



# 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 2.5" Hinge Screws
- 7 SS ½" Door Connection Screws/washer
- 6 SS ½" Self-Tapping Sheet metal Screws
- 1 Top Seam Cap

Each **Strap Drum Kit** Includes:

**Qty**

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

Each **Finishing Kit** Includes:

(1 Kit per rough opening)

**Qty**

- 2 Metal Door End Caps (4', 5', or 6')
- 4 Plastic 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



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## TUNNEL DOOR FRAMING

➤ **ROUGH OPENING LENGTH IN INCHES:**

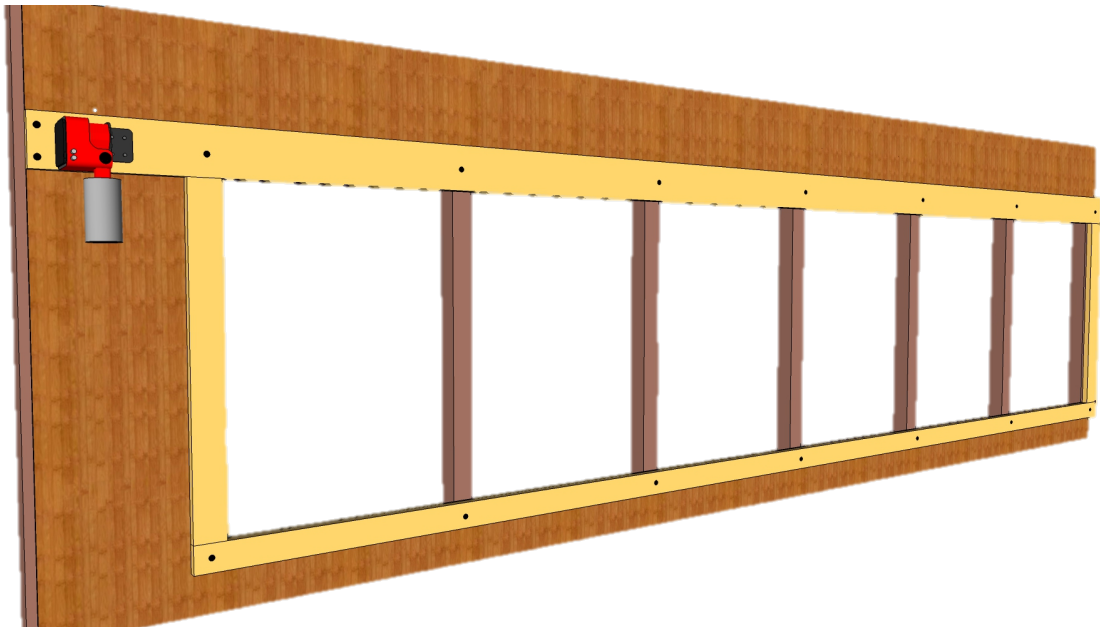
- **(NUMBER OF DOORS x 45.5") and subtract 8"**
- **ON EXISTING ROUGH OPENINGS, DIVIDE THE LENGTH OF THE OPENING IN INCHES BY 45.5 TO FIND THE NUMBER OF DOORS NEEDED.**

➤ **ROUGH OPENING HEIGHT:**

Door height	RO Height
4ft.	45"
5ft.	57"
6ft.	69"

➤ **FRAME:**

- **TOP BOARD: 2x8** (If space is limited above the header (Vents) you may use a 2x6 Header Option – see step 1a for details)
- **BOTTOM AND SIDE BOARDS: 2x6**
- **ALL FRAME BOARDS SHOULD BE FLUSH WITH ONE ANOTHER**
- **THE 2x8 (TOP BOARD) SHOULD EXTEND ONE POST PAST THE END/START OF THE ROUGH OPENING FOR MOUNTING THE DURADrive**
- **THE FRAMING SHOULD BE SECURED TO THE POSTS USING A DECKING GRADE WOOD SCREW >=3"**
- **CAULK THE FRAME BOARDS TO SEAL AGAINST THE EXISTING WALLS FOR LEAKS**





