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TECHNICAL SPECIFICATIONS for Model HRG 220 ST& HRG 222 ST (02827 HYS)
Swing Gate Operators with Smart Touch Controller

PART I – GENERAL

1.01. INCLUDED IN THIS SECTION
A. Pre-wired gate operator for swing gates, including all attachments and mounting brackets.
B. For further information, call the factory at 1-800-321-9947.

1.02. RELATED WORK SPECIFIED ELSEWHERE
A. Fencing: See section 02815.
B. Cast in place concrete: See section 03300.
C. Electrical service and connections: See division 16512.

1.03. SUBMITTALS
A. Shop drawings: Submit shop drawings under the provisions of Section 01300. Submit drawings showing connections to adjacent construction, range of travel, and all electrical and mechanical connections to the operator. All underground runs of electrical and hydraulic lines shall be indicated on drawings. Drawings shall also show the size and location of the concrete mounting pad.
B. Installation instructions: Submit two copies of manufacturer's installation instructions for this specific project.
C. Project list: Submit list of product installations comparable to the subject job. Include date of product installation, installer, and owner's name and location of the project.
D. Test reports:
   1) Submit affidavits from the manufacturer demonstrating that the gate mechanism has been tested to 200,000 cycles without breakdown.
   2) Each operator shall bear a label indication that the operator mechanism has been tested for full power and pressure of all hydraulics, full stress tests of all mechanical components and electrical tests of all overload devices.

1.04. QUALITY ASSURANCE
A. Manufacturer: A company specializing in the manufacture of security gate operators of the type specified, with a minimum of seven years experience and minimum of five years experience with gate operators of this type and design.
B. Installer: A minimum of three years experience installing similar equipment.

1.05. CODES AND REGULATORY REQUIREMENTS
A. Operators shall be built to UL325 standards and be listed by a NRTL testing laboratory. Complete all electrical work according to local codes and National Electrical code. All fieldwork shall be performed in a neat and professional manner, completed to journeyman standards.
B. Current safety standards require the use of multiple external sensors to be capable of reversing the gate in either direction upon sensing an obstruction. See also 2.02 E
C. Vehicle gates should never be used by pedestrians. Separate pedestrian gates must always be provided when foot traffic is present.
D. Current safety standards require gate operators to be designed and labeled for specific usage classes. Hy-Security Model HRG ST operators are compliant with all classes of usage, Class I-IV.

1.06. PRODUCT DELIVERY AND STORAGE
A. Comply with 01600.
B. Store products upright in the original shipping containers, covered, ventilated and protected from all weather conditions.

1.07. WARRANTY
A. Provide a five year warranty against all defects in materials or workmanship. Defective materials shall be replaced with new materials furnished by the manufacturer, at no cost to the owner. (Labor and

other incidental costs are not covered under the factory warranty, but may be covered by a separate service agreement between installing company and the owner.)

PART II – PRODUCTS

2.01. GATE OPERATORS

A. Hy-Security Gate Operators Model HRG 220 ST (HRG 222 ST for pairs) with Smart Touch Controller, or other comparable operator, as approved by the architect. Substitute operators that are approved will be published in an addendum, not less than ten days prior to bid opening.

2.02. OPERATION

A. Operation shall be by means of a hydraulic cylinder acting upward in a steel post assembly to cause the post and the gate panel to rotate from zero to 90 degrees (Alt. option for 100 degrees) without the use of articulating arms, screw drives or mechanical devices. The closing action of the gate panel shall cause the free end of the gate to be mechanically locked in place without the use of externally operated electric or mechanical locks. The opening and closing cycle times will vary depending on gate size and weight, from 14 to 30 seconds. The opening action of the gate panel shall allow the gate to rise approximately twelve inches and clear adjacent curbs or obstructions. The post assembly shall be fully enclosed and not offer any openings for foreign material to enter. Actuator assembly shall be supported on non-lubricated synthetic bearing surfaces. Bearings providing rotation and lift to the actuator assembly shall be permanently lubricated cam followers. (Note: degree of swing is built in at the factory and cannot be changed in the field.)

B. Schedule of Capacities:
   1) Models HRG 220-STA and HRG 222-STA, gates to 13' wide and weight to 1000 pounds, = 14 seconds to open/close.
   2) Models HRG 220-STB and HRG 222-STB, gates to 16' wide and/or weight over 1000 pounds, 19 seconds to open/close.
   3) Models HRG 220-STC and HRG 222-STC, gates to 16' wide and weight over 1600 pounds, 30 seconds to open/close.

