Model 7000

Post Mounted Residential & Medium Duty Commercial Slide Gate Operator

INSTALLATION MANUAL

Rev. Date: 05/15/03
WARNING - To reduce the risk of injury or death:

- READ AND FOLLOW ALL INSTRUCTIONS.
- Installation should be performed by a professional installer.
- Required welding should be performed by a qualified welder.
- Should electricity be required, use a certified electrician only.
- Any device that requires 120 Volts AC should be U.L. approved.
- Review with the owner all safety concerns including:
  - Do not operate the gate unless area around gate is in full view.
  - Never let children operate or play with gate controls. Keep the remote control away from children.
  - Always keep people and objects away from the gate. NO ONE SHOULD CROSS THE PATH OF THE MOVING GATE.
  - Periodically test the obstruction sensitivity to assure safe and proper operation. Do not test sensitivity by standing between the gate and the hinge or stop post.
  - Do not allow children to play with the gate controls.
  - The “CAUTION AUTOMATIC GATE” signs should be clearly visible from both sides of the gate.
  - Always insure that the gate has closed securely before leaving area.
  - Arrange with local fire and law enforcement for emergency access.

- Use the emergency release only when the gate is not moving.
- Use safety devices such as loop detectors, edge switches, and beam detectors whenever possible.
- Install control devices such as keypads far enough away (5 feet or further) from any moving parts of the operator and gate to prevent possible injury.
- Do not install control box where the gate can come in contact with person using the push button on side of control box.
- Always disconnect the battery or power source when making adjustments or repairs to any part of the gate or operator.
- All rollers should be covered to prevent injury.
- KEEP GATES PROPERLY MAINTAINED. Read the owner’s manual. Have a qualified service person make repairs to gate hardware.
- The entrance is for vehicles only. Pedestrians must use separate entrance.

Test the gate operator monthly. The gate MUST reverse on contact with a rigid object or stop when an object activates the non contact sensors. After adjusting the force or limit of travel, retest the gate operator. Failure to adjust and retest the gate operator properly can increase the risk of injury or death.

SAVE THESE INSTRUCTIONS.
The **Apollo** Model 7000 Slide Gate Operator is designed to handle a slide gate up to 23 feet in total length (accommodates a 20 foot drive). A professional fence or gate dealer is recommended to assure proper installation. **Apollo Gate Operators** are available only through qualified dealers with an outstanding reputation in the fence and gate industry. These dealers will be able to recommend the proper equipment for particular applications. **Apollo Gate Operators** are 12 Volt DC (**Direct Current**) powered. A 12 Volt marine type battery is recommended. There are several advantages with 12 Volt DC systems:

- *Low voltage virtually eliminates risk of electrical shock.*
- *Battery powered operators provide up to 200 operations in the event of power outages.*
- *The battery may be recharged with a trickle charger or by solar energy (eliminating the need for costly trenching to remote entrances).*

If a trickle charger is used and a standard electrical outlet is not readily available, a licensed electrician will be required for proper electrical hook up.

The following table should be used as a guide for capacity of operation of operators only, additional options may reduce the the daily usage. *Please note that the charge capability of solar panels will vary with different geographical locations.*

### Charging Methods for Average Daily Usage

<table>
<thead>
<tr>
<th>Model #</th>
<th>Daily Usage</th>
<th>1-10</th>
<th>1-20</th>
<th>1-40</th>
<th>1-60</th>
<th>1-80</th>
<th>80+</th>
</tr>
</thead>
<tbody>
<tr>
<td>201</td>
<td>5 watt solar panel</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>210</td>
<td>10 watt solar panel</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MSX20</td>
<td>20 watt solar panel (<strong>requires 5310 regulator</strong>)</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MSX30</td>
<td>30 watt solar panel (<strong>requires 5310 regulator</strong>)</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MSX40</td>
<td>40 watt solar panel (<strong>requires 5310 regulator</strong>)</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>404</td>
<td>1.5 amp battery charger</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>405</td>
<td>10 amp battery charger</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
PRE-INSTALLATION CHECKLIST

The following checklist should be used before beginning installation:

• Verify that the proper operator has been selected for this application.

• Verify proper installation and operation of the gate.
  1. Are all rollers covered with a protective housing?
  2. Are the rollers servicable?
  3. Does the gate roll free and level?
  4. Will the gate require a locking device?
  5. Are the main posts sturdy enough to handle the gate & operator?

• Determine the general location of the operator, chain brackets, and solar panel (if used).
  1. Is there a suitable location for the operator?
  2. Can the solar panel (if used) be mounted in an unobstructed area facing south?
  3. Will additional solar panel cable be required?
  4. Is electricity available (if required)?

