

8600EZ Power Drive Single Doors and Bi-Parting Doors Part Number: 8600*

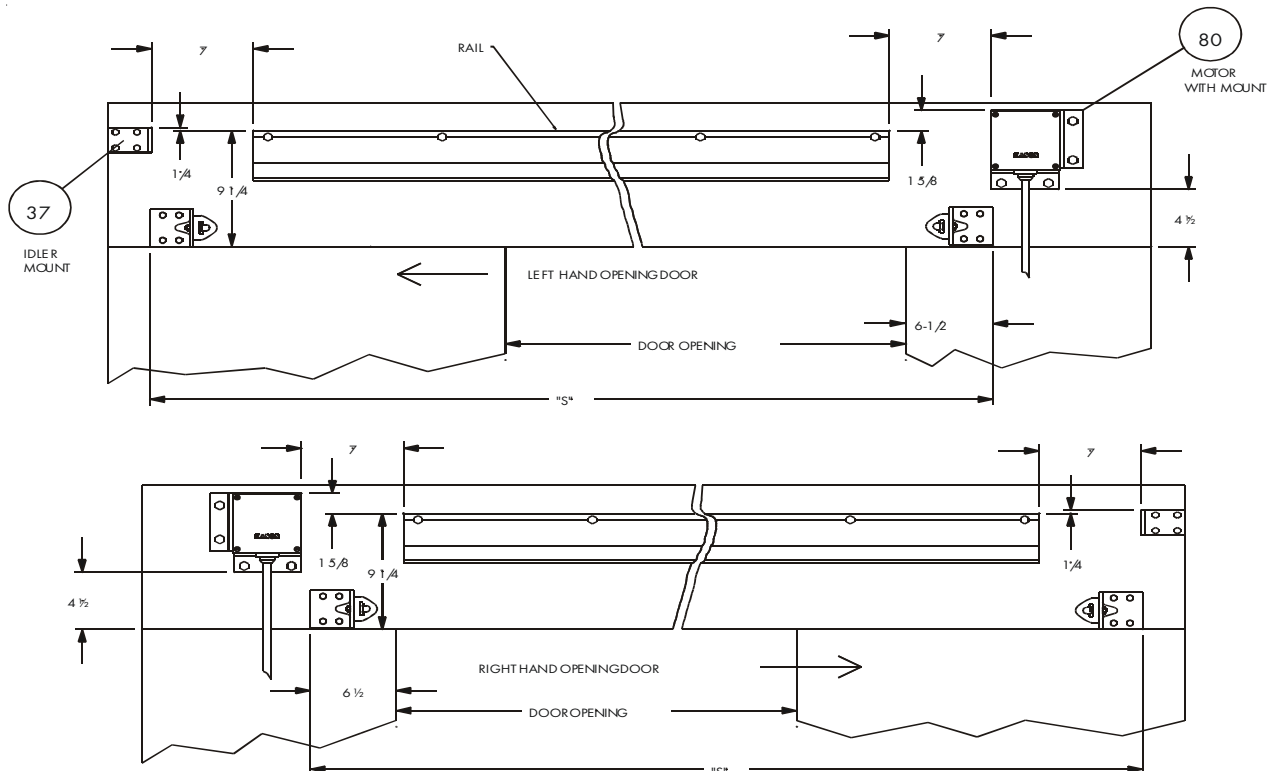
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Prefabrication Instructions

1. Begin door prefabrication by following Sections I through V in the 8600EZ SINGLE DOORWARE SYSTEM PREFABRICATION INSTRUCTIONS (IS-8600EZ-14A), except do not install Door Stop (38) at door open end of header as instructed in Section III-D. The open end Door Stop will be installed in a later step.
2. Mounting Motor and Idler. Using **Fig. 1** determine where motor and idler are to be mounted and mark their positions. Place motor mounting bracket on header in marked position, center-punch holes, drill for 3/8" bolts. Carriage bolts inserted from the back of header with nuts are recommended. Attach motor onto bracket using supplied bolts (40 in. lbs. MAX), washers and fasten securely. Install sprocket onto shaft. DO NOT HAMMER ON SHAFT! Attach motor bracket(with motor) to header. Place idler mount on opposite end of header from motor and above rail as shown in **Fig. 1**, center-punch holes, drill for 1/4" bolts and fasten securely.
3. **Single Door.** Mount door stops (2 required). Using **Fig. 1** determine stop locations and mark positions as shown. $S = 2 \times \text{door opening plus } 14"$. Install with 3/8" fasteners. (Additional stops may be mounted near bottom of door is desired).

Fig. 1

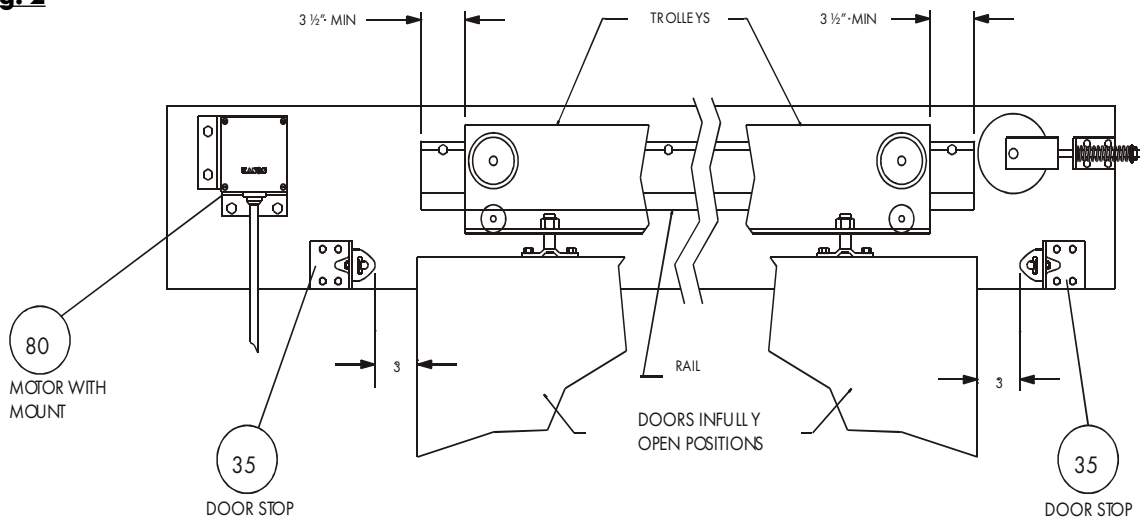


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Bi-Parting Doors. Mounting door stops. Refer to **Fig. 2** and locate trolley and door nearest motor to their intended open position. Trolley must not be closer than 3 1/2" to the end of the rail while in the open position. Locate door stop 3" from the open door edge as shown in **Fig. 2** and install with 3/8" fasteners. *If trolley does not have 3 1/2" of extra travel on rail with door in the open positions, the door open position must be reset in the closed direction by the necessary distance to give 3 1/2" spacing.* Measure distance from motor side door stop to center of opening. Mark same distance from center of opening to opposite end of header and mount remaining door stop.

Fig. 2



4. Locate all idler components shown in **Fig. 4**. Remove hex nut, washer and spring from carriage bolt. Insert carriage bolt through idler mount as shown in **Fig. 3** and **Fig. 4**. Note: Washers and cotter pin securing roller should face outward. Slide spring onto carriage bolt. Add flat washer and start elastic hex locknut onto thread, but do not tighten at this time.

