

SECTION 02825

MODEL HYJG HYDRAULIC VERTICAL PIVOT GATE SYSTEM

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes: Provide vertical pivot gate system including gates and special Tilt-A-Way hydraulic operator, with accessories as required for complete operational installation. Tilt-A-Way vertical pivot gate systems are UL 325, and CSA C22.2#247 listed.
- B. Related Sections:
 - 1. Section 02820: Chain link fences and gates.
 - 2. Division 3: Concrete support slab.
 - 3. Division 16: Electrical connections.

1.02 SYSTEM DESCRIPTION

- A. Performance Requirements:
 - 2. Safety Devices: Provide manufacturer's standard safety devices including the following features.
 - a. Provide pressure relief valve to avoid crushing obstruction encountered in either direction of travel.
 - b. Provide shut off power device if balance system fails.
 - 2. Power Failure: Provide manual bypass system, which allows barriers to be opened and to be closed in the event of power failure.
 - 3. Operation: Design system to allow for a minimum of 2900 open and close operations per day.

[Note: Gate heights up to eight feet, use a standard operator model HYJG. Contact manufacture for gate heights above nine for gate length restrictions.]

- B. Gate Height: [_____] [As indicated on Drawings].

[Note: Gate widths from 25 feet wide or up to 50 feet total width for two vertical pivot gate operators are possible with aluminum barriers, up to 40 feet total width for steel barriers, with no center posts, overhead supports, tracks, or special framing required.]

- C. Gate Width: [_____] [_____ total, two gates] [As indicated on Drawings.]

1.03 SUBMITTALS

- A. Product Data: Furnish manufacturer's literature for gate and operator and each manufactured accessory required for Project.
 - 1. Wiring Diagrams: Furnish manufacturer's wiring diagrams for gate operator.
 - 2. Maintenance Data: Furnish manufacturer's operators and parts manual.

- B. Shop Drawings: Show location of vertical pivot gates system in relationship with adjacent fencing and paving, details of installation, hardware locations, and accessories.
 - 1. Templates: Provide drawings or templates for installation of anchor bolts in support slab.
- C. Certificates: Furnish manufacturer's certification indicating system provided complies with specified requirements.

1.04 QUALITY ASSURANCE

- A. Installer Qualifications: Firm approved by manufacturer or with minimum five years successful experience completing vertical pivot gate installation similar to that required.
- B. Pre-installation Conference: Conduct meeting at site prior to commencing work related to vertical pivot gate system installation.
 - 1. Require attendance of parties directly affecting vertical pivot gate installation.
 - 2. Review site conditions, procedures, and coordination required with related work.

1.05 PROJECT CONDITIONS

- A. Field Measurements: Verify dimensions and component layout by field measurements prior to beginning installation.

1.06 WARRANTY

- A. Provide manufacturer's standard limited warranty for system and system components against failure resulting from normal use based on manufacturer's literature.
 - 1. Failure shall be defined as any defect in manufacturing, which prevents the gate from operating as intended.
- B. Warranty Period: Three years.

PART 2 - PRODUCTS

2.01 MANUFACTURER

- A. Ideal Manufacturing, Inc., 2011 Harnish Blvd., Billings, MT 59101.
Telephone 800-523-3888 or 406-656-4360; Fax 406-656-4363.
Web address: www.tiltaway.com; E-mail: info@idealmfginc.com

2.02 MANUFACTURED UNIT

- A. Vertical Pivot Gate System: Ideal Mfg., Inc./TILT-A-WAY Models HYJG.

2.03 COMPONENTS

- A. Hydraulic Power Unit: 1 HP TEFC motor, 1800 RPM, 24 Volt DC Spencer Hydraulic power unit capable of delivering 4 GPM at 385 PSI, with external adjustment relief valve and 4-way solenoid operated 3-position manual override valve.
1. Hydraulic pump, motor, and reservoir will all be as one unit with fluid thermometer and fluid level sight gauge.
 2. The hydraulic system will be designed to keep the gate locked in the closed position, keeping any person from lifting the gate open when it is in the closed position.
 3. Pedestal Frame: Welded construction with removable outer skin of cross break corrosion resistant painted gray .063 aluminum plate panels.
 4. Inspection Door Hardware: Stainless steel continuous hinges and heavy-duty lockable pull down catches to hold inspection door shut.
 5. Power: 115 Volt AC 24 Volt DC battery backup [24 Volt DC motor and control board] [110 Volt AC for battery charger and optional accessories]. The two 12 Volt batteries supplied by the installer, or owner. The total gate system requires 20-amp service, with no more than 3% drop in voltage, while gate is in operation. (FOR WIRE SIZE: CONSULT LOCAL ELECTRICAL CODE.)
- B. Hydraulic System: 3000-psi hydraulic cylinder.
1. Cylinder: 2-1/2" by 38" stroke hydraulic cylinder with 1-3/8" diameter rod, limit switches and cushioned slow down on each end of travel, and adjustable stops with lock down in any position.
 2. Hydraulic Fluid: Manufacturer's standard, factory checked, filled, and tested.
- C. Balance System: System designed to allow barrier to be hand raised and to be hand lowered with 12 to 15 pounds of pressure, consisting of manufacturer's standard cables, sheaves, sealed cam yoke roller bearings, and tension springs pulled in a straight line.
1. Safety Control Switch: Provide built-in safety control switch capable of stopping barrier in any position should balance system fail.
 2. Testing: Factory test and adjust balance system to ensure gate may be manually raised and lowered with specified pressure.
 3. Signage: Signage to be added to the gate barrier must be declared at the time of order so the manufacturer can add the signs on the barrier, to ensure Ideal Mfg. balances the operator correctly at the time of manufacturing.
- D. Electrical System: Oversized rain tight enclosure housing electrical components except limit switches, safety switches, and motor.
1. Wire: Oil and gasoline resistant.
 2. Overload Protection: Allen Bradley type circuit breaker to protect motor.
 3. Reversing Controller: Provide as required to operate motor and solenoid valves.
 4. Overrun Delay Timers: Integral to board capable of shutting down system in case motor runs longer than 30 seconds.
 5. Limit Switches: Adjustable snap action style limit switches capable of stopping barrier at each end of travel.

