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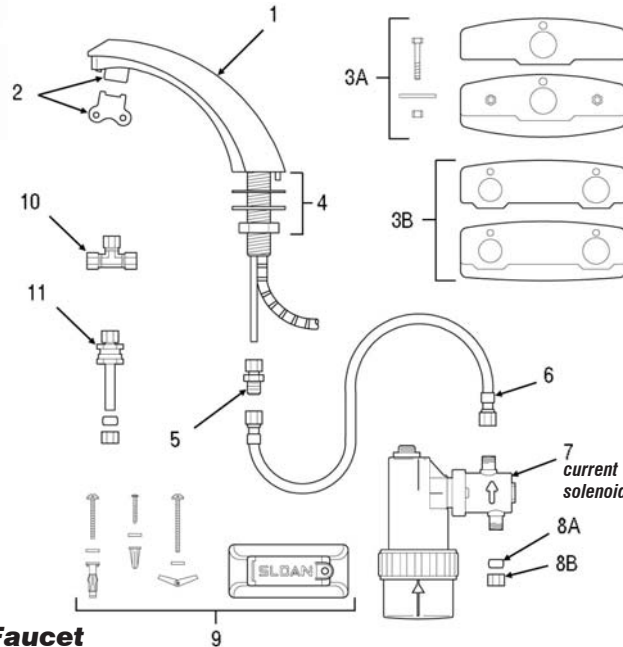
SENSOR FAUCETS

Parts Guide

• BATTERY OPERATED FAUCETS



OPTIMA Plus® EBF-85 Faucet



Solenoid Valve Changes

The current solenoid (in production since May 1998; part 7 shown on the left) has MALE inlet and outlet connections. The current style filter plug has a metal filter cap that can be removed with a 5/8" wrench.

The older solenoid valve (shown below) can be identified by FEMALE inlet and outlet connections. These require EBF-17 compression fittings (part 12 shown below).

This older style solenoid has either a plastic or a replacement brass filter cap. Remove the older brass filter cap with a 7/16" or 1/2" hex wrench. Replace the old style filter cap with an EBF-1005-A Filter Cap Replacement Kit (brass cap).

Parts List—EBF-85 Faucet

Item Number	Code Number	Part Number	Description
1	3315016	EBF-10-A	Faucet and Sensor Assembly (EBF-85)
	0315115	EBF-179-A	Fiber Optic Sensor Cable Assembly Only (replaces EBF-12-A)
	TBA	EBF-1009-A	Fiber Optic Sensor Cable Assembly Only (replaces EBF-12-A, includes lens holder)
2	3365091	ETF-1021-A	0.5 gpm (1.9 Lpm) Spray Head with Key (female thread)
	3365090	ETF-1022-A	2.2 gpm (8.3 Lpm) Aerator Spray Head with Key (female thread)
	0305612	ETF-237	2.2 gpm (8.3 Lpm) Laminar Flow Spray Head (female thread)
	0305927	ETF-435	Replacement Key ONLY for ETF-1021-A 0.5 gpm (1.9 Lpm) Spray Head and ETF-1022-A 2.2 gpm (8.3 Lpm) Aerator Spray Head (NOT required for ETF-237 2.2 gpm/8.3 Lpm Laminar Flow Spray Head)
3A	3365466	ETF-295-A	4" (102 mm) Centerset Trim Plate Kit for Faucet (Faucet Only) includes two (2) Nuts, two (2) Hex Screws, two (2) Flat Washers, Single Hole Cover Plate, and CP Base Plate
3B	3365467	ETF-299-A	4" (102 mm) Centerset Trim Plate Kit for Faucet with Optional Mixing Valve includes two (2) Nuts, two (2) Hex Screws, two (2) Flat Washers, Dual Hole Cover Plate, and CP Base Plate
4	0305626	ETF-290-A	Faucet Mounting Kit includes Rubber Gasket, Mounting Washer, Mounting Nut, and ETF-297 Compression Fitting Connector
5	0305736	ETF-297	1/4" to 3/8" Compression Fitting Connector
6	0305891	MIX-19	20" (508 mm) Flex Hose
7	3315111	EBF-11-A	Solenoid Valve Module Assembly includes Solenoid Enclosure, Solenoid Body, and Filter Cap
8A	0305510	ETF-208	3/8" (10 mm) Ferrule
8B	0305511	ETF-209	3/8" (10 mm) Compression Nut
9	3315014	EBF-25-A	Mounting Bracket Kit includes Base Plate, Wall Bracket Base, Wall Bracket, Mounting Screw, Self-tapping Screw, two (2) Wood Screws plus Washers and Plastic Anchors, two (2) Screws plus Washers and Toggle Nuts, two (2) Screws plus Washers and Hollow Wall Anchors
10	0305728	ETF-259	3/8" Tee Compression Fitting
11	3365001	ETF-470-A	Back Check
12	0315004	EBF-17	3/8" to 1/4" Compression Fitting Connector
—	3315009	EBF-1001-A	Solenoid Filter Replacement Kit for old solenoid includes Filter Screen Assembly and O-ring
—	3315028	EBF-1004-A	Solenoid Filter Replacement Kit for current solenoid includes Filter Screen Assembly and O-ring
—	3315051	EBF-1005-A	Filter Cap Assembly for old solenoid includes metal Filter Cover and O-ring