Fig. 3

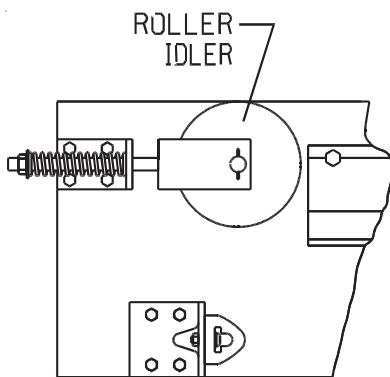
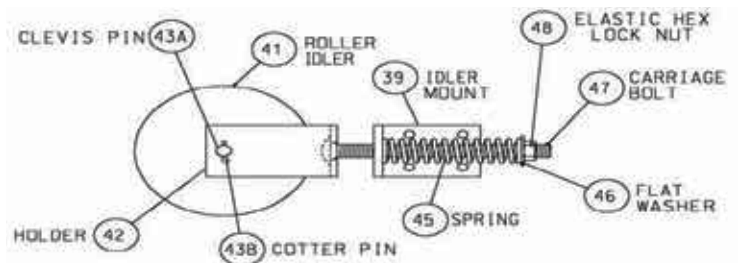


Fig. 4



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5. **Single Door.** Bolt the upper chain disconnect (**Fig. 5**) to the trolley using 1/2" bolts as shown in **Fig. 7** and **Fig. 9**. Insert bolts with one flat washer through trolley and upper disconnect from bottom. Place flat washer, lock washer and nut on each bolt to complete. Fully tighten the left nut, but only hand-tighten the right side nut at this time.

Bi-Parting Doors. Bolt the upper and lower chain disconnects (**Fig. 5 & 6**) to the trolley using 1/2" bolts as shown in **Fig. 8-A**, **Fig. 8-B** and **Fig. 9**. **NOTE:** Upper chain disconnect(46) must be mounted to the trolley nearest the EZ power drive unit. Insert bolts with one flat washer through trolley from bottom. Place flat washer, lock washer and nut on each bolt to complete. Fully tighten both nuts on the lower disconnect and the left nut on the upper disconnect. Only hand-tighten the right side nut on the upper disconnect at this time.

Fig. 5 - Upper Disconnect

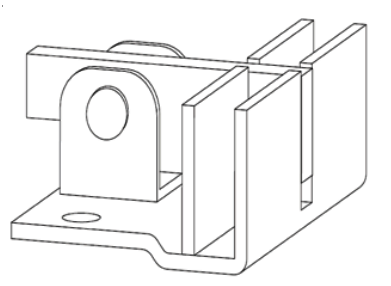
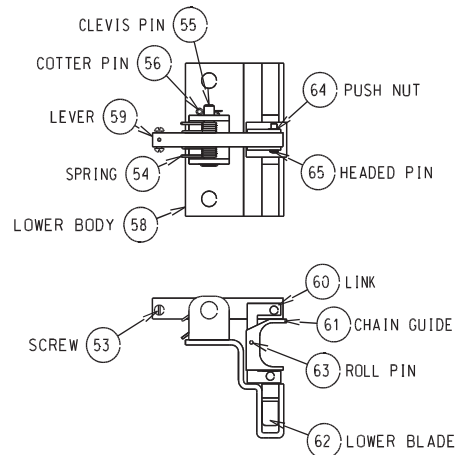


Fig. 6 - Lower Disconnect



See page 4 for reference Drawing with safety switch

Sold in 18600EZ0010 EZ Power Hardware Kit, single door and 18600EZ0011 EZ Power Hardware Kit, Bi-Parting doors

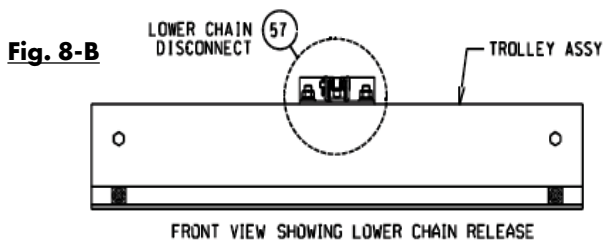
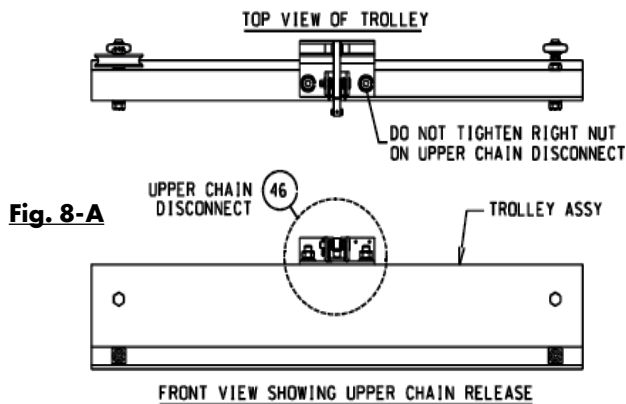
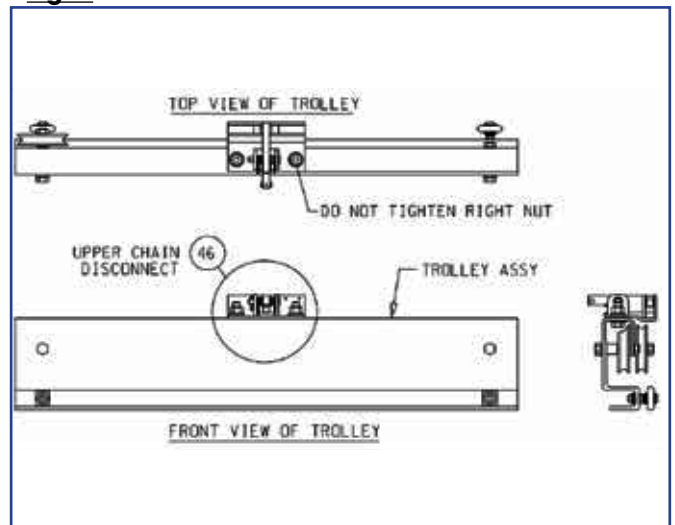


Fig. 7



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Attach safety switch to plate using screws and locknuts as shown in **Fig. 9**. Do not overtighten screws or switch damage can result. Slide plate under flat washer and against upper body until it just touches upper blade, then attach using #8 screw (87). Tighten right side nut to secure upper body and plate to trolley.

