

HORTON AUTOMATICS - ARCHITECTURAL SPECIFICATIONS, 6/2005

HD-SWING™ SERIES 4900 HEAVY DUTY ELECTRIC SWING DOOR OPERATOR SURFACE APPLIED WITH FIRE EXIT HARDWARE

DIVISION 8 - DOORS AND WINDOWS SECTION 08460 - AUTOMATIC ENTRANCE DOORS

Specifier Note: Coordinate and edit articles and paragraphs below to suit project requirements. Add section numbers and titles per CSI "MasterFormat" and specifier's practice. Consult with manufacturer regarding performance requirements for units applicable to project, as well as, related equipment and accessories required.

PART I - GENERAL

1.01 SUMMARY

- A. WORK INCLUDED: Furnish complete automatic aluminum door system, as specified, that has been manufactured, fabricated and installed to maintain performance criteria stated by manufacturer without defects, damage or failure.
- B. RELATED WORK:
 - 1. Masonry: Division 4, applicable sections.
 - 2. Electrical: Division 16, applicable sections.
 - 3. Labeled doors and frames; Hardware: Division 8, applicable sections.
 - 4. Perimeter Sealants; Insulation: Division 7, applicable sections.
 - 5. Fire detection equipment: Division 10, applicable sections.

1.02 REFERENCES

- A. [AMERICAN ARCHITECTURAL MANUFACTURERS ASSOCIATION \(AAMA\) 101](#): Appendix Dissimilar Materials.
- B. [AMERICAN ASSOCIATION OF AUTOMATIC DOOR MANUFACTURERS \(AAADM\)](#).
- C. [AMERICAN NATIONAL STANDARDS INSTITUTE \(ANSI\) ANSI A156.10](#): For Power Operated Pedestrian Doors; Swing Doors section.
- D. [AMERICAN SOCIETY FOR TESTING AND MATERIALS \(ASTM\) B221](#): Aluminum-Alloy Extruded Bars, Rods, Shapes and Tubes.
- E. [NATIONAL FIRE PROTECTION ASSOCIATION \(NFPA\) 101](#): Code for Safety to Life from Fire in Buildings & Structures.
- F. [THE ALUMINUM ASSOCIATION \(AA\)](#) Aluminum Finishes Manual.
- G. [UNDERWRITERS LABORATORY, INC.\(USA & CANADA\) UL 325](#): Electrical Door, Drapery, Gate, Louver, and Window Operators and Systems.

1.03 SUBMITTALS

- A. PRODUCT DATA: Submit manufacturer's complete product and installation data.
- B. SHOP DRAWINGS: Submit drawings showing layout, profiles, product components including anchorage, accessories, finish and glazing details (where required).
- C. QUALITY ASSURANCE AND CLOSEOUT SUBMITTALS: Submit the following:
 - 1. Manufacturer's Operation and Maintenance Data.
 - 2. Warranty document as specified herein.

3. AAADM inspection compliance form completed and signed by certified AAADM inspector prior to doors being placed in operation as proof of compliance with ANSI A156.10.

1.04 QUALITY ASSURANCE

- A. **INSTALLERS QUALIFICATIONS:** Installer shall be factory trained, certified by AAADM, and experienced to perform work of this section.
- B. **MANUFACTURER'S QUALIFICATIONS:** Manufacturer to have minimum (5) five years successful experience in the fabrication of automatic doors of the type required for this project. Manufacturer capable of providing field service representation during installation, approving acceptable installer and approving application method.

1.05 WARRANTIES

- A. **MANUFACTURER'S WARRANTY:** Units to be warranted against defect in material and workmanship for a period of one year from the Date of Substantial Completion. Manufacturer's warranty is in addition to, and not a limitation of, other rights owner may have under Contract Documents.
- B. **DISTRIBUTOR'S WARRANTY:** One year warranty: Labor and transportation charges for defective parts replacement.

1.06 PROJECT CONDITIONS

FIELD MEASUREMENTS: Verify actual dimensions/openings by field measurements before fabrication and record on shop drawings. Coordinate with fabrication and construction schedule to avoid construction delays.

