INSTALLATION INSTRUCTIONS FOR RETROFIT AND COMPLETE VALVE INSTALLATION FOR SLOAN SOLIS®, SOLAR POWERED, SINGLE AND DUAL FLUSH WATER CLOSETS AND URINALS

SLOAN



Reducing Your Water Footprint.™



8100 Series Complete Flushometer Models

8100 Series Sloan SOLIS[®] Valves are complete Flushometer Valves and ideal for new installations.





RESS Series Retrofit Conversion Kit Models

RESS Sloan SOLIS® models are used to convert existing Flushometers to Solar Powered, Sensor Activated

0.5 gpf/1.9 Lpf

Sloan SOLIS® Dual Flush Water Closet Models can be furnished for th

the following:
1.1 gpf/4.2 Lpf
1.6 gpf/6.0 Lpf (Full Flush)

I	Reduced Flush
l	For Low Consumption Bowls

Sloan SOLIS® Water Closet Models can be furnished for the

following:

1.28 gpf/4.7 Lpf 1.1 gpf/4.2 Lpf High Efficiency High Efficiency

Sloan SOLIS [®] Urinal N	lodels can be furnished for
0.125 gpf/0.5 Lpf	High Efficiency
0.25 gpf/1.0 Lpf	High Efficiency

High Efficiency



the following:

LIMITED WARRANTY

Unless otherwise noted, Sloan Valve Company warrants this product, manufactured and sold for commercial or industrial uses, to be free from defects in material and workmanship for a period of three (3) years (one (1) year for special finishes, SF faucets, PWT electronics and 30 days for PWT software) from date of first purchase. During this period, Sloan Valve Company will, at its option, repair, replace, or refund the purchase price of any product which fails to conform with this warranty under normal use and service. This shall be the sole and exclusive remedy under this warranty. Products must be returned to Sloan Valve Company, at customer's cost. No claims will be allowed for labor, transportation or other 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.

VALVE ROUGH-IN

Water Closet Installation

Model 8111, 8113, 8115, and 8116 Reference for RESS-C Retrofit



Model	"Х"	" Y "
8111†	11½" (292 mm)	16 ½" (419 mm)
8113	16" (406 mm)	21" (533 mm)
8115‡	24" (610 mm)	29" (737 mm)
8116‡	27" (686 mm)	32" (813 mm)

When installing the Sloan SOLIS® in a handicap stall:

Per the ADA Guidelines (section 604.9.4) it is recommended that the grab bars be split or shifted to the wide side of the stall.

⁺For new installations, Sloan strongly recommends the use of our Model 8111 which has a shorter installation height.

*Model 8115 & 8116 valves are designed for installations where the water supply is roughed-in 24" - 27" (610 mm - 686 mm) above the top of the water closet.

Typical Water Closet Installation Model 8137

Reference for RESS-C Retrofit



Typical Urinal Installation Models 8186 Reference for RESS-U Retrofit



8180

!!! IMPORTANT !!!

WITH THE EXCEPTION OF CONTROL STOP INLET, DO NOT USE PIPE SEALANT OR PLUMBING GREASE ON ANY VALVE COMPONENT OR COUPLING!

!!! IMPORTANT !!!

NEVER OPEN CONTROL STOP TO WHERE THE FLOW FROM THE VALVE EXCEEDS THE FLOW CAPABILITY OF THE FIXTURE. IN THE EVENT OF A VALVE FAILURE, THE FIXTURE MUST BE ABLE TO ACCOMMODATE A CONTINUOUS FLOW FROM THE VALVE.

!!! IMPORTANT !!!

PROTECT THE CHROME OR SPECIAL FINISH OF SLOAN FLUSHOMETERS — DO NOT USE TOOTHED TOOLS TO INSTALL OR SERVICE THESE VALVES. USE A SLOAN A-50 SUPER-WRENCH™, SLOAN A-109 PLIER WRENCH OR SMOOTH JAWED SPUD WRENCH TO SECURE ALL COUPLINGS. ALSO SEE "CARE AND CLEANING" SECTION

PRIOR TO INSTALLING THE SLOAN SOLIS® FLUSHOMETER

Prior to installing the Sloan SOLIS[®] Flushometer, install the items listed below as illustrated in the Rough-in Diagram. (New installations only.)

