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Operating Manual for AC and Battery Powered Sensor Faucets Models ES2RL & ESB2RL

Note: Model ES2RL and Hydrotek model H-6700C-LR are the same.
Model ESB2RL and Hydrotek model HB-6700C-LR are the same.
OPERATION & MAINTENANCE MANUAL

HYDROTEK MODEL #H-6700C FAUCET

TECHNICAL SUPPORT TEAM:
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Email: mike@hydrotekintl.com or armin@hydrotekintl.com
Solid Brass  AC or Battery Powered

Automatic Faucet

6700C Series  ISO 9002 Certified

High Technology For No Touch Operation

- ADA Compliant. Meets all barrier free codes
- Conserves water and energy
- Easily installed in new or retrofit applications
- Competitively priced for today's commercial market
- Promotes cleanliness & hygiene
- Proven Hydrotek craftsmanship and reliability

Features:

- **ACCU-SENSE** adjustable sensor eyes.
- Chrome plated, solid brass construction.
- Wall mountable, waterproof control box with armored, vandal resistant control and power cables.
- Preset/adjustable sensor range 6” - 30” for various installation requirements.
- Standard automatic time-out feature. Preset at 0 but adjustable to 15, 30 or 60 seconds. Prevents accidental sink overflow.
- Shut-off delay is adjustable from 1 second (preset) to 8 seconds.
- Includes in-line filters with clean-out trap to reduce maintenance costs.
- Standard 6” gooseneck spout and 2.0 GPM laminar flow control.
- Single-hole, wall/splash mounting.
- All parts are field replaceable to ensure quick and easy repair.
- Same faucet, field switchable to/from AC Powered or Battery Powered.
- Slow closing, piston-operated solenoid valve provides reliable and smooth operation without water hammer.
- Superior VSI silicone elastomer piston seals are unaffected by chlorine, chloramines or ammonia.
- Control module automatically performs a unique self-check of all electrical components.
- No-touch system enhances hygiene in the medical, institutional, food service industries, etc.

6700C Series  U.S. Patent: 6192530B1
Hydrotek Automatic Gooseneck Faucet

Non-Mixing / Wall Mounted

Model H-6700C (AC) or HB-6700C (Battery)

Meets ANSI/ASME A112.18.1M-1989

Operation:
1. A continuous, invisible beam is emitted from the sensor.
2. The faucet is activated by placing hands under the spout within the effective range of the beam. Water starts to flow immediately for as long as the user’s hands remain in the sensor range.
3. When hands are removed, the water flow stops. The sensor will automatically reset and be ready for the next user.
4. In battery powered mode, flashing red light will indicate low battery condition.

Specifications:

Faucet Construction: Solid Brass, Chrome Plated
Control Circuit: Solid state, AC or Battery, Switchable
Auto. Time-out: Preset and Adjustable for 0, 15, 30, or 60 seconds
Sensor Range: Preset and Adjustable
Shut-Off Delay: Preset and Adjustable from 1 - 8 seconds
Control Cable: Armored, Vandal Resistant
Solenoid Valve: 6V DC, Normally closed
- Wattage: 0.4W (idle), 5W (in use)
- Operating Pressure: 5psi to 125psi
Flow Control: 2.0 GPM, Laminar

AC Mode
Power Adapter
Standard plug-in: Input AC 120V 60 Hz or 220 V
(UL/CSA)
Power Cable: Output DC 12V, 0.8A/Class 2
(UL/CSA)
Optional Multi-Unit Adapter: Serves up to 8 Faucets
(UL/CSA)

Battery Mode
Battery Powered Models: (4) AA Alkaline Batteries Battery
Service Life: 400,000 on/off cycles, up to 4 years

Standard Package Includes:
H-6700C (AC) X (1) Faucet with Electronic Sensor
X (1) Control Box w/6V DC Solenoid
X (1) 12V DC Plug-in Power Adapter
X (1) In-Line Filter with Clean-Out Trap
X (1) 18" Flex, S.S. Supply Tube, 3/8"
X (1) Mounting Hardware
X (1) 6" Gooseneck Spout
X (1) 2.0 GPM V.R. Laminar Flow Control
(4) AA Alkaline Batteries
(1) Battery Holder

Dimensions:
Base Width (Outside Measurement) 2-1/4"
Base Depth 2-1/2"
Faucet Height (Aerator to Base) 8-3/4"
Faucet Height Overall 12-3/4"
Depth (Center of Aerator to Center of Faucet Base) 5-3/8"
Mounting Bolt Length 1-7/16"
Mounting Bolt Pattern Single-Hole Mount

