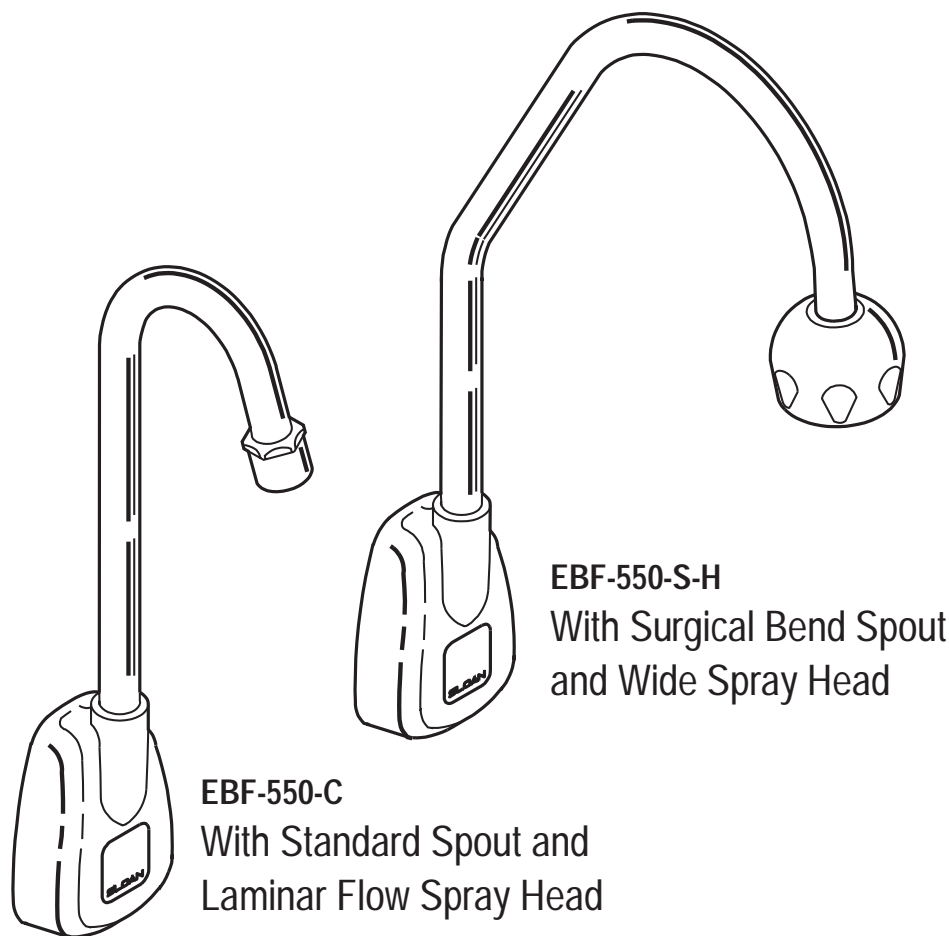


SLOAN®

INSTALLATION INSTRUCTIONS BATTERY POWERED SENSOR OPERATED HAND WASHING FAUCETS



Includes Instructions for
Installation of Optional Back
Checks

Made in the U.S.A.

A112.18.1M

Installation of the Sloan OPTIMA *Plus* EBF-550 Battery Powered, Sensor Operated Faucet makes scrub or wash-up sinks totally "hands-free" providing the ultimate in sanitary protection and automatic operation. The OPTIMA *Plus* faucet uses infrared technology to sense the user's presence and turn on a water supply that has been pre-mixed to the desired water temperature. When the user's hands are removed from the invisible beam of light, the water supply automatically turns off. In addition, the faucet is powered by four "C" cell batteries which eliminates the need to run any electrical lines to the system.

The Sloan EBF-550 battery powered, sensor operated faucets come complete

with an integral faucet and sensor assembly, control module, alkaline batteries (Size C), and all mounting hardware. Back checks and a grid strainer are also available and can be supplied as optional equipment. 3/8 inch copper supply tube or flexible hose connections to be supplied by the installer.

The following instructions will serve as a guide when installing the Sloan EBF-550 faucet. As always, good safety practices and care are recommended when installing your new faucet. If further assistance is required, contact your nearest Sloan Representative office or the Sloan Installation Engineering Department.

LIMITED WARRANTY

Sloan Valve Company warrants its EBF-550 Series Faucets to be made of first class materials, free from defects of material or workmanship under normal use and to perform the service for which they are intended in a thoroughly reliable and efficient manner when properly installed and serviced, for a period of three years (1 year for decorative finishes) from date of purchase. During this period, Sloan Valve Company will, at its option, repair or replace any part or parts which prove to be thus defective if returned to Sloan Valve Company, at customer's cost, and this shall be the sole remedy available under this warranty. No claims will be allowed for labor, transportation or other incidental costs. This warranty extends only to persons or organizations who purchase Sloan Valve Company's products directly from Sloan Valve Company for purpose of resale. This warranty does not cover the life of the batteries.

THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. IN NO EVENT IS SLOAN VALVE COMPANY RESPONSIBLE FOR ANY CONSEQUENTIAL DAMAGES OF ANY MEASURE WHATSOEVER.

