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INTRODUCTION
This manual provides Maintenance Procedures for the RSS-2000 series electric finger wedge vehicle barrier system. It is NOT intended to be all encompassing and personnel are highly encouraged to review this manual prior to performing maintenance on RSSI Barriers.

GENERAL
The RSS-2000 series finger wedge barrier is a modern "best-of-breed" electrically operated, retractable, shallow foundation, anti-ram vehicle barricade that, when properly configured, can operate with a continuous duty cycle in all climates with minimal maintenance and expense. The barrier is DoD approved and certified to meet DOS impact condition designation K12, L3 or ASTM F2656 impact condition designation M50, P1. The barrier is capable of stopping and destroying a 15,000 lbs vehicle traveling at speeds of up to 50 mph. The barrier was independently tested and certified to operate 1,500,000+ cycles with zero failure, minimal downtime and maintenance. When properly installed the barrier rests completely flush with the existing roadway surface in the Down (roadway open) position. An Allen-Bradley MPAI series IP-67 servo electromechanical actuator with manual override and rapid reverse smoothly and quietly rotates an arresting element to an above ground position of 36" without obstructing line-of-sight vision.

BEFORE YOU BEGIN
● Read and understand all instructions and procedures before you begin to maintain the barriers.
● Read and observe all Warning hazard alert messages in this publication. They provide information that can help prevent serious personal injury, damage to components, or both.
● Follow your company’s safety guidelines, to include lockout procedures.
● Use the proper tools when required to help avoid serious personal injury and damage to components.
● After review of this manual, recommend a conference call with the RSSI factory to discuss any questions regarding procedures we may not have addressed or that require further clarification.

HOW TO OBTAIN ADDITIONAL FACTORY SUPPORT
If you have any issues or questions, on-site personnel are highly encouraged to contact RSSI’s Service department. WE CAN HELP YOU! Normal office hours are 7:00 AM Central Standard Time to 3:30 PM Central Standard Time, Monday - Friday. After hour support is available with prior coordination. Additionally, we have several how-to videos on our website.

<table>
<thead>
<tr>
<th>Telephone</th>
<th>Email</th>
<th>Training Videos</th>
</tr>
</thead>
<tbody>
<tr>
<td>+1 (850) 871-9300</td>
<td><a href="mailto:service@rssi.com">service@rssi.com</a></td>
<td><a href="http://www.rssi.com/support/videos">www.rssi.com/support/videos</a></td>
</tr>
</tbody>
</table>
HAZARD ALERT MESSAGE AND SYMBOLS

**WARNING**  
A Warning alerts you to an instruction or procedure that you must follow exactly to avoid serious personal injury and damage to components.

**CAUTION**  
A Caution alerts you to an essential installation or maintenance procedure or statement, which, if not strictly observed, could result in damage to the system, equipment or injury.

**NOTE**  
A Note alerts you to an essential installation or maintenance procedure, condition, or statement.

GENERAL SAFETY

Personnel MUST comply with the following important safety instructions DURING installation activities for the RSS-2000 series electric finger wedge vehicle barrier system.

- Read and comply with all safety rules in this manual.
- A fully trained maintenance person must perform all work.
- Do not operate this equipment when you are distracted or under the influence of drugs, alcohol or medication causing diminished control.
- Never operate this equipment when a vehicle, person or any obstruction is in the way of full operation of the RSS-2000.
- Prior to start-up of the RSS-2000 series electric finger wedge vehicle barrier system, all electrical connections to the barrier will be isolated (disconnected) IAW local Lock Out Procedures.
- All Ethernet terminations should be tested with Ethernet cable tester (TIA/EIA 568A standard)
- Use special care when removing any inspection plates as these plates are very heavy.
- Never operate this equipment when a vehicle, person or any obstruction is in the way of full operation of the RSS-2000.

BARRIER DESCRIPTION

- The RSS-2000 Series Electric Finger Wedge Vehicle Barrier consists of a shallow steel vault assembly that is hot dip galvanized with a skid resistant top plate and a 4 inch x 4 inch removable post assembly.

*Figure 1, RSS-2000*
BARRIER MAINTENANCE
Maintenance of the RSS-2000 barrier consists of routine Preventative Maintenance Procedures, which RSSI recommends quarterly or semi-annually and non-routine maintenance procedures. Preventative Maintenance Procedures can be found on page 22, Attachment 3. Non-routine Maintenance Procedures are addressed in this section.

EMERGENCY MANUAL OPERATION
Tools needed: Always have these tools readily available
1. Cordless impact wrench or ratchet wrench with TORX 45 bit
2. Cordless drill with adapter for 15/16 socket
3. Flashlight and gloves

BEFORE YOU INITIATE MAINTENANCE OPERATIONS
All Maintenance Operations must be coordinated with site personnel

WARNING
- Place traffic cones and block roadway from traffic to ensure worker safety
- Use the proper tools when required to help avoid serious personal injury and damage to components.
- Never operate this equipment when a vehicle, person or any obstruction is in the way of full operation of the RSS-2000.

Lowering Barrier (Open Roadway)
1. Determine which top plate to remove (directly over actuator)
   - 4 and 5 post barrier = standing on attack side – second top plate from left
   - 6 post barrier = Middle top plate

![Figure 3. Actuator Top Plate, RSS-2000](image)
2. Using cordless impact wrench or ratchet wrench with TORX 45 bit to remove 6 top plate screws

![Figure 4. Remove Top Plate Screws](image)

3. Remove top plate and relocate in a safe place (plates weigh approx. 75 lbs., use gloves and a buddy)
4. Using flashlight, visually inspect actuator for debris that could interfere with operation

**WARNING**

Remove power from barrier (Barrier Control Panel)

5. Disconnect power to the barrier by turning off the Main Disconnect and lock out with a wire tie or IAW local lockout procedures.

![Figure 5. Main Disconnect](image)


![Figure 6. Cylinder Cover](image)
7. Hand turn the 15/16 nut clockwise while applying light pressure to engage the manual drive downward lining up the tabs inside the notches while going down. The Brass Ring will lower and lock as you screw down.

8. Once tabs and notches are lined up and Manual Drive is down, turn locking nut (right below 15/16 nut) clockwise to Lock Manual Brake Overdrive in place. Brass ring will pop up into place.

---

**WARNING**

NEVER use impact wrench or tool to rotate manual screw (Drill only)

9. Then switch to a cordless drill and set the drill on the slowest RPM setting. Lower the barrier by using the drill (no pressure) and operating it on reverse setting (counterclockwise) until it reaches the full down position. DO NOT OVERDRIVE.

