



# ***INSTALLATION GUIDE***

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## **90-MINUTE FIRE DOOR**

*(Patents Pending)*

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## INTRODUCTION

The KONTROL Fire Door System includes the track, chain, door, and door closing assemblies. This instruction describes installation of the track, chain and door assembly and is intended for use as a guide for installation.

## PARTS LIST

The following parts make up the Kontrol Fire Door Assembly

### 1. Chain Guide

### 2. Angle Trim and Spring Clips.

(Clips not shown)

### 3. Track

(Provided as (2) Loading Sections, (1) 20" Transfer Track, and any combination of 10' full-length sections and cut-to-length variable sections.)



Part 1. Chain Guide



Part 2. Angle Trim



Part 3. Aluminum Track

### 4. Door Sections

(Combinations of the following may be used.)

#### A. Curtain Sections

(Basic curtain section: composed of slats, hinges, sweeps, insulation, and rollers.)



Part 4A. Curtain Section

#### B. Lead Post Sections

(Includes lead post and a small curtain section with embedded exit hardware.)



Part 4B. Lead Post Section

#### C. Jamb Sections

(A basic curtain section with an extended half hinge on (1) side.)



Part 4C. Jamb Section

### **NOTE:**

Each door section is assigned a 3 to 4 digit code:

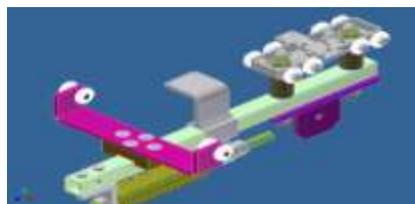
The first digit is a letter that specifies orientation. (i.e. when facing the pocket/ operator, "A" is on the left and "B" is on the right.)

The second and third digits specify section type, "LP" is used for lead post sections, "WJ" for jamb sections, and "C#" for center sections with the # being a numerical value starting from 1 at the jamb section, increasing in value as you work toward the lead post. ( Example: AC4 ) Upon delivery of the product, it may be beneficial to stack the boxes in a manner that will eliminate the need to rearrange them when installing. (see page 15)

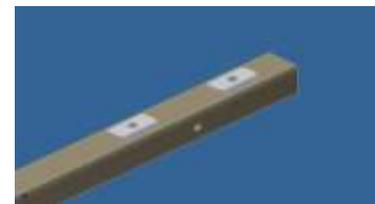
### 5. Stabilizer Bar Assembly

#### A. Stabilizer Bar Trolley

#### B. Adjustable Stabilizer Bar



Part 5A. Stabilizer Bar Trolley



Part 5B. Adjustable Stabilizer Bar

### 6. Striker with Cap

### 7. Floating Jamb with Trolley

### 8. Floating Jamb Stops

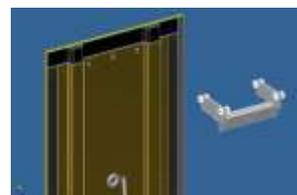
### 9. Motor Operator (not shown)

(See Motor Installation Guide)

### 10. Chain (with minimum [3] master links) (not shown)



Part 6. Striker with Cap



Part 7. Floating Jamb with Trolley



Part 8. Jamb Stop

## TOOLS REQUIRED

Electric and/or Battery Drivers  
Driver Tips (#2 square head & #2 Phillips)  
Drill  
Drill Bits (#29, #28, #25, 1/4" at minimum)  
Utility Knife  
Scissors  
Rivet Gun  
Long Nose Pliers  
Chalk Line  
Chop Saw  
File  
Saw Horses  
Ladders / Scaffolding  
Rubber Mallet

String  
Level  
Measuring Tape  
10-24 Tap (Steel Header)  
Chain Breaker for # 40 Chain  
#2 Flathead Screwdriver  
#2 Phillips Screwdriver  
Wire Cutters / Strippers / Crimpers  
Wrenches (1/2", 7/16", 9/16", & 3/4")  
Sockets (7/16", 1/2" & 9/16)  
Deep Socket ( 3/4")  
Ratchet and 15" extension

### Optional Tools:

(The following tools are not required but have been found to be helpful during installation)

- Hand Truck (see Step 3 of Section 6. Door Section Install for details.)
- Rubber Tipped Clamps (see Step 5 of Section 3. Chain Guide/Drive Chain for details.)
- Rag / Mild Household Cleaning Solution (To wipe down track, chain guide, walls, header, etc. after installation is complete)
- Voltmeter/Multimeter

## HARDWARE LIST

ITEM	HARDWARE DESCRIPTION	QUANTITY (APPROX.)	USED FOR
1	Lag Screws, 3/8 x 4"	4 x (# of Operators)	Operator Mount
2	Wood Screws, #10	8 x (Ft. of Opening Width)	Track/ Chain Guide/ Striker
3	Master Link (#40 Chain)	4 x (section of chain)	Drive Chain
4	Bolt, 1/4 - 20 x 1"	3 x (# of Floating Jambs)	Floating Jamb Trolley
5	Nut, 1/4 - 20, Nylock	3 x (# of Floating Jambs)	Floating Jamb Trolley
6	Hinge Screws #8 x 1/2"	20 per 30' of Door	Hinges
7	All-Thread, 3/8" x 2 3/8" LG	1 x (# of Lead Posts)	Lead Post
8	Acorn Nut, 3/8"	2 x (# of Lead Posts)	Lead Post
9	Bolt, 5/16 - 18 x 1 1/4" Hex Head	2 x (# of Lead Posts)	Stabilizer Bar Bracket
10	Washer, 5/16", Flat	4 x (# of Lead Posts)	Stabilizer Bar Bracket
11	Washer, 5/16", Lock	2 x (# of Lead Posts)	Stabilizer Bar Bracket
12	Nut, 5/16 - 18	2 x (# of Lead Posts)	Stabilizer Bar Bracket
13	Bolt, 1/4 - 20, Slotted Truss-Head	2 x (# of Lead Posts)	Stabilizer Bar Adjustment
14	Washer, 1/4", Flat	2 x (# of Lead Posts)	Stabilizer Bar Adjustment
15	Nut, 1/4 - 20, Nylock	2 x (# of Lead Posts)	Stabilizer Bar Adjustment
16	Insulation Caps	20 per 30' of Door	Insulation Pins
17	Self-Drilling, Screws, #8	2 x (Ft. of Opening Height)	Floating Jamb
18	Rivets 1/8" Black	10 per Section of Door	Sweep
19	Backer Washers - Black	10 per Section of Door	Sweep
20	Foil Faced Insulation Tape	48" per Section of Door	Joining Insulation

## BEFORE INSTALLATION



If wall or header construction of the opening does not conform to the requirements set forth on the Cookson drawings, the UL label or certificate for the door will not be valid.

***NOTE:*** Batteries must be installed and control connected to AC power for a minimum of 2-3 hours prior to testing the DC only operation of the door.

### **I. Wall Opening Inspection**

The wall construction in the area of the opening should be inspected to verify that it conforms to the conditions shown on the Cookson shop drawings provided for the specific door/wall combination. This specifically includes the construction of the pocket, header, and striker channel.

The opening must be measured and compared with the shop drawings and production “cut sheet”. Focused inspection is required to verify that the opening is properly prepared to accept the door. The “cut sheet” is a production document prepared at the factory that indicates the lengths to which the components were cut for each opening.

### **II. Product Inspection**

Each box should be inspected for damage. Any freight damage should have been noted and documented on the delivery receipt with freight carrier at time of receipt. Damaged boxes must be documented (photos are required) and the factory should be contacted for further information on investigating any freight claims against the freight carrier company. Note: Door section boxes are marked according to specific door locations, door numbers and hanging position (See note on page 3). Do not unpack the boxes until it is time to install the door.

Refer to **Figure 6.3** to determine the order in which the door sections must be loaded. Stacking the boxes in a convenient order when received will greatly reduce time and effort during the loading process.

### **III. Locate and Mark the Centerline of the Header**

The centerline of the header should be marked with a chalk line. The header width must be 18” minimum and span the entire distance between the back wall of the pocket and the striker wall. The centerline mark must allow 9” minimum clearance on either side of the line. Failure to meet this requirement means that the width available for the door when stacked will not be sufficient. Standard straight track header shown in **Figure III.1** and **Figure III.2**.



*Figure III.1. Marking the Centerline*



*Figure III.2. Finished Centerline*

## INSTALLATION

### **1. Operator and Control Box Install**

Operator Install:

Operators are shipped as a complete unit and are fastened directly to the header using the provided lag screws.

Drill 1/4" pilot holes prior to installing the required lag screws. A template that calls out the proper pilot hole locations will be provided with the operator.

Operator should be installed on the centerline of the header and butted up against the back wall of the pocket. Install (2) lag bolts into the pilot holes drilled at the back of the header. Leave 1/2" space between the header and the head of the lag bolt. Slide the operator onto the lag bolts, making sure the operator is butted up against the back wall of the pocket. Hold the operator in place by installing (2) #10 track screws through the 1/4" holes located at the front of the motor bracket flange. Retrieve the remaining lag bolts and complete the operator installation by tightening all (4) lag bolts into the header.

