



ARCHITECTURAL SPECIFICATIONS

RHINO ADO 4000

LOW-ENERGY ELECTRIC SWING DOOR OPERATOR

The 4000 Series Automatic Door Operator System is designed for the most demanding entrance applications such as hospitals and hotels. Configurations come in left or right push, left or right pull, or dual configurations. The 4000 series is available for new or converted barrier free openings and are compatible with all mechanical and electrical hardware.

PART I - GENERAL

- 1.01** A. AMERICAN ARCHITECTURAL MANUFACTURERS ASSOCIATION (AAMA)
 B. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)
 C. AMERICAN SOCIETY FOR TESTING AND MATERIALS ASTM)
 D. THE ALUMINUM ASSOCIATION (AA)

1.03 **SYSTEM DESCRIPTION**

Provide an automatic swing door operator which has been manufactured, fabricated and installed to maintain performance criteria stated by manufacturer without defects, damage or failure.

1.04 **SUBMITTALS**

A. PRODUCT DATA: Submit manufacturer's product data and standard details

1.05 **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. MANUFACTURERS QUALIFICATIONS: Manufacturer capable of providing field service representation during installation, approving acceptable installer and approving application method.

1.06 **WARRANTY**

Units to be warranted against defect in material and workmanship for a period of one year from the date of installation.

PART II - PRODUCTS

2.01 MANUFACTURER

Automatic swing door operator(s) furnished and installed shall be of type(s) and size(s) specified and as indicated on plans and door schedule.

2.02 EQUIPMENT

A. MANUFACTURED DOOR UNITS:

1. Style 4000: 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" (101.6 mm) of the door frame, specify a parallel arm.

B. OPERATOR: The Electric Operating Mechanism shall be Style 4000

The operator shall be shock mounted and concealed in an extruded aluminum 6 1/2" x 6 1/2" side access header extending the full width of door or a minimum 32" in length. Opening force shall be accomplished by a 1/8 HP D.C. permanent magnet motor working through reduction gears to the output shaft. Closing force shall be supplied by a field replaceable spring. When the door is in the closing mode or fully closed, motor voltage shall not be required and will be off. The door can be manually operated with power on or off without damage to the operator.

The master control unit shall incorporate an adjustable time delay of 1 to 99 seconds (ANSI A156.19 requirement is 5 second minimum time delay). 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 limit current to the motor if it is applied when the door is inadvertently locked or otherwise prevented from opening.

A. OPERATION: Automatic and/or Manual:

1. Automatic: Pushbutton switch actuates door open; door closes after time delay expires. 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. 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.
2. Manual: Push-To-Open: Manually pushing door activates automatic opening cycle; door closes after time delay expires. Time delay for manual push-to-open operation can be independently adjustable from 1-99 seconds.

2.03 RELATED EQUIPMENT

A. ACTIVATING DEVICE: Shall be marked Press to Open and located on each side of the opening as per ANSI Safety Standard A117.

1. Option: Push plate: 4-1/2" Diameter (114.3 mm) round or square, stainless steel switch.

2.04 RELATED WORK REQUIREMENTS

A. ELECTRICAL: 120 VAC, 60 cycle, 1 phase, 15 amp. Two low-voltage wires shall be furnished to connect push button/plate switch to the operator.

2.5 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; capable of self-support of transom glass above.

B. FINISHES (for all exposed aluminum surfaces):

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. Special Paint Coating: Color as selected.

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 with manufacturer's prescribed tolerances. Provide support and anchor in place.

B. DISSIMILAR MATERIALS: Comply with AAMA 101, Appendix *Dissimilar Materials Is* separating aluminum materials and other corrodible surfaces from sources of corrosion or electrolytic action contact points.

C. 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.

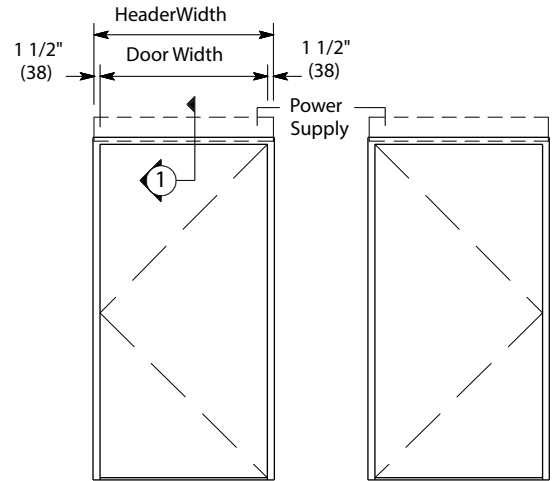
4. Clean product surfaces and lubricate operating equipment for optimum condition and safety.

B. ADJUSTMENT: Installer to adjust operator and controls for optimum condition and safety.

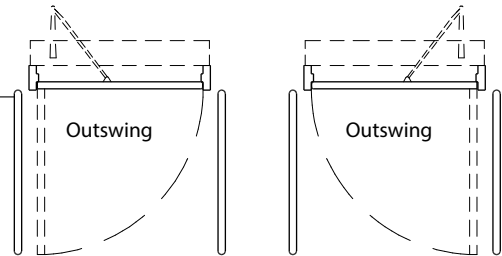
C. ADVISE CONTRACTOR: of precautions required through the remainder of the construction period, to ensure that doors will be without damage or deterioration (other than normal weathering) at the time of acceptance.

