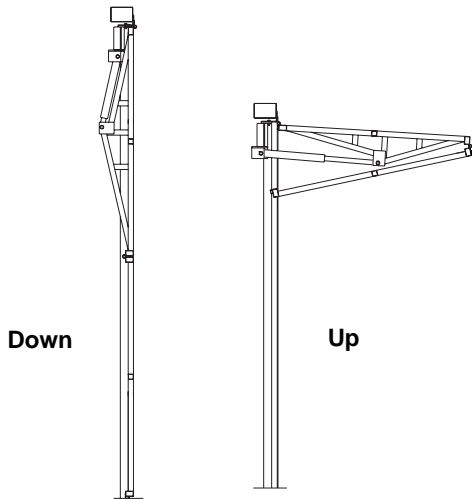


# BI-Fold HYDRAU-LIFT SPECIFICATIONS

## BF2 Vertical Folding Bi-Fold Door



### PRODUCT OVERVIEW:

**Standard Features:** The Hydrau-Lift door comes standard with a welded steel frame that is primed in rust resistant red oxide paint ready for field finishing, a patented SST hydraulic lift system and controls, factory applied gasketing for superior weather tight perimeter seals, all NEMA electric controls and a door mounting frame.

Hufcor's Hydrau-Lift™ steel bi-fold door may be clad with just about any material. The door is designed and prepped to accept the materials.

An optional custom aluminum storefront system is available that can be factory applied and precision fitted for field glazing. Includes pre-cut stops and crowns that can be anodized or Kynar paint finished to match most any glass storefront façade.

**How to Obtain:** Hufcor Hydrau-Lift doors are sold, installed, and serviced by factory-trained authorized distributors in the United States and by Licensees and Distributors outside the U.S.A.

**Delivery:** Hydrau-Lift doors are built for your specific clear opening size. Lead times vary due to seasonal fluctuations (average 6 - 8 weeks from receipt of final dimensions and approved shop drawings and payment.) Check with your local distributor for the current schedule.

### Standard Sizes: (rough opening size) \*

**Maximum Opening:**

Heights to 16' [4876] \*  
Widths to 18' [5486]

**Minimum Opening:** 8' x 8' [2438 x 2438]

\*Maximum door sizes are determined by calculations of width, height and weight of cladding. Contact your Hufcor Distributor for assistance for doors exceeding these dimensions.

**Overall Opening Maximum Weight::**

Hydrau-Lift door + cladding: 8600 lbs. [3900 kg] (Use of optional cable lifts can increase overall maximum weight. Contact Hufcor for limitations.)

### "Standard" Product Features and Benefits:

Look for these features when comparing similar products.

- Feature:** Door folds vertically up and out  
**Benefit:** Minimizes the amount of headroom needed inside the building. Also does not interfere with interior designs, overhead lighting or fire safety systems.
- Feature:** When retracted, the door forms an awning.  
**Benefit:** Provides some protection from the weather and sun.
- Feature:** Frame is durable steel tube.  
**Benefit:** Strong, durable framing that is narrower in profile than other bi-fold door systems, providing a more aesthetic, clean finished door system.
- Feature:** No floor track required  
**Benefit:** Nothing to impair movement in and out of the building. An optional ramped threshold could also add weather resistance without impairing movement.
- Feature:** Extensive cladding options.  
**Benefit:** Cladding options may match or coordinate with the building.
- Feature:** Patented, hydraulic SST lift system  
**Benefit:** The SST hydraulic lift eliminates the need for drive shafts and motor mounts located in the room. The hydraulic cylinders are located on the upper half of the door and built into the outer edge of the door frame, creating an unobstructed door opening.  
**Benefit:** Elimination of cables or lifting straps and kickouts that are a maintenance nuisance and obstructs the door.  
**Benefit:** The SST hydraulic system acts as a locking mechanism, providing more than 1000 lbs of force on the door in the closed position, securing the door in the opening.
- Feature:** Built-in release valve  
**Benefit:** The SST hydraulic release valve allows the Hydrau-Lift door to be lowered safely in the event of a power failure.
- Feature:** Variable speed drive system and limit switches  
**Benefit:** Hydrau-Lift bi-fold doors run smooth, minimizing wear on the motor and hydraulic cylinders.
- Feature:** Higher speed operation  
**Benefit:** The doors operate up to 20' per minute - often more than twice as fast as cable or strap lifted doors.
- Feature:** Custom door frame with pre-welded hinges that integrates with surrounding rough opening support  
**Benefit:** The frame provides some adjustability to square up field conditions, speeds installation, offers a consistent running surface for the bottom steel roller. Provides added overhead door support making the door less taxing on the building structure. (Consult your structural engineer.)
- Feature:** Optional stainless steel tubing  
**Benefit:** Can be used in corrosive environments including coastal regions and swimming pool enclosures.
- Feature:** Factory-applied exterior storefront cladding  
**Benefit:** Complete architectural turnkey door system with tested thermal barriers without the need to coordinate multiple trades to get a finished product.



