

INSTALLATION INSTRUCTIONS FOR SENSOR ACTIVATED LAVATORY FAUCETS



Model ETF-600
24 VAC, Sensor Activated, 4" Centerset Lavatory Faucet



Model ETF-610
24 VAC, Sensor Activated Pedestal Lavatory Faucet

Compliant to: ASME A112.18.1 and CSA B125.1



[®] Certified







Sloan Valve Company warrants its ETF-600 and ETF-610 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 special 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.

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.

PRIOR TO INSTALLATION

Prior to installing the Sloan ETF-600 or ETF-610 Faucet, install the items listed below. Refer to Rough-in illustrations on Page 2.

- When Using Plug-In Transformer Install electrical receptacle for plugin transformer (120 VAC, 2 amp service for each ETF-233 (24 VAC, 35 VA) plug-in transformer used).
- When Using Box Mount Transformer Install electrical wiring to transformer location (120 VAC, 2 amp service for each EL-248-40 (24 VAC, 40 VA) transformer used).
- Lavatory/sink
- Drain line
- Hot and cold water supply lines or tempered water supply line

Multiple Faucets

Multiple faucets can be powered by a single transformer, provided that the transformer has been properly sized. Allow a minimum of 15 VA of current rating for each solenoid valve used. Refer to "Step 4 — Install Transformer" for further information.

Mixing Valve

When installing the faucet with a Sloan mixing valve, these Installation Instructions AND the Installation Instructions packaged with the mixing valve MUST be followed.

Important:

- INSTALL ALL ELECTRICAL WIRING IN ACCORDANCE WITH NATIONAL/LOCAL CODES AND REGULATIONS.
- INSTALL ALL PLUMBING IN ACCORDANCE WITH APPLICABLE CODES AND REGULATIONS.
- A 24 VAC STEP-DOWN TRANSFORMER MUST BE USED.

- USE APPROPRIATE PRECAUTIONS WHILE CONNECTING TRANSFORMER TO 120 VAC POWER SOURCE.
- DO NOT PLUG TRANSFORMER INTO POWER SOURCE (RECEPTACLE) UNTIL ALL WIRING IS COMPLETED. ALLOWING 24 VAC TRANSFORMER WIRES TO TOUCH OR SHORT WHILE POWER IS BEING SUPPLIED WILL CAUSE PERMANENT DAMAGE TO THE TRANSFORMER AND CIRCUIT CONTROL MODULE.
- KEEP THREAD SEALANT OUT OF YOUR WATERWAY TO PREVENT COMPONENT PART DAMAGE! DO NOT USE ANY SEALANT ON COMPRESSION FITTINGS. FOR THREADED PIPE FITTINGS, DO NOT APPLY SEALANT TO THE FIRST TWO "STARTER" THREADS.
- FLUSH ALL WATER LINES UNTIL WATER IS CLEAR BEFORE CONNECTING SOLENOID TO SUPPLY STOPS.

DO NOT INSTALL THE SPRAY HEAD UNTIL AFTER THE SUPPLY LINES HAVE BEEN FLUSHED.

BAK-CHEK® TEE USAGE

When connecting the Sloan ETF-600 or ETF-610 Faucet to both hot and cold water supplies, a Bak-Chek® Tee is provided and required as illustrated in the Rough-in drawings on Page 2. 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 Bak-Chek® Tee is not required.

A Bak-Chek® Tee is not required or provided when a Temperature Mixing Valve is included with the faucet.

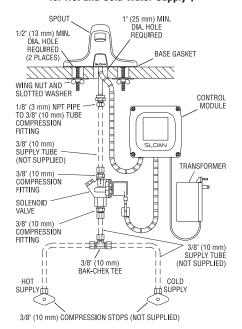
TOOLS REQUIRED FOR INSTALLATION

- Open end wrenches for hex sizes: 1", 5/8", 9/16", 1/2"
- Slotted screwdriver (supplied)
- Pliers

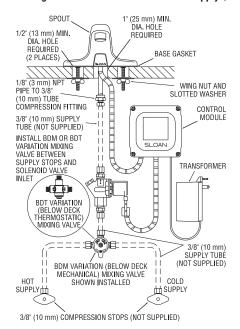
- Basin wrench
 - Slotted screwdriver, 3/16"
 - Phillips head screwdriver, #2
 - Wire stripper/crimping tool

