Therm-L-Tec Systems LLC

Therm-L-Bond
Manual and Power Operated
Horizontal & Bi-Parting Sliding Doors
M-1000 & Invertek VFD
208/230 VAC / 3 Phase / 50/60 Hz
440 VAC / 3 Phase / 50/60 Hz

Installation and Setup Manual

Rev. D 6/2024

Index

Index	*1*
Welcome	*2*
Installation and Preparation	*3*
Header and Casing Installation	*6*
Hanging and Adjusting Door	*7*
Standard Wiring Diagram 3 Phase 230VAC or 440VAC - Single and Bi-Part Cooler / Freezer	*10*
Electrical Requirements	*11*
FUSED DISCONNECT RATING & FUSES	*12*
Control Box Wiring	*13*
Pull Cord Switch Diagram	*14*
Location and Function of the Power Switch	*15*
Connecting small Elec. Box on BI-PART Header f. Safety Edge Tightening and Checking Drive Belt	*17*
Laser Sensor Details	*18*
Installation and Adjustment of Laser Sensor's on Header Belt & Sensor Maintenance Instructions	*21*
Model M-1000 Control Board	*22*
Functions of the DIP-Switches	*23*
Adjusting the Closing Delay Timer and the Partial Opening Timer	*24*
First Startup of the Door Operator	*25*
Trouble Shooting Guide	*26*
Appendix A: Pull Cord Location Guide	*29*

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Welcome

Thank you for choosing
Therm-L-Bond Doors!

We at Therm-L-Tec Systems are confident in our product and pledge to do our part in making this a profitable business relationship. We would like to work with you every step of the way for the life of the door.

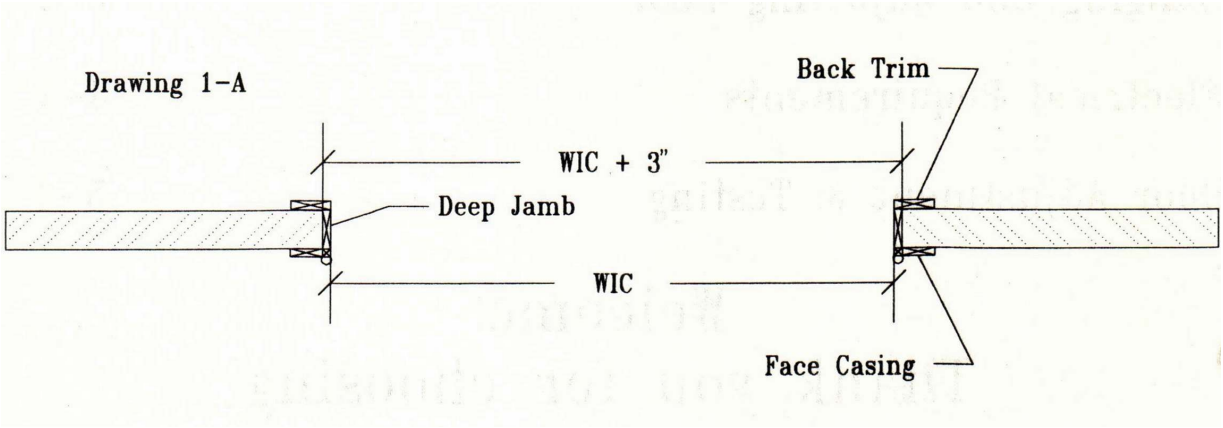
To receive the most efficient technical support from Therm-L-Tec, record the model and serial number on your parts manual and file for future reference.

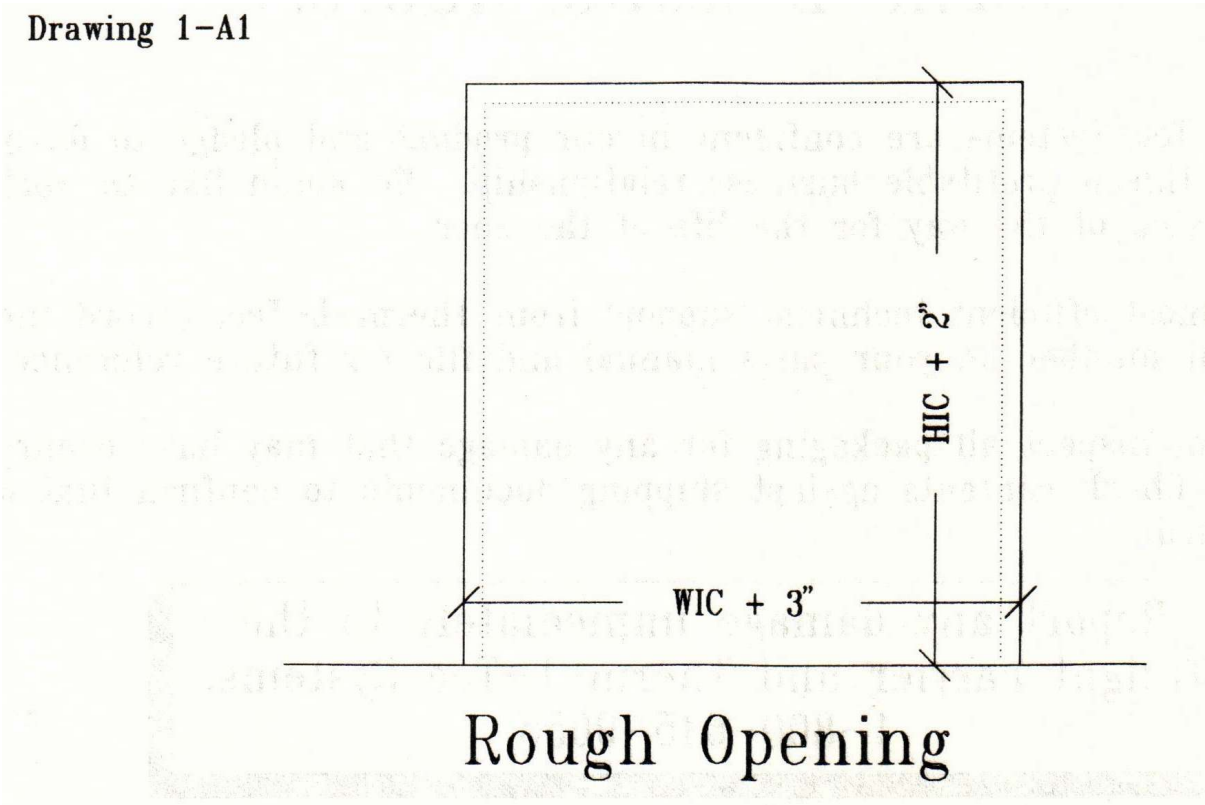
Before you begin, inspect all packaging for any damage that may have occurred during transit. Check contents against shipping documents to confirm all parts are enclosed.

Report any damage immediately to the
freight carrier and Therm-L-Tec Systems.
1 (913) 728 2662

Installation Preparation
Single Horizontal Slide Manual and SST Electric

1 - 1 Check rough opening size. When Therm-L-Tec provides jambs and back trim, they should be a minimum of Width in Clear (WIC) + 3" x Height in Clear (HIC) + 2". (See drawing 1-A & 1-A1)

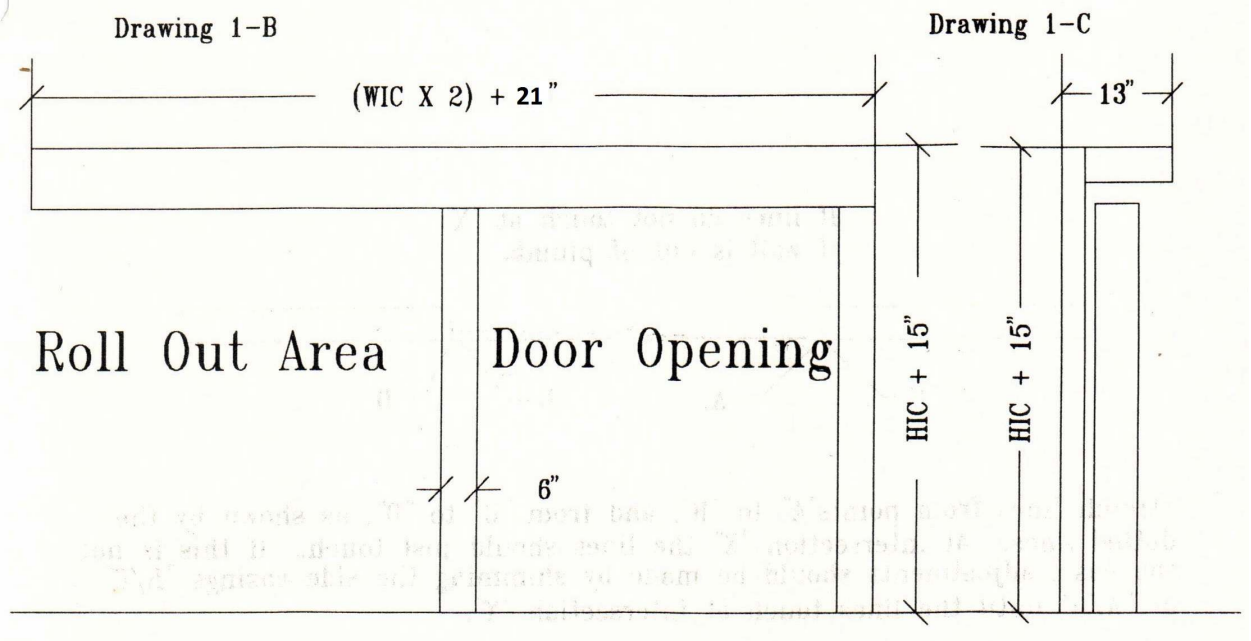




If jambs are supplied by others, a different figure may be applicable (See drawing 1-A2)