## **PART 1 - GENERAL**

### 1.01 DESCRIPTION

#### A. General

1. Furnish and install hydraulic bi-fold door system complete from one manufacturer. Provide all labor, materials, tools, equipment, and services for bi-fold door in accordance with provisions of contract documents.

### 1.02 RELATED WORK BY OTHERS

- A. Preparation of opening including door channel will be by General Contractor. Any deviation of site conditions contrary to approved shop drawings must be called to the attention of the architect.
- B. All header, blocking, support structures, jambs, and track channel, as required.
- C. Paint or otherwise finishing all trim and other materials adjoining door.

### 1.03 SUBMITTALS

- A. Complete shop drawings are to be provided prior to fabrication indicating construction and installation details. Shop drawings must be submitted within 60 days after receipt of signed contract.

### 1.04 QUALITY ASSURANCE

- A. Preparation of the opening shall conform to the criteria set forth by UBC, 2000 International Building Code & 1999 Standard Building Code (ASCE 7-98)
- B. Wind Loads: Provide certified tested bifold door system, including, but not limited to, anchorage, capable of withstanding wind load pressures of a minimum of 15 psf as tested per ASTM E-331 overall and have achieved a minimum of 45 psf for positive pressure testing per ASTM E-331. The test must be performed on a complete system including the door, frame and external cladding.
- C. Air Infiltration: Not more than 0.30 cfm static air pressure differential, when tested in accordance with ASTM E-283 at a minimum of 1.57 psf.
- D. Water Leakage: There shall be no uncontrolled water entry when water is uniformly sprayed on the external face of the door system per ASTM E-331.

### 1.05 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Proper storage of door before installation and continued protection during and after installation will be the responsibility of the General Contractor.

### 1.06 WARRANTY

- A. Frame, hydraulic drive mechanisms and controls shall be guaranteed for one year against defects in material and workmanship from date of shipment to the job site.
  1. Optional Aluminum Storefront Cladding: shall be guaranteed for one year against defects in material and workmanship from date of shipment to the job site.
  2. Cladding by others is not included in this warranty.

## **PART 2 - PRODUCTS**

### 2.01 ACCEPTABLE MANUFACTURERS

- A. Upon compliance with all of the criteria specified in this section, Manufacturers wishing to bid products similar to the product specified must submit to the architect 10 days prior to bidding complete data in support of compliance and a list of three past installations of products similar to those listed. The submitting manufacturer guarantees the proposed substituted product complies with the product specified and as detailed on the drawings.

### 2.02 MATERIALS

- A. Product to be the Hydrau-Lift, steel bi-fold door as furnished by Hufcor Inc.
  1. Construct door sections with structural steel tube (of ASTM-A500 grade minimum) frames to comply with applied wind code. Optional: Stainless steel tube frame for highly corrosive environments.
  2. Door frames shall be structural steel tubing and be designed to the same loading requirements for live, dead and wind loads as the surrounding construction with a maximum vertical member of 6-foot centers.
  3. Door frame shall not exceed 5 1/2" [139] thickness.
  4. Door frames shall be factory-welded at all joints and connections, with smooth welds not to exceed 1/4" [6] thickness.
  5. Door frame shall be primed with rust-resistant red oxide to provide

corrosion resistance and be prepared for field finishing if required.