---

**NOTE**

The Manual Nut is equipped with an internal clutch. It will engage at max physical limits or if the load is too great.
WARNING

Improper operation of manual screw will damage actuator

10. To release Manual Drive slide the brass ring down and turn locking nut (counterclockwise) out of notches. Then turn 15/16 nut counterclockwise to disengage Manual Drive. Manual Drive will move upward and pop when fully disengaged. DO NOT OPERATE BARRIER UNTIL MANUAL BRAKE OVERDRIVE IS FULLY DISENGAGED. Screw metal cylinder back onto Manual Drive careful not to damage O-Ring or cross-thread.

BEFORE YOU INITIATE MAINTENANCE OPERATIONS

All Maintenance Operations must be coordinated with site personnel

WARNING

- Place traffic cones and block roadway from traffic to ensure worker safety
- Use the proper tools when required to help avoid serious personal injury and damage to components.
- Never operate this equipment when a vehicle, person or any obstruction is in the way of full operation of the RSS-2000.

Raising Barrier (Close Roadway)

1. Remove metal cylinder cover from Manual Drive (counterclockwise).
2. Hand turn the 15/16 nut clockwise while applying light pressure to engage the manual drive downward lining up the tabs inside the notches while going down. Brass Ring will lower as you screw down.
3. Once tabs and notches are lined up and Manual Drive is down, turn locking nut (right below 15/16 nut) clockwise to Lock Manual Brake Overdrive in place. Brass ring will pop up into place.
4. Then switch to a cordless drill and set the drill on the slowest RPM setting. Raise the barrier by using the drill (no pressure) and operating it forward (clockwise) on the slowest RPM setting until it reaches the full up position.
5. To release Manual Drive slide the brass ring down and turn locking nut (counterclockwise) out of notches. Then turn 15/16 nut counterclockwise to disengage Manual Drive. Manual Drive will move upward and pop when fully disengaged. DO NOT OPERATE BARRIER UNTIL MANUAL BRAKE OVERDRIVE IS FULLY DISENGAGED.
6. Place top plate back in place and install 6 screws, start all screws before tightening (anti-seize)
7. After condition requiring Emergency Manual Operation has been corrected (power restored or components repaired, reinstate power to the barrier by turning on the Main Disconnect

8. Push in drive fuses (FU1) in BCP
9. Return barrier to service.

⚠️ **WARNING**

If barrier will be down for maintenance for an extended period, leave Main Disconnect power off, ensure it is locked and TAGGED out.
Troubleshooting Procedures.

The following Table contains the most common Trouble Shooting items for the barrier systems. If you encounter an issue not listed or want to discuss with a technician, please contact the factory.