1.07 DELIVERY, STORAGE AND HANDLING

- A. **ORDERING AND DELIVERY:** Comply with factory's ordering instructions and lead time requirements. Delivery shall be in factory's original, unopened, undamaged containers with identification labels intact.
- B. **STORAGE AND PROTECTION:** Provide protection from exposure to harmful weather conditions and vandalism.

PART II - PRODUCTS

2.01 MANUFACTURER

HORTON AUTOMATICS, a division of Overhead Door Corporation, shall manufacture automatic swing door(s) of type(s) and size(s) specified on plans and door schedule.

2.02 EQUIPMENT

- A. **HD-SWING™ HEADER:** Shall be available in the following configurations:
 1. Side Access: Shall be extruded aluminum case 6" x 6" (152 mm x 152 mm)
 2. Bottom Access: Shall be extruded aluminum case 4 1/2" x 6" (114 mm x 152 mm). This configuration will allow for bottom of header to be flush with ceiling.
- B. **OPERATOR:** The Electric Operating Mechanism shall be Series 4000. Maximum current draw shall not exceed 3.15 amps. Operator shall be isolation mounted and concealed in an extruded aluminum case for smooth and quiet operation.
 1. Opening action shall be accomplished by a 1/8 HP D.C. permanent magnet motor working through reduction gears to the output shaft. Gear train bearings shall be sealed ball bearing types.
 2. Closing action shall be accomplished by a maximum-duty Quadracoil™ spring (four independent coil springs separated by teflon discs and enclosed in an

external spring box) with a lifetime warranty. Close speed control shall be supplied by dynamic braking of the motor and shall be fully adjustable. Operator to act as a manual closer when power is off or when the master control unit is removed. An On/Off/Hold Open switch shall be supplied.

3. Master Control: Shall incorporate the following features:
 - a. Adjustable time delay of 1 to 28 seconds.
 - b. Infinite adjustment to opening and open check speeds including adjusting the opening force without affecting the opening speed.
 - c. Immediate reversal of door motion without undue strain on the drive train. This will be accomplished by supplying stepped voltage to the motor. The door shall reverse when closing if an object stops the door.
 - d. Motor Protection Circuit: A locked door motor protection circuit will be supplied that will shut off current to the motor when the door is inadvertently locked or otherwise prevented from opening.
 - e. Emergency Breakout for Inswinging doors (overhead concealed): When door is in emergency breakout position, power shall be removed from the operator.

C. OPERATING SEQUENCE (in order of normal use):

1. The actuating switch signals the operator when to open. When the adjustable time delay expires, the door will mechanically close by spring force.
2. The detection of a fire trips the fire detection device. Provision must be made to remove power from the operator upon activation of the fire alarm causing the door to be mechanically closed by a spring.
3. The fire detection device also trips the latch release mechanism on the fire exit hardware causing the latch bolts to engage when the door is in the closed position. The fire exit hardware latches the door closed to contain the fire or smoke and prevent it from spreading to other areas of the building.
4. Exiting: The panic bar is depressed which releases the exit device. The springs on the door operator will reclose the door as soon as the door is released. The door will close and relatch upon reactivation of the fire detection system.
5. Reset to automatic mode as required.

D. MANUFACTURED DOOR UNITS: HD-SWING™ Type 4900: Surface Applied Operator with Connecting Arms: The operator header shall be mounted to the surface of the existing labeled door frame or wall. Connecting hardware shall be a double arm arrangement that pushes the existing labeled door open. UL approved "Fire Exit Hardware" shall be type GXHX as found in the UL Materials Directory. This equipment shall work in conjunction with fire/smoke detection system provided by others.

2.03 RELATED EQUIPMENT

A. BASIC SENSOR SYSTEM: Shall be 24 VAC, class II circuit Vista™ package and shall incorporate the following:

1. Activation sensor: Shall be one of the following:
 - a. Microwave unidirectional/bidirectional motion sensor shall activate the door (approach side).
 - b. Active infrared motion/presense sensor shall activate the door (approach side).
2. Swing Side safety sensor: Overhead-mounted active infrared sensor shall utilize diffused technology.
 - a. Sensor shall keep a closed door from opening or an open door from closing when safety zone (swing door area) is occupied.
 - b. When door is in open position the swing side safety sensor shall provide threshold protection covering the full width of door overlapping into activating zone.
3. Pulsed infrared Sentinel™ photo beam shall be mounted beyond the swing of the door for ANSI compliance.