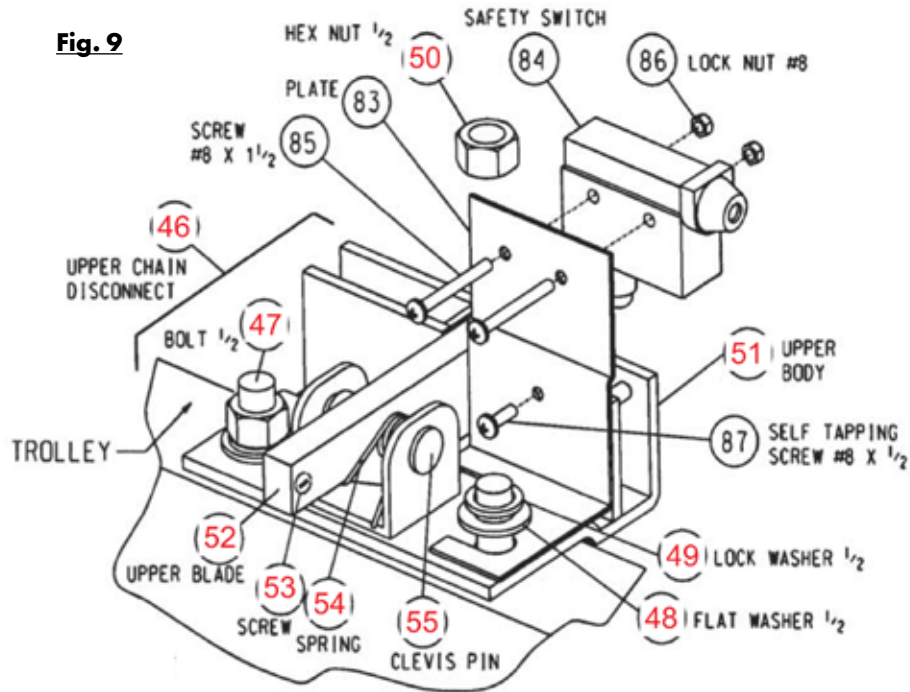
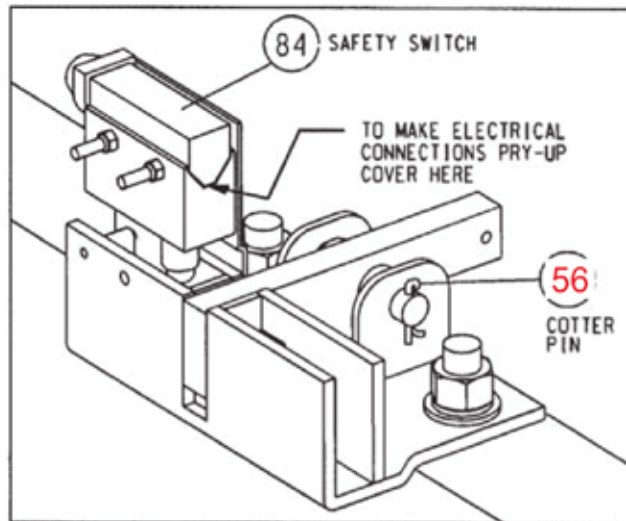


Fig. 10 shows how to remove safety switch electrical cover for wiring. See wiring diagram on page 14. Wire N/C and common contacts of switch in series with safety stop button, using NEC rated control wire. Secure wire to door and wall as needed, and include slack loop for door.

Fig. 10



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6. Mounting Recessed Inside Release Housing. From the exterior side of the door, drill a 1/2" hole completely through door. Be certain to drill square to the door face as shown in **Fig. 11**, (STEP No. 1). From the interior side of door, cut a 6" diameter hole located on center of the 1/2" through hole, cutting only to a depth of 1-5/8" as shown in **Fig. 11**, (STEP No. 2).

NOTE: Inside Release knob should be positioned so that it can be turned with one hand while grasping the door handle with the other. Check interior of door for proper placement.

7. Hollow out the insulation within the cut-out area to the 1-5/8" depth. Hole should accept recessed housing as shown in **Fig. 12**. Check fit by placing recessed housing in large hole on interior side of door, aligning center hole with 1/2" through hole.

Fig. 11

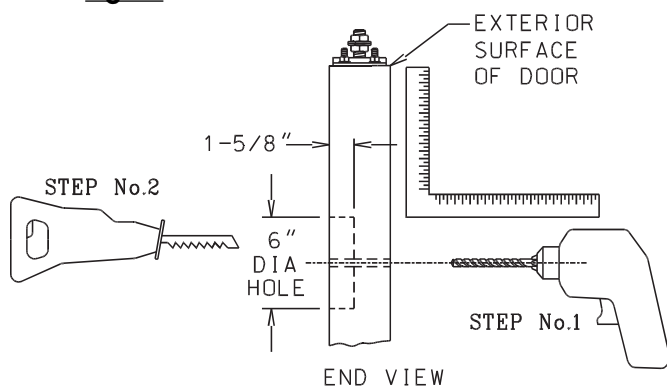
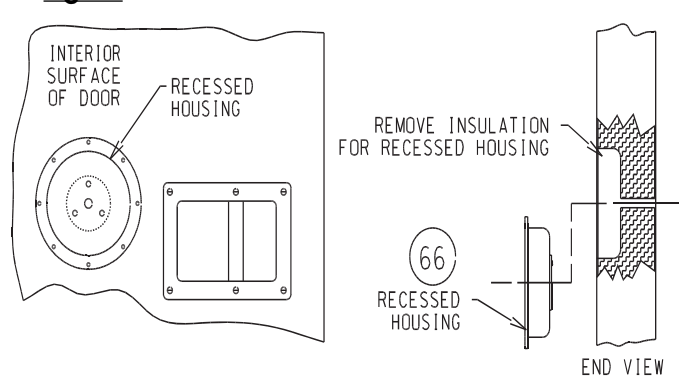


Fig. 12



8. Installing Inside Release Knob Assembly

- a. Place recessed housing in large hole on interior side of door, aligning center hole with a/2" through holes as shown in **Fig. 13**, (STEP 1). Do not fasten in place at this time.
- b. Insert knob/rod into center hole in recessed housing. Push until rod end comes through exterior door face and then place flange over rod as shown in **Fig. 13**, (STEP 2).
- c. Position parts to rotate freely, then fasten recessed housing and flange to door faces with no. 10 pan head screws as shown in **Fig. 13**, (STEP 3).
- d. Place exterior knob onto rod as shown in **Fig. 14**, (STEP 4). While holding inside knob, drill 3/16" hole through small hole in knob.
- e. Insert cable stud through hole so that square of stud can be held with a wrench, ad tighten lock nut so stud just protrudes as shown in **Fig. 14**, (STEP 5).

Fig. 13

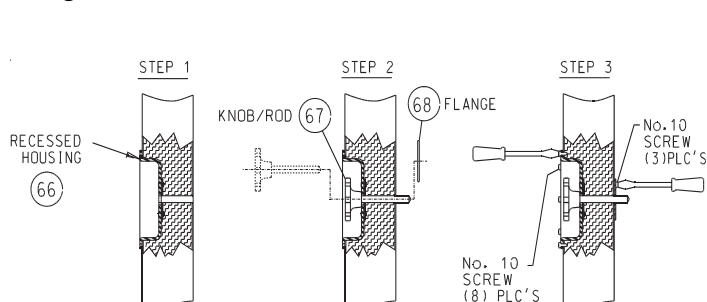
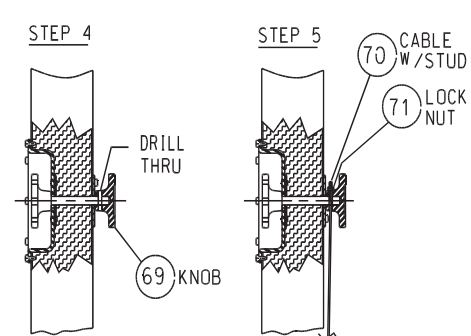


Fig. 14



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9. Mounting Shoes. Locate shoes as shown in **Fig. 15**, and using shoe as a template, drill $11/64$ holes. Stack two shoes together at each location and fasten to rail with No. 10 flat head screws provided.

NOTE: Shoes prevent chain from making incidental contact with rail.

