



GT20 - SWING OPERATOR – FULL ENERGY  
AUTOMATIC ENTRANCE SYSTEM  
SUGGESTED ARCHITECTURAL SPECIFICATIONS  
SECTION 8

SECTION 08 71 13 – AUTOMATIC DOOR OPERATORS

**PART 1 - GENERAL**

**1.1 SUMMARY**

**\*NOTE: This specification is for automatic door operators complying with ANSI/BHMA A156.10 for power operated pedestrian door applications.**

- A. This section includes the following types of automatic door operators:
1. Full energy door operators for swinging doors.

**1.2 REFERENCES**

- A. American Association of Automatic Door Manufacturers (AAADM) – [www.aaadm.com](http://www.aaadm.com)  
B. American National Standards Institute (ANSI) – [www.ansi.org](http://www.ansi.org)  
C. Builders' Hardware Manufacturers Association (BHMA) – [www.buildershardware.com](http://www.buildershardware.com)  
D. Canadian Standards Association (CSA) – [www.csa.ca](http://www.csa.ca)  
E. Underwriters Laboratory, Inc. (UL) – [www.ul.com](http://www.ul.com)  
F. Standards Council of Canada (ULC) – [www.canada.ul.com](http://www.canada.ul.com)

**1.3 DEFINITIONS**

- A. Double Egress Doors: A pair of doors that swing simultaneously with the two doors moving in opposite directions with no mullion between them.
- B. Double Swing Doors: A pair of doors that swing with the two doors moving in opposite directions with a mullion between them; each door functioning as an independent single swing door.
- C. Activation Device: Device that, when actuated, signals the door operator to activate the operation of the door.
- D. Knowing act: Consciously initiating the powered opening of a low energy door using acceptable methods including wall mounted switches such as push plates and controlled access devices such as keypads, card readers and key switches.
- E. Safety Device: A device that detects the presence of an object or person within a zone where contact could occur and provides a signal to stop the movement of the door.



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**1.4 PERFORMANCE REQUIREMENTS**

- A. General: Provide automatic door operators that have been designed and fabricated to comply with specified performance requirements, as demonstrated by testing manufacturer's corresponding standard systems.
- B. Automatic door equipment accommodates medium to heavy pedestrian traffic and have the following minimum performance characteristics:
  - 1. Up to 550 pound (249.5 kg) weight of doors, 48 inches (1219 mm) maximum door width per operator.
- C. Operator capable of operating within temperature ranges of 5° F to 122° F (-15° C to 50° C).
- D. Opening Force requirements for Egress Doors: In the event of a power failure to the operator, automatic swinging entrance doors shall open with a manual force not to exceed 30 lbf applied at 1" (25 mm) from the latch edge of the door.
- E. Break-away Device: Automatic swinging entrances shall require no more than 50 lbf applied 1" (25 mm) from the latch edge of the door. When the door(s) is opened in the breakout mode, powered operated components excluding spring power shall not operate the door(s).
- F. Closing Time:
  - 1. Doors shall be field adjustable to close from 90 degrees to 10 degrees in 2 seconds or longer as applicable per ANSI/BHMA A156.10 standards.
  - 2. Doors shall be field adjusted to close from 10 degrees to fully closed in not less than 1.5 seconds.

**1.5 SUBMITTALS**

- A. Comply with Division 01 - Submittal Procedures.
- B. Product Data: Manufacturer's product sheets including installation details, material descriptions, dimensions of individual components and extrusions, fabrication, operational descriptions and finishes.
- C. Shop Drawings: Submit manufacturer's shop drawings, including complete elevations, sections and details, indicating dimensions, materials, operator, motion/presence sensor control device, anchors, hardware, finish, options and accessories.
  - 1. Indicate required clearances, and location and size of each field connection.
  - 2. Indicate locations and elevations of entrances showing activation and safety devices.



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3. Wiring Diagrams: For power, signal, safety device and knowing act device (if used) wiring.
- D. Manufacturers Field Reports: Submit manufacturer's field reports from AAADM certified technician of inspection and approval of doors for compliance with ANSI/BHMA A156.10 after completion of installation.
- E. Operating and Maintenance Manuals: Provide manufacturers operating and maintenance manuals for each item comprising the complete door opening installation in quantity as required in Division 01, Closeout Submittals. The manual shall include the name, address, and contact information of the manufacturers providing the hardware and their nearest service representatives. The final copies delivered after completion of the installation test to include spare parts list.
- F. Warranties and Maintenance: Special warranties and maintenance agreements specified in this Section.