Table 1, Trouble Shooting Procedures

<table>
<thead>
<tr>
<th>STEP</th>
<th>Condition (Problem)</th>
<th>Cause (Possible Reason)</th>
<th>Corrective Action</th>
<th>Verify Corrective Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>E01 and/or E14 on Active Alarm Screen with Servo Drive fuse FU1 pushed in</td>
<td>Loss of communication to Servo Drive</td>
<td>At the BCP, check the Amber Link Light on Ethernet switch located next to the PLC Ethernet Cable connected to the Servo Drive (ensure you have cable from Servo Drive). If there is no light; try connecting cable to another port in switch. If Amber Link Light for this device comes on, test barrier operation. If testing is good, mark old port as bad. If test is bad, re-terminate RJ-45 connector or replace Ethernet Cable. Conduct an end-to-end Ethernet Cable Test, if still bad, replace Ethernet Switch.</td>
<td>If the Condition still exists, check item #2. If the Condition still exists, call RSSI</td>
</tr>
<tr>
<td>2</td>
<td>E01 and/or E14 on Active Alarm Screen with Servo Drive fuse FU1 pushed in</td>
<td>Loss of communication to Servo Drive</td>
<td>At the BCP, check the Green communications light on switch located next to the Ethernet Cable connected to the Servo Drive. If there is no blinking light; try connecting cable to another port in switch. If light still does not blink for this device, replace the Ethernet Switch in BCP.</td>
<td>If the Condition still exists, after checking item #1 and #2, Replace the Servo Drive Panel inside the Barrier. Refer to Atch 11, Replace the Servo Drive Panel in Barrier on Page 47 If the Condition still exists, call RSSI</td>
</tr>
<tr>
<td>3</td>
<td>E01 and/or E14 on Active Alarm Screen with Servo Drive fuse FU1 pushed in</td>
<td>Loss of power to Servo Drive</td>
<td>At the BCP, check for Red light at Fuse holder FU1; if red light is lit, replace fuse.</td>
<td>If the Condition still exists, check item #4.</td>
</tr>
<tr>
<td>4</td>
<td>E01 and/or E14 on Active Alarm Screen with Servo Drive fuse FU1 pushed in</td>
<td>Loss of power to Servo Drive</td>
<td>Test power from BCP to Servo Drive Panel with Volt Meter (230 Vac), if bad, verify Power J-box splices are good, if loose, re-terminate.</td>
<td>If the Condition still exists, and you've checked item #3&amp;4, replace Servo Drive Panel inside barrier. Refer to Atch 11, Replace the Servo Drive Panel in Barrier on Page 47 If the Condition still exists, call RSSI</td>
</tr>
<tr>
<td>STEP</td>
<td>Condition (Problem)</td>
<td>Cause (Possible Reason)</td>
<td>Corrective Action</td>
<td>Verify Corrective Action</td>
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<tr>
<td>5</td>
<td>Loss of Power</td>
<td>BBP has experienced</td>
<td>Test incoming power to BBP at CB1, if good, clear active alarm by pressing ALARM RESET</td>
<td>Alarm should clear (Green) If the Condition still exists, call RSSI</td>
</tr>
<tr>
<td></td>
<td>Alarm on active</td>
<td>Loss of normal power</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>alarm screen</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>6</td>
<td>E09 – Bus under</td>
<td>Incoming main power too low</td>
<td>Check voltage (220-240v) while running barrier at BBP at CB1. If less than 220v, incoming power is too low.</td>
<td>Confirm Electrical voltage If confirmed and condition still exists, Call RSSI</td>
</tr>
<tr>
<td></td>
<td>voltage on active</td>
<td>for load</td>
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<td>alarm page or in</td>
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<td></td>
<td>alarm history</td>
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<td></td>
<td>Barrier stops in</td>
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<td></td>
<td>mid Motion</td>
<td></td>
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<tr>
<td>7</td>
<td>Sump pump not</td>
<td>Power problem</td>
<td>In the BCP check for 120V across SP and NEUTRAL-terminal blocks. If no power, check CB 1 and CB 4; reset if necessary</td>
<td>Confirm sump pump operation Refer to Atch 15, Replace 120V power supply in BCP on page 56 If the Condition still exists, check item #15</td>
</tr>
<tr>
<td></td>
<td>working</td>
<td></td>
<td></td>
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<tr>
<td>8</td>
<td>Sump pump not</td>
<td>Debris blocking sump pump discharge</td>
<td>Clean area around sump pump and check sump pump drain lines (PVC)</td>
<td>Confirm sump pump operation</td>
</tr>
<tr>
<td></td>
<td>working</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Sump pump not</td>
<td>Sump pump bad</td>
<td>Replace sump pump</td>
<td>Refer to Atch 5, Replace Sump Pump on page 30 If the Condition still exists, and you’ve checked item #14 &amp; 15, contact RSSI</td>
</tr>
<tr>
<td></td>
<td>working</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Barrier has</td>
<td>Possible broken spring(s)</td>
<td>Check spring assembly for broken springs; if found replace</td>
<td>Refer to Component Repair Section for Spring Replacement Procedures</td>
</tr>
<tr>
<td></td>
<td>slowed down moving</td>
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<td></td>
<td>to up position,</td>
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<td>hesitates, jerky</td>
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<td></td>
<td>motion</td>
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<td></td>
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</tr>
<tr>
<td>11</td>
<td>Vehicles crossing</td>
<td>Top plates loose</td>
<td>Inspect all top plates screws, tighten or replace</td>
<td>Verify by observing vehicles cross barrier. If the Condition still exists, check item #12</td>
</tr>
<tr>
<td></td>
<td>barrier making a</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>clunking noise</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Vehicles crossing</td>
<td>Down position set wrong</td>
<td>Using “Setting positions procedure” JOG/TEACH Down position Flush with the roadway.</td>
<td>Verify by observing vehicles cross barrier. Refer to Atch 2, Initiate Advanced Maintenance Operations, Page 19 If the Condition still exists, call RSSI</td>
</tr>
<tr>
<td></td>
<td>barrier making a</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>clunking noise</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>The IR Sensor isn't</td>
<td>Dirty lens or misaligned IR Sensor</td>
<td>Clean photo eyes with soft cloth and re-align IR Sensor.</td>
<td>Retest sensor, if the Condition still exists, check item #14.</td>
</tr>
<tr>
<td></td>
<td>detecting vehicles</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>The IR Sensor isn't</td>
<td>Bad IR Sensor</td>
<td>Recheck wiring, and if necessary, replace IR Sensor(s);</td>
<td>If the Condition still exists, after checking item #13 and #14, call RSSI Refer to Atch 7, Replace IR Sensor on page 35</td>
</tr>
<tr>
<td></td>
<td>detecting vehicles</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STEP</td>
<td>Condition (Problem)</td>
<td>Cause (Possible Reason)</td>
<td>Corrective Action</td>
<td>Verify Corrective Action</td>
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<td>------------------------------------------------------------------------------------</td>
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<td>-----------------------------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>15</td>
<td>The barrier safety loops don't detect vehicles</td>
<td>Loop detector tuning</td>
<td>Retune loop detector by removing and inserting front plug with no vehicle on loop. Indicator lights should display solid green when tuned.</td>
<td>Retest loop detector, if the Condition still exists, check item #16. Refer to Atch 6, Replace Safety Loop Sensor on page 42</td>
</tr>
<tr>
<td>16</td>
<td>The barrier safety loops don't detect vehicles</td>
<td>Bad loop detector</td>
<td>Replace loop detector.</td>
<td>Retest, if the Condition still exists, check item #17. Refer to Atch 6, Replace Safety Loop Sensor on page 33</td>
</tr>
<tr>
<td>17</td>
<td>The barrier safety loops don't detect vehicles</td>
<td>Bad safety loop in roadway</td>
<td>Inspect roadway for cracks through Safety Loop wires. Replace if bad.</td>
<td>Safety Loop Installation can be found in the Installation Manual, Retest safety loop, if the Condition still exists after checking items #15-17, call RSSI</td>
</tr>
<tr>
<td>18</td>
<td>Touchscreens hard to operate or touchscreen area controls seem out of alignment</td>
<td>Touchscreen mount clips too tight</td>
<td>On back of touchscreen locate 4 black mount clips and loosen excessively tight clips, reposition clips evenly.</td>
<td>Check operation of touchscreen If condition still exists, check item #19</td>
</tr>
<tr>
<td>19</td>
<td>Touchscreens hard to operate or touchscreen area controls seem out of alignment</td>
<td>Bad Touchscreen</td>
<td>Replace touchscreen</td>
<td>Check operation of touchscreen Refer to Atch 16, Replace and Setup Touch Screen on page 58</td>
</tr>
<tr>
<td>20</td>
<td>Barrier heat grid system doesn't seem to work</td>
<td>Thermostat not set properly</td>
<td>Confirm thermostat set to 40 degrees.</td>
<td>Retest heat, if the Condition still exists, check item # 21.</td>
</tr>
<tr>
<td>21</td>
<td>Barrier heat grid system doesn't seem to work</td>
<td>Thermostat Location</td>
<td>Ensure thermostat is located in an area near barriers where ambient temperature is used to activate heat grid system.</td>
<td>Retest heat, if the Condition still exists, check item # 22.</td>
</tr>
<tr>
<td>22</td>
<td>Barrier heat grid system doesn't seem to work</td>
<td>Debris in barrier covering heat system</td>
<td>Clean out barrier vault</td>
<td>Retest heat, if the Condition still exists, check item #23.</td>
</tr>
<tr>
<td>23</td>
<td>Barrier heat grid system doesn't seem to work</td>
<td>Thermostat Bad</td>
<td>Turn thermostat to lowest setting and confirm contactor H1 does not pull in. Jump out thermostat input by placing a jumper wire between I 1/15 and +24 vdc. If contactor H1 pulls in, replace Thermostat.</td>
<td>Retest heat grid system If conditions still exists after checking items #20-23, call RSSI</td>
</tr>
</tbody>
</table>

**NOTE**
If you encounter an issue not listed or want to discuss with a technician, please contact the factory. See page 3, HOW TO OBTAIN ADDITIONAL FACTORY SUPPORT.
Battery Backup Panel (BBP) Recovery/Restart Procedures

The BBP is designed to automatically switch to battery power when normal power is lost and to switch back when normal power is restored. The BBP will also fully charge the batteries after an outage. The system will provide approximately 200 cycles of backup power to operate the barriers during a power outage (2 each 12 volt batteries). Should the power outage last longer than the battery life, the power inverter will shut down when the batteries voltage drops below approximately 20VDC.

