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The Automatic Choice

ARCHITECTURAL SPECIFICATIONS

SWINGING AUTOMATIC ENTRANCES – LOW ENERGY

HD-Swing® Series 4500LE & 4800LE
Aluminum Swing Door Entrance System with
Overhead Concealed Low Energy Operator

B14.1

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DIVISION 08 - OPENINGS

SECTION 08 42 29.33 SWINGING AUTOMATIC ENTRANCES

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 swing door entrance system, as specified, that has been manufactured, fabricated and installed to maintain performance criteria stated by manufacturer without defects, damage or failure. Automatic swing door entrance systems shall be configured as follows:

1. Single doors: Outswing or Inswing.
2. Simultaneous pairs: Outswing or Inswing.
3. Double Egress: Outswing and Inswing.

B. RELATED WORK:

1. Division 8 Section "Aluminum-Framed Entrances and Storefronts" for entrances furnished separately.
2. Division 8 Section "Door Hardware" for hardware to the extent not specified in this Section.
3. Division 16 Sections for electrical connections including conduit and wiring for power door operators.

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 A156.19: For Power Assist and Low Energy Power Operated Doors

D. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM) B221: Aluminum-Alloy Extruded Bars, Rods, Shapes and Tubes.

E. BUILDING OFFICIALS AND CODE ADMINISTRATORS INTERNATIONAL (BOCA)

F. INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS / UNIFORM BUILDING CODE (ICBO/UBC)

G. INTERNATIONAL CODE COUNCIL / INTERNATIONAL BUILDING CODE (ICC/IBC)

H. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) 101:

1. NFPA 101: Code for Safety to Life from Fire in Buildings & Structures.
2. NFPA 70: National Electrical Code (NEC).

I. THE ALUMINUM ASSOCIATION (AA) Aluminum Finishes Manual.

J. UNDERWRITERS LABORATORY, INC. (USA & CANADA) UL 325: Electrical Door, Drapery, Gate, Louver, and Window Operators and Systems.



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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. **CLOSEOUT SUBMITTALS:** Submit the following:
 - 1. Owner's Manual.
 - 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 A156.19.

1.04 QUALITY ASSURANCE AND PERFORMANCE REQUIREMENTS

- 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.
- C. **CERTIFICATIONS:** Automatic sliding door systems and options shall be factory certified to meet performance design criteria in accordance with the following standards:
 - 1. ANSI A156. 19: For Power Assist and Low Energy Power Operated Doors
 - 2. NFPA 101: Code for Safety to Life from Fire in Buildings & Structures.
 - 3. UL 325: Electrical Door, Drapery, Gate, Louver, and Window Operators and Systems.
 - 4. BOCA: Means of Egress, Power Operated Doors
 - 5. ICBO/UBC: Egress Through Lobbies
 - 6. ICC/IBC: Egress Section
- D. **SOURCE LIMITATIONS:** Obtain automatic door operators through one source from a single manufacturer.
- E. **PRODUCT OPTIONS:** Drawings indicate sizes, profiles, and dimensional requirements of automatic entrance door assemblies and are based on the specific system indicated. Refer to Division 1 Section "Product Requirements."
- F. **POWER OPERATED DOOR STANDARD:** ANSI/BHMA A156.19.
- G. **ELECTRICAL COMPONENTS, DEVICES, AND ACCESSORIES:** Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- H. **OPERATING RANGE:** -30° F to 130° F (-34° C to 54° C)
- I. **OPENING FORCE REQUIREMENTS FOR EGRESS DOORS:** In the event power failure to the operator, swinging automatic entrance doors shall open with a manual force, not to exceed 30 lbf (133 N) applied at 1" (25 mm) from the latch edge of the door.



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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 & 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 entrance(s) of type(s) and size(s) specified on plans and door schedule.

2.02 EQUIPMENT

A. MANUFACTURED DOOR UNITS:

1. **HD-SWING® Type 4500LE: Overhead Concealed Low Energy Operator, Door and Frame:** The operator header is mounted directly over the door and serves as the door frame header.
 - a. **Direct Drive Connecting Arm:** The operator output shaft shall connect to a concealed arm in the top web of the door and serve as the door top pivot.
 - b. **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.
 - c. **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.
2. **HD-SWING® Type 4800LE: Overhead Concealed Low Energy 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. **Direct Drive Connecting Arm:** The operator output shaft shall connect to a concealed arm in the top web of the door and serve as the door top pivot.



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B. HD-SWING® HEADER CASE: 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.