FAUCET ROUGH-IN

ETF-600 Faucet with Bak-Chek® Tee for Hot and Cold Water Supply †

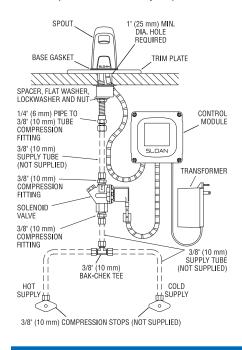


ETF-600 Faucet with BDM and BDT Variation Mixing Valves for Hot and Cold Water Supply †

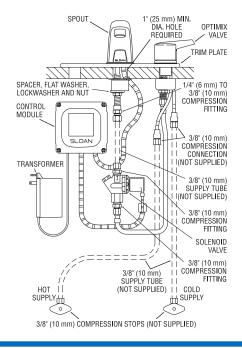


Available Flow Rates:	
† Model ETF-600 —	0.5 gpm (1.9 Lpm) Spray Head
† Model ETF-600-B —	2.2 gpm (8.3 Lpm) Aerator Spray Head
† Model ETF-600-C —	2.2 gpm (8.3 Lpm) Laminar Spray Head
‡ Model ETF-610 —	0.5 gpm (1.9 Lpm) Spray Head
‡ Model ETF-610-B —	2.2 gpm (8.3 Lpm) Aerator Spray Head
‡ Model ETF-610-C —	2.2 gpm (8.3 Lpm) Laminar Spray Head

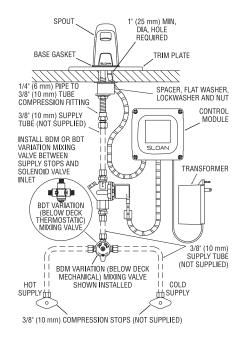
ETF-610 Faucet with Bak-Chek® Tee for Hot and Cold Water Supply (shown with 4" trim plate) ‡



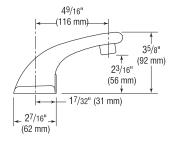
ETF-610 Faucet with ADM Variation Mixing Valve for Hot & Cold Water Supply (shown with 8" trim plate) ‡



ETF-610 Faucet with BDM and BDT Variation Mixing Valves for Hot and Cold Water Supply (shown with 4" trim plate) ‡

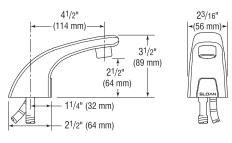


ETF-600 Faucet



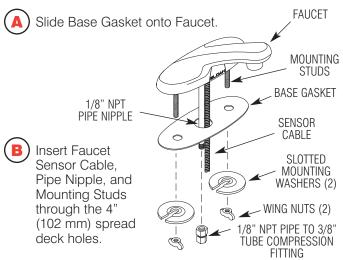


ETF-610 Faucet



1 Install ETF-600 Faucet

Note: Refer to the Installation Instructions included with the ETF-578-A Trim Plate for additional information about using an 8" Trim Plate with an ETF-600 faucet.



- Secure Faucet to deck using Slotted Mounting Washers and Wing Nuts supplied.
- Apply thread sealant or Teflon tape to threads at end of Faucet Pipe Nipple. Install 1/8" Pipe x 3/8" Tube Compression Fitting on end of Faucet Pipe Nipple.

1 R Install ETF-610 Faucet

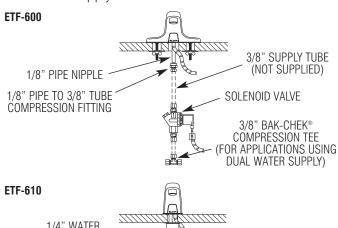
Note: Sloan Valve Company recommends that this faucet be installed with our trim plate. Our trim plate includes an anti-rotation feature to prevent rotary motion of this single-hole pedestal-style faucet.

