
Heavy Skylight Motorization System Installation Instructions



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The AmesburyTruth website is a great resource for the latest product and installation information.

Visit **www.AmesburyTruth.com**

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Form 90474 RA



Danger

To help prevent
severe personal
injury or death

- Read and understand instructions **completely** before beginning installation.
- Wiring must be installed 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 electrical connections are verified.
- This equipment is intended to be connected to a **Sentry 3 Control Unit**, which should be connected to a circuit capable of providing 1 Amp at 120 VAC, per control unit.
- Do not allow children to operate unit.
- The **DC Marvel Power System** must not be used on windows intended to meet egress codes.
- The **DC Marvel Power System** is intended for indoor use only.
- Save ALL instructions. Additional copies can be downloaded off of our website at:
www.amesburytruth.com/products/windows/skylights
- **Installer** – please be sure to give ALL instructions to the homeowner once installation is complete.
- Unless a screen is locked into place to avoid a person reaching into the window during operation, it is advised that the **DC Marvel Power System** not be installed in applications where the motor unit is less than eight feet above the floor

Table of Contents

Preparation

What You Should Know Before Starting4

Getting Started

Required Hardware5

Planning5

Mounting Diagrams6

Required Brackets...7

Installation

Motor Installation for Sill Mount Brackets8

Motor Installation for Face Mount Brackets... 10

Switch Installation & Wiring Diagram 12

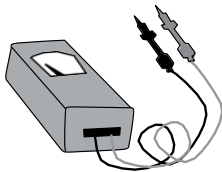
Troubleshooting

Common Problems 13

Emergency Procedures..... 13

Support 14

What You Should Know Before Starting



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).
- The **DC Marvel Power System** is intended to fit onto hinged windows or skylights.
- Any use of the **DC Marvel Power System** not approved by AmesburyTruth is at the user's own risk.

Be sure the motor system is compatible with your application:

It is important to understand that a successful application of the **DC Marvel Power System** is dependent on a properly functioning manual window or skylight system. This will include the following:

- △ **Correct hinges** must be installed on the window unit to ensure a counter-balanced operation.
 - It is the responsibility of the window manufacturer and/or the window specifier to ensure that the properly selected hinges are used on the window. Selection of hinges is based on the window size and weight.
- △ In any single motor application, the force at the chain (**pulling or pushing**) should not exceed **45 pounds**.
 - In a (synchronized) double motor application the weight at each chain should not exceed **45 pounds** (should not exceed **90 pounds** at the chain edge of the sash).
 - Please note that on hinged skylight applications the weight on the chain is typically about half the total weight of the sash.
- △ Application must allow for the connection of the power cord in accordance with local electrical codes.



Required Hardware

DC Marvel Power System

- Motor unit w/ power cord
- Screw pack
- Sash bracket
- Two styles of sill mount brackets
- One set of face mount brackets
- Templates
- Installation Instructions

Sentry 3 Motor Control Module Kit – PN 2032103

(purchased separately)

- Sentry 3 Controller
- 24 VDC Power Supply
- Low Voltage SPDT switch
- Wall Switch Plate
- Installation Instructions

Tools required for installation

- Screw Driver
- 1/8" Drill Bit (for pilot holes)
- 7/64" [3mm] Hex Wrench
- Wire Strippers
- Wire Connectors/Nuts
 - Per Local/National Codes

Note:

- See wiring diagram on page 12 for wiring requirements.
- For replacement parts, please go to www.amesburytruth.com

Planning



*Talk to the
homeowner*

Important

If you are not the homeowner, it is important to contact the homeowner and discuss how they want to control a group of windows and/or skylights. It may be very difficult to change the installation to meet the homeowner's desires once installation is complete.

