1. This kit converts all 33/35A and 98/99 series mechanical exit devices to quiet electric latch (QEL) retraction devices.
2. This kit can also be used for motor replacement on existing QEL devices.
3. Install according to instructions or device will not function and panic or fire label will be void.
4. The QEL wiring must be attached to the fire alarm system if installed on fire exit hardware.
5. If existing device is fire rated or less dogging a QEL baseplate conversion kit is required.

### Parts

<table>
<thead>
<tr>
<th>QEL Kit - 114317</th>
<th>HD-QEL (Hex Dogging QEL) Kit (Panic Only) - 958002</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="QEL Kit" /></td>
<td><img src="image" alt="HD-QEL Kit" /></td>
</tr>
</tbody>
</table>

### 3 Remove Exit Device from Door

- **Remove Mechanism Case**

  - Keep all parts

  - **OR**

### 4 Remove Mechanism Case

- **Keep all parts**

### WARNING

- **If existing exit device is fire rated, do not install HD-QEL (hex dogging) type motor. Doing so will void fire rating.**

### 1 Disconnect Power

- **To avoid risk of shock, disconnect AC power from power supply before proceeding with this conversion. If using 900-BB Battery Backup option, unplug all four wires from battery terminals.**

### 2 Detach Vertical Rods if present

- **Refer to device instructions as needed.**
Prepare baseplate for new motor. Find your existing application below (on page 2 or 3) and follow steps.

**FIRE OR LESS DOGGING DEVICE**
(Applies to exit devices built after October 2014. Baseplate conversion kit required for earlier devices.)

1. Remove pushpad from baseplate.

   ![Diagram of pushpad removal](Image)
   
   *Keep pushbar*

2. Install connector and pin.

   ![Diagram of connector installation](Image)
   
   *Verify pin is snapped in place on other side of action rod. Pin should be inserted from side that will be up when device is mounted on door.*

**QEL DEVICE** (built prior to December 2014)

1. Remove existing QEL motor

   ![Diagram of QEL motor removal](Image)

2. Discard old QEL motor assembly.
QEL DEVICE (built after December 2014)

1. Remove existing QEL motor.
2. Discard old QEL motor assembly.

PANIC DEVICE (with dogging assembly)

1. Remove two screws from dogging assembly. If riveted see below.
2. Drill or use center punch on two rivet heads until rivets can be removed from baseplate.
3. Remove and discard dogging assembly.

Note: Do not drill through baseplate. Rivet may tend to spin with drill.
6 Install New QEL Motor Assembly

7 Install Mechanism Case

8 Prepare dogging cover for HD dogging key (if applicable and only on panic devices).

8a Locate and drill hole

8b Install dogging cover

9 Drill Wire Access Hole (if required)
10 Attach Exit Device to Door

For more detailed installation instructions for specific Exit Devices, visit the Support area of the Allegion website at www.allegion.com/us

11 Confirm Equipment Compatibility

The QEL is compatible with the following equipment (refer to individual instructions as needed):
- PS900-SERIES Power Supplies - PS902, PS904, PS906, PS914
- PS873 Power Supply Plus 871-2, 871-2Q, 873-4TD/AO Option Boards

12 Route Two Wires from QEL Exit Device to Power Supply

**QEL Electrical Load**
- Voltage: 24 VDC
- Current: 1.0 A inrush (0.5 sec)
- 0.14 A holding

<table>
<thead>
<tr>
<th>Distance (one way)</th>
<th>Wire Gauge</th>
</tr>
</thead>
<tbody>
<tr>
<td>200’</td>
<td>18AWG</td>
</tr>
<tr>
<td>320’</td>
<td>16AWG</td>
</tr>
<tr>
<td>500’</td>
<td>14AWG</td>
</tr>
<tr>
<td>800’</td>
<td>12AWG</td>
</tr>
</tbody>
</table>

Note: Power wires to QEL are not polarized.

EPT shown. A door loop or electric hinge/pivot may also be used.
**13 Install 900-2Rs, 4Rl, or 4R Option Board(s) into Power Supply**

**a** Review Available 900 series Option Board Mounting Locations (Gray)

- PS902
- PS904
- PS914
- PS906

**b** Plug Option Board Cable into any Available Option Connector

- PS902
  - 1 Board
- PS904, 914
  - 2 Boards
- PS914
  - 3 Boards

**c** Secure Board(s) with Screws

**Notes:**
1. 24VDC output setting required when QEL device connected
2. If installing board in location 2 or 3, rotate board 180°
3. The QEL is compatible with an existing 900-2Q board if currently installed.
4. Latchbolt retraction of (2) sequenced QEL's requires more than 1 second to complete.
5. When powering multiple components, verify that the amperage requirements of all components combined does not exceed the power supply output rating.

