AUTOMATED FENESTRATION INC

AFI Sentry Series Motor and Control Kit

Installation Instruction

Warning

To help prevent severe personal injury or death:

- Read and understand instructions completely before beginning installation.
- Wiring must be installed by a qualified electrician according to local and National Electrical Codes (N.E.C.)
- Disconnect main power before beginning installation! Verify that power is OFF at the main breaker or fuse panel by testing with a voltage meter that you know is working correctly.
- Connect power only after motor connections and settings are verified.
- This equipment does not provide a method to shut off power, and should be connected to a dedicated breaker or fused power circuit capable of providing 1 amp at 120 VAC of power per window unit.
- The screen interlock MUST be correctly installed and is a required part of the power window system. It is intended to help prevent injury that could result from reaching into the window area during operation. The correct installation of the screen interlock is the responsibility of the installer. (The screen interlock is not required on windows and skylights installed more than 8 feet above the floor.)
- Do not allow children to operate the wall push buttons or remote control transmitter(s).

Additional Safety Guidelines:

- When connecting the Sentry Series system to accessories, read the installation instructions supplied with each accessory before beginning installation.
- The Sentry Series system must not be used on windows intended to meet egress codes.
- The Sentry Series system is intended for indoor use only, with screens in place.
- Installer – please be sure to give ALL instructions to the homeowner once installation is complete.

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What you Should Know Before Starting

Supply Voltage Note:
The supply voltage range for the Sentry Series power window system is very flexible to accommodate supply voltages available from many different countries. The input (supply) voltage range is 90 to 264 VAC at a frequency range of 47 to 440 Hz. For practical purposes, the supply voltage referenced in this document is 120 volts at 60 Hz commonly used in the United States.

Operating Environment:
The control unit must be located in a dry environment which includes protection from condensation. The operating temperature range must be maintained between 140° F (60° C) to -5° F (-20° C).

Be sure the motor system will fit in your application:
The Sentry power window system is intended to fit onto casement, awning and skylight hardware manufactured by Truth Hardware only. The Sentry Series power window will not work in the following applications:

- Fitted to any type of jalousie window
- Fitted to any type of door
- Fitted to any type of cable controlled window system - Such as those manufactured by Clearline or Ultra-Flex
- Fitted to any type of manual skylight hardware manufactured by Velux or Roto

Be sure the motor system is compatible with your application
It is important to understand that the design parameters of the Sentry Series power window system are predicated on a properly functioning manual window system. This includes the rotary operators and hinges installed on the window. It is the responsibility of the window manufacturer and/or the window specifier to insure the window size and weight fall within the specifications of the manual hardware system installed on the window. If the window size and/or weight fall outside of the hardware specifications, the motor system may not function properly. If the window carries an AAMA (American Architectural Manufacturers Association) label chances are the window system meets all hardware requirements.
However, if the window does not carry an AAMA label you may want to contact the window manufacturer to verify the windows have been manufacturer within the hardware manufacturer's specifications - especially if the window size is unusually large and/or of unusual proportions.

Getting Started

Parts List		Part Number
1.	Motor Cover	12490.xx (not part of kit)
2.	Mounting bracket - Window*	
3.	Mounting bracket - Skylight*	Parts 2 thru 8 are in hardware pack 12492
4.	Push on fastener	
5.	Isolation grommet	
6.	Screws	
7.	Terminal block	
8.	Strain relief	
9.	Spline adapter and wrench	
10.	Motor unit Installation instructions (not pictured)	12547.00.0001 90063
11.	Shutterbox control unit	
12.	Decora Wall Switch (White)	
13.	sRemote remote control unit	
14.	Power Supply Unit	

* Window bracket may look slightly different.
** Skylight bracket is not included with all kits.
xx Indicates a color selection

Note:
No wire is included. See wiring diagram on page 17 for wire requirements.