The information contained in this document is subject to change without notice.

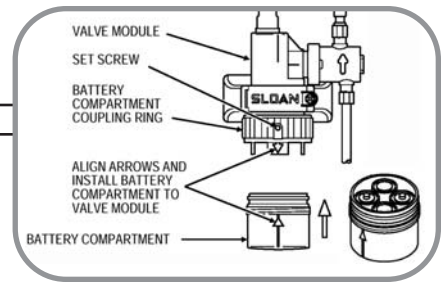
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Troubleshooting Guide for EBF-85 Faucets

NOTE: BEEP sounds are emitted from the Solenoid Valve Module (not from the Spout of the Faucet). For the first ten (10) minutes of operation (or after battery replacement), the unit BEEPs every time the faucet is activated to indicate that range limits are set. To conserve battery power, the unit will not BEEP again until it indicates low battery power.

Calibration Procedure: When the battery compartment is assembled to the valve module with active batteries, the faucet initiates a self-calibration mode and uses BEEPs to indicate the status of this mode. To prevent improper calibration, ensure that the Spout is centered properly and that no targets are in the detection range of the sensor when the batteries are connected. An initial series of BEEPs indicates that power is being supplied from the batteries to the faucet. For the next thirty (30) seconds, the sensor determines the most suitable range setting for its environment. Water will not flow from the faucet during this automatic range calibration. After the range is calibrated, a second series of BEEPs indicates that the faucet is ready for use. Under normal operation, this faucet adapts its range to changes in the



environment.

Battery Replacement Procedure:

Loosen security set screw on the Coupling Ring with a 0.05" hex or allen wrench. Unscrew Battery Compartment Coupling Ring. Remove Battery Compartment. To ensure proper operation, remove old batteries and insert four (4) new C-size Alkaline batteries. Check that the orientation of each battery matches the positive (+) and negative (-) symbols shown in the bottom of the Battery Compartment. Reattach the Battery Compartment to the Control Module by aligning the arrow on the Battery Compartment with the arrow on the solid tab of the Solenoid Valve Module. Secure by tightening Battery Compartment Coupling Ring. To deter unauthorized removal of batteries, use a 0.05" hex or allen wrench to tighten the Security Set Screw on the Coupling Ring.