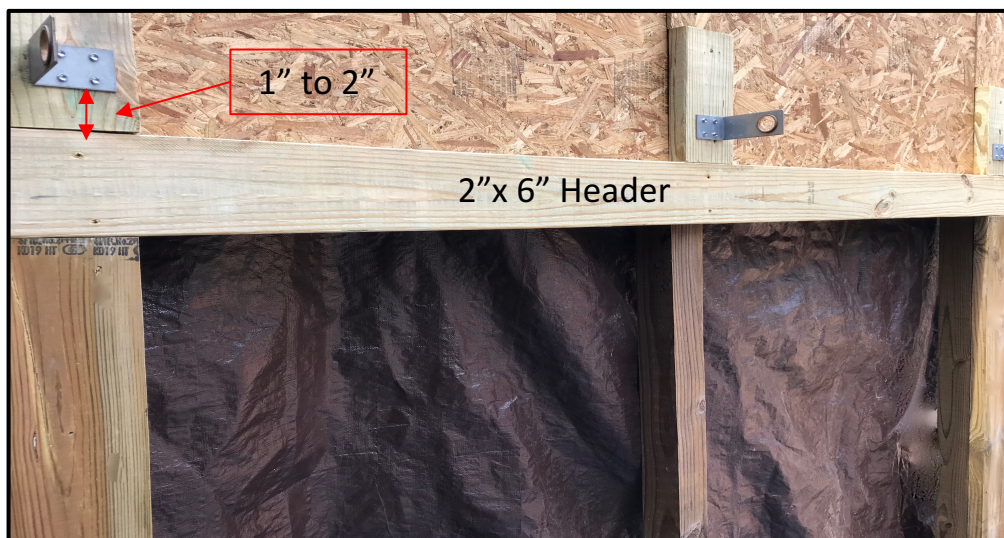
## Step 1: Pipe Brackets (2x8 Header)

Install a Pipe Bracket at every Framing Post along the top edge of the 2X8 Header as shown. Brackets require 4 each 2.5" long Stainless Steel Screws (**provided with Door install Kit**).



## Step 1a: Pipe Brackets (Limited space using 2x6 Header Option)

If space is limited above the header (Vents) you may use a 2x6 Header, but 2x4 blocks will need to be added at every frame post for the Pipe Brackets to mount to. Install a Pipe Bracket at every Frame Post 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 2.5" long Stainless Steel Screws (**provided**).



## Step 2: 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 for every other Door. The Strap Drums will be located in the middle of every other Door or 91 inches from each Strap Drum starting with the middle of the First Door. The swaged end of the 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 in the middle of the Door followed by every other Door (91 inches apart), **plus one extra** for the Final Door of the run.



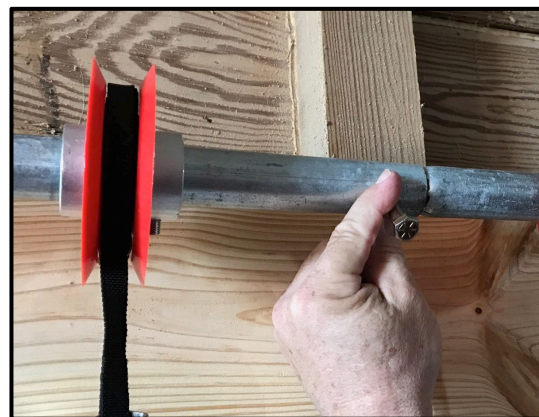
Set Screws must  
Be on Right side  
when installed



## Step 3: 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 4: 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 5: Install Gear/Motor

Install the **DuraDrive** 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 DuraDrive end of the Doors.

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

**Note:** The motor can be down or horizontal when on the Left end of the pipe. It can only be up or horizontal on the Right end of the pipe. There is a Left Hand DuraDrive available for use to have the motor Down on the Right End of the pipe.

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 electrical power, ref Step 16).



## Step 6: Install first Door Section

At the bottom of the rough opening measure down 4 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.

