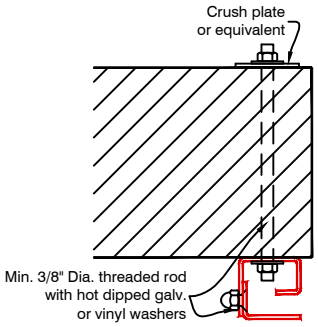


Fig. 4

c. When fastening to a steel frame, drill and tap holes for the appropriate fastener size. Fasten as shown in Fig. 5 with a min. of 3/8" dia. fasteners equal to that specified in the latest edition of NFPA 80 section 6-4.1.4, Note: Steel frame member must be embedded or secured to the masonry wall prior to the wall / guide assembly to them.

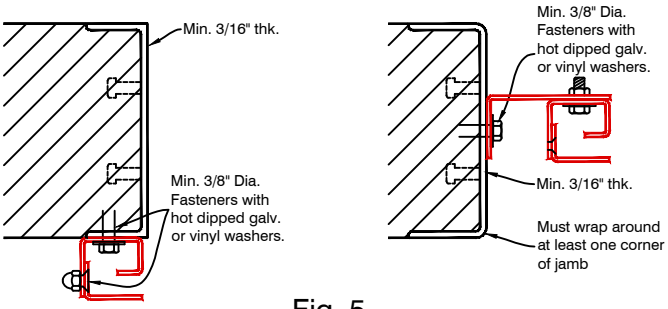


Fig. 5

d. When fastening to a double(2) metal stud jamb, each stud is to be minimum of 14 gauge. Fasten using a min. of 3/8" dia. self-tapping screws, as shown in Fig. 6.

e. When fastening to a double(2) wood stud jamb, each stud is to be a min. 2"x 4". Fasten using a min. of 3/8" dia lag screws, as shown in Fig. 7.

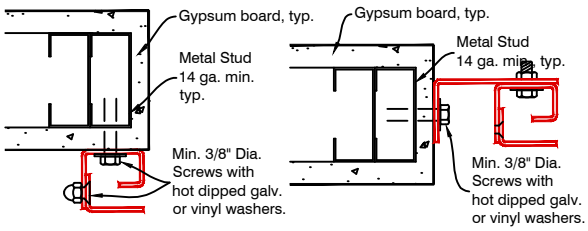


Fig. 6

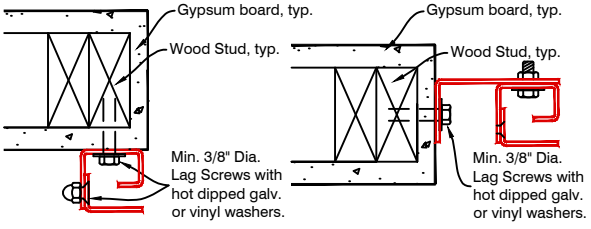
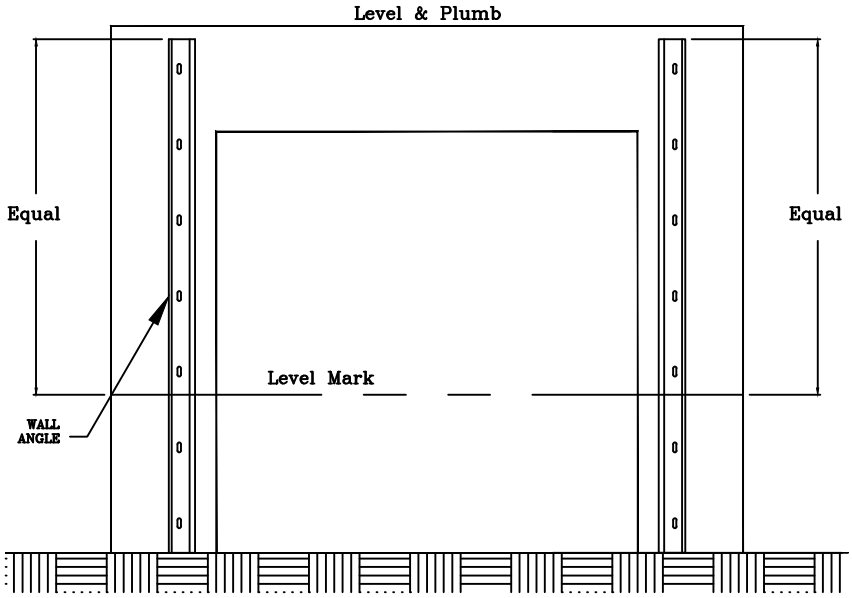