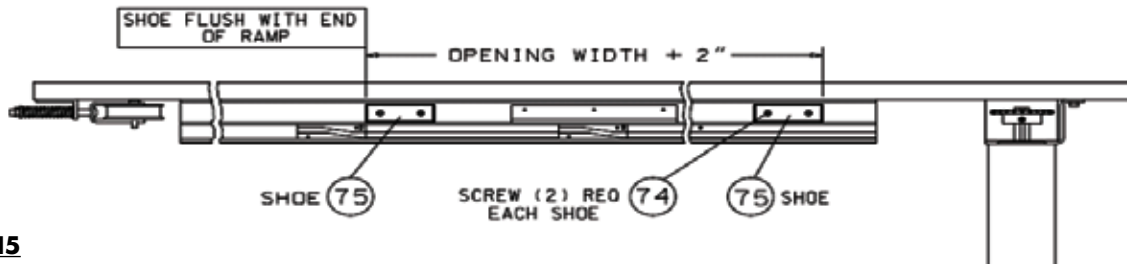
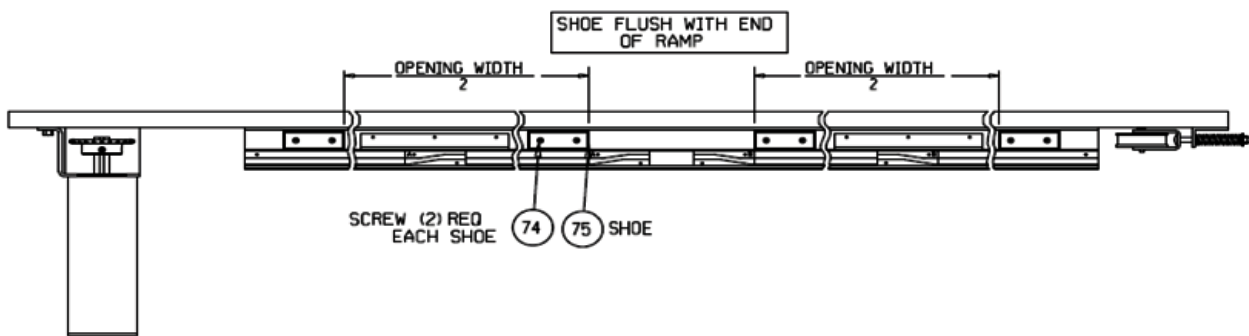


Fig. 15



10. Adjusting length of chain for single doors. Measure DIM Q as shown in **Fig. 16**. Calculate formula below to find chain length for single door systems.

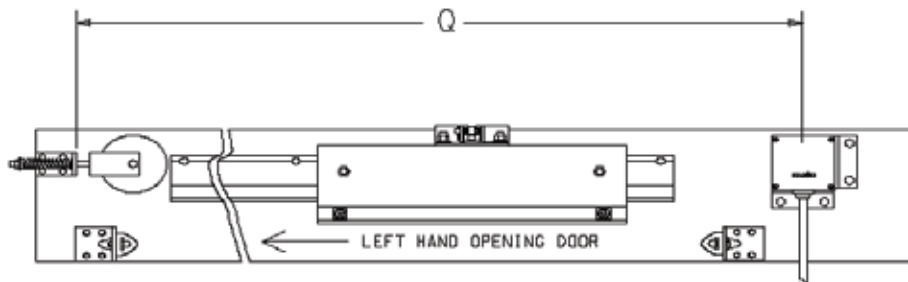
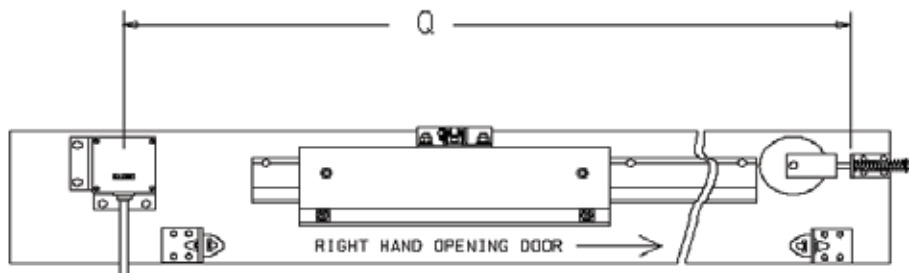


Fig. 16



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Bi-Parting Doors. Determining chain length for Bi-Parting doors. Locate centerline of rail and make a mark DIM P on either side of center. Locate trolleys at these marks. Measure DIM Q _____; DIM R _____; DIM S _____ and DIM T _____ as shown in **Fig. 17**. Calculate formula below to find chain length.

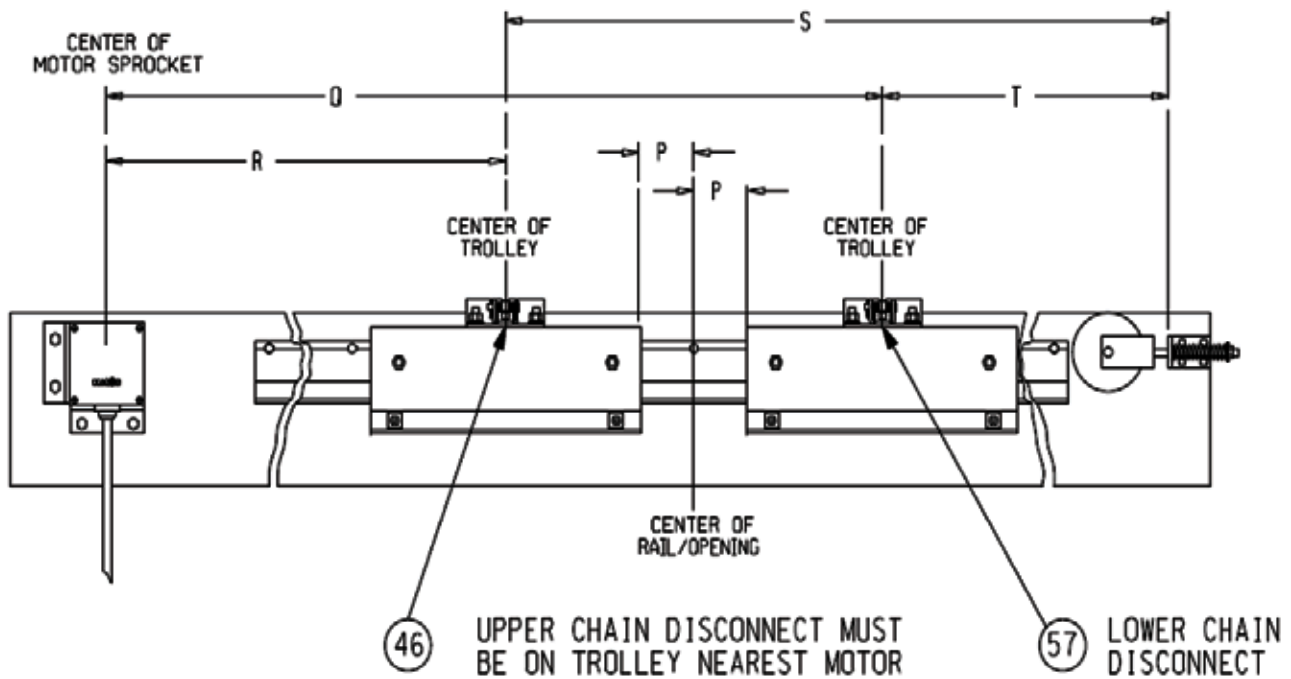
P= _____ (F- 5 1/4") Trolley in closed door position using KASON Safety Edge. **

