



## HYDRA-EZE DOORS

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### **1. Door Structure**

All door design drawings will be in AutoCAD format. All drawings will be subject to customer review and approval prior to production of the door system. All systems will come with a pre-hung frame which will transmit 100% of the dead weight and operational load to the structure and foundation. Door frame shall be fabricated with ASTM A500 Grade B welded square and rectangular steel tubing 11 Gauge to 3/8" wall thickness with minimum yield strength of 46,000 psi. All exterior corners are mitered at 45 degrees. All interior and exterior joints are welded on all sides for strength and to prevent water or moisture from entering the frame. Miscellaneous structural members shall conform to ASTM A500 and ASTM A-36 with minimum yield strength of 36,000 psi. Exterior and interior to be left flush for customer provided sheeting. The pre-hung frame will come with mounting locations for the hydraulic power unit, hydraulic cylinders, and hydraulic lines.

Framing members shall be square and true to dimension in all directions and shall not be out of line horizontally or vertically more than 1/8 inch in 20 feet. Door sections shall be fabricated in a manner so as to prevent bowing, racking, or warping during fabrication in order to hold the sections to specified tolerances. Welds which could affect the fit or function of the door shall be ground smooth.

In accordance with DOT regulations and standard shipping practices, **HYDRA-EZE** door systems will be one piece when possible. If the system dimensions will not permit a one piece design, a fold over design will be utilized. The fold over design implements a sleeved bolt together system with hinges opposing the bolts to ease field assembly. Simply unfold the system, place provided bolts through the sleeved holes in the center beam, and tighten. Multiple section systems will only be utilized when door dimensions exceed DOT parameters even with a fold over design. Specifications for field assembly and welding will be provided with each approved design. As required, integral trusses shall be mounted to the exterior of the horizontal framing members.

### **2. Hydraulic Power Operator and Controls**

Doors shall be provided with hydraulic power operators to open and close the door. The operators will come filled, purged, and ready for bolt in installation. The hydraulic unit shall be equipped with load holding valves to hold the door in any position of door travel. Electrical controls shall conform to National Electrical code Section 513. Control enclosures shall conform to NEMA 4. . Each control station shall be a two button type with buttons marked "Open" and "Close". The "Open" and "Close" buttons shall be of the constant pressure type, also known as a "dead man switch". When the door is in motion and pressure is released from the control button, the door shall stop instantly and remain in the stopped position. From the stopped position, the door shall be operable in either direction by the "Open" or "Close" control button. The wall mounted control station can be located on either end of the door system. All control stations utilize a keyed lock-out to aid in the prevention of unauthorized personnel operating the system.

Hydraulic motors shall be heavy duty 2 HP to 5 HP or larger TEFC type and mounted at the center above the door for the purpose of load balancing. Standard voltage is 230V single phase with 115V single phase, 208V/230V/460V three phase voltages optional. Attached hydraulic pumps will operate at a minimum of 1000 PSI to a maximum of 2000 PSI as required for the system. This will also act as a margin of safety, ensuring the pumps will not exceed the rated operating pressures of all other hydraulic components.

### **3. Hydraulic Cylinders**

All **HYDRA-EZE door** systems are equipped with (2) industrial double-acting hydraulic cylinders. The hydraulic cylinders are rated at a minimum of 3000 PSI capacity to ensure safety, aid in preventing system failure, and provide a long service life. The hydraulic cylinders will be rebuild-able so that maintenance costs over an extended period of time will be minimal. Hydraulic cylinders will have a minimum of a 2" bore and 1 3/8" rod and will be equipped with a clevis mount on both ends.

### **4. Hydraulic Valves and Lines**

Hydraulic lines will be a minimum of 1/4" I.D. and a maximum of 3/8" I.D. flexible braided line. All hydraulic lines will be equipped with SAE fittings and will be rated at a minimum of 3000 PSI. Hydraulic valves will have a minimum flow rating of 5 GPM and pressure rating of 3,000 PSI. **HYDRA-EZE** door systems will come equipped with 50 / 50 mechanical flow dividers to aid in load balancing the systems and an in-line flow regulator to adjust the opening and closing speed. The directional valve will be a minimum of 3,000 PSI rated and actuated by (2) 24-120VAC coils. All

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systems are equipped with a return line filter in addition to the in tank filter. The return line filter will be rated at 1,000 PSI and 20 GPM, it will also be equipped with a replaceable element for maintenance purposes.

### **5. Limit Switches**

**HYDRA-EZE** door systems equipped with optional features such as auto open/close will come equipped with pressure switches, plunger switches, and lever arm switches as needed. All limit switches will operate on 24VAC only.

### **6. Electrical Wiring**

Wiring on the door and in the control panel will be completed prior to delivery, and a color electrical schematic will be provided with the system. Wiring in the building from the control panel to the power unit, as well as the power supply to the control panel will be the responsibility of the installer. Materials required for the wiring of the building will be by others. The control system voltage will be 24-120VAC, primary voltage per customer specifications.