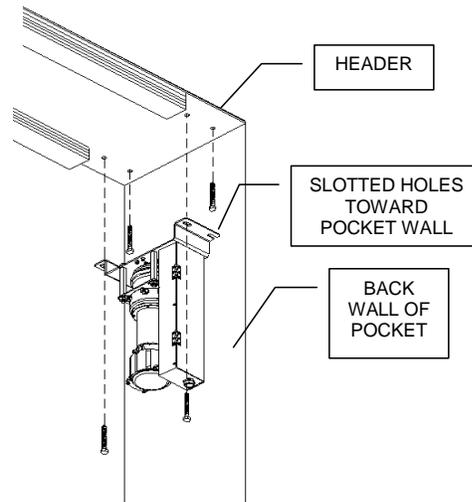


Figure 1.a. Installing Operator.

Control Box Install

The Control Box should be installed on the back wall of the pocket using the appropriate fasteners based on the wall construction (not provided by Cookson). The bottom of the Control Box should be at least 24" from the finished floor to provide ample room for any junction boxes and wiring. Use the measurements provided in Figure 1.c to mark the required hole locations. Partially insert the top (2) fasteners, leaving approximately 1/4" between the back wall of the header and the fastener head. Position the Control Box mounts over the installed fasteners via the large area of the keyhole. Slide the operator down so that the fasteners are positioned in the narrow, top portion of the keyhole. Tighten the fasteners. Insert fasteners in the narrow, top portion of the keyholes on the bottom (2) mounts.

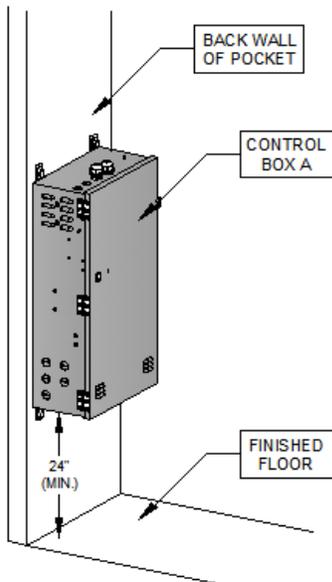


Figure 1.b. Installed Control Box.

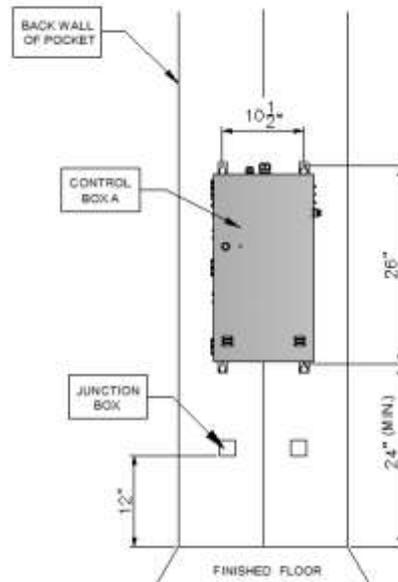


Figure 1.c. Control Box Hole Locations.

**2. Striker Install**

Locate the Striker. The lengths and quantities of components used to form the striker vary depending on the size of the opening.

Confirm that the combined length of the striker sections matches the opening height dimension. The striker should fit snugly between the floor and the header. When installing, ensure center of the striker is aligned with the centerline of the header and perpendicular to the floor. It may prove helpful to draw a vertical centerline along the striker wall.

Recessed Striker (and Flush Mount Striker):

First make sure the striker fits correctly in the striker channel. Position the striker so that the end containing the cap is nearest the header. If the striker is composed of multiple sections, begin by installing the longest section at the floor. Make sure that the striker sections are butted tightly together. Attach the striker via the factory pre-drilled holes.

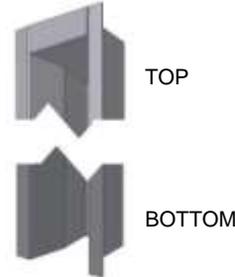
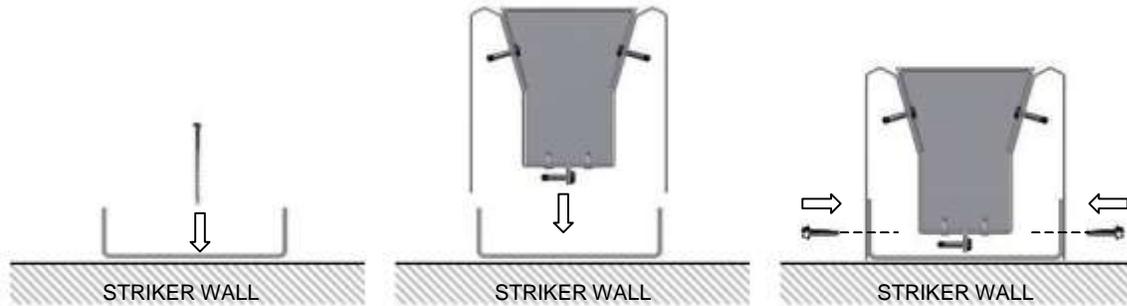


Figure 2. Recessed Striker

Wall Mount Striker:

The Wall Mount Base must be installed first. Starting at the floor, install the longest Base section first, followed by the next longest section, etc. Make sure that the Base is aligned with the centerline of the header and perpendicular to the floor. The Striker is then installed by sliding it over the Base (*the flanges of the Striker should be outside the flanges of the Base*). Use the pre-drilled holes in the Striker profile as a guide to drill holes in the Base, and then use screws to attach the Striker to the Base. If multiple sections are provided, use the same method as for Recessed Strikers (longest section at the bottom, cap nearest the top).



Step 1. Install the Base

Step 2. Slide the Striker over the Base

Step 3. Drill and fasten Striker to Base

**NOTE:** If the striker is too long, remove the top cap by drilling out the rivets. Cut the striker (from the top) to the required length (take care not to deform the striker profile when cutting). Place the cap back into the striker so that it is flush with the top of the striker and mark the hole locations. Re-drill the rivet holes using a #29 bit and reattach the cap. If the striker is short, contact factory.

### 3. Chain Guide / Drive Chain Install

Locate and unpack the chain guide. The chain guide is provided in some combination of the following types: Loading Sections, Full 10' Sections (quantities vary), and Variable Sections (length and quantity vary). Loading Sections and Variable Sections should be labeled with a three-letter code. The first letter of each code indicates which side the section should be installed. (When facing the pocket, the left-hand side is the "A" side.) The last (2) letters indicate whether it is a load section (LS) or variable section (VS). Variable Sections may need to be cut to size in the field. A "cut" end should never be used in a joint with another section of chain guide. (I.e. The Variable section "cut" end should face the back wall of the pocket). The Full 10' Sections are interchangeable, and thus are not labeled.

It may be helpful to simulate the layout of chain guide on the floor prior to installation. See **Figure 3.a**.

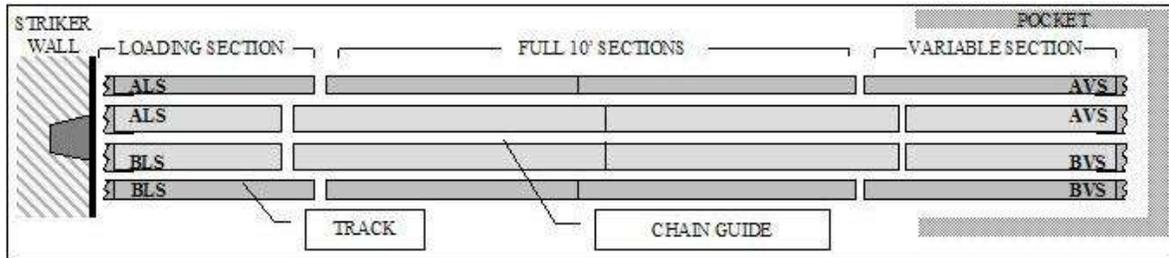


Figure 3.a. Chain Guide and Track Arrangement (TOP VIEW)

**NOTE:** When possible, field cuts should be positioned so that they fall within pocket area for aesthetic purposes. Chain guide sections are best cut to length using a chop saw and then deburred as needed.

#### Step 1. Fixed Loading Section and Sprocket Assembly

Locate the (2) Loading Sections of Chain Guide (labeled **ALS** and **BLS**) and the End Sprocket Assembly (located in operator box). The stabilizer bar trolley will later be loaded at this point by removing one side of the Loading Section, but the full Loading Section must first be completely installed to ensure the spacing and length of the entire chain guide assembly.

Locate the Chain Guide Loading Section labeled **BLS**. Insert the End Sprocket Assembly into the labeled end of chain guide as shown in **Figure 3.1**. Position the assembly so that the back of the sprocket assembly is butted up to the striker cap. Align the inner edge of the chain guide with the centerline of the header while keeping the sprocket assembly securely in place. Attach the chain guide using the provided hardware (2 1/2" X # 10 screws if mounting to a wood header or #10-24 Flathead screws 3/4" long if mounting to steel header).