6. Door frames shall be furnished with factory-applied, mechanically fastened horizontal neoprene seals. Adhesive fastened seals are unacceptable.
- B. Bi-fold doors shall be operated by hydraulic lift arms that are mechanically fastened to the door frame.
    1. The lift arms to be located on the top half of the door only. Optional: lower side mounted lift cylinders available for ultra-heavy doors (exceeding 4400 lbs. total door weight).
    2. Lift cables or straps, horizontal top and bottom drive shafts are unacceptable.
    3. No pulleys are allowed, thereby reducing maintenance.
    4. Cable or strap "kick outs" are not allowed.
    5. Door speed shall be no less than 18' [5486] per minute.
    6. Doors shall be locked closed by means of the hydraulic cylinders providing a minimum of 1000 lbs of closing force and not by manual locks, catches or door latches.
- C. Power Operator - All electrical controls meet National Electrical Code Section 513. Standard voltage is 220V single phase.
    1. Hydraulic power unit, 220 v, single phase, "up-down" push button or spring-loaded master keyed stations for separate mounting.
    2. Power unit to power (2) hydraulic cylinders that open and close the door.
    3. Each door operator shall have thermal overload protection for the motor.
    4. The operator will be wired for a constant hold operation.
    5. Motor to be pre-wired and factory tested and provided with supply cables for final hookup (by others).
- D. Finishes
    1. Entire door frame shall be cleaned and primed, painted with rust-resistant red oxide primer:
      - a. Optional finishes (by others)
        - (1) Custom painted
        - (2) Powder coated
- E. Available Accessories/Options
    1. Optional photo eyes and sensing edge that stops the downward movement of the bi-fold door.
    2. 3'0" x 6'8" [914 x 1829] pass door (only available in doors with 16' [4876] rough opening heights or larger).
    3. Remote control
    4. Custom designed and fitted aluminum storefront system. The cladding system must contain a minimum 1/8" EDPM thermal barrier between the pressure plates and covers and an additional thermal membrane between the system base plates and steel frame.
      - a. 1" [25] Insulated glass stops
      - b. 1/4" [6] thick single lite glass stops

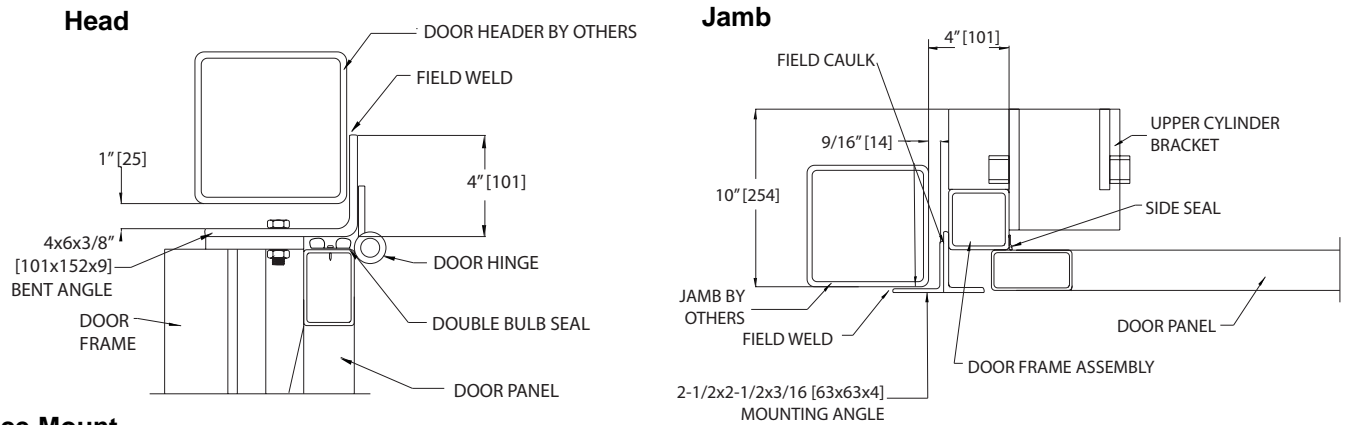
### 2.03 OPERATION

- A. Door shall be extended/retracted in the opening using a push button or spring loaded master keyed switch, wall mounted using hydraulic lift arms.

