

HYDROTEK INTERNATIONAL, INC.

5055 Forsyth Commerce Rd., Ste. 124, Orlando, FL 32807

Phone (800)922-9883 / Fax (866)670-5580

www.hydrotekintl.com

OPERATION & MAINTENANCE MANUAL

HYDROTEK MODEL #HB-4000C FAUCET

TECHNICAL SUPPORT TEAM:

Michael Hu & Armin Kharazi

Phone (800) 922-9883 ext. 105

Email: mike@hydrotekintl.com or armin@hydrotekintl.com



Solid Brass AC or Battery Powered

Automatic Faucet

4000C 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 2.0 GPM Laminar flow control.
- Same faucet, field switchable to/from AC Powered or Battery Powered.
- Manual override provides continuous water flow for special applications or in case of power failure.
- Manually controlled temperature adjustment.
- Patented electronics and slow-closing solenoid valve provide reliable and smooth operation without water hammer.
- Control module automatically performs a unique self-check of all electrical components.
- Superior VSI silicone elastomer solenoid piston seals are unaffected by chlorine, chloramines or ammonia.



4000C Series

U.S. Patent:

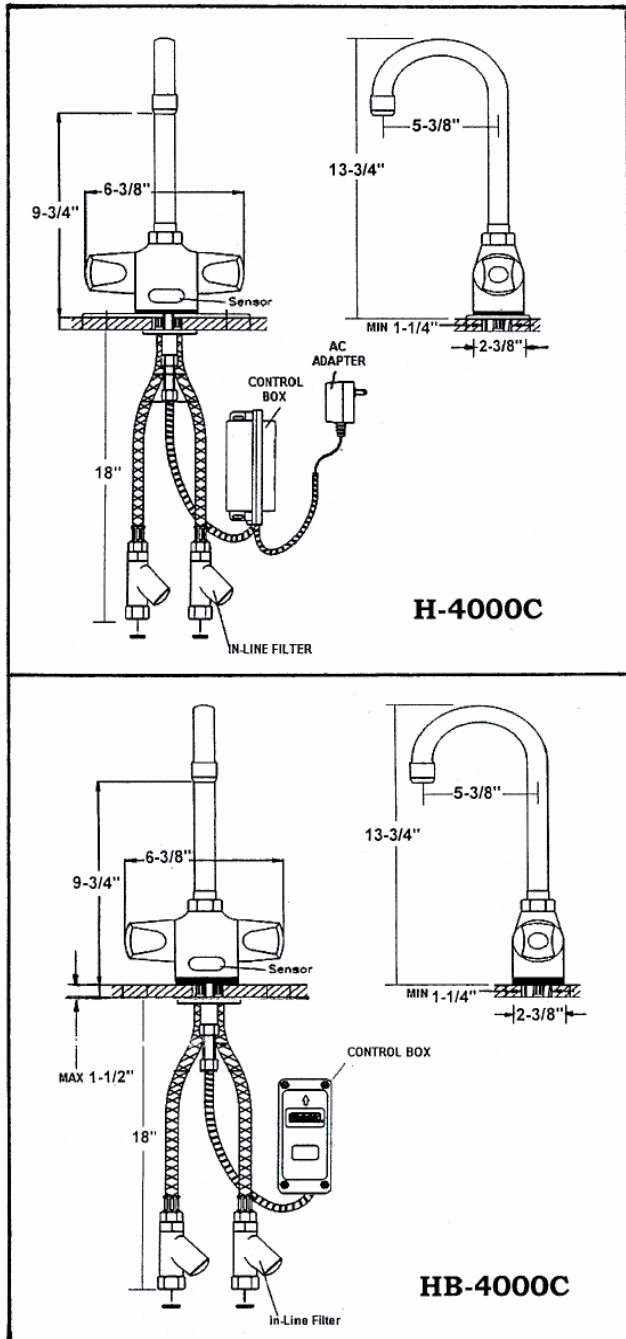
4741363

6192530B1

Hydrotek Automatic Gooseneck Faucet

Mixing / Deck Mounted

Model H-4000C (AC) or HB-4000C (Battery)
with manual off / on and temperature adjust
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.
5. Use faucet handle for temperature adjust and manual Off/On.