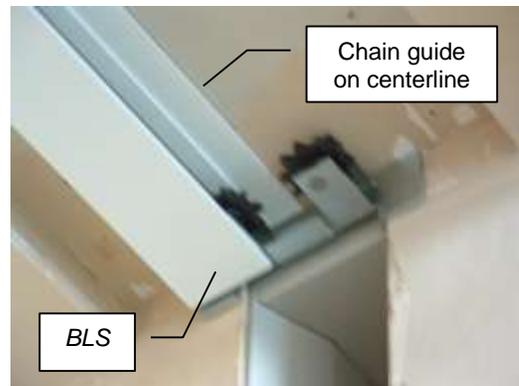


Figure 3.1. Chain Guide Loading Section and Sprocket Assembly

Step 2. Full Loading Section (Initial)

Once the “B”-side is installed, slide the “A”-side chain guide (labeled **ALS**) over the sprocket assembly and butt the inner edge to the inner edge of the installed chain guide, making sure it follows the centerline of the header as well. Fasten the chain guide to the header.

**NOTE:** The “A”-side of the chain guide loading section will be removed later in the install. It is recommended that only the minimum number of fasteners needed to hold the chain guide in place be installed at this stage. This prevents unnecessary work and helps preserve the header.

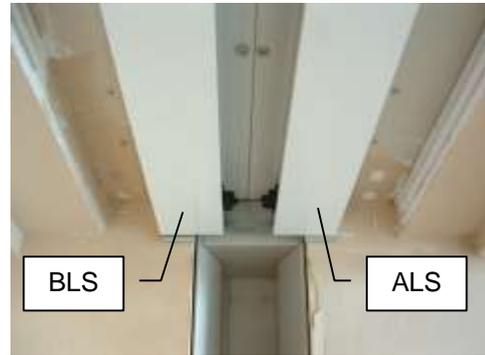


Figure 3.2. Installed Loading Section

Step 3. Fixed Chain Guide

The remaining chain guide sections can now be installed. Locate all of the Full 10’ Sections and the (2) Variable Sections of track. Beginning with a Full 10’ Section, align the section accordingly and butt the end up to the previously installed “A”-side Loading Section. Fasten it to the header using the appropriate hardware, making sure that the inner edge follows the centerline. Care must be taken to ensure that all joints are aligned, tight, and smooth as possible. Position the next piece by butting the end against the B-side Loading Section and aligning the inner edge with the inner edge of the installed A-side chain guide section. Continue this pattern for all 10’ Chain Guide sections. (May work in reverse order B→A as well.)

The (2) Variable Sections should be cut as required and installed nearest to the operator. The “cut” ends should be positioned towards the back wall of the pocket (so that they are not used as a joint). The variable sections should terminate approximately 2” from the motor operator. It may be helpful to label the “cut” end in order to ensure that the variable sections are positioned correctly after cutting. ( If pocket is built larger than the minimum depth required for stacking, please consult the factory. )

Step 4. Stabilizer Bar Trolley

Once the entire span of chain guide is in position, return to the Loading Section and remove the “A”-side section. Locate the Stabilizer Bar Trolley (**Figure 3.4.a**) and use a 3/4” wrench to compress the spring entirely. Insert the stabilizer bar trolley into the chain guide from the Loading Section as shown in **Figure 3.4.b** and **Figure 3.4.c**, making sure the end of the trolley assembly on which the spring is located is facing the striker. Since the track is not yet installed, the rollers of the lead post trolley will be hanging freely on the outside of each chain guide. Roll the trolley far enough into the chain guide so that it sits securely in the guide at a safe distance from the loading section to prevent it from falling out.

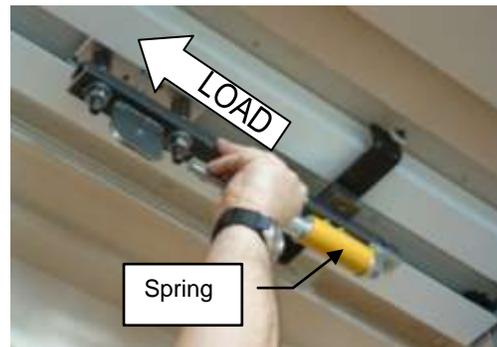


Figure 3.4.a. Loading Stabilizer Bar Trolley

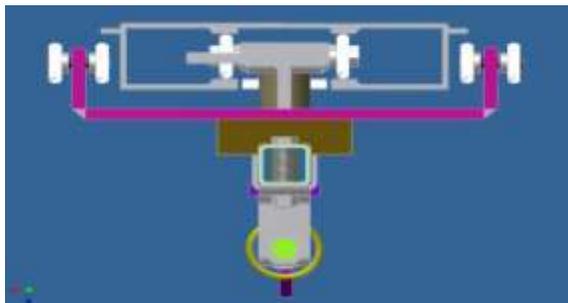


Figure 3.4.b. Cross Section View of Chain Guide and Trolley



Figure 3.4.c. Loaded Stabilizer Bar Trolley

Step 5. Operator Chain Drive

(See Chain Feeder **Figure 3.7** prior to threading chain.)

Beginning at the previously removed section of chain guide, “thread” the chain through the end sprocket and into the opposite side chain guide channel. See **Figure 3.5.a**. If this proves difficult, attaching a “pull string” to the end of the chain has proved helpful for this process. Another method is to slide the end sprocket assembly free of the chain guide, “threading” the chain through, and then replacing the assembly.

Pull the chain through the chain guide along the length of the opening. The “pull string” helps with this task as well. It is also recommended that rubber-tipped clamps or tape be temporarily installed at intervals along the chain guide to keep the chain from falling out of the chain guide during the “threading” process. See **Figure 3.5.b**.

Once you reach the operator, “thread” the chain through the motor mount drive chain sprocket and continue working the chain through the chain guide until the end of the chain extends a few inches into the removed loading section opening. The trolley will need to be rolled back into the loading section opening and may need to be held in place. Attach one end of the chain to the spring tension tab using a provided master link as shown in **Figure 3.5.c**. Select the chain link that will insure that proper chain tension adjustment can be obtained (see **Step 6**). Break the chain and attach it to the trolley tab using the provided master link as shown in **Figure 3.5.d**. Remove any clamps or tape at this time.



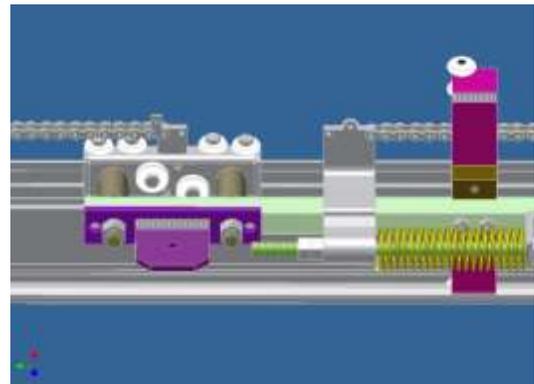
*Figure 3.5.a. “Threading” End Sprocket Assembly*



*Figure 3.5.b. Using Clamps to Secure Chain*



*Figure 3.5.c. Chain Attachment Photo*



*Figure 3.5.d. Chain Attachment Drawing*

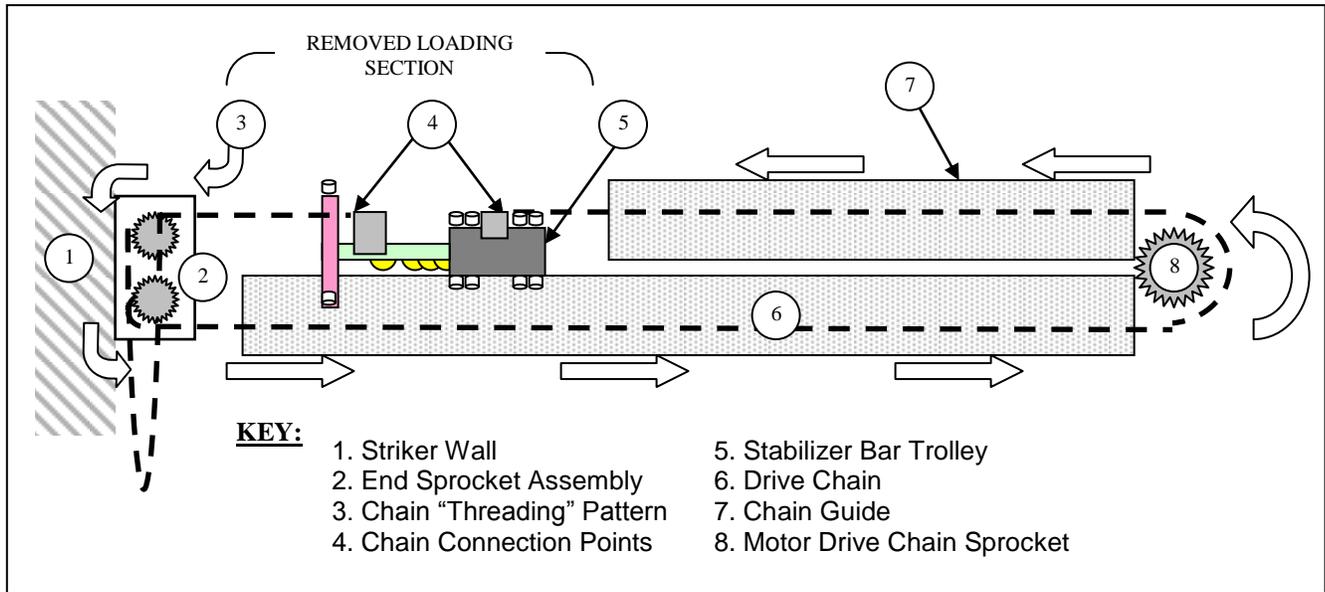


Figure 3.5.e. Top View of Chain Path

**Step 6. Complete Chain Guide Installation**

**NOTE:** Be sure to replace the loading section (ALS) of chain guide before adjusting the tension. Failure to do so may cause damage to the chain guide or end sprocket assembly.