FAUCET ROUGH-IN

EBF-550 FAUCET WITH HOT AND COLD WATER SUPPLY (SHOWN WITH STANDARD SPOUT AND SHOWER SPRAY HEAD)

- MODEL EBF-550-A-2 — .5 gpm (1.9 Lpm) Max.
- MODEL EBF-550-B-2 — 2.2 gpm (8.3 Lpm) Max.
- MODEL EBF-550-C-2 — 2.2 gpm (8.3 Lpm) Max. — Laminar Flow
- MODEL EBF-550-H-2 — 2.2 gpm (8.3 Lpm) Max. — Shower Spray Head

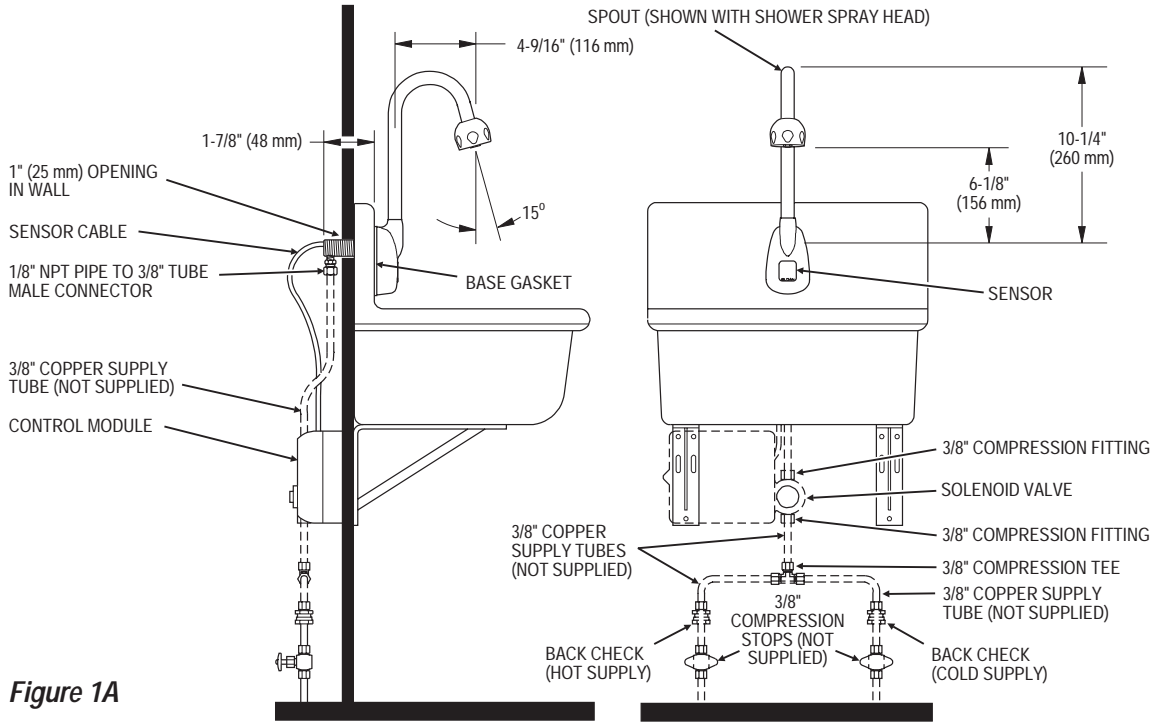


Figure 1A

EBF-550 FAUCET WITH SINGLE LINE WATER SUPPLY (SHOWN WITH SURGICAL BEND SPOUT AND SHOWER SPRAY HEAD)

- MODEL EBF-550-A — .5 gpm (1.9 Lpm) Max.
- MODEL EBF-550-B — 2.2 gpm (8.3 Lpm) Max.
- MODEL EBF-550-C — 2.2 gpm (8.3 Lpm) Max. — Laminar Flow
- MODEL EBF-550-H — 2.2 gpm (8.3 Lpm) Max. — Shower Spray Head

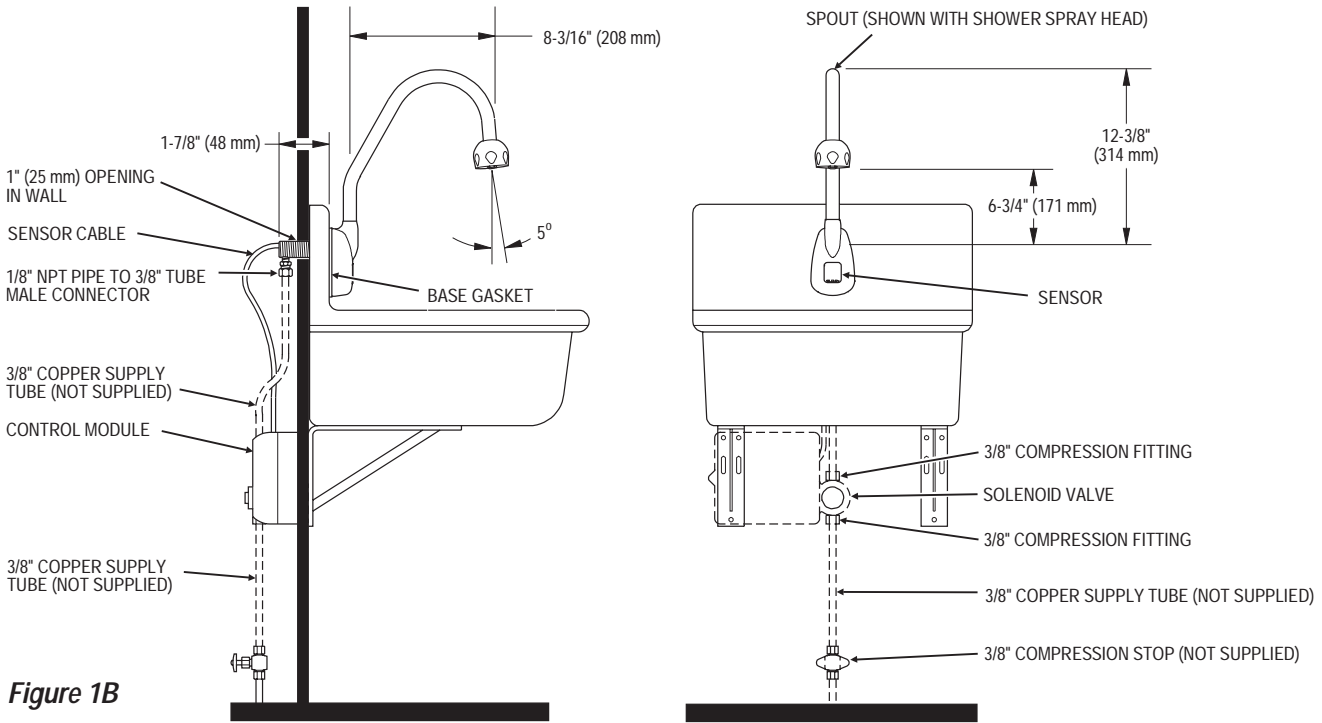


Figure 1B

PRIOR TO INSTALLATION

Prior to installing the faucet, install the items listed below. Also, refer to Figure 1.