TO RECOVER WHEN MAIN POWER RETURNS

1. Power inverter must be reset, after batteries are recharged, by flipping the power switch on top to the OFF position and then back ON, check for solid green light.
2. Check battery charger DC Ammeter to confirm batteries are recharging.
3. Allow batteries to charge at least 12 hours before conducting a test of the BBP.
4. After batteries are charged perform the below Functional Checkout to test the system.

FUNCTIONAL TEST CHECKOUT

1. Turn off CB1 (main power source) Contactor C1 should de-energize and Emergency contactor C2 should energize simultaneously.
2. Check voltages at terminals 3L1 and 3L2 = approx. 245VAC (no load)
3. Test barrier operation on BBP.
4. Turn CB1 back on and after approx. 4 seconds, the emergency contactor C2 should de-energize and C1 should energize.
5. Return to normal operations

NOTE: Ensure Switch on top of Invertor is set to 60 Hz??
Ethernet and Device Testing Procedures

The following table identifies all devices in the RSSI Barrier Network.

<table>
<thead>
<tr>
<th>IP ADDRESS</th>
<th>DEVICE/LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>192.168.1.1</td>
<td>Gateway (For future use)</td>
</tr>
<tr>
<td>192.168.1.10</td>
<td>PLC in BCP</td>
</tr>
<tr>
<td>192.168.1.11</td>
<td>Servo Drive Inside Barrier</td>
</tr>
<tr>
<td>192.168.1.12</td>
<td>Maintenance Touch Screen in BCP</td>
</tr>
<tr>
<td>192.168.1.13</td>
<td>Point I/O in Primary Touch Screen Controls</td>
</tr>
<tr>
<td>192.168.1.22</td>
<td>Primary Touch Screen</td>
</tr>
</tbody>
</table>

Table 1, IP Address Listing

If you receive a loss of communications Alarm or have to change out a device, you may have to conduct Ethernet tests of connectivity to all the nodes/devices (PLC, Touchscreen, Servo Drive).

1. Using a laptop, connect your Ethernet cable to an empty port on the Ethernet switch in the BCP.
2. Set the static TCP/IP address on your laptop to 192.168.1.200 with subnet mask 255.255.255.0
3. Go to a DOS PROMPT and type PING 192.168.1.10 you should get replies from the PLC.
4. Go to a DOS PROMPT and type PING 192.168.1.11 you should get replies from the Servo Drive.
5. Go to a DOS PROMPT and type PING 192.168.1.12 you should get replies from the Maintenance Touchscreen in the BCP.
6. Go to a DOS PROMPT and type PING 192.168.1.22 you should get replies from the Primary Touchscreen.
7. If you do not get replies from the devices, ensure your laptop is on the correct subnet again and troubleshoot connectivity problems to any device. Test Ethernet cabling end to end with an Ethernet cable tester.
Component Repair/Replacement Procedures

If there is a component to repair/replace that is not covered in this manual, contact the RSSI Service Manager for assistance (see page 3, HOW TO OBTAIN ADDITIONAL FACTORY SUPPORT).

- Repairs should only be performed by a factory trained technician.
- Most repairs (LED lights, fuses, pins or screws, and sump pump) will be simple remove and replace and traditional skill sets (electrical, plumbing, and mechanical) can easily handle these tasks.
- Critical electrical components, Servo Drive, Actuator, PLC, and Communication Systems require more specialized skill sets. With this manual, and the phone support of a RSSI factory technician, these tasks can be easily performed.

Detailed Component Repair and Replacement Procedures are outlined in Attachments 4-16

16 Attachments
1. Barrier Control From Maintenance Touch Screen
2. Initiate Advanced Maintenance Operations (From Maintenance Touch Screen in BCP)
3. Preventative Maintenance Checklist
4. Replace Actuator
5. Replace Sump Pump
6. Replace Safety Loop Sensor
7. Replace IR Sensor
8. Replace Spring
9. Replace Servo Drive Fuse
10. Replace LED Traffic Light
11. Replace Servo Drive Panel in Barrier
12. Replace Post Assembly LED Lights
13. Replace Surge Protection Module in BBP
14. Replace Time Delay Relay in BBP
15. Replace 24 VDC Power Supply in BCP
16. Replace and Setup Touchscreens

** END OF SECTION **

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6530 E Highway 22
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(850) 871-9300
www.rssi.com
ATTACHMENT 1- BARRIER CONTROL FROM MAINTENANCE TOUCH SCREEN

1. From the MAIN MENU, press the BARRIER CONTROL button (See Fig 7).

![Figure 7, Main Menu](image1)

2. Inside the BARRIER CONTROL menu use the MOVE CLOSED/OPEN buttons to operate the barrier a few cycles, measure the post assembly in the CLOSED (UP) position to ensure it reaches 35-36 inches and ensure the OPEN(DOWN) position is all the way down and out of roadway. (See Fig 8)

![Figure 8, Barrier Control Menu](image2)

**NOTE**
If the Peak Current is higher than 20 Amp, it may indicate that the barrier position needs to be adjusted. Refer to Step 5 in Attachment 2.

**NOTE**
If the barrier post assembly is not flush with the roadway (protruding from barrier), refer to Step 5 in Attachment 2.
FROM THE MAINTENANCE TOUCH SCREEN IN THE BCP

Homing the Barrier

1. Turn on Fuse FU1. On the maintenance touch screen in the BCP, go to the main screen and check for any alarms and reset or clear.

2. At the Main Screen, go to the LOGIN box and login: “RSSI” password: “32404”.

3. Once you have logged in at the Main screen, select the HOME box and then at the HOME menu press the red HOME button. The Home button will flash while homing, once it has completed the process the green BARRIER HOMED button will appear. The barrier is now homed, select Main to return to main screen.

![Figure 9, Home Menu](image)

Barrier Control

1. From the MAIN MENU, press the BARRIER CONTROL button (See Fig 10).

![Figure 10, Main Menu](image)
2. Inside the BARRIER CONTROL menu use the MOVE CLOSED/OPEN buttons to operate the barrier a few cycles, measure the post assembly in the CLOSED(up) position to ensure it reaches 35-36 inches and ensure the OPEN(down) position is all the way down and out of roadway. (See Fig 11)

![Figure 11, Barrier Control Menu](image)

**NOTE**
If the Peak Current is higher than 20 Amp, it may indicate that the barrier position needs to be adjusted. Refer to Step 5 in Attachment 2.

**NOTE**
If the barrier post assembly is not flush with the roadway (protruding from barrier), refer to Step 5 in Attachment 2.
ATTACHMENT 2 - INITIATE ADVANCED MAINTENANCE OPERATIONS (FROM MAINTENANCE TOUCH SCREEN IN BCP)

The Maintenance Touchscreen located in the BCP is located in a mechanical room and many maintenance tasks can be accomplished from the Secondary Operator Controls. However, there are tasks that can only be performed from this touch screen.