After the chain is attached to the two chain connection points and a continuous loop is formed, replace the loading section of chain guide and fasten to the header using all available screw holes. Use a 3/4" wrench to release the spring compression on the chain adjustment trolley until a suitable tension is obtained. The chain should rest on the bottom face within the chain guide. Check the tension near the midpoint of the opening, the chain should not be able to come out of the chain guide.



Figure 3.6. Adjusting Chain Tension

**Optional Chain Feeder**

To help the chain "threading" process, a chain feeder may be constructed. This is composed of a square piece of plywood with a pin through the center. The size of the plywood square needed will depend on the amount of chain being used, but should not exceed the width of the header. Pre-drill holes approximately 3/16" in. diameter on each corner of the plywood. Driving a nail through the exact center of the board works nicely as a pin, and rounding the tip may prevent injury. Place the open pinhole of the first chain link over the nail and wrap the chain counterclockwise around the nail without overlapping, creating a flat coil on the plywood. Use the track screws to loosely fasten the feeder to the header in the center of the loading section, making sure not to install the screws far enough that the chain coil makes contact with the header. The chain feeder should then allow the chain to be smoothly fed into the end sprocket during the "threading" process. Once the coil fully unwinds, remove the chain feeder and hardware from the header. Repeat procedure until all chain is treaded onto chain guide.



Figure 3.7. Optional Chain Feeder

## 4. Track Install

Locate and unpack the track. The track has been labeled with the same (3) digit code as used in for the chain guide sections. It may be helpful to simulate the layout of track on the floor. See **Figure 3.a**. The door sections will later be loaded at this point by removing both sides of the Loading Section, but the full Loading Section must first be completely installed to ensure the spacing and length of the entire track assembly.

**NOTE:** When possible, field cuts should be positioned so that they fall within pocket area for aesthetic purposes. Track sections are best cut to length using a chop saw and then deburr as needed.

### Step 1. Track Loading Section (Initial)

**NOTE:** Both sides of the track loading section will be removed later during the install. It is recommended that only the minimum number of fasteners needed to hold the track in place be installed at this stage. This prevents unnecessary work as well as preserving the integrity of the header.

Locate the (2) Loading Sections of track. Position (1) of the loading track sections so that the edge is butted tightly against the striker wall and the inside edge it is tightly butted up against the chain guide as shown in **Figure 4.1.a**. The flange on the track should be facing out. Make sure that the joints of the track overlap the joints of the chain guide by approximately 6". Use the 2 1/2" x # 10 screws provided to mount the track to the header. Repeat for remaining Loading Section.

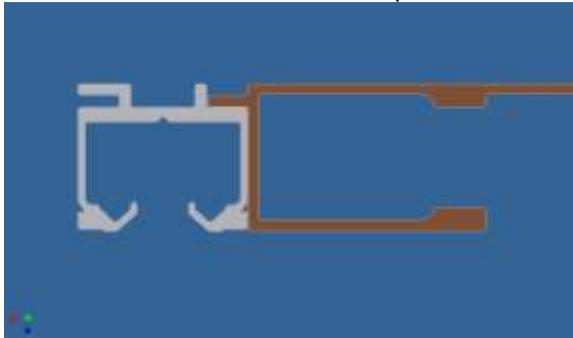


Figure 4.1.a. Positioning Track



Figure 4.1.b. Staggered Track and Chain Guide Joints

### Step 2. Fixed Track

Before installing each fixed track section, the angle trim spring clips should be positioned on the outside of track as shown in **Figure 4.2.a** and **Figure 4.2.b**. Clips should be positioned approximately 12" apart. The clips can be installed on the Loading Section later in the installation. Be sure to set aside an appropriate number of clips for each side of the Loading Section. The remaining sections of track can now be installed using the same method of pre-drilling holes as described in the previous step. All joints should be as tight and smooth as possible.

The last (2) sections of track to be installed (closest to the motor operator) are called Variable Sections, and are labeled **AVS** and **BVS**. These sections must be field cut to the required size. The "cut" end of each section should face the back wall of the pocket, as to not be used in a joint. The "A" and "B" designations should also be used in positioning the sections. Cut Variable Sections so that they extend past the drive chain sprocket and terminate approximately 1/2" from the back wall of the pocket.

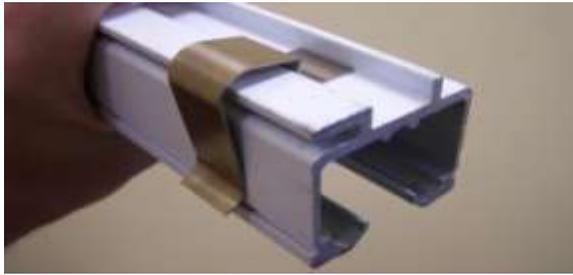


Figure 4.2.a. Angle Trim Spring Clip



Figure 4.2.b. Clip Spacing

## 5. Initial Limit Switch Adjustment



**Do not run the trolley near either end of the track before the operator limits are set. This may result in damage to the trolley, track, striker, etc.**

Set the "OPEN" and "CLOSE" limits. Refer to **Section 3. Limit Switch Adjustment** on page 12 and 13 of the installation guide provided for the operator.

Make sure the trolley runs smoothly over each joint making adjustments where misalignments are noticed before continuing.

## 6. Door Sections Install

### Step 1. Loading Section Preparation

Position the trolley assembly somewhere on the fixed section of track, clear of the loading section. Remove both sides of the track loading section and place them safely off to the side. Carefully run the trolley into the loading section toward the striker wall until there is at least 20" of clearance between the lead post trolley and beginning of the fixed track sections.

Refer to **Figure 6.3** on **page 15**. Use this to determine the order in which the door sections must be loaded.



Figure 6.1. Trolley in Position for Loading Curtain

### Step 2. Floating Jamb Trolley

Locate the floating jamb trolley. Install the floating jamb trolley with the longer "tabs" facing the operator. Slide the floating jamb trolley down the length of the track to the back of the pocket. The trolley should make contact with the operator. The longer tabs on the trolley should slide past the front face of the operator to ensure correct pocket depth calculations.

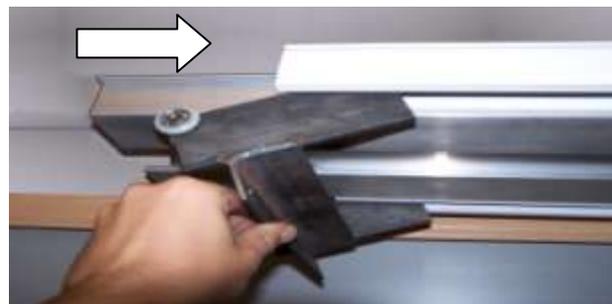


Figure 6.2. Loading Floating Jamb Trolley

### Step 3. Jamb Sections

Locate the *Jamb Sections (WJ)*. Jamb sections are distinguishable from the typical curtain sections by the presence of a half hinge on (1) side. This side is referred to as the jamb side. See **Page 2 (Parts List)** for details on the door sections and door section codes.

***NOTE: The letter markings on the door sections do not always correlate with the letter markings on the track and chain guide.***

The roller bearing closest to the jamb side of the curtain section should be inserted into the outer trough of the track. The remaining rollers should alternate in the track (i.e. inside, outside, inside etc.). Once the rollers are in position, slide the "Transfer Track " onto the rollers The Transfer Track is the 20" section of track supplied with the hardware. It is suggested that the Transfer Track be used to keep the rollers in place while loading the curtain sections onto the track. Cut the plastic packing wrap off the top and bottom of the door section, being careful not to damage the door. It will be helpful to leave at least one band of the plastic packing wrap near the midpoint of the section. The curtain sections should be tied with approximately 4' lengths of rope both on the top and bottom to help hold the slats in place when lifting the door section onto the track.



**The "Transfer Track" can cause serious injury if it is allowed to drop when lifting or transferring door sections onto the track.**

Position the jamb section under the correlating track loading section. The side with insulation is the inside and should be facing the chain guide. The half hinge on the jamb side of the section should be facing the pocket and in position to be loaded into the track first.