Fig. 7

FIGURE 2-D

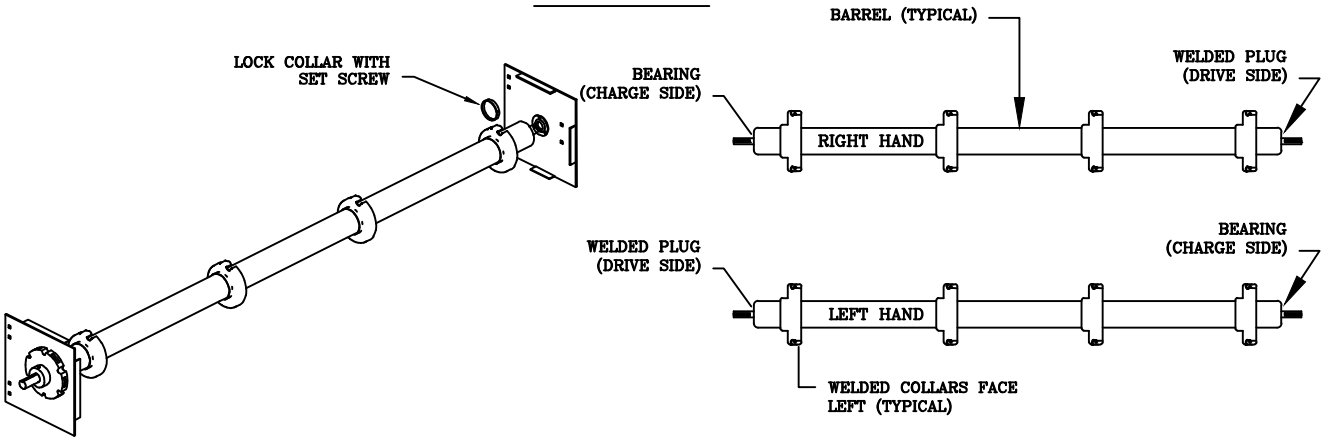


Note: The drive assembly is not balanced when lifting. Use caution, as the tension side will be much heavier than the drive side.

Installing barrel and head plates:

FIRST: lock bushing with set screw as shown in figure 2-E. Must be set to stop barrel movement (both left to right, and side to side). Note: Barrel deflection shall not to exceed .03 inches per foot of width. Bracket not less than 8".

FIGURE 2-E



SECOND: Remove pipe shaft and curtain from package or crate; place on level ground (flat and free of debris), as to "drive side" orientation (right or left as in figure 2-E. Install locking collar on the inner shaft, between the pipe and bracket plate with bearing (unless bearing has locking set screws). Place brackets on shaft with drive side bracket on proper side. (see Figure 2-E). Mount the drive gear or sprocket to prevent the bracket from coming off. Install charge side bracket on other end of the shaft, then the charge wheel and key way to shaft. DO NOT PUT A TENSION RETAINER BAR THROUGH THE CHANNEL, INTO THE CHARGE WHEEL AT THIS TIME. Leave it free to turn. Torque set screws to center the barrel according to steps outlined in figure 2-E.

INSTALLATION

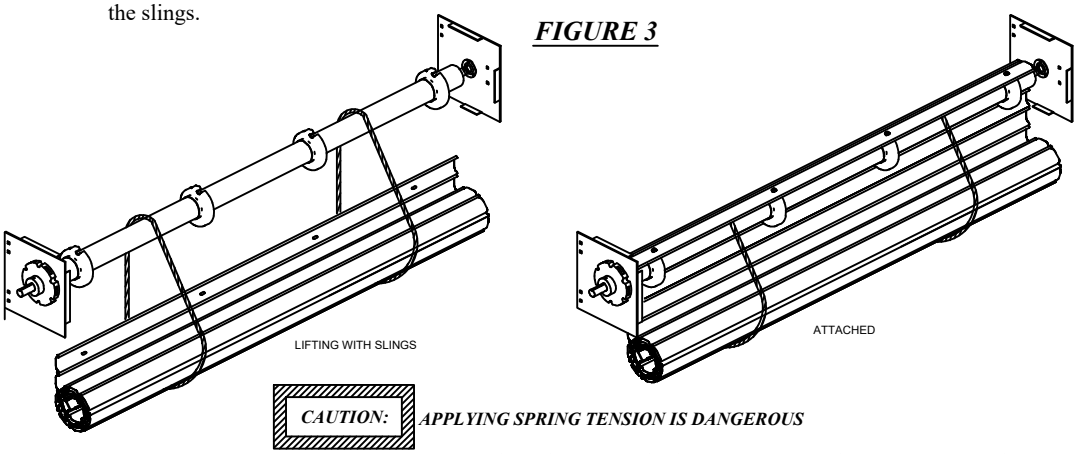
THIRD: Lift pipe barrel with attached end brackets (figure 2-E) to the top of the wall mounting angles and bolt end brackets to mounting angles. Set pipe shaft level (within 1/16"). This is to ensure proper roll-up of the curtain. Once completed, dimensions are verified and all bolts are torque, Proceed to mounting the curtain.