- HET Closet or HEU Urinal fixture
- Drain line
- Water supply line

IMPORTANT:

- INSTALL ALL PLUMBING IN ACCORDANCE WITH APPLICABLE CODES AND REGULATIONS.
- WATER SUPPLY LINES MUST BE SIZED TO PROVIDE AN ADEQUATE VOLUME OF WATER FOR EACH FIXTURE.
- WHEN INSTALLING A FLUSHOMETER, IT IS IMPORTANT THAT THE FLUSH MODEL MATCHES THE REQUIREMENTS OF THE PLUMBING FIXTURE.
- FLUSH ALL WATER LINES PRIOR TO MAKING CONNECTIONS.

TOOLS REQUIRED FOR INSTALLATION

- Slotted screwdriver to adjust control stop.
- Sloan A-50 Super-Wrench[™], Sloan A-109 Plier Wrench or smooth jawed spud wrench for couplings.
- Trimpot adjustment screwdriver (supplied) to adjust range, if necessary.

!!! IMPORTANT !!!

THE STRAP WRENCH PROVIDED WITH SLOAN SOLIS® IS A CONVENIENCE TOOL AND IS NOT TO BE USED TO REMOVE OR INSTALL THE FLUSHOMETER COUPLINGS. USE STRAP WRENCH ONLY TO INSTALL SLOAN SOLIS® LOCKING RING.

!!! IMPORTANT !!!

THIS PRODUCT CONTAINS MECHANICAL AND/OR ELECTRICAL COMPONENTS THAT ARE SUBJECT TO NORMAL WEAR. THESE COMPONENTS SHOULD BE CHECKED ON A REGULAR BASIS AND REPLACED AS NEEDED TO MAINTAIN THE VALVE'S PERFORMANCE.

When further assistance is required, please consult your local Sloan Representative or call Sloan Technical Support at: 1-888-SLOAN-14 (1-888-756-2614) or visit us online at: www.sloanvalve.com

The Sloan SOLIS[®] is designed to operate with 15 to 80 PSI (103 to 552 kPa) of water pressure. **THE MINIMUM PRESSURE REQUIRED TO THE VALVE IS DETERMINED BY THE TYPE OF FIXTURE SELECTED.** Consult fixture manufacturer for pressure requirements. Most High Efficiency water closets require a minimum flowing pressure of 25 psi (172 kPa). Many building codes and the ASME A112.19.2 fixture standard list maximum static water pressure as 80 PSI (552 kPa).

- Strap wrench (supplied) to install Sloan SOLIS® to valve body.
- 7/64" hex wrench (supplied) to secure Sloan SOLIS® cover to base plate.
- 5/64" hex wrench to secure water Supply Flange.

1 - FOR COMPLETE VALVE INSTALLATION, START HERE. FOR RESS RETROFIT INSTALLATION, START AT STEP 6. INSTALL OPTIONAL SWEAT SOLDER ADAPTER (ONLY IF YOUR SUPPLY PIPE DOES NOT HAVE A MALE THREAD)

Measure from finished wall to C/L of Fixture Spud. Cut pipe $11\!\!\!/ 3''$ (32 mm) shorter than this measurement. Chamfer 0.D. and I.D. of
water supply pipe.



С

Sweat solder the Adapter to pipe.

WITH THE EXCEPTION OF CONTROL STOP INLET, DO NOT USE PIPE SEALANT OR PLUMBING GREASE ON ANY VALVE COMPONENT OR COUPLING!



2 - INSTALL COVER TUBE, WALL FLANGE AND CONTROL STOP TO SUPPLY PIPE



C/L

FIXTURE

6 - WHEN RETROFITTING AN EXISTING VALVE, START HERE. REMOVE COMPONENTS FROM EXISITING FLUSHOMETER (RESS RETROFIT INSTALLATIONS ONLY)

A) Remove Control Stop Cap.



Turn off water supply at Control Stop. Push Valve Handle to relieve water pressure.



Remove Outside and Inside Covers and old Inside Parts Kit.



Remove old Handle Assembly and Gasket.