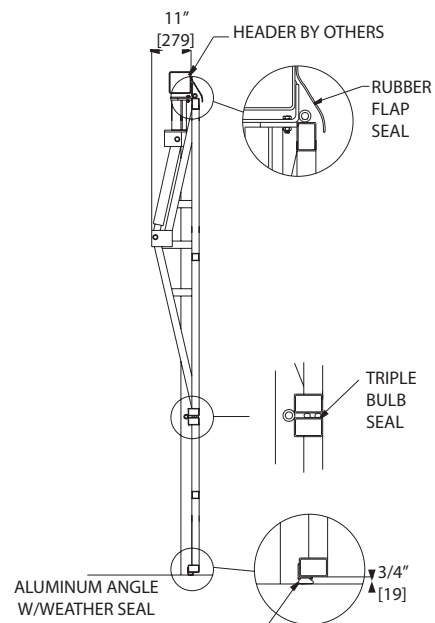
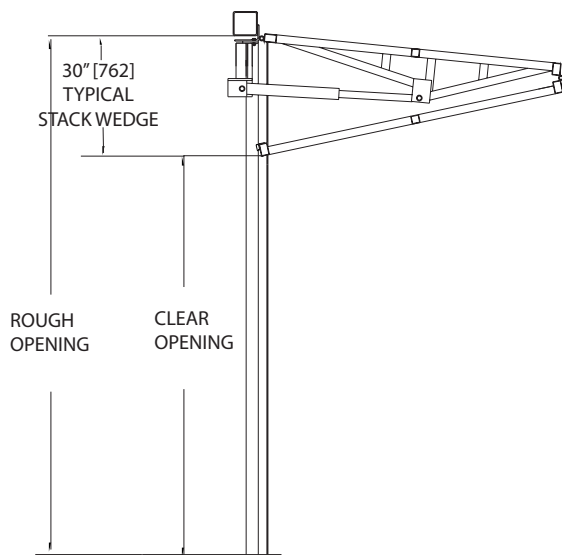
## **PART 3 - EXECUTION**

- A. Installation. The installation of the door system shall be by an authorized factory-trained installer and be in strict accordance with the approved shop drawings and manufacturer's standard printed specifications, instructions, and recommendations.
- B. Cleaning
    1. All surfaces shall be wiped clean and free of handprints, grease, and soil.
    2. Cartoning and other installation debris shall be removed to on-site waste collection area, provided by others.
- C. Training
    1. Installer shall demonstrate proper operation and maintenance procedures to owner's representative.
    2. Operating keys and owners manuals shall be provided to owner's representative.

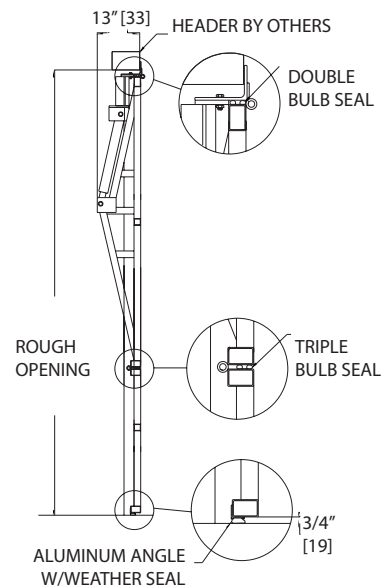
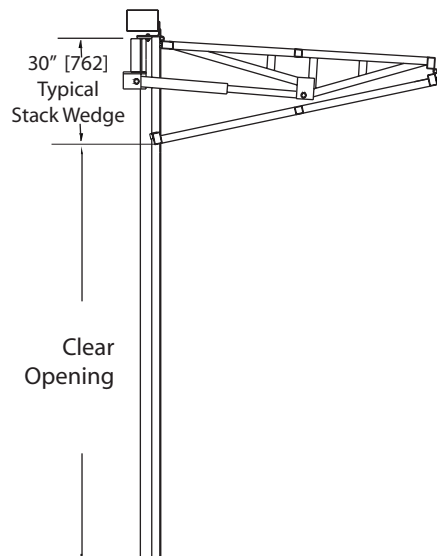
## STANDARD ATTACHMENT DETAILS