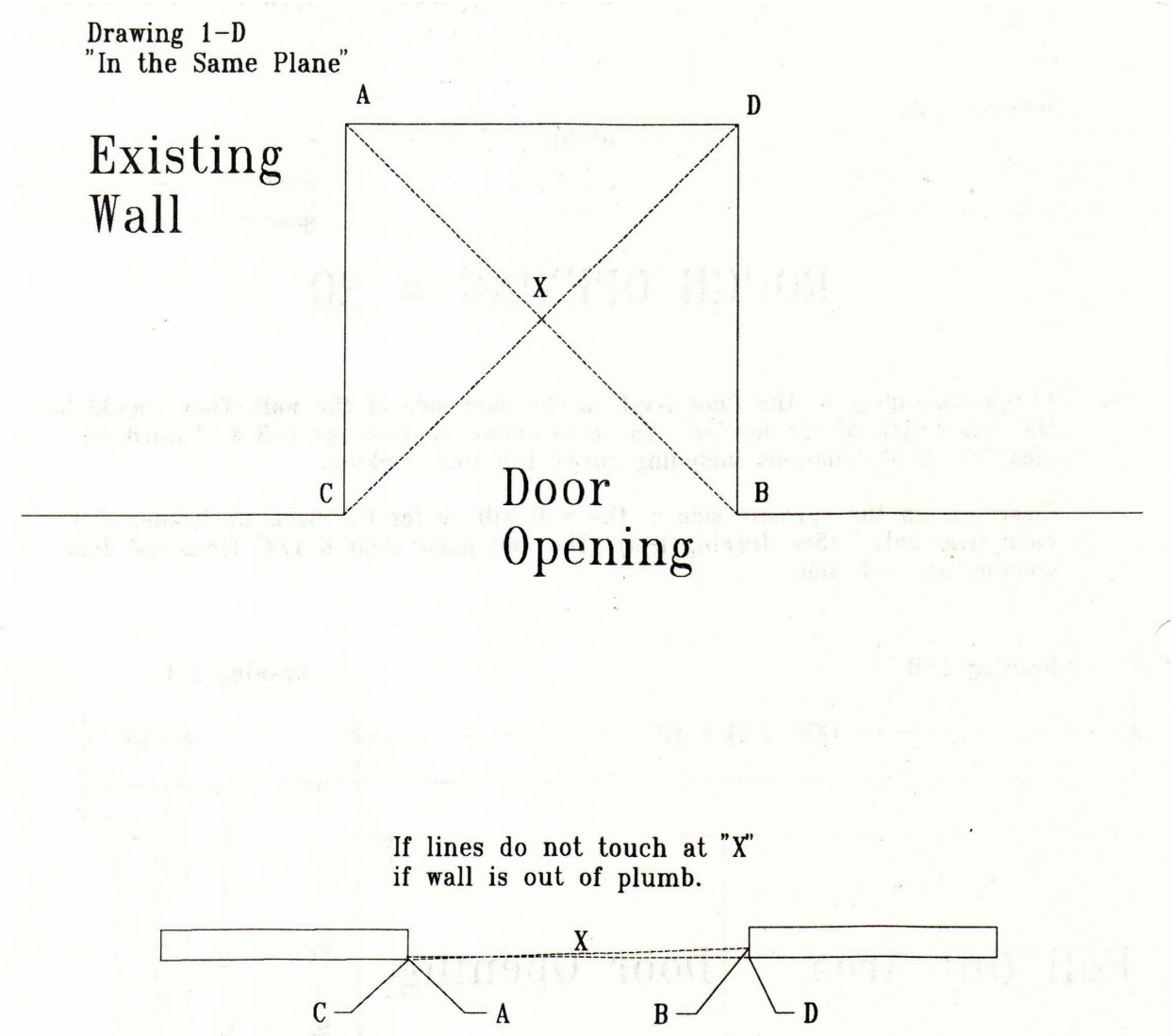
1-2 Check clearances at the floor level on the door side of the wall. They should be full length of the header. The area shown in drawings 1-B & C must be clear of all obstructions including curbs, I-beams, racking.

Clearance on the opposite side of the wall will be for the back-up header and back trim only. (See drawing 1-A) The wall must clear 6 1/4" from the door opening on each side.



Check floor level in the roll out area to make the door has room to open. (See drawing 1-B)

1-3 Plumb and check level on each side of the rough opening. Make sure the wall on each side of the opening is in the same plane at floor level.(See drawing 1-D)



Stretch lines from points “A” to “B”, and from “C” to “D”, as shown by the dotted lines. At intersection “X” the lines should just touch. If this is not the case, adjustments should be made by shimming the side casings “B/C”“ or “A/D” until the lines touch at intersection “X”.

Header and Casing Installation

2-1 Secure side casings to the wall. Casings should be level, of equal distance, and in the same plane. When setting side casing, the level should be determined from the high side of the opening. (See drawing 2-A)

Time spent shimming and leveling at this stage will save time later!

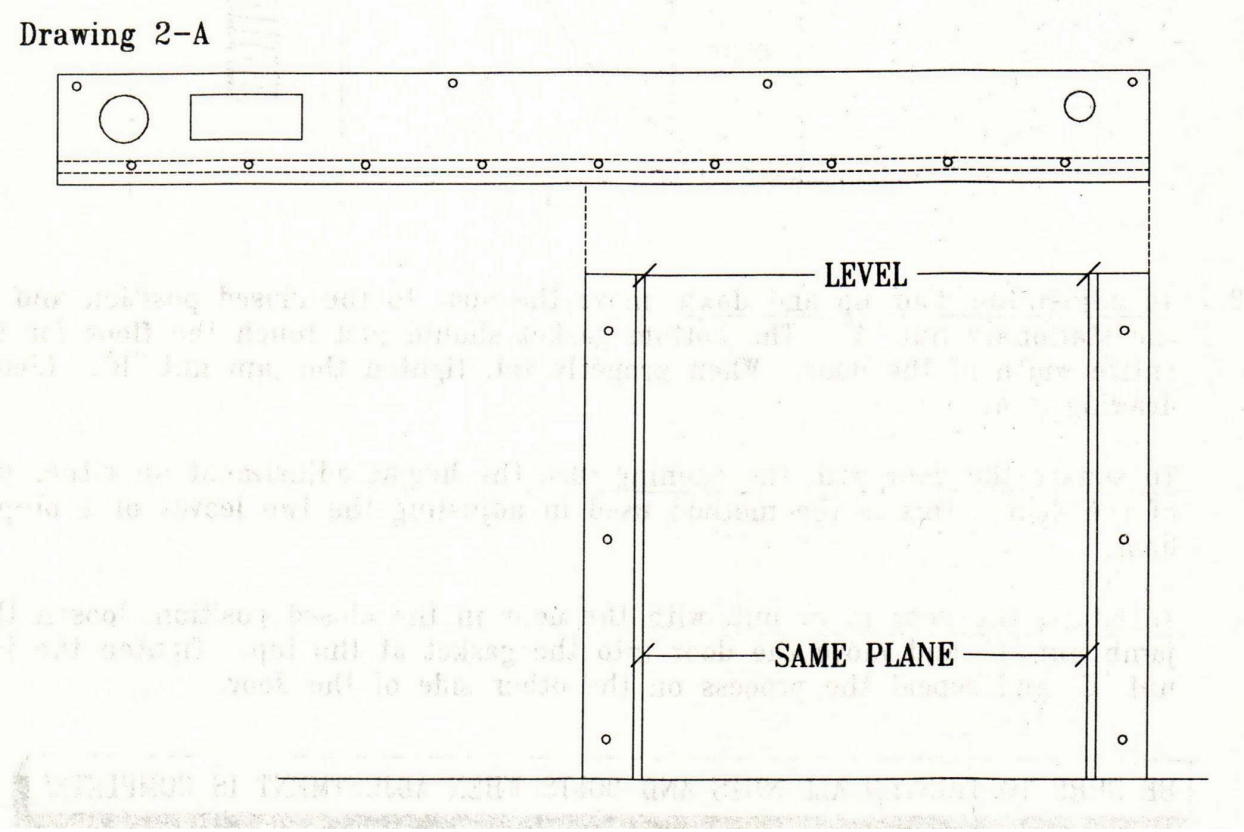
The fasteners used will be determined by the wall material. Care should be taken to prevent thermal transfer - condensation and icing.

2-2 Set Header after the side casings are in place. Fasteners should be installed through the holes provided in the track angle and near the top of the header.

2-3 Caulk all joints where the header and casings meet, where the casings meet the wall and where the casings meet the floor.

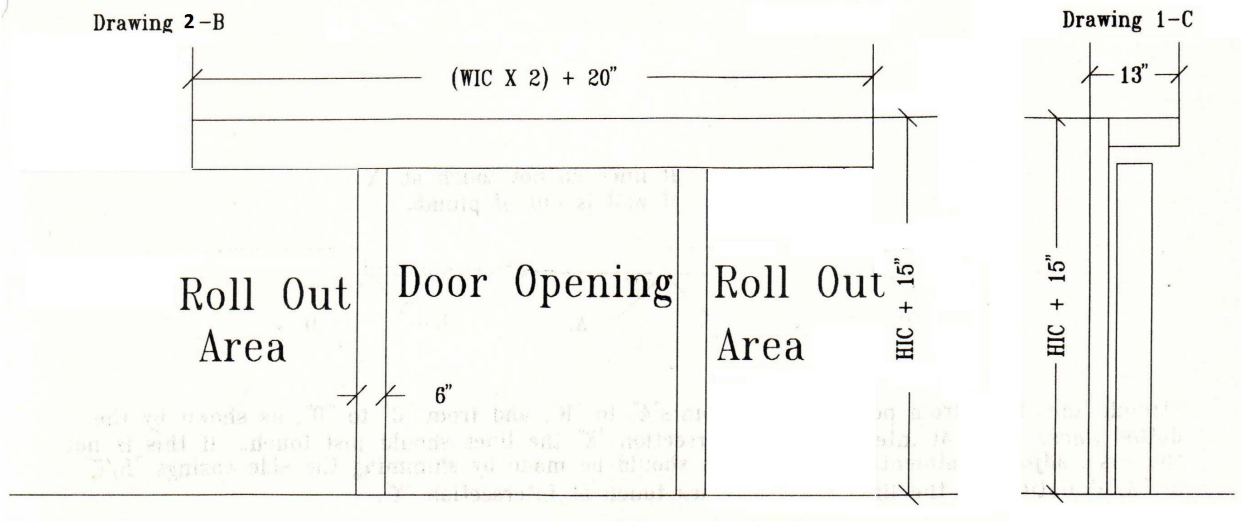
Thorough caulking will increase the efficiency and life of the door.