- Scrub or wash-up sink
- Drain line
- Hot and cold water supply lines or tempered water supply line

IMPORTANT

- ALL PLUMBING IS TO BE INSTALLED IN ACCORDANCE WITH APPLICABLE CODES AND REGULATIONS.
- FLUSH ALL WATER LINES PRIOR TO MAKING CONNECTIONS.

TOOLS REQUIRED FOR INSTALLATION

- Open end wrenches for hex sizes (inches): 1/2, 5/8, 11/16, 15/16 and 1-3/16
- Basin wrench
- Pipe wrench
- Phillips head screwdriver, #2
- Hammer (if installing plastic or hollow wall anchors to mount control module)
- 1/4" drill bit (if installing plastic wall anchors to mount control module)
- 5/16" drill bit (if installing hollow wall anchors to mount control module)
- 3/8" drill bit (if installing toggle nut anchors to mount control module)

INSTALLATION OF EBF-550 FAUCET

DO NOT INSTALL BATTERIES UNTIL THE FAUCET IS COMPLETELY INSTALLED. If the batteries are installed before the sensor cable has been connected to the control module, the faucet may not allow for proper range adjustment.

The Sloan OPTIMA Plus EBF-550 battery powered, sensor operated faucet can be supplied with back checks. When connecting the faucet to a hot and cold water supply, two back checks are required as shown in Figure 1A. Water temperature can be controlled by adjusting the supply stops. When connecting the faucet to a single line water supply or a pre-tempered water supply, a back check is not required as shown in Figure 1B.

Flow Rate

The EBF-550-H faucet with a shower spray head incorporates a 2.2 gpm (8.3 Lpm) maximum flow control. If water flow is too forceful, reduce flow to faucet by adjusting supply stops. If a pressure reducing valve has been installed, adjust valve until optimum spray is obtained. Best performance is achieved between 25 and 40 psi.

Step 1 — Install Back Checks (Option) (Figure 2)

The Sloan Back Check is designed to install on a 3/8" Compression Stop. If the existing Stop is different, it may require replacement or additional fittings (not supplied by Sloan) to connect the Back Checks to the hot and cold water supply lines.

After flushing the water supply lines through the Stops, use a compression nut and compression sleeve to connect inlet end of Back Check to the Supply Stop. Tighten Securely.

Note: Failure to install the Back Checks on a double supply faucet can result in a cross flow connection when the faucet is in the off position and the supply stops are open if the pressure between the two lines is slightly different. This can cause a migration of hot water into the cold water supply, or cold water into the hot water supply. Most plumbing codes require that the Back Checks be used to prevent this occurrence.

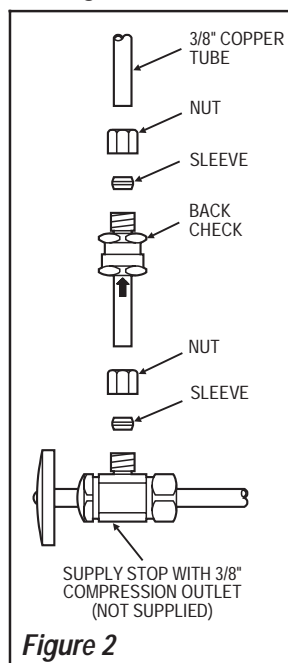


Figure 2

Step 2 — Install Faucet Assembly (Figures 3A, 3B and 3C)

Note: If installing with the MIX-30-A Mixing Valve, install Mixing Valve prior to installing Faucet. Refer to the "Installation Instructions for MIX-25-A and MIX-30-A Mixing Valves" supplied with the Sloan mixing valve.

TO MOUNT ON A SURFACE LESS THAN 0.41" (10 mm) THICK (FIGURE 3A):

Route Faucet Cable through groove on side of Spout Shank. Insert Faucet Cable and Spout Shank through Base Gasket and then through the mounting hole of scrub or wash-up sink. Secure using the Flat Washer, Lockwasher and Nut supplied.

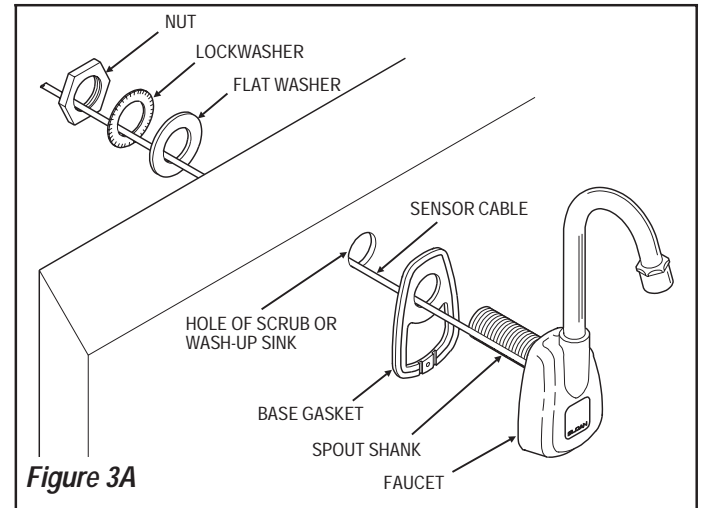


Figure 3A

TO MOUNT ON A SURFACE BETWEEN 0.41" (10 mm) AND 1" (25 mm) THICK (FIGURE 3B):

Insert Mounting Stud into hole on the back side of the Spout Shank. Route Faucet Cable through groove on side of spout shank. Insert Faucet Cable and Spout Shank with attached Mounting Stud through the Base Gasket and then through the mounting hole of scrub or wash-up sink. Last, insert it through the larger hole of the Mounting Spacer. Press the flat side of the Mounting Spacer against the back side of the mounting surface. The Mounting Stud should protrude through the smaller hole of the Mounting Spacer. Secure using the Flat Washer, Lockwasher and Hex Jam Nut supplied. Do **NOT** overtighten the Hex Jam Nut.