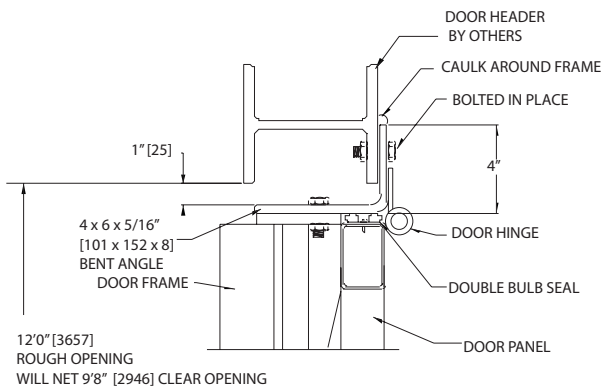
## Face Mount



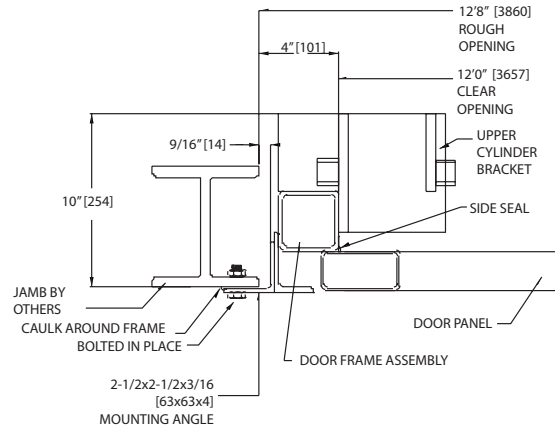
## Flush Mount



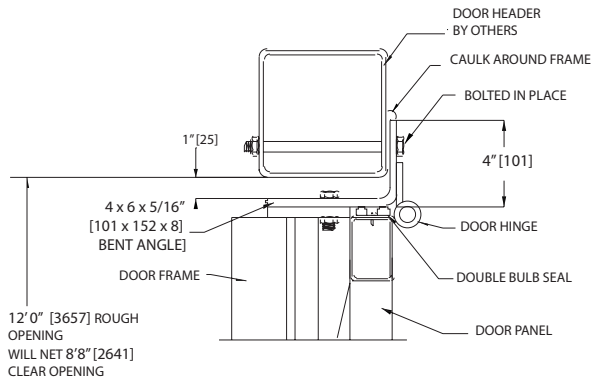
## Optional Attachment Details



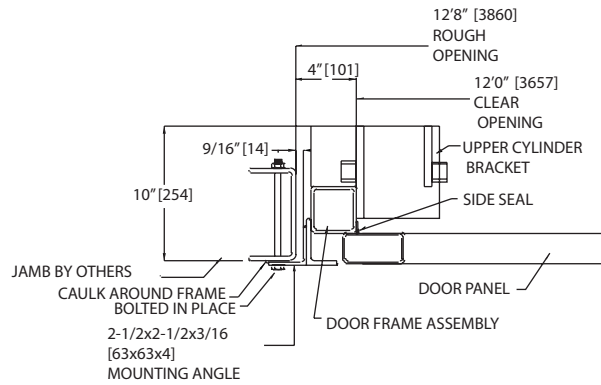
