INDOTECH

Tech-Roll Ultra

Installation and Maintenance Manual

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Introduction

Read carefully the manual before starting the installation of your TECH ROLL door.

Installing a TECH ROLL door is a considerable task that requires knowledge and preparation. We recommend you contact a professional specialized in the field. Not only will the door will be adjusted properly, the professionals will guarantee its installation in accordance with their warranty terms.

The installation instructions that follow are general guidelines. Under no circumstances should it be considered as complete instructions for the installation of a roll-up industrial door. **The manufacturer assumes no responsibility for any damages incurred during the installation of a TECH ROLL door.**

The door must be properly installed in order to provide reliable, safe and long term usage. If you have any doubts or questions concerning the installation, please contact us at 1-866-835-TECH.

How to use this manual

Throughout this manual, the following images are used to alert the reader to potential hazardous situations. Additional information is also provided to ensure proper manipulation or installation of the door.

WARNING is used to indicate the potential for personal injury if the procedure is not performed as described.

CAUTION is used to indicate the potential for damage to the product or property if ever the procedure is not done correctly. It is also used to relay CRITICAL information to the reader in order to finish successfully the task at hand.

The mention "*Note*" is used to provide additional information to help in the completion of the procedure, or in the operation of the door, and is not usually safety related.

TOOLS AND EQUIPMENT REQUIRED

1- Socket and wrench set

2- High capacity forklift

3- Stepladder or ladder

4- Carpenter, spirit, water or laser level

5- Welder

6- Rubber mallet

7- Various hand tools (pliers,

screwdrivers, two spring winding bars.)

8- “C” Clamps (at least 4)

9- Measuring tape

BASIC JOB REQUIREMENTS

1- The customer, dealer or installer must supply a high capacity forklift.

2- A minimum of two people are required.

3- The customer must guarantee full access to the door opening during the installation. No traffic should be allowed through the door during the installation.

Note: One installer must be a qualified electrician and all electrical work must meet local building codes. If the installer is not qualified, an electrician must be present to install the components that require power such as the control panel.

4- The Indotech control panel should be installed next to the door.

ELECTRICAL REQUIREMENTS

A qualified electrician will have to:

1- Install the Indotech wall-mount control panel (if any),

2- Supply and install a fusible disconnect box,

3- Run the power wires from the main distribution panel to a fusible disconnect box then to the Indotech control panel or motor control box,

4- Run wires from all the components of the door (limit switches, sensors) to the Indotech control panel or motor control box.

GENERAL LAYOUT OF THE DOOR

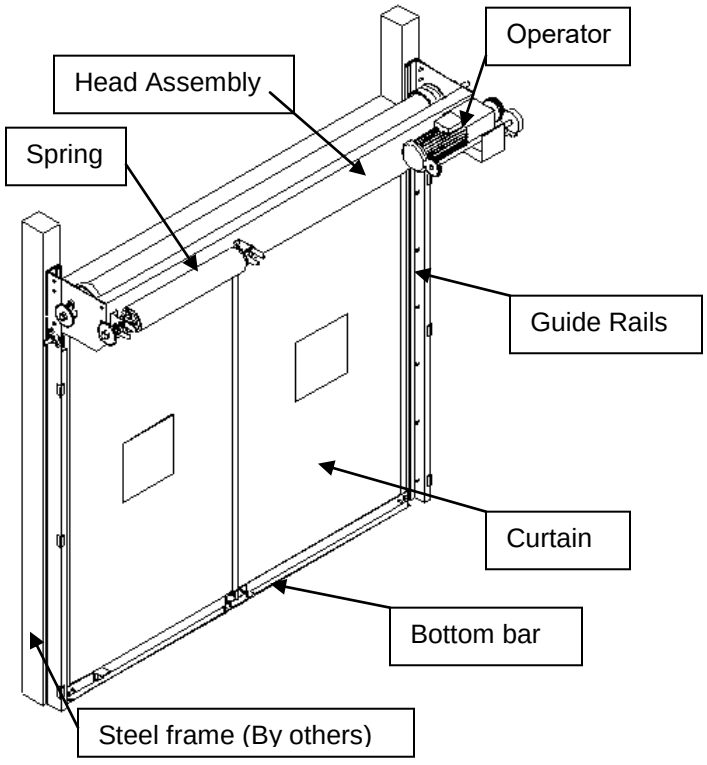


Figure 1

INSTALLATION

MEASURING THE DOOR OPENING

1- It is very important to check the measurements of the door opening with the received door. **If the measurements do not match, do not install the door.**

2- It is important to check the squaring of the steel frame. This can be checked using a carpenter's water level or a laser level (See Figure 2).

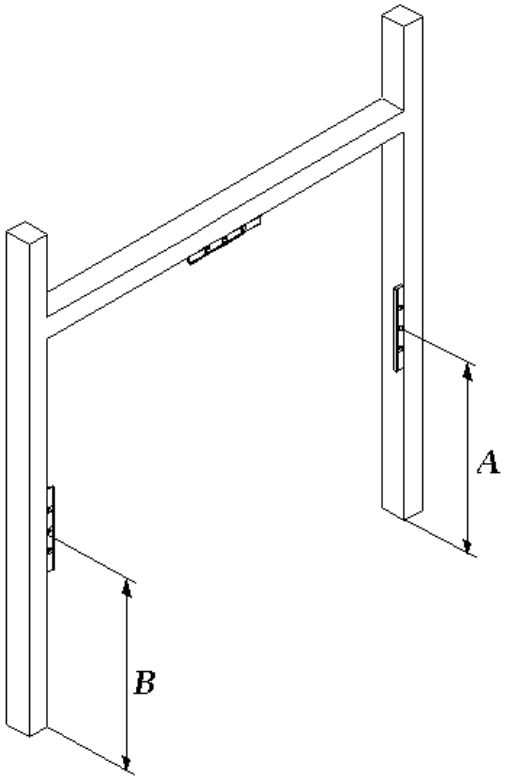


Figure 2

If a laser is used, the distance between the laser mark and the floor, measure A and B (See Figure 2), must be equal to ±1/8-in. If the difference between the two distances is greater than the allowable tolerance, the use of shims or another method of adjustment to ensure the ±1/8-in tolerance is possible. If a water level is used, the distance between the watermark and the floor, measure A and B (See Figure 2), must be equal ±1/8-in. If the difference between the two distances is greater than the tolerance, then use shims other method to ensure the ±1/8-in tolerance.

3- Ensure the steel frame is straight vertically in the area where the guide rail will be mounted (See Figure 3). If the area is not straight vertically or is not perpendicular with the floor, use shims or other methods of levelling.