**Slats and hinges are susceptible to bending and twisting when being lifted, especially on taller doors. Always orient the sections that the hinges are on the top and bottom when lifting. It may be beneficial, and perhaps mandatory on doors that are 10' or taller, to have at least (3) individuals lifting the door sections, one on each end doing the bulk of the lifting and one in the center to prevent bending and twisting.**

Lift the jamb section until the Transfer Track is the same height as the fixed track section. *A hand truck proves useful for this process. It can be used to "walk" the bottom of the section into place, as well as lifting the slats to the necessary height for loading.*

Butt the Transfer Track so it lines up with the fixed track, creating a smooth joint. Carefully slide the jamb section out of the Transfer Track and into the fixed track. Push the jamb section safely away from the opening in the loading section. Check to see if all of the rollers are correctly positioned in the track. Repeat this process for the jamb section on the opposite side.

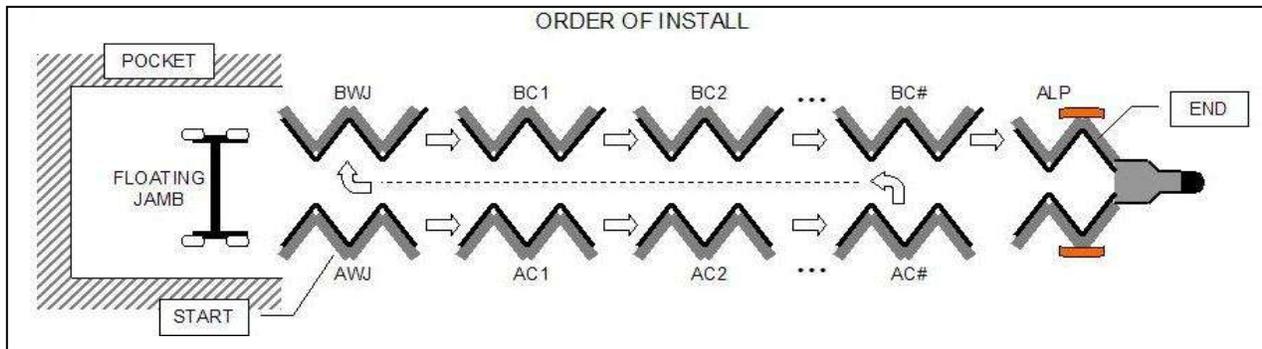


Figure 6.3. Curtain Section Installation Order (Designated by Arrows)

#### Step 4. Curtain Sections

Locate the *Curtain Sections (C#)*. Refer to the assembly drawing provided to determine the proper placement of the sections. Once again, the side with the insulation and/or wire ties is the inside. The curtain sections with wire ties must all be installed on the same side. Before each section is installed, make sure that the rollers are positioned using the same alternating pattern identified in **STEP 3** above.

Verify that there is only (1) hinge being used to join each set of door sections. If the (2) end slats that are to be joined together contain hinges, verify that the door section is indeed in the correct position. If so, remove the hinge from the door section that is not yet installed by carefully sliding it out from the top of the curtain. Place it safely off to the side as it may be needed on a different door section. If no hinges are found at a joining section, carefully slide a hinge from the top of the uninstalled door section. Make sure there are screws installed in the top of each bead. If not, install the screws before loading using the extra screws provided by Cookson.



Figure 6.4. Door Sections: Lead Post Section (bottom) and Wiring Side Curtain Section (top)

Once the hinges are correctly in place, install the remaining curtain sections using the same method as described above for the jamb sections.

#### Step 5. Lead Post Section

Make sure that all installed door sections are positioned safely away from loading section. Locate the Lead Post Section (LP) of curtain. Move the chain adjustment trolley back so that there is approximately 4" of space between the front roller of the trolley and the beginning of the first full track section.

Locate the all-thread and (2) acorn nuts provided by Cookson. Position the Lead Post under the Load Section so that the vertical square tubing inside the lead post is butted up against the horizontal square tubing of the stabilizer bar trolley. It may be helpful to place the lead post section on a hand truck to alleviate the task of moving and lifting the lead post into position. Align the pre-drilled holes located near the mouth of the lead post with the pre-drilled holes in the square tubing of the stabilizer bar trolley. Fasten the lead post to the stabilizer bar trolley using the all-thread and acorn nuts. See **Figure 6.5**. The all-thread is not designed to support the lead post itself for any

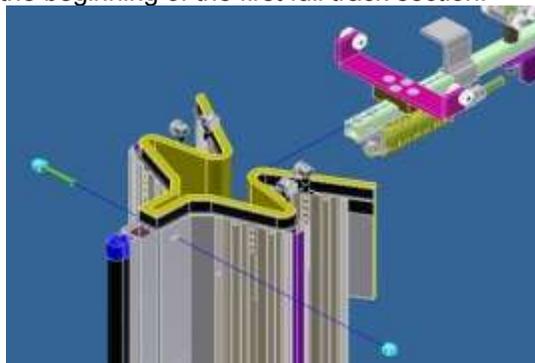


Figure 6.5. Attaching Lead Post to Chain Adjustment Trolley

extended period of time, so the remainder of this step should be completed immediately. The rollers attached to the slats on the lead post section must be inserted into the installed track before the trolley rollers. Confirm that the hinge pattern and roller positioning of the slats attached to the lead post are consistent with the other door sections. Lift the lead post section as needed and slide the rollers into the track. This may require some adjustment since both sides of rollers must be installed simultaneously. It may be necessary to slide the trolley toward the installed track sections in order to load the rollers. Once all (4) of the slat rollers are in place within the track, slide the lead post section into the installed track and clear from the load section.

Step 6. Complete Track

Once all door sections are installed, replace the (2) loading sections of track utilizing all screw holes. Be sure to attach the angle trim spring clips to the loading track sections before installing.

**7. Floating Jamb Install**

***NOTE:*** Keep the floating jamb as plumb as possible when rolling it on the track. Exerting an uneven force will cause the trolley to tilt in the track, binding the rollers, which could cause permanent damage.

Locate the *Floating Jamb* and hardware provided. Position the floating jamb below the floating jamb trolley with the insulation side facing the pocket and the (3) 1/4" pre-drilled holes near the top. Lift the floating jamb and attach it to the floating jamb trolley via the (3) pre-drilled holes using the provided hardware. If the floating jamb does not hang plumb, adjust the jamb by loosening the fasteners and repositioning them as needed. Once the jamb is installed, verify that it rolls smoothly on the track.

Roll the jamb into the pocket and check the clearance. The rubber sweep on the sides of the floating jamb should make contact with the pocket walls, but the jamb should still be reasonably easy to move inside the pocket. Make sure the steel on the floating jamb does not come in contact with any part of the pocket.

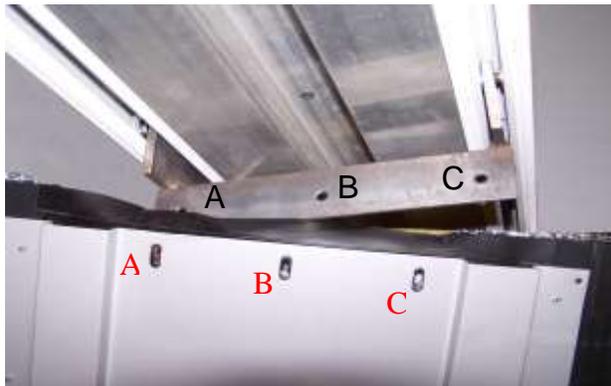


Figure 7.a. Installing Floating Jamb



Figure 7.b. Installed Floating Jamb & Fasteners

## 8. Stabilizer Bar Install

### Step 1. Attaching Stabilizer Bar to Trolley

Locate the *Adjustable Stabilizer Bar* and hardware provided. Make sure the (4) set screws located on the stabilizer bar (two on each end) are sufficiently tight to keep the adjustable arms from sliding out of the square tubing when the assembly is held vertically. Use the provided hardware to loosely attach the adjustable arms on (1) end of the stabilizer bar assembly to the bracket on the stabilizer bar trolley (the bracket should be set between the arms). See **Figure 8.1**. The set screws on the stabilizer bar should be facing away from the lead post.



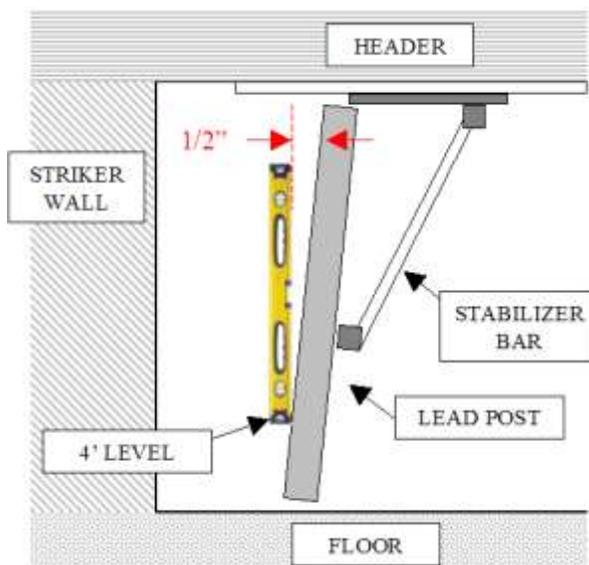
*Figure 8.1. Attaching Stabilizer Bar to Trolley*

It is recommended that the top set of arms (those being attached to the trolley) be positioned so they extend approximately 6". This may prevent having to readjust the top arms.