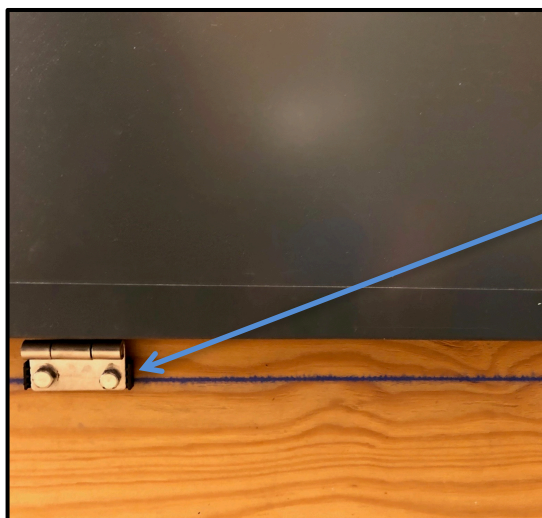


## Step 7: Install first Door Section

**The left vertical edge of the first Door should be at least 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 first Door while maintaining the chalk line (Step 6) 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.

(2.5" long SS Hinge Screws, 10mm Hex Driver provided with Door Install Kit)



Hinge Spacer

## Step 8. Install Strap Bracket

With both Hinges secured to the wall install the Strap Bracket to the wall **½ inch above the top of the Door and directly above the middle of the Door** (22.75 inches in from side of Door) as shown. Brackets require 2 each 2.5" long Stainless Steel Screws (**provided**).



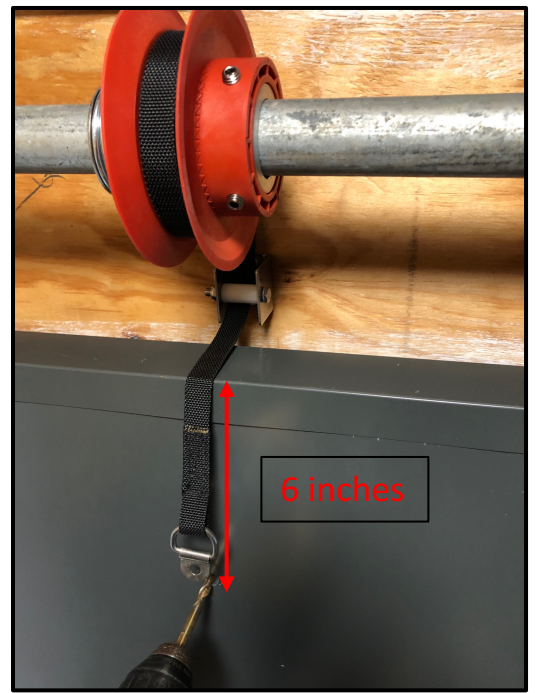


### Step 9: Drill Strap Bolt Hole

Slide the **Strap Drum** on the pipe directly over the **Strap Bracket** and run the strap off the back of the Drum Spool and route through the Strap Bracket as shown.

Measure **6 inches** down from the top of the door and **drill a ¼ inch hole** all the way through the Door. Use the Strap to align the hole directly inline with Bracket and Drum.

Now insert the 2.5" Strap Bolt through the Strap end and through the Door securing the Strap to the Door.



### Step 10: 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 11: Secure Strap Drum to Pipe

Now, with the door **open approximately 6 inches from the frame**, secure the Door in position by tightening the two Set Screws on the Strap Spool Drum using a 4mm Hex Allen Wrench or Socket tool included with each Finishing Kit. Important that the Strap Drum is positioned to keep the Strap straight and flat down to the Door.

This will hold the door in the up position and allow the next door section to be easily installed.



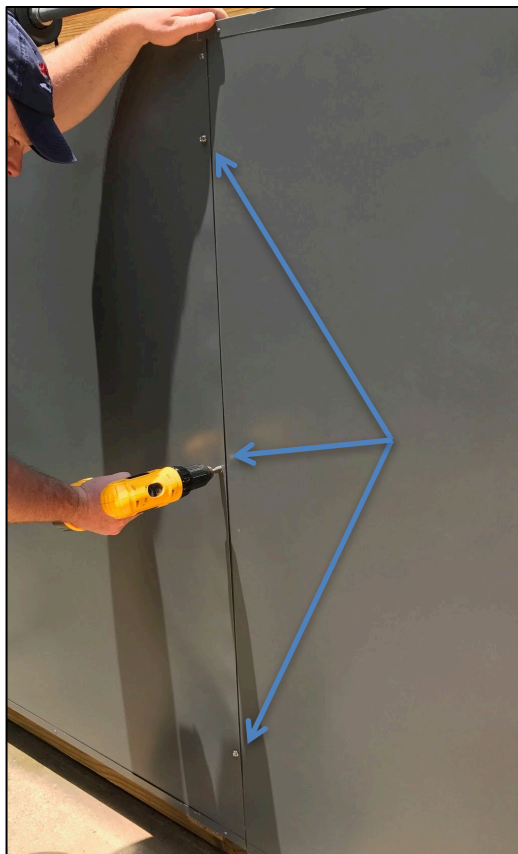
## Step 12: Install All Door Sections

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 7**.

c) Now that the second Door's Hinges are secured to the wall, install 3 each 1/2" long SS Door Connection Screws 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.