_____ (F- 5 1/2") Trolley in closed door position using KASON Bulb Gasket. **

FIRST CHAIN LENGTH = $R + Q + 2 \frac{1}{4}' =$ _____

SECOND CHAIN LENGTH = $T + S + 6 \frac{7}{8}" =$ _____

Fig. 17

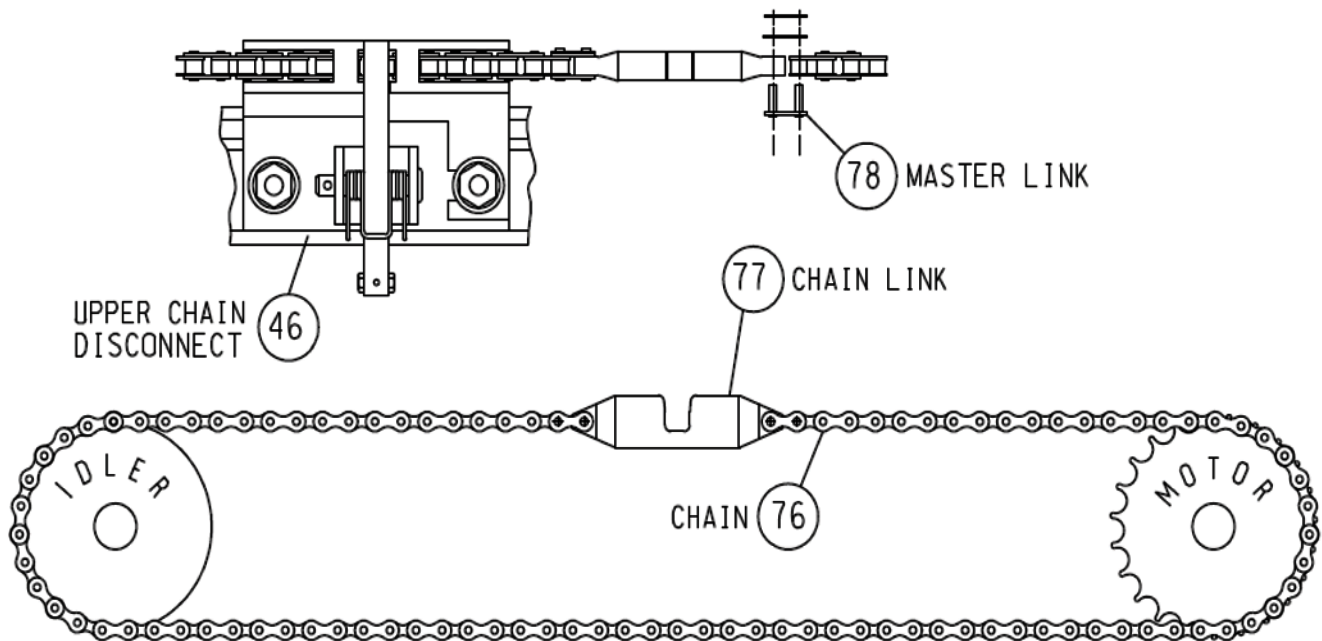


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11. Connecting the Chain - Single Door Units
 - a. Place trolley on rail before proceeding.
 - b. Carefully remove chain from its package and uncoil. Cut chain to length according to formula. Do not twist chain.
 - c. Route chain through chain disconnect and around idler roller as shown **Fig. 18**.
 - d. Attach each end of chain to chain link using master links.
 - e. Position chain link at approximate center of door travel.
 - f. Pull chain tight and place over motor sprocket.
 - g. Tension chain by tightening nut on carriage bolt until spring is compressed so that the space between coils is equal to the width of a penny.

Fig. 18

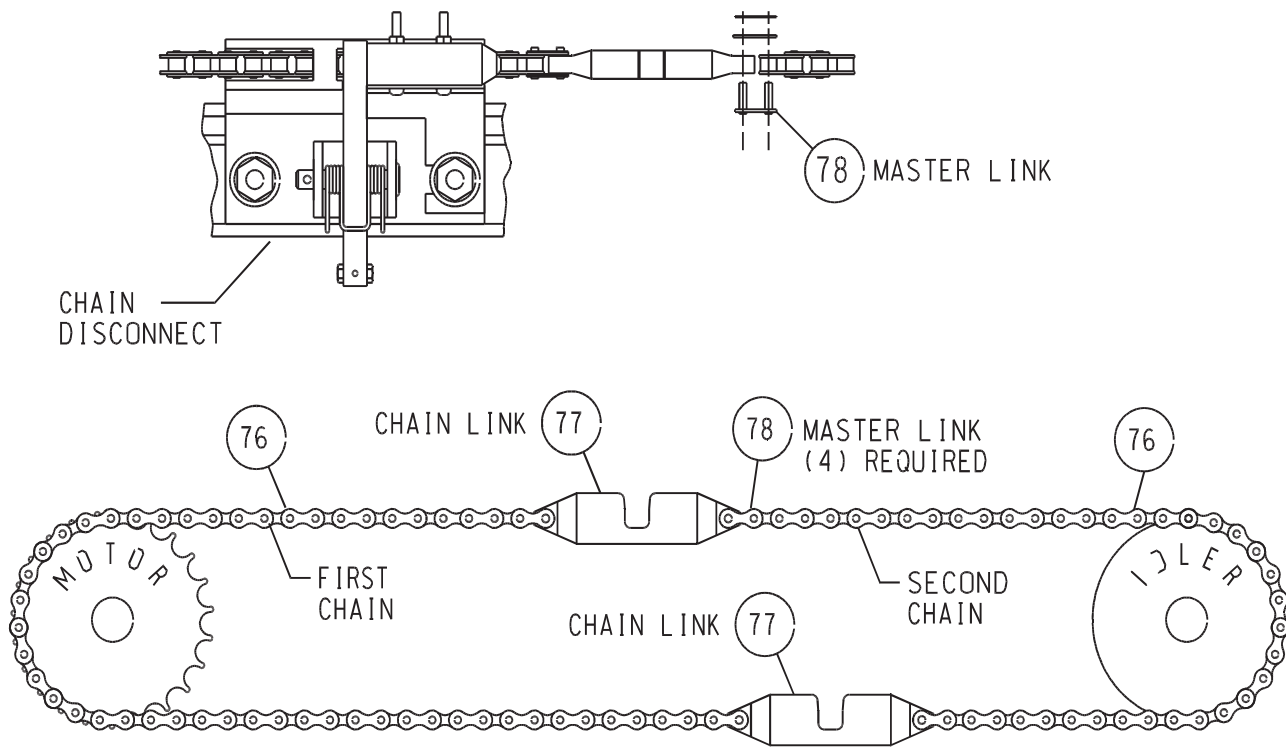


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Connecting the Chain - Bi-parting Door Units

- a. Place trolleys on rail before proceeding.
- b. Carefully remove chain from its package and uncoil. Cut first and second chains to length according to formulas. Do not twist chain.
- c. Using master links, attach one chain link to each end of first chain oriented as shown in Fig. 19.
- d. Route lower chain link through lower disconnect and attach second chain using master link.
- e. Route upper chain link through upper disconnect pulling second chain around idler.
- f. Fasten remaining chain end to chain link on upper disconnect using master link.
- g. Pull chain tight and place over motor sprocket.
- h. Tension chain by tightening nut on carriage bolt until spring is compressed so that the space between coils is equal to the width of a penny.
- i. The trolley's travel limits will be adjusted later in Section III of the instructions during Drive Programming and Setup.
- j. When in closed position, all wheels of both trolleys should be on lower position of ramp.