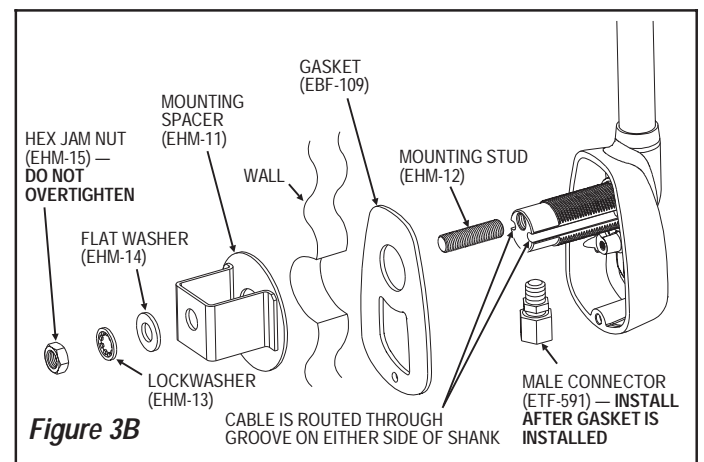


Figure 3B

Note: Sloan Valve Company does NOT supply hardware necessary for mounting the faucet on surfaces thicker than 1" (25 mm) thick.

OPTIONAL ANTI-ROTATION FEATURE (FIGURE 3C)

Note: The anti-rotation feature uses a screw to anchor the faucet in the vertical position and is intended for use ONLY on stainless steel sinks.

Use the faucet Base Gasket as a template by placing it in position over the faucet mounting hole. Mark the stainless steel mounting surface at the center of the

small hole at the bottom of the Base Gasket. Drill a 7/64" (3 mm) diameter hole through the stainless steel mounting surface. Insert the Self-Tapping Screw from the back through the drilled hole. Tighten the Screw until it securely engages into the small hole in the back of the faucet body to prevent rotation from the vertical mounting position.

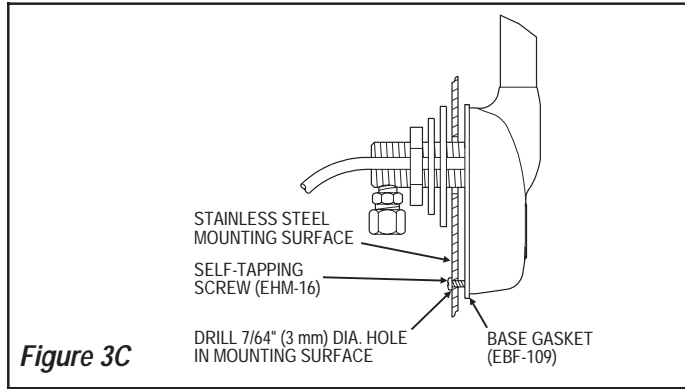


Figure 3C

Step 3 — Mount Control Module to Wall (Figures 1 and 4)

Important: DO NOT install control module upside down. The control module may be oriented so that it faces sideways (vertically); however, optimum performance is obtained when control module is in the horizontal position with the Sloan logo facing up.

Install the Control Module in an appropriate location as shown in Figure 1. When installed, the Faucet Sensor Cable from Spout to Control Module should have some slack.

Remove Control Module Cover from Control Module Base. Use the Control Module Base as a template to mark off holes on wall for Mounting Screws. Determine the appropriate Mounting Fastener for the particular wall type (3 fastener types are provided as shown in the parts list). Drill the appropriate size hole (listed below) at the four locations marked.

- For plastic wall anchor — Drill 1/4" (6 mm) holes
- For hollow wall anchor — Drill 5/16" (8 mm) holes
- For toggle nut anchor — Drill 3/8" (10 mm) holes

Attach Control Module Base to wall using the fastener type chosen.

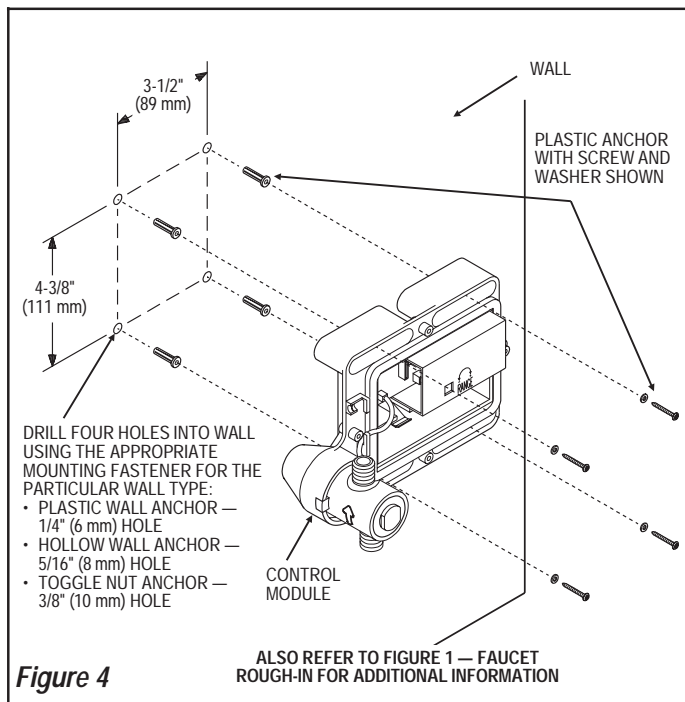


Figure 4

Step 4 — Connect Sensor Cable to Control Module (Figure 5)

Remove Circuit Board Cover from Control Module.

