



**DIVERSIFIED**

# Tunnel Doors

Installation Manual

## Limited Warranty

All products are warranted to be free from defects in material and workmanship for a period of two (2) years from the date of purchase if installed and used in strict accordance with the installation instructions. Liability is limited to the sale price of any products proved to be defective or, at manufacturer's option, to the replacement of such products upon their return. No products are to be returned to the manufacturer, until there is an inspection and a return-goods authorization.

All complaints should be directed first to the authorized distributor who sold the product. If satisfaction is not obtained or the name of the distributor is not known, write the manufacturer that appears below.

This limited warranty is expressly in lieu of any and all representations and warranties expressed or implied, including any implied warranty of merchantability or fitness for a particular purpose. The remedy set forth in this limited warranty shall be the exclusive remedy available to any person. No person has authority to bind the manufacturer to any representation or warranty other than this limited warranty. The manufacturer shall not be liable for any consequential damages resulting from the use of our products or caused by any defect, failure or malfunction of our products. (Some areas do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.)

This warranty gives you specific legal rights and you may also have other rights that vary from area to area.

### **Warrantor:**

#### **Diversified**

556 Industrial Way West Eatontown, NJ 07724

732.363.2333

Toll Free: 1.800.348.6663 Fax: 732.905.7696

It is highly recommended that this Installation Manual be entirely read before starting to install the Doors and Operating system.

## Required Tools

- Tape Measure
- Marker
- Hammer
- Level
- ¼" Drill Bit
- String Chalk Reel
- Cordless Drill with Phillips Driver
- Roofing Nail Gun (**Highly Recommended**)
- 1/4 Drive Ratchet
- 17mm Socket or Wrench
- 9/16 Socket and Wrench
- 10mm Socket or Wrench
- 10mm Hex Head Driver
- 8mm Hex Head Driver
- Phillips Screw Driver
- Large Channel Lock Pliers
- 4mm Hex Socket (**provided**)

## Part Inventory for Kits

Each **Door Install Kit** Includes:

### **Qty**

- 8 SS 2" Hinge Screws
- 7 SS ½" Door Connection Screws/washer
- 6 SS ½" Self-Tapping Sheet metal Screws
- 1 Top Seam Cap
- 1 Bottom Seam Cover (metal)
- 2 Plastic Hinge Spacers  
(Latest Doors already attached to Hinges)

Each **Strap Drum Kit** Includes:

### **Qty**

- 1 Strap Drum Unit with 2 SS Set Screws
- 1 SS Strap Guide Bracket
- 6 SS 2" Wood Screws
- 1 SS 2.5" Strap Bolt
- 1 SS Lock Nut
- 1 SS Skin Washer
- 2 Plastic Hole Plugs

Each **Finishing Kit** Includes:

(1 Kit per rough opening)