Install Chrome Handle Cap with Gasket to handle opening on Flushometer Body. Tighten Chrome Handle Cap securely.

NOTE: An extra H-533 Tail O-ring is included in the event leakage occurs if the valve is repositioned during the installation of the new Sloan SOLIS[®]. Use only as needed.



7 - SLOAN SOLIS® FLUSH VOLUME (RESS RETROFIT INSTALLATIONS ONLY)

The flush volume of the Sloan SOLIS® is controlled by the Regulator in the Flex Tube Diaphragm Kit or the Cartridge Assembly. Regulators are identified by the color.

When installing a new Regulator on a Flex Tube Diaphragm Kit, be sure to push the Regulator past the O-ring when installing.

Note: Never use more water than needed. High Efficiency water closets and urinals will not function properly on excess water.



8 - ASSEMBLE FLEX TUBE DIAPHRAGM (OR CARTRIDGE ASSEMBLY) TO SLOAN SOLIS ELECTRONIC ASSEMBLY



To facilitate installation, wet the diaphragm assembly (on top or completely).

NOTE: SENSOR LENS MUST FACE DIRECTLY FORWARD. ROTATING THE SENSOR TO EITHER SIDE WILL DECREASE THE SENSOR'S ABILITY TO DETECT A TARGET.

9 - TIGHTEN LOCKING RING



!!! IMPORTANT !!!

THE LOCKING RING MUST BE INSTALLED DOWN PAST THE VALVE BODY THREADS BY AT LEAST ONE THREAD. IF DIFFICULTY IS EXPERIENCED INSTALLING THE LOCKING RING, TURN THE LOCKING RING BACK AND FORTH, EACH TIME WORKING IT FURTHER DOWN THE THREADS. THE LOCKING RING WILL ACT AS A THREAD CHASER IN THE EVENT THERE HAS BEEN A BUILD-UP OF MATTER ON THE THREADS OF THE OLD VALVE BODY.

IF RETROFITTING THE SLOAN SOLIS® ONTO A ZURN VALVE BODY, A SPECIAL LOCKING RING MUST BE USED (IDENTIFIED BY A MACHINED GROOVE AROUND THE RING). ORDER THE SLOAN SOLIS® WITH THE "Z" VARIATION TO RECEIVE THE UNIT SUPPLIED WITH THIS RING.

10 - REMOVE TAPE FROM SOLAR PANEL AND SENSOR WINDOW TO ACTIVATE



For the first ten (10) minutes of operation, a Visible Light flashes in the Sensing Window of the Sloan SOLIS® Flushometer when a user is detected.

11 - TEST SENSOR ACTIVATION

The Sloan SOLIS® has a factory set sensing range:

Water Closet Models - 22" to 42" (559 mm to 1067 mm) and Urinal Models - 15" to 30" (381 mm to 762 mm)



THE FACTORY SETTING SHOULD BE SATISFACTORY FOR MOST INSTALLATIONS. IF A RANGE ADJUSTMENT IS REQUIRED, REFER TO THE RANGE ADJUSTMENT INSTRUCTIONS ON THIS PAGE.

12 - ADJUST CONTROL STOP AND INSTALL VANDAL RESISTANT STOP CAP

Α Open Control Stop COUNTERCLOCKWISE 1/2 turn from closed position. **CLOCKWISE** CLOSES CONTROL STOP В Activate flushometer by COUNTERCLOCKWISE placing hand in front **OPENS CONTROL STOP** of SOLIS® Sensor Lens for ten (10) seconds (or press override button) and then moving it away. hmr Adjust Control Stop after each flush until the rate of flow delivered properly cleanses the fixture. D Install Control Stop Cap onto Control Stop. For RESS retrofit applications, reuse Stop Cap from existing valve. In complete valve

installations, a new Stop Cap is provided. Follow the instructions packaged with the Free Spinning Vandal Resistant Stop Cap.

!!! IMPORTANT !!!