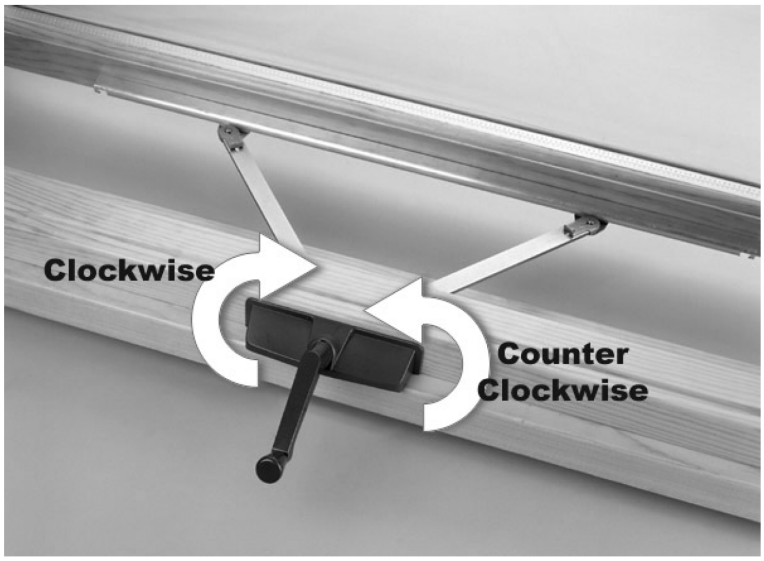
Motor Installation

Note: Window operators are usually mounted to the bottom sill of the window. Occasionally the operator will be mounted on the side jamb of an awning or casement window and also occasionally to the head of a hopper window. These are all acceptable applications provided the window opens and closes smoothly throughout its full range of motion. Be sure the motor system is mounted securely to the window in these applications.

1. Test hand crank

A. Determine the direction of the hand crank rotation to open the window as either Clockwise or Counter Clockwise (when facing the window operator).

B. Circle the direction to OPEN below (This information will be needed for proper system setup in Step 5.):

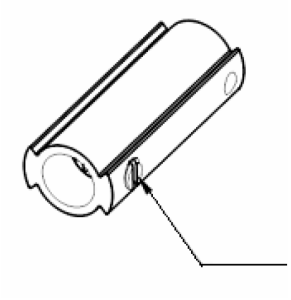


Note: The window or skylight can be in any position while installing the Sentry Series motor. However, leaving the window or skylight partially open is helpful in testing system operation. When power is supplied to the motor for the first time, the control system is programmed to close the window. A closing window upon power-up will therefore confirm that the motor is receiving power and wiring polarity is correct. If the window is closed during motor installation, a short noticeable hum will confirm that the window is receiving power.

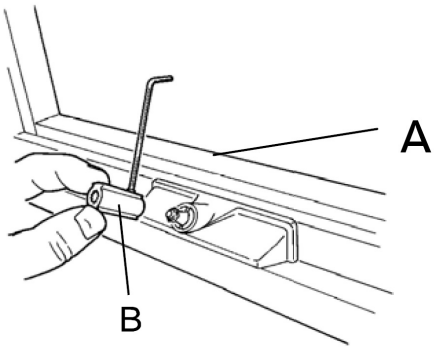
2. Install adapter

Before installing the spline adapter determine how the adapter should be applied to the type of window operator that you have.
If your window operator is similar to the picture shown below (some operators may have the worm on the other side of the operator case) please switch the set screw to the hole at the opposite end of the adaptor before installing on the operator shaft. For all other operators, apply the adapter as it was shipped to you.

After installing the spline adapter (B) onto operator shaft, tighten set screw with wrench (A).
NOTE: Be sure the set screw is fully seated into the operator shaft groove.



If the operator looks similar to the one shown on the left please move the set screw from the hole that it was installed in for shipping to the open hole at the opposite end of the adaptor.



3. Choose wire location

Plan wire exit location on window for

- **Operator motor**
  See figure 3a below for casement and awning windows and Figure 3b for skylights
  Note: *Be sure the window width will accommodate the motor width. See Fig.s 3c & 3d below for finished dimensions.*
- **Power sash lock (if used)**
  Consult power sash lock installation instructions
- **Power mini blinds (if used)**
  Consult power mini blind installation instructions