Route Sensor Cable from Spout to the location where Control Module is mounted (usually located behind wall directly under Faucet Shank to ensure enough slack in Sensor Cable). Insert Locking Connector from Faucet Spout into mating Receptacle on Connector Board of Control Module.

Insert the Sensor Cable into the strain relief slot of the Control Module.

Install Circuit Board Cover into Control Module.

Also refer to Figure 1 — Faucet Rough-In for Additional Information.

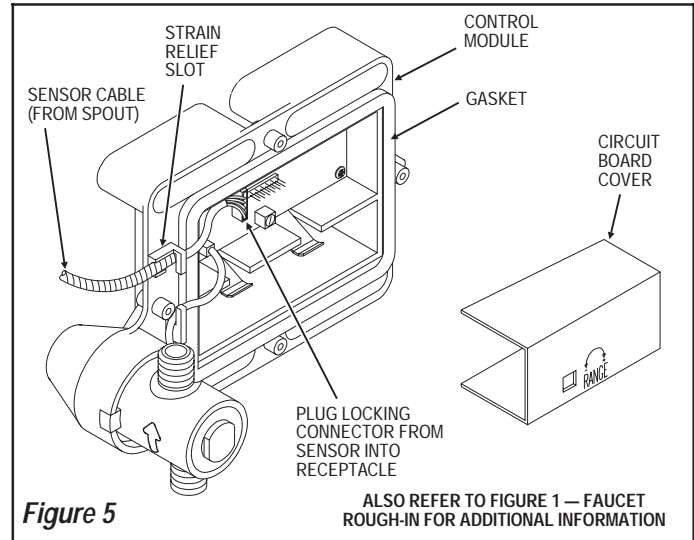


Figure 5

Step 5 — Connect Supply Line From Solenoid Valve Outlet to Faucet (Figure 6)

Note: Flow direction of Solenoid Valve is indicated by an arrow on Valve Body.

Important: When applying any form of sealant to fitting threads, leave the first two starter threads free of sealant to prevent the possibility of sealant entering into the waterway and damaging system components. Compression fittings do not require any form of sealant.

Thread Male Connector into inlet hole at bottom of Spout Shank; tighten securely to prevent leaks.

Connect a 3/8" O.D. copper supply tube (furnished by the installer) between Compression Fittings on Spout and top outlet of Solenoid Valve.

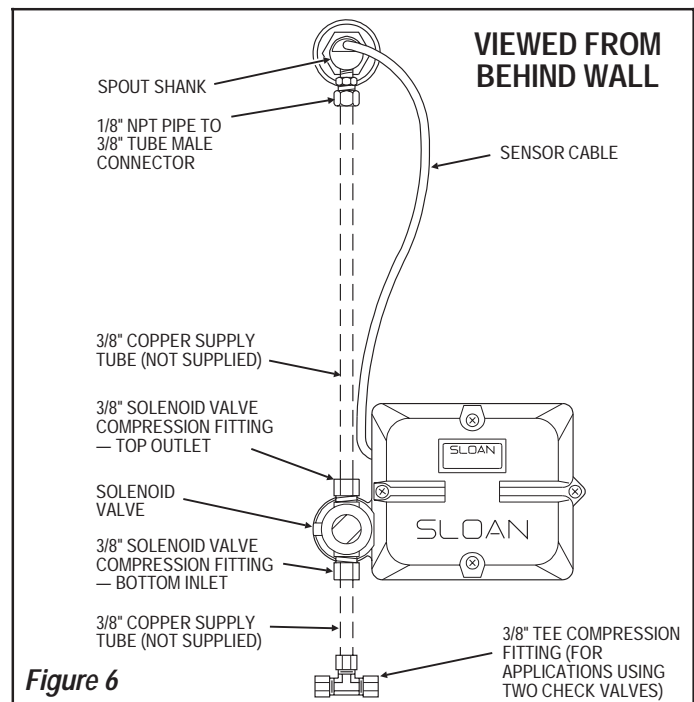


Figure 6

Step 6 — Connect Supply Line(s) From Supply Stop to Solenoid Valve Inlet (Refer back to Figure 1)

Flush supply line(s) of any debris.

FOR HOT AND COLD WATER SUPPLY APPLICATIONS

When connecting the Faucet to a hot and cold water supply, two Back Checks are required as described in Step 1 and shown in Figure 1A.

Insert 3/8" copper tube end of Back Checks into 3/8" Compression Fitting of hot and cold Supply Stops. (Supply Stops furnished by installer.) Tighten Compression Fittings securely.

Install a 3/8" Copper Supply Tube between each Back Check and the Compression Tee Fitting supplied as shown in Figure 1A.

Install a 3/8" Copper Supply Tube between Compression Tee Fitting and bottom inlet Compression Fitting of the Solenoid Valve.