THE SLOAN FLUSHOMETER IS ENGINEERED FOR QUIET OPERATION. EXCESSIVE WATER FLOW CREATES NOISE, WHILE TOO LITTLE WATER FLOW MAY NOT SATISFY THE NEEDS OF THE FIXTURE. PROPER ADJUSTMENT IS MADE WHEN PLUMBING FIXTURE IS CLEANSED AFTER EACH FLUSH WITHOUT SPLASHING WATER OUT FROM THE LIP AND A QUIET FLUSHING CYCLE IS ACHIEVED.

!!! IMPORTANT !!!

THE CONTROL STOP SHOULD NEVER BE OPENED TO THE POINT WHERE THE FLOW FROM THE VALVE EXCEEDS THE FLOW CAPABILITY OF THE FIXTURE. IN THE EVENT OF A VALVE FAILURE, THE FIXTURE MUST BE ABLE TO ACCOMMODATE A CONTINUOUS FLOW FROM THE VALVE.

OPERATION

- 1. A continuous, INVISIBLE light beam is emitted from the Sloan SOLIS® Sensor.
- 2. As the user enters the beam's effective range, 22 to 42 inches (559 mm to 1067 mm) for closet installations and 15 to 30 inches (381 mm to 762 mm) for urinal installations, the beam is reflected into the Scanner Window to activate the Output Circuit. Once activated, the Output Circuit continues in a "hold" mode for as long as the user remains within the effective range of the sensor. For Dual Flush models, if the user stays longer than 65 seconds, a full flush will automatically initiate when the user leaves. For Single Flush models, once the user steps away, a full flush will automatically initiate.
- 3. For Dual Flush models, once a user is detected, if the user leaves in 65 seconds or less, a reduced flush will automatically initiate. The circuit automatically resets and is ready for the next user. For Single Flush models, when the user steps away, this initiates a full flush. The circuit automatically resets and is ready for the next user.
- 4. In addition to the above the Sloan SOLIS[®] Urinal incorporates a standard deferred flushing mode feature that accommodates the high volume usage seen in stadiums or similar high attendance facilities.



RANGE ADJUSTMENT (ADJUST ONLY IF NECESSARY)

The Sloan SOLIS[®] has a factory set sensing range: Water Closet Models - 22" to 42" (559 mm to 1067 mm) Urinal Models - 15" to 30" (381 mm to 762 mm)

The factory setting should be satisfactory for most installations.

If the range is too short (i.e., not picking up users) or too long (i.e., picking up opposite wall or stall door) the range can be adjusted.

Note: Water DOES NOT have to be turned off to adjust range.

Loosen the two screws on top of the unit and remove cover. Remove the rubber plug from top of electronic sensor module to uncover the potentiometer.

RANGE ADJUSTMENT PROCEDURE

For the first ten (10) minutes of operation, a visible light flashes in the sensing Window of the Sloan SOLIS[®] flushometer when a user is detected. This visible light feature can be reactivated after ten (10) minutes by opening and closing the battery compartment door. Check the range by stepping toward the unit until the light flashes, indicating the sensor's maximum detection limit. Adjust the range potentiometer screw located on top of the sensor module a few degrees CLOCKWISE to increase the range or a few degrees COUNTER-CLOCKWISE to decrease the range. Repeat this adjustment until the desired range is achieved.

Always Determine the Sensing Range with Metal Cover and Lens Window On Top of the Unit. Important: Adjust in small increments only! Range potentiometer adjustment screw rotates only ¾ of a turn; DO NOT over-rotate.

When range adjustment is satisfactory, replace the rubber plug. Reinstall cover and tighten the two screws on top of the unit.



BATTERY REPLACEMENT

When required, replace batteries with four (4) Alkaline AA-Size Batteries.

Note: Water DOES NOT have to be turned off to replace Batteries.

Loosen the two (2) Screws on top of unit. Remove the complete cover assembly. Lift the sensor module from its plate. Unplug the electrical connector from Battery compartment cover. Loosen the retaining screw on battery compartment cover. Remove battery Compartment cover and old batteries. Install four (4) fresh Alkaline AA-Size batteries **exactly** as illustrated.





Install Battery Compartment Cover and secure with Retaining Screw. Make certain that Battery Compartment Cover is fully compressed against Gasket to provide a seal; **Do Not** overtighten. Plug the Electrical Connector into the Battery Compartment Cover. Reinstall the Sensor Module onto the Plate. Reinstall the complete Cover Assembly onto the Plate. Tighten the two (2) Screws on top of the unit.