Drawing 2-A



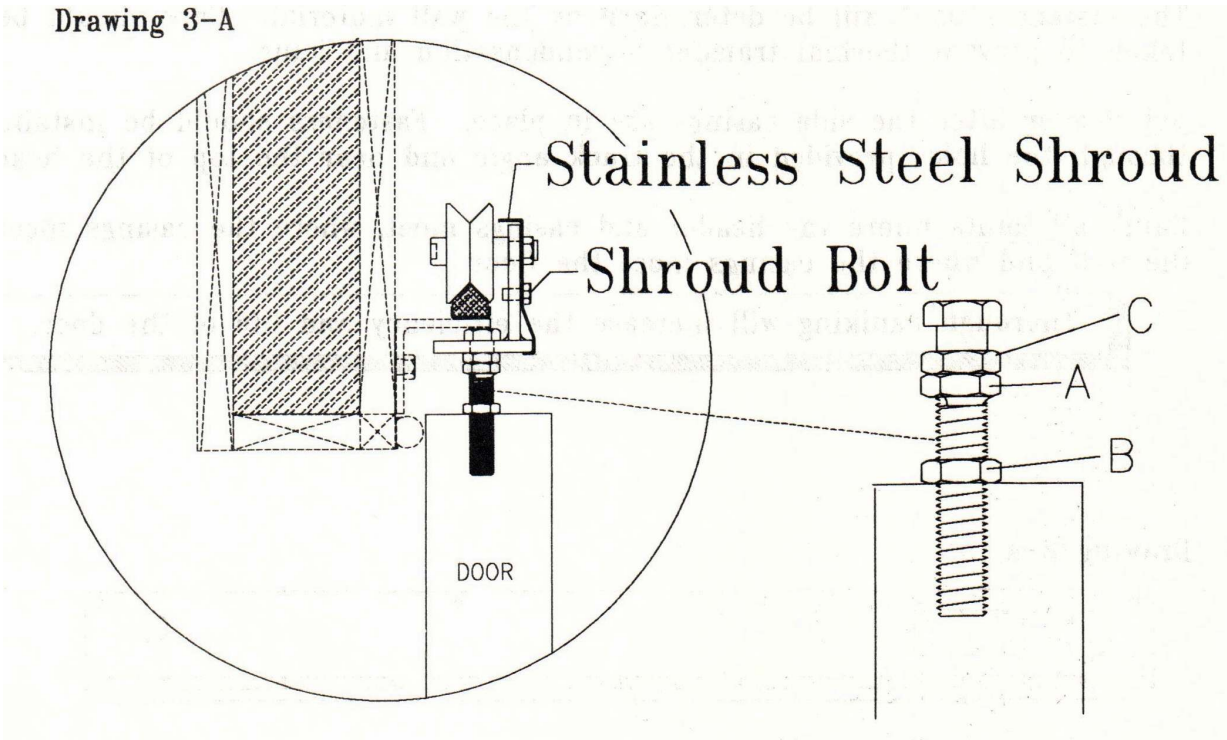
BI-PART DOORS:

IMPORTANT: Header Center has to exactly line up with the Center of the Door Opening measured between the installed Door Casings / Gaskets!



Hanging and Adjusting Door

3-1 To hang the door on the track, remove the anti-derail wedge and roll the door onto the track from one end. If the clearance prohibits this installation method, the trolleys can be removed from the door by first removing the shroud. The trolleys will then slide off the trolley bolt. Install the trolleys on the track, and then re-attach the door to the trolleys. (See drawing 3-A)

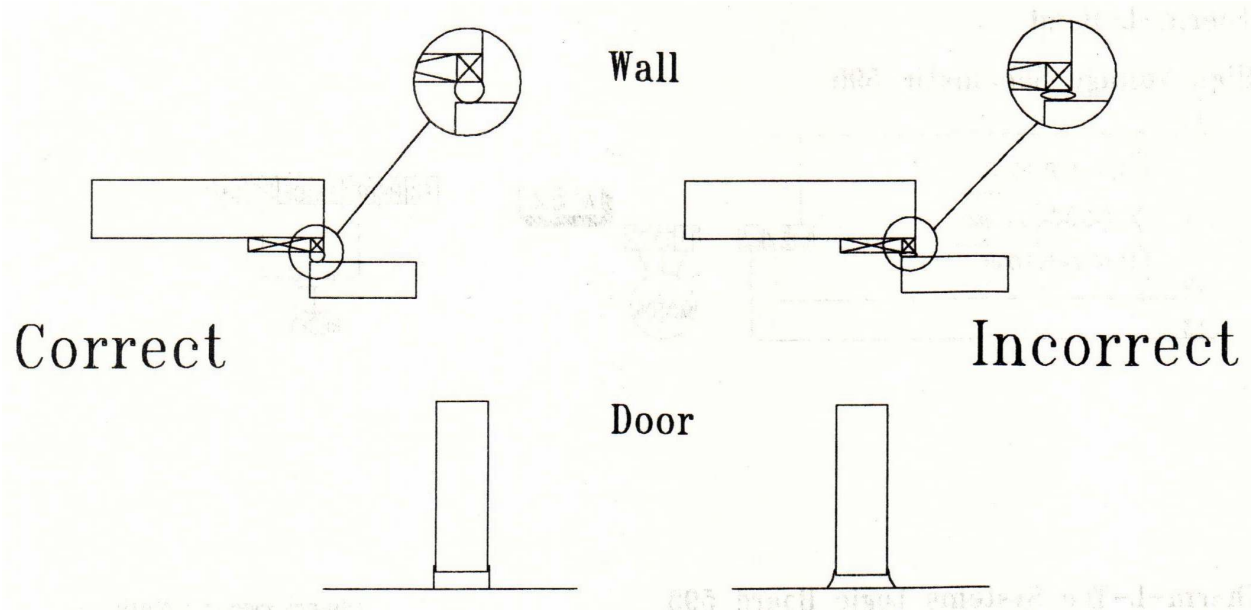


3-2 To adjust the door up and down, move the door to the close position and turn the stationary nut “A”. The bottom gasket should just touch the floor for the entire width of the door. When properly set, tighten the jam nut “B”. (See drawing 3-B)

To square the door with the opening, use the height adjustment on either side of the door. This is the method used in adjusting the two leaves of a bi-part door.

To adjust the door in or out, with the door in the closed position, loosen the jamb nut “C” and move the door into the gasket at the top. Tighten the jamb nut “C” and repeat the process on the other side of the door.

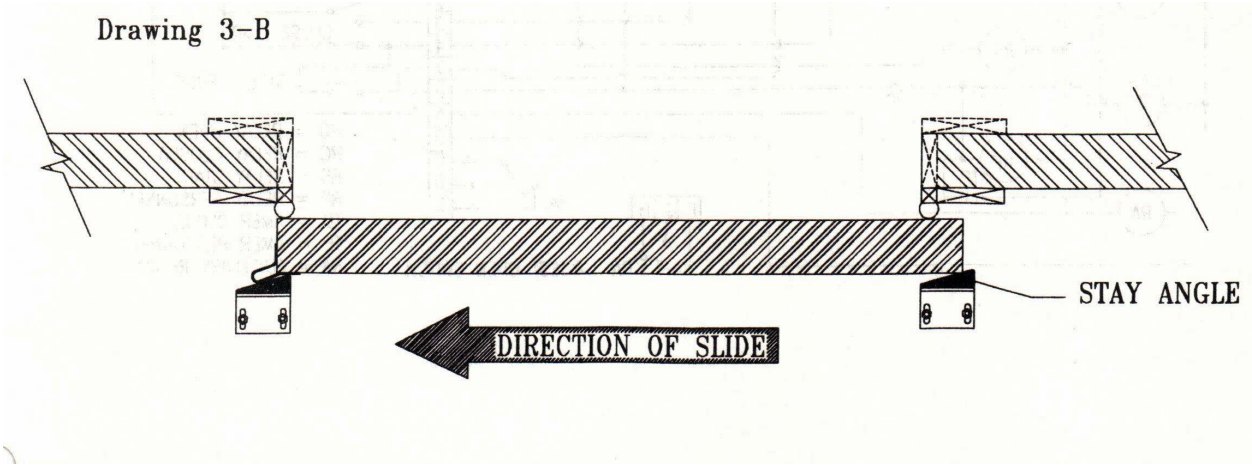
BE SURE TO TIGHTEN ALL NUTS AND BOLTS WHEN ADJUSTMENT IS COMPLETE!



Care should be taken to insure proper contact between the door and the gasket at the sides and head. Next, check the sill gasket with the floor. Proper adjustment is critical.

3-3 Fasten stay angles to the floor. (See drawing 3-B). With the door in the closed position, move the angle into the door until the door just touches the gasket. Next, tighten the anchor bolts.