FOR SINGLE LINE WATER SUPPLY APPLICATIONS

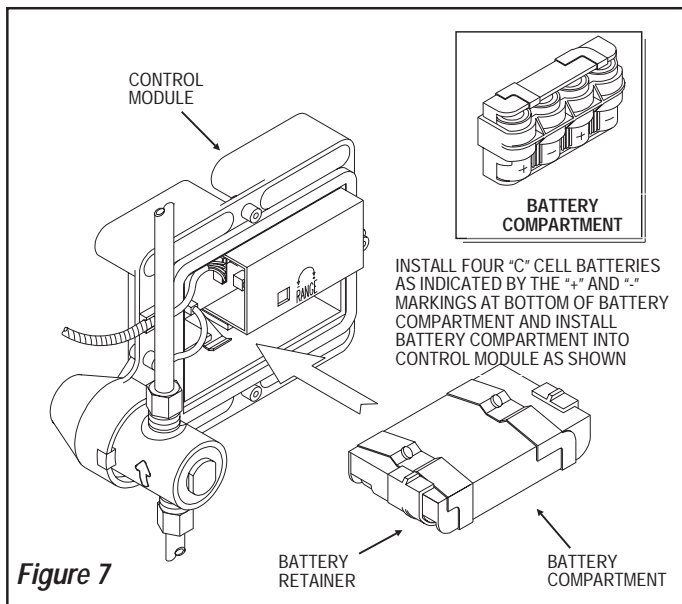
When connecting the Faucet to a single line water supply or a pre-tempered water supply, a Back Check is not required as shown in Figure 1B.

Install a 3/8" copper Supply Tube between the Supply Stop and the bottom inlet Compression Fitting of the Solenoid Valve. (Supply Stops furnished by installer.)

Also refer to Figure 1 — Faucet Rough-in for Additional Information.

Step 7 — Install Batteries (Figure 7)

Remove the Battery Compartment from the Control Module by gently pulling straight out. Spread the ends of the Battery Retainer and remove it from the Battery Compartment. Insert the four (4) "C" Cell Alkaline Batteries provided as indicated by the "+" and "-" markings inside the Battery Compartment. Spread the ends of the Battery Retainer and slide it over the Battery Compartment until locked into place. **Note:** Battery Retainer must be installed as shown in Figure 7. If installed up-side-down, it will not install into the Control Module. Reinsert the Battery Compartment into the Control Module as shown in Figure 7.



Step 8 — Start-Up

Open Supply Stops. With Aerator or Shower Spray Head removed, activate Faucet for 30 seconds by placing hands in front of the Sensor. The Solenoid Valve should "click," Sensor LED indicator should blink and water should flow from the Spout. If this does not occur, refer to the Troubleshooting section of this instruction manual.

Note: The Sensor LED indicator should blink when Faucet is activated for the first 10 minutes after start-up.

Close Supply Stops and install Aerator (using the Key provided) or Shower Spray Head into the Spout. Reopen Supply Stops, activate Faucet and check for leaks.

Step 9 — Range Adjustment (Figure 8)

The OPTIMA EBF-550 Faucet is factory set to operate when hands are placed 4 to 5 inches (102 to 127 mm) from the Sensor. This range should be satisfactory for most installations.

If range adjustment is required, refer to the following range adjustment procedures.

TO MAKE A RANGE ADJUSTMENT

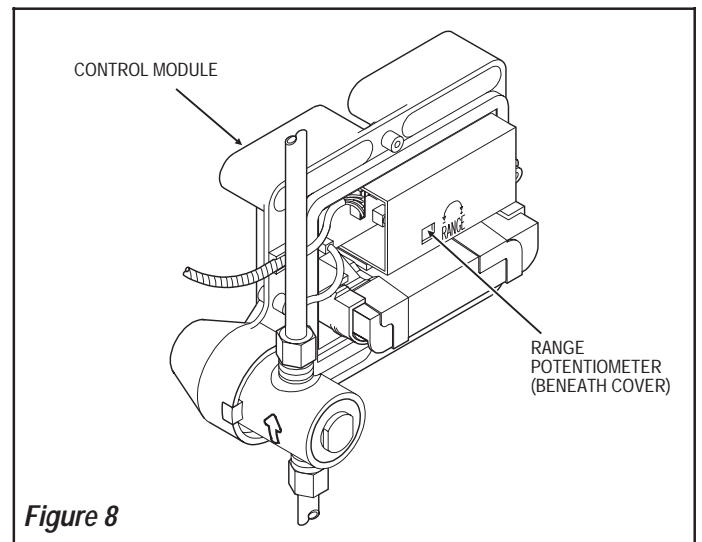
The Range Potentiometer is located in the Control Module shown in Figure 8. A screwdriver is provided on the inside cover of the Control Module for making range adjustments.

Important: Range Potentiometer adjustment screw rotates only 3/4 of a turn; DO NOT over-rotate.

The EBF-550 Faucet is factory set to operate when hands are placed 4 to 5 inches (102 to 127 mm) from the sensor. If further adjustment is required, turn the Range Potentiometer counterclockwise to **decrease range** or clockwise to **increase range**.

Cycle Faucet several times to assure that the Sensor with range adjusted will not inadvertently pick up reflection off the edge of the sink. If reflection occurs, adjust the Range Potentiometer counterclockwise very slightly and again cycle Faucet.

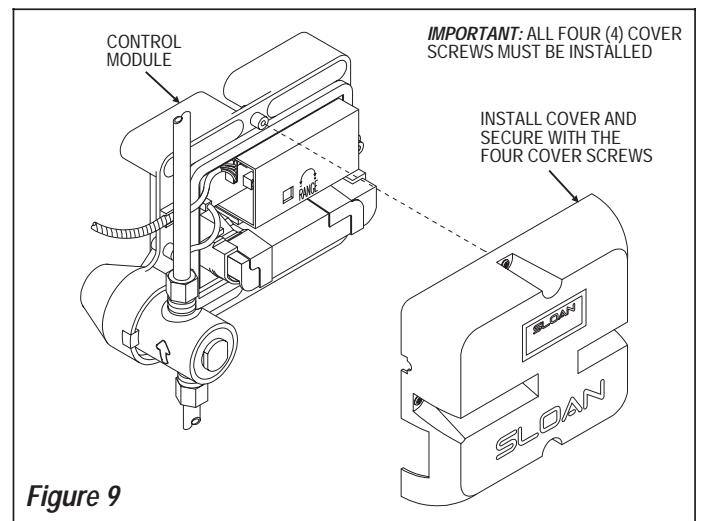
Repeat adjustment procedure until desired range is achieved.