### **7. Hinges**

Heavy duty hinges are welded on the doors by WELL BILT INDUSTRIES. The number and location varies with door size and wind load requirements. Top hinges are installed approximately every 10'-0" apart, welded to the pre-hung frame and the door. Center hinges, spaced approximately every 5'-0" apart, are only installed on systems too tall to be shipped to the job site in one piece, therefore requiring the unit to be folded in half for shipping. Hinges are fabricated with 3/4 inch diameter pins and have been tested to withstand 15,000 lbs. tension loading. Top and center hinges are pre-lubed for life.

### **8. Floor Lock Pins**

Door shall be provided with 1 inch diameter floor lock pins (cane bolts), the number based on the door size and wind loading requirements. Floor lock pins are installed on the bottom door frame member and are intended to engage 1-3/4" diameter steel sleeved holes in the structures finished floor with a minimum of 3" of penetration into the finished floor. The number and placement of the pins is dependent upon the door size with a minimum of (3) cane bolts on any door system.

### **9. Protective Finish**

Standard finish on WELL BILT INDUSTRIES doors is a low VOC fab gray Primer. This provides short term protection of the metal surfaces until the door is installed and can be painted with a finish coat of paint. After installation finish paint is recommended as the primer does not seal the system and exposure to moisture can result in oxidization. Red oxide primer can be provided by request.

### **10. Weather Seals**

WELL BILT INDUSTRIES shall provide EPDM style 40 black rubber 12" top and 10" bottom weather seals to be installed by others when the door is being sheeted. EPDM is for outdoor and high temperature application and resists ozone, steam, water, oxygenated solvents plus animal and vegetable oils.

### **11. Compliance**

WELL BILT INDUSTRIES doors are constructed to comply with all codes and specifications provided at the time an order is initiated. Wind load compliance certification by a professional engineer licensed to practice in the state of Florida is available if required. WELL BILT INDUSTRIES is a Miami-Dade County Approved Hangar Door Manufacturer and has been issued a Certificate of Competency.

### **12. Warranty**

WELL BILT INDUSTRIES **HYDRA-EZE** door systems are warranted for one year from the date of purchase against defects in material and workmanship. Refer to WELL BILT INDUSTRIES for specific details.

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**13. Factory Testing**

WELL BILT INDUSTRIES *HYDRA-EZE* door systems are factory tested prior to delivery. Factory testing is video taped and includes component, installation, maintenance and general operation details. A copy of this video will be duplicated and forwarded to the customer.

**14. Owners Manual**

WELL BILT INDUSTRIES will provide each customer with an "Owner's Manual" which details the specifics pertaining to their custom door system.

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## **HYDRA-EZE DOOR OPTIONAL FEATURES**

### **Personnel Doors**

The standard personnel door supplied by WELL BILT INDUSTRIES is a 3078 size aluminum framed, hollow core door (30"x78"). Other sizes are available on special order. NOTE: Larger personnel doors should be specified with caution as higher doors may not fit within the door frame. An electrical interlock can be provided to prevent the **HYDRA-EZE** door from being operated unless the personnel door is securely closed.

WELL BILT INDUSTRIES also offers wind load rated personnel doors (36"x80"), as well as framed openings for personnel doors supplied by others (sized per customer specifications).

Passage locksets and wind chains are included. Locksets with dead bolts are available as well as master keyed locksets for multiple door installations.

### **Auto Lock System**

WELL BILT INDUSTRIES offers an optional Auto-Lock system that engages the doors floor lock pins as the door is closed and retracts the floor lock pins as the door is opened. The Auto-Lock system can be used safely with the manual (constant pressure) control button or with an automatic open control system. If used with an automatic close control system photoelectric eye and/or safety edge is recommended for safety reasons.

### **Photoelectric Eye**

WELL BILT INDUSTRIES offers a 24 volt photoelectric beam system for the detection of objects in the path of the door and stopping the door closing action.

### **Warning Bell**

WELL BILT INDUSTRIES offers a 24, 120, or 240 volt bell to ring when door is in operation.

### **Warning Horn**

WELL BILT INDUSTRIES offers a 120 or 240 volt horn to ring when door is in operation.

### **Safety Edge**

A safety device can be installed on the bottom edge of a **HYDRA-EZE** door to stop and reverse the closing action if an obstruction is encountered.

### **Auto Reverse**

This is a function that can be added to any system equipped with a safety edge which will open the door partially or fully if an obstruction is encountered.

### **Remote Control**

WELL BILT INDUSTRIES offers a two channel remote control system capable of opening or closing a **HYDRA-EZE** door system from up to 1500 feet away. Warning devices such as horns or lights plus safety edge or photoelectric eyes should be used with remote control systems.

### **Emergency Open**

WELL BILT INDUSTRIES offers an optional back up system to open the door during a power outage.

### **Wind Load Certification**

Where local codes or authorities require, drawings and calculations verifying wind load compliance signed and sealed by a professional engineer licensed to practice in the state of Florida are available. Wind load certifications for other states may be available. Please inquire with WELL BILT INDUSTRIES.

### **Finish Paint**

Custom industrial enamel finish paint is available.

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