Optional Variations and Accessories:
- 1.6 GPM Soft-Flow Aerator 1.5 & 2.5 GPM Laminar Flow Control and Rose Spray Head
- HC-010 Multi-Unit Voltage Adapter (AC Powered Only)
- HC-001 Mixing/Check Valve (Mechanical)
- HBL-04 Thermostatic Mixing Valve with Checks
- 8” deep Gooseneck and 6” or 8” Swing Spout

HYDROTEK INTERNATIONAL, INC.
5055 Forsyth Commerce Rd., Ste. 124
Orlando, FL 32807
1.800.922.9883 (Phone)
1.866.670.5580 (Fax)
www.hydrotekintl.com
1. Prior to installing this faucet, thoroughly flush all water lines and replace stop washers, if necessary.

2. To ensure proper operation, "DRY TEST" the faucet by plugging (17) Sensor eye cable connector into the matching connector on the PC board inside the (18) Control box. Plug (19) Power adapter output connector into matching connector on PC board located inside the (18) Control box. Plug (19) Power adapter into 120 V AC outlet. Place your hand in front of faucet sensor eye. If there is a clicking sound, the faucet is activating properly. If not, call the factory.

3. After successful "DRY TEST," unplug connectors from both the Sensor eye cable and Power adapter to the PC board.


5. Connect electrical Sensor eye cable and Power adapter as described in STEP #2, making sure that the Sensor eye and Power adapter cables are seated into the Control box housing properly.

6. Attach (13) Compression fitting to (14) Solenoid valve and connect it to the (11) Elbow using (12) Supply tube. Insert (16) Nylon washer into the swivel nut located on the (15) In-line filter inlet (for pre-tempered or cold water only). Using a union fitting (not supplied), connect supply line (not supplied) from supply stop to (15) In-line filter inlet swivel nut (for tempered water).

7. Turn on water and check for leaks. Plug (19) Power adapter into 120V AC outlet. Reinstall Control box cover and tighten screws to insure that the box is water-resistant. Coil excess Power Adapter wire and secure in a safe, dry area. Place hand in front of Sensor eye to activate water flow. Remove hands and water should stop. If not, refer to troubleshooting guide.

8. Periodically clean the filter element located inside the In-line filter.

9. For minor adjustments, refer to the instructions located inside the Control box cover.

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1. Prior to installing this faucet, thoroughly flush all water lines and replace stop washers, if necessary.

2. To ensure proper operation, "DRY TEST" the faucet by plugging (17) Sensor Eye Cable connector into the matching connector on the PC board inside the (18) Control Box. Pull out PC board for easier access. Properly install batteries in Battery Holder and plug Battery Holder output connector into the corresponding connector on the PC board. Place your hand in front of faucet sensor eye. If there is a clicking sound, the faucet is activating properly. If not, call the factory.

3. After successful "DRY TEST," unplug Sensor Eye Cable and Battery Holder connectors from the PC board.

4. **Use Teflon Tape, not Pipe Dope for all connections.** Loosen (1) Flow Control Device and assemble (2) Gooseneck Spout using (4) Split Washers and (3) Spout Nut. Mount gooseneck spout onto (5) Faucet Body. Feed (17) Sensor Eye Cable through the sink wall and mount the faucet onto the sink using (8) O-ring, (9) Washer and (10) Mounting Nut. Attach (11) 90-Degree Elbow to (7) Supply Rod.

5. Connect Sensor Eye Cable as described in STEP #2, making sure that the Sensor Eye cable is seated into the Control box housing properly.

6. Attach (13) Compression Fitting to (14) Solenoid Valve outlet and connect it to (12) Supply Tube using (11) Elbow and (13) Compression Fitting. Insert (16) Nylon Washer into swivel nut located on (15) In-line Filter Inlet (for pre-tempered or cold water only). Using a union fitting (not supplied), connect supply line (not supplied) from supply stop to (15) In-line Filter inlet swivel nut (for tempered water). >>Attach optional Hydrotek HC-001 Mixing/Check Valve or HC-003 Mixing "T" w/checks to In-line filter inlet. Connect supply lines (not supplied) from hot and cold supply stops to Mixing valve or Mixing "T" inlets. **Use Teflon Tape, not Pipe Dope for all connections.**

7. Turn on water and check for leaks. Connect Battery holder to the PC board and reinstall the Control box cover. Tighten screws to ensure that the box is water resistant. Place hand in front of Sensor eye to activate water flow. Remove hands and water should stop. If not, refer to troubleshooting guide.