### **Qty**

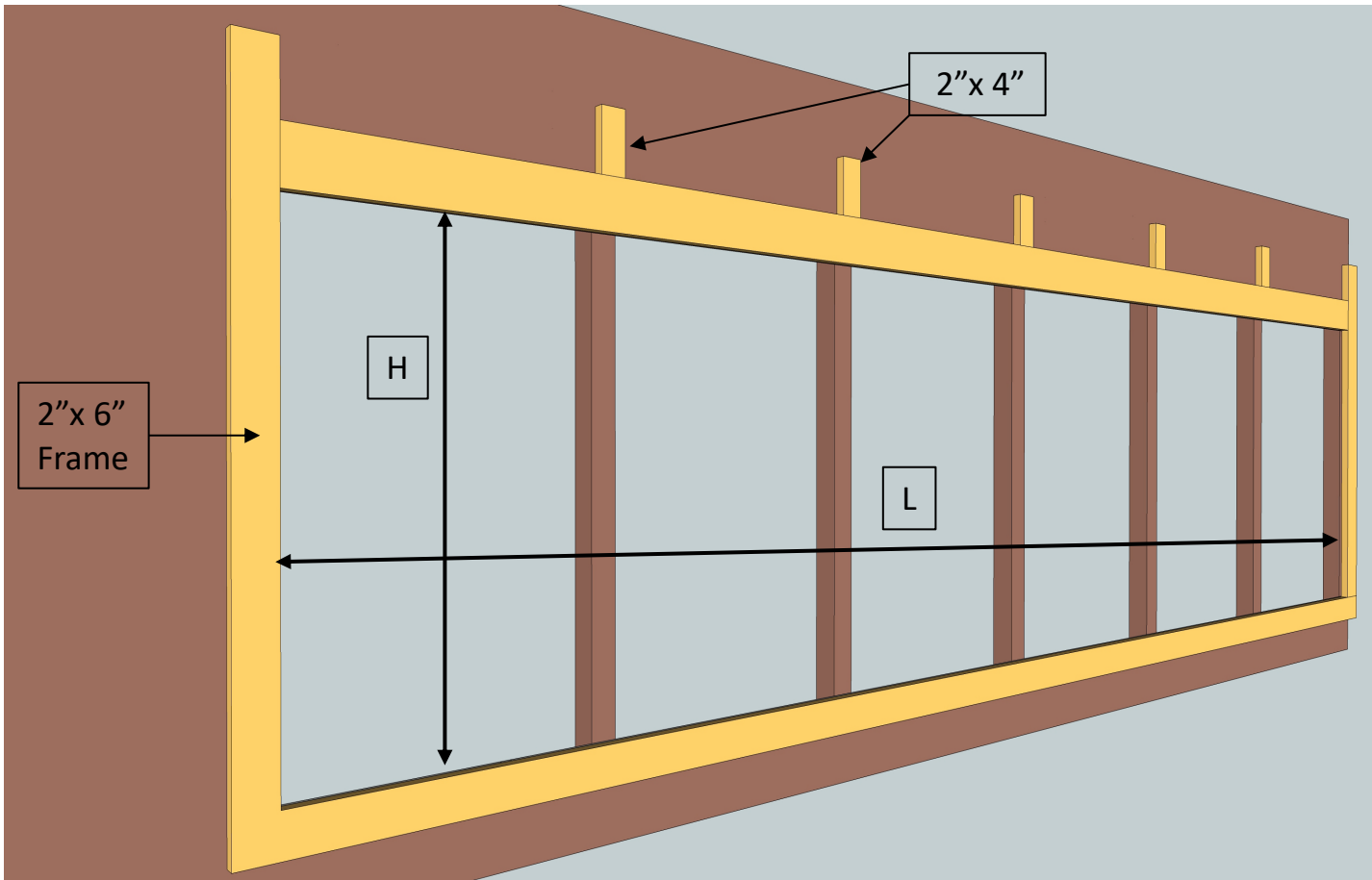
- 2 Door End Caps (4', 5', or 6')
- 4 Corner Caps
- 20 SS ½" Self-Tapping Sheet metal Screws
- 1 4mm Hex Head Socket Tool

## Hardware not included

Roofing Nails to install "P" Seal

## Installation Frame Out

1. Install a **2" x 6"** frame (top, bottom, and sides) around the rough opening.
2. Also add **2x4** Blocks above the Header at each frame post as shown. The 2x4s should be 6 to 8 inches in length. They will be used for mounting the Pipe Brackets in Step 1.



Frame opening height "H" dimensions:

**4ft** Door System, H = 45"

**5ft** Door System, H = 57"

**6ft** Door System, H = 69"

Frame opening length "L" dimension = Any desired length with **45.5"** Door section increments minus 4" (for the end Seals).

**Note:** Caulk the frame boards to seal against the existing walls to ensure no leaks occur.



## Step 1: Pipe Brackets

Install a Pipe Bracket at every Framed Support as shown. Bracket should be mounted 1" to 2" above the 2x6 window Header. Brackets must be level and in line with each other. Brackets require 4 each 2" long Stainless Steel Screws (**provided**).



## Step 2: Strap Brackets

Install the Strap Brackets as shown 3" up from bottom of the 2x6 Header. **Install the first Bracket at the end of the window 2 inches in from the end Frame.** The Doors are 45.5 inches wide, so place a Strap Bracket every 91 inches. This will provide a Strap Mechanism on every other Door. Brackets require 2 each 2" long Stainless Steel Screws (**provided**).



### Step 3: Install Pipe and Strap Drums

Slide the **Pipe sections** through the Pipe Support Brackets while at the same time placing **1 each Strap Drum Kit** onto the pipe between each pair of Pipe Support Brackets as shown. The swaged end of Pipe needs to point in the opposite direction from where the Gear/Motor will be mounted.