C. Standard mechanical components shall include as a minimum:
   1) Indexing arm to allow precise closing adjustment.
   2) 2-1/4" industrial quality sealed cam followers.
   3) Drop bolt locking device.
   4) Power package, including 42” x 30” x 12” NEMA 3R galvanized electric enclosure for electric controls, hydraulic pump and valves.
   5) Finish: actuator post is _____ _____ metallic flame spray equivalent to hot dip galvanizing.
   6) Limit switches to limit travel in each direction.
   7) Hydraulic hand pump for emergency operation.
   8) Hoses shall be 1/4", rated to 2750 working p.s.i.
   9) Hose fittings at valve block and at actuator post assembly, shall be quick disconnect type.
   10) High performance hydraulic fluid with a viscosity index greater than 375.

D. Minimum standard electrical components: Industrial grade.
   1) Pump motor: 1 HP, (2 HP on HRG 222 models) 56C, TEFC, continuous duty with a minimum service factor or 1.15. Standard voltages available in single or three phase.
   2) All components shall have overload protection.
   3) Controls: Smart Touch Controller Board with 128K memory containing:
      a) inherent entrapment sensor;
      b) built in “warn before operate” system;
      c) built in timer to close;
      d) liquid crystal display for reporting of functions;
      e) 19 programmable output relay options;
      f) anti-tailgate mode;
      g) built-in power surge/lightening strike protection;
      h) capable, with optional software, of event logging EEPROM for trouble shooting diagnostics;
      i) RS232 port for connection to laptop or other computer peripheral and RS485 connection of Master/Slave systems.

4) Transformer: 75 VA, non-jumpered taps, for all common voltages.
5) Control unit: 24VDC.

E. Required external sensors: See 1.05B. Specify photo eyes or gate edges or a combination thereof to be installed such that the gate is capable of reversing in either direction upon sensing an obstruction.
F. Optional control devices: (choose one or more of the following: card reader, key switch, radio control, pushbuttons, vehicle detectors, and keypads).
G. Optional alert devices: rotating beacon or flashing lights.
H. Other options:
1) Heater with thermostat control for cold climates.
2) Operator is available in the following voltages: 115/208/320 single phase or 208/230/460 three phase. HRG 222 not available in 120 V single phase. 50 Hz is available-specify voltage.

2.03. FACTORY TESTING

A. Fully assemble and test, at the factory, each gate operator to assure smooth operation, sequencing and electrical connection integrity. Apply physical loads to the operator to simulate field conditions. Tests shall simulate physical and electrical loads equal to the fully rated capacity of the operator components.
B. Check all mechanical connections for tightness and alignment. Check all welds for completeness and continuity. Check welded corners and edges to assure they are square and straight.
C. Inspect zinc finish for completeness. Touch up any imperfections prior to shipment.
D. Check all hydraulic hoses and electrical wires to assure that chafing cannot occur during shipping or operation.

PART III – EXECUTION

3.01. SITE EXAMINATION

A. Locate concrete mounting pad in accordance with approved shop drawings.
B. Make sure that supporting posts or pilasters are adequate to support the gate and operator. Do not proceed with installation if supports are inadequate.

3.02. INSTALLATION

A. Install gate operator in accordance with the manufacturers printed instructions, current at the time of installation. Coordinate locations of operators with contract drawings; other trades and shop drawings.
B. Installer shall insure that the service to the operator is at least 20 AMPS. Operator wattage is 1500. (2500 watts for model HRG 222).

3.03. FIELD QUALITY CONTROL

A. Test gate operators through ten full cycles and adjust for operation without binding, scraping or uneven motion.
B. All anchor bolts shall be fully concealed in the finished installation.

3.04. CONTINUED SERVICE AND DOCUMENTATION

A. Train owner's personnel in the general maintenance of the gate operator and accessories and provide two copies of "Operations and Maintenance: manuals for the owners' use. Manuals will identify parts of the equipment for future procurement.

SPECIAL NOTE: The HRG operator post assembly provides rotational forces to the swing gate only, and is not intended to provide support against the "tip over" forces imposed by the swinging gate panel.

A backing post or structural pilaster is required to assure that the only forces being applied to the operator base are vertical.

NOTE: Hy-Security Gate Operators reserves the right to change these specifications at any time, without notice and without prejudice. Call 1-800-321-9947 if you are not sure that you have the latest edition.

NOTE: Operators manufactured by Hy-Security Gate Operators are intended for use in controlling vehicular traffic and are not intended to be used by pedestrians or to control pedestrian traffic**. Always install a separate pedestrian man gate.**