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 sec.
Control Cable:	- Armored, Vandal Resistant
Solenoid Valve:	- 6V DC, Normally closed
	- Wattage: 0.4W (idle), 5W (in use)
	- Operating Pressure: 5 psi to 125 psi
Flow Control:	- 2.0 GPM, Laminar Flow Control

AC Mode

Power Adapter	- Input AC 120V 60 Hz or 220 V
Standard plug-in:	- Output DC 12V, 0.8A/Class 2
(UL/CSA)	- Armored, Vandal Resistant
Power Cable:	- Serves up to 8 Faucets
Optional Multi-Unit Adapter	- Input AC 120V, Output DC 12V, 3A
(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:

<i>H-4000C (AC)</i>		<i>HB-4000C (Bat)</i>
X	(1) Faucet with Electronic Sensor	X
X	(1) Control Box	X
X	(1) 12V DC Plug-in Power Adapter	
X	(1) In-Line Filter with Clean-Out Trap	X
X	(1) Flex, S.S. Supply Tubes, 3/8"	X
X	(1) Mounting Hardware	X
X	(1) 6" Gooseneck Spout	X
X	(1) 2.0 GPM V.R. Laminar Flow Control	X
	(4) AA Alkaline Batteries	X
	(1) Battery Holder	X

Dimensions:

Base Width (Outside Measurement)	2"
Base Depth	2-1/2"
Faucet Height (Aerator to Base)	9-3/4"
Faucet Height Overall	13-3/4"
Depth (Center of Aerator to Center of Faucet Base)	5-3/8"
Mounting Bolt Length	2-1/2"
Mounting Bolt Pattern	Single-Hole Mount

Optional Variations and Accessories:

- 1.6 GPM Soft-Flow Aerator 1.5 & 2.5 GPM Laminar & Rose Spray
- 4" or 8" Centerset Cover Plate
- HC-010 Multi-Unit Voltage Adapter (AC Powered Only)
- HBL-04 Thermostatic Mixing Valve with Checks
- HC-029 Wrist Blade Handle
- 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

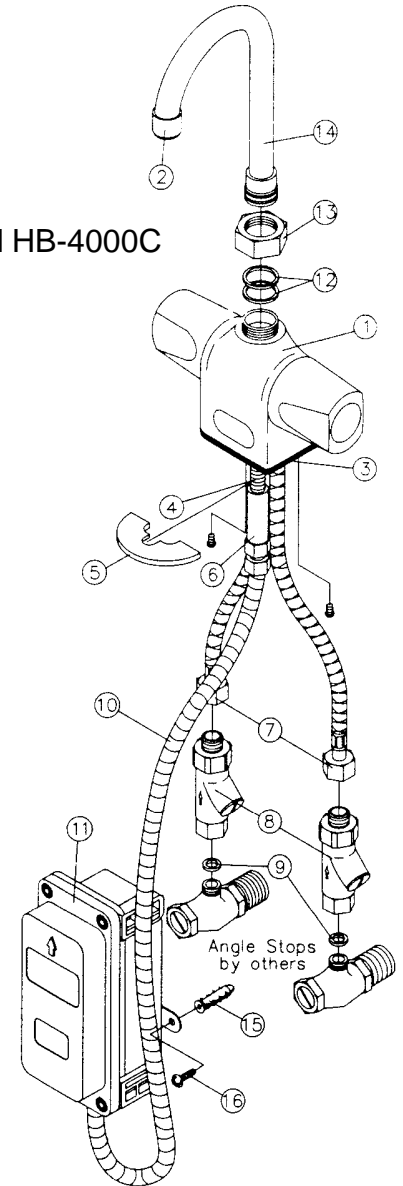


INSTALLATION INSTRUCTIONS

Hydrotek Mixing Automatic Faucet w/ Manual Control (Battery Powered)