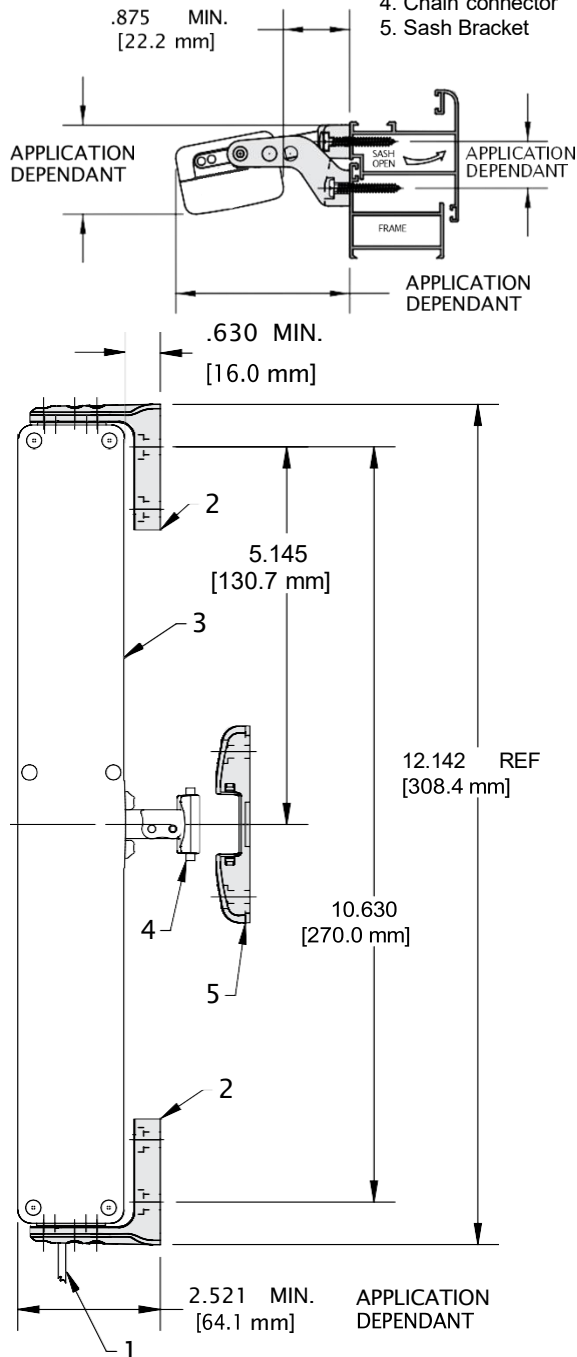
Please Consider

- Up to 2 (if synchronized) DC Marvel Power Units can be controlled by one Sentry 3 controller kit
 - **See wiring diagram (page 12) & Sentry 3 Install. Instructions**
 - Each window will require a separate controller
- Depending on the mounting brackets used, approximately a 13"(330mm) long x 1.5"(38mm) tall and 3"(76mm) deep space is required to mount the DC Marvel Unit.
- If you are installing the motor system onto a window that has manual locks we recommend that the keepers on the locks be removed.
- For more advanced methods of controlling the DC Marvel Power System please contact AmesburyTruth's Technical Services.
- The windows and/or skylights must operate correctly and smoothly. Lubrication or cleaning of hardware may be required. This motor system will not operate correctly if the manual hardware is not functioning properly.