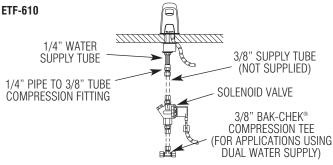
- A Slide Base Gasket over Faucet Water Supply Tube and Sensor Cable. Install optional Trim Plate, then Trim Plate Gasket.
- B Holding Faucet Base Gasket and optional Trim Plate assembly in place, insert Sensor Cable and Faucet Water Supply Tube through the 1" (25 mm) center hole in deck or lavatory. Use plumber's putty to secure optional Trim Plate.
- **FAUCET** Thread Sensor Cable through **BASE** 1/4" NPT side of Mounting WATER GASKET SUPPLY TUBE Spacer. Secure MOUNTING Faucet to deck SPACER **FLAT** or lavatory using **SENSOR** WASHER Flat Washer, **CABLE** 0 Lockwasher and LOCKWASHER Mounting Nut. 1/4" NPT PIPE (9) MOUNTING -TO 3/8" TUBE COMPRESSION NUT **FITTING**
- Apply thread sealant or Teflon tape to threads at end of Faucet Water Supply Tube. Install 1/4" Pipe x 3/8" Tube Compression Fitting on end of Faucet Water Supply Tube.

Install Solenoid Valve

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

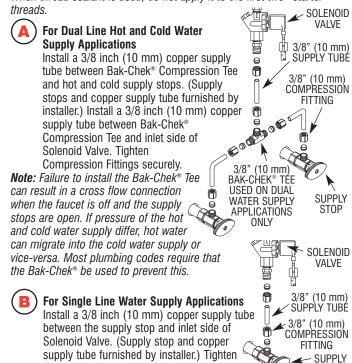
Connect 3/8" O.D. Supply Tube between Compression Fitting on outlet side of Solenoid Valve and Compression Fitting on Spout's Pipe Nipple or Water Supply Tube.





Connect Supply Line(s)

Important: Keep thread sealant out of your waterway and prevent component part damage! Do not use sealant on compression fittings. When thread sealant is used, do not apply it to the first two "starter" threads



Important: Flush dirt, debris, and sediment from the supply line(s).

ST_{OP}

Compression Fittings securely.

4

Install Transformer

Multiple Faucets

Multiple faucets can be powered by a single transformer that has been properly sized. Allow a minimum of 15 VA of current rating for each solenoid valve used. Refer to the following example to determine the required current rating for 3 OPTIMA faucets.

Example:

Total number of OPTIMA faucets: 3
Total number of solenoid valves: 3
Multiply by current rating: 15 VA

Minimum current rating of required transformer: 45 VA

Transformers Available with the ETF-600 and ETF-610 Faucets

Standard Plug-In † ETF-233 120 VAC 35 VA Standard Box Mount EL-248-40 120 VAC 40 VA

† In Canada, use ETF-416 (120 VAC, 35 VA).

Optional Transformers Available from Sloan

 Box Mount
 EL-154
 120 VAC
 50 VA

 Foot Mount
 EL-208
 120 VAC
 100 VA

 Box Mount
 EL-342
 240 VAC
 50 VA

All Sloan transformers are 50/60 Hz.

Other transformers (not supplied by Sloan) may be used, provided they meet UL requirements for Class 2 transformers.

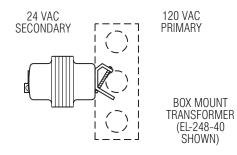
Box Mount Transformers

Important: DO NOT supply power to primary side of Transformer until all wiring has been completed.

Mount Transformer on a metal electrical junction box (supplied by others). ("J" box should be mounted inside chase wall or above ceiling.) Install Transformer within 50 feet (15.24 meters) of Faucet. 18 gauge wire is recommended.



Run wires from secondary side of Transformer to 3/8 inch (10 mm) hole at back of Control Module Enclosure. If necessary, wires can be run through wall and then inserted through hole in back of Control Module Enclosure.

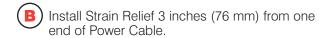


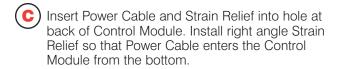
Plug-in Transformers

Important: DO NOT plug Transformer into receptacle until all wiring has been completed.

The Transformer is supplied with a 10 foot Cable; however, this Cable can and should be shortened to meet installation requirements.