Drawing 3-B

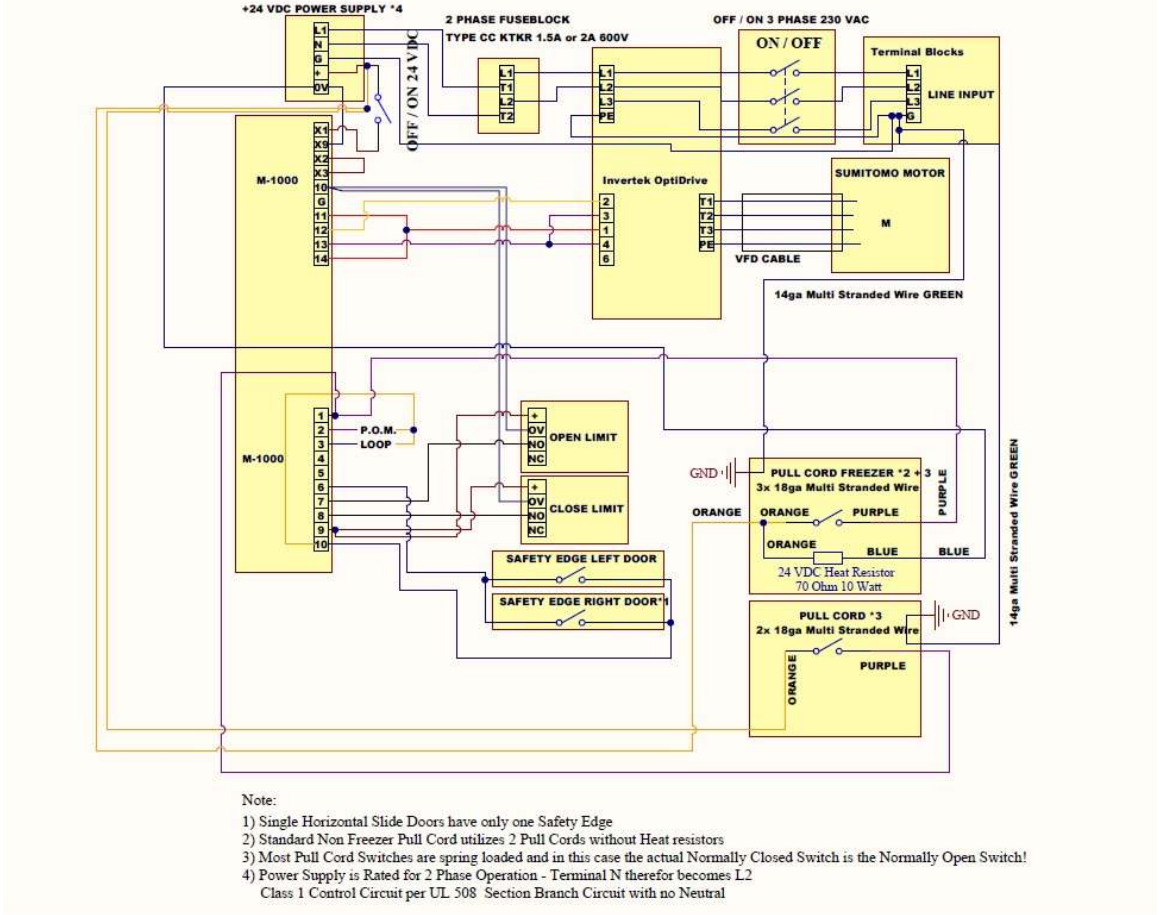


Standard Wiring Diagram 3 Phase 230VAC / 440VAC
Single and Bi-Part Cooler / Freezer

The applicable Wiring Diagram for each particular Door is inside the electrical control cabinet! Verify Supply Power with Box before Connecting!

NOTE: 460VAC / 480VAC Supply require a 3 Phase Step Down Transformer to 440 VAC 1.5 KVA rating - VFD's are rated now for 440 VAC and will trip frequently with Overvoltage DC Bus Error when operating on 460VAC or 480VAC, requiring manual error reset of VFD on each occurrence.

208 / 240 VAC 3 PHASE CONTROL BOX



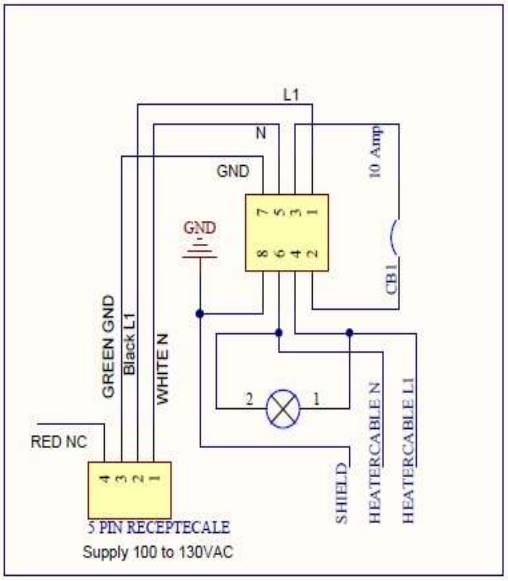
Note:
1) Single Horizontal Slide Doors have only one Safety Edge
2) Standard Non Freezer Pull Cord utilizes 2 Pull Cords without Heat resistors
3) Most Pull Cord Switches are spring loaded and in this case the actual Normally Closed Switch is the Normally Open Switch!
4) Power Supply is Rated for 2 Phase Operation - Terminal N therefor becomes L2
Class 1 Control Circuit per UL 508 Section Branch Circuit with no Neutral

Electrical Requirements

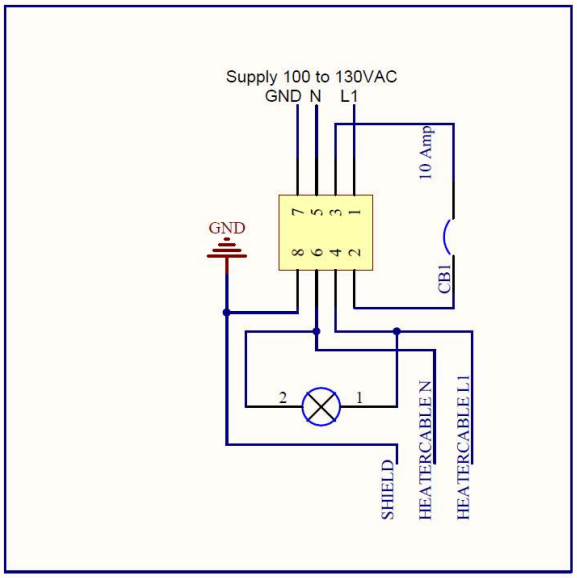
4-1 Freezer doors are equipped with a self-regulating heat cable. A Self Resetting Breaker protection is supplied in the junction box. The heat cable requires 110 VAC 10 Amps. Because of the nature of the self regulating heat cable, if the temperature is below freezing when power is applied, the self resetting breaker CB1 may trip. After a few seconds the Breaker will reset and apply power to the Heat Cable until CB1 trips again. This startup at very low temperatures will repeat it self for app up to 3 minutes and is indicated by the slow blinking Green Light. Once the Heat Cable reaches it's set point the Green Light will stay ON.
If the Green Light Indicator is constantly OFF then you may want to check your Branch Circuit Breaker.
The Self Resetting Circuit Breaker is designed as slow acting breaker. If a short between Phase and Neutral or Phase and Earth Ground occur then the Branch Circuit Breaker will trip immediately.
The wiring diagram is located inside the cover of the supplied junction box.

!Therm-L-Tec Building Systems Inc. Recommends using a 20 Amp Branch Circuit Breaker maximum to prevent Fire Hazard!

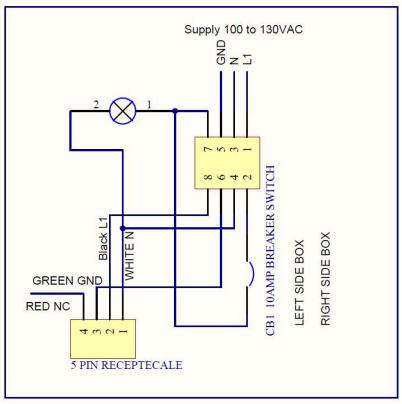
Drawing 4-A
(Wiring Diagram Heater Cable Box)



Door Mounted Box with Supply over plugable Cordset



Door Mounted Box with Supply over SJOOW Cable



Frame Mounted Box with Supply over regular Conduit, Heat cable connected to plugable Cordset

4-2 Power to the operator must be preceded by a ***fused disconnect!***

Failure to install a properly fused disconnect will void manufacturer's liability in the event of equipment failure.

The operating voltage of this unit cannot be altered in the field.

Fuse requirements		
Operating Voltage	**Phases**	**Fuse Rating**
208 VAC	3 Phase	FRN 5 AMP / 250V
240 VAC	3 Phases	FRN 4 AMP / 250V
480 VAC	3 Phases	FRN 2 AMP / 600V

Control Box Wiring

The incoming 3 phases from the fused disconnect to the operator are terminated on the 3 Terminal Blocks Label: L1, L2, L3 and GND

4-3 Control voltage is prewired. The 24 VDC circuit is completed by plugging the grey/yellow molded plug into the receiver located on the header. This would include the Laser Sensors, Safety Edge, Padlock Lock Out, and Partial Opening if applicable. The pull cord connection will be addressed below.

Electrical hardware added in the field such as door activators and safety devices should be properly grounded. Local codes may require that 24V wires be run in conduit.

WE RECOMMEND THE SEPARATION OF 24VDC and ANY AC POWER BY USING SEPARATE CONDUIT TO DECREASE THE RISK OF EMC RELATED ISSUES!