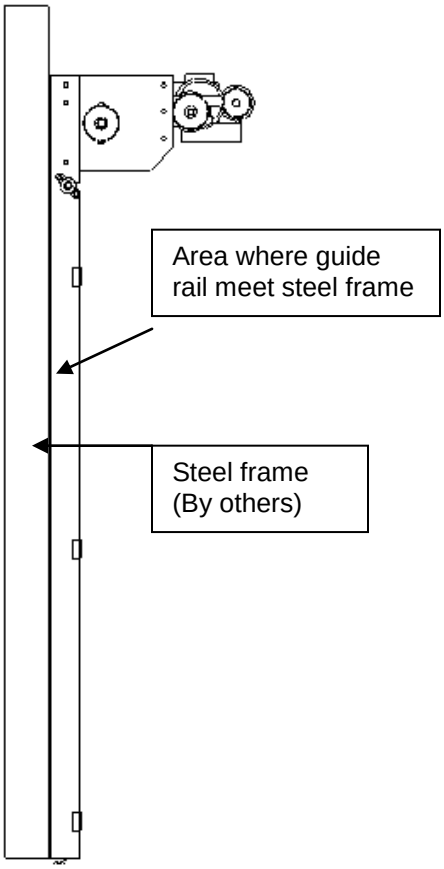


Figure 3

Measuring the head assembly

Before installing the guide rail, it is necessary to know the distance the rails need to be apart for the door to operate correctly.

This distance is obtained by measuring the head assembly.

The "C" dimension should be taken from side plate to side plate at the front of the head assembly as shown on Figure 4.

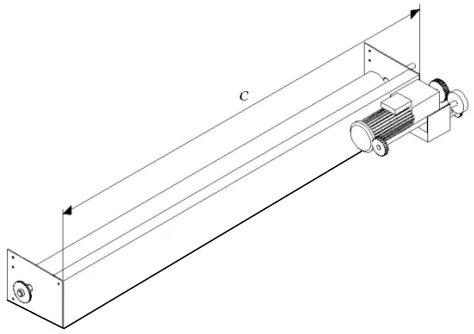


Figure 4

CAUTION

The measure 'C', from the head assembly, must be taken at the ends of the front cross-member shown in Figure 4. <u>The measure taken from Figure 5 is incorrect</u>. The space between the steel plates varies during shipping or handling and it should not be used.

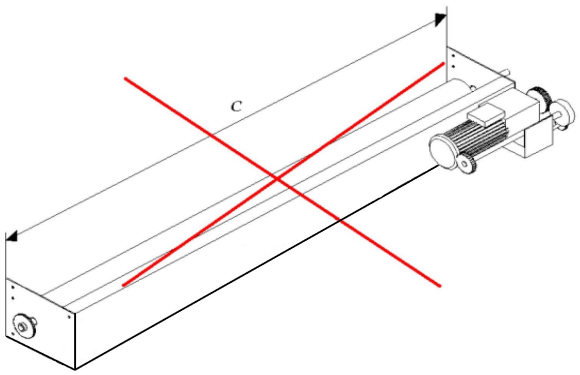


Figure 5

INSTALLING THE GUIDE RAILS

1- Install the guide rails on the steel frame using "C" clamps.

2- Using a level, check if the guide rails are straight vertical and parallel to each other.

The inside distance between the interior of the rails must be equal to the measure take from the head assembly (See Figures 6 and 7).

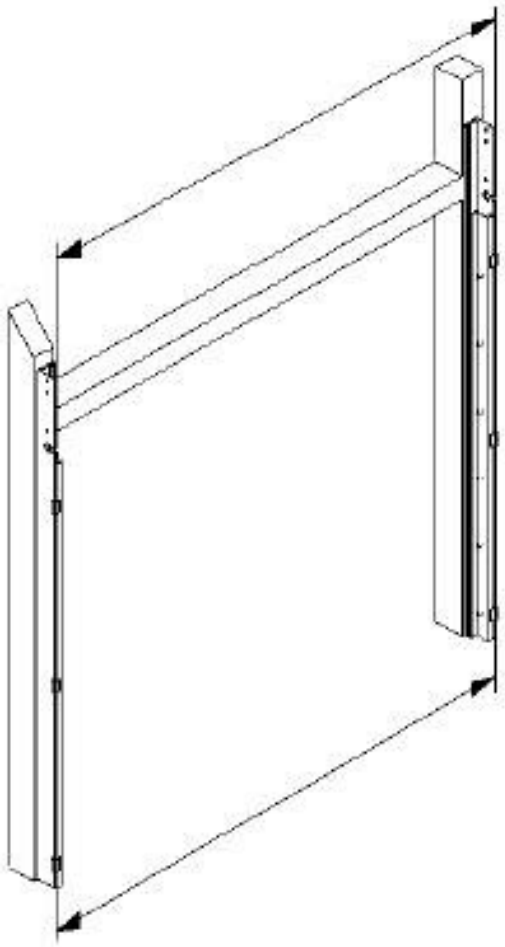


Figure 6

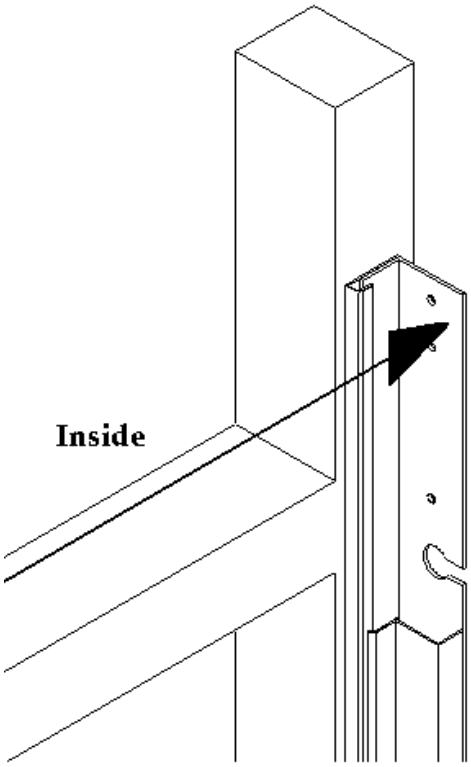


Figure 7

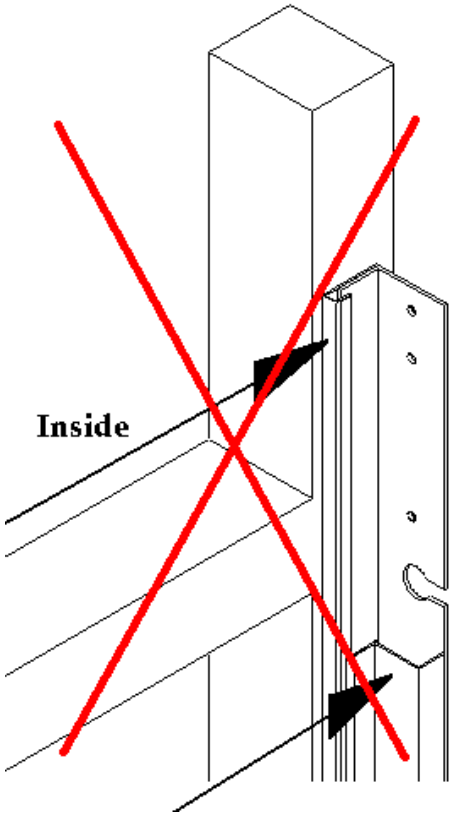


Figure 8

CAUTION

The (inside) space between the rails must be measured as in Figure 7. It must not be done as in Figure 8. If the measurement is not taken properly the door will not function as required.