⚠️ **NOTE**
If you’re unsure of the impact of changing a setting, please contact RSSI. See page 3, HOW TO OBTAIN ADDITIONAL FACTORY SUPPORT.

1. **ALARM Screen:** Clear Active alarms before proceeding) Primary/Secondary Touch Screens must be connected before alarms can be cleared.

![ALARM Screen]

2. **LOGIN Screen User:** RSSI, PW=32404

![LOGIN Screen]
3. **DRIVE STATUS** screen: Drive Status must be DRIVE OK – if it is not resolve by checking trouble shooting table on page 10.

4. **HOME** Screen: Technician can HOME barrier or abort HOMING, if barrier gets out of HOME again, the touchscreen will show message and direct technician to re-home. If barrier doesn't complete Homing in 30-45 seconds, verify Drive Status in Item 3 above. If Drive is OK, attempt to HOME again. If it doesn’t complete Homing a 2nd time, pressing the abort homing button will stop HOMING procedure. Contact RSSI for assistance.

5. **JOG/TEACH** screens: use JOG to position barrier–then TEACH open/closed lane positions. Closed position should read around -180 and open position should read -2 to -5 depending on roadway. Make sure barrier clears all vehicle including snow removal trucks and doesn't bounce when vehicles roll over barrier.
CAUTION
DO NOT change any other settings on this screen without FIRST contacting RSSI. Doing so may change the operating characteristics of your barrier.

6. MOVE screen: using accel/decel to select speed of barrier EFO speed (use defaults)

7. Barrier Control Screen: run barrier through a series of open/close movements while monitoring the AMP indicator. Should be less than 15 amps close lane and less than 10 amps open lane. T/shoot high amp movements before proceeding. Recheck Manual Screw, must be Disengaged.
ATTACHMENT 3 - PREVENTATIVE MAINTENANCE CHECKLIST

Make copies of this checklist for maintenance activity for each barrier and maintain a copy in the maintenance binder for the Warranty/Historical Record. For assistance, please call RSSI’s service department at (850) 871-9300 or email service@rssi.com.

<table>
<thead>
<tr>
<th>Name of Person Performing Maintenance:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barrier Location:</td>
</tr>
<tr>
<td>Barrier Model No:</td>
</tr>
<tr>
<td>Barrier Serial No:</td>
</tr>
<tr>
<td>Voltage:</td>
</tr>
<tr>
<td>Barrier Cycle Count:</td>
</tr>
<tr>
<td>Date:</td>
</tr>
</tbody>
</table>

BEFORE YOU INITIATE MAINTENANCE OPERATIONS

All Maintenance Operations must be coordinated with site personnel.

WARNING

Place traffic cones and block roadway from traffic to ensure worker safety

Preventative Maintenance Steps

1. Turn power on to unit (if necessary) to check for proper voltage.
2. Place necessary traffic safety cones to ensure worker safety.
3. Check operation of unit by operating the barrier 3 times. Ensure that the post assembly rotates smoothly and reaches full UP and DOWN positions.
4. Check LED safety lights on barrier for proper operation.
5. Make sure the vehicle barrier is in the UP position and disconnect power to the barrier by turning off the Main Disconnect and lock out with a wire tie or IAW local lockout procedures.
6. Remove all access plates (3 ea Large; 5 ea small over bearings; and 1 ea over Servo Drive Panel). Using a cordless drill with a TORX 45 bit, remove the screws from all access plates. After all screws are removed move the access plates from the barrier.

7. Check sump pump and drainage ports (if applicable). Make sure that the drain ports and/or sump pump are clear of debris and the sump pump operates properly.

8. Check actuator and spring assembly pivot arm clevis bracket bolts. If these connections are not kept tight, it might cause loose motion that could result in excessive wear. Spray down pins that hold spring packs in with white lithium grease.
9. Check actuator clevis pin and cotter pin. Make sure these are tight. A loose fit might cause excessive wear and improper barrier operation.

10. Check spring assembly front clevis pin and retaining pin and pivot tube end bolt and nut. Make sure these are tight. A loose fit might cause excessive wear and improper barrier operation. Spray down pins that hold spring packs in with white lithium grease.
11. Check spring assembly. Make sure springs are not broken. Also, check the anchor bolts to ensure none are loose. A loose fit or broken spring might cause excessive wear and improper barrier operation.

12. Check chain pins. If these connections are not kept tight, it might cause loose motion that could result in excessive wear.

13. Check split journal bearing bolts. Make sure these are tight. A loose fit might cause excessive wear and improper bollard operation.
   a. Check cables for damage and ensure all connectors are seated properly.
   b. Check for corrosion on Ethernet Termination at the Servo Drive Panel.
   c. Check for signs of water intrusion in power connector at Servo Drive Panel.
   d. Check Mounting Bolts/Nuts for the Servo Drive Panel. Make sure they are tight.
   e. Check that Servo Drive Panel is not sitting in water (if so, re-check item #7).
15. Check post assembly and touch up paint as needed.
16. Check the barrier interior for dirt and debris. Remove as necessary.
17. Replace the access cover plates and screws. Apply Permatex anti-seize lubricant or equal to screws.
18. Reinstate power to the barrier by turning on the Main Disconnect

19. Remove traffic safety cones.
20. Return barrier to NORMAL operation.
21. Complete this checklist, report any deficiencies to your supervisor, and maintain a copy in files.
ATTACHMENT 4 - REPLACE ACTUATOR

Tools needed: Always have these tools readily available
1. Cordless impact wrench or ratchet wrench with TORX 45 bit
2. Cordless drill with adapter for 15/16 socket
3. Flashlight and gloves

BEFORE YOU INITIATE MAINTENANCE OPERATIONS
All Maintenance Operations must be coordinated with site personnel.

WARNING
- Place traffic cones and block roadway from traffic to ensure worker safety.
- Use the proper tools to avoid serious personal injury and damage to components.
- Never operate this equipment when a vehicle, person or any obstruction is in the way of full operation of the RSS-2000.

CAUTION
Review Emergency Manual Operation Procedures on page 8
1. Disconnect power to the barrier by turning off the Main Disconnect and lock out with a wire tie or IAW local lockout procedures.