#### **Important:**

The First Door section will require a Strap Drum followed by every other Door, **plus one extra** for the Final Door's right side. (Reference Step 11)

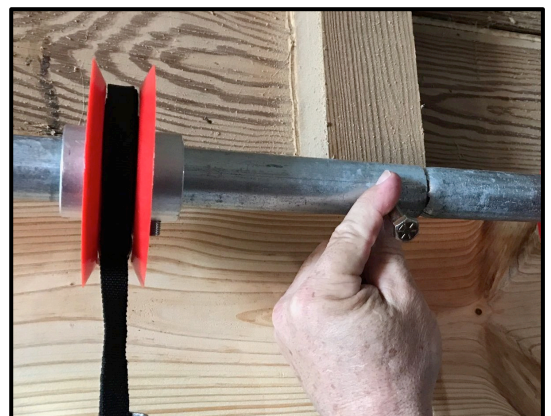


Set Screws must  
Be on Right side  
when installed



### Step 4: Connect Pipe Ends

Slide the swaged ends of each Pipe section together and insert the connecting Bolt/Nut. **Be sure that the Strap Drums are in the correct position before installing the Bolt.** Bolt/Nut are shipped with each section of pipe.





## Step 5: Install Seal

Install the **“P” Seal** around the entire perimeter of the rough opening directly along the edge of the frame. The bulb end of the seal must be in towards the opening on all sides as shown. Install using roofing nails (not included). Space the nails approximately every 6 inches. **(It is highly recommended that a Roofing Nail Air Gun be used to expedite the installation of the seal)**



## Step 6: Install Gear/Motor

Install the **Di Drive** and connect its Drive shaft to the end of the Pipe with a Bolt/Nut. When installing the Pipe ensure the non-swaged end of the Pipe is at the Di Drive end of the Doors.

It is recommended to use Carriage Bolts to secure the Di Drive Bracket to the wall mounting plank. The Di Drive Bracket must be on the same plane as the Pipe Brackets.

**Note:** The Di Drive has 3 possible positions depending on the left or right side of the house (**motor end Up, Down, or Horizontal**). You may remove the 4 attaching Bolts and rotate the Di Drive into the required position on the mounting bracket. **It is highly recommended that the Manual Drive Shaft of the motor be easily accessible in case the Doors ever need to be operated manually (loss of power, ref Step 16).**



## Step 7: Install first Door Section

At the bottom of the rough opening measure down **5 inches** from the sill and snap a chalk line the length of the opening.

**Note:** Always start installing the Doors from the left end of the rough opening. This simplifies placing the tongue and groove sides of the Doors into each other.





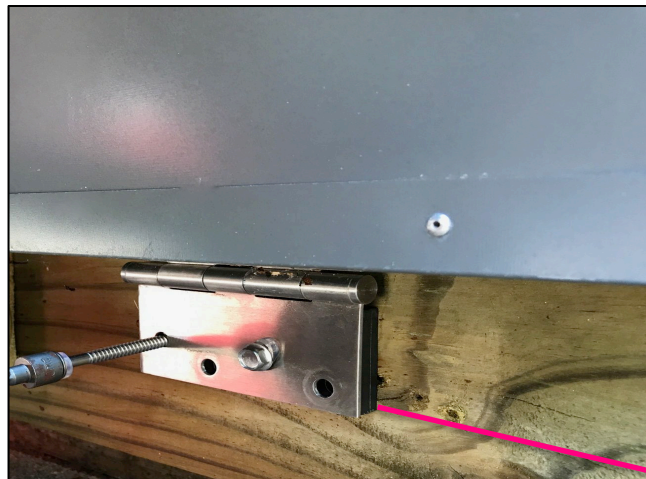
## Step 8: Install first Door Section

### Step 8.1

The left vertical edge of the first Door should be **2 inches** past the end of the rough opening.

With the Door being held in this position, install one each Hinge screw into each Hinge of the Door while maintaining the chalk line (Step 7) along the bottom edge of both Hinges. If the **Hinge Spacer** is not already attached to the Hinge plate ensure the Spacer is placed between the Hinge plate and the wall as shown. With both hinges in level position install remaining Hinge Screws.