3- Weld the rails to the steel frame (See Figures 9 and 10).

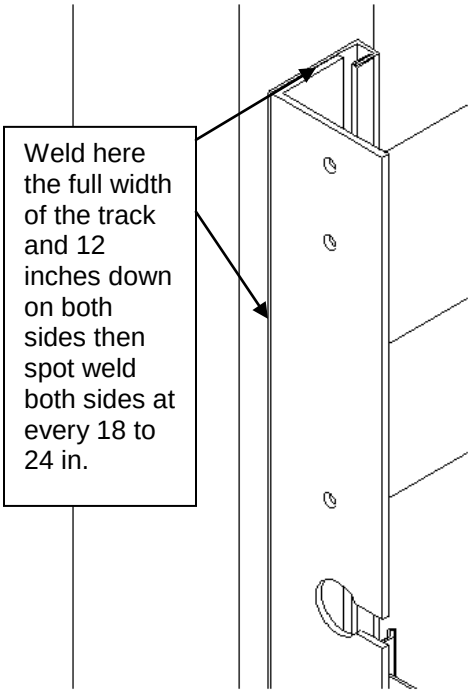


Figure 9

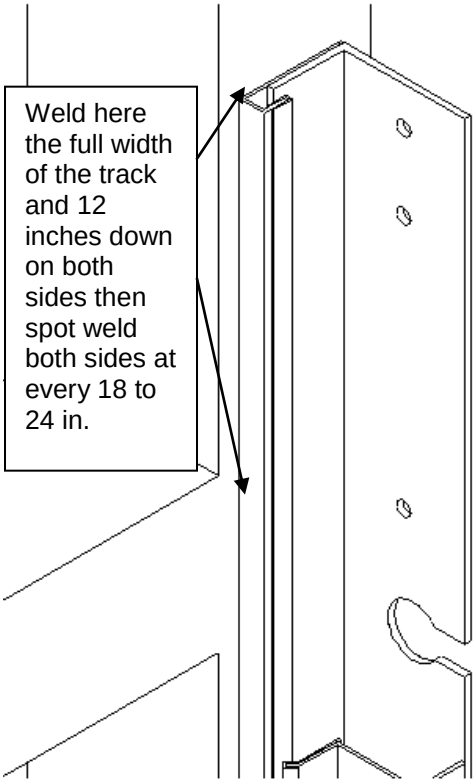


Figure 10

INSTALLING THE HEAD ASSEMBLY

1- Use the forklift to align the head assembly between the guide rails and fasten it with 1/2-13 bolts supplied with the door (See Figure 11).

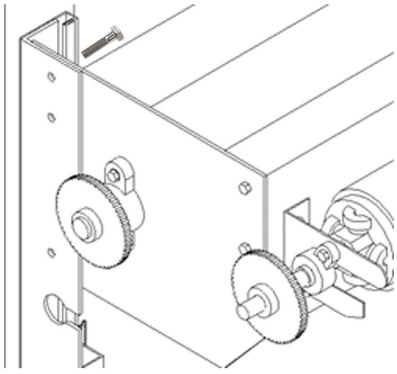


Figure 11

CAUTION

The plate from the head assembly must be fastened inside the guide rails for the door to operate correctly.

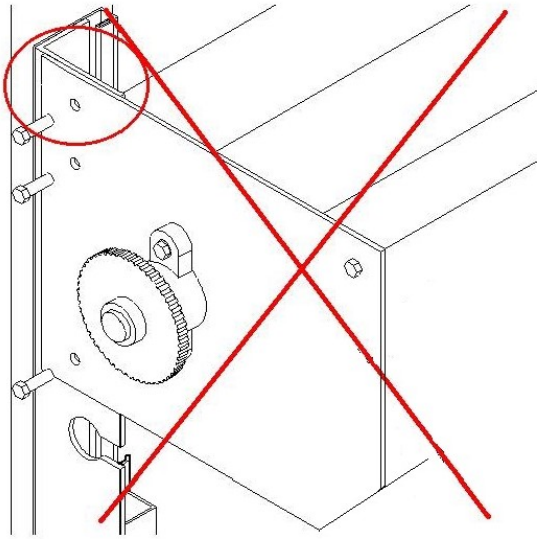


Figure 12

2- Check if the main roller is centered within the head assembly (See Figure 13 on the next page).

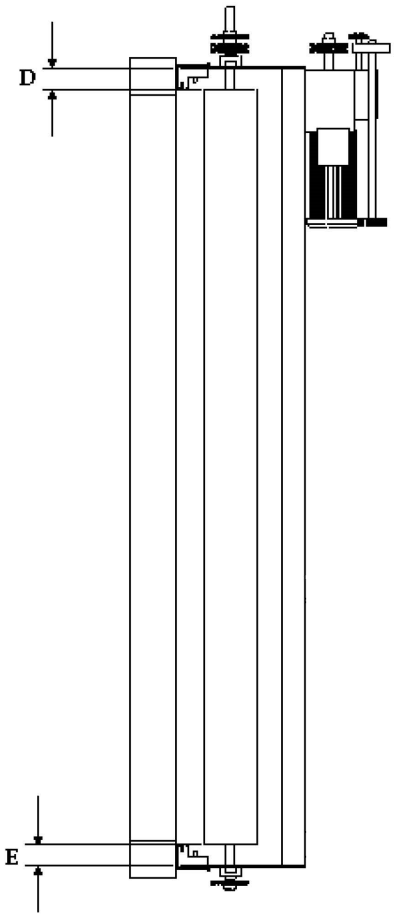


Figure 13

Dimensions D and E must be the same.

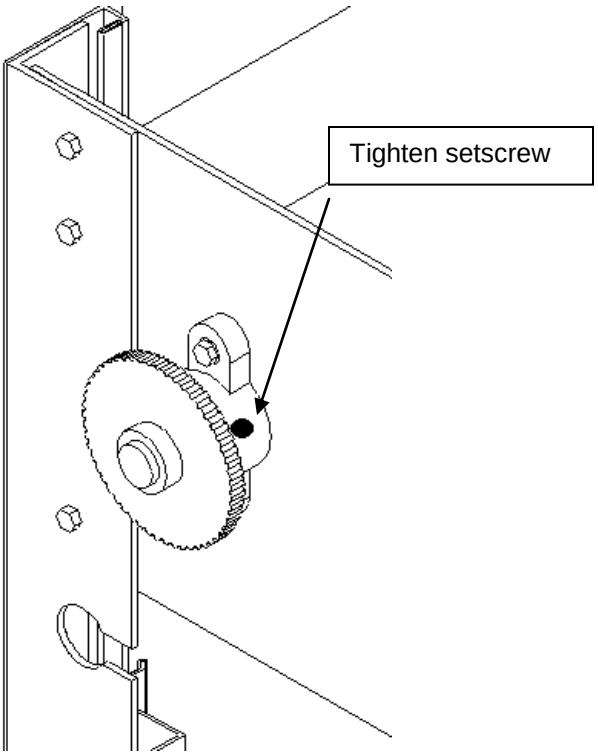


Figure 14

WARNING

After the installation of the head assembly, and adjustment of the main roller, makes sure the setscrews on the bearings are tightened properly (See Figure 14). Injury may occur if the main roller slips out of the bearings while the door is in operation.