**14 Connect Input and Output Wires to Option Board (2RSShown)**

**Sequential Mode - Typical Wiring**

- PS900 Series
- 2RS
- Input 11 will activate both outputs

**Note:**
Fail secure output only allowed if approved by Authority Having Jurisdiction

**Individual Mode - Typical Wiring**

- PS900 Series
- 2RS
- Input 11 will activate output 1
- Input 12 will activate output 2
### Check Operation

A. Activate each input and verify all QEL devices operate properly.
B. If any device does not operate properly, see step 16 for troubleshooting.

### If Necessary, Troubleshoot Operation (LED is only visible with the mechanism cover removed)

<table>
<thead>
<tr>
<th>Power at the QEL</th>
<th>QEL Response</th>
<th>Condition/Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>24VDC</td>
<td>LED - Solid green&lt;br&gt;Latchbolt - retracted</td>
<td>Operation normal, latch retracted immediately</td>
</tr>
<tr>
<td>24VDC</td>
<td>LED - Solid red after latchbolt attempts to retract multiple times</td>
<td>Latchbolt cannot fully retract mechanically&lt;br&gt;Verify mechanical adjustment (on vertical rod or mortise lock devices if used). Remove and reapply input voltage to reset this condition. See Check Mechanical Operation on page 8 as needed.**</td>
</tr>
<tr>
<td>24VDC</td>
<td>LED - Flashing green/red&lt;br&gt;Latchbolt - not retracted</td>
<td>Excessive tamper (while power applied, the pushpad was pulled out at least 3 time)&lt;br&gt;Wait 15 seconds and latchbolt will retract again OR remove and reapply power to clear condition</td>
</tr>
<tr>
<td>24VDC low</td>
<td>LED - Flashing green&lt;br&gt;Latchbolt - retracted</td>
<td>Voltage low during latchbolt retraction (latchbolt retracts at reduced force)&lt;br&gt;Wire length is too long, wire gauge is too small or power supply has poor regulation</td>
</tr>
<tr>
<td>29VDC or greater</td>
<td>LED - Flashing red&lt;br&gt;Latchbolt - will not retract</td>
<td>Input voltage is too high for proper operation&lt;br&gt;Wrong power supply, power supply defective.</td>
</tr>
<tr>
<td>13VDC or lower</td>
<td>LED - off&lt;br&gt;Latchbolt - not retracted</td>
<td>Input voltage is too low for proper operation&lt;br&gt;Wrong power supply, power supply defective or not set to the proper output voltage.&lt;br&gt;To set, remove AC power from power supply, change power supply setting from 12 to 24VDC, then reapply AC power and verify proper operation.</td>
</tr>
<tr>
<td>0VDC</td>
<td>LED - off&lt;br&gt;Latchbolt - not retracted</td>
<td>No input voltage&lt;br&gt;Problem with the power supply, control switch or wiring</td>
</tr>
<tr>
<td>0VDC</td>
<td>LED - off&lt;br&gt;Latchbolt - retracted</td>
<td>No input voltage&lt;br&gt;Mechanical dogging is engaged</td>
</tr>
</tbody>
</table>

*For information about adjusting exit devices, you can find their installation instructions in the support area at www.allegion.com/us or call Technical Services at 1-877-671-7011*
## Check Mechanical Operation

<table>
<thead>
<tr>
<th>33A/3527A</th>
<th>98/9927</th>
<th>98/9947WDC</th>
</tr>
</thead>
<tbody>
<tr>
<td>33A/3547A</td>
<td>98/9947</td>
<td>98/9957</td>
</tr>
</tbody>
</table>

1. Make sure device is not dogged for SD-QEL / HD-QEL.
2. Depress pushbar and make sure latch bolt retracts and extends fully (see Figure 1).
3. If latch bolt does not retract or extend fully, adjustments may be required per the device installation instructions.

### Any HD Device

1. Fully depress pushbar.
2. Insert hex dogging key and turn clockwise.
4. Fully depress pushbar.
5. Insert hex dogging key and turn counter clockwise.
6. Release pushbar and verify latchbolt extends fully.

---

**Figure 1**

- **Latch bolt deadlocked (will not push in)**
  - Release trigger extended
  - Flush within \( \frac{1}{16} \)" with door closed
  - Flush within \( \frac{1}{16} \)" with door open

- **Latch bolt extended**
  - Latch bolt retracted
  - Latch bolt extended
  - Flush within \( \frac{1}{4} \)"