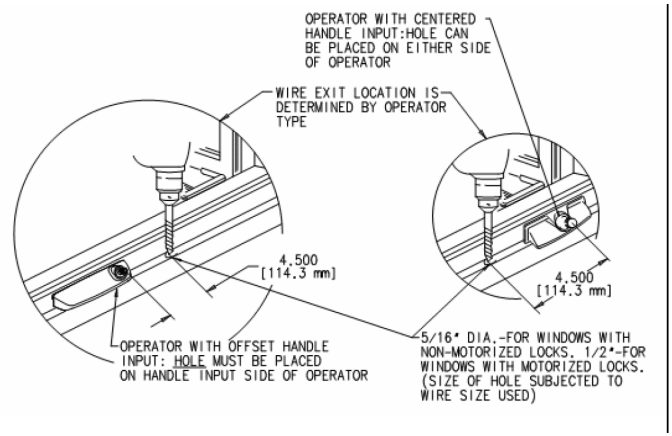


Figure 3a

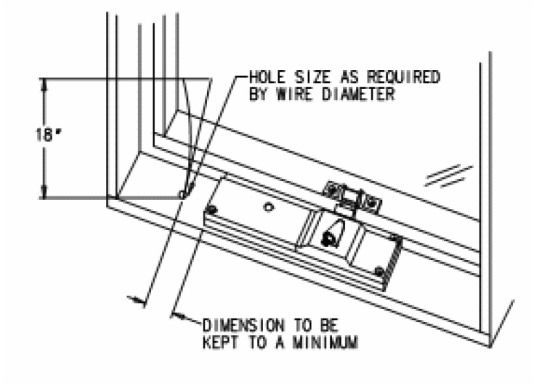


Figure 3b

NOTE: The placement information above are guidelines only. In some cases it is better to do a trial fit of the motor onto the operator. Hold the motor square and check both sides while looking for interference between the motor housing and operator housing.

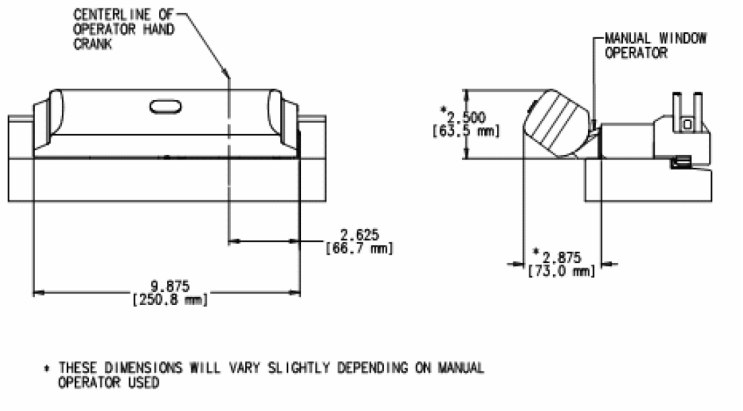


Figure 3c

Finished dimensions of motor system applied to a casement or awning window.

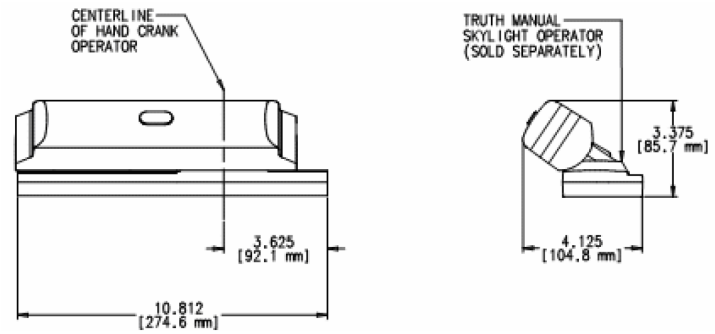


Figure 3d

Finished dimensions of the WLS motor system applied to a skylight window.

4. Mount the motor

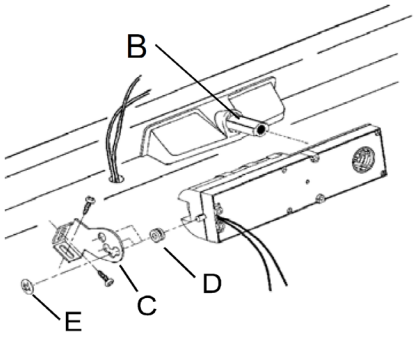
A. Slide motor over spline adapter (B)

B. Insert the isolation grommet (D) into the mounting bracket where it best lines up with the motor mount post.
Note: *If a number of mounting positions are provided by the bracket, use the one which provides the best alignment with the window frame.*

C. Secure motor with bracket (C).
Note: *In window applications two screws should be used when mounting the bracket (C) to wood or plastic window frames.*

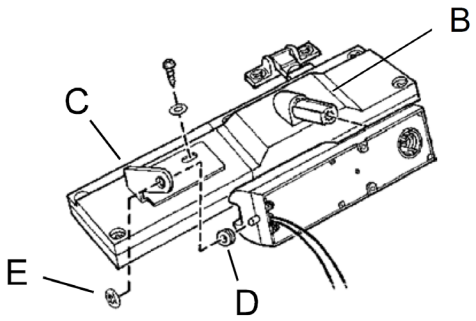
D. Slide the push-on fastener (E) over the motor post to secure the motor to the bracket and window casing.
Warning: *The push-on fastener is required for safety. Failure to install the fastener (E) can cause the motor to become detached and fall from window.*