INSERTING THE CURTAIN INTO THE GUIDE RAILS

Remove the tie-straps from the rolled curtain and lead approx 12 inches of the curtain into the guide rails. The endlocks of the curtain must slide between the front cover of the guide rail and the back of the rail. Each edge of the guide rails has a black PVC strip. In effect, the curtain of the doo should be between the two sets of blac PVC strips.

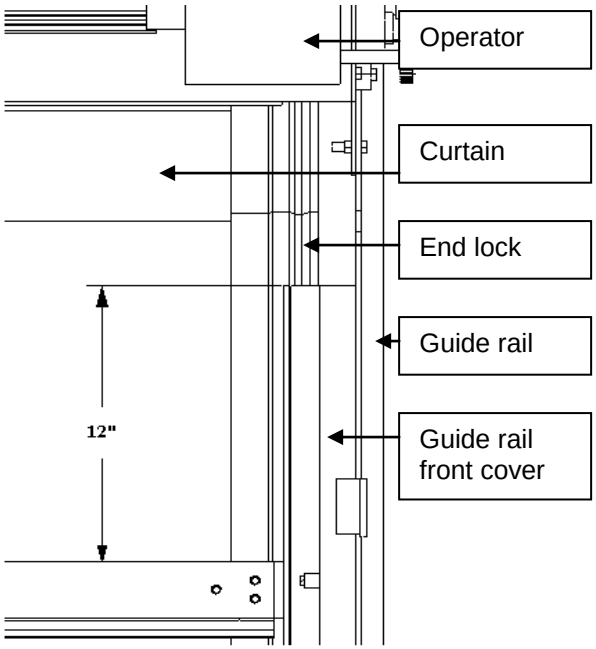


Figure 15

INSTALLING THE IDLER ROLLER

Insert the idler roller bearing onto the idler roller shaft, slide the bearings into the slots and bolt the bearings on the guide rails (See Figure 18).

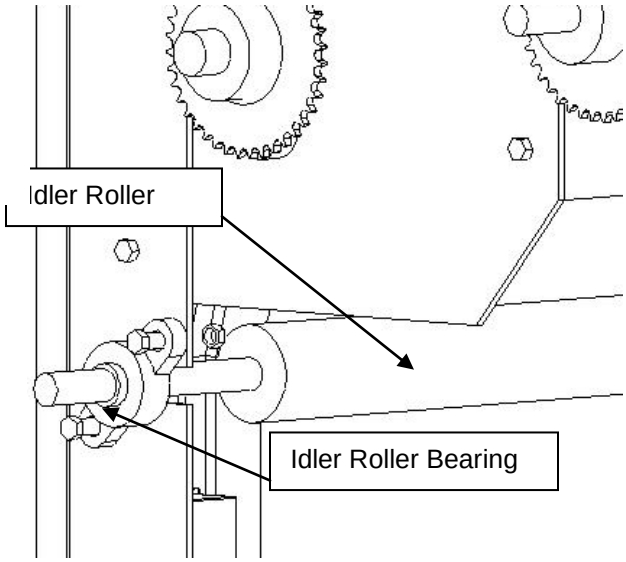


Figure 16

WARNING

Make sure the bearings setscrews are tight after installing the idler roller (See Figure 17). This will prevent injuries from happening. The idler roller could fall during door operation.

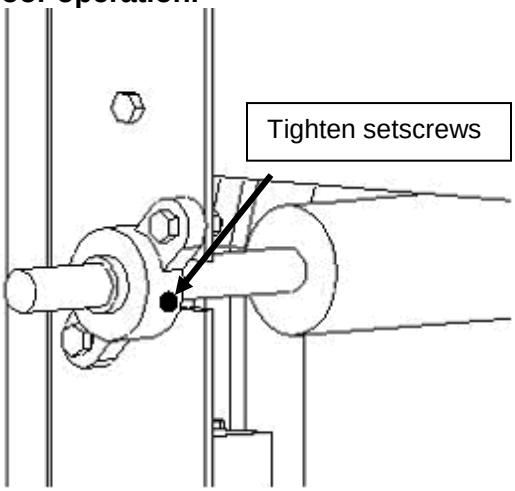


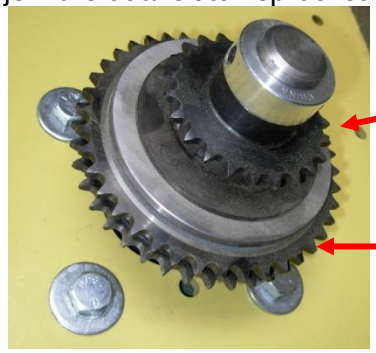
Figure 17

WARNING

<u>The door must be fully open</u> and the opener securely bolted to the mounting bracket before installing the roller chain.

Roller Chain Installation

1- Using the D40 or D50 sized chain, join the dual clutch sprocket and…

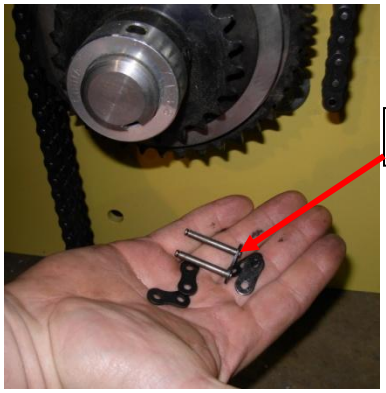


Picture 1

… the gear reducer dual sprocket… (Picture 2)

Picture 2

…together with the chain link provided in the hardware bag (Picture 3).



Picture 3

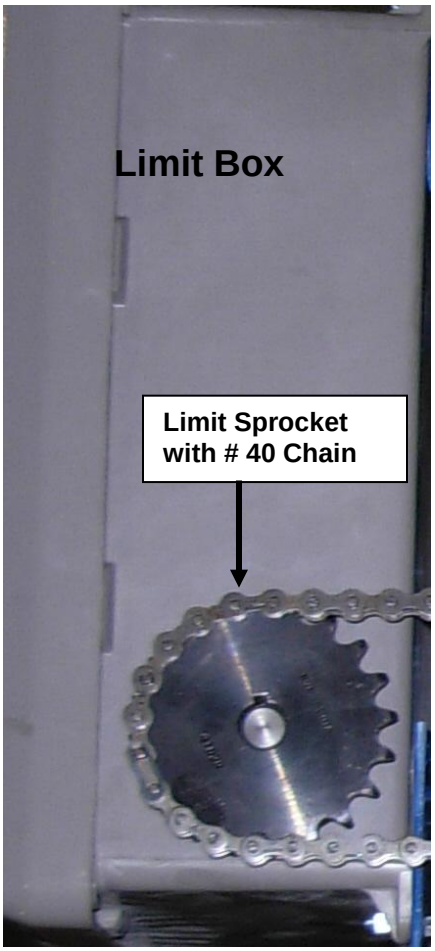
If the chain is too long, punch out the pin, that will leave an inside link nearest to the desired length.