### Step 2. Attaching Stabilizer Bar to Lead Post

Attach the adjustable arms located at the bottom of the stabilizer bar to the bracket located on the inside of the lead post. Loosen the set screws on the stabilizer bar in order to adjust the arm extensions as needed. The arms at the top and bottom of the stabilizer bar should extend about the same amount (approximately 6"). If the arms on either side of the stabilizer bar extend more than 10", adjust the opposite side to even out the extension distance. If both sides extend more than 10" when installed, notify Cookson. Adjust the arms to angle the lead post as shown in **Figure 8.2.a**. The bottom of the lead post should reach the striker first. Using a 4' level, make sure that the lead post bottom is approximately 1/2" out of plumb. This helps ensure that the lead post forms a tight seal with the striker when closed. Once the stabilizer bar is fastened to the lead post, tighten the set screws to hold the arms securely in place.

Using the pre-drilled holes located on the side of the stabilizer bar near the bottom as a guide, drill a 1/4" hole through both adjustable arms. See **Figure 8.2.b**. Use the provided hardware to secure the bottom arms in place. See **Figure 8.2.c**. Repeat the process on the top arms.



*Figure 8.2.a. Angling the Lead Post*



*Figure 8.2.b. Drilling out the Arms*



*Figure 8.2.c. Securing the Arms*

## FINISHING THE DOOR

### 9. Joining Door Sections on Non-Wiring Side

Cut the remaining shrink-wrap bands from the door sections. Remove all packing materials and stretch open the door sections. Attach all curtain sections on the non-wiring side. Be sure not to pinch any insulation or vinyl sweep between the door sections. **Do not attach the lead post section or floating jamb at this point.** This will allow the curtain to be slid out of the way while wiring the door.

Use the following process to join the hinges:

<p>Stage 1. Starting at the bottom of the door, align the hinge and slats as shown in the picture below. Strike firmly with rubber mallet in direction of arrow to "pop" the hinge into the bead of the slat.</p> 	<p>Stage 2. Once the bottom of the hinge is in the bead, fold the slats as shown below. The bead of the hinge should lie on the opening in the slat. Strike firmly on the face of the hinge. Be careful not to dent the hinge or slats. It may help to slightly slide the mallet towards the unconnected side while striking.</p> 	<p>Stage 3. Continue working up the hinge until the entire bead is inside the slat. Fold and extend the slats to verify that the hinge is installed properly. Be sure not to pinch any insulation or vinyl sweep between the hinge and slat</p> 
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### 10. Joining Insulation and Sweep



**Insulation pins are very sharp. Take necessary measures to prevent injury.**

Check to see if any insulation pins are missing a cap. If so, push the insulation onto the curtain until the pin penetrates completely through. Gently press an insulation pin cap onto the exposed pin until it snaps. Take care not to push the cap onto the pin so far that the pin penetrates the dome of the cap.

At each joining section on the non-wiring side, trim the insulation flaps on both the top and bottom of the curtain so that they meet flush approximately at the center of the hinge. Use the provided insulation tape to secure the (2) flaps together.

The insulation along the bottom of the curtain should just lightly contact the floor. If necessary, trim the insulation so that it is flush with the floor.

**Sweep** - The vinyl sweep around the lead post and at each joining section (top and bottom) of the non-wiring side can now be joined. Fold the excess sweep on each side of the joining section toward the inside of the door, so that the outside face of each flap is now facing each other. Trim any sweep beyond the existing hole pattern on both sides. Align the hole pattern in each flap and fasten them together using the (2) outer most holes of the pattern. Be sure to use the larger rivets and backer washers provided by Cookson.



*Figure 10.2. Joining Sweep*

## **11. Joining Door Sections on Wiring Side**

Cut any remaining shrink-wrap bands from the door sections. Remove all packing materials and stretch open the door sections. Attach the half-hinge on floating jamb door section containing the wire ties to the floating jamb as shown in **Figure 11**. Starting 2" from the bottom, insert the provided self-tapping hardware every 18" throughout the height of the jamb. Be sure not to pinch any insulation or vinyl sweep between the jamb and the half-hinge.



*Figure 11. Attaching Jamb Section to Floating Jamb*

Join all other door sections using the method described above in **Section 9**.

Join the insulation and sweep at each joining section using the process described above in **Section 10**.

## **12. Wiring the Door**

Thread the (6) wires provided by Cookson [(2) **BLACK**, (2) **BLUE**, (2) **WHITE**] through the back of the floating jamb via the wiring hole. Pull the wires through the hole until there is enough slack to reach the lead post. It may be helpful to temporarily tape or clamp the wire ends to the lead post. Slide the door sections of the opposite side out of the way as needed.

Beginning on the slat closest to the lead post, loop all (6) wires through the white wire clip and then down through the zip tie in the wire harness on the next slat. Pull slack as needed through the floating jamb wiring hole. Tighten the zip tie just enough to hold the wires in place, but not so much that the wires can't be easily pulled through (in case the amount of slack needs to be adjusted). Leave just enough slack in the wires so they hug the slats when fully stacked, but do not go completely taut. Leaving too little slack may cause stacking issues, while too much slack leaves the wires free to tangle on other parts of the door. See **Figure 12a**.



Figure 12.a. Wiring Pattern



Figure 12.b. Leaving Extra Wiring

Continue this pattern until the floating jamb is reached. Leave enough wire between the backside of the floating jamb and the back wall of the pocket so that the floating jamb can be pulled approximately 5' out into the opening without pulling the wires taut. This will allow access to the operator and control box without having to disconnect the wiring. It may be beneficial to also leave some slack inside the curtain, in case extra wire is ever needed. Make sure to fasten the extra slack to the floating jamb to prevent it from tangling on another component of the door, as shown in **Figure 12.b**.

Connect the wiring to the lead post and control box. See **Figure 12.c**.

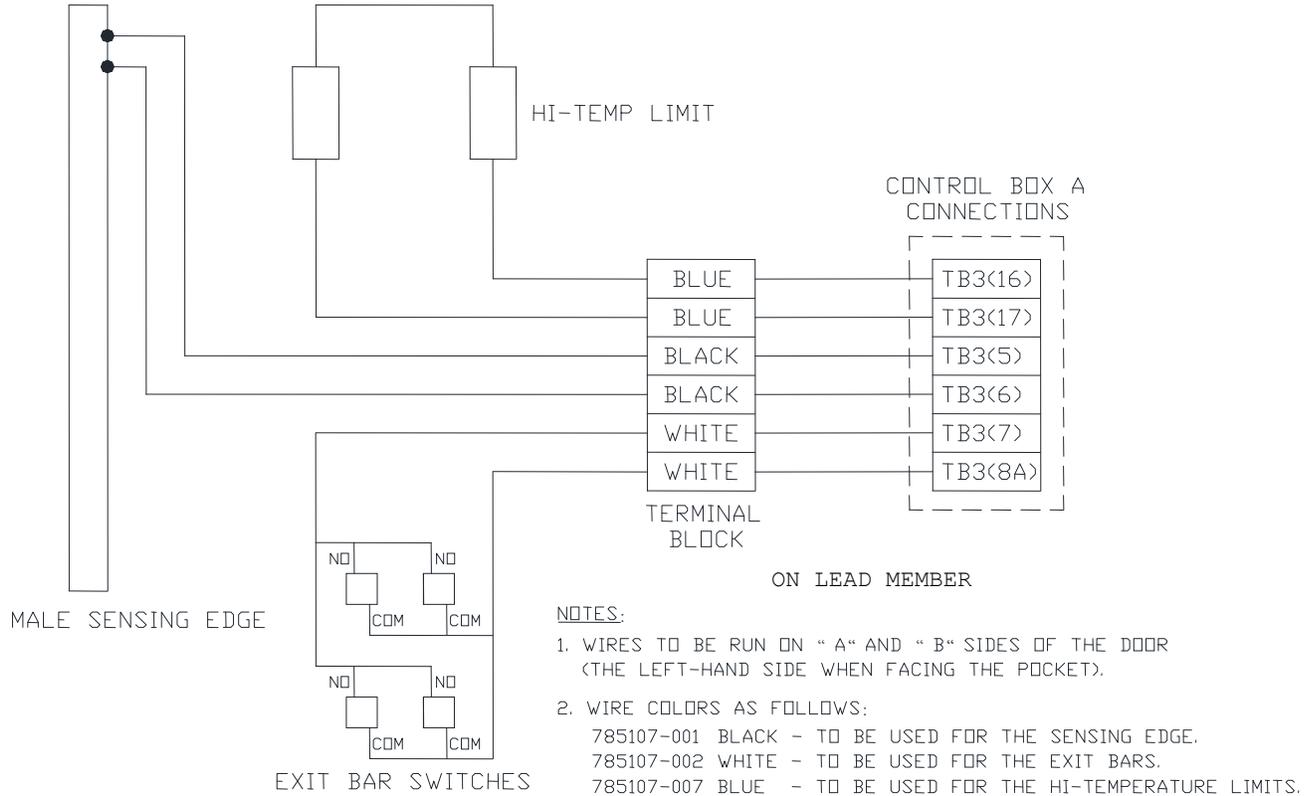


Figure 12.c. Lead Post Wiring

**NOTE:** At this point in installation refer to installation guide and operation manual for wiring and testing instructions.