Window Mount



Sheet metal screws: (2) #8 x 5/8"

Skylight Mount

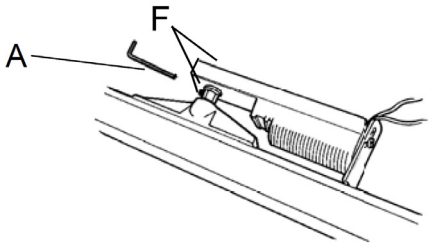


Machine screw: (1) #12-24 x 1"

5. Align and tighten collar

Align motor to window and tighten set screw in black plastic alignment collar (F) with wench (A).

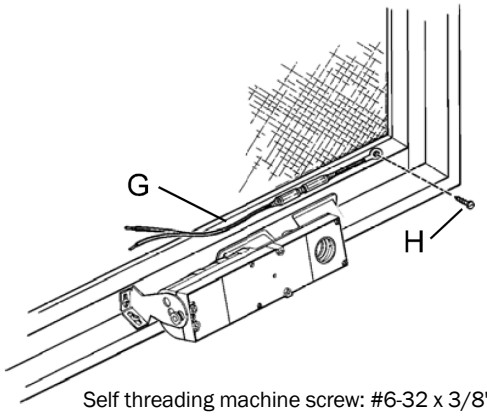
Warning: *Do not over tighten. Damage will occur to alignment collar if it is tightened excessively.*



6. Install screen interlock!

Install screen interlock (G) to the face of the screen frame as shown using the supplied pan head screw (H). Refer to Main Wiring diagram for connection information.

Warning: *The screen interlock must be installed on windows or skylights less than 8 ft from the floor. It is intended to prevent personal injury and/or window damage during operation*



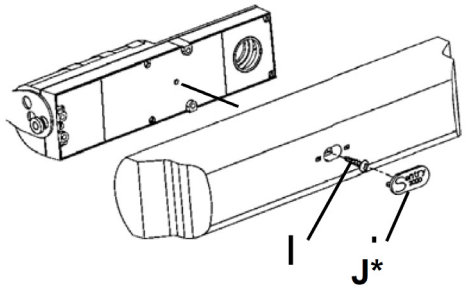
Self threading machine screw: #6-32 x 3/8"

7. Secure wires and install cover

A. Connect motor wires per wire diagram (see page 17) and secure with tape.

B. Install the motor cover using the 6X3/8 PH screw (I) found under cover button (J).

Warning: *Use of a longer screw () will damage the motor and void the warranty Use only the screw provided for the motor cover (No. 6-32 X 3/8 Phillips pan head machine screw).*



8. Apply power

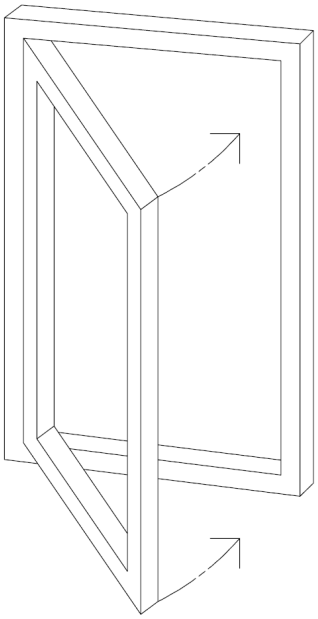
Apply power to the control unit

Note: *Upon power-up the window should* ***close****. (If window is closed, motor will momentarily hum.)*
If the window opens *refer to the window crank direction in step 1 and dip switch settings in step 5.*

- Disconnect power
- Change dip switch 3 on S2 (Refer to step 5)
- Reapply power

The window should now close.

Note: *Do not disconnect power while the window motor is running.*



System Status Feedback

The Sentry Series control unit is capable of providing feedback regarding whether the window is closed or not closed. It will not provide true window position other than closed.

Note: *See main wiring diagram on page 17 for proper connections.*

Status output function:

- The status output functions as a relay. When the output is closed (relay contacts closed), the window is fully closed. When the output is open (relay contacts open), the window is not fully closed.
- Feedback output (contact closure) maximum ratings:
  Rated Load: 0.50 A at 125VAC, 1 A at 24VDC
  Minimum Load: 1mA, 5VDC
  Max. operating voltage: 125 VAC, 60 VDC
  Max. operating current: 1A
  Max. switching capacity: 62.50 VA, 30W