(2" long SS Hinge Screws, 10mm Hex Driver)



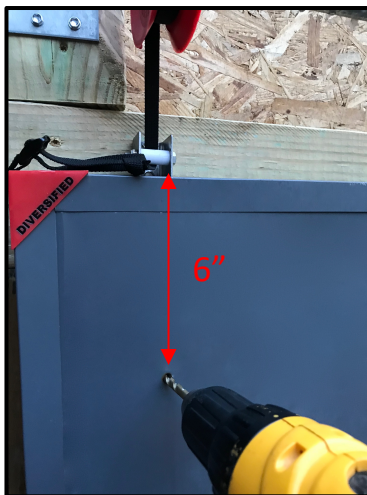
Hinge  
Spacer



### Step 8.2

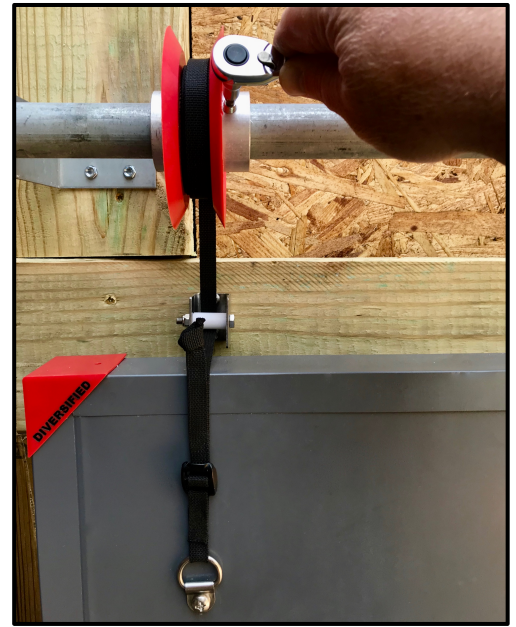
With the Hinges secured to the wall drill a  $\frac{1}{4}$ " hole all the way through the door

**6 inches down and in line with the Strap Bracket above.** Insert the 2.5" Bolt thru the end of the Strap and all the way through the Door. You do not need to use the lock nut at this time as the bolt alone will hold the door in position during the next several steps.



### Step 8.3

Now, with the door **open approximately 6 inches from the frame**, secure the Door in position by tightening just one of the Set Screws on the Strap Spool Drum using the 4mm Hex Socket tool included with each Finishing Kit. This will hold the door in the up position and allow the next door section to be installed.



### Step 9: Adjustable Strap Lock

The Strap Drum Kits come with an **Adjustable Strap Lock** that is used for the final adjustment of the Doors. Ensure they are correctly looped through the lock as shown below. There should be approximately 6 inches of Strap End through the lock.





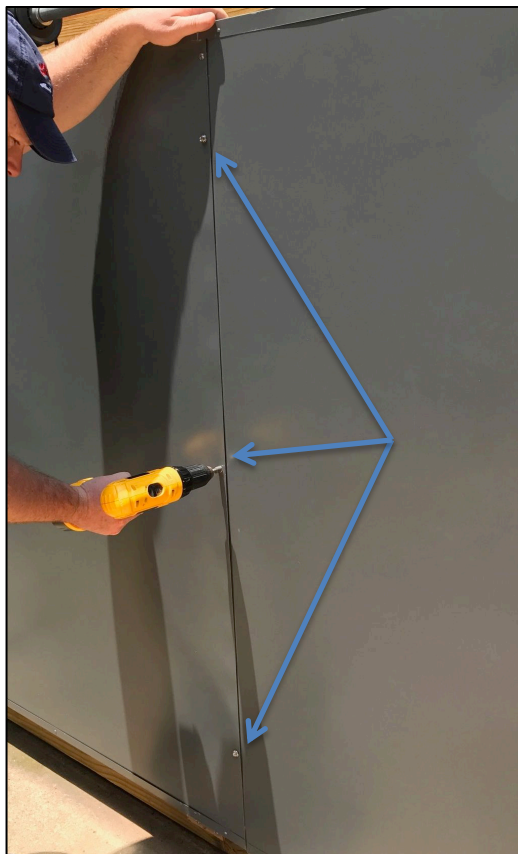
## Step 10: Install All Door Sections

a) With the first Door installed and open at the top by approximately 6 inches, insert the second Door Section's tongue edge into the grooved edge of the first Door. **Ensure the two Doors are pressed together firmly and square to each other all along the seam.** (Pic 1)

b) With the second Door's Left side now supported by the groove of the first Door and the second Door being securely held in this position, install the bottom Door Hinges as per **Step 8.1.**

c) Now that the second Door's Hinges are secured to the wall, install 3 each 1/2" long SS Door Connection Screws with washer heads through both Door sections along the seam as shown. (pic 2)