Note: Never lift with a single support or exceed 4 feet overhang while lifting, loading, unloading or transporting the curtain assembly. This will cause damage (DO NOT lift with fork lift, without sling or pads under forks.

Installing curtain:

FIRST: Lift the rolled up curtain 12"-24" below the mounted shaft, attach rope slings of adequate size around the curtain, (figure 3). Once the slings are in place, drop the lift below, approximately 1" under the rope slings for safety. Pull slat up between the top slings and the pipe barrel matching the holes with the pipe barrel. Note: Pipe barrel may have tapped holes, tapped tabs or barrel rings. Fasten curtain with the hardware provided but do not tighten. Center and level the curtain assembly to the pipe barrel and secure and torque all fasteners. Remove lift so that the curtain weight rests on the slings.

FIGURE 3

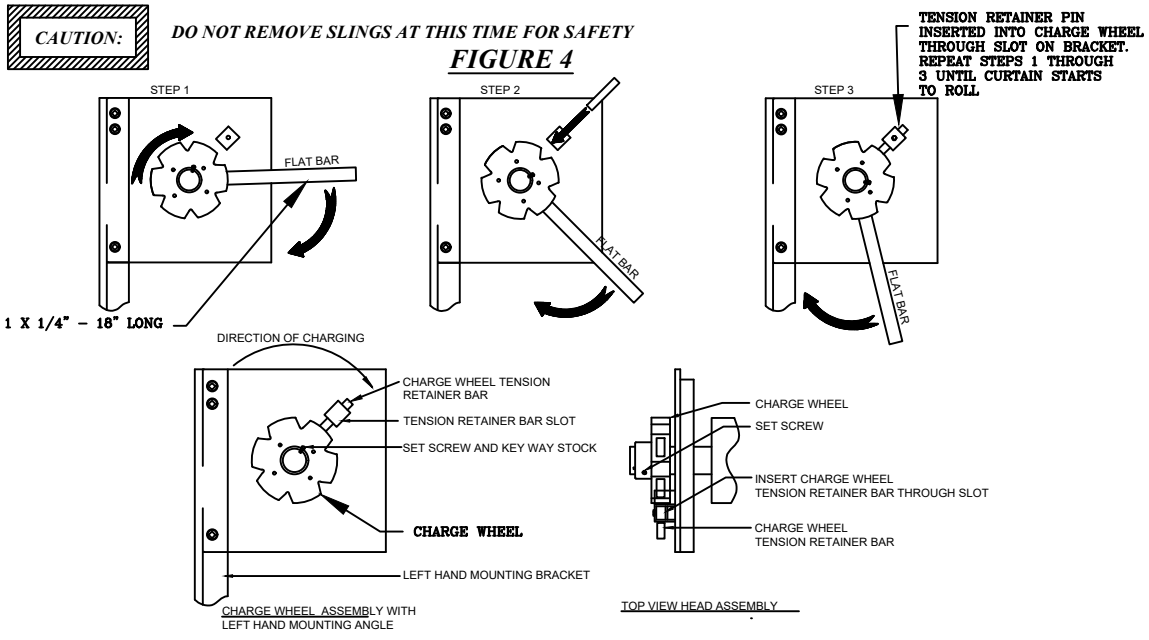


CAUTION: ***APPLYING SPRING TENSION IS DANGEROUS***

SECOND: It requires two workers for safety. You will need two 1 x 1/4 flat bars, min. 18" long (not provided) to apply tension to the springs. Slide one of the bars into any of the slots of the charge wheel. Rotate in the direction that the door would roll up (charge wheel on left; clockwise, charge wheel on right; counterclockwise) (see figures 3 & 4). Slide the second bar in the slot above, hold and remove the lower bar. Repeat the procedure until the curtain starts to coil around pipe barrel and stop when the bottom bar becomes visible. Line up the charge wheel slots with the channel stop on the charge bracket and slide the tension retainer bar provided, through the slot on the charge wheel.