Fig. 19

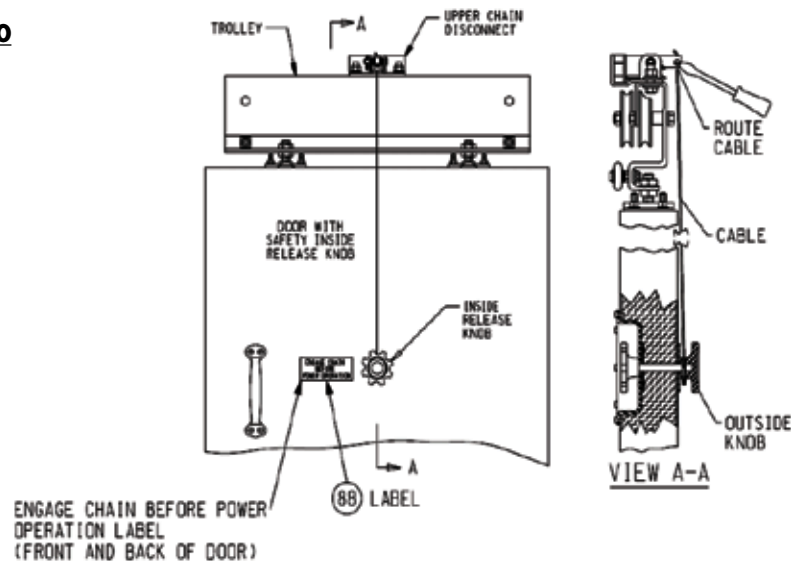


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12. Single Door. - Install chain disconnect cable as shown in **Fig. 20** before proceeding to Electrical installation. Engage upper chain disconnect (**Fig. 7**) with door approximately centered in travel.

WARNING! Door must be engaged with chain prior to power drive operation. Install all safety stickers shown in **Fig. 20** and **Fig. 22**. Failure to engage chain could result in damage to the power system.

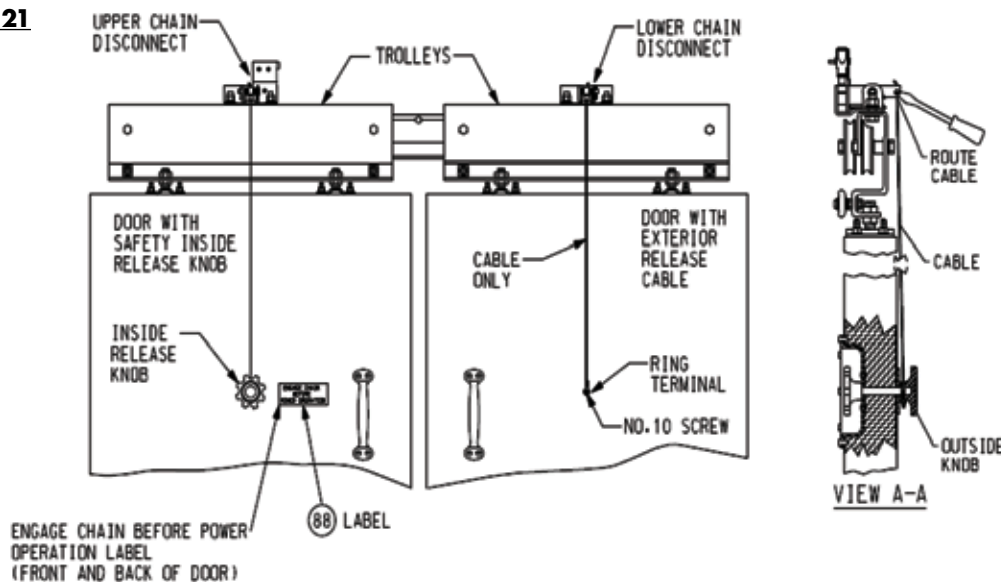
Fig. 20



- Bi-Parting Doors. - Install chain disconnect cables as shown in **Fig. 21** before proceeding to Electrical installation. Engage chain disconnects (**Fig. 7**) with doors approximately centered in travel.

WARNING! Doors must be engaged with chains prior to power drive operation. Install all safety stickers shown in **Fig. 21** and **Fig. 22**. Failure to engage chain could result in damage to the power system.

Fig. 21



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Job Site Installation

Step 1. Begin job site installation by following instruction sheet "Installation Instructions - 8600EZ Single Door System" (IS-8600EZ-14B).

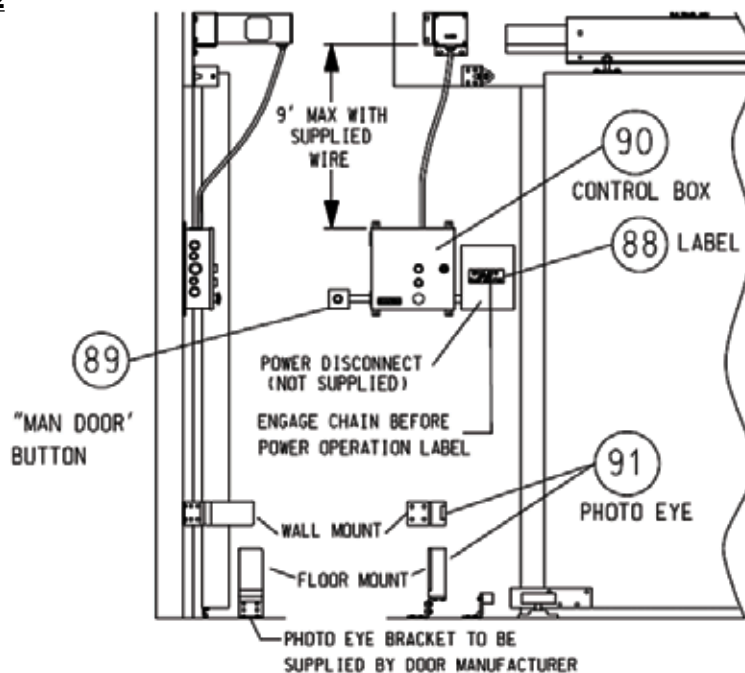
! CAUTION!

Only qualified personnel should wire the motor unit and its remote accessories. Adhere to all local electrical codes when installing this unit.

Mount control box as shown below in **Fig. 22** using appropriate fasteners and in the desired locations. Control boxes may be mounted up high and out of reach if desired. **NOTE:** If control box requires mounting further than 9' from motor, an intermediate junction box is re-quired. It is **NOT** recommended to replace or alter the supplied wire inside the motor housing.

Mount photo eye at this time, if used. May be mounted on wall or floor as shown in **Fig. 22**.

Fig. 22



STOP!

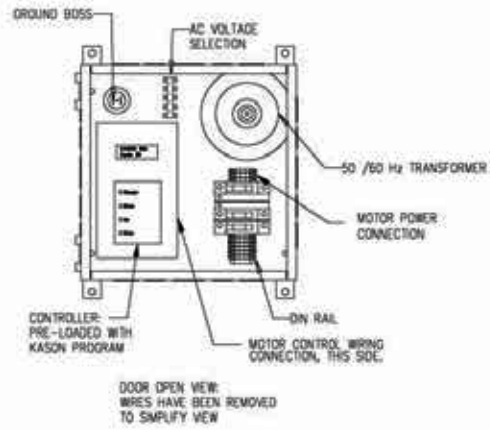
Assure chain is locked in the chain disconnect or connected to the door. See **Fig. 7**. **WARNING!** Door must be engaged with chain prior to power drive operation. Install all safety stickers shown in **Fig. 21** and **22**. Failure to engage chain could result in damage to the power system.