### 13. Sealing the Door

Verify that the insulation and sweep is joined at all joining sections and the wiring is complete and correct. Join the lead post section to the curtain section on the non-wiring side using the method described in **Section 9**. Attach the floating jamb section to the floating jamb on the non-wiring side using the method described in **Section 11**.

## **14. Trimming the Bottom Sweep**

Join the sweep on the lead post section to the first curtain section by pulling the flaps outside the door and using the process described in **Section 10**. See **Figure 14.a** and **Figure 14.b**.



*Figure 14.a. Trimming Sweep from Outside*



*Figure 14.b. Joining Sweep from Outside*

Close the door completely. If necessary, trim the bottom sweep from the outside so that no more than 1/4" of fold over occurs anywhere along the floor.

## **15. Installing the Floating Jamb Stops**

Partially open the door and push the floating jamb to the back of the pocket. Locate the (2) floating jamb stops and provided hardware. The jamb stops need to be located approx. 54" from the floor, which will insure clearance above the exit hardware as shown in **Figure 15**. Measure in 5" from the pocket opening and mark the three locations for the mounting screws. Making sure the jamb stops are vertical, install the screws leaving them loose enough to slip the jamb stops onto the screws using the key slots on the stops. Tighten all jamb stop screws to complete this step.

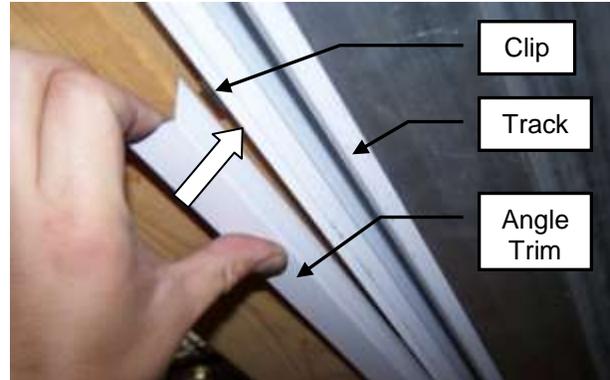
If access to the pocket is required, loosen the jamb stop mounting screws, slide the floating jamb stops up and remove. Maneuver the floating jamb out of the pocket, taking care not to damage the jamb on the protruding hardware of the removed jamb stop.



*Figure 15. Jamb Stop and Exit Hardware*

## 16. Installing Trim

Locate the angle trim pieces. Position the trim pieces so that the vertical edge is butted up to the outside of the track and the horizontal edge extends away from the track. Starting at the striker wall, slide the horizontal edge between the track and the previously installed spring clips. Continue this process throughout the entire length of the opening on both sides of the door. The last piece should be cut so that it extends at least 6" into the pocket. See **Figure 16.a**.



*Figure 16.a. Installing Angle Trim*

## 17. Testing the Door

The door should move freely in the track. Check that the track and chain guide joints are properly aligned and cause minimal interference during operation. Confirm the motor operation and the limit switch settings as per the *Motor Operator Installation Guide*. If required, readjust the limit switch settings by repeating the **Limit Switch Adjustment** section of the *Motor Operator Installation Guide*. Once complete; tighten the hardware to secure the floating jamb stops.

## APPENDIX

### A. LEAKAGE RESISTANCE RATING TABLES

Please refer to the following table for specific leakage rates:

**Table A.1.**

TEST PRESSURE (inches of WC)	SILL CONDITIONS**	AIR TEMPERATURE	DOOR ASSEMBLY LEAKAGE* (cfm/ft <sup>2</sup> )	
0.05	A	Ambient	1.23	<3
0.1	A	Ambient	2.13	<3
0.2	A	Ambient	3.56	>3
0.05	A	Elevated	0.67	<3
0.1	A	Elevated	1.05	<3
0.2	A	Elevated	1.78	<3
0.3	A	Elevated	2.35	<3

**Table A.2. Without Artificial Bottom Seal**

TEST PRESSURE (inches of WC)	SILL CONDITIONS**	AIR TEMPERATURE	DOOR ASSEMBLY LEAKAGE* (cfm/ft <sup>2</sup> )	
0.05	B	Ambient	1.67	<3
0.1	B	Ambient	2.809	<3
0.2	B	Ambient	++	
0.3	B	Ambient	++	
0.05	B	Elevated	0.695	<3
0.1	B	Elevated	1.491	<3
0.2	B	Elevated	1.854	<3
0.3	B	Elevated	++	

\* Maximum Air Leakage Rate allowed is 3 cfm/ft<sup>2</sup> at 0.1 inches of WC (water column).

\*\* Sill Condition A – Assembly tested with bottom of door and frame assembly artificially sealed as allowed by UL 1784 and NFPA 105.

Sill Condition B – Assembly tested without artificial bottom seal.

## **B. GENERAL MAINTENANCE AND OPERATION GUIDE- V3.02**

### **Quick Reference**

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### **Introduction**

The following information is intended to act as a guideline for the required maintenance and a brief overview of the general operation of a Kontrol Fire Door. Any maintenance or repair issues beyond the scope of this overview require an authorized Cookson Service Technician. Please consult factory with any questions or concerns. The information herein will help acquaint you with the basic operations of Kontrol Fire products, and following the recommended maintenance tips provided will help ensure a long-lasting, safe and secure Fire Door.



### **NOTICE**

**Kontrol Fire Doors are integrated into the Fire and Life Safety Equipment of the facility in which they are installed. To ensure the health and safety of the general public, Kontrol Fire Products should only be installed and serviced by Cookson authorized personnel.**

### **Preventive Maintenance**

Standard building codes state that Fire Doors must be cycled semi annually. Cookson recommends a visual inspection and preventive maintenance be performed on Kontrol Fire products quarterly. For a comprehensive and efficient inspection, follow the ensuing steps in order:

#### **Before Operating the Door**

##### ***B.1 Inspect Chain***

- a) Locate the drive chain. The drive chain is housed in a specially designed chain guide located between the track sections. Check to see if the chain is properly lubricated. There should always be a light film of lubrication coating the entire chain. Use light oil as required to maintain adequate lubrication.

- b) With the door fully open, choose a location near the midpoint of the opening and locate the drive chain. The chain should be resting on the bottom face within the chain guide. Check the tension of both sides of the chain, the chain should not be able to come out of the chain guide. Contact the Cookson Service Department or an authorized Cookson Service Agent for more information if an adjustment is needed.
- c) Locate the End Sprocket Assembly, this is located within the chain guide near the striker wall. Ensure that the chain is properly threaded along the sprockets within the assembly. Contact the Cookson Service Department or an authorized Cookson Service Agent for more information before operating the door if the chain is not properly threaded along the sprockets.

#### *B.2 Inspect Track / Chain Guide*

Inspect the Track and Chain Guide for any damage or anomalies that may impede the operation of the door. Inspect each joint to ensure that it is smooth and tight. Clear the track and chain guide of any debris. Contact the Cookson Service Department or an authorized Cookson Service Agent for more information before operating the door if damage is observed.



**Do not operate the door before completing steps 1 and 2. Failing to recognize and rectify potential problems before operating the door can result in damage to the unit.**

#### *B.3 Test Operation*

Fully close the Kontrol Fire Door by activating the standard push button or optional key switch. Ensure that the door moves smoothly across the entire opening. Once the door is fully closed, check to make sure that the lead post closes securely into the striker. Reopen the door using the push button or key switch, again ensuring a smooth operation. Once the door is fully open, ensure that the door stacks within the pocket. Contact the Cookson Service Department or an authorized Cookson Service Agent for more information if any problems are established.

#### *B.4 Test Sensing Edge*

Locate the vinyl sensing edge on the front edge of the lead post. Check to ensure that the edge is firmly attached to the lead post for the entire height of the door. Use the controls to initiate the closing process. While the door is in motion, activate the sensing edge by depressing the leading edge of the vinyl extrusion. The door should stop and reverse for a few seconds before it continues to close. Contact the Cookson Service Department or an authorized Cookson Service Agent for more information if the sensing edge is loose, not properly aligned, or does not function as stated.

#### *B.5 Test Exit Bars*

For standard fire doors, with the door in the fully closed position, locate the orange exit bars. Apply a small amount of pressure to the face in order to depress the exit bar. The door should open partially to a pre-set distance. The distance the door opens varies depending on the option selected. The door is factory set to open to approximately 54", but can be field programmed to open anywhere from 48" to the entire width of the opening. Check to make sure that the door opens to the specified distance. Contact the Cookson Service Department or an authorized Cookson Service Agent for more information if the exit bars do not function as stated.