2. Disengage Servo Drive fuses (FU1)
3. Remove 6 top plate screws with TORX 45 bit

4. Disconnect the power (orange) and control (green) cables from actuator, taking care not to contaminate connectors with dirt, debris and water. Protect if necessary.
5. Engage and adjust the manual adjustment screw (review Manual Operating Procedures on Page 8) on top of actuator until you can easily remove the connecting pin at the actuator rod end

**WARNING**

*DO NOT* hammer out pins, this will damage the actuator

6. Remove actuator mount pins, taking care not to let actuator fall. Remove actuator.
7. Inspect all pins and mounting hardware for excessive wear and replace if necessary.
8. Install new actuator in reverse order, adjust manual adjustment screw by hand until rod eye can be slipped back into pivot arm and easily pinned

**WARNING**

*(DO NOT FORCE). MANUAL ADJUSTMENT LOCKOUT MUST BE DISENGAGED BEFORE ACTUATOR IS MOVED ELECTRICALLY AGAIN OR DAMAGE WILL OCCUR. (review manual screw lockout adjustment instructions on page 8)*

9. Re-connect power and control connectors, taking great care to line up keyways and hand tightening connectors back onto the actuator. Inspect connector’s ends for dirt and water.

**WARNING**

*DO NOT OVER-TIGHTEN, DAMAGE TO SEAL MAY OCCUR.*

**WARNING**

*MANUAL ADJUSTMENT LOCKOUT SCREW MUST BE DISENGAGED BEFORE ACTUATOR IS MOVED ELECTRICALLY AGAIN OR DAMAGE WILL OCCUR.*

10. Clear barrier of tools and top plates
11. Reinstate power to the barrier by turning on the Main Disconnect

12. Push in Servo drive fuses (FU1)
13. Home the barrier then set positions from the Maintenance Touchscreen (see Attachments 1&2)
14. Reinstall top plate over actuator with 6 each TORX 45 screws you removed or replace if corroded or damaged
15. Run the barrier up and down from barrier control menu.
16. Return barrier to service.
ATTACHMENT 5 – REPLACE SUMP PUMP

TOOLS NEEDED:

1. Phillips Head Screw Driver
2. Wire cutter and crimper
3. Waterproof Connectors
4. Heat Gun

BEFORE YOU INITIATE MAINTENANCE OPERATIONS

All Maintenance Operations must be coordinated with site personnel.

⚠️ WARNING

- Place traffic cones and block roadway from traffic to ensure worker safety.
- Use the proper tools to avoid serious personal injury and damage to components.

1. Disconnect power to the barrier by turning off the Main Disconnect and lock out with a wire tie or IAW local lockout procedures.

2. Turn off Drive Fuse (FU1) inside BCP.

3. Turn off 120V breaker to Sump Pump
4. Remove Top Plate from Barrier and Cover from Power JBox.

5. Cut SP1 (black wire), 2 (white wire), and Ground (green wire) terminations to sump pump inside Power JBox.

6. Cut zip ties on older sump pump wires. Then disconnect PVC pipe by removing set screw on top of PVC pipe. Then remove sump pump from barrier.
7. Install new pump, then connect 1”PVC. Run new sump pump wires to Power JBox. Only the SP1 (black wire), 2 (white wire), and Ground (green wire).

8. Terminate Black wire to SP1, White wire to 2 and Green wire to Ground inside the Power JBox using water proof connectors.

9. Reinstall power to the barrier by turning on the Main Disconnect

10. Return power to the Sump Pump by turning back on the circuit breaker. The Sump Pump will cycle once power is restored, if no water is present pump will stop.
11. Re-install cover on Power JBox, then re-install steel top plate.
12. Once the top plate is replaced and traffic lane is clear, turn on breaker FU1 inside Panel.
13. Return barrier to normal operation.
ATTACHMENT 6 – REPLACE SAFETY LOOP SENSOR

TOOLS NEEDED
1. Phillips Head Screw Driver

BEFORE YOU INITIATE MAINTENANCE OPERATIONS
All Maintenance Operations must be coordinated with site personnel
1. Turn off the power to the barrier you’re working on (24v power supply is on (CB5)).
2. Remove the frequency plug with the wires from the safety loops.
4. Disconnect the terminations from the defective Safety Loop Sensor.
5. Remove safety loop sensor from Din Rail and replace with new one.
   • Factory settings are to the left, reset bottom two dipswitches to the right (train to infinity and normally open).
   • Top two dipswitches are sensitivity settings. Factory settings are to the left (low sensitivity), reset sensitivity to high (top two dipswitches to the right
**NOTE**  
Sensitivity settings are Low, Medium Low, Medium High, High

7. Replace frequency plug and restore power to the barrier. Loop detector should flash red/green and then go to solid green indicator light. Test safety loop sensitivity and make adjustments as needed.

**NOTE**  
Ensure safety loops are clear before powering safety loop detectors.

8. Conduct a test of safety loops for functionality.
9. Return barrier to operation.
ATTACHMENT 7 – REPLACE IR SENSOR

TOOLS NEEDED:

1. 1 1/2 inch open end wrench or crescent wrench

BEFORE YOU INITIATE MAINTENANCE OPERATIONS

All Maintenance Operations must be coordinated with site personnel.

NOTE

Before replacing, clean the IR Sensor lens and recheck for operation

Replace IR Sensor

1. Verify which set of IR Sensors are defective.
2. Disconnect power to the barrier by turning off the Main Disconnect and lock out with a wire tie or IAW local lockout procedures.
3. Turn off the power to the barrier controls you’re working on (24v power supply).
4. Disconnect the IR Sensor cable connector and the 1-1/2” retaining nut, holding sensor to the bracket.

![Image of IR Sensor](image1.jpg)

5. Install new IR Sensor and tighten the cable connector and retaining nut.

**NOTE**
Ensure if you remove a Transmitter, you replace it with a Transmitter.

6. Reinstate power to the barrier by turning on the Main Disconnect

![Image of Main Disconnect](image2.jpg)

7. Once the sensors are in place, ensure 24v power supply is on (CB5).
8. Conduct a IR Sensor functional check.
9. If required, realign the IR Sensors.

- Each sensor has a green Power ON/OFF indicator and yellow indicators for the selected modulation frequency. In addition, receivers have a yellow LED that lights when the outputs are conducting, plus a 4-element light bar that indicates signal strength, relative to the switch point (the higher the number lit, the more light is received).
• Adjust the emitter first, then the receiver. Adjust the emitter's position until the receiver signal strength light bar indicates its highest amount of signal received (the highest number lit). Tighten the emitter mounting hardware, then repeat the process for the receiver.

10. Return barrier to service.
ATTACHMENT 8 – REPLACE SPRING

TOOLS NEEDED:
1. One electric or air impact drill
2. 1-1/8" inch socket and 1-1/8" inch open or boxed end wrench.
3. TORX 45 bit

BEFORE YOU INITIATE MAINTENANCE OPERATIONS
All Maintenance Operations must be coordinated with site personnel

WARNING
- Place traffic cones and block roadway from traffic to ensure worker safety.
- Use the proper tools to avoid serious personal injury and damage to components.
- Never operate this equipment when a vehicle, person or any obstruction is in the way of full operation of the RSS-2000.