2- Check for chain slack from both sprockets, (there should be no more than ¼-in of slack between the sprockets when chain is depressed)

Always tighten the setscrews

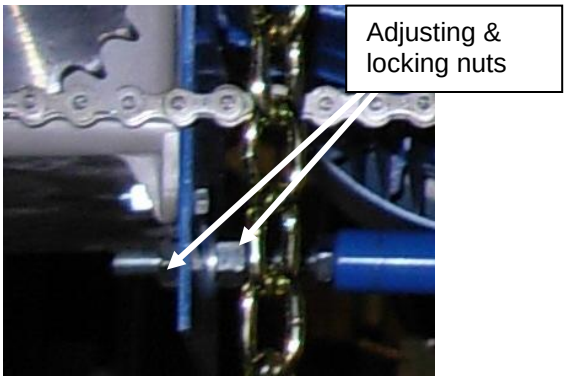
Limit Chain Installation

1- Using the #40 chain, join the clutch limit sprocket (Picture 1) and the limit box sprocket (Picture 4) together with the chain link provided in the hardware bag.



Picture 4

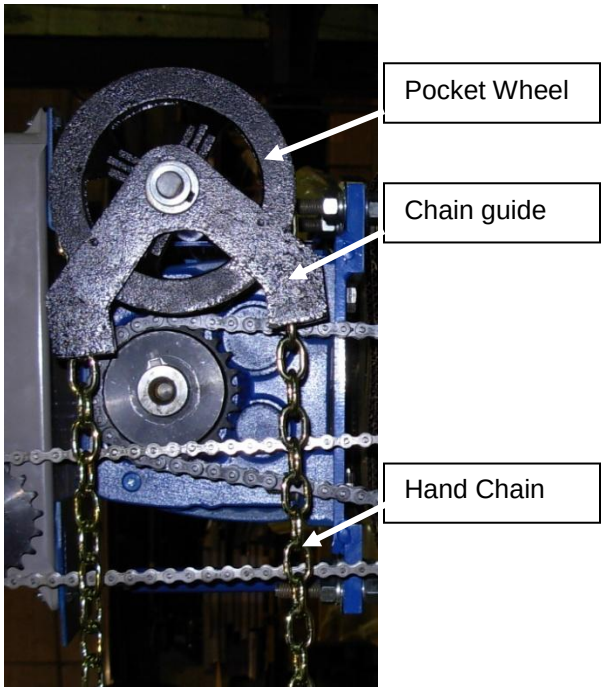
To remove slack between sprockets, lift the limit box by hand and use the adjustment nut underneath the limit box to keep the tension, and then lock it in place with the remaining two nuts. (See picture 5)



Picture 5

Hand Chain Installation

1- Run the hand chain through the pocket wheel and chain guide. Allow both ends to hang down toward the ground and then cut the excess hand chain if necessary. Both ends should be approximately 1 foot from ground. Connect both ends of the hand chain.



Picture 6 (Side view of door)

Clutch

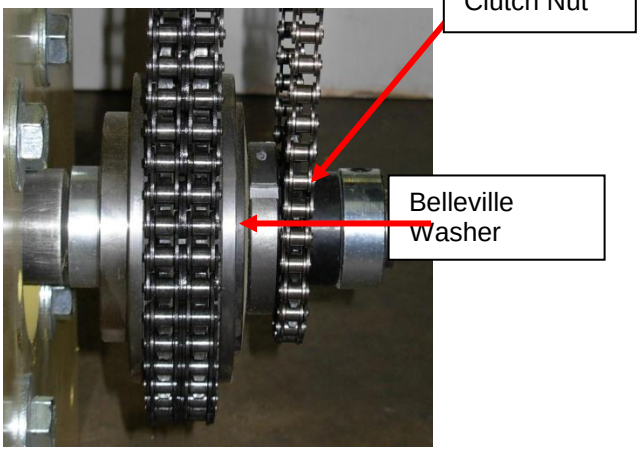
Close the door with the chain hoist. If the clutch slips, here is how to adjust it:

1- Loosen the clutch nut setscrew 1/4 turn max (**do not remove setscrew**).

2- Tighten clutch nut gradually until there is just enough pressure on the Belleville spring washer to permit chain hoist to move the door smoothly, but still allow the clutch to slip if the door is obstructed.

3. When clutch is properly adjusted, it should be possible to stop the door by hand during travel, when using opener or chain hoist.

4. Make sure to tighten the clutch setscrew each time the clutch is tested and that it is locked in place upon completion of the adjustments.



Picture 7

WIND BAR INSTALLATION (option)

If the door is equipped with a wind bar, **close the door with the chain hoist**, then:

1- Remove the end brackets from the rails of the windbar (see Figure 18).

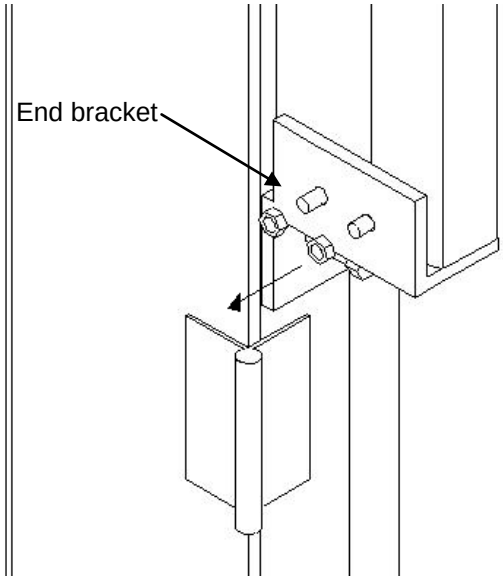


Figure 18

2- Using a forklift, or with two men, slide the wind bar into the rails. The windbar should be close to the curtain (See Figure 19).

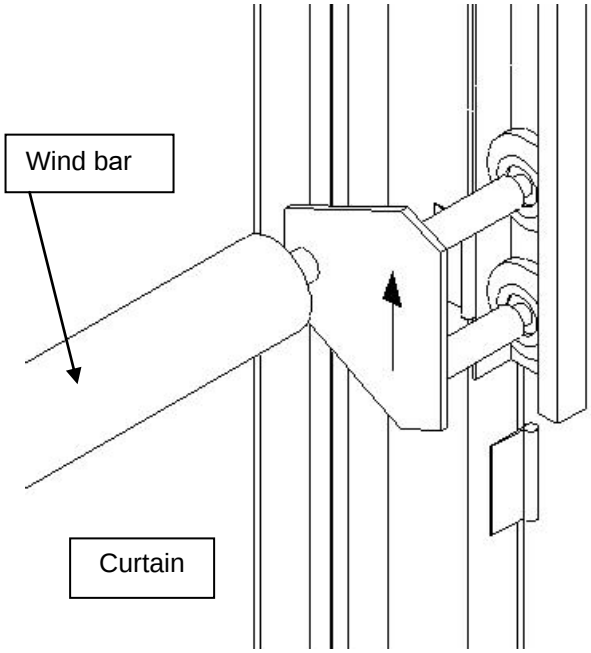


Figure 19

3- Reinstall the end brackets onto the windbar track (See Figures 18 & 20).