4-4 When connecting the pull cord switch, one orange, one purple and one blue lead are supplied at the control panel. Connecting these two/three wires will activate the door (momentary contact is necessary). If more than one activator is used, they should be wired in parallel. (See drawing 4-C)

4-5 The SST is equipped with a safety edge switch, when activated, will reverse the close cycle of the door. In addition, it is equipped with a motor overload safety device. Additional safety hardware may be desired, such as a ground loop, radar motion detector or a photo electric safety mechanism. These devices connect to our operator on +24 VDC and Terminal 6. (See wiring diagram)

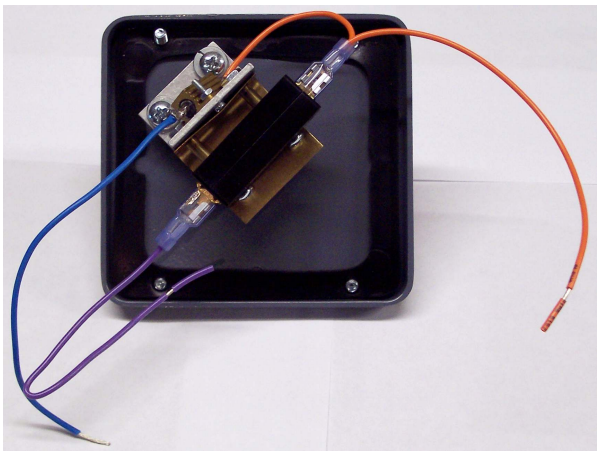
4-6 The 24 VDC Power Supply branch circuit (2 Phases 230 or VAC) is protected by two:

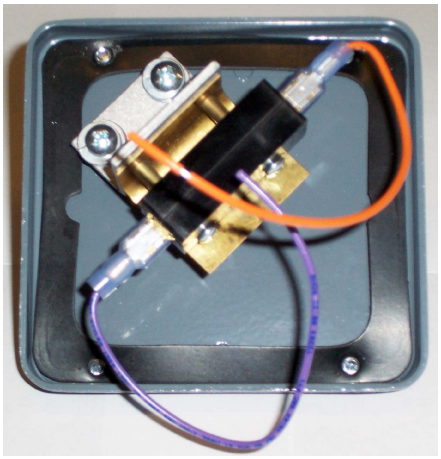
CLASS CC Fuses 600V

KLKR 2 Amp or 2pcs 2Amp Breaker

The Safety Edge is not a guarantee against injury.
Care should be taken not to be in the way of the door during it's close cycle!

Pull Cord Switch Diagram - Drawing 4C





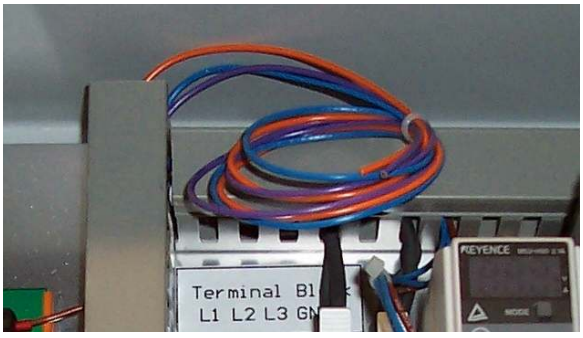
For Freezer with Heat Resistor:
Orange: +24 VDC
Purple: M-1000s TB # 5
Blue: 0V

For Cooler (standard):
Orange: +24 VDC
Purple: M-1000s TB # 5
Blue: Not used

Pull Cord with Heat Resistor is labeled with an “F” for Freezer.

Install this Pull Cord Switch inside your freezer.

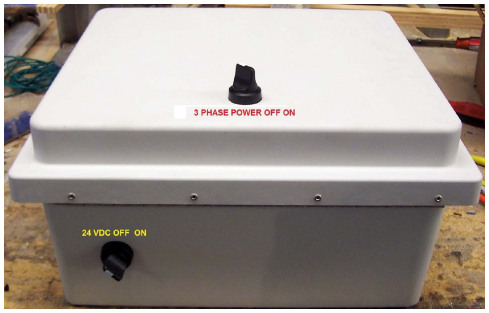
Please remember that when you turn off the Bottom Switch (24 VDC) on the Control Box then the Heat Resistors are also turned off and your switch may freeze.
If this happens, simply turn the 24 VDC power back on and wait for 48 hours before trying to operate the switch. The switch should be completely defrosted after this time.



Pull Cord Switch Wire Termination inside the Control Box

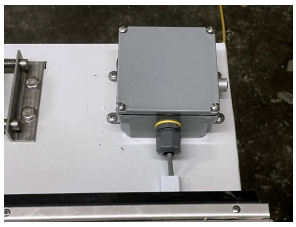
Orange:	+24 VDC
Blue:	OV
Purple:	Pull Cord Switch Return

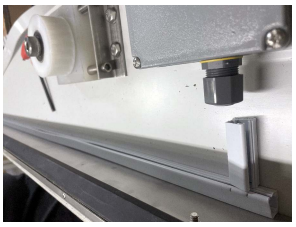
Connect the same colors from both Pull Cord Switches in the Control Box together by using Wire Nuts or a other suitable connection. If Blue (0V) is not used tape the end off with electrical tape. The Pull Cord Switch Boxes should be grounded with a green 14ga Wire and connected to the Green/Yellow Terminal on the DIN-Rail for Earth Ground Protection.

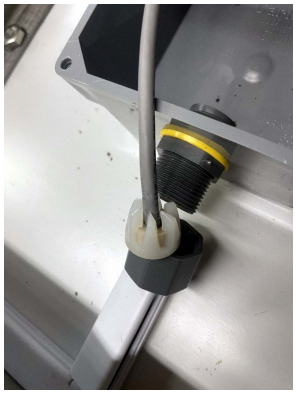


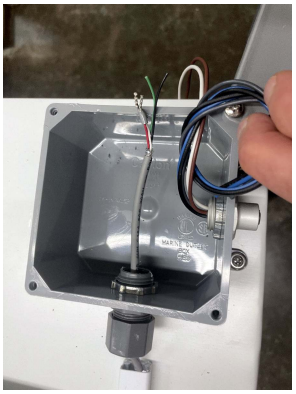
Location of the two Power Switches for 3 Phase Power and 24 VDC
Front Switch: 3 Phase Power - turns off entire Control Box and all connected peripheral
Bottom Switch: 24 VDC Control Voltage - turns off all peripheral powered by 24 VDC incl. Control Board

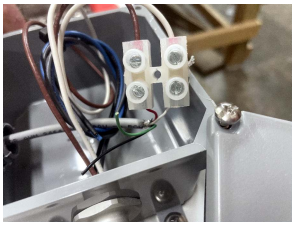
Connecting the Cable for the opposite Door Leaf Safety Edge (BI-PART DOORS ONLY!)











white => white
red => brown
Note: Color may vary, depending on Cables used

Safety Precautions with Laser Products	
WARNING!	• This Product uses two semiconductor laser's as light source. • Use of controls or adjustments or performance of procedures other then those specified herein may result in hazardous radiation exposure. • Follow the instructions mentioned in this manual. Otherwise, injury to the human body (eyes and skin) may result. • Laser emissions from this product is not automatically stopped when it is disassembled. Do not disassemble this product. • **DO NOT STARE INTO THE LASER BEAM!**

Wavelength / Output Power (CW)	660 nm / 145µW
FDA (CDRH) Part 1040.10	Class 1 Laser Product
IEC 60825-1	Class 1 Laser Product
The Certification and Identification Label is attached to the Laser Enclosure directly	
This product is not intended for use as an explosion-proof product.	
This product uses DC power. The product may explode or burn if any AC voltage is applied.	

Recommendation:

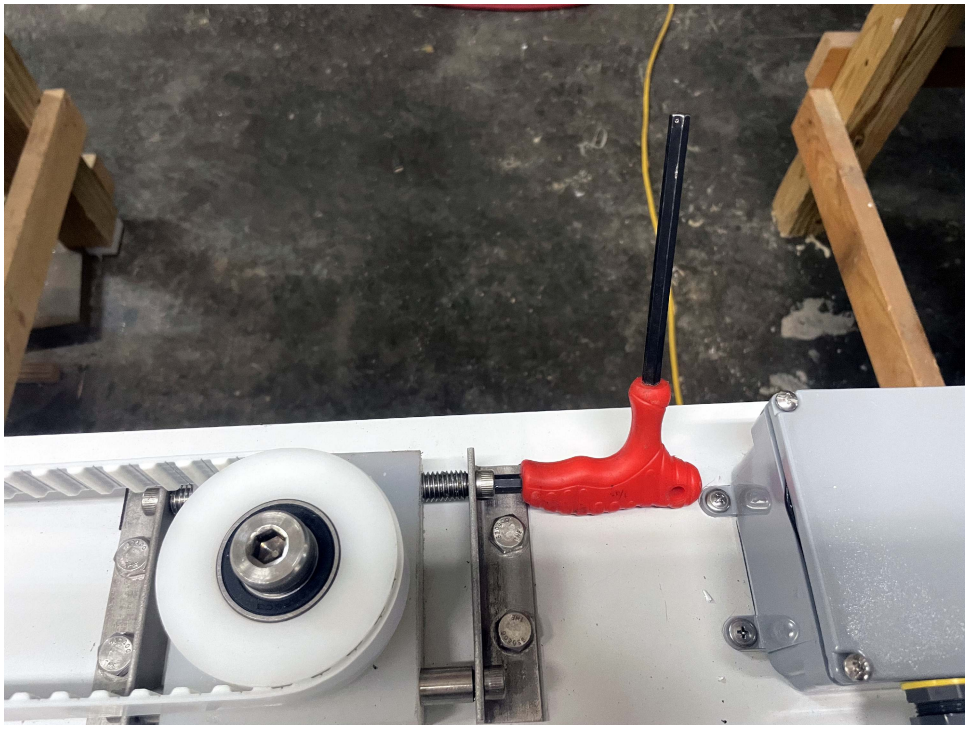
All adjustments should be made when the surrounding area of the door has reached it's desired Operating Temperature. This means that the cooler/freezer Temperature should be at the normal operating temperature on both sides of the door. This will prevent drifting of the door.