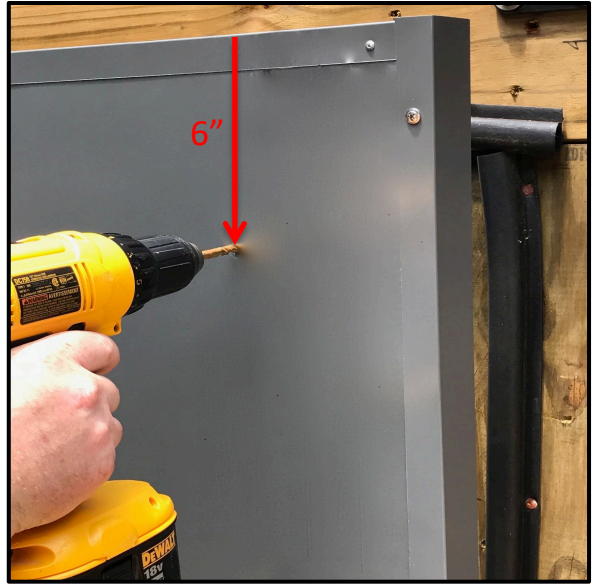
d) **Three additional Door Connection Screws must be installed and spaced evenly along the seam on the outside of the Doors.** This can be accomplished with the Doors fully open at the end of the installation or at any time if access to the backside of the Doors is available. These 3 screws will compress the **Seam Seal** on the hinge side of the Doors and ensure no air will pass through the Door Seams.



**Continue with Steps 8, 9, and 10 for each remaining Door Section.**

### Step 11: Final Door Section

The last Door Section must have a **1/4"** hole drilled approximately 4 inches from the right side of the door to attach a final Strap Drum to the end of the Door as shown. **This will ensure a tight seal along the right side vertical Seal.**



### Step 12: Strap Nut/Washer

On the backside of each door install the Lock nut and large washer to the 2.5" Strap through bolt.

**Do not over tighten** the lock Nut for the Strap Bolt or damage could result to the Door Skin.

**Finger tight** is all that is required.

All hardware provided in the **Strap Drum Kit**.



## Step 13: Install Seam Caps, End Caps, Corner Caps, and Plugs

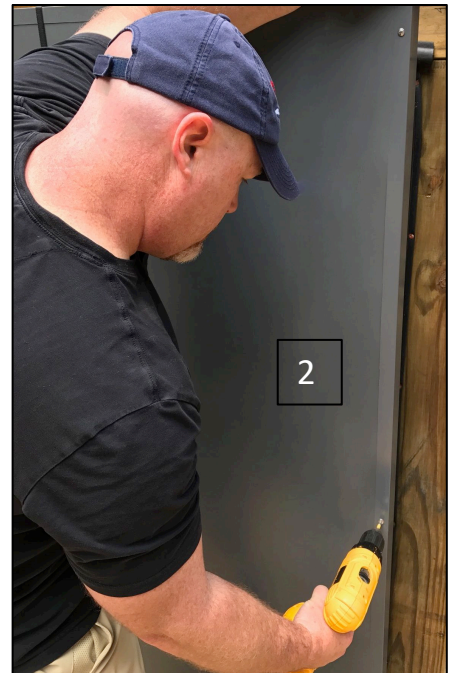
### 13.1

At the top of each Door Section seam install the **di Seam Caps** with two each small SS Sheet Metal Screws. One each front and back of Doors (Pic 1). The Top Seam Cap and associated hardware are provided in each **Door Install Kit**.



### 13.2

At each end of the Door run install **End Caps** (Pic 2) on the Vertical Edge of the First and Last Door using ½" SS Sheet Metal Screws provided in each **Finishing Kit**.