Mounting Diagrams

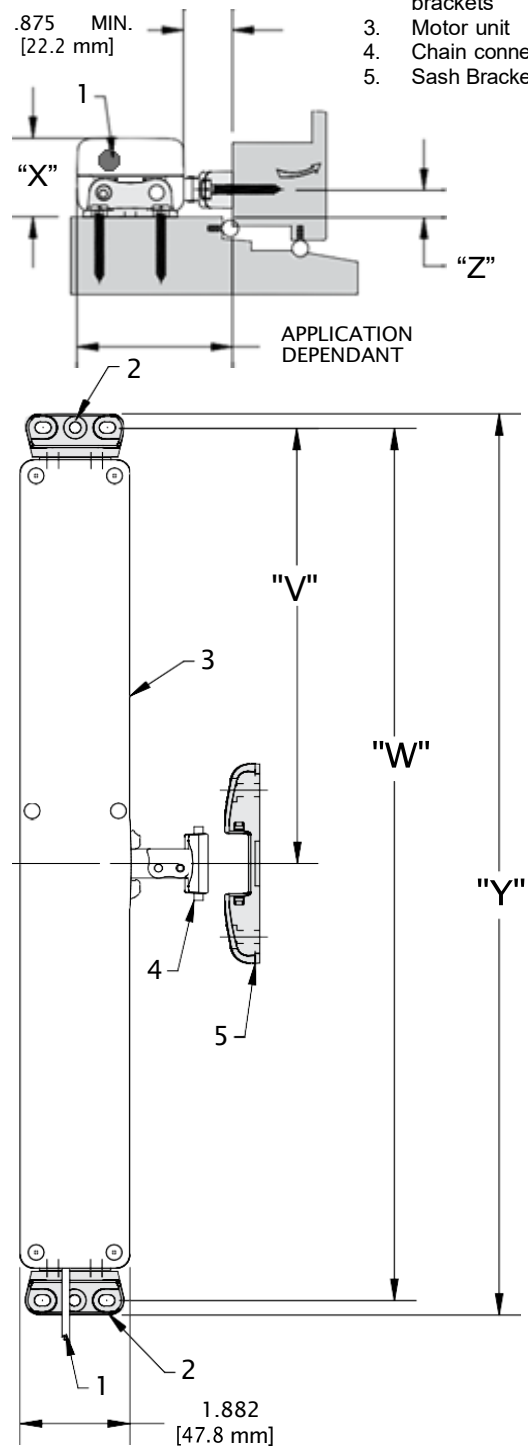
FACE MOUNT

1. Power supply cable
2. Face mount frame brackets
3. Motor unit
4. Chain connector
5. Sash Bracket



SILL MOUNT

1. Power supply cable
2. Sill mount frame brackets
3. Motor unit
4. Chain connector
5. Sash Bracket

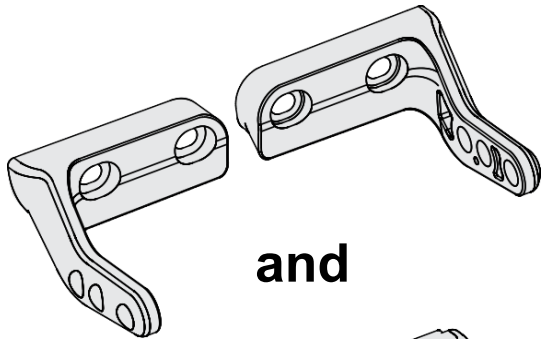


Required Brackets...

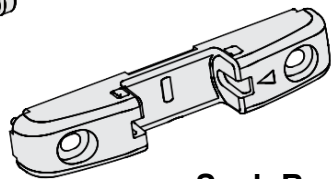
...For Face Mount

On a Face Mount application, you will need one set of Frame Face Mount Brackets and one Sash Bracket for your window or skylight.

Frame Brackets (1 Pair)



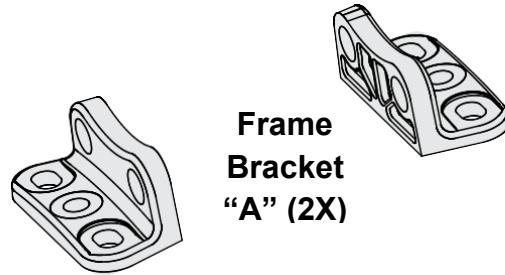
and



Sash Bracket

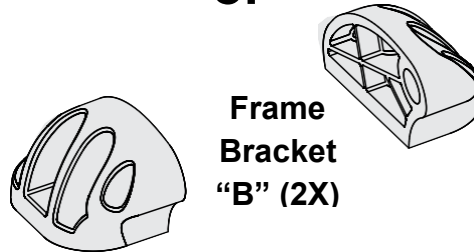
...For Sill Mount

On a Sill Mount application, determine which set of brackets you will need for your window or skylight.