• Consider safety and access options. Recommend if needed.
  1. Will there be children or animals in the area?
  2. Are safety loops, edge switches, or photo beam detectors required?
  3. How can the gate be opened in emergencies?
  4. How will visitors enter and exit?
  5. Will vehicles (and trailers) have sufficient room off roadway to operate any control devices such as keypads?
PARTS IDENTIFICATION

- Chain Brackets (2)
- #40 Roller Chain (30 feet)
- Tie Wraps (4 each)
- 5/16 Washers, Lock Washers, & Nuts (16 each)
- Operator
- 5/16” x 2” U Bolts (4 each)
- 5/16” x 3” U Bolts (4 each)
- Chain Bolts with hardware (2 each)
- Magnetic Chain Limits with hardware (2 each)
- Master Chain Links (2 each)
- 5/16 Washers, Lock Washers, & Nuts (16 each)
- 5 Watt Solar Panel & Bracket (optional)
- 5/16” x 2” U Bolts (4 each)
- 5/16” x 3” U Bolts (4 each)
- Chain Bolts with hardware (2 each)
- Magnetic Chain Limits with hardware (2 each)
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- 5/16” x 3” U Bolts (4 each)
OPERATOR INSTALLATION

STEP 1. Install two 3” dia. Posts parallel to the gate as shown. Posts height depends on height preference of operator.

STEP 2. Remove chain cover and front lid. Mount to posts using the four supplied 3” U-bolts.
STEP 3. Install one of the gate brackets and chain bolts on right side of gate using the supplied 2” U-bolts. Do not tighten at this time.

STEP 4. Attach the chain to the chain bolt using the master chain link.

*Note:* The height of the chain bolt should align with the bottom teeth of the idler sprockets.
**STEP 5.** Thread chain on the sprockets as shown.

![Diagram showing chain on sprockets]

Chain should be level with about a 1 inch lag per 10 feet.

**STEP 6.** *(Refer to page 8)*

- Install the other gate bracket and chain bolt on the left side of the gate.
- Determine the required length of chain needed to attach to the chain bolt and still allow adjustment.
- Using a chain breaking tool, remove excess chain.
- Attach chain to chain bolt.
- Tighten all chain brackets and chain bolts. Allow 1 inch of chain lag per 10 feet of chain.
GATE LIMIT SWITCH INSTALLATION

Align each magnet with the corresponding switch on the operator for the open and closed position.

Connect the battery and test for proper open & close position.

WARNING: If further adjustment is required, always disconnect battery prior to relocating the chain magnet.

STEP 7. Install chain cover.
- Install solar panel or battery charger and any optional accessories.
- Close box.
- Good Job!

QUICK RELEASE OPERATION

Gate may be manually opened using the quick release.

Disconnect battery before use!

Engaged

Pull & turn 1/2 inch to dis-engage
635/636 CONTROL BOARD CONNECTIONS

8 Pin White Connector (two on 636 Master & Slave)

1 ORANGE - Open Limit Input (Normally open unless gate is opened)
2 WHITE - Close Limit Input (Normally open unless gate is closed)
3 BLACK - Motor - Positive during open cycle, Negative during close cycle
4 RED - Motor - Negative during open cycle, Positive during close cycle
5 GREEN - Ground (Limit Switch Common)
6 Ground Not used
7 BLACK - Ground - Battery Negative
8 RED - Battery Positive (+12 VDC)

7 Pin Black Connectors

1 Edge 1 Input
2 Edge 2 Input
3 Ground
4 Ground
5 Stop Input (N/C)
6 Close Input (N/O)
7 Open Input (N/O)
8 Ground
9 Ground
10 Free Exit Input (Open only for telephone entry, probes, etc.)
11 Ground
12 Under Gate or Shadow Loop Input
13 Ground
14 Safety Loop or Photo Beam Input

3 Pin Black Connectors (3)

GND Ground
INP Input (Activates gate when momentarily connected to ground)
12V +12 Volt Output (For powering options - 3 Amps Max.)