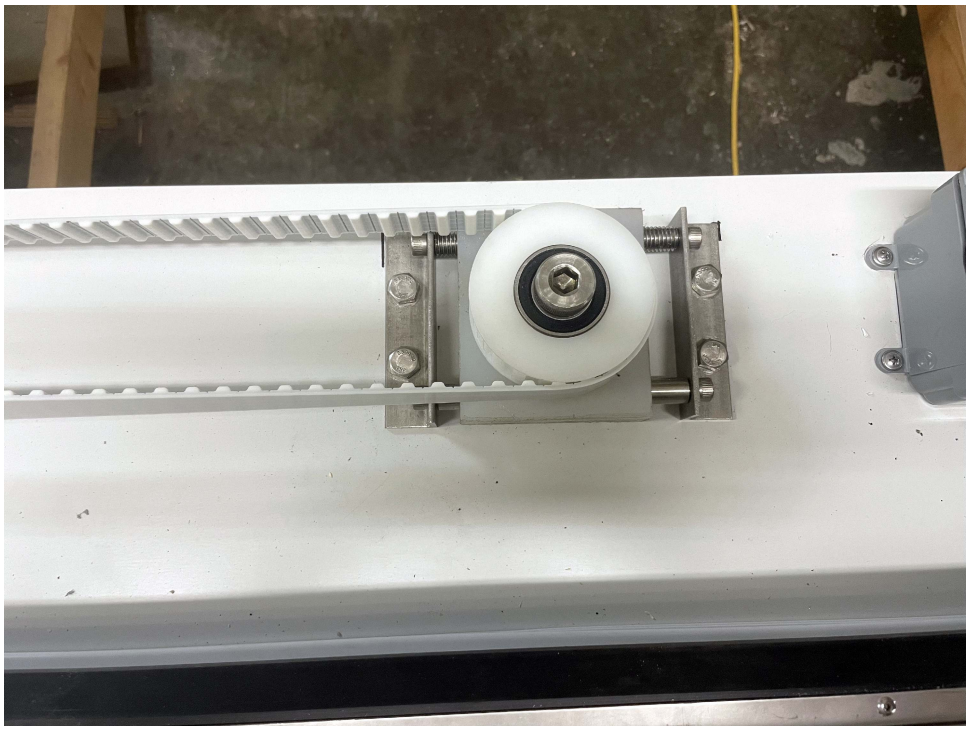
Note: The adjustment will drift with temperature change.

As an example:	
Door was set at 65° F and opens and closes to the desired End Points	
Ambient Temperature Increases	Travel of door will increase by about 1" for every 40° F positive Temperature Change
Ambient Temperature Decreases	Travel of door will decrease by about 1" for every 40° F negative Temperature Change

Check and tighten the belt tension after installing the door and operating the door for a few days!
Turn Hexhead on threaded rod ONLY!
Belt tension should be checked periodically and adjusted if necessary!

BELT SHOULD BE TIGHT!

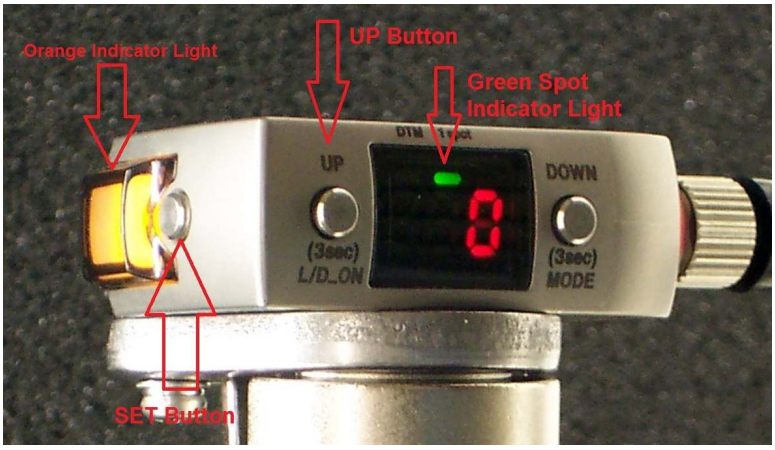




Laser Sensor Details

Functions of Buttons and Indicators

Button: DOWN / MODE	to change and set parameters
Button: UP / L ON or D ON	to change and set parameters
Button: CALIBRATION (Set Button)	to change and set parameters
Indicator: 1 SPOT	ON: Target detected OK OFF: No Target or multiple reflections (bad Laser signal)
Indicator: DATUM	ON: DATUM Calibration with Foreground suppression completed OFF: DATUM was not calibrated or turned off
Indicator: INDICATOR LIGHT	ON: Target Detected - Output is “ON” FLASH: Laser Sensor is set to 1 Shot Mode and target was detected Output is “ON” for app. 300 to 500 msec OFF: No Target - Output is “OFF”
Display	Will display a positive or negative number to indicate the difference of distance between the DATUM CALIBRATED VALUE (O) and the actual sensing of the target. For example: 1 = Target is closer to the Laser Sensor by “1" Unit - 5 = Target is farther from the Laser Sensor by “- 5" Units” The units are not defined by a particular unit of measurement i.e. inches or millimeter etc. The detection range is set at the factory to +/- 20 UNITS which equates to app +/- 5/8" of range to allow a margin for door alignment and small variations in the track alignment during door travel. If the +/- 20 Units are exceeded (is greater) then the Laser Sensor will not sense the End Limit Tabs.



Location of the different Buttons and Light Indicators on the Laser Sensor

Installation and Adjusting of the Laser Sensor's on the Header

Open Position Sensor

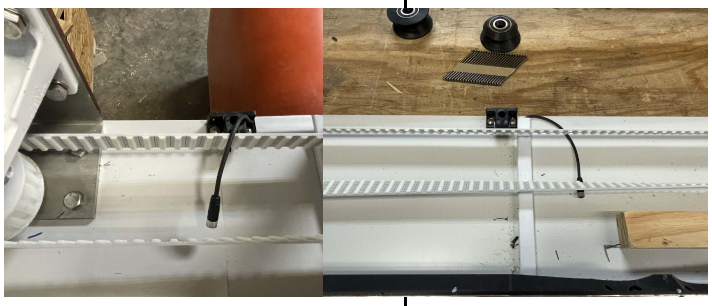
Note: The Open Position requires more breaking distance for the door to come to a complete stop!

Make sure your belt tension is correct before proceeding! (See Page 17)

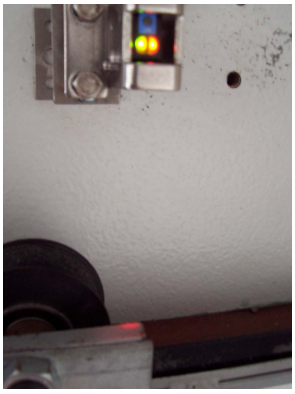
1. Insert the Sensor into the Base Unit

Open Limit Sensor	Close Limit Sensor
	

2. Attach Sensor to the cable which is stored for transport in the small wire duct.



3. Apply 3 Phase Power ONLY! to the System so the 7 Segment LED of the sensor comes on
4. Move the door so the light beam meets the end of the Trolley Angle. (See detail pictures on next Page)

	
If the light beam hits the trolley angle like this	adjust the sensor by loosening the small set screw on the Bracket and aligning the beam by rotating the sensor until the beam hits the trolley angle like in this picture.

Open Position Sensor

9. Move the door out of the way of the light beam
10. Verify correct operation of the sensor by moving the door several times in and out of the light beam. Every time the door is detected by the Sensor the Orange Light should come on and has to go Off when door is not detected.
11. Verify with a Voltmeter that the **Terminal #7** is at +24VDC when the Orange Light comes on and is below 1 VDC when the Orange Light is Off for Open Position

Close Position Sensor

The Close Position Sensor is essentially installed in the same way as the Open Sensor. However, the distance is about 3" which the sensor has to be moved into the door travel. Check **Terminal #8** for +24VDC when the door is detected for the closing Input.

Final Adjustment, fine tuning.

After finishing the preceding steps and having installed the Sensors, operate the door.

1. Pull the Pull Cord. Door should Open
2. Check the offset between your desired position and the actual position

This door is not fully open. The desired Open Position is that the Safety Edge is flush with the Door Seal. The door opening is short by about 1" in this example.

3. Measure the distance on the door of how much the door has over/under traveled
4. Adjust the Sensor now as follows:

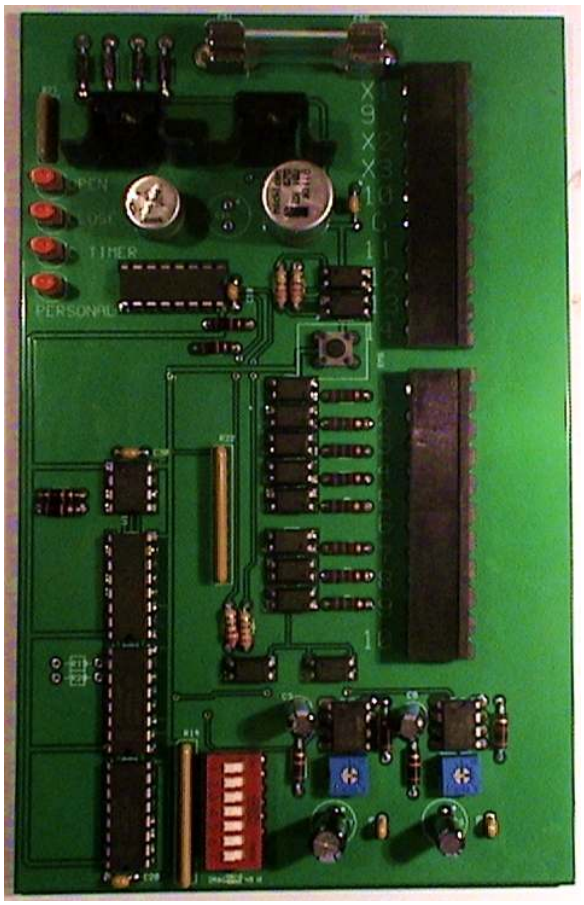
   Door does not open far enough:
   Move Sensor in door open direction by the measured inches.

   Door opens to far:
   Move Sensor in the opposite door open direction by the measured inches.

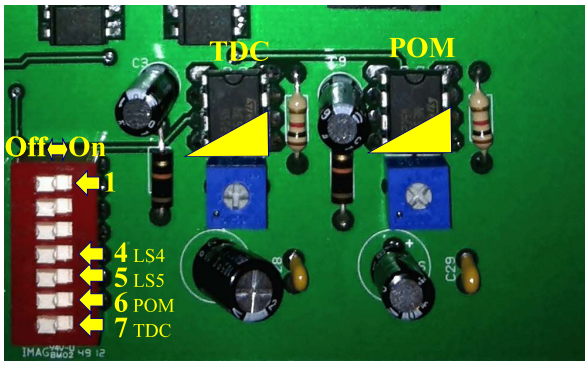
5. Repeat the same steps above for the Close Position
6. Tighten all screws with Allen Key to prevent Sensors positions from going out off Alignment. Check Sensors for correct alignment and re-tighten Sensors periodically.