CAUTION: ***DO NOT REMOVE SLINGS AT THIS TIME FOR SAFETY***

FIGURE 4



INSTALLATION

REDI Reset
Motor Install

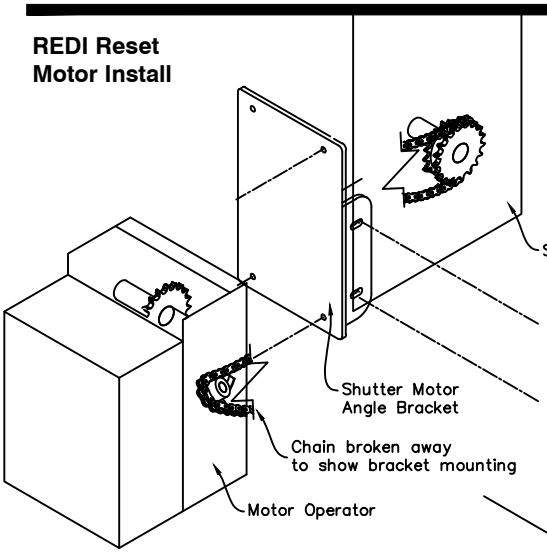


Fig. 11a

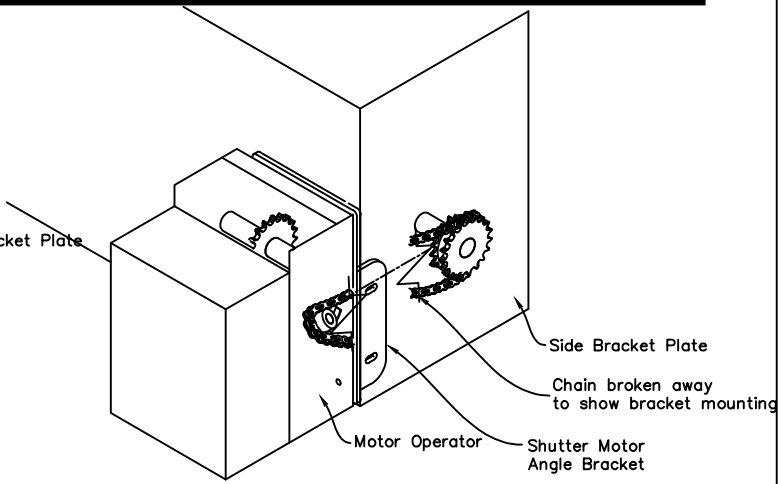


Fig. 11b

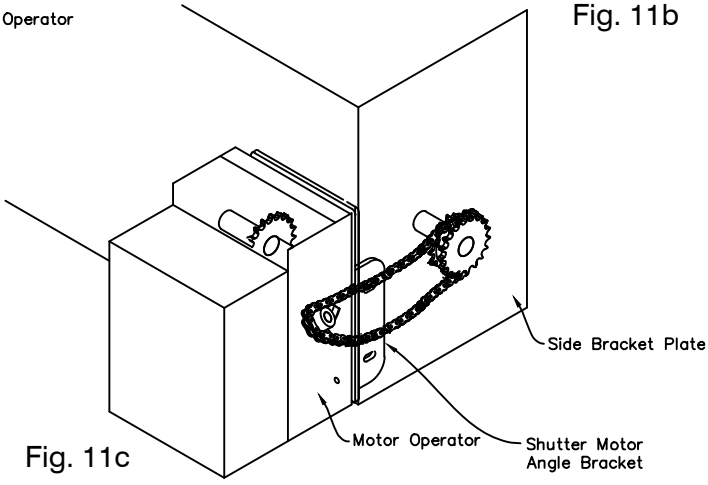


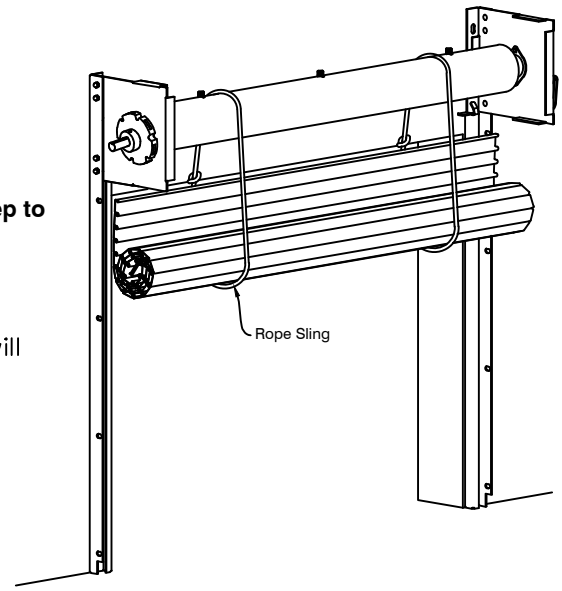
Fig. 11c

Curtain Mounting

Hoist the coiled curtain approximately one (1) foot below the pipe shaft assembly and suspend it using rope slings. See Fig. 13. NOTE: Two or more rope slings is strongly recommended.