Emergency Bypass Connector

Used when the control board is not functioning. Unplug the motor harness from the Master (or Slave) Connector and momentarily insert into the Emergency Bypass Connector to open the gate. In the event the motor is not disconnected quickly enough, the blue 15 amp fuse will protect the circuit board from damage and should be replaced when the original problem is fixed.
635/636 CONTROL BOARD ADJUSTMENTS

**PROGRAM SWITCHES**

<table>
<thead>
<tr>
<th>Factory Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1 ON</td>
<td>TIMER TO CLOSE - Automatically closes gate</td>
</tr>
<tr>
<td></td>
<td>ON - Close timer enabled     OFF - Close timer disabled</td>
</tr>
<tr>
<td>#2 OFF</td>
<td>CURRENT SENSITIVITY OPTION - Delays current sensing from start</td>
</tr>
<tr>
<td></td>
<td>ON - 4 second delay       OFF - 2 second delay</td>
</tr>
<tr>
<td>#3 ON</td>
<td>TIMER TO CLOSE OPTION</td>
</tr>
<tr>
<td></td>
<td>ON - timer to close works only when open limit switch is activated</td>
</tr>
<tr>
<td></td>
<td>OFF - timer to close works from any open gate position</td>
</tr>
<tr>
<td>#4 OFF</td>
<td>DUAL CONTROL SLAVE OPTION</td>
</tr>
<tr>
<td></td>
<td>ON - disables slave side of dual board</td>
</tr>
<tr>
<td></td>
<td>OFF - enables slave side of dual board</td>
</tr>
<tr>
<td>#5 OFF</td>
<td>DUAL CONTROL MASTER OPTION</td>
</tr>
<tr>
<td></td>
<td>ON - disables master side of dual board</td>
</tr>
<tr>
<td></td>
<td>OFF - Enables master side of dual board</td>
</tr>
<tr>
<td>#6 OFF</td>
<td>MAXIMUM RUN TIMER OPTION</td>
</tr>
<tr>
<td></td>
<td>ON - stops and reverses gate if run timer times out before closing</td>
</tr>
<tr>
<td></td>
<td>OFF - stops gate if run timer times out before closing</td>
</tr>
<tr>
<td>#7 ON</td>
<td>MAXIMUM RUN TIMER VALUE</td>
</tr>
<tr>
<td></td>
<td>ON - 40 seconds</td>
</tr>
<tr>
<td></td>
<td>OFF - 20 seconds</td>
</tr>
<tr>
<td>#8 ON</td>
<td>TIMER TO CLOSE VALUE</td>
</tr>
<tr>
<td></td>
<td>ON - 20 to 70 seconds (adjustable)</td>
</tr>
<tr>
<td></td>
<td>OFF - 10 to 35 seconds (adjustable)</td>
</tr>
<tr>
<td>#9 OFF</td>
<td>OPEN, STOP, CLOSE CONTROL ENABLE</td>
</tr>
<tr>
<td></td>
<td>ON - allows for open, stop, close unit (optional) to operate gate</td>
</tr>
<tr>
<td></td>
<td>OFF - normal operation</td>
</tr>
<tr>
<td></td>
<td>(If 9 is on, terminals 4 &amp; 5 must be normally closed for proper operation.)</td>
</tr>
</tbody>
</table>

**TIMER TO CLOSE ADJUSTMENT**

- Rotate clockwise to increase time before gate closes.
- Rotate counter-clockwise to decrease time before gate closes.
- If program switch #6 is on, the gate must activate the open limit switch in order for the timer to close to operate.

**CURRENT SENSITIVITY**

- Rotate clockwise to decrease sensitivity (more force).
- Rotate counter-clockwise to increase sensitivity (less force).
- **WARNING:** The CURRENT SENSITIVITY should be adjusted to prevent injury in the event of someone being entrapped in the gate. This feature should be periodically tested to assure proper operation. Refer to SAFETY PRECAUTIONS.

**LED ENABLE**

- Enables LEDs for installation and troubleshooting (must be depressed to observe LEDs).

**Fuses**

There are 4 standard automotive type fuses on the 635/636 circuit board. The **EMERGENCY BY-PASS** plug is protected by a 15 Amp fuse. The remaining three fuses (one for each of the 12 Volt outputs) are 3 amp.
Do not confuse the receiver code switches with the red program switches on the gate control board.

Never set all code switches to the same position. Transmitters must match code switches for proper operation.

If power is taken directly from battery or connected as shown below, receiver should be configured for 12VDC.
LIMITED TWO-YEAR WARRANTY

Apollo Gate Operators are warranted against defects for a period of 24 months from the date of purchase, providing recommended installation procedures are followed. This warranty is in lieu of all other warranties expressed or implied (some states do not allow limitations on how long an implied warranty lasts, so this limitation may not apply to you) and shall be considered void if damage was due to improper installation or use, connection to improper power source, or if damage was caused by fire, flood, or lightning. The manufacturer will not be responsible for any labor charges incurred in the removal or replacement of defective parts.

In case of failure due to defective material or workmanship during the warranty period, the defective part will be repaired or replaced at the manufacturer’s option at no charge if returned freight prepaid. New or factory rebuilt replacements may be used. Replacement parts are warranted for the remaining portion of the original warranty period. The manufacturer will pay standard ground freight on the return of repaired or replaced items in warranty.