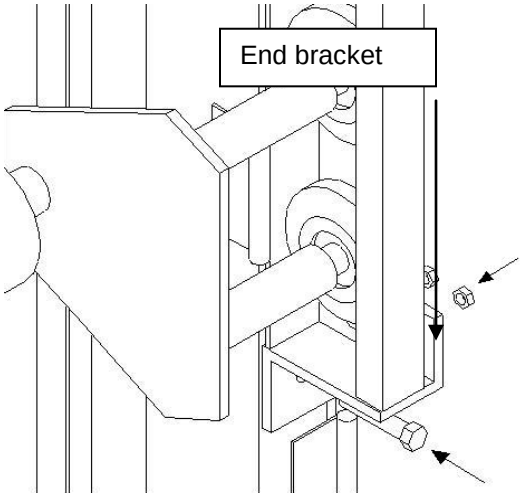
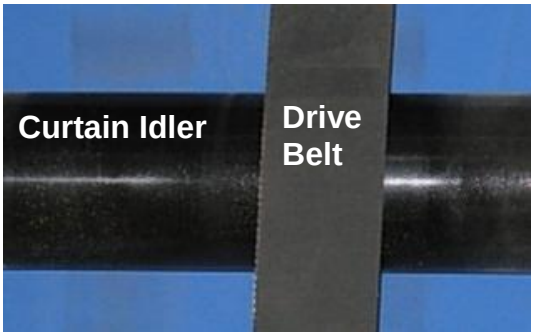


Figure 20

4- Install the drive belts. The drive belt must pass in front of idler... (See Picture 8)



Picture 8

5 - …then behind the wind bar from underneath; and then back up to the top to be fastened to the head assembly. (See Figures 21 & 22)

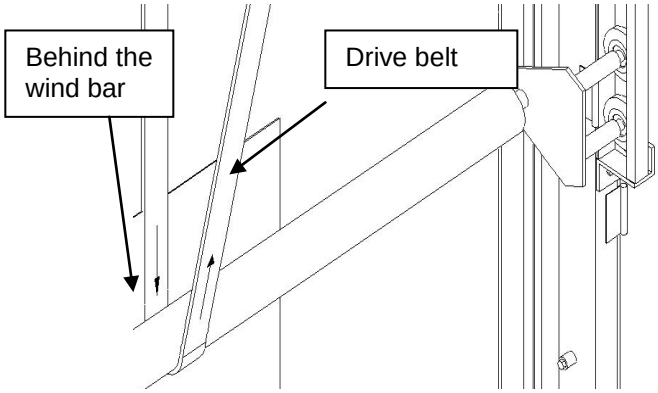


Figure 21

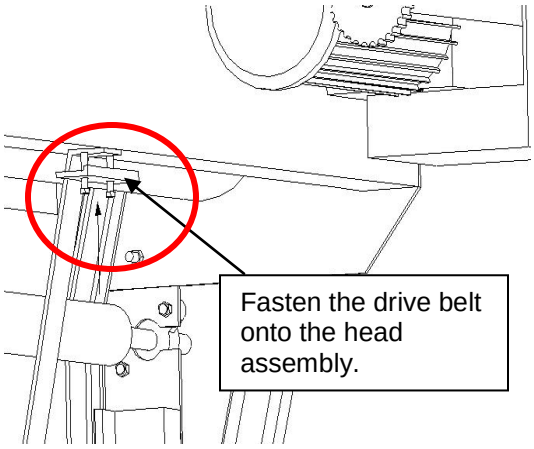


Figure 22

CAUTION

When fastening the drive belt onto the head assembly, it is important that the wind bar wheels do not touch the end bracket. A space of 1-in must be kept between the wheels of the wind bar and the end brackets.

INSTALLATION OF EXTERIOR WINDBAR (OPTION)

Figure 23

Option 1- Install track with screws.

1- Place the galvanized steel tracks on the exterior door frames juxtaposed with the guide rails of the door. Then place them firmly on the lintel of the head of the steel frame. Mark the location of the rails.

Drill then countersink the holes in the center of the track every 15 to 20 inches. Clamp the track to the frame of the door and screw the track to the door frame with the appropriate conical screws. In the case of an empty structure (HSS), the windbar track should be installed on the HSS (Figure 23).

Locate the placement of the end brackets under the galvanized track and mark the location of the holes on the steel frame. Pierce the bolt holes.

Option 2- Weld the track in place

1-Place the galvanized steel tracks on the exterior door frames juxtaposed with the guide rails of the door. Then place them firmly on the lintel of the head of the steel frame. Mark the location of the rails.

Clamp the track to the frame of the door and weld it in place every 18 inches on both sides, 3 inches from the exterior windbar

In the case of an empty structure (HSS), the windbar track will be installed on the HSS (Figure 23).

Locate the placement of the end brackets under the galvanized track and mark the location of the holes on the steel frame. Pierce the bolt holes.

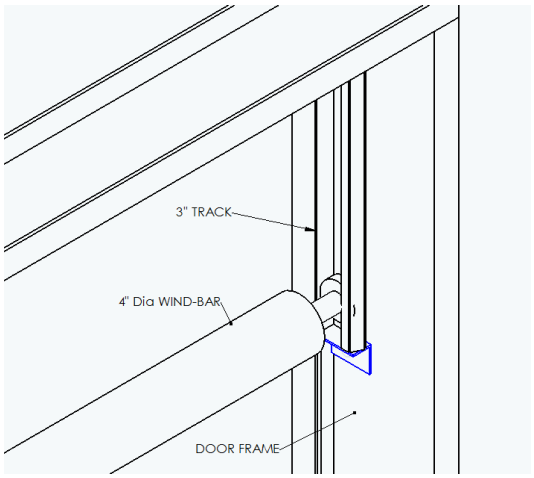


Figure 23

2-With the help of another person, insert the windbar into the tracks. Install the end brackets and screw them into place. Do the same with the other side of the track. Center the windbar between the two guide rails.

2-1 At each end, tighten the collars to 1/2" of the end of the windbar (Figures 24 & 25)

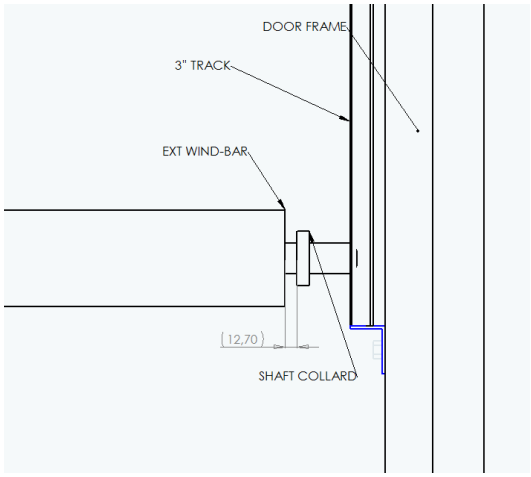


Figure 25

3- Close the door manually.