NOTE: Be sure that the charge wheel is disengaged during this next step to avoid building tension or reversing (back winding) the springs.

1) Coil the curtain up over the pipe by hand, the slings will rotate and guide the top slat over the pipe assembly.



2) Align the top slat with the mounting bolts, which are welded onto the pipe assembly, then add lock washer and nut to mounting bolt. Tighten nut to ensure curtain is securely fastened to pipe assembly. As shown in Fig. 14. NOTE: Be sure that the curtain is mounted level and aligned in the center of the pipe assembly.

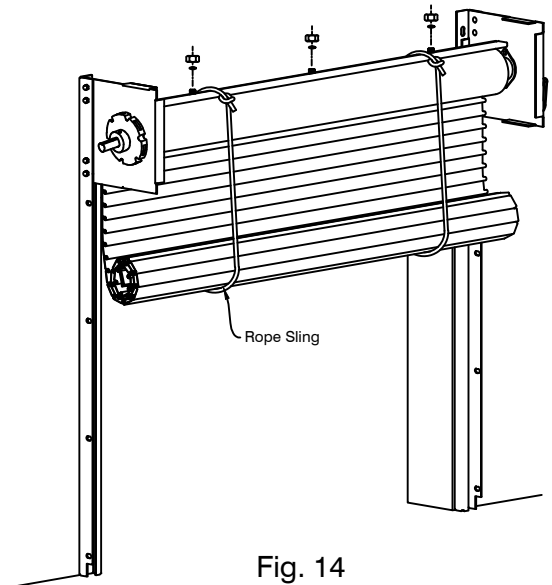


Fig. 14

3) The size, weight or operational type of the door, will determine which method to wrap the curtain around the pipe assembly:

a. When using a tension bar, begin to give tension, one or two turns will begin to roll the curtain onto the pipe assembly. NOTE: As the curtain rolls on the pipe, tension is being released, repeat giving tension until the bottom bar of the curtain reaches approximately one (1) foot from the bottom of the brackets. As shown in Fig. 15. NOTE: Lift the drop arm in the engaged position, to lock the charge wheel, in between turns.

⚠ CAUTION ⚠ ON SMALLER DOORS ESPECIALLY, THE TORSION SPRING IS VERY EASY TO OVER TENSION. IF YOU OVER TENSION THE CHARGE WHEEL, THE SPRING WILL COLLAPSE INTERNALLY, RESULTING IN IMPROPER OPERATION OF THE DOOR.

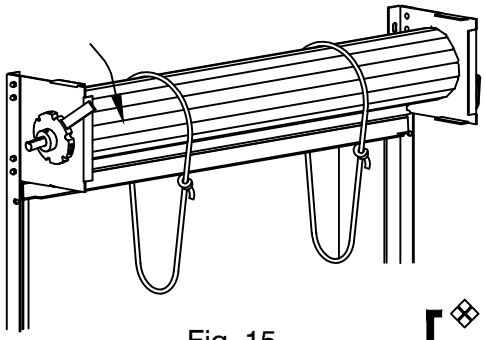


Fig. 15

ALTERNATE METHODS:

b. Pull ropes by hand
c. Lift using hand crank
d. Powered by motor

⚠ WARNING ⚠

USE EXTREME CAUTION WHEN GIVING TENSION TO THE CHARGE WHEEL, SERIOUS INJURY OR DEATH MAY OCCUR.

NOTE: ON b, c & d ABOVE, YOU MUST ENSURE THAT THE CHARGE WHEEL IS DISENGAGED.

⚠ CAUTION ⚠ MAKE SURE TO SECURE THE CURTAIN FROM UNROLLING. ⚠ CAUTION ⚠

5 Outside Guide Installation

Align and bolt the outside angles to the wall guide angle.