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 the Sensor Eye Cable connector (10) into the matching connector on the PC board inside the Control Box (11). Pull out the PC board for easier access. Install batteries into Battery Holder and plug Battery Holder output connector into its corresponding connector on the PC board. Place your hands in front of the faucet's Sensor Eyes. If there is a clicking sound, the faucet is activating properly. If not, call the factory.
3. After successful "DRY TEST," unplug the Sensor Eye cable and Battery Holder connectors from the PC board.
4. Attach the hot and cold water Supply Tubes (7) by screwing threaded ends into the bottom of the faucet body. (Note: Teflon tape is not required for supply tube connections to faucet body.) **CAUTION: DO NOT USE PIPE DOPE.**
5. Position faucet by lowering flexible Supply Tubes (7) and Control Cable (10) through deck hole. Secure faucet to sink deck using Mounting Washer (5) and Mounting Nut (6).
6. Considering the length of the Control Cable (10), drill two holes into the wall and insert Mounting Anchors (15). Position Control Box (11) so that the Control Cable (10) enters control box from the bottom. Attach the control box to the wall by aligning box mounting holes with mounting anchors using Anchor Screws (16).
7. Attach In-line Filter/Check Valves (8) to stop valves using Nylon Washers (9) inserted into filter inlet. Attach Supply Tubes (7) to Filter/Check Valve compression fittings. Left is the supply tube "HOT." Right is the supply tube "COLD." The filters may be cleaned by using a screwdriver to open the cleanout trap and removing the screen. **DO NOT USE PIPE DOPE. USE TEFLON TAPE ONLY.**
8. Mount Gooseneck Spout (14) onto the faucet using the Lock Nut (13) and Nylon Split Washers (12). Open stop valves and test faucet using manual control and check for leaks. Set water temperature using the control handle on the right side of the faucet.
9. Connect electrical cables as described in STEP #2. Control cable must be seated in the control box properly to maintain waterproof seal. Reinstall Control Box cover.
10. Test faucet by placing hands under spout. Water should begin to flow. Water flow should stop when hands are removed. If the faucet does not function properly, refer to the troubleshooting guide.
11. Sensor Distance (SDA) is factory preset. If you need to alter this setting, please call Hydrotek.