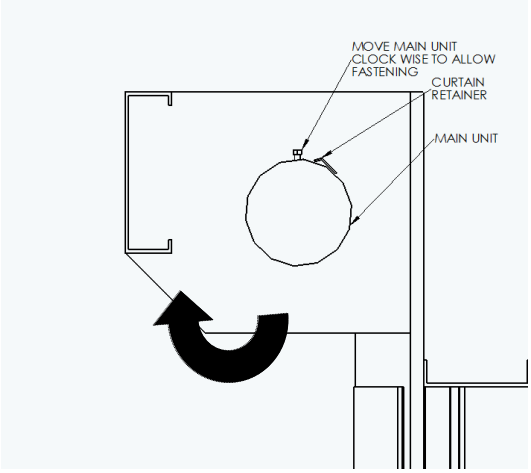


Figure 26

3.1- Turn the main barrel in the closing direction, 3/4 of a turn. The back of the curtain retainer will be visible and provide enough clearance for the installation of the 2" strap retainer straps (± - 20º). The end of the strap should be parallel to the headkit of the door. the strap should hang down towards the floor along the exterior side of the curtain. The straps will then be tied to the curtain when the door is opened.

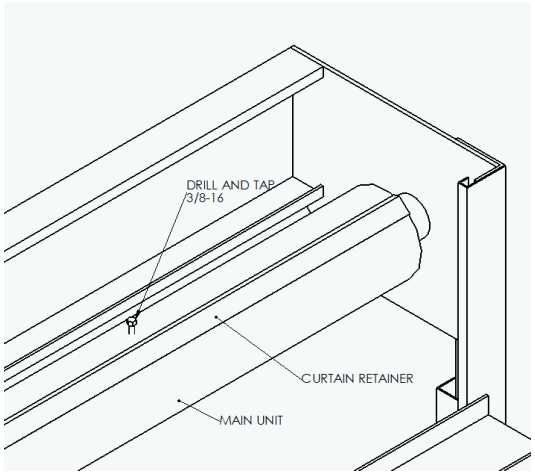


Figure 27

3.2- Make sure the straps are at least 24-48 inches from the ends of the main unit (equal distance). The strap must not overlap the curtain's reinforcement joint.

3.3-Make sure that the straps are properly aligned to ensure that the windbar moves evenly while traveling up or down.

3.4- Using a level placed in the middle of the wind bar, raise the wind bar using the remaining strap until the wind bar is level; then do the same with the second strap. Manuall roll the excess curtain and straps , then mechanically operator the door. If the door and the windbar function properly, remove the excess strap.

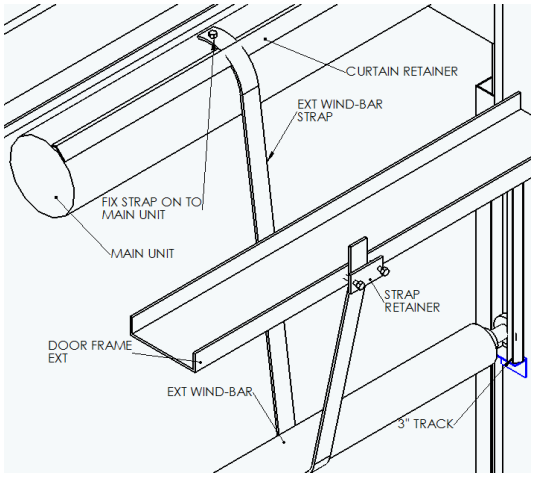
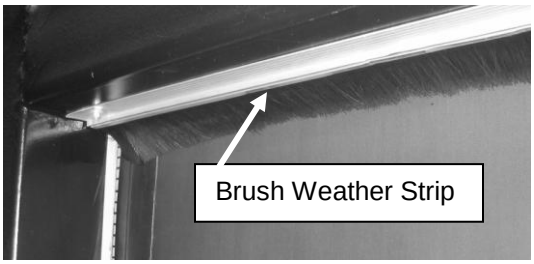


Figure 28

Installing the brush weather strip

The brush weather strip is installed onto the horizontal (top) part of the steel frame, bristles pointing towards the curtain. You should not see light coming through the bristles and the back of the curtain when looking at it from the ground up (See Picture 9).



Picture 9

Inspecting the components

Before operating the door it is necessary to check if the major components of the door are working well. These step are done by hand using the chain hoist. (See Picture 10).

Picture 10

Check if:

1- The curtain slides freely and evenly inside the guide rails,

2- The bottom bar makes full contact with the ground and there is no light showing,

3- The springs are strong enough to operate the door correctly when it travels manually.

When the mechanical adjustments are completed, **return the door to the half-open position**.

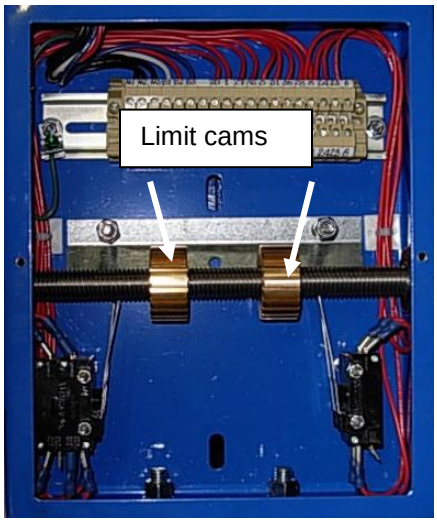
Door start-up

Before testing the electrical components, the door must be in the half-open position.

Once all the electrical components are connected, the following tests are required.

1- Check for the proper rotation of the opener/door, example: If by pressing the open button the door closes, the rotation is wrong. To correct this, interchange any two of the incoming three phase power lines.

2- Readjust the cams if the door is not stopping properly at its fully open or close positions. (See below)



Picture 11

3- Open the door, wait for it to stop. Be sure the wind bar clears the opening. If not, pull on the excess drive belt at its fastening point in step 5 (Figure 25).
Run door again. If all is okay, cut the excess belt, if required.

4- To verify if the safety edge is operational: Place an object, high enough to clear 12-in off the ground and then close the door. The door should stop then reverse back up after hitting the object. If not, look for faulty switch or wiring.

5- To verify if the photocell is operational: while the door is coming down, using a long object block photocell beam. The door should stop

then reverse automatically. If not, look for faulty photocell and/or wiring.

NOTE: **if the photocell is not energized, aligned correctly, or defective or if the wiring is faulty, it will prevent the door from closing.**

6- Adjust the tension of the compression springs on the guide rails with a wrench. Compress the springs to approximately 1-in. A gap of 5/16" is necessary for the curtain to run smoothly in the guides.

Picture 12

Track Cover Compression Spring and Bolt, compressed to 1-in

Geneal repair guide

Inertia brake reset

Once the inertia brake is activated it is no longer possible to operate the door mechanically It is then necessary to reset the brake manually. To do so, using the chain hoist lift the door one to two feet. Then press the “Open” button to open completely the door. Press the “Close” button. The door should be functional and the inertia brake should be reset.