8. Periodically clean the filter element located inside the (15) In-line filter.

9. For minor adjustments, refer to the instructions located inside the Control box cover.
HYDROTEK Model HB-6700C
**HYDROTEK AUTOMATIC FAUCET TROUBLESHOOTING GUIDE**

*(AC Powered)*

Normal Operation: When power is connected or RESET button is pushed, the lights on the Printed Circuit Board (PCB) will blink in the following sequence: red – red (with solenoid clicking) – green – red – red. Green light will remain lit. When the user’s hands are placed under the spout, the red indicator light on the faucet and PC board will illuminate and water will begin to flow. Water flow will stop when hands are removed. Always push the RESET button BEFORE attempting to diagnose any problem and AFTER taking corrective action.

### Table

<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>POSSIBLE CAUSE</th>
<th>TO DIAGNOSE</th>
<th>REMEDY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faucet will not turn on:</td>
<td>Water not turned on.</td>
<td>Check water supply.</td>
<td>Turn water on.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Power supply failure.</td>
<td>Check power adapter voltage, polarity, wires, and connections.</td>
<td>Replace power adapter and reconnect. Push RESET button.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sensor distance is too short.</td>
<td>Use hand/palm to find focal point of sensor beam.</td>
<td>To adjust sensor distance out, turn adjustment clockwise. Push RESET button.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Electronic PCB is defective.</td>
<td>With power adapter plugged in, push RESET button. No light, no action.</td>
<td>Replace PCB.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sensor eyes are defective.</td>
<td>With power adapter plugged in, place hands in front of sensor eyes. Indicator light on faucet does not blink.</td>
<td>Replace sensor eyes and cable.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Solenoid valve is clogged.</td>
<td>Solenoid is clicking but no water is coming out.</td>
<td>Clean solenoid and blow free all by-pass holes. Replace control disc. Push RESET button.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>In-line filter is clogged.</td>
<td>Open clean-out trap and check filter screen.</td>
<td>Clean or replace filter screen.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Solenoid coil is defective.</td>
<td>With power adapter plugged in, push the RESET button. Light blinks but no solenoid clicking.</td>
<td>Replace solenoid coil. Push RESET button.</td>
</tr>
</tbody>
</table>

| Faucet will not shut off:     | Solenoid valve is normally closed.    | Turn off water and activate faucet. If there is a clicking sound, the solenoid valve is dirty. If there is no clicking sound, then replace solenoid valve. Other factors could be problematic (Sensor distance adjustment could be too long or electronic PCB could be defective). If the faucet is dripping, the solenoid valve needs a rebuild kit. Follow the same procedures as above for remedies. |

**IMPORTANT:** Periodic maintenance is required for smooth and trouble-free operation of this faucet.

*For more detailed remedy procedures, please call Hydrotek Tech Support at (800)922-9883 ext. 105*
SOLENOID VALVE CLEANING FOR
HYDROTEK 1000C, 2603C, 6000C, 6700C FAUCETS
(AC AND BATTERY POWERED)

1. Turn off water supply at stop valve.
2. Remove control box (if possible) to gain access to the solenoid valve.
3. Remove four Screws (#21) and separate the valve from the box.
4. Remove four Coil Screws (#43) and separate Coil (#41) from Valve Seat (#27).
5. When separating Plastic Control Valve (#34) be careful to retain the small Orange Rubber Plug (#29). Re-install this on Brass Valve Seat (#27).
6. Clean or replace Control Disc (#30), Disc Spring (#31), Piston & Tip (#36 and 37), Piston Spring (#38), and check Sleeve (#39) for corrosion.
7. Re-install all parts in same order as the diagram below.
8. Re-install solenoid on the control box and re-mount box in water line.
10. Reset P.C. Board and make sure solenoid clicks open and thumps closed.
11. Turn on water and check for leaks and proper operation.