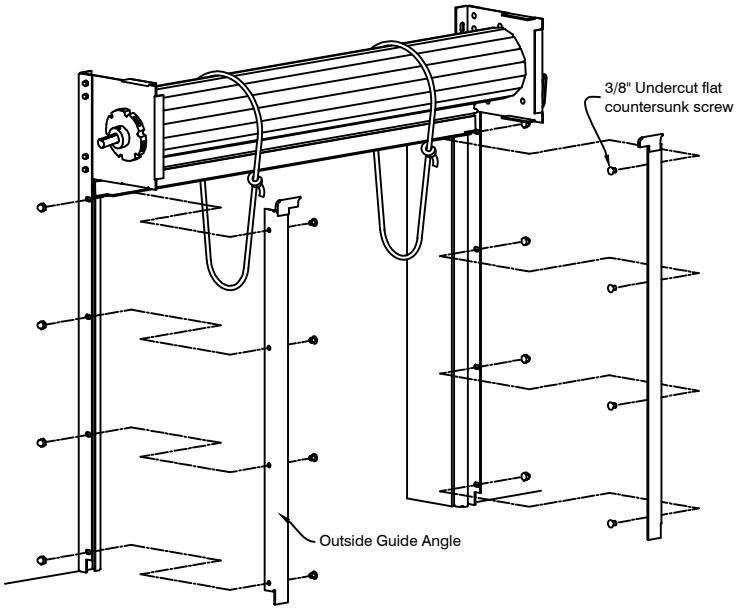


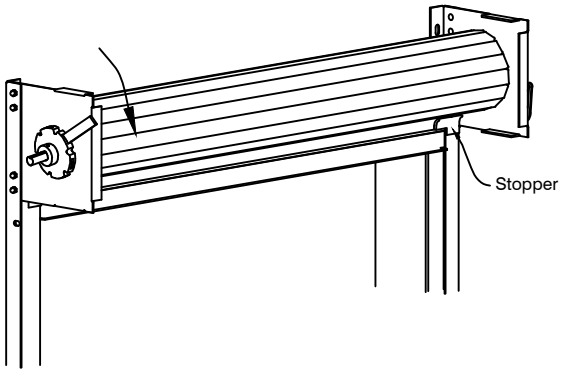
Fig. 16

⚠ CAUTION ⚠ **MAKE SURE TO SECURE THE CURTAIN FROM UNROLLING.** **⚠ CAUTION ⚠**

6 Spring Adjusting

Secure the curtain from unrolling and engage the drop arm for the charge wheel.

1) Attach a pipe wrench to the charge side shaft, rotate the charge wheel until the bottom bar raises up to the bottom of the stoppers in the guide and remains in that position as shown in Fig. 17.



◈ WARNING ◈

USE EXTREME CAUTION WHEN GIVING TENSION TO THE CHARGE WHEEL, SERIOUS INJURY OR DEATH MAY OCCUR.

Fig. 17

⚠ CAUTION ⚠ **UNDER NO CIRCUMSTANCES SHOULD MORE THAN ONE FULL TURN BE ADDED OVER THAT REQUIRED TO HOLD THE CURTAIN'S BOTTOM BAR AT THE GUIDE STOPS.**

2) Test Door for optimum operation.

For optimum operation, you may find additional turns are required. In some cases, less turns are required.

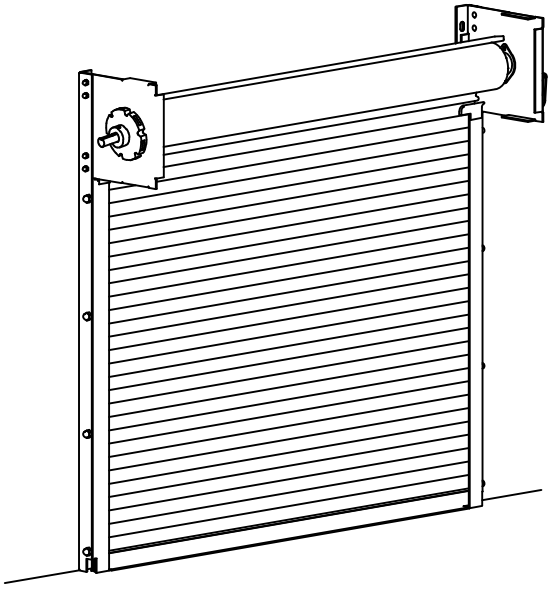


Fig. 18

⚠ **IMPORTANT** ⚠ **UNDER NO CIRCUMSTANCES SHOULD TENSION BE APPLIED WHEN THE DOOR IS IN THE CLOSED POSITION.**

7 Mount Hood

Install the hood to the flanges on the brackets by using #10 self-drilling sheet metal screws.