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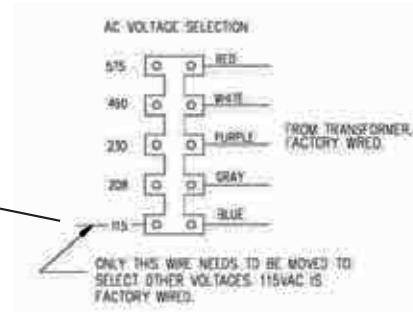
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Wiring connections. Open control box and locate/identify the connection points for incoming power AC Inputs (L1, L2 & Ground), motor power and low voltage connection for motor communications and user defined inputs. See **Fig. 23**. All connections with the exception of AC Input connections, are color coded

Fig. 23

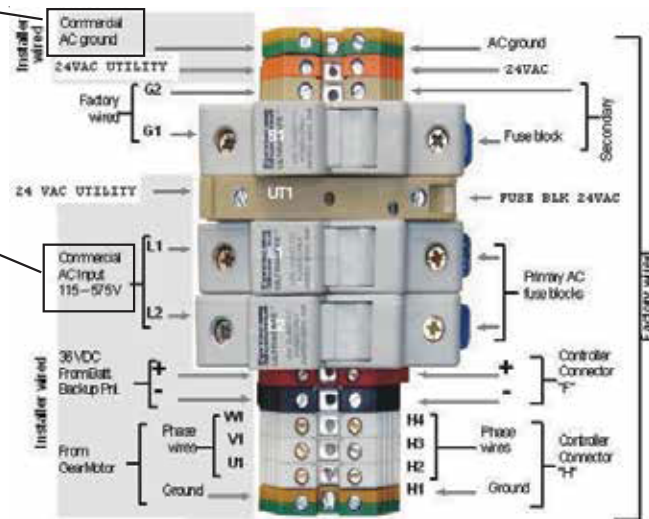


WARNING! FAILURE TO SELECT PROPER VOLTAGE MAY RESULT IN ELECTRICAL DAMAGE!
Step 2.
 Select AC input voltage. Move the **black** wire to the applicable AC voltage matching worksite voltage supply. Unit is factory wired to 115VAC.



Step 3.
 Wire AC Input. **Ground.**

Step 4.
 Wire AC Input. **Line 1 (L1) and Line 2 (L2).**



DETAIL A: DIN RAIL WIRING DIAGRAM

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Step 5. Select fuse for desired voltage: Refer to fuse chart **Fig. 24**. Kason fuses may be ordered at the same time as the 8600EZ Power Drive, as long as the voltage is known.

Fig. 23

Application	AC Supply	DIN Rail Fuse	Fuse Rating		Type	Suggested Model #
			Amps	Volts		
Primary	115	L1 and L2	25	600	Slow Blow	KLKR 25
	208	L1 and L2	12	600	Slow Blow	KLKR 12
	230	L1 and L2	10	600	Slow Blow	KLKR 10
	460	L1 and L2	5	600	Slow Blow	KLKR 5
	575	L1 and L2	4	600	Slow Blow	KLKR 4
Secondary		S1	20	600	Slow Blow	KLKR 20
Accessories (AC)		UT1	1	250	Fast Blow	ABC-1-R
Accessories (DC)		UT3	1	250	Fast Blow	ABC-1-R
Battery Backup		BB	20	600	Slow Blow	KLKR 20

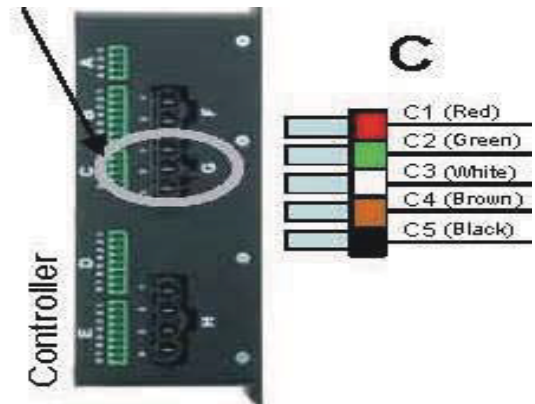
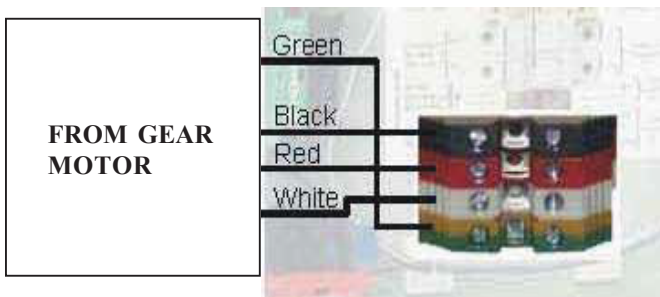
Note: Model # refers to BUSSMAN for ABC series

Model # refers to LITTLEFUSE for KLKR and KLDR series

Fuse Installation: Fuses will install correctly into fuse blocks only with the raised "button" end outward as fuse is inserted into holder.

Step 6. Wire gear motor power inside panel. Wire color matches color of connector terminals. See **Fig. 23** (Step 1) for location of connectors.

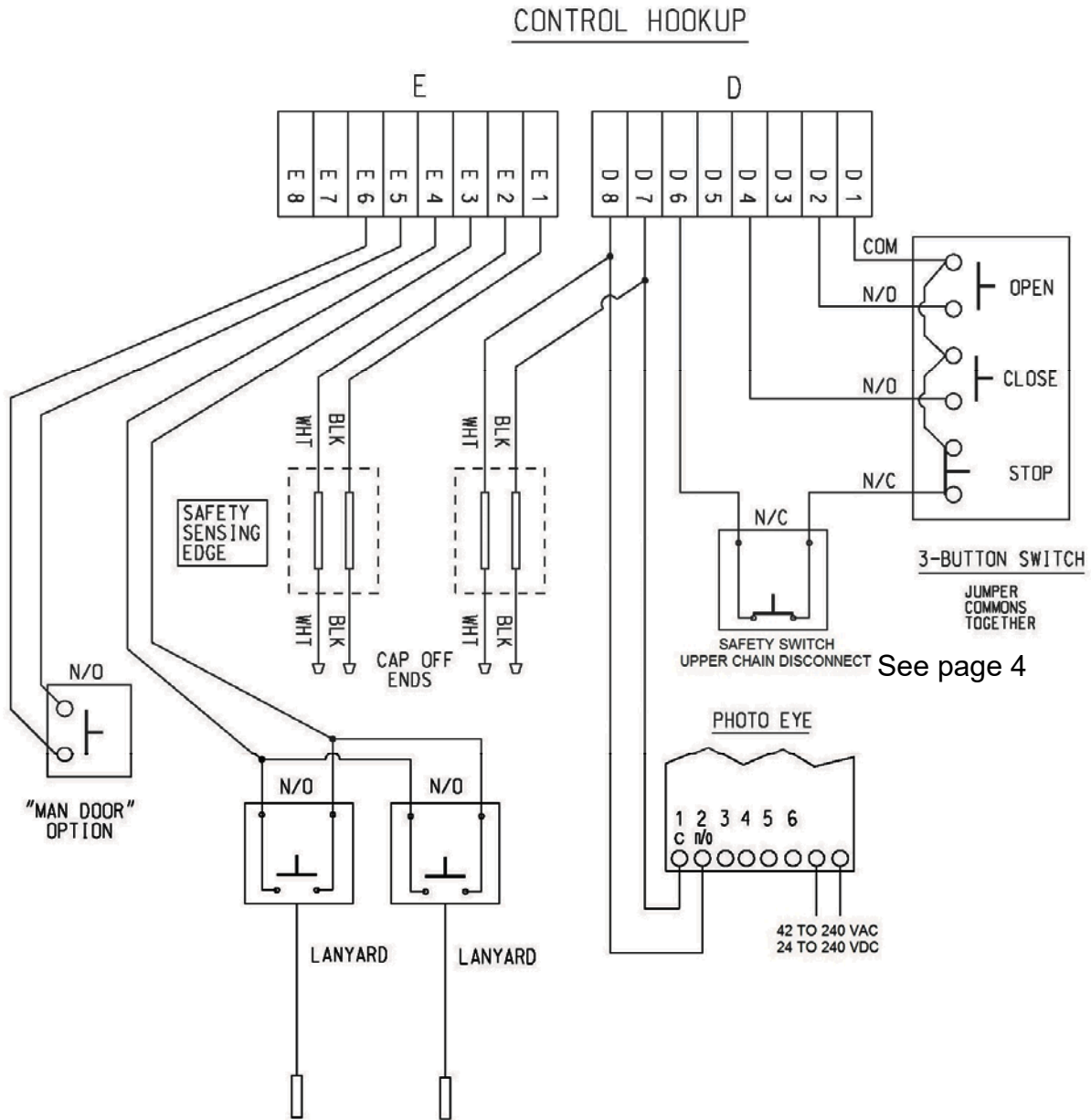
Step 7. Wire gear motor control. Wire color matches color of connector terminals. See **Fig. 23** (Step 1) for location of connectors.