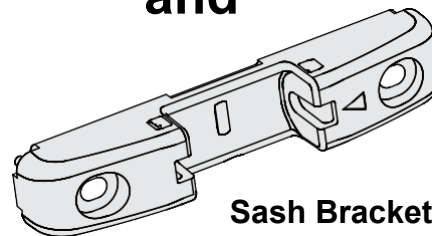
**Frame
Bracket
"A" (2X)**

or



**Frame
Bracket
"B" (2X)**

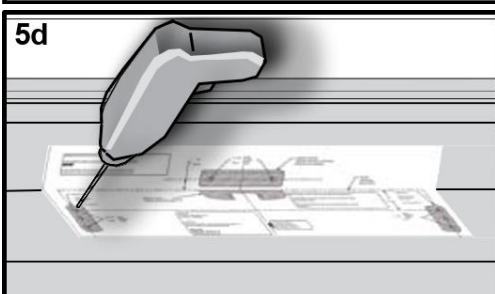
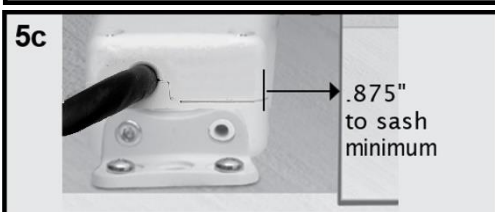
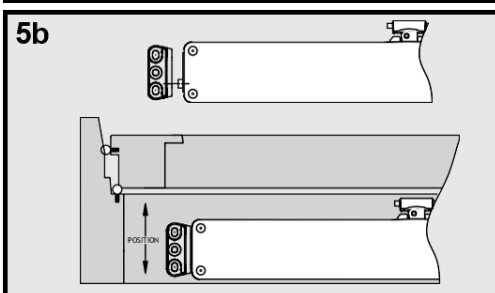
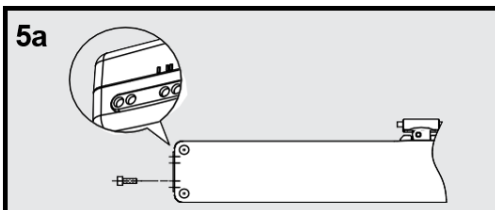
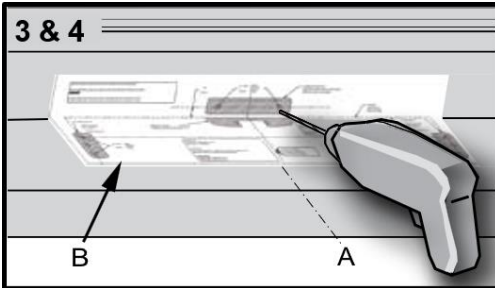
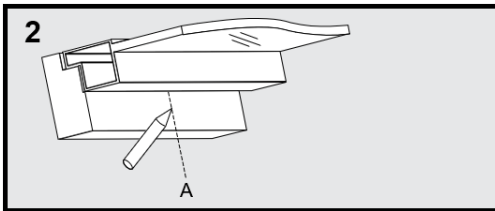
and



Sash Bracket

Frame Bracket	"V"	"W"	"X"	"Y"	"Z"
"A"	6.090" (154.7mm)	12.520" (318mm)	1.396" (35.5mm)	13.031" (331mm)	.444" (11.3mm)
"B"	6.033" (153.3mm)	12.406" (315.1mm)	1.652" (42.0mm)	12.520" (332mm)	.700" (17.8mm)