**Head Detail-Steel I-Beam**



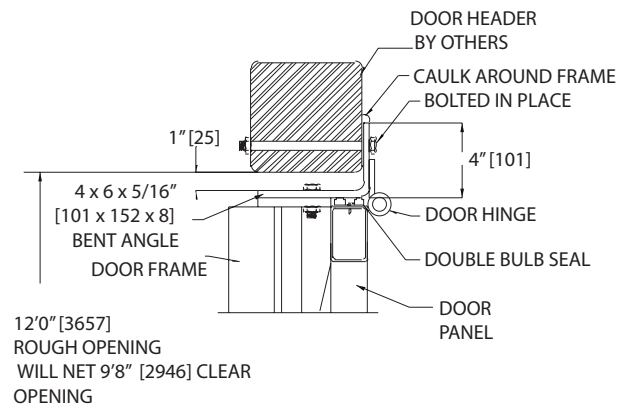
**Jamb Detail-Steel I-Beam**



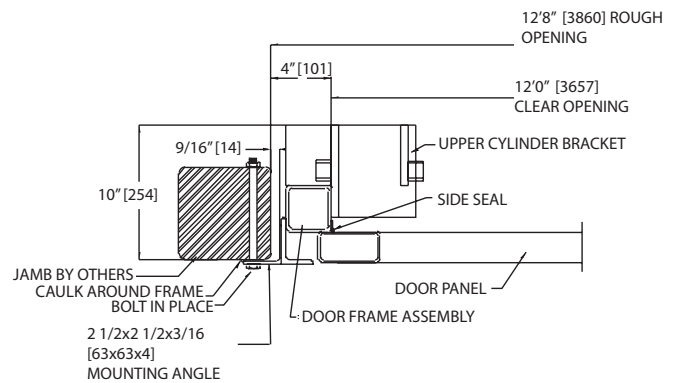
**Head Detail-Steel Channel**



**Jamb Detail-Steel Channel**

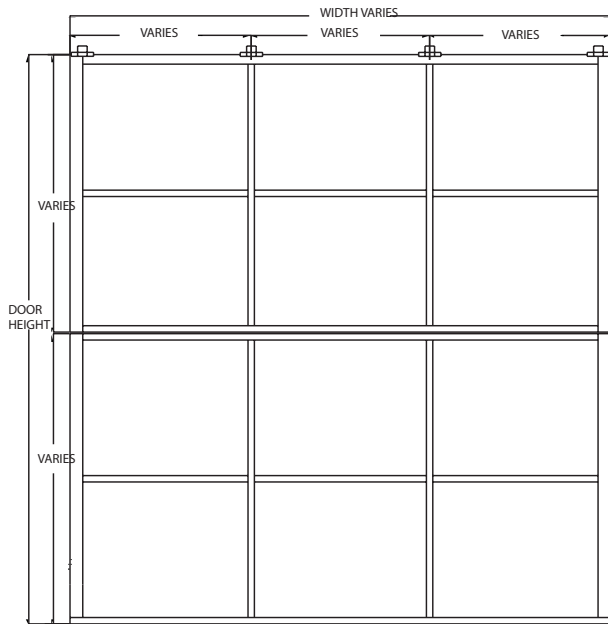