1. Using the Barrier Controls, raise the barrier to the UP position. This will take the tension off the spring assembly.

2. Disconnect power to the barrier by turning off the Main Disconnect and lock out with a wire tie or IAW local lockout procedures.

3. Turn off the power to the barrier you’re working on (Turn off Fuse FU1 in BCP).
4. Remove the top cover plate over damaged spring.

5. The below picture shows the Tension Bolts and Bracket; the tension bolts and brackets plates will be fully tightened.

6. Loosen the tension bolts evenly, until spring assembly has some slack in the springs. Make sure to NOT loosen the tension bolts too far as it will interfere with the removal of the clevis pin.
7. Remove clevis pins from both ends of spring assembly.

8. Place the spring assembly on top of the barrier for easy access to change the broken spring(s).

9. Change the broken spring by removing the cross bolt and nut holding the springs in place.

**NOTE:**
PVC spacers hold the springs in place allowing for an even pull; If removed, replace for optimal efficiency.
10. Once the spring has been replaced, reverse the sequence to re-install the cross bolt, spacer, and nut.

NOTE:
Lubricate tension bolts before reinserting in the barrier and tightening tension bolts

11. Replace clevis pins on both ends of spring assembly.

12. Tighten tension bolts evenly until plates are pulled together with no gap.

13. Reinstate power to the barrier by turning on the Main Disconnect
14. Open the Barrier Control Panel and turn ON the Servo Drive of the affected barrier by re-engaging the Servo Drive fuse.
15. Conduct an operational test…exercise barrier 8-10 cycles while observing spring assembly functionality.
16. Replace top plate.
17. Return barrier to service.
ATTACHMENT 9 - REPLACE SERVO DRIVE FUSE

TOOLS NEEDED: None

BEFORE YOU INITIATE MAINTENANCE OPERATIONS
All Maintenance Operations must be coordinated with site personnel

1. Servo Drive Fuse (FU1) closed

2. Disconnect power to the barrier by turning off the Main Disconnect and lock out with a wire tie or IAW local lockout procedures.

3. Dis-engage Servo Drive Fuse Holder (FU1)
4. Remove old Fuse and replace with new one

5. Reinstate power to the barrier by turning on the Main Disconnect

6. Re-engage Servo Drive Fuse Holder (FU1)
7. Servo Drive should power up
8. Return barrier to service.
ATTACHMENT 10 – REPLACE LED TRAFFIC LIGHT

TOOLS NEEDED

1. Phillips Head Screwdriver
2. Pliers

BEFORE YOU INITIATE MAINTENANCE OPERATIONS

All Maintenance Operations must be coordinated with site personnel. Turn off the power to the barrier you’re working on (24v power supply is on CB5).

1. Loosen exterior Traffic Lens Cover wing screws (use pliers if not hand tight)

2. Open hinged cover to access LED light and interior terminal connections.

3. Loosen Tabs holding lens in place with a Phillips Head Screw Driver.
4. Remove wires for old LED Light from interior terminal block.

5. Remove old LED light and replace with new LED light.
6. Rewire new LED light to interior terminal block.
7. Tighten Tabs holding lens in place with a Phillips Head Screw Driver.
8. Close hinged cover and tighten cover wing screws.
9. Turn power back on (24v power supply is on CB5) and conduct an operational test to verify Traffic Light functionality.
10. Return barrier to service.
ATTACHMENT 11 - REPLACE SERVO DRIVE PANEL IN BARRIER

The Servo Drive Panel is a waterproof housing and can be easily removed and replaced as a sealed unit. Do not remove sealed actuator cable connectors from the Servo Drive Panel, remove the connectors at the actuator; remove sealed unit and cables together. The replacement unit will include the cables and can be easily reconnected. The Power and Ethernet connectors are removed at the sealed servo Panel unit and reconnected to the new Servo Drive Panel unit.

![Servo Drive Panel Image]

**WARNING**

The Servo Drive Panel should ONLY be opened at the RSSI factory. It is considered a “LRU” Line Replacement Unit. Opening this box VOIDS THE WARRANTY.

**TOOLS NEEDED**

1. Cordless impact wrench or ratchet wrench with TORX 45 bit
2. 3/4 inch wrench
3. 7/16 inch wrench
4. Flashlight and gloves

**BEFORE YOU INITIATE MAINTENANCE OPERATIONS**

All Maintenance Operations must be coordinated with site personnel

**WARNING**

- Place traffic cones and block roadway from traffic to ensure worker safety.
- Use the proper tools to avoid serious personal injury and damage to components.
- Never operate this equipment when a vehicle, person or any obstruction is in the way of full operation of the RSS-2000.
1. Disconnect power to the barrier by turning off the Main Disconnect and lock out with a wire tie or IAW local lockout procedures.

NOTE

All top plate screws require a TORX 45 bit.

2. Remove 5 screws from top plate over Servo Drive Panel, 4 screws from the small top plates across the back of the barrier (exposing cable run and zip ties) and 6 screws on top plate directly over actuator.

3. Carefully remove plates, then inspect and if necessary, remove dirt, debris and water from barrier vault.

CAUTION

DO NOT FORCE CONNECTORS TOGETHER, they are keyed in and must be aligned correctly, hand tighten only.

4. Disconnect actuator cables taking care not to drop into dirt or debris (protect connectors)
5. Remove plastic ties that hold the actuator cables to barrier beams
6. Disconnect power cable from sealed drive unit taking care not to contaminate with dirt or debris
7. Disconnect Ethernet cable from sealed drive unit taking care not to contaminate with dirt or debris.
8. Remove the 4 nuts that secure the sealed Servo Drive Panel to the side of the barrier (3/4)
9. Disconnect small ground wire from Servo Drive Panel to frame of barrier (7/16)
10. Slide sealed unit up and out, taking care to guide the actuator cables out also.
11. Slide in new Servo Drive Panel taking care to guide the actuator cables in carefully
12. Install the 4 nuts that secure the sealed Servo Drive Panel to the inside of the barrier
13. Reconnect small ground wire from Servo Drive Panel to frame of barrier
NOTE
Use dielectric grease to protect connectors.

