

TECHNICAL SPECIFICATIONS for Model: GA-8011
SECTION 34 71 13
ACTIVE VEHICLE BARRIERS

PART 1 – GENERAL

1.1 SUMMARY

- A. Section Includes:
1. Drop arm vehicle barriers
 2. [_____]

1.2 RELATED SECTIONS

- A. Section 03 30 00 – Cast-in-Place Concrete
- B. Section 26 05 13 – Electrical Service and Connections
- C. Section 32 31 13 – Fencing

1.3 CODES AND REGULATORY REQUIREMENTS

- A. Electrical Panels shall be built and labeled to UL508A standards. Complete all electrical work according to local codes and National Electrical Code. All fieldwork shall be performed in a neat and professional manner, completed to journeyman standards.
- B. Vehicular barriers should never be used by pedestrians. A separate pedestrian entrance must always be provided when foot traffic is present.
- C. Current safety standards require gate operators to be designed and labeled for specific usage classes. Sloan's Gate Arm Barrier System, Model: GA-8011 is listed for use in all UL 325 Usage Classes: I, II, III, IV.

NOTE: To be compliant with UL 325 and Industry safety guidelines, additional entrapment protection devices may need to be installed with this gate operator if the moving arm will travel within 24 inches (.61 m) of a stationary object.

1.4 SUBMITTALS

- A. Product Data:
1. Comply with Section [01 33 00 – Submittal Procedures.] [_____].
 2. Shop Drawing: Submit drawings showing connections to adjacent construction, range of travel, and all electrical and mechanical connections to the barrier. All underground runs of electrical lines and inductive vehicle obstruction loop locations shall be indicated on drawings. Drawings shall also show the size and location of the concrete footings.
 3. Installation instructions: Submit two copies of manufacturer's installation instructions for this specific project.
 4. Project list: Submit list of product installations comparable to the subject job. Include date of product installation, installer, and owner's name and location of the project.
 5. Test reports:
 - a. Submit affidavits from the manufacturer demonstrating that the barrier mechanism has been tested to 2,000,000 cycles without breakdown.

- b. Each operator shall bear a label indicating that the operator mechanism has been tested. Operator is tested for full power and pressure of all hydraulic components, full stress tests of all mechanical components and electrical tests of all overload devices.
- 6. Warranty Documentation: Submit sample of manufacturer's warranty.

1.5 QUALITY ASSURANCE

- A. COMPLY WITH SECTION [01 43 00 – QUALITY ASSURANCE.] [_____].
- B. Manufacturer: A company specializing in the manufacture of vehicle barrier of the type specified, with a minimum of five years' experience manufacturing operators of this type and design.
- C. Installer Qualifications:
 - 1. Must have a minimum of five years' experience installing similar equipment, provide proof of attending a Technical Training within the previous three years, or obtain other significant manufacturer endorsement of technical aptitude, if required, during the submittal process.
 - 2. Installer is an authorized representative of the vehicle barrier manufacturer for both installation and maintenance of the type of units required for this Project.
- D. Source Limitations: Provide each type of product from a single manufacturing source to ensure uniformity.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Comply with Section [01 66 00 – Product Storage and Handling Requirements.] [_____].
- B. While Sloan Security Group does not assume responsibility for injury to persons or property during loading, unloading, transporting or installation, verbal guidance and additional written instructions are available upon request.
- C. Sloan Security Group does not assume responsibility for insuring that the rigging and lifting gear is properly sized and attached when lifting heavy components. Equipment used shall be capable of handling product in an overhang position.
- D. Upon receipt at the job site, all materials shall be checked to ensure that no damage occurred during shipping or handling. Materials shall be stored in such a manner to ensure proper ventilation and drainage, and to protect against damage, weather, vandalism, and theft.

1.7 WARRANTY

- A. Provide a warranty against all defects in materials or workmanship for two years after the date of installation when installed by a Sloan authorized installer. Defective materials shall be replaced at manufacturer's discretion with new or reconditioned materials furnished by the manufacturer, at no cost to the owner. Freight, labor and other incidental costs are not covered under the factory warranty but may be covered by a separate service agreement between installing company and the owner.
 - 1. To ensure validation of warranty, complete warranty registration form included in the printed materials shipped with the operator.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Sloan Security Group, Phone: (888) 382-8370, Website: www.sloansg.com, Email: info@sloansg.com
- B. Substitutions: Not Permitted.