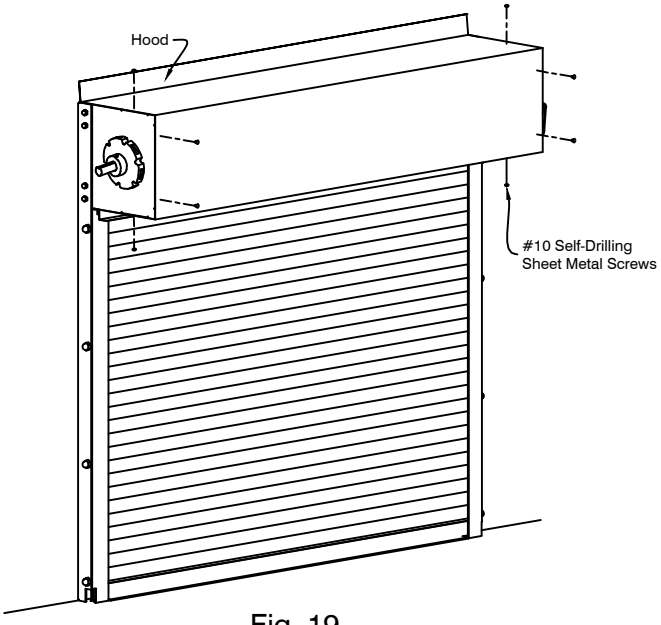


Fig. 19

8 Release Assembly

Routing of the rolling fire door release assembly is a vital part of the door system. If the assembly is installed incorrectly, it may prevent the rolling fire door from closing automatically. The provisions for installation of fusible links are found in the National Fire Protection Association Standard 80 (NFPA 80).

1) Locate the first fusible link near one of the bracket plates and allow for sufficient movement of the sash chain to release the drop mechanism.

2) Locate the second fusible link or detector within 12 inches of the ceiling on the coil side of the wall. Do not install a link or detector within four inches of the intersection of the wall and ceiling as shown in Fig. 20.

3) Locate the third fusible link or detector on the opposite side of the wall at a distance from the wall that will allow sufficient travel of the chain to completely release the fire door. Attach the fusible link near the ceiling straight out from the through wall hole. The detector must be more than four inches from the intersection of the wall and ceiling as shown in Fig. 20.

4) Check with the local authority having jurisdiction regarding the through wall hole. Consider using 1/2 inch EMT.

5) Use S-hooks for attaching fusible links. This will allow ease of installation and adjustments.

6) When routing the sash chain, DO NOT make more than 90 degree bends.

7) Use the turnbuckle to take up the slack in the sash chain.

8) Attach eye screws to the wall to help route the sash chain to a given location.

9) The fusible links should be interconnected such that disconnection of any link will cause the door to close.

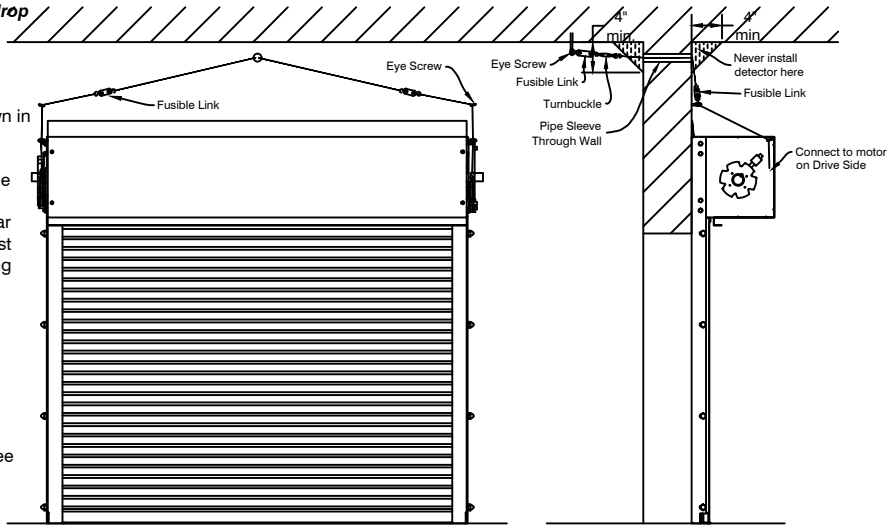


Fig. 20

Installing motor connections: (Refer to Operator Installation Instructions via chain crank or motor)

FIRST: Connect power supply to motor according to the wiring diagram.

SECOND: Mount the push button control station within sight of the unit and attach wiring according to the wiring diagram.

THIRD: Install sash chain and fusible link to the fusible link plunger as described in the motor installation instructions. Sash chain and fusible links should be properly mounted per NFPA bulletin 80 and in accordance with the local authority having jurisdiction. Once the sash chain is installed, remove the cotter pin from the fusible link plunger as shown in the motor installation instructions.

FOURTH: Connect the central alarm (if applicable) to the operator according to the wiring diagram.

FIFTH: Adjust the motor travel limit switched as described in the motor installation instructions.

SIXTH: After all connections are complete and the limits are set, operate the unit to the open position.

SEVENTH: On all motor operated units, set roller chain tension properly. Half links are used for fine adjustment. Motor operators that have excessive vibration must be braced diagonally to wall or adjacent construction. Be certain that the operator is firmly mounted.