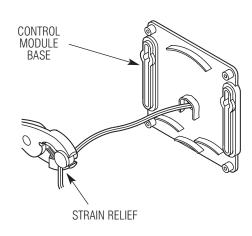


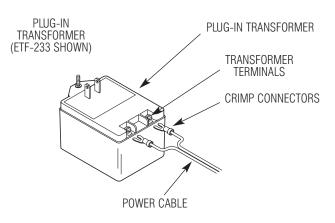


Important: Twist stranded ends of Power Cable before inserting into Terminal Block. Fraying of Stranded Power Cable Wire can cause a short and damage the Control Module and Transformer when powered.



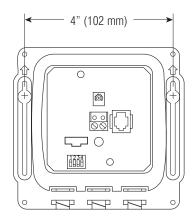
E Install Crimp Connectors and connect Power Cable ends to Transformer Terminals.





Mount Control Module to Wall

- Install the Control Module in an appropriate location as shown in Rough-in. Control Module must be installed so that all cables enter from the bottom of the unit. When installed, Cables from the Spout and Solenoid Valve to the Control Module should have some slack.
- Mount Control Module to wall using Mounting Screws and Plastic Anchors.

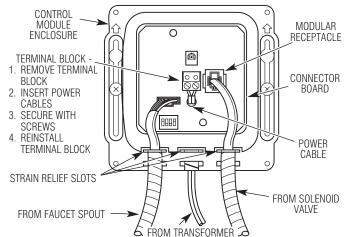


EXTENSION CABLES

Extension Cables are available as an option from Sloan to allow for installing the Control Module remote from the Faucet Spout and Solenoid Valve. Refer to the Parts List for available lengths.

Control Module Connection

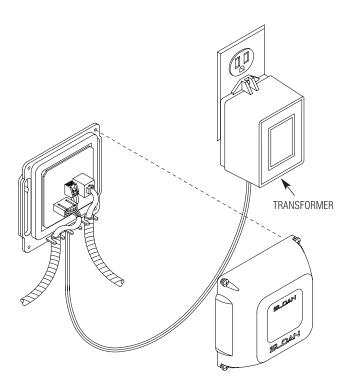
- Route Cables from Solenoid Valve and Spout to the Control Module.
- B Insert Solenoid Valve Connector into the Modular Receptacle on Connector Board.



- Insert Locking Connector from Faucet Spout into mating Receptacle on Connector Board. Allow 3 to 4 inches (76 to 102 mm) of Cable to extend into the Control Module.
- Insert each Conduit Cable into a strain relief slot in the Control Module.

Plug In Transformer

A Plug Transformer into 120 VAC Receptacle.



Start-up

A Supply power to Transformer.

Note: The Control Module is equipped with two LED lights. When power is supplied by the Transformer, one LED will illuminate green. When Sensor is activated, this LED will change to red. A second red LED illuminates when Solenoid Valve is activated.

- Open Supply Stop(s). With Aerator removed, activate Faucet for 30 seconds by placing hands in front of Sensor. The Solenoid Valve should "click" and water should flow from the Spout. If this does not occur, refer to the Troubleshooting section of this instruction instructions.
- Close Supply Stop(s) and install Spray Head in Spout using the Key provided. Reopen Supply Stop(s), activate Faucet and check for leaks.

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Range Adjustment

The OPTIMA ETF-600 and ETF-610 Faucets are factory set to operate when hands are placed 4 to 5 inches (102 to 127 mm) from 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 and Dip Switches are located in Control Module.

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

Make certain that Dip Switch number 4 is in the UP position. Using the small screwdriver provided, adjust Range Potentiometer clockwise until green (power ON) indicator LED turns red (Faucet is now picking up sink). Adjust Range Potentiometer back counterclockwise until red LED returns to green. Range is now at maximum.

Cycle Faucet several times to assure that range as adjusted will not inadvertently pick up IR reflection in lavatory. If IR reflection occurs (green LED will flicker red), adjust Range Potentiometer counterclockwise very slightly and again cycle Faucet.

Repeat range adjustment counterclockwise until length of range is at bowl rim of lavatory (plus or minus 1" (25 mm)).