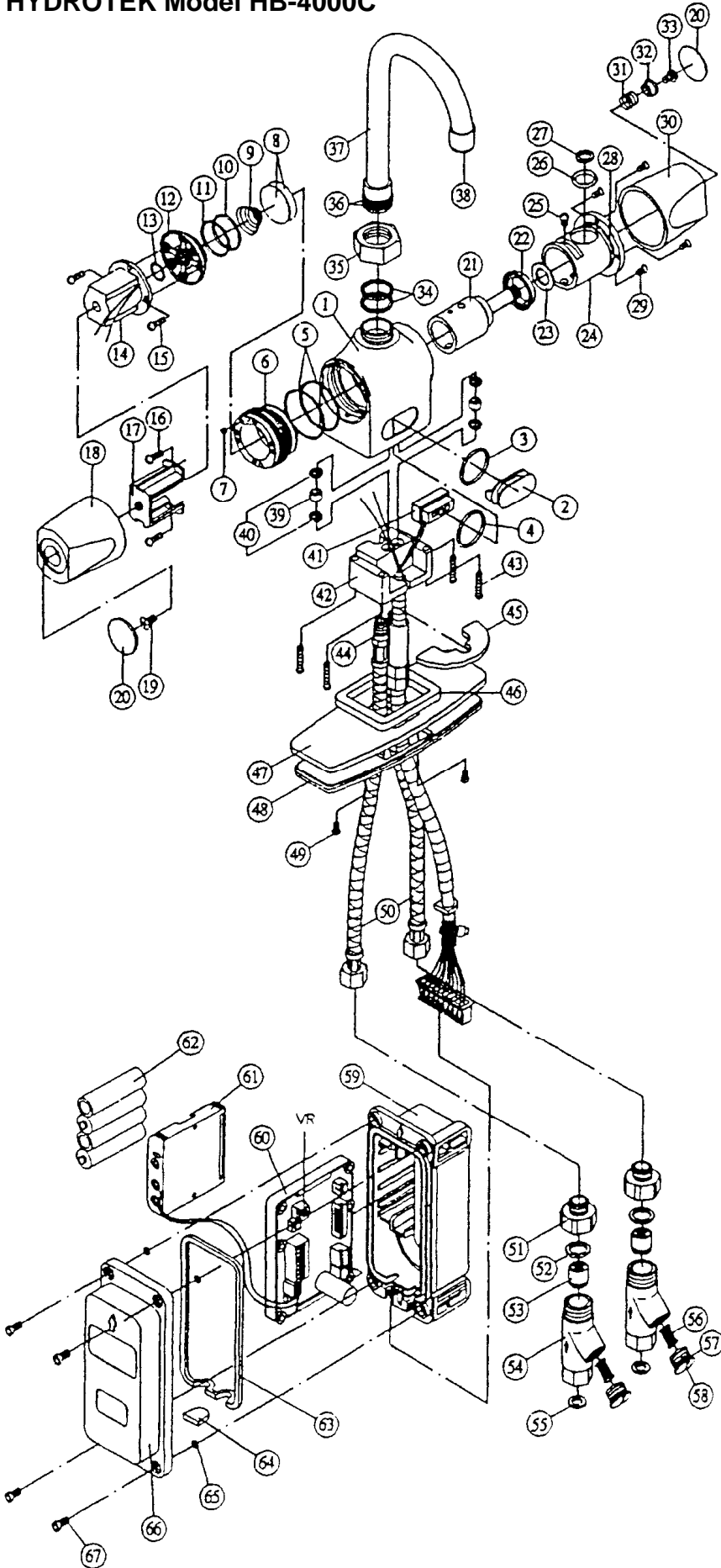
Model HB-4000C



Part Number Descriptions	
1. Faucet body	9. Nylon washer
2. Laminar flow outlet device, 2.0 GPM	10. Control cable
3. Gasket	11. Control box
4. Mounting bolt	12. Nylon split washer (2) for spout
5. Mounting washer	13. Lock nut for spout
6. Mounting nut	14. Gooseneck spout
7. Supply tube (2)	15. Mounting anchor (2)
8. Filter/Check Valve (2)	16. Anchor screw (2)

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

HYDROTEK Model HB-4000C



NO.	DESCRIPTION	PART NO.
1	Body	B4-01D-01A
2	Sensor Eye Lens	PC-004-31A
3	O-Ring	HC-014-33
4	O-Ring	HC-014-16
5	O-Ring X2	HC-014-04
6	Valve Seat	HB-05B-01B
7	Rubber Plug	HB-02-06
8	Control Disc w/Rubber	HC-005-03H
9	Control Disc Spring	HC-003-03
10	O-Ring	HC-014-11
11	O-Ring	HC-014-30
12	Control Valve	HB-05-06
13	O-Ring	HC-014-03
14	Coil	HB-04B-E
15	Screw X2	HC-013-12
16	Screw X2	HC-013-35
17	Solenoid Cover Bracket	HB-05-03
18	Solenoid Cover	H3-01D-05C
19	Screw	HC-013-31
20	Side Mark	H3-01-09A
21	Temp. Adj. Rod	H3-01B-801G
22	Rubber Skirt	HC-005-0311
23	Washer	H3-01-0804A
24	Temp. Adj. Cap.	H3-01B-0802C
25	Screw	HC-013-04
26	O-Ring	HC-014-07
27	Retainer Ring	H3-01-0803
28	O-Ring	HC-014-06
29	Screw X4	HC-013-11
30	Control Handle	H3-01D-06A
31	Spring	H3-01-0702
32	Seat, Screw	H3-01-0701
33	Screw	HC-013-06
34	O-Ring X2	H4-01-03A
35	Spout Nut	H4-01D-02A
36	O-Ring X2	HC-014-09
37	6" Gooseneck Spout	HC-016D-01A
38	Flow Control 2.0 L	HC-015D-E
39	Brass Connector X2	H3-01-03A
40	Connector O-Ring X4	H3-01-04
41	Sensor Eye & Cable	PC-006-32
42	Bottom Plate	H3-01B-02B
43	Screw X4	HC-013-09
44	O-Ring X2	HC-014-01
45	Mounting Washer	B3-01-06
46	Bottom Plate Gasket	B4-01-02
47	Cover Plate	HC-006D-01A
48	Cover Plate Gasket	HC-006-02C
49	Screw X2	HC-013-12
50	Flexible Supply Tube	HC-004-13
51	Compression Adapt. X2	HC-023D-03D
52	Washer X2	HC-009-06
53	Check Valve X2	HC-023-07A
54	Filter Body X2	HC-023D-01D
55	Nylon Washer X2	HC-023-10
56	Filter Screen X2	HC-009-03
57	O-Ring X2	HC-014-36
58	Filter Cap X2	HC-023D-02
59	Control Box	HB-012-0101C
60	PCB	PC-009-32
61	Battery Holder	HB-00-03
62	AA Battery X4	HB-09-04A
63	Control Box Seal	HB-012-0102
64	Control Box Rubber Plug	HB-011-0104
65	O-Ring X4	HC-014-62
66	Control Box Cover	HB-012-0201
67	Screw, Hex Locking X4	HC-013-61

HYDROTEK AUTOMATIC FAUCET TROUBLESHOOTING GUIDE

(Battery Powered)

Normal Operation: When new batteries are inserted, 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. When the user's hands are placed under the spout, the red indicator light on the faucet will flash one time and water will begin to flow. Water flow will stop when hands are removed. Red indicator light flashes when batteries are low. Always push the RESET button BEFORE attempting to diagnose any problem and AFTER taking corrective action.