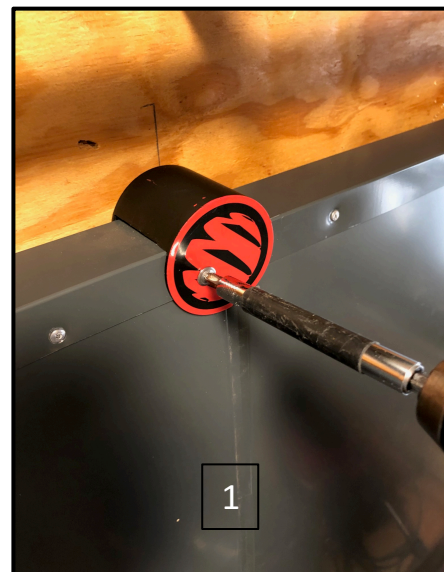
**Continue with Steps 8, 9, 10, 11, and 12 for each remaining Door Section**



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

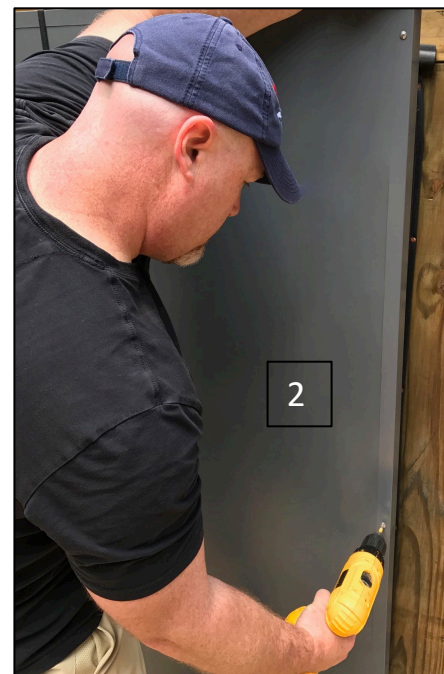
### 13.1

At the top of each Door Section seam install the **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**.



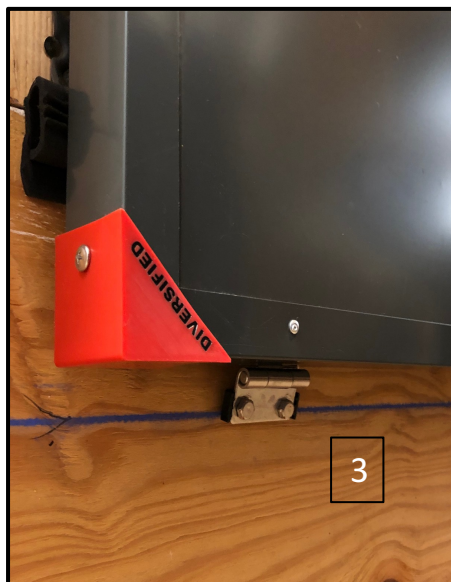
### 13.2

At each end of the Door run install metal **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**



## Step 14: Set DuraDrive Open/Close Limit 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 DuraDrive to full open until there is less than one wrap of Strap on the Drums. **This removes any slack in the Straps.**

b) Then, run the Doors in the closed direction until you reach the desired opening distance and set the **OPEN limit switch position** within the DuraDrive (see DuraDrive owners manual).