#### 1.6 QUALITY ASSURANCE

- A. Manufacturers Qualifications: Engage qualified manufacturers with a minimum 10 years of documented experience in manufacturing of doors and equipment of similar to that indicated for this Project and that have a proven record of successful in-service performance.
- B. A manufacturer with company certificate issued by AAADM.
- C. Installer Qualifications: Installers with a minimum 5 years documented experience installing and maintenance of units similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
- D. Certified Inspector Qualifications: Certified by AAADM.
- E. Source Limitations for Automatic Operators: Obtain each type of door operator and sensor components specified in this Section from a single source, same manufacturer unless otherwise indicated.
- F. Certifications: Operators shall be certified by the manufacturer to meet performance design criteria in accordance with the following standards.
  1. ANSI/BHMA A156.10 American National Standard for Power Operated Pedestrian Doors.
  2. UL 325 - Standard for Door, Drapery, Gate, Louver, and Window Operators and Systems.



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- G. Emergency Exit door requirements: Comply with requirements of authorities having jurisdiction for automatic entrance doors serving as a required means of egress.

**1.7 COORDINATION**

- A. Coordinate door operators with doors, frames and related work to ensure proper size, thickness, hand, function and finish.
- B. Electrical System Roughing-in: Coordinate layout and installation of power door operators with connections to power supplies and access control system as applicable.

**1.8 WARRANTY**

- A. Automatic Door Operators shall be free of defects in material and workmanship for a period of one (1) year from the date of substantial completion.
- B. During the warranty period a trained technician shall perform service and affect repairs. An AAADM inspection shall be performed after each repair.
- C. During the warranty period all warranty work, including but not limited to emergency service, shall be performed during normal business hours.
- D. Owner to receive warranty after completion of installation.

**PART 2 - PRODUCTS**

**2.01 APPROVED MANUFACTURER**

- A. Manufacturer: NABCO ENTRANCES S82 W18717 Gemini Drive, Muskego, WI 53150  
Phone: (877) 622-2694; Fax: (888) 679-3319; website: [www.nabcoentrances.com](http://www.nabcoentrances.com)

[Substitutions: Requests for substitution and product approval in compliance with the specifications must be submitted in writing and in accordance with the procedures outlined in Division 1, Section, "Substitution Procedures". Approval of requests is at the discretion of the architect, owner, and their designated consultants.]

**2.02 AUTOMATIC SWING DOOR OPERATOR**

- A. Model: NABCO GT20 full energy automatic door operator (Basis of Design):
  - 1. Automatic Operator: DC brush motor, non-handed operator, operating voltage of 110 -120VAC 50/60Hz. Operator shall be adjustable to compensate for different manual push forces as required.



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2. Automatic operator shall be capable of operating and controlling up to a 550 pound (249.5kg) door, 48 inches (1219mm) in width.
3. Surface Mounted Operator:
  - a. Side access surface applied operator is contained in a 4 ¾" (120 mm) deep x 3¾" (95 mm) high aluminum housing with a removable cover.
  - b. Surface mounted housing available with continuous header to full door width.
4. Overhead Concealed Mounted Operator:
  - a. Overhead concealed mounted operator is contained in a 5 ½" (140 mm) deep X 6" (152 mm) high aluminum extrusion.
  - b. Mounted between door jambs, continuous for full width of door.
5. Operator can be field adjusted to comply with ANSI/BHMA A156.19 American National Standard for Power Assist and Low Energy Operated Doors. To comply with ANSI/BHMA A156.19 a knowing-act activation device is required.

B. Door Operation:

1. Opening Cycle: The adjustable speed operator mechanically powers the drive Shaft and the torque controls maintain constant speed throughout the opening cycle regardless of stack pressures or wind speed. Operator shall allow manual door operation with operational forces as indicated to fully open the door applied at 1" (25 mm) from the latch edge of the door.
2. Hold Open: The operator shall stop and hold the door open at the selected door opening angle for an adjustable period of time (0 seconds to 60 seconds).
3. Wind Force Dampening: The control shall determine the difference between a hard stop such as hitting solid objects vs soft changes of force such as wind and stack pressure. This function is achieved during the opening or closing cycle.
4. Stack Pressure Compensation: The control shall determine the difference between a hard stop such as hitting solid objects vs soft changes of force such as wind and stack pressure. This function is achieved during the opening or closing cycle.
5. Obstruction Control: The operator will stop and reverse the door movement. This function is achieved during the opening or closing cycle.
6. Electric Lock Management: Internal module for electrified locking integration.
7. Electric Lock Output: 24 VDC ( $\pm$  10%) 2A, or dry contact. Lock monitoring prevents operator(s) from opening door(s) until release of electrified lock.



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Operator pulls door closed before opening, automatically unjamming electric latch hardware.

Sequenced operation between operators for pairs of doors allowing lock release and astragal coordination.