Your Door is now ready for operation.

Maintenance:
The Sensor's do not need to be re calibrated unless the drive parameters have been changed or the door has been hit, damaged or the Sensor Swivel Mount has come loose from Vibration. Check Swivel Mount(s) on a regular basis and re-tighten!
We also recommend that you check your belt tension on a regular basis and all Bolts associated with Shroud, Belt Pick up(s) and Trolley Wheels.


OPEN
CLOSE
TIMER
PERSONAL

Functions of the DIP-Switches



Time Delay Close (TDC) Switch NO 7

DIP Switch Number 7 will turn the Time Delay Close Timer ON.
The Door will now stay in the "Fully Open Position" until the Timer times out and the LED "C Timer" goes out. The Door will then close automatically.

To turn the TDC Timer Function ON move DIP Switch Number 7 to the ON (right) Position

Personal Open (POM) Switch NO 6

DIP Switch Number 6 will turn the Personal Timer ON.
The Personal Open feature works with an additional Push Button Switch which is usually incorporated in the Door itself. By Pushing the Personal Open Push Button the POM Timer activates the Variable Frequency Drive for the set time to open the Door partially. The LED's "Personal" and "Open" will stay on until the POM Timer times out.

To turn the POM Timer Function ON move DIP Switch Number 6 to the ON (right) Position

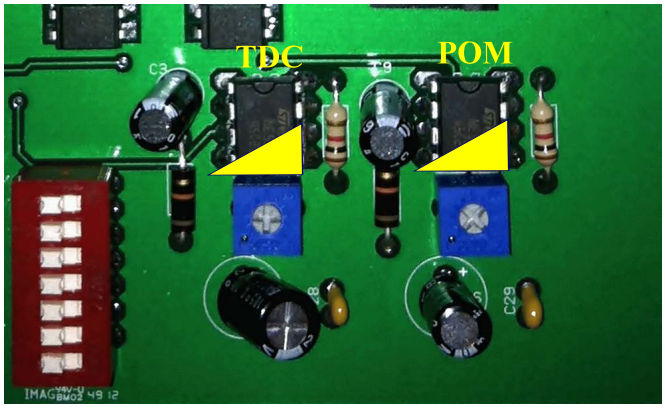
Loop Open / Safety Switch NO 4 + NO 5

The DIP Switch Number 4 and 5 will turn the Loop Input Terminal Number 3 on the Lower Header ON. Depending on the combination below, the INPUT is either OFF or will be a Safety or Open and Safety Input.
In the Safety Input Mode the Loop Input will only reverse a Closing Door, the same way as activating the Safety Edge.
In the Safety and Open Mode the Loop Input will be opening the Door the same as if the Pull Cord Open would be activated and in the Door Closing Cycle will then work as a Door travel direction reversing device the same way as the safety edge.

Function	***Dip Switch No 4***	***Dip Switch No 5***
Loop Input OFF	**Off**	**Off**
Loop Input Open + Safety	**Off**	**On**
Loop Input Safety	**On**	**On**
Loop Input OFF	**On**	**Off**

Note: ***The DIP Switches 1 to 3 have currently no functionality. They can be either left in the ON or OFF Position, but we recommend leaving them in the OFF Position!***

Adjusting the Closing Delay Timer and the Partial Opening Timer



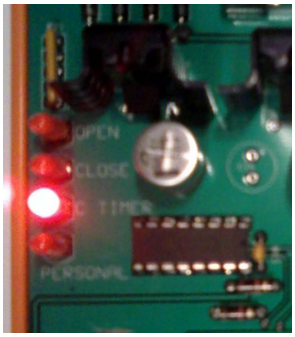
Both timers can be increased by inserting a small Phillips Screw Driver and turning them in Clock Wise CW direction. Turning the Potentiometer in Counter Clock Wise Direction will decrease the time.

TDC timing: 0.1 Sec to 20 Sec
POM timing: 0.1 Sec to 10 Sec

TDC Timer:

WARNING:
DO NOT ENABLE TDC TIMER UNLESS BEA FALCON XL RADAR DETECTORS ARE INSTALLED ON BOTH SIDES OF DOOR AND ARE SETUP CORRECTLY AND ARE FULLY FUNCTIONAL OTHERWISE DOOR WILL CLOSE WITHOUT WARNING AFTER TDC TIMER HAS TIMED OUT!

The TDC Timer is a count down timer which will trigger after a preselected time has elapsed.
The TDC Timer will automate and delay the Door Close Cycle.
The Pull Cord does not have to be pulled in order to close the Door with the TDC Timer enabaled.
Pulling the Pull Cord while the Timer is running, indicated by “C TIMER” LED on, will reset the TDC timer and the timer count down will start again. The door can therefor be kept open indefinitely if the Pull Cord is either defective or is being constantly pulled before the timer times out and the door enters the Closing Cycle.

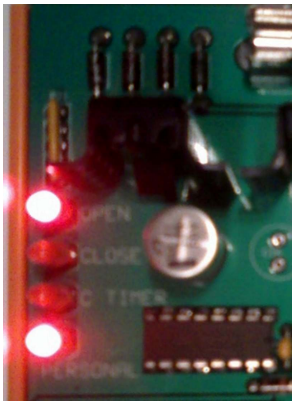


C TIMER LED, indicating that the Closing Timer is currently running

POM Timer:

WARNING:
POM TIMER WILL AUTOMATICALLY ENABLE TDC TIMER WHENEVER THE POM PUSH BUTTON IS USED!
SEE WARNING INSTRUCTIONS ON PREVIOUS PAGE FOR TDC TIMER FUNCTION!

The POM Timer is a count down timer and activates the VFD Door Open Input until a preselected time has elapsed.
The POM Timer should be set to less then the time it takes to fully open the Door.
Example:
If it takes 4 seconds to open the door fully and the POM Timer is set to 2 seconds then the door will be opened app. only half the distance (50% Door Travel) off it's full travel.
If the Timer is set to High, then the door will fully open before the timer times out.
If this happens simply reduce the timer to a lower value.

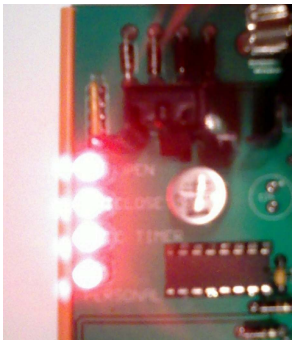


The LED's "Personal" and "Open" will stay on until the POM Timer times out.

First Startup of the Door Operator

! Please check and verify all wiring and all components of the system to be free of error and shorts etc. before restoring Power to the Door Operator!

The M-1000 Board will blink all LED's 5 times in about 1 sec intervals to indicate that the Micro Controller has completed a self check and the Unit is operational.



All 4 LED's are blinking during Power On Sequence

1. Operate the Pull Cord Open and observe the Open of the Door.
2. Adjust the Open Limit Tab for correct Open Limit
3. Adjust the Close Limit Tab for Correct Close Limit
4. Adjust Closing Timer if enabled to for desired time delay
5. Adjust Partial Opening timer for desired Partial Door Opening Distance
6. Check your Loop / Radar / Motion Detector if this option is enabled (DIP Switches 4+5). Make necessary adjustments's to that particular unit for desired operation

Door is now fully operational!

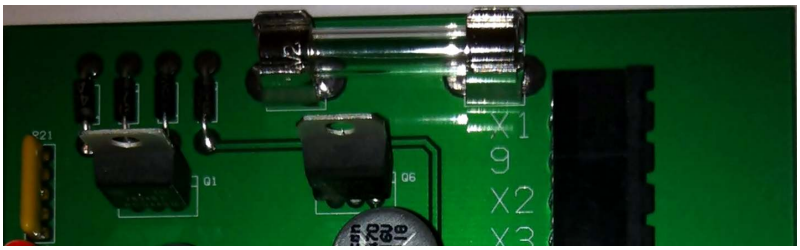
Trouble Shooting Guide:

Problem: LED's do not blink during Startup.

Check that you have 24 VDC on Terminals X1 and 9 on the Upper Terminal Block Header.
Note: The Polarity is not important as the M-1000 Board can be operated on 24VDC or 24 VAC

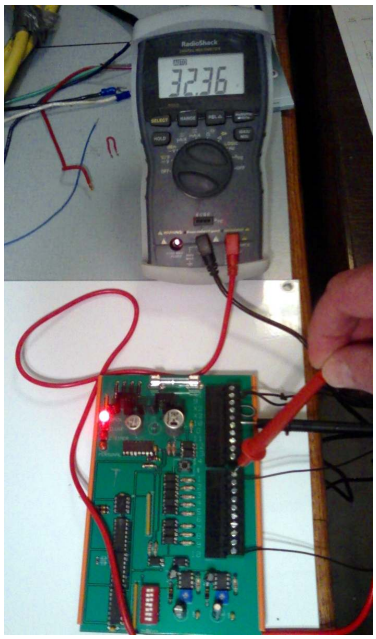
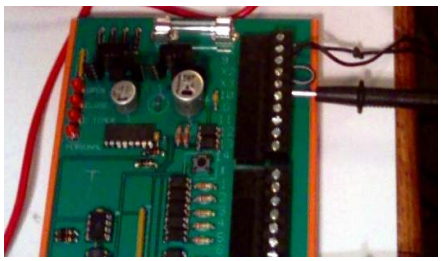
If you measure a Voltage of 24 VDC then check Fuse F1

- replace with 750mA 250V Fast acting 3AG Fuse Only!
- check for short circuit in your +24VDC Control Circuit!
  The most common source for a blown Fuse F1 is a short in the wiring of the +24 VDC Control Voltage against Ground.