14. Install Ethernet cable to sealed unit –
15. Install power cable to sealed unit (tighten then push connector in and tighten again) it may take a few times to FULLY SEAT the power connector to seal unit
16. Run the actuator cables back the same way and secure to barrier beams with zip ties
17. Reconnect actuator connectors to actuator.
18. Reinstall power to the barrier by turning on the Main Disconnect
19. Clear barrier of tools and top plates and Push in Servo drive fuses (FU1)
20. Home the barrier and set positions from the Secondary Operator or Maintenance Touchscreen (see Attachments 1&2)
21. Reinstall top plate over Servo Drive Panel with 5 each TORX 45 screws you removed or replace if corroded or damaged

22. Run the barrier up and down from barrier control menu.
23. Return barrier to service.
ATTACHMENT 12 - REPLACE POST ASSEMBLY LED LIGHTS

TOOLS NEEDED:
1. Phillips Head Screw Driver
2. Wire Cutters/Stripper
3. Water proof Butt Splices and Electrical Tape (in Spare Parts Kit)
4. Heat Gun

BEFORE YOU INITIATE MAINTENANCE OPERATIONS

All Maintenance Operations must be coordinated with site personnel

WARNING
- Place traffic cones and block roadway from traffic to ensure worker safety.
- Use the proper tools to avoid serious personal injury and damage to components.
- Never operate this equipment when a vehicle, person or any obstruction is in the way of full operation of the RSS-2000.

1. Disconnect power to the barrier by turning off the Main Disconnect and lock out with a wire tie or IAW local lockout procedures.

2. Turn off the power to the barrier you’re working on (24v power supply).
3. Remove screws holding LED in place.

4. Remove tape and cut wires on the inside of the water proof butt splices.
5. Rewire LED Lights, terminate with a waterproof butt splice and tape connection.
6. Reinstate power to the barrier by turning on the Main Disconnect

7. Conduct a test to verify LED Lights are functioning properly.
8. Return barrier to operation.
ATTACHMENT 13 - REPLACE SURGE PROTECTION MODULE IN BBP

TOOLS NEEDED: None

BEFORE YOU INITIATE MAINTENANCE OPERATIONS

All Maintenance Operations must be coordinated with site personnel.

NOTE

Surge Protection Module is equipped with RED indicators on the front of device to inform you if the device has Failed. Please ensure the Module has Failed before replacing.

1. Turn off ALL Circuit Breakers

2. Locate the Surge Protection Module, then using your thumb and finger pull out pluggable center module from device.
3. Install new pluggable module into Surge Protection Device. Ensure tabs are lined up and module is seated securely.

4. Turn ON CB1, wait 4 seconds for transfer switch, then turn on CB2, & CB3. Then monitor Surge Protection Module to ensure it does not Fail once power is turned on.
5. Return barrier to normal operation.
ATTACHMENT 14 - REPLACE TIME DELAY RELAY IN BBP

TOOLS NEEDED: None

BEFORE YOU INITIATE MAINTENANCE OPERATIONS

All Maintenance Operations must be coordinated with site personnel.

1. Disconnect power to the barrier by turning off the Main Disconnect and lock out with a wire tie or IAW local lockout procedures.

2. Turn off top switch on inverter.

3. Turn off main incoming power to BBP (CB1).
4. Grasp Time Delay Relay with thumb and finger then pull straight out.

5. Ensure Time Delay Relay dip switches are set properly (out of the box, all dip switches are set to the left; adjust the top dip switch to right and leave the remaining three to the left)

6. Install new Time Delay Relay, be cautious as you line up the pins. Ensure dial on the relay is set to 4 seconds.

7. Return main incoming power to BBS by turning on CB1. Ensure Contactor C1 engages.
8. Turn Inverter switch back to the ON position.
9. Reinstate power to the barrier by turning on the Main Disconnect
10. Return barrier to normal operation.
ATTACHMENT 15 - REPLACE 24 VDC POWER SUPPLY IN BCP

TOOLS NEEDED:
1. Small Phillips Head Screwdriver
2. Small Straight Head Screwdriver
3. Volt Meter

BEFORE YOU INITIATE MAINTENANCE OPERATIONS

All Maintenance Operations must be coordinated with site personnel.

1. Disconnect power to the barrier by turning off the Main Disconnect and lock out with a wire tie or IAW local lockout procedures.

2. Turn the 24V breaker to the OFF position. CB5.

3. Remove the 3 wires on the TOP and BOTTOM of the affected 24VDC Power Supply. (note wire locations for re-termination)
4. Remove Power Supply from the Panel railing by pulling down on white tab on the bottom of the Power Supply, then pulling out and up from the bottom of the Power Supply.

5. Install the new Power Supply onto Panel railing by reversing step 4 above.
6. Re-terminate the three wires on the TOP and BOTTOM of the new Power Supply.
7. Reinstall power to the barrier by turning on the Main Disconnect

8. Then turn on the affected 24VDC breaker.
9. Ensure 24VDC devices have powered up (check for 24 VDC with Voltmeter).
10. Return barrier to normal operation.
ATTACHMENT 16 – REPLACE AND SETUP TOUCHSCREENS

Replace Touchscreens

BEFORE YOU INITIATE MAINTENANCE OPERATIONS

All Maintenance Operations must be coordinated with site personnel

1. Remove (unplug) 24vdc power and Ethernet patch cable

2. Locate 4 black plastic locking clips on rear of screen
3. Remove by rotating plastic clips until they release

4. Replace with new touchscreen

5. Attach 4 black plastic locking clips by rotating until snug against faceplate
CAUTION
Do not over tighten clips, this will cause sensitivity issues on touchscreen

6. Replace (plug in) the 24vdc and Ethernet patch cable

7. Complete steps below “Changing IP address and choose program” section
   Setup Replacement Touchscreen

   Set IP Address
   1. Power up replacement touchscreen and it will boot to the menu screen
   2. Drill down to this path: terminal settings - networks and communications - network connections - network adaptors and find the option for "USE DHCP" - select NO
   3. Go to the IP ADDRESS button and enter 192.168.1.12 for maintenance touchscreen; 192.168.1.22 for primary touchscreen. Simply choose which touchscreen you are replacing. The Subnet mask is 255.255.255.0
   4. Use the back button to return to the main menu and select reset touchscreen.
   5. You will now be at the menu again and in the lower left corner you should see the new IP address you just set.
1. Choose Touchscreen Program and From menu, select Load Application [F1].

2. Then choose desired program from the list and press Load [F2].

3. If asked “Do you want to replace the terminal’s current communication…configuration?”, select Yes [F7].
4. After a few moments the run program button and other buttons will light up on Main menu. Select, Terminal Settings [F4]

5. Next, select Startup Options

6. Then select Run Current Application and press the Run Options [F3] button.
7. In the Run Options Menu.
   a. Set Replace RSLinx Enterprise Communications [F1] to Yes.
   b. Set Delete Log Files On Every Power Cycle [F2] to NO and Press Ok [F7].

8. Press OK [F7]

9. Press Close [F8]

11. Return barrier to service.