

TECHNICAL BULLETIN - #A104  
SUBJECT: **STOP ARM & CROSSING ARM**  
**INSTALLATION INSTRUCTIONS**  
Effective Date: 8/27/01 Revised Date: 8/22/05

**AIR – VACUUM or ELECTRIC** [includes 5 series, Sentinel or 6 series]

**NOTE ON ALL VEHICLE POWER CONNECTIONS:** *For both crossing gates and stop arms:*  
The +12V power connection (red wire) **MUST BE FUSED AT 5 AMPS**, Fast Blow.

**Safety-Guard Crossing Gates:**

The SMC Crossing Gate control is designed to be mounted on the front bumper of a bus on the passenger side. Installation methods vary depending on the bus design, bumper form and the system desired for activation. An SMC Mounting Bracket Kit designed for your particular bus chassis is recommended to ensure proper installation and location. Contact the local bus or SMC parts distributor for information on the various Mounting Bracket Kits available.

1. Mount the crossing gate control to the bracket(s) to be used prior to mounting the bracket(s) on the bumper. The Crossing Gate should be mounted on the passenger side such that the arm will be in line with the outer edge of the front wheel when extended or per the State specifications if different. Note- each Mounting Bracket Kit includes the appropriate bracket(s), pictorial instructions.
2. Make wiring connections per Wiring Diagram '1-2-5-6'. Troubleshooting Guides for the units are available by request to SMC Customer Service and/or local Distributor.  
If an AIR unit is to be actuated in conjunction with an existing AIR unit, a separate Regulator – Solenoid Valve (P/N 1660) for each is recommended to ensure proper operation. Connect the Air source to the inlet port of the Regulator (P/N 1690) and the outlet port of the Solenoid Valve (P/N 1680) to the unit. The Regulator should be set fully counter-clockwise closed position and then after installation is complete, gradually increase the air pressure by pulling the locking ring cap upward and turning this cap clockwise until the hinge is extended to approximately 90 degrees. **CAUTION:** *Do not exceed the maximum pressure required to open to 90 degrees (typically ~12 psi.), otherwise damage to the unit may result. Relock the cap by pushing the ring downward. \*(Integrated Air Crossing Arms will need 90 psi to open unit. This unit will need a separate regulator & solenoid. Must not exceed 120psi.)*
3. If a VACUUM unit is to be actuated in conjunction with an existing VACUUM unit, no new valves or switches are needed. Connect the Vacuum source to the outlet port of a Check Valve (P/N 1699), connect the Check Valve inlet port to the inlet port of a Solenoid Valve (P/N 1680) and connect the outlet port of the Solenoid Valve to the unit. **Note-** the Solenoid Valves should be mounted as close to the units as reasonably possible using care not to kink the tubing.

**\*NOTE:** *SMC MOUNTING BRACKETS MUST BE USED ON ALL SMC CROSSING CONTROL ARMS AND MUST BE INSTALLED ACCORDING TO INSTRUCTIONS TO INCLUDE THE SPLASH SHIELD. FAILURE TO FOLLOW CORRECT INSTALLATION PROCEDURES WILL VOID WARRANTY ON ALL PARTS OF CROSSING CONTROL ARM.*

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**Safety-Guard Stop Arms:**

Safety Guard Stop Arms are designed to be mounted on the bus side near the driver window and near the rear on the driver side (Model xxx1, xxx5 or xxx9) and/or near the rear on the passenger side (Model xxx1R, xxx5R or xxx9R) per the individual State specifications. Care should be taken to position the unit so it doesn't interfere with a window mechanism.

1. Drill a 9/16" hole in the vehicle's outer skin at the point(s) directly behind the Air or Vacuum inlet port and/or wiring outlet locations when the unit is positioned in the desired location.  
**Note-** if the unit is a Vacuum or Air type with lights, 5/16" holes may be made for the light wires behind their point(s) of exit but the installer assumes all warranty issue claims for damaged wire insulation.
2. For Air and Vacuum units, install a hose barb into the Stop Arm fitting on the backside and attach a desired length of tubing to reach the Solenoid Valve location.
3. Push tubing and any wire leads through the proper holes with protective grommets. Level the Stop Arm onto the bus body such that the weight of the unit does not rest on the tubing and/or wires. Mark the location of the four mounting holes pierced in the base.
4. Drill 3/16" holes at the four marked places and attach the unit with #14 x 3/4" sheet metal screws or equivalent.
5. Follow steps 2 through 4 of the Crossing Gate Installation section

***\*IMPORTANT: USING OR SUBSTITUTING OTHER THAN ALL GENUINE SPECIALTY MANUFACTURING COMPANY COMPONENTS WITHIN THE UNITS, BLADES, STROBE LIGHTING AND LENSES WILL VOID WARRANTY.***