2.2 VEHICLE BARRIERS

- A. Basis of Design: Sloan Gate Arm Barrier System, Model: GA-8011, as manufactured by Sloan Security Group.
- B. Operation shall be by means of a brushed DC electric motor with an integral primary spur gear reducer driving a single reductions gear reducer with the gate arm mount fixed to the output shaft via a splined connection. The motor shall contain an integral position feedback encoder such that limits are set in software. The design shall include provisions for re-establishing previously set limits in the event of power failure. The gear reducer shall be filled with synthetic lubricant capable of allowing operation down to -25°C (-13°F) without a heater. Operator shall be capable of handling arms up to 14ft (4.27m) in length made from extruded aluminum, wood, or PVC. Gate operator shall operate in the event of a power failure in an uninterruptible power supply mode to the extent the two 8Ah batteries can maintain adequate power.
- C. Schedule of length and speed capacities:
 - 1. GA-8011 10ft: Travel time adjustable as fast as 1.5 seconds from fully closed to fully open position. Maximum arm length shall be 10' (3 m).
 - 2. GA-8011 14ft: Travel time adjustable as fast as 2.5 seconds from fully closed to fully open position. Maximum arm length shall be 14' (4.27 m).
 - 3. GA-8011 10ft Solar Powered: Travel time adjustable as fast as 1.5 seconds from fully closed to fully open position. Maximum arm length shall be 10' (3 m). Solar powered.
 - 4. GA-8011 14ft Solar Powered: Travel time adjustable as fast as 2.5 seconds from fully closed to fully open position. Maximum arm length shall be 14' (4.27 m). Solar Powered.
- D. Minimum standard mechanical components:
 - 1. Chassis: shall be 14 gauge (2.11 mm) galvanized steel.
 - 2. Cover: shall be 14 gauge (2.11 mm) galvanized steel with keyed lock.
 - 3. Gear Reducer: #60 with splined output shaft.
 - 4. Arm striping: shall be highly reflective red and white vertical stripes to MUTCD standards.
 - 5. Finish: Textured TGIC polyester powder coat finish in white, proven to withstand 1000-hour salt spray test.
- E. Minimum standard electrical components:
 - 1. Motor: 140W minimum with integral gearbox and Hall effect sensors.
 - 2. Hall effect sensor for detection of output shaft position.
 - 3. Controls: Smart DC Controller Board with 512K memory containing:
 - a. bi-directional traffic mode;
 - b. inputs for tenant, transient, and special users
 - c. 32 character liquid crystal display for reporting of functions, 5 button user interface;
 - d. 26 programmable output relay options including vehicle counts, arming signals, wrong-way and back-out signals.
 - e. anti-tailgate mode;
 - f. built-in power surge/lightening strike protection;

- g. Multi-stage intelligent battery charging under microprocessor control;
 - h. RS232 port for connection to laptop or other computer peripheral and RS485 connection of Master/Slave systems.
 - i. RS485 communication of all gate status, counts, signals, alarms and faults.
 - 4. Transformer: 250VA (N/A for solar models). Input power: 115V, 208V/230V Field selectable. (24V solar panels for solar models)
 - 5. Stop switch, hold open/hold close switch.
- F. Optional control devices (choose one or more of the following): card reader, key switch, radio control, pushbuttons, free egress vehicle detectors, vehicle obstruction and arming loop detectors, reset loop, various emergency vehicle open devices as dictated by local code or keypads.
- G. Optional external sensors for stopping or reversing the gate travel (choose one or more of the following):
- 1. Arm edge sensor
 - 2. Photo-eyes.
- H. Other options (*choose from the following list*):
- 1. "Warn before operate buzzer" function
 - 2. HY-5A plug in type vehicle detectors
 - 3. Arm bracket for wood arm 1" x 4" (25.4 mm x 101.6 mm)
 - 4. Arm bracket for 2.5" (63.5 mm) square PCV arms
 - 5. 1 1/2" (38.1 mm) x 3 1/4" (82.5 mm) single piece aluminum arm 8' (2.4 m) or 10' (3.0 m) (GA-8011 10ft) contains LED light strip on top surface and rubber bumper on lower surface.
 - 6. 1 1/2" (38.1 mm) x 3 1/4" (82.5 mm) single piece aluminum arm 12' (3.6 m) or 14' (4.3 m) (GA-8011 14ft) contains LED light strip on top surface and rubber bumper on lower surface.
 - 7. 1 1/2" (38.1 mm) x 3 1/4" (82.5 mm) articulating arm 8' (2.4 m) or 9' (2.7 m) clearance. May be shortened as needed.

2.3 FACTORY TESTING

- A. Fully assemble and test, at the factory, each barrier to assure smooth operation, sequencing and electrical connection integrity.
- B. Check all mechanical connections for tightness and alignment. Check all welds for completeness and continuity.
- C. Inspect finishes for completeness. Touch up imperfections prior to shipment.
- D. Check all electrical wires to assure that chafing cannot occur during shipping or operation.