<u>PROBLEM</u>	<u>POSSIBLE CAUSE</u>	<u>TO DIAGNOSE</u>	<u>REMEDY</u>
Faucet will not turn on:	Water not turned on.	Check water supply.	Turn water on.
	Power supply failure.	Check batteries, polarity of battery, and connections.	Replace batteries and reconnect. Push RESET button.
	Sensor distance is too short.	Use hand/palm to find focal point of sensor beam.	To adjust sensor distance out, turn adjustment clockwise. Push RESET button.
	Electronic PCB is defective.	No light or action. Change batteries and reset the unit.	Replace PCB.
	Sensor eyes are defective.	Insert new batteries and place hands in front of Sensor eyes. Red light doesn't blink.	Replace sensor eyes and cable. Push RESET button.
	Solenoid valve is clogged.	Solenoid is clicking but no water is coming out.	Clean solenoid and blow free all by-pass holes. Replace control disc. Push RESET button.
	In-line filter is clogged.	Open clean-out trap and check filter screen.	Clean or replace filter screen.
	Solenoid coil is defective.	Insert new batteries and reset the unit. Light blinks normally, but there is no clicking	Replace solenoid coil. Push RESET button.

Faucet will not shut off OR there is low flow:

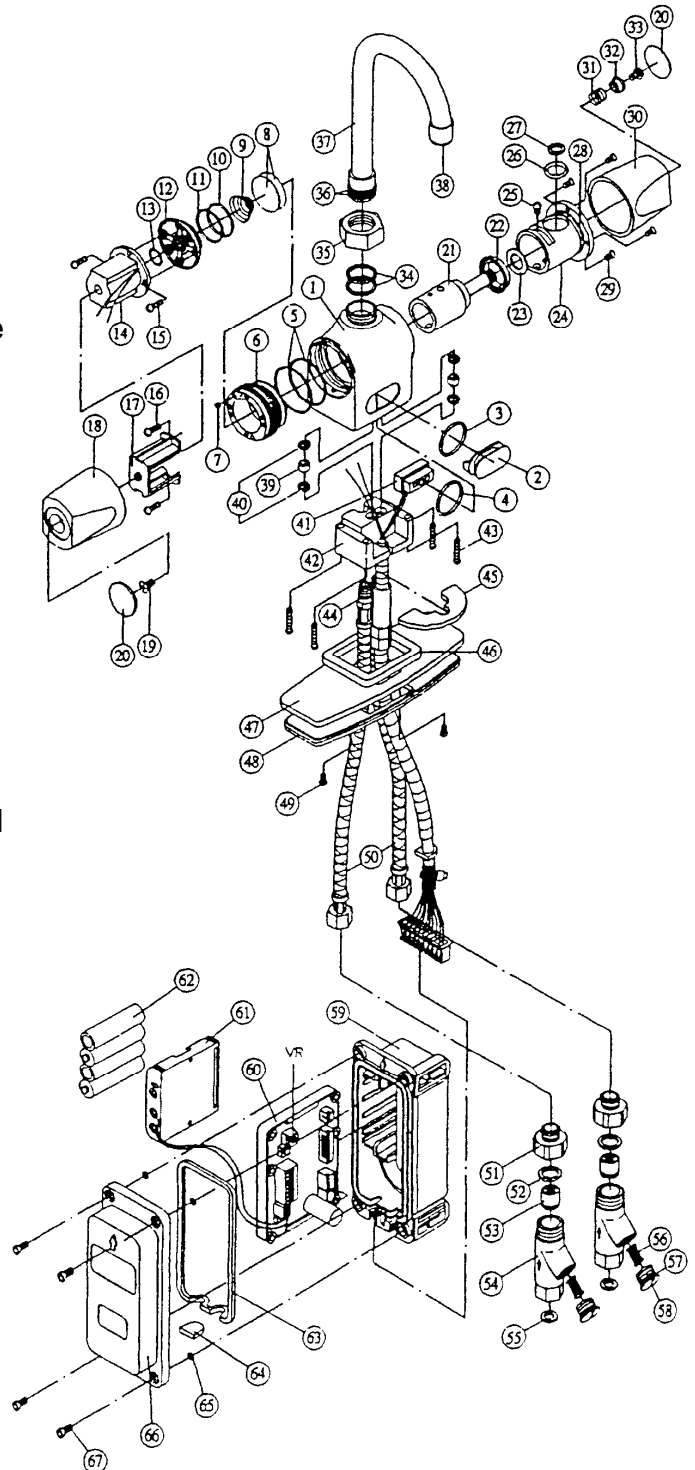
If this is a 3000C or 4000C series model, be sure that the right faucet handle is in the "AUTO" mode position. Otherwise, solenoid valve is normally closed. Turn off water and activate faucet. If there is a clicking sound, the solenoid valve is dirty. If there is no clicking sound, then replace solenoid 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 Solenoid repair 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 HB-4000C FAUCET (BATTERY POWERED)