CARE AND CLEANING

DO NOT use abrasive or chemical cleaners to clean flushometers 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 flushometer should be protected from any splattering of cleaner. Acids and cleaning fluids can discolor or remove chrome plating or special finish.



TROUBLESHOOTING GUIDE

- 1. Sensor Flashes Continuously Only When User Steps Within Range.
 - A. Unit in Start-Up mode; no problem. This feature is active for the first ten (10) minutes of operation.
- **2. Valve Does Not Flush; Sensor Not Picking Up User.** A. Range too short; increase the range.
- 3. Valve Does Not Flush; Sensor Picking Up Opposite Wall or Surface, or Only Flushes When Someone Walks By. Light Flashes Continuously for First 10 Minutes Even with No One in Front of the Sensor.
 - A. Range too long; shorten range.
- 4. Valve Does Not Flush Even After Adjustment.
 - A. Range Adjustment Potentiometer set at full "max" or full "min" setting. Re-adjust Potentiometer away from full "max" or "min" setting.
 - B. Batteries completely used up; replace batteries.
 - C. Problem with Electronic Sensor Module; replace Electronic Sensor Module.
- 5. Unit Flashes 4 Quick Times When User Steps Within Range.
 - A. Batteries low; replace batteries.
- 6. Valve Does Not Shut Off.
 - A. Bypass Orifice in Diaphragm is clogged with dirt or debris, or Bypass is clogged by an invisible gelatinous film due to "over-treated" water. Remove flex tube diaphragm and wash under running water.

NOTE: SIZE OF ORIFICE IN THE BYPASS IS OF UTMOST IMPORTANCE FOR THE PROPER METERING OF WATER BY THE VALVE. DO NOT ENLARGE OR DAMAGE THIS ORIFICE. REPLACE FLEX TUBE DIAPHRAGM IF CLEANING DOES NOT CORRECT THE PROBLEM.

- B. Dirt or debris fouling stem or flex tube diaphragm. Remove flex tube diaphragm and wash under running water.
- C. O-ring on stem of flex tube diaphragm or cartridge is damaged or worn. Replace o-ring if necessary.
- D. Problem with electronic sensor module; replace sensor module.

7. Not Enough Water to Fixture.

- A. Wrong flush volume regulator installed in flex tube diaphragm kit. Install the correct Regulator.
- B. Wrong SOLIS[®] model installed; i.e., 1.0 gpf urinal installed on 3.5 gpf closet fixture. Replace with proper Sloan SOLIS[®] model.
- C. Enlarged by-pass in diaphragm. Replace flex tube diaphragm.
- D. Control Stop not adjusted properly. Readjust control stop.
- E. Inadequate volume or pressure at supply. Increase water pressure or supply (flow) to valve. Consult factory for assistance.
- F. Flow control in EBV-326-A cartridge assembly is dirty. Clean under running water and brush away debris.

8. Too Much Water to Fixture.

- A. Wrong flush volume regulator installed in flex tube diaphragm Kit. Install the correct regulator.
- B. Control Stop not adjusted properly. Readjust Control Stop.
- C. Wrong Sloan SOLIS[®] model installed; i.e., 3.5 gpf Model installed on 1.0 or 1.5 gal. Urinal fixture. Replace with proper Sloan SOLIS[®] model.
- D. Dirt in Diaphragm Bypass. Clean under running water or replace Flex Tube Diaphragm.
- E. Flow control improperly removed from EBV-326-A cartridge Assembly. Replace cartridge assembly.

NOTE: THE EBV-46-A BEAM DEFLECTOR IS NOT REQUIRED OR AVAILABLE FOR THE SLOAN SOLIS®.

Note: Troubleshooting also applies to the Sloan SOLIS Urinals.

!!! IMPORTANT !!!

LAWS AND REGULATIONS PROHIBIT THE USE OF HIGHER FLUSHING VOLUMES THAN LISTED ON FIXTURE OR FLUSHOMETER.