**Head Detail-Wood**



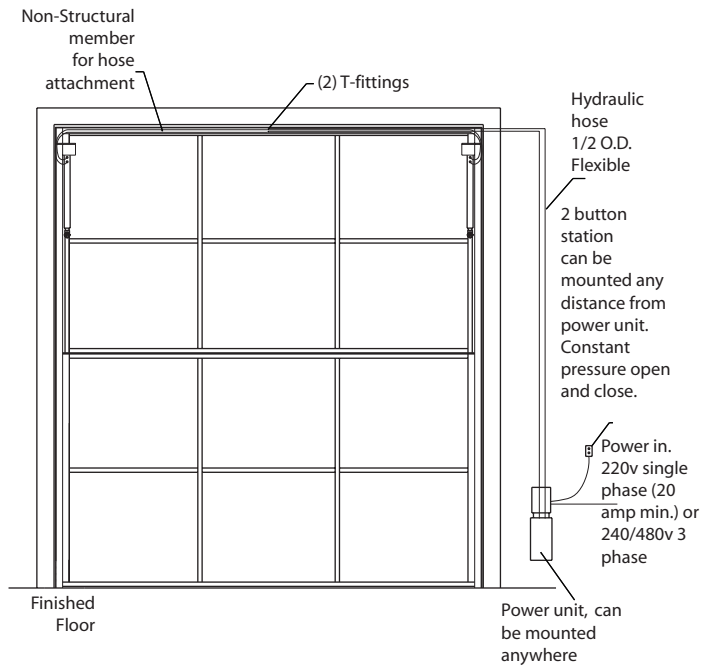
**Jamb Detail-Wood**

Typical Outside/In View



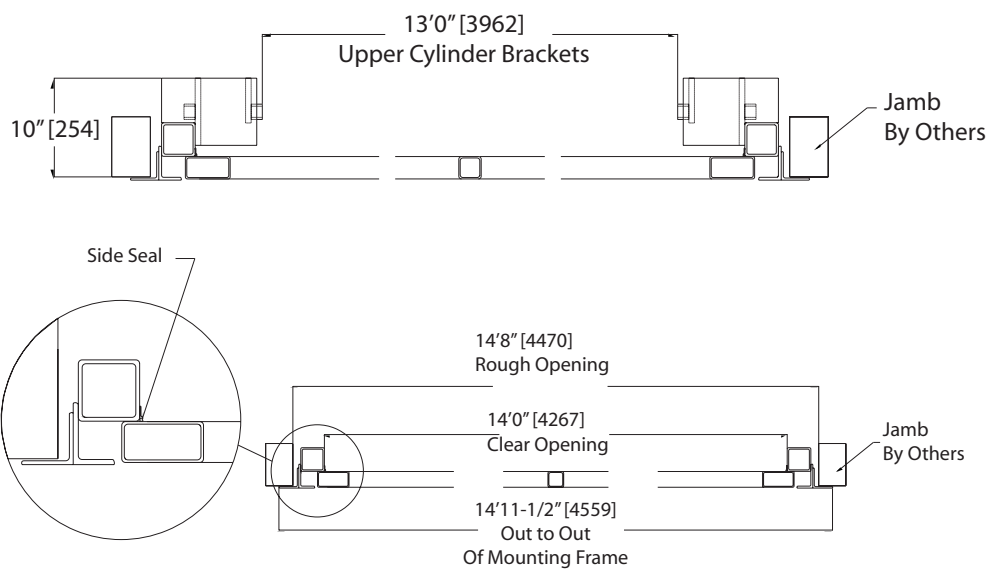
ELEVATION

Typical Inside/Out View

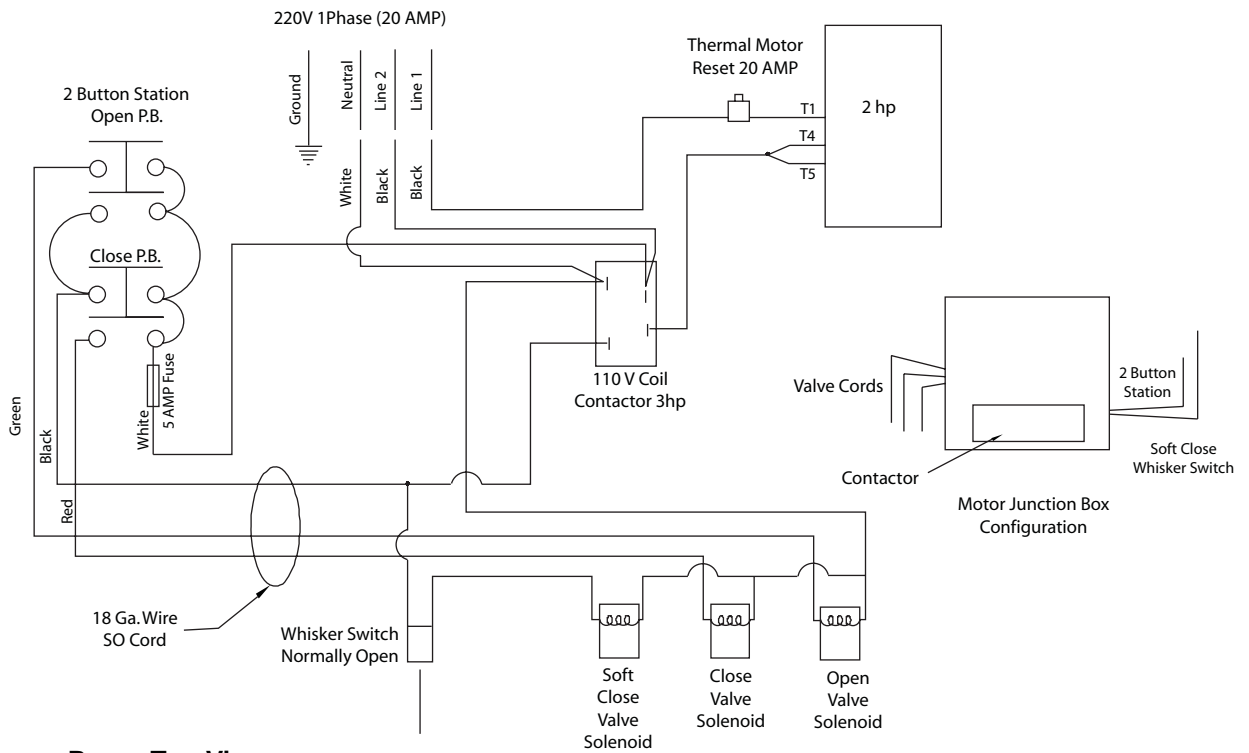


### TYPICAL HORIZONTAL SECTIONS - (Not to