8. Programmable Force and Time: Force and time are programmable to ensure door is latched.
9. Programmable Emergency Input: When input receives a signal the door can be programmed to close under spring power, or stop, or open, or close slowly under motor power.
10. Electronic Controls: Solid state integrated circuit controls the operation and switching of the swing power operator. The electronic control provides low voltage power supply for all means of actuation. The controls include time delay (1 to 60 seconds) for normal cycle. Secondary programmable activation input with 0-180 seconds of time delay.
11. Control Switch: Automatic door operators shall be equipped with the following type of function switch: On, off, hold-open, night mode and exit.
12. Operator Interface: Safety sensor inputs for all types of safety sensors with programmable and adjustable lock-out functions.
13. An optional plug-in relay board shall be available to provide various door position status signals to access control or building management systems.

### **2.03 ACTIVATION DEVICES**

- A. General: Provide activation devices in accordance with ANSI/BHMA A156.10 standard for condition of exposure and for long-term, maintenance-free operation under normal traffic load for type of occupancy indicated. Coordinate activation devices with door operation and door operator mechanisms.

### **2.04 KNOWING ACT ACTIVATING DEVICES**

- A. Wall Switches: 6". 4 1/2" diameter stainless steel surface or flush mounted, engraved or plain, as provided by NABCO Entrances, Inc.
- B. Optional activators are available
- C. Secondary activation is required by ANSI/BHMA A156.10



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**2.05 SAFETY DEVICES**

- A. General: Provide safety devices in accordance with ANSI/BHMA A156.10 standard for condition of exposure and for long-term, maintenance-free operation under normal traffic load for type of occupancy indicated. Coordinate safety devices with door operator and door operator mechanisms.

**2.06 GUIDE RAILS**

- A. General: Provide guide rails in accordance with ANSI/BHMA A156.10 standard.

**2.07 ALUMINUM FINISHES**

- A. Comply with NAAMM's 'Metal Finishes for Architectural and Metal Products' for recommendations for applying and designating finishes.

- B. Automatic Operator Enclosure:

- 1. Anodized Finish:
  - a. Clear: AA-M12-C22-A31
  - b. Dark Bronze: AA-M12-C22-A44
- 2. Painted Finish:
  - a. Powder coat painted to match Architect's sample
  - b. Kynar finish, 2 coat or 3 coat to match Architect's sample
- 3. Clad Finish (protective coatings by others)
  - a. Stainless Steel: Satin, mirror-like finish
  - b. Bronze: Satin, polished finish
  - c. Brass: Satin, polished finish

**PART 3 - EXECUTION**

**3.01 EXAMINATION**

- A. Examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, wall and floor construction, and other conditions affecting performance.
- B. Examine roughing-in for electrical source power to verify actual locations of wiring connections.
- C. Proceed only after such discrepancies or conflicts have been resolved.



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**3.02 INSTALLATION**

- A. Do not install damaged components. Fit joints to produce hairline joints free of burrs and distortion. Rigidly secure non-movement joints.
- B. Automatic door equipment shall be installed by an AAADM certified installer in compliance with ANSI/BHMA A156.10, manufacturer’s recommendations and approved shop drawings.
- C. Operators: Install automatic operators plumb and true in alignment with established lines and grades without warp or rack of framing members and doors. Anchor securely in place.
  - 1. Install surface mounted hardware using concealed fasteners to greatest extent possible.
  - 2. Set headers, carrier assemblies, tracks, operating brackets and guides level and true to location with anchorage for permanent support.
- D. Door Operators: Connect door operators to electrical power distribution system as specified in Division 26 Sections.
- E. Sealants: Comply with requirements specified in division 7 Section “Joint Sealants” to seal between the operator housing and the adjacent wall surface.
- F. Signage: Apply signage on both sides of each door as required by ANSI/BHMA A156.10 and manufacturers installation instructions.

**3.03 FIELD QUALITY CONTROL**

- A. Manufacturers Field Services:
  - 1. Manufacturer’s representative shall provide technical assistance and guidance for installation of doors.
  - 2. Before placing doors into operation, an AAADM certified technician shall inspect and approve doors for compliance with ANSI/BHMA A156.10.
- B. ADJUSTING
  - 1. Adjust door operators, controls and hardware for smooth and safe operation and for weather tight closure. Adjust doors in compliance with ANSI/BHMA A156.10.
- C. CLEANING AND PROTECTION
  - 1. Clean adjacent surfaces soiled by automatic operator installation.





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2. Clean metal surfaces promptly after installation. Remove excess sealants, compounds, dirt and other substances. Repair damaged finish to match original finish.

D. DEMONSTRATION

1. Engage a factory-authorized representative to train Owner's maintenance personnel to operate and maintain safe operation of the door.

END OF SECTION