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Step 8. Connect Accessories. Kason has provided a 3 button station with the controller cover. Refer to **Fig. 26** for control hookup of additional accessories that may be required.



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The Controller Navigation Buttons are: Escape, Enter, Up, Down

Step 9. Turn on the AC Power

If upon power up, the display reads: 1st Line **Company Name**
2nd Line **Cycle Count**

Step 10. Door Size Calibration

- A. Press the “Up” or “Down” button until the display reads “AutoCal Now”
 - i. Press the “Enter” button.
 - ii. Display should read “ENTER to Calibr”

NOTE: To exit “AutoCal Now” mode, press the “Down” button once for the display to show “Return to Main” then press “Enter” to return to the main menu.
- B. Press the “Enter” button. (The door will cycle to open, then close.)
 - i. The door should move toward the open position at a slow speed.

NOTE: If the door moves toward the close position, jump to **Step 11**.

 - During opening, the display will show “Status, Calibrate Open”.
 - At the open position, the door will press against the open stop retainer.
 - ii. Upon completing **B(i)**, the door will auto-reverse direction
 - During closing, the display will show “Status, Calibrate Close”.
 - At the close position, the door will press against the close stop retainer (or the two leaves press together with a bi-parting door) and stop.
 - The display should read “Door Size Stored”, “Cycle to complt”.
- C. Cycle the door as follows to complete calibration
 - Open the door using the “Open” button switch connected to Input 1. (See **Step 8**, Connector D, pins 1 and 2). The door should open faster than during calibration.
 - Close the door using the “Close” button switch connected to Input 1. (See **Step 8**, Connector D, pins 3 and 4). The door should close faster than during calibration.

SYSTEM IS NOW READY TO USE

Step 11. Direction Reverse

- A. Power down the system until the screen goes blank, then power back on.
- B. Press the “Up” or “Down” button until screen displays “Ent Pswd”.
- C. Press the “Enter” button, then the following sequence of buttons to change direction: **ENTER, DOWN, DOWN, ENTER, ESC, ESC, ESC, ESC**.
- D. Press the “Up” or “Down” button until display reads “Dir Flip”.
- E. Press the “Enter” button.
- F. Press the “Up” button to change value from 0 to 1 or the “Down” button to change value from 1 to 0.
- G. Press the “Enter” button to save this value.
 - i. Power down the system and repeat **Step 10**.



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Factory Presets:

The parameters that are preprogrammed from the factory:

Ramp-up/down speeds for door open and close	Factory Set
Main door size	35"
Main door auto-close times	5 seconds
Auto/Manual calibration speed	5 in/sec

Password Protected Drive Programming

The 8600Ez comes pre-programmed with all the parameters assigned. User adjustments have been minimized to make installation simpler. Some parameters, if needed to be adjusted, may be done through technical sales support. Contact your local sales rep for more information. 1-800-93-KASON.

Some parameters are password protected so the installation doesn't change any factory presets. To access the password protected menu, press "up/down" (See **Fig. 23**) to select "password" as a menu option. Press "enter". The USER profile Password is: ENT, DOWN, DOWN, ENT, ESC, ESC, ESC, ESC

User Profile Setup Menu	
Close delay 0 max 240	Set the close delay timer, in seconds, that the door will remain fully open for before automatically closing. A value of 0 disables the close delay timer.
Close over curr% 175 max 2000	During the first high-speed cycle after calibration, the system records the current usage over the profile and uses this as a baseline for future closings. If on a future closing the current required is more than this percentoid over the baseline, the door will detect a collision and re-open with all close timers disabled.
Close decel 175 max 200	This is the percentoid during the door closing deceleration portion of the profile (just before the closing crawl gap.)
Close clear 60 max 2000	Boost amount to apply to the above two parameters when clearing a previously detected collision. This parameter can help prevent detection of new collisions when accelerating after clearing a previous collision.
Open top speed 300 max 400	Target speed for high speed door movement on opening
Close top speed 250 max 400	Target speed for high speed movement of the door on closing
Dir Flip 1 or 0	Flips the direction of what is considered open and closed in the event that the motor is mounted in the opposite orientation than normal
Dynamic brake 1 or 0	Enable (1)/ disable (0) dynamic braking action
Enter password	Allow to change to a different group



INSTALLATION INSTRUCTIONS

8600EZ Power Drive Single Doors and Bi-Parting Doors

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Parts List

35.	Door Stop	9850000311
37.	Idler Mount	98600004550035K
38.	Roller (Idler)	9860000098
39.	Holder	98600004760035K
40(A).	Clevis Pin	90107500111750
40(B).	Cotter Pin	90103120111000
41.	Deleted Item	
42.	Spring	98600001600167
43.	Flat Washer	90138500300062
44.	Carriage Bolt	98600005540037K
45.	Elastic Lock Hex Nut	90088500110000
46.	Upper Chain Disconnect	9860000345
47.	Hex Bolt 1/2"-13 X 1-1/2"	9000550C111500
48.	Flat Washer 1/2"	90138531110062
49.	Lock Washer 1/2"	90152500110000
50.	Hex Nut 1/2"-13	9008850C110000
51.	Upper Body	9860000230
52.	Upper Blade	98600005100037
53.	Round Head Screw No. 10x3/8"	9000319F110375
54.	Torsion Spring	98600001620127
55.	Clevis Pin 3/8"	90107370112120
56.	Cotter Pin	90103120111000
57.	Lower Chain Disconnect	9860000346
58.	Lower Body	9860000229
59.	Lever	98600005860037
60.	Link	98600002060035
61.	Chain Guide	98600009250117
62.	Lower Blade	98600005400037
63.	Roller Pin	90102125301000
64.	Push Nut	90201180120202
65.	Headed Pin 3/16"	90533001460093R
66.	Recessed Housing	9048600331
67.	Knob/Rod	9850000131
68.	Flange	90048001830035K
69.	Knob	98600004930117
70.	Cable/Stud	9850000322
71.	Lock Nut	2008819C110000
72.	Ring Terminal	90170250910000
73.	Type "A" Screw No. 10x3/4"	9002119F110750
74.	Flat Head Screw No. 10x5/8"	9002619F110625
75.	Shoe	98600002400117
76.	Chain No.41x44Ft 6in.	98600001510010
77.	Chain Link	98600009370037
78.	Master Link No.41 Chain	9860000939
80.	Motor with Mounting Bracket	CONSULT FACTORY
81.	Switch Lever	98600002250035K
82.	Groove Pin 1/8x1	120108120111000
83.	Switch Mounting Plate	98600002270035K
84.	Safety Switch	9860000220
85.	Screw No.8-32x1/1-1/2	2001316C111500
86.	Lock Nut No.8	2008816C110000
87.	Screw No.8-32x1/2 Self Tapping	2002716F110500
88.	Chain Label	18600EZ9320117
89.	Single Button-'Man Door'	18600000278
90.	Control Box	CONSULT FACTORY
91.	Photo Eye	18600000510