PART 3 – EXECUTION

3.1 SITE EXAMINATION

- A. The purchaser shall indicate the location of all products with suitable means.
- B. The purchaser shall indicate all underground utility locations, USC&G benchmarks, property monuments, and other underground structures that interfere with installation.
- C. Locate concrete mounting pad in accordance with approved shop drawings and in compliance with local building codes.

- D. Before installing the Sloan Gate Arm Barrier System, all necessary site clearing and grading shall be performed by the purchaser. An adequate clearance on both sides of the vehicle barrier line is required.

3.2 PREPARATION

- A. Examine and verify foundation suitability for product installation.
- B. Clean surfaces thoroughly prior to installation
- C. Prepare surfaces using the methods recommended by the manufacturer for achieving the best results for substrate under the project conditions.

3.3 INSTALLATION

- A. The active vehicle barrier shall be installed per Sloan's System Drawing. Construct concrete mounting pad to the dimensions specified by the plans. Excavate a properly sized area for mounting pad and install reinforcing steel in accordance with the plans. Place the concrete, install the barrier, and plumb. Refer to contract or submittal plans for more installation details.
- B. Install barrier in accordance with the safety regulations and the manufacturer's product literature and installation instructions, current at the time of installation. Coordinate locations of operators with contract drawings; other trades and shop drawings.
- C. Installer shall ensure that the electrical service to the barrier is at least 10 AMPS. Electrical wiring to conform to NEC and manufacturer's installation instructions. GA-8011 is 250W.
- D. Sloan Gate Arm Barrier System is warranted against defects in material and workmanship on structural components for five years from ship date, when installed by a Sloan authorized installer.
- E. Engage an experienced installer who has minimum five years documented experience with projects of similar scope and complexity.
- F. Suggested Installer: Sloan Security Group Phone: (888) 382-8370, Website: www.sloansg.com, Email: info@sloansg.com

3.4 BARRIER SITING AND SAFETY PRECAUTIONS:

- A. Careful consideration must be given to the selection, placement, and design of a vehicle barrier installation. As is the case with any active vehicle barrier system, perimeter security device, or security gate that blocks a roadway, it is essential to ensure that approaching vehicles as well as pedestrians are fully aware of the presence of the barrier and its operation. Installer will work with End User Customer to provide proper illumination and clearly worded signage (with appropriate graphics) warning of the barrier's presence and its hazards. Sloan strongly recommends that an architect and/or traffic and/or safety engineer be consulted before installing any active vehicle barrier and that an installation configuration be employed that physically limits approach speeds to no more than 20 MPH. End User Customer agrees that it will be responsible for selecting the location of the barrier and the configuration of approaches and warnings. Sloan will offer reasonable assistance in integrating the barrier with external and existing systems, but it does not provide traffic or safety engineering services.

3.5 FIELD QUALITY CONTROL

- A. Test operator through ten full open and close cycles and adjust for operation without binding, scraping or uneven motion. Test limit switches for proper open and close limit positions.
- B. All anchor bolts shall be fully tightened in the finished installation.
- C. Owner, or owner's representative, shall complete "punch list" with installing contractor prior to final acceptance of the installation and submit completed warranty documentation to manufacturer.

3.6 CONTINUED SERVICE AND DOCUMENTATION

- A. Train owner's personnel on how to safely shut off electrical power, release and manually operate the barrier. Additionally, demonstrate the general maintenance of the gate operator and accessories and provide one copy of "Programming and Operations Manual" for the owner's use. Manuals will identify parts of the equipment for future procurement.
- B. General maintenance of the Sloan Gate Arm Barrier System shall consist of removing foreign materials and debris that may cause damage to the barrier and may cause safety concerns. Refer to the owner's manual for more details on the system maintenance.
- C. Sloan will supply an operator manual that contains recommended maintenance intervals, procedures, and replacement parts lists.
- D. Maintenance instructions shall include routine maintenance procedures, possible breakdowns, and repairs, and troubleshooting guide. The instructions shall include equipment layout and simplified wiring, and control diagrams of the systems as installed.
- E. Suggested Maintenance Contractor: Sloan Security Group, Phone: (888) 382-8370, Website: www.sloangsg.com, email: info@sloangsg.com

NOTE: Sloan Security Group reserves the right to change these specifications at any time. Call (888) 382-8370 to ensure that you have the latest edition.

CAUTION: Barriers manufactured by Sloan Security Group are intended for use in controlling vehicular traffic and are not intended to be used by pedestrians or to control pedestrian traffic. **Always install a separate pedestrian entry.** Barrier arm type gate operators present a specific hazard to motorcyclists. Please direct motor traffic to another access point.