***NOTE: If the fire door is being used as a Security Door, the exit bars on the side selected as the "secure" side will have no effect on the door unless the building's alarm system is activated. Contact the Cookson Service Department or an authorized Cookson Service Agent for more information concerning Security Door Maintenance.***

#### *B.6 Inspect Rollers / Panel Support Hanger Pins*

Visually inspect the nylon roller bearings and hanger pin of each slat, as well as the nylon roller bearings of the lead post and floating jamb trolley, for any signs of damage. It is recommended not to use any lubricants on the roller bearings or track unless required. Contact the Cookson Service Department or an authorized Cookson Service Agent for more information concerning the repair and proper lubrication of roller bearings and hanger pins if required.

#### *B.7 Inspect Sweep*

Locate the continuous vinyl sweep on the top and bottom of the curtain. Inspect the sweep for any tears or holes and repair any damage. Contact the Cookson Service Department or an authorized Cookson Service Agent if the damage is extensive and beyond repair.

#### *B.8 Cleaning*

Cleaning should be done quarterly or more frequently if the location and usage of the door results in excessive dirt build-up. Use a mild soap, water-based cleaner, or an all-purpose spray or aerosol to clean the exposed surfaces (i.e. slats, lead post, track, chain guide, etc). Test the effect the cleaner has on the finish of the components on an inauspicious surface, such as the slat nearest the floating jamb, before applying it to a highly visible area. Contact Cookson Customer Service with any questions.

### **General Operation**

Kontrol Fire Doors are most commonly used as emergency closures. Thus the door will remain open (concealed in an 18" wide pocket) most of the time, only closing when an alarm signal is activated or the unit is being tested. The unit may be wired to the building's main emergency alarm system or to a supervised local smoke detector. The speed at which the door will close is normally factory set at 9 inches/second.

The door operates on a low voltage DC system and includes a back-up battery, which the "Control Box" continuously charges to its optimum voltage using a 120V line. This allows the door to operate even during a loss of AC power. The unit can be installed to close automatically in the event of a power loss in the building. The door can also be opened during a power loss by activating the "open" option on the key switch or push button control.

The lead post is equipped with a sensing edge assembly, which will cause the door to stop and reverse motion upon encountering an obstruction. The assembly requires only a light pressure applied to the leading edge to activate the safety feature. If an alarm signal is present, the door will continue its closing process once the obstruction is removed. If no alarm signal is present, the door can be closed by activating the "close" switch on the operation control. The door can also be manually pushed open in the event of an emergency when the edge is suppressed.

Applying minimal pressure anywhere on the orange exit bars while the door is fully closed will cause the door to open a preset distance to form an emergency egress. The exit bars can be pressed multiple times, even when the door is in motion. The door will open the preset distance from wherever the lead post is at the moment the bar is activated. If an alarm signal is present, the door will continue its closing process after a brief pause. If no alarm signal is present, the door can be closed by activating the "close" switch on the operation control.

***NOTE: The above only applies for standard Fire Doors. Exit Bars on doors being used as security doors will have no effect unless the alarm signal is being supplied. Contact Cookson Service Department for further information.***

In the event of a loss of both AC power and battery back-up power, Kontrol Fire Doors can be operated manually by physically pushing the door open.

*Resetting the System after Alarm:*

Kontrol Fire Doors do not require any type of “reset” action. Once the alarm system is cleared, return the door to its open state by activating the “open” switch on the key switch or push button control. This will automatically reset the system. Be advised that the unit cannot be reset if the alarm signal is still being transmitted to the door. The unit will forego any attempts to reset it by reverting to the closed position until the signal is no longer present.

**Troubleshooting**

*Continuous Monitoring:*

On all Kontrol Fire Door Systems, various integral door components are electronically screened by a routine monitoring system, which relays data to the “Control Box”. In the event of a fault condition, the “Control Box” will emit an audible fault signal. Contact Cookson Customer Service of fault signal. Please reference the following table in order to provide Cookson with the necessary information to efficiently correct the issue.

*Fault and Light Signals:*

Item	Description	Sound
A	AC power loss warning signal	B____ B.B. B____ B.B. B____ B.B. ....
B	Overload warning signal	B____ B. B____ B. B____ B. ....
C	Battery failure warning signal	B____ B.B.B. B____ B.B.B. B____ B.B.B. ....
D	Alarm warning signal or high temperature	B____ B____ B____ B____ .....
E	T1,4 not connected or control panel cover opened	B.B.B.B. B.B.B.B. B.B.B.B. ....

*Checking Control Box Panel:*

Clear the pocket by removing the jamb stops and sliding the floating jamb into the opening.

*Possible Fault Conditions:*

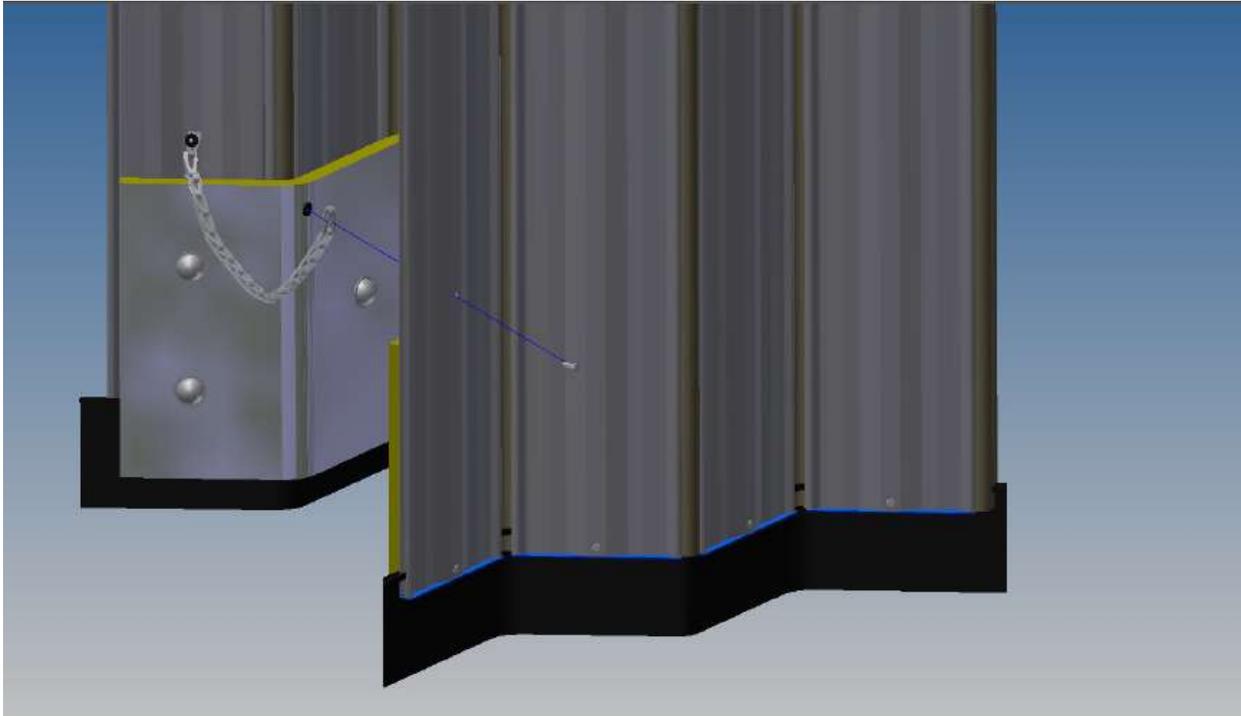
- *Battery Fault:*  
Occurs when battery is either overcharged or undercharged. This is the result of a failed component in the power supply or a loss of AC power for a sustained period of time. If Battery Fault is signified and AC power is still present, a failed component is most likely the culprit. Contact Cookson Customer Service for information on replacing components.
- *Loss of AC Power:*  
If AC power is not being supplied to the unit, contact Cookson Customer Service quickly for further instructions. As soon as AC power is restored, the fault will automatically clear. In the event of an extended power outage, use the door activation switch to temporarily mute the audible alarm and contact the Cookson Customer Service Department or an authorized Cookson Service Agent for assistance.

**CONTACT INFORMATION**

To schedule service or to request additional information, please contact the Cookson Customer Service Department @

**(800) 390-8590**

# Sash Chain Attachment Instructions



Sash Chain Attachment, to be installed when door billowing issues do not allow the door to retract correctly into the pocket.

**Note:** *Your Fire Door has been supplied with enough Sash Chain, Rivets and Backer Washers to accomplish this retrofit. (As Required)*

This procedure will take two people. First you will need to open the curtain at the floating jamb, starting at the lead post put a mark ( inside the partition ) on both sides every 4 ft., or every 12 slats. Drill a 9/64 dia. hole in the center of the marked slats 10" off the floor. These holes need to be drilled on both sides ( A& B ) or ( C & D ) of the curtain, making sure that the number of slats to the lead post are equal on either side. Starting at the lead post end attach the #35 sash chain ( 19 links ) to both sides riveting in place from the outside using the rivets and backer washers provided. Work your way to the floating jamb attaching the curtain sides together.