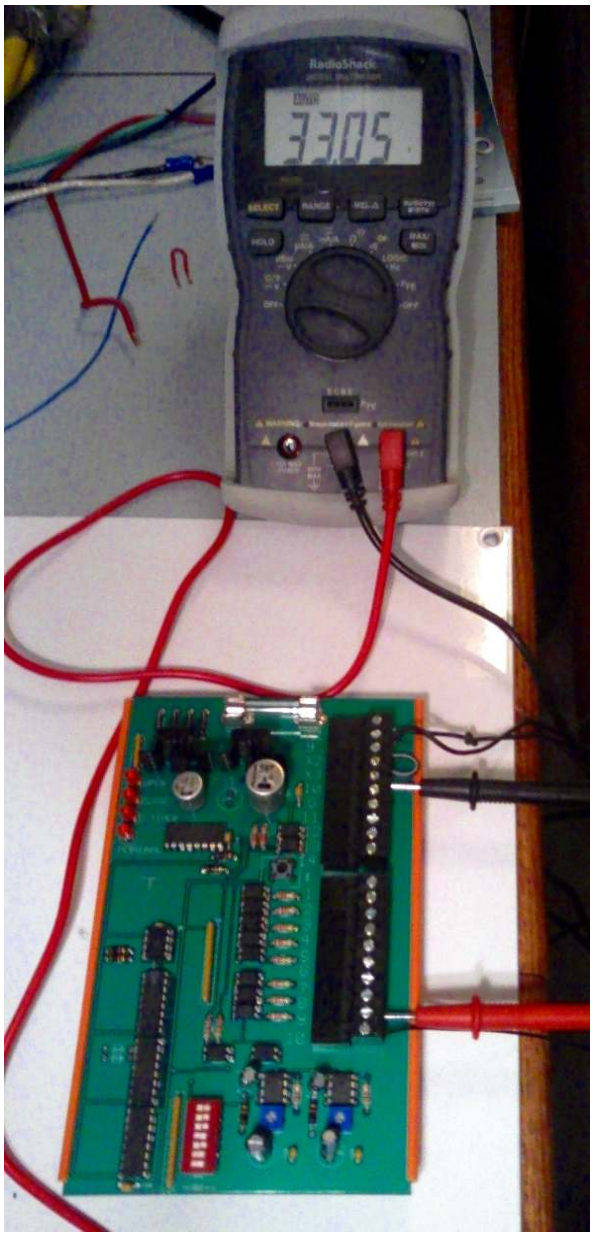


Fuse F1 750mA / 250VP Fast Acting 3AG - Replace only with same value!

If the error is not a short Circuit in the +24 VDC Control Circuit then the M-1000 Board is defective and needs to be replaced.

Measuring DC Voltages on the M-1000 Board	
	To measure any DC Voltage with your VOM or DMM, simply connect your 0V (Black / Minus) Lead to Terminal 10 on the Upper Terminal Block Header. Tighten the screw of Terminal 10 lightly so you do not have to hold the 0V Lead. Note: The measurement in the picture was taken with a 24 VAC Power supply. The Board has a built in Bridge Rectifier which will provide ca. 34 VDC.
	

Verify +24 VDC on Terminals 9 and 10 on the Lower Terminal Block Header



If you do not measure +24 VDC at Terminal 9 or 10 check that you have +24 VDC on Terminal X2 and X3 on the Upper Terminal Block Header
Also check if the VFD is turned on.
If you measure +24 VDC on X3 but you do not measure +24 VDC on 9 or 10 then the M-1000 Board is defective and needs to be replaced.

Note: The measurement in the picture was taken with a 24 VAC Power supply. The Board has a built in Bridge Rectifier which will provide ca. 34 VDC.

Problem: Pull Cord Open does not open Door!

Check for +24 VDC on Terminal 1 on the Lower Terminal Block Header. If you do not measure +24 VDC while the Pullcord is Pulled - check your wiring and your pull cord switch.

Problem: Partial Open does not open Door!

First check your DIP Switch Number 6 is set to ON (right)
Check for +24 VDC on Terminal 2 on the Lower Terminal Block Header.
If you do not measure +24 VDC while the Partial Open Pushbutton is Pushed
- check your wiring and your Partial Open Pushbutton switch.

Problem: Loop Open does not open Door!

First check your DIP Switch Number 4 and 5 are set to 4 OFF (left) and 5 ON (right)
Check for +24 VDC on Terminal 3 on the Lower Terminal Block Header.
If you do not measure +24 VDC while the Loop is Activated
- check your wiring and your Loop Detector

Problem: Loop does not reverse (Open) Door in Closing Cycle

First check your DIP Switch Number 4 and 5 are set to 4 OFF (left) and 5 ON (right)
or
check your DIP Switch Number 4 and 5 are set to 4 ON (right) and 5 ON (right)
Check for +24 VDC on Terminal 3 on the Lower Terminal Block Header.
If you do not measure +24 VDC while the Loop is Activated
- check your wiring and your Loop Detector

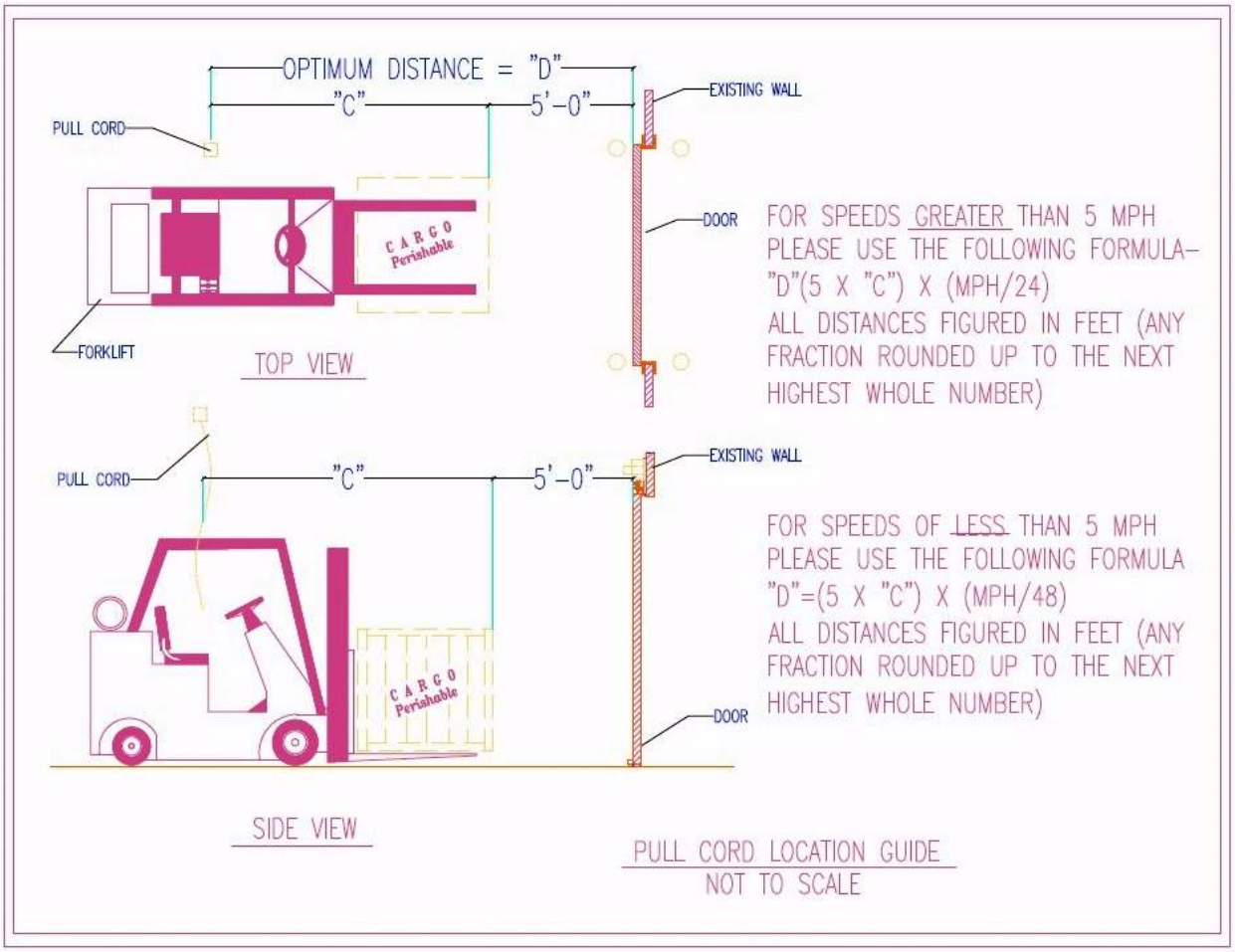
Problem: Door does not stop at Open Limit

First Check for +24 VDC on Terminal 7 on the Lower Terminal Block Header.
You should measure +24 VDC when the Tab actuates the Open Limit Laser Sensor.
If you do not measure +24 VDC on Terminal 7 then
FIRST
Check your wiring and then Adjust your Open Limit Tab

Problem: Door does not stop at Close Limit

First Check for +24 VDC on Terminal 8 on the Lower Terminal Block Header.
You should measure +24 VDC when the Tab actuates the Close Limit Laser Sensor.
If you do not measure +24 VDC on Terminal 8 then
FIRST
Check your wiring and then Adjust your Close Limit Tab!

Appendix A:


OPTIMUM DISTANCE = "D"
"C"
5'-0"
EXISTING WALL
PULL CORD
DOOR
CARGO
Perishable
FORKLIFT
TOP VIEW
FOR SPEEDS GREATER THAN 5 MPH
PLEASE USE THE FOLLOWING FORMULA-
"D"(5 X "C") X (MPH/24)
ALL DISTANCES FIGURED IN FEET (ANY
FRACTION ROUNDED UP TO THE NEXT
HIGHEST WHOLE NUMBER)
PULL CORD
"C"
5'-0"
EXISTING WALL
CARGO
Perishable
DOOR
FOR SPEEDS OF LESS THAN 5 MPH
PLEASE USE THE FOLLOWING FORMULA
"D"=(5 X "C") X (MPH/48)
ALL DISTANCES FIGURED IN FEET (ANY
FRACTION ROUNDED UP TO THE NEXT
HIGHEST WHOLE NUMBER)
SIDE VIEW
PULL CORD LOCATION GUIDE
NOT TO SCALE