

## HORTON AUTOMATICS - ARCHITECTURAL SPECIFICATIONS, 6/2005

### HD-SWING™ SERIES 4000 HEAVY DUTY ELECTRIC SWING DOOR OPERATOR

#### 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. Storefront; Glass; Hardware: Division 8, applicable sections.
  - 4. Perimeter Sealants; Insulation: Division 7, 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 \(ANSI\)](#):
  - 1. [ANSI Z97.1](#): Safety Glazing Materials Used in Buildings - Methods of Test.
  - 2. [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. MANUFACTURED DOOR UNITS:

1. HD-SWING™ Type 4100: Surface Applied Operator with Connecting Arms: The operator header shall be mounted to the surface of the existing door frame or wall. Connecting hardware shall be a double arm arrangement that can either push the door or pull the door open to suit the job condition. When the operator mounting is on the pull side and adjacent wall is within 4" (102 mm) of the door frame, specify a parallel arm.
2. HD-SWING™ Type 4500: Overhead Concealed Operator, Door and Frame: The operator header is mounted directly over the door and serves as the door frame header.
  - a. Connecting Arm Type 1 - Independent pivot: The operator output shaft shall connect to an arm that transmits power to the door via a slide block connected to the arm. The arm works in a track that is mounted in the top web of the door. The door pivot is independent of the operator (this configuration shall allow for removal of operator without removing the door panel).
  - b. Connecting Arm Type 2 - Direct Drive: The operator output shaft shall connect to a concealed arm in the top web of the door and serve as the door top pivot.
  - c. Swing Door Panel: Shall be aluminum, 1-3/4" (44 mm) deep, narrow stile construction. Lock and pivot rails shall have adjustable dual weather-stripping. Standard hardware shall include maximum security lock, push bar(s), pivots, vinyl finger guard(s), and 4" (105 mm) threshold. Standard glazing prep to be for 1/4" (6 mm) glass. Total weight limit per panel shall be 200 lbs. (90.7 kg). Door panel options shall include medium and wide stiles, horizontal muntin(s) of size and type indicated, 7" (179 mm) threshold and non-threshold application.
  - d. Jamb/Frame: Shall be 1-3/4" deep x 4" wide (44 mm x 102 mm). Frame options shall include 4 1/2" (114 mm) and 6" (152 mm) wide jambs, transom and sidelite(s) of size and type indicated.
3. HD-SWING™ Type 4800: Overhead Concealed Operator with Connecting Arm and Pivots (compatible with center-pivoted door and frame by others): The operator header is mounted directly over the door and serves as the door frame header.
  - a. Connecting Arm Type 1: Independent pivot: The operator output shaft shall connect to an arm that transmits power to the door via a slide block connected to the arm. The arm works in a track that is mounted in the top web of the door. The door pivot is independent of the operator (this configuration shall allow for removal of operator without removing the door panel).
  - b. Connecting Arm Type 2: Direct Drive: The operator output shaft shall connect to a concealed arm in the top web of the door and serve as the door top pivot.

### 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.

#### **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. GLASS AND GLAZING: Glazing Materials: Glass stops, glazing vinyl and setting blocks for field glazing as per Safety Glazing standard ANSI Z97.1.2. General contractor to coordinate acquisition of glass in thickness and type in accordance with manufacturer's recommendations for prescribed design.

#### **2.05 MATERIALS, FINISHES AND FABRICATION**

- A. EXTRUDED ALUMINUM: ASTM B221, 6063-T5 alloy and temper, anodized:
1. Structural Header Sections: Minimum 1/8" (3 mm) thickness.
  2. Structural Frame Sections: Minimum 1/8" (3 mm) thickness.
  3. Structural Panel Sections: Commercial grade.
- 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. PANEL CONSTRUCTION:
1. Corner block type with 3/16" steel backup plate construction, mechanically secured with minimum of four hardened steel screws. Sash consists of snap-in glass stops, snap-in glazing beads and vinyl gaskets.

2. Weatherstripping material captured in extruded aluminum door panel. Door nosing weatherstrip to be spring-loaded adjustable astragal type. Surface applied self-adhesive weatherstripping not acceptable.
  3. Panel to be supplied with adjustable glass setting block to allow for adjusting of door to meet site conditions eliminating the need for additional shims.
- D. FRAME CONSTRUCTION: Butt joints, mechanically secured by means of screws and formed aluminum corner brackets.
- E. 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**