Standard Packages

Single Units		Pair Units	
Types: LH, RH, LHR, RHR		Types: LH-RH, LHR-RHR	
Door Width	Header Width	Door Pair Width	Header Width
3'-0" (914)	3'-3" (991)	5'-0" (1524)	5'-3" (1600)
3'-6" (1067)	3'-9" (1143)	6'-0" (1829)	6'-3" (1905)
		7'-0" (2133)	7'-3" (2210)
Anodized Finish: Clear or Dark Bronze			



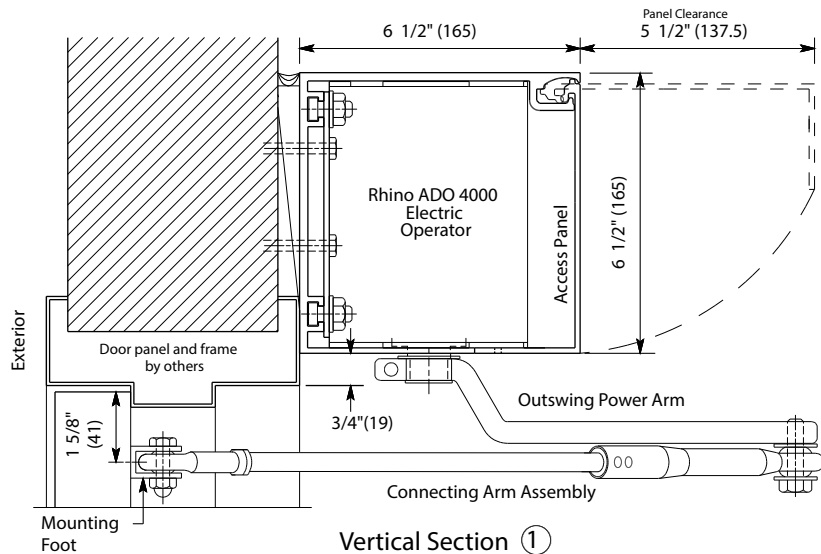
Guide Rail not req'd for Low Energy



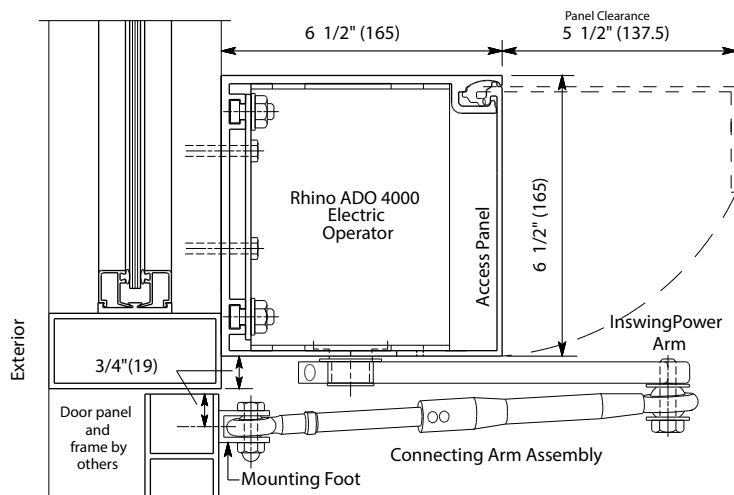
Single Units
 Floor Plans with Elevations
 LHR & RHR shown. LH & RH are Inswing

Installation and Operation

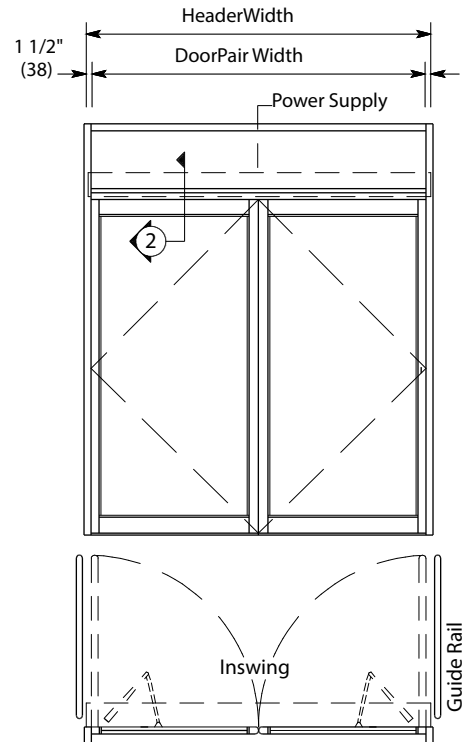
- Swing door header is surface mounted onto frame and connecting arm assembly is mounted to face of door panel. Frame and door panel to be provided by others.
- Electrical: Provide 120VAC, 60cycle, singlephase, 15 amp service (in conduit) to each swing door unit on a dedicated 20 amp circuit breaker routed into header. Maximum current draw is 3.15 amps.
- For 1-way traffic: Unit to be actuated by Sensor System
 For 2-way traffic, Low Energy: Unit to be actuated by push button or push plate



Vertical Section ①



Vertical Section ②



Pair Unit
 Floor Plan with Elevation

LH-RH shown. LHR-RHR is Outswing