Scale)

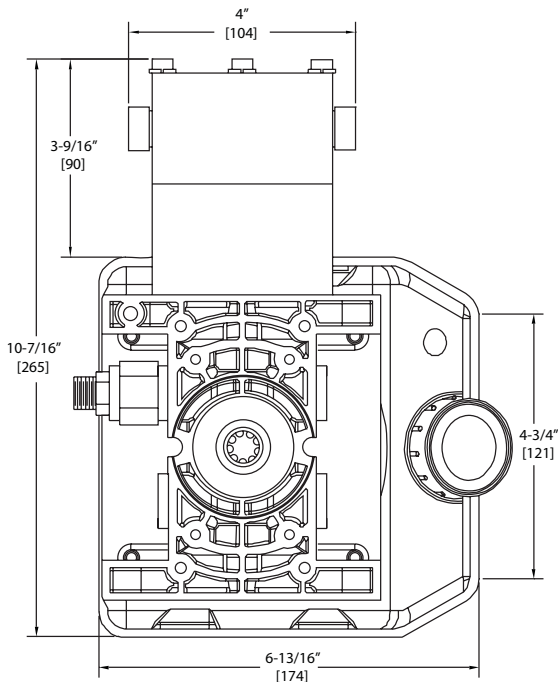
**Shown for 14'x12' [4267 x 3657] Opening**



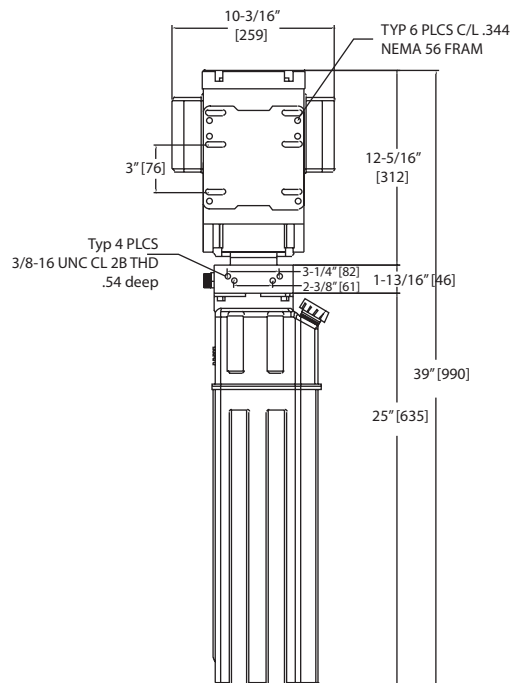
## Wiring Diagram



**Pump-Top View**



**Pump-Elevation**



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