Horton AUTOMATICS
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ARCHITECTURAL SPECS

AUTOMATIC SWING DOORS & OPERATORS - HEAVY DUTY

SERIES 4000 **B6.0**
ELECTRIC SWING DOOR OPERATOR
8/02

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. Glass; Hardware: Division 8, applicable sections.
4. Perimeter Sealants; Insulation: Division 7, applicable sections.

1.02 REFERENCES

A. AMERICAN ARCHITECTURAL MANUFACTURERS ASSOCIATION:

1. AAMA 101: Appendix Dissimilar Materials

B. AMERICAN ASSOCIATION OF AUTOMATIC DOOR MANUFACTURERS (AAADM).

C. AMERICAN NATIONAL STANDARDS INSTITUTE:

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:

1. ASTM B221: Aluminum-Alloy Extruded Bars, Rods, Shapes and Tubes.

E. NATIONAL FIRE PROTECTION ASSOCIATION:

1. NFPA 101: Code for Safety to Life from Fire in Buildings & Structures.

F. THE ALUMINUM ASSOCIATION: AA Aluminum Finishes Manual.

G. UNDERWRITERS LABORATORY, INC.:

1. UL 325: Electrical Door, Drapery, Gate, Louver, and Window Operators and Systems

H. UNDERWRITERS LABORATORY OF CANADA

1.03 SUBMITTALS

A. PRODUCT DATA: Submit manufacturer's complete product and installation data.

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1.03 SUBMITTALS - Continued

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 experienced (as determined by contractor) to perform work of this section who has specialized in the installation of work similar to that required for this project and who is acceptable to product manufacturer.

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

Automatic swing door(s) furnished and installed shall be of type(s) and size(s) specified and as indicated on plans and door schedule and shall be manufactured by Horton Automatics, a division of Overhead Door Corporation.

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2.02 EQUIPMENT

A. MANUFACTURED DOOR UNITS:

1. 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. Type 4500: Overhead Concealed Operator, Door and Frame: The operator header is mounted directly over the door and serves as the door frame header. The cover shall be self-supporting to transom glass above. 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. Direct drive optional.

Swing door panel shall be aluminum, 1-3/4" (44 mm) deep, narrow stile vertical and horizontal rails. Lock and pivot rails shall have adjustable dual weather-stripping. Vinyl finger guards shall be provided. The following hardware shall be provided: Maximum security lock, push bar(s), pivots, finger guard(s), and threshold.

Jamb/Frame members shall be 1-3/4" deep x 4" wide (44 mm x 102 mm).

3. Type 4800: Overhead Concealed Operator with Connecting Arm and Pivots: The operator header is mounted directly over the door and serves as the door frame header. The cover shall be self-supporting to transom glass above. 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 and the bottom door pivot is included. Direct drive optional.

B. OPERATOR: The Electric Operating Mechanism shall be Series 4000: operator shall be shock mounted and concealed in an extruded aluminum case 6" x 6" (152 mm x 152 mm) side access header cover or an optional 4 1/2" x 6" (114 mm x 152 mm) bottom access header cover. The operator shall be readily convertible to any hand required.

Opening force 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. Closing force shall be supplied by a field replaceable Quadracoil™ spring (four independent coil springs separated by teflon discs and enclosed in an external spring box). Close speed control shall be accomplished 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 toggle switch shall be supplied.

The master control unit shall incorporate an adjustable time delay of 1 to 28 seconds. It shall provide infinite adjustment to opening and back check speeds including adjusting the opening force without affecting the opening speed. The master control unit shall provide for immediate reversal of door motion without undue strain on the drive train by supplying stepped voltage to the motor. The door shall reverse when closing if an object stops the door. A locked door motor protection circuit will be supplied that will shut off current to the motor if it is applied when the door is inadvertently locked or otherwise prevented from opening.

Option: Emergency Breakout for Inswinging doors. When door is in emergency breakout position, power shall be removed from the operator.

2.03 RELATED EQUIPMENT

A. BASIC SENSOR SYSTEM - 24 VAC, class ll circuit: Vista™ package:

1. Motion sensor: Microwave unidirectional/bidirectional sensor shall activate the door (approach side).

2. Swing Side safety sensor: Active infrared sensor shall utilize a combination of focused and diffused technology. Sensor shall keep a closed door from opening or an open door from closing when safety zone (swing door area) is occupied.

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2.03 RELATED EQUIPMENT - Continued

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.

B. ENHANCED SENSOR SYSTEM- 24 VAC, class ll circuit:

Option 1. Standard Vista™ package plus door mounted presence sensor(s): The sensor can be mounted on the swing side of the door at the strike edge of the door panel. It can be set to either slow or stop an opening door when someone (or object) enters its field of view. Another door mounted presence sensor can be mounted on the approach side for reopening the door if a person or object is in the swing path during the closing cycle.

The door mounted sensor is an advanced presence sensor that uses active infrared technology to provide safety zone protection for swing doors. It incorporates distance measurements and is insensitive to reflectiveness of the floor surface.

Option 2. Standard Vista™ package plus safety beam: In lieu of door mounted presence sensor(s), a safety (sentinel) beam can be mounted at the end of guide rails as an extra safety device. The door stops if the beam is interrupted during the opening cycle and to ensure the area is clear before resuming normal operation, it slowly seeks the full open position. The safety beam offers extra safety beyond the strike edge of the door. This option is cost effective for use on a pair of swing doors.

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: 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 3/16" (5 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 ll Clear Anodized Coating, AA-MI2C22A31.
2. 313-R1 Dark Bronze: Arch. Class ll Anodized Coating, AA-MI2C22A32.
3. 312-R1 Light Bronze: Arch. Class ll Anodic Coating, AA-MI2C22A32.
4. 315-R1 Black: Arch. Class ll 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: Mortise and tenon type joints, neatly and mechanically secured. Sash consists of snap-in glass stops, snap-in glazing beads and vinyl gaskets.

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2.05 MATERIALS, FINISHES AND FABRICATION - Continued

D. FRAME CONSTRUCTION: Butt joints, neatly and mechanically secured.

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: Installer to adjust operator and controls for optimum condition and safety and to be compliance of 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