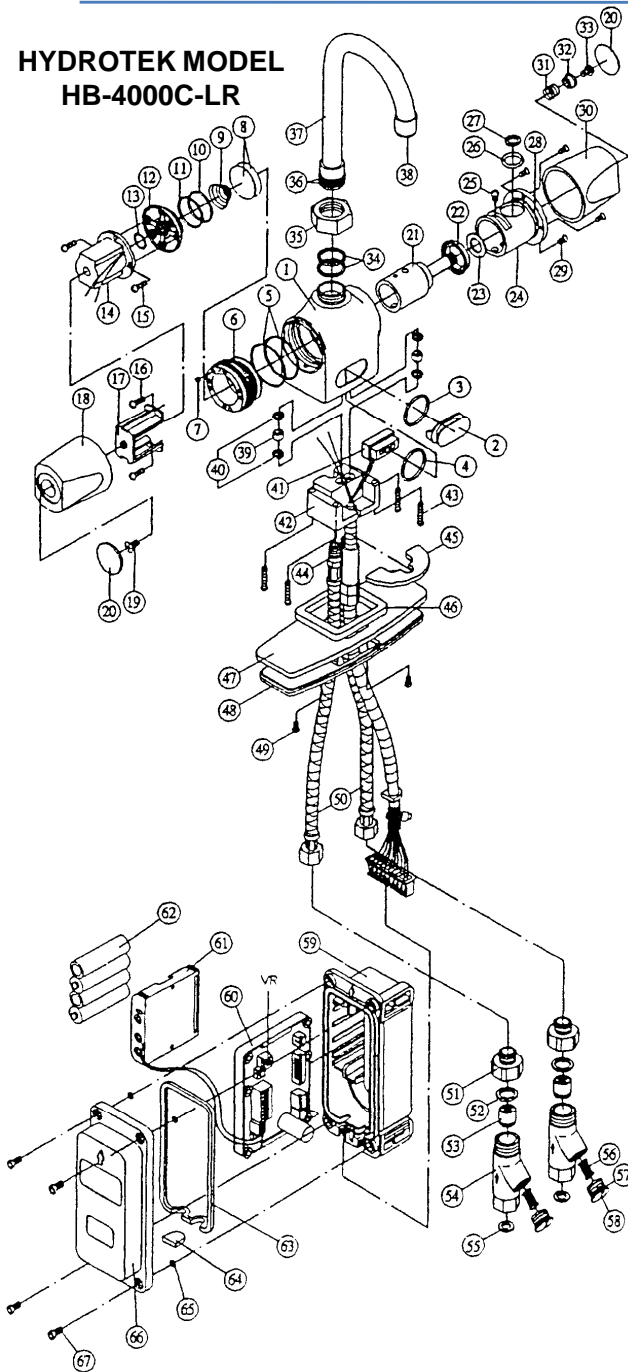
1. Remove Battery Pack (#61) from the PC Board (#60) in the Control Box (#59).
2. Turn off water supply at the angle stop valve or main supply.
3. Position the Manual Control (#30) in the middle of the manual control range to drain water from the faucet.
4. Remove the Blue Plastic Cover (#20) from the left Solenoid Cover/Handle (#18).
5. Remove the solenoid cover by removing the Phillips Head Screw (#19) from the center of the Solenoid Cover (#18).
6. Remove the four Phillips head screws (#15, 16) from the Solenoid Coil Body (#14) and carefully separate the coil from the faucet body.
7. Pry the Control Valve (#12) from the Seat (#6) and remove Spring (#9) and Control Disc (#8). Control disc can be easily removed by opening the water supply slowly until the disc pushes out of the seat. Inspect for debris under the control disc and inside the valve seat. If using a repair kit, replace Disc (#8), Cone Shaped Spring (#9), O-ring (#13), Piston, Piston Tip, and Piston Spring.
8. Re-assemble the control valve, spring, and disc. Reattach coil to the body, making sure all components are assembled in the correct order and direction as the diagram on this page.
9. Turn on water supply, check for leaks and test operation of the faucet manually.
10. Reinstall Battery Pack (#61) and push RESET button located on the PC Board (#60). Turn Manual Handle (#30) to "AUTO" mode to return faucet to electronic operation.