EIGHTH: Install hood, soffits, special covers and any special hardware furnished (see figure 6-A) Install center hood support if supplied. Caulk exterior hoods.

⚠ IMPORTANT ⚠ DO NOT INSTALL ANY DETECTOR WITHIN FOUR INCHES OF THE INTERSECTION OF THE WALL AND CEILING.

9 Operational Test

After the installation is completed, an operational test must be conducted. This test is to determine that the system has been installed and functions as intended. Testing of each fusible link shall be conducted separately to ensure that a successful drop test will be achieved at each fusible link / detector device.

A. Test Drop Procedure

1) Release the fusible link by disengaging the "S" hook that is holding the chain to the link.

2) Insure that the drop arm mechanisms and sash chain is not obstructed for this will cause incomplete disengagement.

3) If the door unit drops too fast, bring door back to up position, then retension to proper balance to operate door, then relocate the blank point screw on the charge wheel to a position that relieves less tension. If the door unit drops too slow, bring door back to up position, then retension to proper balance to operate door,with the door in the open position, relocate the blank point screw to a position that relieves more tension. NOTE: Rolling fire doors shall have an average closing speed of not less than 6 in. per second nor more than 24 in. per second. (NFPA 80 - Latest Edition)

⚠ **IMPORTANT** ⚠ **UNDER NO CIRCUMSTANCES SHOULDTENSION BE APPLIED WHEN THE DOOR IS IN THE CLOSED POSITION.**

NOTE: Each rolling fire door installed must be test dropped and an Alpine fire door drop test report must be filled out (see below). A copy of the report must be forwarded to the Alpine office otherwise the door warranty is considered VOID.

FIRE DOOR DROP TEST REPORT

Job Number: _____ **Door Marks:** _____

Job Name: _____

Building: _____

U.L. Label #: _____ **Alpine Serial #:** _____

CUSTOMER REPRESENTATIVE WITNESSING THE FIRE TEST

Name: _____

Title: _____

Signature: _____ **Date:** _____

TEST PERFORMED BY:

Name: _____

Signature: _____ **Date:** _____

PLEASE COMPLETE THIS FORM AND SEND A COPY TO THE FOLLOWING ADRESS.

Alpine Overhead Doors, Inc.
309 Nassau Ave.
Brooklyn, N.Y. 11222

OR FAX: (718) 486-6324

OVERHEAD DOORS, INC.

REDI-RESET ™

AUTO–FIRE®

MAINTENANCE INSTRUCTIONS

LUBRICATION:

The most important single maintenance item on doors of this type is lubrication. This is required only at certain points because all rotating members are equipped with high quality sealed bearings that are lubricated for life.

The curtain guides and the teeth of the gears contained in the chain hoist or hand crank mechanism (if supplied) should be lubricated at least twice a year (more often if the door works very frequently) with one of the following greases:

- Dixon's Graphite Cup Grease (#1 for normal weather, # 2 for winter weather)
- Alemite MP Lithium Grease (#1 for winter weather, # 2 for normal weather)
- Texaco #904 Graphite Grease, or other equivalents

If door is electrically operated, check the oil level in the warm gear speed reducer every six months and replenish if necessary with S.A.E. 140 gear oil for normally heated buildings or thinner grades for outside installations exposed to low temperatures.

PAINT:

All non-lubricated steel surfaces should be painted annually (more often if required in corrosive atmospheres) with a good grade of rust inhibiting metallic based paint. If the door is powder coated, touchup paint can be obtained by a local paint supplier.

CAUTION: ***APPLYING SPRING TENSION IS DANGEROUS. only EXPERIENCED DOOR INSTALLERS SHOULD PERFORM ADJUSTMENTS.***

SPRING ADJUSTMENT:

In time, the counter balancing springs may lose some of their initial tension. This condition imposes an extra load on the operator and should be corrected as follows:

- The door must be raised to the full open position and held open by "C" clamps or vise grips on each guide.

  Note: If Electric operator is present, shut off main power supply during adjustment.

- With suitable tool (18" or 24" pipe wrench or larger spanner) turn the spring adjusting charge wheel one notch at a time. Test door between additional notches, until the door is balanced properly. Use caution not to over tension, otherwise it will shorten the life cycle of the spring.

  Note: To add tension, turn in the direction that the door rolls up (charge wheel on left - clockwise, charge wheel on right - counterclockwise) (see figure 4).

- Make sure tension retainer bar is properly engaged in spring adjusting charge wheel at all times.

- May require reverse tension if the door does not close on gravity during testing.