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- 1. PROBLEM: Module emits audible "BEEPs" when activated.**
CAUSE: Battery power is nearly exhausted.
SOLUTION: To ensure proper operation, insert four (4) new C-size Alkaline batteries. Check that the orientation of each battery matches the positive (+) and negative (-) symbols shown in the bottom of the Battery Compartment. Reattach Battery Compartment to Control Module.
- 2. PROBLEM: Sensor is activated but faucet does not deliver water.**
INDICATOR: Module DOES NOT produce audible "BEEPs".
CAUSE: Battery power is fully exhausted.
SOLUTION: To ensure proper operation, insert four (4) new C-size Alkaline batteries. Check that the orientation of each battery matches the positive (+) and negative (-) symbols shown in the bottom of the Battery Compartment. Reattach Battery Compartment to Control Module.
CAUSE: Batteries are not installed properly.
SOLUTION: Check that the orientation of the batteries match the positive (+) and negative (-) symbols shown in the bottom of the battery compartment. Reattach the Battery Compartment to the Control Module.
CAUSE: Solenoid Valve Module is defective.
SOLUTION: Replace EBF-11-A Solenoid Valve Module.
INDICATOR: Module produces audible "BEEPs" when batteries are installed and after 30-second calibration procedure, but NOT when a target is placed in the detection zone of the Sensor.
CAUSE: Fiber Optic Cable is not connected correctly to Solenoid Valve Module or was not connected when batteries were installed.
SOLUTION: Reconnect Fiber Optic Cable to Solenoid Valve Module. Open Battery Compartment to reset electrical system. Check that the orientation of each battery matches the positive (+) and negative (-) symbols shown in the bottom of the battery compartment. Reattach the Battery Compartment to the Control Module.
CAUSE: Fiber Optic Cable is defective.
SOLUTION: Replace EBF-179-A Sensor Cable, EBF-1009-A Sensor Cable, or EBF-10-A Faucet/Sensor Assembly.
CAUSE: Solenoid Valve Module is defective.
SOLUTION: Replace EBF-11-A Solenoid Valve Module.
INDICATOR: Module produces audible "BEEPs" when a target is placed in the detection zone of the Sensor and Solenoid Valve produces an audible "CLICK", but NO water flows.
CAUSE: Water supply to faucet is not open.
SOLUTION: Open supply stop(s).
CAUSE: Back Check is installed backwards.
SOLUTION: Reinstall Back Check(s).
CAUSE: Solenoid Filter is clogged.
- 2 SOLUTION:** Remove, clean, and reinsert. Replace with EBF-1001-A or EBF-1004-A Solenoid Filter Kit if necessary.
CAUSE: Aerator or Spray head is clogged.
SOLUTION: Remove, clean, and reinsert.
INDICATOR: Module produces audible "BEEPs" when a target is placed in the detection zone of the Sensor, but Solenoid Valve does NOT produce an audible "CLICK" and NO water flows.
CAUSE: Solenoid Valve Module is defective.
SOLUTION: Replace EBF-11-A Solenoid Valve Module.
- 3. PROBLEM: Faucet delivers only a slow flow or dribble when Sensor is activated.**
CAUSE: Water supply valve is partially closed.
SOLUTION: Open the Supply Stop(s) completely.
CAUSE: Solenoid Filter is clogged.
SOLUTION: Remove, clean, and reinsert. Replace with EBF-1001-A or EBF-1004-A Solenoid Filter if necessary.
CAUSE: Aerator or Spray head is clogged.
SOLUTION: Remove, clean, and reinsert.
- 4. PROBLEM: Faucet does not stop delivering water or continues to drip after user is no longer detected (automatic shut-off fails even when batteries are removed).**
CAUSE: Solenoid Valve has been connected backwards.
SOLUTION: Disassemble Solenoid Valve compression fittings at the inlet and outlet positions. Water should flow from inlet through the Solenoid Valve to outlet according to the direction shown by the arrow on the side of the Solenoid Valve. Reconnect the fittings in the correct orientation.
CAUSE: Solenoid Valve seat is dirty.
SOLUTION: Remove, clean, and reinsert Solenoid Filter. Activate faucet several times to flush out dirt.
CAUSE: Solenoid Valve is dirty.
SOLUTION: Backflush by reversing water flow (opposite to the direction shown by the arrow on the side of the Solenoid Valve) through the Solenoid Valve. Reconnect the compression fittings in the correct orientation. Activate faucet.
CAUSE: Solenoid Valve Module is defective.
SOLUTION: Replace EBF-11-A Solenoid Valve Module.
- 5. PROBLEM: The water temperature is too hot or too cold on a faucet connected to hot and cold supply lines with two Back Checks.**
CAUSE: Supply Stops are not adjusted properly.
SOLUTION: Adjust Supply Stops.
CAUSE: One Back Check is installed backwards.
SOLUTION: Reinstall Back Check.
NOTE: For some systems, a Thermostatic Mixing Valve may be required.