- B. ENHANCED SENSOR SYSTEM: Shall be 24 VAC, class II circuit. Enhanced Vista™ system shall utilize same activation sensor and swing side safety sensor as basic Vista™ system but shall include additional door mounted presence sensors for each side of the swinging door panel. The door mounted presence sensors shall be an advanced presence sensor utilizing focused active infrared technology to provide safety zone protection for swing doors. It shall incorporate distance measurements and shall be insensitive to reflections from the door surface.
- C. GUIDE RAILS: Shall be of type selected and to be provided on swing side of door unless protected by adjacent wall.
- D. UL LABELED EQUIPMENT: Door, frame, hinges, automatic fire detectors or a central alarm control and "fire exit hardware" type GXHX as found in the UL Building Materials Directory.

2.04 RELATED WORK REQUIREMENTS

- A. ELECTRICAL: 120 VAC, 60 cycle, 1 phase, 15 amp. Non-North American voltages can be 240 VAC (operator must have 240 volt power supply)
- B. DOOR AND HARDWARE: Labeled door and frame assembly as per NFPA 101 Safety to Life Requirements and NFPA 80 Fire Door Requirements. All hardware used must be UL listed for retarding the spread of fire or smoke.

2.05 MATERIALS, FINISHES AND FABRICATION

- A. EXTRUDED ALUMINUM: ASTM B221, 6063-T5 alloy and temper, anodized: Structural Header Sections: Minimum 1/8" (3 mm) thickness.
- B. FINISHES (for all exposed aluminum surfaces): Shall be one of the following:
 - 1. 204-R1 Clear: Arch. Class II Clear Anodized Coating, AA-MI2C22A31.
 - 2. 313-R1 Dark Bronze: Arch. Class II Anodized Coating, AA-MI2C22A32.
 - 3. 312-R1 Light Bronze: Arch. Class II Anodic Coating, AA-MI2C22A32.
 - 4. 315-R1 Black: Arch. Class II Anodic Coating, AA-MI2C22A32.
 - 5. Special Paint Coating: Color as selected.
 - 6. Clad with stainless steel or muntz metal (brass alloy): #7 or #4 finish.
- C. OPERATOR CONSTRUCTION: Electromechanical.

PART III - EXECUTION

3.01 EXAMINATION

SITE VERIFICATION OF CONDITIONS: Installer must verify that base conditions previously installed under other sections are acceptable for product installation according to with manufacturer's instructions. Notify the Contractor in writing of conditions detrimental to the proper and timely completion of work. Do not start work until all negative conditions are corrected in a manner acceptable to the installer and manufacturer.

3.02 INSTALLATION

- A. GENERAL: Install door units plumb, level and true to line, without warp or rack of frames or sash with manufacturer's prescribed tolerances. Provide support and anchor in place.
- B. DISSIMILAR MATERIALS: Comply with AAMA 101, Appendix Dissimilar Materials by separating aluminum materials and other corrodible surfaces from sources of corrosion or electrolytic action contact points.

- C. WEATHER-TIGHT CONSTRUCTION: Install header and framing members in a bed of sealant or with joint filler or gaskets. Coordinate installation with wall flashings and other components of construction.
- D. ELECTRICAL: General or electrical contractor to install all wiring to operator on a separate circuit breaker routed into header.

3.03 CLEANING, ADJUSTMENT AND PROTECTION

- A. CLEANING: After installation, installer to take following steps:
 1. Remove temporary coverings and protection of adjacent work areas.
 2. Remove construction debris from construction site and legally dispose of debris.
 3. Repair or replace damaged installed products.
 4. Clean product surfaces and lubricate operating equipment for optimum condition and safety.
- B. ADJUSTMENT: AAADM certified technician shall inspect and adjust installation to assure compliance with ANSI A156.10.
- C. ADVISE CONTRACTOR: Of precautions required through the remainder of the construction period, to ensure that doors will be without damage or deterioration (other than normal weathering) at the time of acceptance.

END OF SECTION