### 13.3

Install a Safety **Corner Cap** at each of the four corners of the Door section as shown (Pics 3). Corner Caps and screws provided in each **Finishing Kit**

### 13.4

If your Doors came with **pre-drilled Strap Holes** and they were not used, Press install two each **Plastic Plugs** into the pre-drilled Strap Bolt holes (1 each side of the Door, Pic 4). Plugs are included in each **Strap Drum Kit** if needed. (Future Doors will not have any pre-drilled Strap Bolt holes)





## Step 14: Set Di Drive Open/Close Switches

a) At this point all the Door Sections should be fully installed with all Strap Drums attached and the Doors sitting open approximately 6 inches at the top evenly along the sections. Now, run the Di Drive to **OPEN** the Doors to the Full Open required position (see Di Drive owners manual) . This will remove any slack in the Straps around the Drums.

b) Set the **OPEN** switch position within the DI Drive (see Di Drive owners manual).

c) Now begin to CLOSE the Doors using the manual switches of the Di Drive. **Once the Doors begin to compress the top “P” Seal, STOP the Di Drive and set the CLOSE switch position.** Be careful not to change the Open position switch while adjusting the Close switch.

## Step 15: Final Door Adjustment

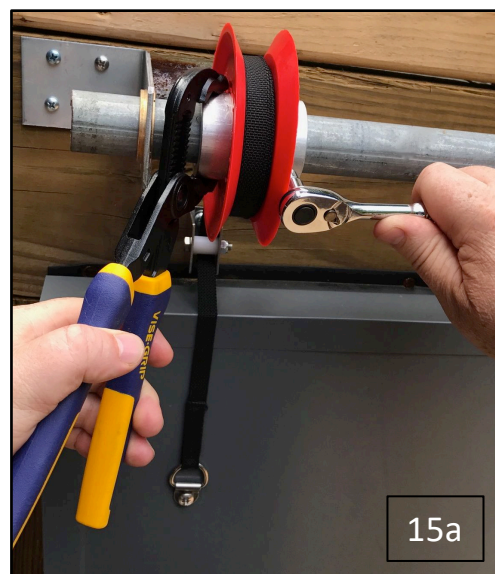
a) With the Di Drive in the set **CLOSED** position, loosen the Set Screw of the Strap Drum from step 8.2. Using a pair of Channel Lock Pliers rotate the Strap Spool downward to tighten the Strap and compress the Door tight against the seal. This also removes any slack in the strap spool for the initial setting. **(See Pic 15a)**

b) The P-Seal should be compressed to a 1/2” to provide a proper seal. With the Door tight against the seal, lock in place by tightening the two Set Screws using a 4mm Hex head socket (provided in each **Finishing Kit**). Complete this step for each Strap Spool.

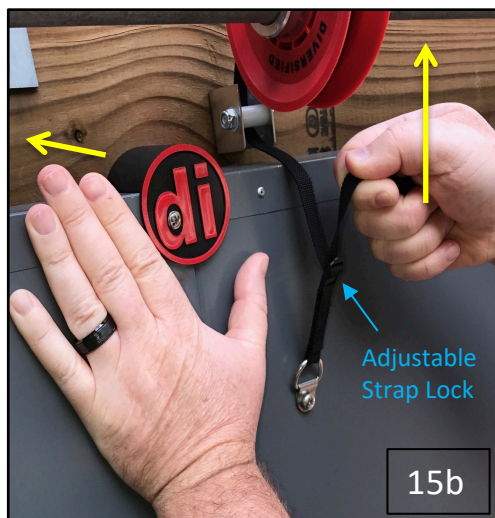
c) With all the Strap Spools tightened and locked, run the Doors fully Open and Closed a couple of times to ensure no further Strap adjustments are required.

d) If needed you can do a final adjustment of the Doors by pulling up on each Strap end of the Adjustable Strap Locks while at the same time pushing the Door hard against the seal. The P-Seal should be compressed to a 1/2” to provide a proper seal **(See Pic 15b)**. The **Adjustable Strap Lock** will not allow the Strap to loosen.

**Tightening the Straps too far could place unnecessary strain on the Di Drive and the Pipe.**



15a



15b

## Step 16: Manual Drive/Emergency Backup

The Di Drives are equipped with a Manual Drive Shaft that can be used during installation or as an **Emergency Backup system** should there ever be a loss of electrical power to the building.

On the bottom of the motor is a 3/8 inch Hex Drive Shaft that can be operated opened or closed by simply using a common Battery powered Hand held Drill motor with a 3/8" drive socket.

Use caution when using the Manual Drive as you may run through the Limit Switches of the Gear.