Time Out Adjustment

The Faucet Time Out Setting determines the maximum time the Faucet will run upon continuous activation. This timing can be changed to meet individual application requirements.

Refer to Table 1 or label on cover of Control Module along with the following instructions to set the desired Time Out. The Dip Switches used to set the Time Out are located in the Control Module.

Set the Time Out by configuring the number 1, 2 and 3 Dip Switches as shown in Table 1.

Table 1 — Time Out Settings

Time Out	Dip Switch Setting			
Time Out	Switch #1	Switch #2	Switch #3	
3 SECONDS	UP	UP	DOWN	
6 SECONDS	DOWN	DOWN	UP	
12 SECONDS	UP	DOWN	UP	
30 SECONDS	UP	DOWN	DOWN	
45 SECONDS	UP	UP	UP	
1 MINUTE	DOWN	UP	UP	
3 MINUTES	DOWN	DOWN	DOWN	
20 MINUTES	DOWN	UP	DOWN	

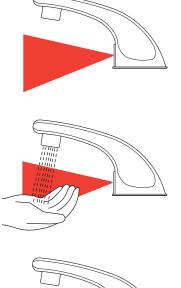
Unless otherwise specified, all ETF-600/ETF-610 Faucets leave the factory set with a 30 second Time Out.

Note: The position of Dip Switch # 4 (range enhancer setting) does not affect Faucet Time Outs.

Push Cables into slots at the bottom of the Control Module. Install Control Module Cover using Screws provided. Refer to illustration in Step 7.

Test Faucet Operation

- A continuous invisible beam of infrared light is emitted from the OPTIMA sensor located at the base of the lavatory faucet.
- 2. As the user's hands enter the beam's effective range (beneath the 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 an 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.



CARE AND CLEANING OF CHROME AND SPECIAL FINISHES

DO NOT use abrasive or chemical cleaners (including chlorine bleach) to clean faucets that 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.

When cleaning the bathroom tile, protect the faucet from any splattering of cleaner. Acids and cleaning fluids will discolor or remove chrome plating.



TROUBLESHOOTING GUIDE

Note: Remove Cover from Control Module to check diagnostic lights.

1. PROBLEM: No water is delivered when Faucet is activated.

INDICATOR: If no LED lights illuminate:

CAUSE: No electricity is being supplied to Faucet.

SOLUTION: Ensure that the main power is turned "ON." Check all

Transformer, Sensor, Solenoid and Cable Connections. Make sure that Transformer is supplying 24 VAC (Volts AC). If no

voltage is detected, replace Transformer.

CAUSE: There is an electrical system malfunction.

SOLUTION: Reset electrical system. Unplug Sensor Connection.

Disconnect power to circuit for ten (10) seconds. Reconnect.

INDICATOR: If the GREEN LED does NOT illuminate when power is reconnected:

CAUSE: There is an electrical system malfunction.

SOLUTION: Reset electrical system. Unplug Sensor Connection.

Disconnect power to circuit for ten (10) seconds. Reconnect.

CAUSE: The Control Module circuit is "dead." SOLUTION: Replace ETF-450-A Control Module.

INDICATOR: If GREEN LED illuminates AND changes to RED when hands are in the Sensor's detection zone AND the RED Solenoid LED illuminates:

CAUSE: Water supply stop(s) may be partially closed.

SOLUTION: Open supply stop(s) completely. *CAUSE: Debris is clogging Solenoid Filter.*

SOLUTION: Shut off water supply. Remove, clean and reinstall Solenoid

-ilter.

INDICATOR: If GREEN LED illuminates AND changes to RED when hands are placed in the Sensor's detection zone AND the RED Solenoid LED flickers with a vibrating/clicking noise heard inside the module:

CAUSE: There is a direct short in the Solenoid or Solenoid Cable.

SOLUTION: Replace with ETF-370-A Solenoid.

INDICATOR: If GREEN/RED LED illuminates AND changes to RED when hands are NOT located in the Sensor's detection zone BUT the RED Solenoid LED (in upper left corner of circuit) does NOT illuminate:

CAUSE: Sensor range is set too long and is detecting the sink.