C. OPERATOR: The Electric Operating Mechanism shall be Series 4000: Operator shall be isolation mounted and concealed in an extruded aluminum case for smooth and quiet operation. Maximum current draw shall not exceed 3.15 amps.

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. Field Adjustable Spring 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. The spring shall be adjustable, without removing the operator from the header, to accommodate a wide range of field conditions.
3. Independent Adjustable Closing and Latching Speed Control: The operator shall employ a rheostat module to allow for independent field adjustment of closing and latching speeds using the motor as a dynamic brake.
4. Field Adjustable Open Stop: The operator shall provide a field adjustable open stop to accommodate opening angles from 80 to 135 degrees without the need for additional components.
5. Consistent Cycle: The operator shall deliver an even, consistent open force across the entire transition from door fully closed to door open check. Additionally, the range of the force shall be field adjustable to accommodate a wide range of on-site conditions.
7. Controller Protection: The controller shall incorporate the following features to ensure trouble free operation:
 - a. Automatic Reset upon power up.
 - b. Main fuse protection.
 - c. Electronic surge protection.
 - d. Internal power supply protection.
 - e. Resettable sensor supply fuse protection.
8. Control Switch: Automatic door operators shall be equipped with a three-position function switch to control the operation of the door. Control switch shall provide three modes of operation, Automatic, Off, and Hold-Open.
9. 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.

D. OPERATION: Automatic and/or Manual:

1. Automatic: Pushbutton switch actuates door open; door closes after time delay expires. Opening and closing force, measured 1" (25.4 mm) out from the lock stile of the door, not to exceed 15 pounds (67 N) of force to stop the door when operating in either direction. Operator to include the following variable adjustments so as to comply with ANSI Standard A156.19: Opening speed - 4 to 6 seconds; Closing speed - 4 to 6 seconds.
2. Manual: Push-N-Go™: Manually pushing door activates automatic opening cycle; door closes after time delay expires (approximately 30% less than after pushbutton actuation). In the event of a power failure, the



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operator shall function as a manual door closer in the direction of swing. The operator shall deliver an even, consistent open force across the entire transition from door fully closed to door fully open.

2.03 RELATED EQUIPMENT

- A. "KNOWING ACT" ACTIVATING DEVICE: Shall be located on each side of the opening as per ANSI Safety Standard A117. Activating device shall be one of the following:
1. Pushbutton: 1" Diameter (25 mm) round, red pushbutton switch.
 2. Push plate: 6" Diameter (152 mm) round, stainless steel switch.

2.04 RELATED WORK REQUIREMENTS

- A. ELECTRICAL: To be provided under Division 16: 120 or 220 VAC, 60 cycle, 1 phase, 10 amps for doors with operators in pairs, 5 amps for single doors. 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 & Frame Sections: Minimum 1/8" (3 mm) thickness.
 2. Structural Panel Sections: Commercial grade.
- B. FINISHES (for all exposed aluminum surfaces): Shall be one of the following:
1. 204-R1 Clear: Arch. Class 2 Clear Anodized Coating, AA-MI2C22A31.
 2. 313-R1 Dark Bronze: Arch. Class 1 Anodized Coating, AA-MI2C22A44.
 3. 312-R1 Medium Bronze: Arch. Class 1 Anodized Coating, AA-MI2C22A44.
 4. 311-R1 Light Bronze: Arch. Class 1 Anodized Coating, AA-MI2C22A44.
 5. Champagne: Arch. Class 1 Anodized Coating, AA-MI2C22A44.
 6. Gold: Arch. Class 1 Anodized Coating, AA-MI2C22A44.
 7. Paint Coating:
 - a. Powder Coat: 100% V.O.C. free fluoropolymer resin-based. Standard and custom colors available including wood grain finish.
 - b. Wet Paint: Standard and custom colors available.
 8. Clad with stainless steel or muntz metal (brass alloy): #7 mirror finish or #4 brushed finish.
- C. OPERATOR CONSTRUCTION: Electromechanical.
- D. 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. Weather-stripping material captured in extruded aluminum door panel. Door nosing weather-strip to be spring-loaded adjustable astragal type. Surface applied self-adhesive weather-stripping 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.



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E. FRAME CONSTRUCTION: Butt joints, mechanically secured by means of screws and formed aluminum corner brackets.

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: Installer shall be factory trained, certified by AAADM, and experienced to perform work of this section. 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 A156.19.
- 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.
- D. FIELD QUALITY CONTROL: Testing Services: Factory Trained Installer shall test and inspect each swinging automatic entrance door to determine compliance of installed systems with applicable ANSI standards.

Note: Horton Automatics reserves the right to make product improvements and change specifications without notice.

END OF SECTION