(For further questions, please call Hydrotek Tech Support at 1-800-922-9883 ext. 105)

SENSOR EYE AND CABLE REPLACEMENT FOR HB-4000C (BATTERY POWERED LAVATORY FAUCET)

HYDROTEK MODEL HB-4000C-LR



1. Turn off water supply from angle stops. Disconnect the Sensor Eye Cable (#41) from the Control Box (#59). Loosen compression nuts on Inline filters and drain water from the faucet body by turning Handle (#30) from the AUTO to MANUAL position. Loosen Mounting Plate (#45) and remove faucet from sink deck.
2. Remove the two Water Supply Tubes (#50) and the four Screws (#43) holding the Bottom Plate (#42) to the faucet body.
3. Carefully pull the Bottom Plate (#42) from the faucet body and cut wires from the sensor eyes to the solenoid valve. Retain the two Brass Connectors (#39) for reinstallation.
4. Remove Sensor Eyes (#41) from the Sensor Lens Cover (#2) with a small screwdriver. The eye will snap out of the lens.
5. Unscrew sensor eye retaining bolt from the Bottom Plate (#42) and remove Sensor Eyes and Cable (#41).
6. Install new Sensor Eye retaining bolt onto the Bottom Plate (#42) and tighten until snug. Install new eyes in faucet body.
7. Check O-rings (#40) for damage and connect solenoid wires to existing solenoid coil, matching the wire colors. Connections must be insulated.
8. Holding the faucet body upside down, carefully align Connectors (#39) with the Bottom Plate (#42) and reattach the plate to the faucet body. Note: If connectors are not in proper position, water leakage will occur.

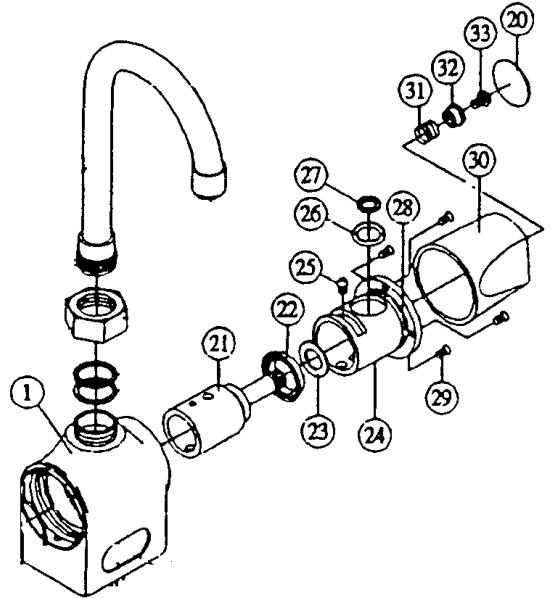
CAUTION: DO NOT PINCH OR SCRAPE WIRES when attaching the Bottom Plate to the faucet body as this will cause the faucet to fail.

9. Carefully reconnect faucet sensor eye cable to the Control Module PCB (#60) located inside the Control Box (#59). Install new batteries and push the RESET button located on the PCB. If the faucet is operating correctly, you will hear a “click” and the indicator light will flash once you have activated the faucet.
10. Reconnect the Supply Tubes (#50), test for proper operation, and remount the body on the sink.

For any questions, please call Hydrotek Tech Support at (800) 922-9883 ext. 105.

TEMPERATURE ADJUSTOR ROD REPAIR
(Part #HC-078)
FOR HYDROTEK 3000C & 4000C FAUCETS
AC and Battery Powered

1. Remove battery from the Control box (in Battery Powered faucets) or disconnect the power supply (for AC Powered faucets).
2. Turn off water at angle stops.
3. Remove the Blue plastic nameplate (#20) from the Temperature control handle (#30) on the right side of the faucet. This plate may have to be destroyed in order to be removed. A replacement is provided in the repair kit.
4. Remove Control Handle (#30) by removing the Phillips head screw, Seat, & Spring (#31,32,33).
5. Remove the four screws (#29) from the Brass adjustor rod cap (#24).
6. Pull the Adjustor rod (#21) and Adjustor rod cap (#24) from the body of the faucet. This will be easier if you reverse the Control handle (#30) and install it backwards on the rod to use as a handle puller.
7. Clean the body chamber and inspect for damage. Inner surface of the chamber should be smooth and free of deposits or debris. Remove screw (#25) on Adjustor rod and separate it from the cap. Use 0000 Steel Wool to polish the surface of the adjustor rod.
8. Inspect or replace O-rings (#26,28) and Rubber skirt (#22). You may want to use a SMALL amount of water-proof, heat-proof grease on the Rubber skirt (#22). **Note: Please make sure nylon washer (#23) is on the shaft of the adjustor rod (#21).** Carefully push the rod into the cap and reinstall screw (#25) on adjustor rod. Position new Fix Ring (#26) as shown in the diagram and align the four screws (#29) with the four holes for the screws in the body and CAREFULLY INSERT adjustor rod and cap assembly so that the O-rings are not damaged. Make sure Fix-ring (#26) is positioned in the "up" position and secure the assembly with the four screws (#29).
9. Turn adjustor rod (#21) clockwise to the end of its rotation.
10. Align full cold auto setting on the Control Handle (#30) with the indicator mark on the body. Attach the handle to the adjustor rod with Spring (#31), Seat (#32), and Screw (#33). Insert Blue plastic nameplate (#20) into handle.
11. Turn on water supply and turn control handle to manual setting and check for leaks in full range of temperature settings.
12. Reconnect power supply (for AC powered faucets) or reset the battery holder and insert batteries (on Battery powered faucets). Test automatic operation.