6. Logic Board: Programmable logic board with manufacturer's full range of available functions.
7. All gates are equipped with a dry contactor to accommodate all types of access equipment.

[Note: Coordinate selection of following options with manufacturer.]

2. Options:
 - a. Cold Weather Package: (required in areas where the temperature drops to less than -10° F).
 - b. Stanchion: (this is for the free end of the gate).
 - c. Radio Controls: Provide standard open-close-stop commercial transmitters/receivers systems.
 - d. Loop Detectors: Provide detector system (except loop) to allow free exit/safety, safety, or close gate operation; system to be factory wired inside electrical box and tested.
 - e. Reversing Edge: Provide manufacturers standard reversing edge system.
 - f. Synchronizing Box: Master slave system for paired gate system (required only when 2 gates operate in conjunction with each other).
 - g. Gate Status Lights: Provide LED light strips indicating gate status: such as green light indicates barrier is open; red light indicates barrier is in motion or is closed.
 - h. Locks: Magnetic lock secures gate in closed position.
 - i. Photo Eye: Used as a form of safety.
 - j. S.O.S.: Siren Operated Sensor (emergency access system)
 - k. Snow removal access doors.
 - l. Stainless steel fasteners.
 - m. Heater for Electrical Box: Provide heater, including full box insulation to protect system for conditions to -70° F.
 - n. Ice Scrapers: (for cable sheaves).

E. Barrier System (Gates): Design to resist twist and to resist sway.

1. Type: Manufacturer's standard aluminum barrier (up to 25 foot wide opening per gate leaf), nominal 3.125" by 2.875" diamond 6063-T5 alloy aluminum screen fabric (amplimesh) welded both sides completely, with sway bracing. Leading member of an aluminum barrier 4" schedule 40 round tube, sway braces- 1 ¼ x 1 ¼ x 1/8 square tube uprights- 2 x 2 x .188 square tube. Sway braces bolted to barrier. Barriers with sway braces are designed to withstand 100 MPH wind load, or optional 150 MHP sway bracing.
2. Type: Custom barrier as indicated on Drawings, with sway bracing.
3. Options: Provide stanchion to contain free end for severe crash applications; match barrier.

F. Accessories: Provide as required for complete operational installation.

1. Child Guards: Provide child and small animal guard on secured side of operator.

2.04 FINISHES

- A. Finish: Factory prime and painted with Sherwin Williams poly urethane to resist corrosion.
 - 1. Color: [As selected from manufacturer's standard colors.] [Custom color as indicated on Finish Schedule.]
 - 2. Manufacturers standard color is Sherwin Williams Gray.
 - 3. Specify color of gate if different from manufacturers standard color.
 - 4. If a color (other than standard gray) is ordered the operator panels could be made from 16 gauge plate steel.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verification of Conditions: Verify concrete support slab complies with requirements and verify anchors and conduits are properly installed
 - 1. Ensure alignment with adjacent construction, fencing, and paving, coordinate with adjacent construction.

3.02 INSTALLATION

- A. Comply with manufacturer's recommendations and installation instructions.
 - 1. Install vertical pivot gate system to provide rigid and secure installation as indicated, straight and true to lines and levels indicated, for free, effortless operation.
 - 2. Install components square and level, accurately fitted and free from distortion and free from defects.
- B. Advise Owner regarding programmable features and controls and preset controls according to Owner requirements.
 - 1. Instruct Owner personnel in proper operation, maintenance, and reprogramming of system.

3.03 PROTECTION

- A. Protect vertical pivot gate system from damage during remainder of construction operations; replace components damaged by subsequent construction operations.
- B. Touch-up scratched and damaged surfaces using same primer and finish system applied in shop.

END OF SECTION