Installing the door curtain back into the guide rails after impact.

After an impact with the Tech-Roll door, the curtain must be pulled through the opening to the side of the guide rails (if the impact occurred towards the opposite side of the rails). Press on the “**Open**” button to have the door roll up to the top. Check to see if the side plates and the bottom bar are aligned with the guide rails. Press the “**Close**” button. The door will engage itself into the tracks by itself. Open the door to a comfortable height to reinstall the plate stiffener on the bottom bar with new ¼-20-1 (QCBXLT14201) bolts.

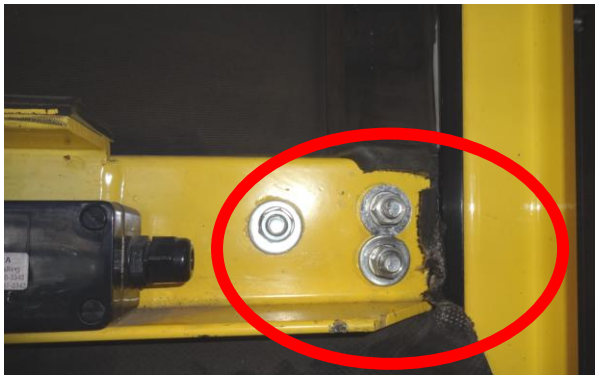
Replacing corner plates (UHMW)

1- Open the track by removing the compression springs.

2- Pull out part of the bottom of the curtain from the track.

3- Unbolt the three bolts situated at the extremities of the bottom bar.

4- Slide out the corner plate



5- Using the old corner plates as a guide, pre-drill the new holes in the new corner plate.

6-Install the new corner plates on the door.

7-Replace the door in the track.

8-Close the track cover and re-fasten the compression springs leaving a gap of 5/16”.

The same operation applies to replacing the corner plate on the other side.

Troubleshooting

1. The door opens but does not close smoothly or with a jerking motion.	1.1 The guide rails were fastened to the inside the head unit.	1.1 Re-install the guide rails outside the head unit.
	1.2 The clutch is worn out or needs adjustment.	1.2 Adjust the clutch or replace the part(s) that are worn out.
2. The door closes quickly but is hard to open.	2.1 The clutch is worn out or needs adjustment.	2.1 Adjust the clutch or replace the part(s) that are worn out.
	2.2 The spring is broken.	2.2 Replace the spring(s).
3. The door re-opens by itself.	3. Under the effect of wind the door may move and block the infrared beam.	3. Adjust the bottom bar stiffener of the door.
		3.1 Check the opening of the guide rails and adjust the tension of the spring mounted on the guide rail if necessary.
		3.2 Move the infrared sensor.
4. The door is slow	4. The clutch is worn out or needs adjustement.	4. Adjust the clutch or replace the worn out parts.
5. The door won't open with the chain hoist.	5. The clutch is worn out or needs adjustement.	5. Adjust the clutch or replace the worn out parts.
6. The opener runs but the door won't move.	6. The brake motor is engaged.	6. Disengage the brake motor and check the wiring of the brake motor.
	6.1 The clutch needs adjustement.	6.1 Adjust the clutch.
7. The door curtain won't stop while going up or down.	7. The chain drive is broken or missing.	7. Replace or repair the drive chain.
	7.1 Check for missing key ways of the drive system.	7.1 Put new key ways where necessary.
	7.2 Check limit switch system.	7.2 Adjust or replace parts of the limit switch.

8. The curtain rolls up at an angle	8. The main roller is not perpendicular with the head of the curtain.	8. Adjust the curtain on the main roller using rubber shims between the curtain and the main pipe.
		8.1 Re-center the main roller between the two head plates.
9. Curtain slides easily out of the guide rails.	9. Check for wear on the PVC mouldings.	9. Replace the PVC moulding.
	9.1 Check if the gap of the guide rail is too wide.	9.1 Adjust the gap to 5/16-in.

For electrical troubleshooting, refer to the operator maintenance manual

INDOTECH
Industrial Rapid Door Manufacture

MAINTENANCE GUIDE FOR TECH-ROLL DOORS

COMPANY NAME:_____ **PROJECT:**_____

TECHNICIAN:_____ **DATE:**_____

SERIAL NUMBER: _____ **DOOR NO:**_____

NUMBER of CYCLES:_____

Maintain every 3 months or reaching

Always turn off the power before any maintenance!

Cycles	25,000	50,000	75,000	100,000		
Replace electric operator fasteners every year.						
Check speed reducer for oil leaks.	☐	☐	☐	☐	☐	☐
Check clutch pads for wear and correct pressure.	☐	☐	☐	☐	☐	☐
Lube all chains.	☐	☐	☐	☐	☐	☐
Check for slack on all roller chains.	☐	☐	☐	☐	☐	☐
Replace driving roller chain every 6 months or	☐	☐	☐	☐	☐	☐
Check sprocket alignment.	☐	☐	☐	☐	☐	☐
Tighten setscrews on all sprockets and bearings.	☐	☐	☐	☐	☐	☐
Check limit switches for damage.	☐	☐	☐	☐	☐	☐
Lube limit shaft.	☐	☐	☐	☐	☐	☐
Check control panel for damage or wear.	☐	☐	☐	☐	☐	☐
Tighten all electrical terminals (make sure power is off!).	☐	☐	☐	☐	☐	☐
Check rail guide PVC strips for wear.	☐	☐	☐	☐	☐	☐
Check curtain for wear or tear.	☐	☐	☐	☐	☐	☐

Check curtain end lock for wear or tear.	☐	☐	☐	☐	☐	☐
Check guide rail gaps of curtain with a new PVC strips (approx. 5/16-in).	☐	☐	☐	☐	☐	☐
Check for any missing nuts, bolts or small springs.	☐	☐	☐	☐	☐	☐
Check bottom bar corner brackets for wear.	☐	☐	☐	☐	☐	☐
Check balancing spring for breakage.	☐	☐	☐	☐	☐	☐
Check electric operator mounting bolts for wear and looseness.	☐	☐	☐	☐	☐	☐
Check door clutch for wear or adjustments.	☐	☐	☐	☐	☐	☐
Verify the wind-bar support strap for wear or tear.	☐	☐	☐	☐	☐	☐
Verify that the wind bar is centered in the door frame.	☐	☐	☐	☐	☐	☐
Grease carriage and or replace as needed.	☐	☐	☐	☐	☐	☐
Turn power back on.						
Check all safety devices for correct operation (soft touch, photo-cell, E-stop…).	☐	☐	☐	☐	☐	☐
Check if chain hoist switch cuts power when activated.	☐	☐	☐	☐	☐	☐
Open/Close/Stop buttons work properly.	☐	☐	☐	☐	☐	☐
Check limit switches adjustments.	☐	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐	☐

Signature: _____

Date:_____

For any other problems contact Indotech at: 1-866-835-8324.