(For further questions, please call Hydrotek Tech Support at 1-800-922-9883 ext. 105)
HYDROTEK AUTOMATIC FAUCET: DIP SWITCHES

*NOTE: ALWAYS PUSH THE RESET BUTTON AFTER ANY ADJUSTMENTS*

A. Shut Off Time Delay (After hands are removed):

<table>
<thead>
<tr>
<th>Sw 1</th>
<th>Sw 2</th>
<th>Sw 3</th>
<th>Time Delay</th>
</tr>
</thead>
<tbody>
<tr>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>1-Sec</td>
</tr>
<tr>
<td>ON</td>
<td>ON</td>
<td>OFF</td>
<td>2-Sec</td>
</tr>
<tr>
<td>ON</td>
<td>OFF</td>
<td>ON</td>
<td>3-Sec</td>
</tr>
<tr>
<td>ON</td>
<td>OFF</td>
<td>OFF</td>
<td>4-Sec</td>
</tr>
<tr>
<td>OFF</td>
<td>ON</td>
<td>ON</td>
<td>5-Sec</td>
</tr>
<tr>
<td>OFF</td>
<td>ON</td>
<td>OFF</td>
<td>6-Sec</td>
</tr>
<tr>
<td>OFF</td>
<td>OFF</td>
<td>ON</td>
<td>7-Sec</td>
</tr>
<tr>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>8-Sec</td>
</tr>
</tbody>
</table>

B. Automatic Time Off (Maximum run time after activation):

<table>
<thead>
<tr>
<th>Sw 4</th>
<th>Sw 5</th>
<th>Time Off</th>
</tr>
</thead>
<tbody>
<tr>
<td>ON</td>
<td>ON</td>
<td>0 Sec</td>
</tr>
<tr>
<td>ON</td>
<td>OFF</td>
<td>15 Sec</td>
</tr>
<tr>
<td>OFF</td>
<td>ON</td>
<td>30 Sec</td>
</tr>
<tr>
<td>OFF</td>
<td>OFF</td>
<td>60 Sec</td>
</tr>
</tbody>
</table>

C. Sensor Distance: To increase distance, turn SDA screw clockwise.
To decrease distance, turn screw counter-clockwise.

<table>
<thead>
<tr>
<th>Sw 6</th>
<th>Mode</th>
<th>Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>ON</td>
<td>Std</td>
<td>4” – 12”</td>
</tr>
<tr>
<td>OFF</td>
<td>Enhanced</td>
<td>10” – 24”</td>
</tr>
</tbody>
</table>

D. Faucet Switch:

<table>
<thead>
<tr>
<th>Sw 7</th>
<th>Sw 8</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>ON</td>
<td>OFF</td>
<td>Auto Faucet</td>
</tr>
</tbody>
</table>

Control Module Diagram for C-Series Faucets

1. AC/DC Switch
2. Battery Holder Pin Connector (Red)
3. Dip Switches
4. Reset Button
5. Sensor Distance Adjustment (SDA)
6. Indicator LED (Green)
7. Indicator LED (Red)
8. Solenoid Pin Connector (White)
9. Sensor Eye Control Cable (White)
10. AC Power Adapter Pin Connector (Red)
11. Battery Holder Pin Connector (White)
## Suggested Backup Parts for 6700C Series Faucets

AC or Battery Powered Lavatory Faucets

<table>
<thead>
<tr>
<th>Part Number From Drawing</th>
<th>Hydrotek Item Code</th>
<th>Description</th>
</tr>
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<tr>
<td>49</td>
<td>HCC-002</td>
<td>AA 1.5V Battery *4 req. per faucet (for Battery Model)</td>
</tr>
<tr>
<td>52</td>
<td>HCC-008B</td>
<td>12V AC Adapter (for AC Model)</td>
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<tr>
<td>23-27</td>
<td>HC-009B</td>
<td>In-line filter</td>
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<td>HCC-033</td>
<td>Sensor Eyes &amp; Cable</td>
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<td>47</td>
<td>HCC-011A</td>
<td>Module – PCB for AC Model</td>
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<tr>
<td>47</td>
<td>HCC-011B</td>
<td>Module – PCB for Battery Model</td>
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<tr>
<td>17-18</td>
<td>HC-015C</td>
<td>Mounting Kit</td>
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<tr>
<td>25</td>
<td>HC-020</td>
<td>Filter Screen</td>
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<td>20</td>
<td>HC-025E</td>
<td>Flexible Supply Tube</td>
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<tr>
<td>1</td>
<td>HB-003CF</td>
<td>Laminar Flow Control</td>
</tr>
<tr>
<td>31,32,36,37,38,39</td>
<td>HCB-017A</td>
<td>Valve Repair Kit</td>
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<tr>
<td>41-42</td>
<td>HCC-019</td>
<td>Solenoid Coil Only</td>
</tr>
<tr>
<td>27-54</td>
<td>HCC-003B</td>
<td>Complete Control Box Assembly</td>
</tr>
</tbody>
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*(Please visit www.hydrotekintl.com to view our most current Products Pricing Sheet)*