Step 10 — Install Cover to Control Module (Figure 9)

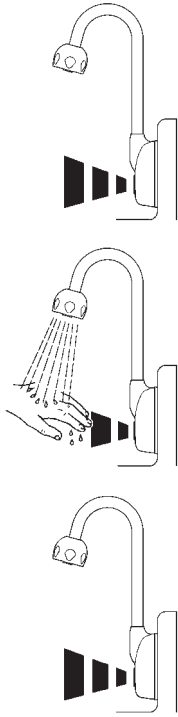
Place Cover over the Control Module and attach using the four (4) screws provided. Cover can be installed in only one orientation.

Important: All four (4) Cover Screws must be installed.



OPERATION

1. A continuous invisible beam of infrared light is emitted from the sensor located on the base of the faucet.
2. As the user's hands enter the beam's effective range (beneath the aerator or shower spray head), the beam is reflected back into the sensor receiver and activates the solenoid valve. Tempered water flows from the faucet into the sink until the hands are removed from the beam or until the faucet reaches its automatic time out limit setting.
3. When hands are moved away from the sensor, the loss of reflected light initiates an electrical signal that deactivates the solenoid valve, shutting off the water flow. The circuit then automatically resets and is ready for the next user.



Remove the Battery Compartment from the Control Module by gently pulling straight out with a firm grip. Spread the ends of the Battery Retainer and remove it from the Battery Compartment. Remove the old batteries and insert four (4) fresh "C" cell alkaline batteries into the Battery Compartment as indicated by the "+" and "-" markings inside the Battery Compartment. Spread the ends of the Battery Retainer and slide it over the Battery Compartment until locked into place.

Note: Battery Retainer must be installed as shown in Figure 7. If installed up-side-down, it will not install into the Control Module.

Reinsert Battery Compartment into the Control Module as shown in Figure 7.

Place Cover over the Control Module and attach using the four (4) screws provided. Cover can be installed in only one orientation.

Important: All four (4) Cover Screws must be installed.

Refer back to Figure 7 for battery installation.

SOLENOID SCREEN FILTER CLEANING (Figure 10)

Before cleaning the Screen Filter, turn off the water supply at the supply stop(s). Activate the faucet to relieve any pressure in the system. Unscrew the Filter Cap and remove it from Solenoid Valve Housing. Carefully remove the Screen Filter from the Solenoid Valve Housing.

Clean the Screen Filter using fresh tap water only. If necessary, use a small brush to clean. Use caution while cleaning to prevent damage to the Screen Filter. If any Filter components are damaged, order Filter Replacement Kit EBF-1004-A.

Examine the Screen Filter Cap O-ring for wear or damage; replace if necessary. Carefully replace the Screen Filter into the Filter Cap. Screw the Filter Cap into the Solenoid Valve Housing and tighten securely to prevent leaks.

Turn on the water supply at the supply stop(s). Activate the faucet to purge any air from the system lines. Check for leaks and repair as necessary.

CARE AND CLEANING OF CHROME AND SPECIAL FINISHES

DO NOT use abrasive or chemical cleaners (including chlorine bleach) to clean faucets as they may dull the luster and attack the chrome or special decorative finishes. Use ONLY soap and water, then wipe dry with clean cloth or towel.

While cleaning the bathroom tile, the faucet should be protected from any splattering of cleaner. Acids and cleaning fluids will discolor or remove chrome plating.

BATTERY REPLACEMENT PROCEDURE (Water does not need to be turned off)

The Sloan Optima Plus EBF-550 Battery Powered, Sensor Operated Lavatory faucet is furnished with four (4) "C" cell alkaline batteries that provide up to 2 years of operation (@ 8000 cycles per month). A flashing LED indicates that battery power will be depleted within one month. Replace batteries with four (4) "C" cell alkaline batteries.

Remove the Cover of the Control Module by unscrewing the four (4) Cover Screws located at the center of each side.

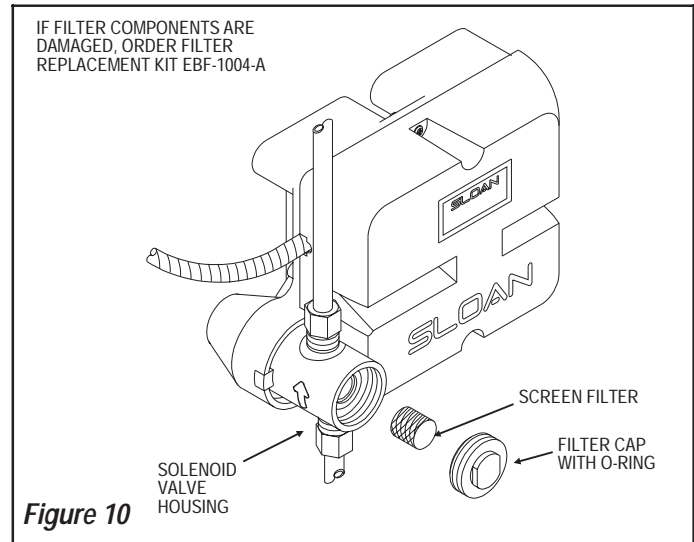
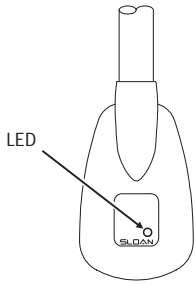


Figure 10

TROUBLESHOOTING GUIDE

PROBLEM	POSSIBLE CAUSE/SOLUTION
Sensor LED does not blink during initial set up	<ol style="list-style-type: none"> 1. Batteries are improperly installed in the Battery Pack or Battery Pack is not properly inserted into the Control Module; check for proper installation. 2. Sensor Cable is not properly inserted into the Control Module; check connection. 3. One or more Batteries are dead; replace Batteries with four (4) Size "C" Alkaline Type. 4. Sensor range is set at Minimum; increase sensor range using screwdriver provided on inside Cover of Control Module. 5. The EBF-60-A Control Module assembly is defective; replace.