SOLUTION: Reduce Sensor detection range.

CAUSE: Sensor is faulty.
SOLUTION: Replace Sensor.

INDICATOR: If GREEN LED illuminates BUT does NOT change to RED when hands are placed in the Sensor's detection zone:

CAUSE: Sensor range is set too short.

SOLUTION: Increase Sensor detection range.

CAUSE: Sensor is faulty.
SOLUTION: Replace Sensor.

2. PROBLEM: Sensing Range is too short.

CAUSE: Extended Range Sensitivity is required.

SOLUTION: Dip Switch number 4 should be in the "DOWN" (Extended

Range Sensitivity) position. Increase range by adjusting Range Potentiometer clockwise (yellow phillips screw in blue base).

3. PROBLEM: Faucet activates by itself (false triggers).

CAUSE: Sensor range is set too long.

SOLUTION: Decrease range by adjusting Range Potentiometer

counterclockwise. If necessary, flip Dip Switch number 4 to the "UP" (Reduced Range Sensitivity) position. Check surroundings for factors that contribute to Sensor range detection problems (bright lights, highly reflective surfaces,

sunlight, etc.).

4. PROBLEM: Faucet delivers very low flow or just a dribble.

CAUSE: Water supply stop(s) may be partially closed.

SOLUTION: Open supply stop(s) completely. *CAUSE: Debris is clogging Solenoid Filter.*

SOLUTION: Shut off water. Remove, clean, and reinstall Solenoid Filter or

install Solenoid Valve repair kit ETF-1009-A.

CAUSE: Solenoid is worn or faulty.

SOLUTION: Rebuild with ETF-1009-A Solenoid Repair Kit or replace ETF-

370-A Solenoid.

CAUSE: Debris is clogging Faucet Aerator or Spray Head.

SOLUTION: Shut off water. Remove Aerator or Spray Head (use Key if required). Clean and reinstall Aerator or Spray Head.

PROBLEM: Faucet does not stop delivering water or continues to drip after user is no longer detected (even after power to the Module has been disconnected).

CAUSE: Solenoid Valve is installed backward.

SOLUTION: Disconnect Solenoid. Reconnect Solenoid with water flow

toward the Faucet (see arrow on Solenoid).

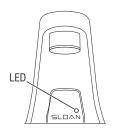
CAUSE: Debris is clogging Solenoid.

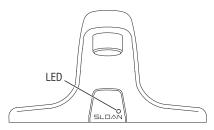
SOLUTION: Remove and clean Solenoid Operator. If necessary, rebuild

with ETF-1009-A Repair Kit.

CAUSE: Seat in Solenoid Valve body is damaged or pitted.

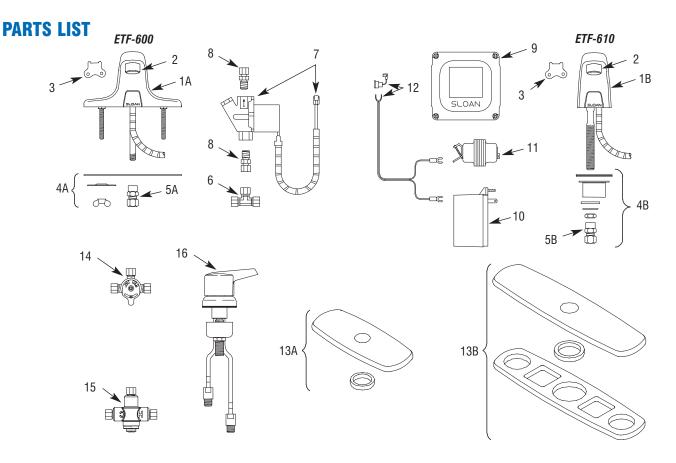
SOLUTION: Replace with ETF-370-A Solenoid





When assistance is required, please contact Sloan Valve Company Installation Engineering Department at:

1-888-SLOAN-14 (1-888-756-2614) OR 1-847-233-2016



Item No.	Part No.	Description
1A	ETF-543-A	Faucet Spout and Sensor Assembly (ETF-600)
1B	ETF-570-A	Pedestal Faucet Spout and Sensor Assembly (ETF-610)
2	ETF-1023-A	0.5 gpm (1.9 Lpm) Spray Head with Key (male thread)
	ETF-1024-A	2.2 gpm (8.3 Lpm) Aerator Spray Head with Key (male thread)
	ETF-1029-A	2.2 gpm (8.3 Lpm) Laminar Flow Spray Head (male thread)
3	ETF-435	Replacement Key Only for ETF-1023-A Spray Head and ETF-1024-A Aerator Spray Head
4A	ETF-546-A	Faucet Mounting Kit for ETF-600 includes: Base Gasket, two (2) Slotted Mounting Washers, two (2) Wing Nuts, and ETF-547 Compression Fitting Connector
4B	EBF-123-A	Faucet Mounting Kit for ETF-610 includes: Spacer, Base Gasket, 1/4" NPSM Hex Nut, Washer, 9/16" Lockwasher, Compression Fitting Connector
5A	ETF-547	1/8" NPT Pipe to 3/8" Tube Compression Fitting Connector (ETF-600)
5B	EBF-129	1/4" NPT Pipe to 3/8" Tube Compression Fitting Connector (ETF-610)
6	ETF-617-A	3/8" Bak-Chek® Tee Compression Fitting
7	ETF-370-A	24 VAC Solenoid Valve Assembly, includes Wire Harness
8	ETF-437-A	Assembly Kit, includes: Compression Fittings (2), Compression Nut (1), Compression Sleeve (1)
9	ETF-450-A	Control Module Assembly
10	ETF-233	Plug-In Transformer
11	EL-248-40	Box Mount Transformer
12	ETF-458-A	Power Cable with Strain Relief and Crimp Connectors (Transformer to Control Module)

OPTIONAL TRIM PLATES			
13A	ETF-607-A	4" (102 mm) Centerset Single-hole Trim Plate Kit for ETF-610 Faucet	
13B	ETF-608-A	8" (203 mm) Centerset Single-hole Trim Plate Kit for ETF-610 Faucet	
_	MIX-102-A	4" (102 mm) Centerset Double-hole Trim Plate Kit for ETF-610 Faucet with Optional Mixing Valve	
_	MIX-106-A	8" (203 mm) Centerset Double-hole Trim Plate Kit for ETF-610 Faucet with Optional Mixing Valve	
_	ETF-578-A	8" (203 mm) Centerset Single-hole Trim Plate Kit for ETF-600 Faucet	
_	ETF-577-A	8" (203 mm) Centerset Double-hole Trim Plate Kit for ETF-600 Faucet with Optional Mixing Valve	

Item No.	Part No.		Description			
OPTIC	OPTIONAL MIXING VALVES					
14 15 16	15 MIX-135-A		Below Deck Mechanical Water Mixing Valve (BDM Variation) Below Deck Thermostatic Water Mixing Valve (BDT Variation) Optimix® Deck Mounted Water Mixing Valve (ADM Variation) (only available for ETF-610 faucet)			
FAUCET CABLE EXTENSION CORDS						
ETF-1 ETF-1 ETF-1	t to Contro 005-26 005-36 005-72 005-108	26" 36" 72"	dule (0.7 meter) Length (0.9 meter) Length (1.8 meter) Length ' (2.7 meter) Length	Solenoid to Control Module ETF-1003-36 36" (0.9 meter) Length ETF-1003-48 48" (1.2 meter) Length ETF-1003-72 72" (1.8 meter) Length ETF-1003-108 108" (2.7 meter) Length		
SOLENOID VALVE REPAIR KIT						
	ETF-100)9-A	Includes replacement	Filter		

ETF-1009-A Includes replacement Filter

For additional information about Sloan Mixing Valves or Trim Plates, consult our Installation Instructions and Maintenance Guides.

If further assistance is required, please contact the Sloan Valve Company Installation Engineering Department at:

1-888-SLOAN-14 (1-888-756-2614)

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



SLOAN VALVE COMPANY • 10500 Seymour Avenue • Franklin Park, IL 60131
Phone: 1-800-982-5839 or 1-847-671-4300 • Fax: 1-800-447-8329 or 1-847-671-4380
www.sloanvalve.com