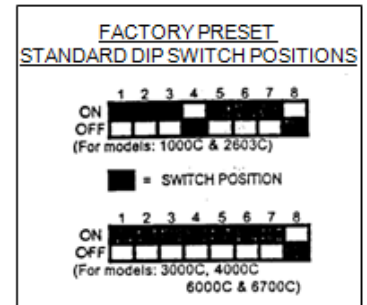
(For further questions, please call Hydrotek Tech Support at 1-800-922-9883 ext. 105)

HYDROTEK AUTOMATIC FAUCET: DIP SWITCHES

NOTE: ALWAYS PUSH THE RESET BUTTON AFTER ANY ADJUSTMENTS

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

Sw 1	Sw 2	Sw 3	Time Delay
ON	ON	ON	1-Sec
ON	ON	OFF	2-Sec
ON	OFF	ON	3-Sec
ON	OFF	OFF	4-Sec
OFF	ON	ON	5-Sec
OFF	ON	OFF	6-Sec
OFF	OFF	ON	7-Sec
OFF	OFF	OFF	8-Sec



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

Sw 4	Sw 5	Time Off
ON	ON	0 Sec
ON	OFF	15 Sec
OFF	ON	30 Sec
OFF	OFF	60 Sec

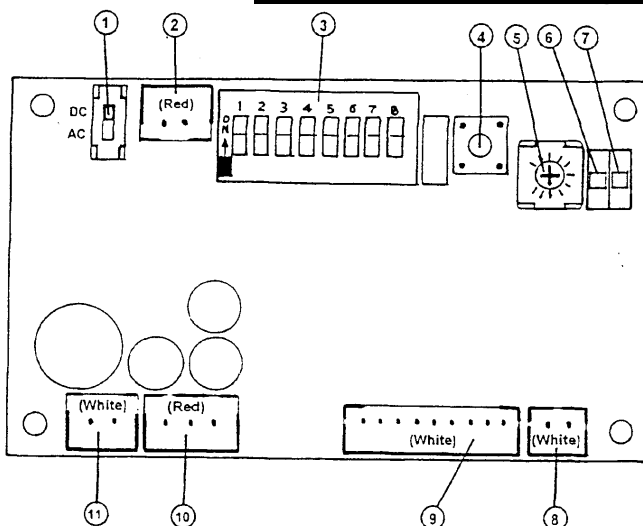
C. Sensor Distance: To increase distance, turn SDA screw clockwise.
To decrease distance, turn screw counter-clockwise.

Sw 6	Mode	Distance
ON	Std	4" – 12"
OFF	Enhanced	10" – 24"

D. Faucet Switch:

Sw 7	Sw 8	Product
ON	OFF	Auto Faucet

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)

Hydrotek International, Inc.
Phone: 800-922-9883 / Fax: 866-670-5580

Suggested Backup Parts for 4000C Series Faucets
AC or Battery Powered Lavatory Faucets

Part Number From Drawing	Hydrotek Item Code	Description
8,9,13,20, & Piston Spring	HCB-017B	Solenoid Repair Kit
20,22,26,27,28	HC-078	O-Ring Kit for Temperature Adjustment Assembly
41	HCC-032	Sensor Eye & Cable
60 60	HCC-011A HCC-011B	PCB Module for AC Model PCB Module for Battery Model
44,50	HC-025C	Supply Tube (2 needed)
38	HB-003CF	2.0 GPM Laminar Flow Control Device
14	HCC-019	Solenoid Coil
56	HC-020	Filter Screen

(Please visit www.hydrotekintl.com to view our most current Products Pricing Sheet)