No water when activated	<ol style="list-style-type: none"> 1. Batteries are not installed properly; replace or reinstall batteries. The Sensor LED Indicator should blink to indicate power and detection of user. 2. Activated Faucet produces Solenoid "click": Water supply is not open; open the Supply Stop. 3. Activated Faucet does not produce Solenoid "click": Solenoid lead is not properly inserted into Control Module; check connection.
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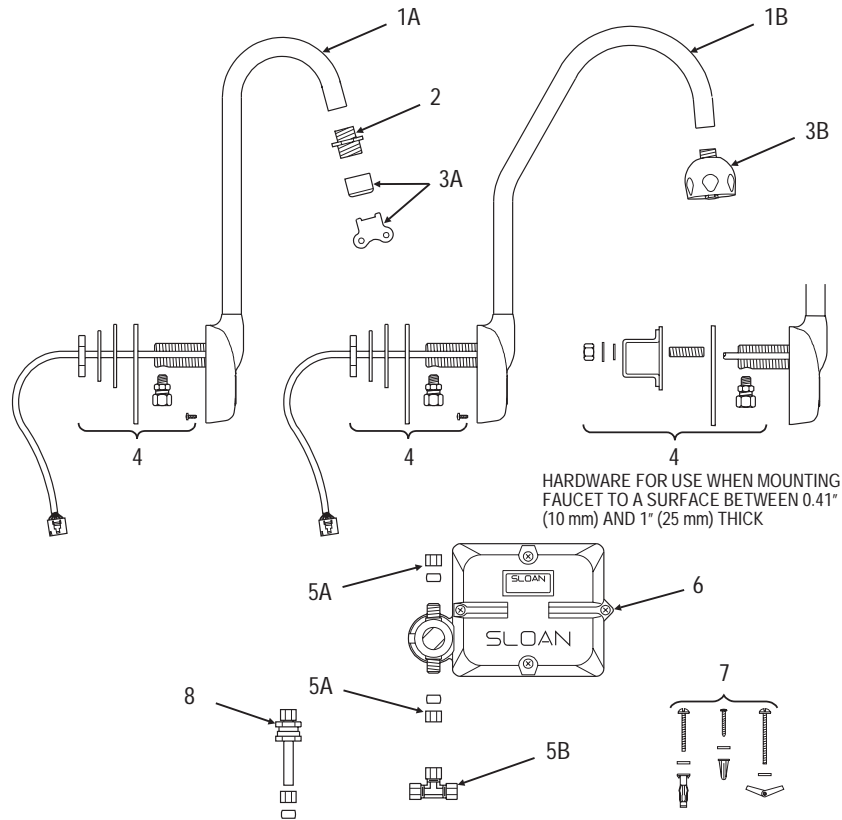
PROBLEM	POSSIBLE CAUSE/SOLUTION
Very low flow or dribble when faucet is activated	<ol style="list-style-type: none"> 1. Supply Stops are not fully opened; open Supply Stops. 2. Filter is clogged; remove, clean and replace. 3. Aerator or Shower Spray Head is clogged; remove, clean and replace.

Faucet does not shut off or drips after shut off, even if batteries are removed	<ol style="list-style-type: none"> 1. Direction of water flow through the Solenoid Valve is backward; disassemble Solenoid compression fittings and reinstall in proper inlet/outlet configuration. Refer to the arrow on the side of the Solenoid Valve for water flow direction. 2. Dirt or debris in Solenoid Valve; reverse the water supply connection to backflush the Solenoid Valve. 3. EBF-62-A Solenoid Valve Module is defective; replace.
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Temperature too hot or too cold (Faucet Supplied with Two Back Checks)	<ol style="list-style-type: none"> 1. Supply Stops are not adjusted properly; adjust Supply Stops. 2. One Back Check may be installed backwards; correct. If required, use thermostatic mixing valve.
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If further assistance is required, please contact the Sloan Valve Company Installation Engineering Department at 1-800-982-5839.

PARTS LIST



Item No.	Part No.	Description
1A	EBF-94-A	Faucet and Sensor Assembly, Standard (EBF-550)
1B	EBF-95-A	Faucet and Sensor Assembly with Surgical Bend (EBF-550)
2	ETF-178	Aerator Adapter (not required for Shower Spray Head)
3A	ETF-1021-A	Spray Head with Mounting Key, 0.5 gpm (1.9 Lpm)
	ETF-1022-A	Aerator Spray Head with Mounting Key, 2.2 gpm (8.3 Lpm)
	ETF-237	Laminar Flow Spray Head, 2.2 gpm (8.3 Lpm) (Mounting Key Not Required)
3B	AC-55-A	Shower Spray Head, 2.2 gpm (8.3 Lpm) Max.
4	EBF-110-A	Spout Mounting Kit , Includes: Base Gasket; Flat Washer; Lockwasher; Mounting Nut, 1/8" NPT x 3/8" Tube Male Connector; Mounting Stud, 3/8"-24; Mounting Spacer; Flat Washer, 3/8"; Lockwasher, 3/8"; Hex Jam Nut, 3/8"-24 and Self-Tapping Screw, #6 x 3/8", Type B
5A	EBF-113-A	Compression Nut (2), Compression Sleeve (2)
5B	ETF-259	3/8" Tee Compression Fitting
6	EBF-60-A	Control Module Assembly
7	EBF-79-A	Mounting Hardware Kit
8	ETF-470-A	Back Check (2 Supplied When Specified with Faucet)

SENSOR REPLACEMENT KIT

EBF-107-A

SOLENOID REPLACEMENT KIT

EBF-62-A

SOLENOID FILTER REPLACEMENT KIT

(Includes Replacement O-Ring)

EBF-1004-A

CONTROL MODULE REPLACEMENT GASKETS

EBF-50-A (2 Required)

NOTICE

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