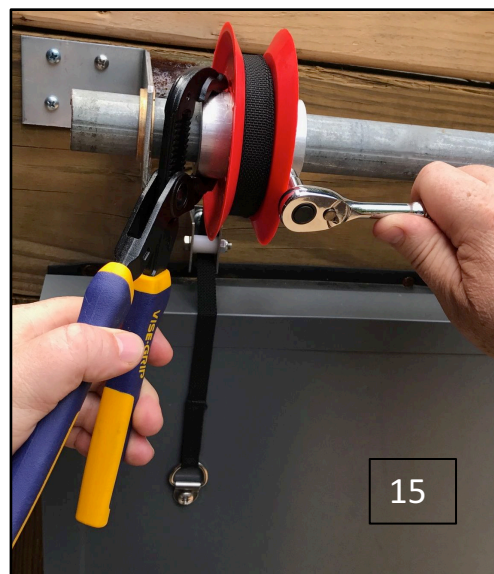
c) Now begin to CLOSE the Doors using the manual switches of the DuraDrive. **Once the Doors begin to compress the top “P” Seal, STOP the DuraDrive and set the CLOSE switch position.** Be careful not to change the Open position limit switch while adjusting the Close switch.

## Step 15: Final Door Adjustment for Non-Ratcheting Strap Drums

a) With the DuraDrive in the set **CLOSED** position, loosen the Set Screw of the Strap Drum from step 11. 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 15)

b) The P-Seal should be compressed to a 1/2” or less 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 Drum.

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



## Step 15a: Final Door Adjustment for Ratcheting Strap Drums only

- a) With the DuraDrive in the set **CLOSED** position and both Set Screws of the Ratcheting Strap Drums tightened down on the pipe, rotate the Strap Drum Collar downward using the **Lock Wrench Tool** provided with each DuraDrive (or Channel Lock Pliers can be used) to operate the ratchet mechanism. This will tighten the Strap and compress the Door tight against the seal. The P-Seal should be compressed to a 1/2" or less to provide a proper seal.

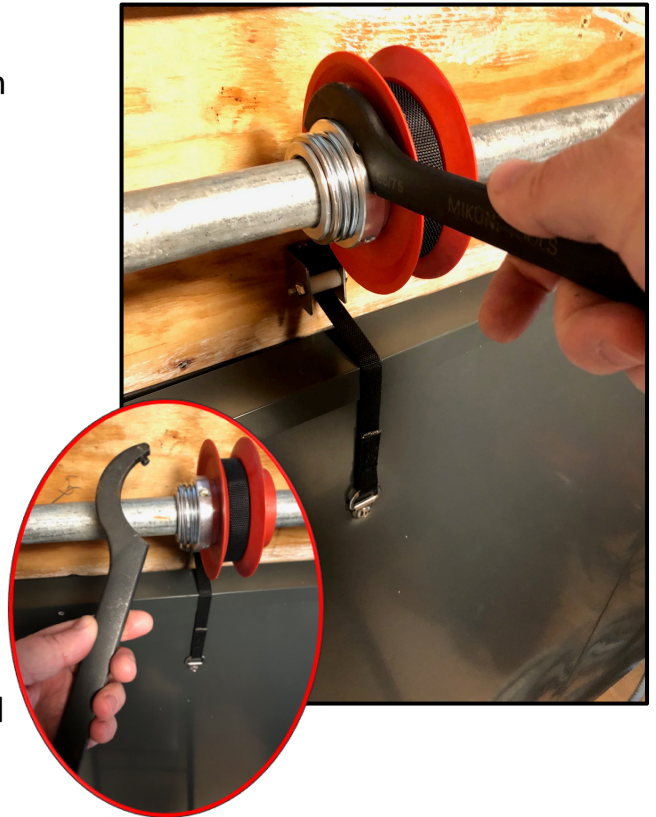
[\(See video link\)](#)

- b) With all the Ratcheting Strap Drums tightened, run the Doors fully Open and Closed a couple of times to ensure no further Strap adjustments are required and all the slack is out of the Straps.

- c) If needed you may also make small adjustments to the Doors while in the open position. With the Doors slightly in the open position you can turn the left side of the Strap Drum downward with your hand while pulling to the left to unlock the Ratchet teeth. This will tighten the Strap. Then close the Doors with the Drive motor to ensure the proper seal.

It is Highly recommended that you only adjust the Strap Drum in very small increments (couple of teeth) with this method to ensure you don't over tighten the Doors when you then close with the Drive Motor.

[\(See video link\)](#)





## Step 16: Manual Drive/Emergency Backup

The DuraDrives are equipped with a Manual Drive Shaft on the motor 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 DuraDrive.