If further assistance is required, please contact your local Sloan Representative or Sloan Technical Support at: 1-888-SLOAN-14 (1-888-756-2614)

or visit us online at: www.sloanvalve.com

RECOMMENDED WATER CLOSET WALL PLATE LOCATIONS



Centered over Flushometer

On Stall Door



PARTS LIST

Item # Part # Description Items Included with RESS Retrofit and Complete Sloan SOLIS® Valves Cover/Sensor/Assembly - Closet SOLIS 1.6 & 1.28 gpf Electronic EBV-304-A 1 Single Button Flush EBV-379-A Cover/Sensor/Assembly - Closet SOLIS 1.1 gpf Electronic Single Button Flush Cover/Sensor/Assembly - Closet SOLIS Electronic Dual Flush WES-24-A EBV-306-A Cover/Sensor/Assembly - Urinal 0.5 & 1.0 gpf SOLIS Electronic Single Button EBV-328-A Cover/Sensor/Assembly - Urinal 0.25 gpf SOLIS Electronic Single Button EBV-325-A Cover/Sensor/Assembly - Urinal 0.125 gpf SOLIS Electronic Single Button Cover/Sensor/Assembly (Zurn) - Closet 1.6 & 1.28 gpf SOLIS EBV-320-A Electronic Single Button Flush Cover/Sensor/Assembly (Zurn) - Closet SOLIS Electronic WES-28-A Dual Flush EBV-321-A Cover/Sensor/Assembly (Zurn) - Urinal 0.25 gpf SOLIS Electronic Single Button 2 Cover Assembly - SOLIS Electronic Dual Flush Flush EBV-311-A Cover Assembly - SOLIS Electronic Single Button Flush EBV-309-A EBV-14 3 Locking Ring EBV-30 Locking Ring - for Zurn valves 4 EBV-312-A-C Module - SOLIS - Water Closet Module - SOLIS - Urinal EBV-312-A-U Module - SOLIS - 1.1 gpf Single Button Flush EBV-382-A WES-33-A Module - SOLIS - Water Closet (Dual Flush) 5 EBV-134 Cover Rest Plate 6 EBV-145-A Inside Cover Assembly (includes solenoid) 7 EBV-136-A Solenoid Flex Tube Diaphragm Assembly 8 t 9 Flush Volume Regulator + 10 † Cartridge Assembly Handle Cap (RESS Retrofit Models Only) EBV-1017-A 11 EBV-91 Range Adjustment Tool 12 EBV-22 Strap Wrench 13 14 EBV-137 7/64" Hex Wrench 15 WES-27 English Plate (Dual Flush only) **WES-29** Spanish Plate (Dual Flush only) Items Included with Complete Sloan SOLIS® Valves Only H-633-AA 1" (25 mm) Sweat Solder Kit 16 H-636-AA 34" (19 mm) Sweat Solder Kit H-700-A 1" (25 mm) Bak-Chek® Control Stop 17 3⁄4" (19 mm) Bak-Chek® Control Stop H-700-A 18 H-1010-A Vandal Resistant Stop Cap 19 EBV-36-A Valve Body 11/2" (38 mm) x 101/2" (229 mm) Vacuum Breaker 20A V-600-AA (Model 8111) V-600-AA 11/2" (38 mm) x 15" (584 mm) Vacuum Breaker (Model 8113) V-600-AA 11/2" (38 mm) x 23" (584 mm) Vacuum Breaker (Model 8115) V-600-AA 11/2" (38 mm) x 26" (660 mm) Vacuum Breaker (Model 8116) 20B V-600-A 3" (76 mm) Vacuum Breaker Assembly 20C V-600-AA 3/4" (19 mm) x 101/2" (229 mm) Vacuum Breaker (Model 8186) 21 F-109 11/2" (38 mm) Elbow Flush Connection 22A F-5-AT 11/2" Spud Coupling Assembly (Models 8110, 8110 8115 & 8116)



† Part No. varies depending on flushometer model.

Manufactured in the U.S.A. by Sloan Valve Company under one or more of the following patents: U.S. Patents: D598,975; D599,436; 7,124,997. Other Patents Pending. BAK-CHEK[®], PARA-FLO[®], PERMEX[®], TURBO-FLO[®].

3/4" Spud Coupling Assembly (Model 8186)

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

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22B F-5-AW