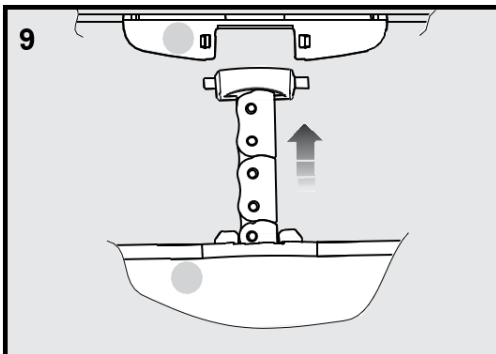
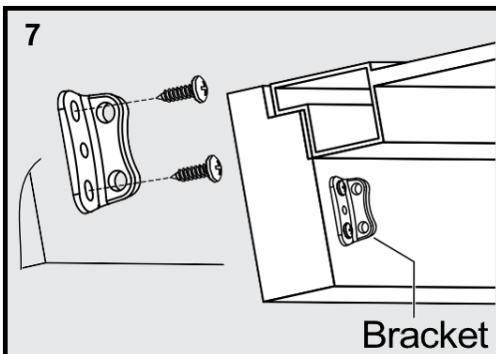
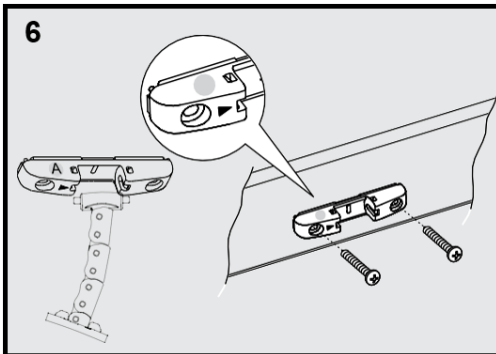
Motor Installation for Sill Mount Brackets



Graphics show bracket "A" but instructions are for both brackets "A" and "B".

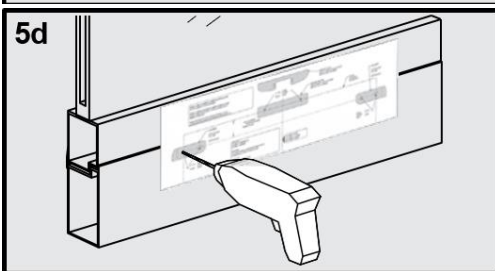
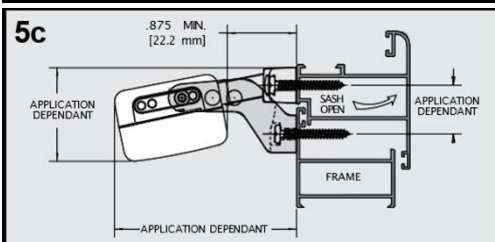
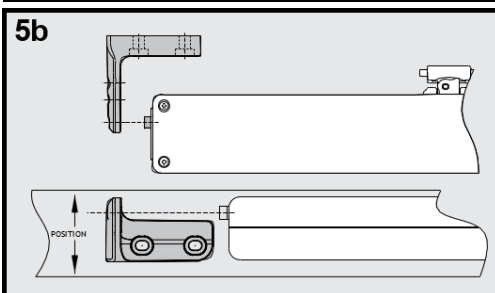
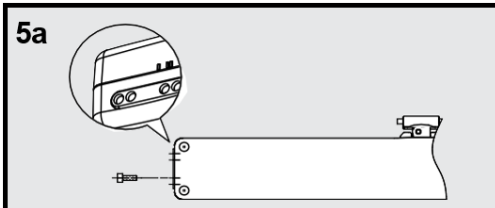
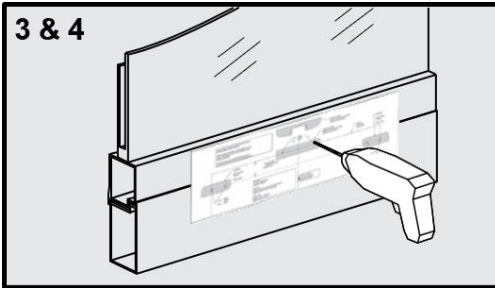
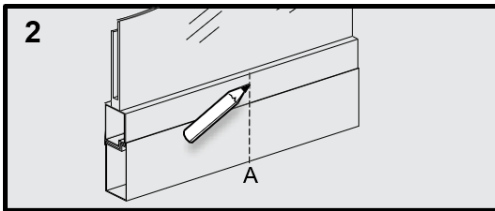
1. Plan wire exit location on window or skylight.
2. Locate centerline (A) of window or skylight.
3. Align appropriate template (B) with centerline (A).
4. Drill pilot holes for sash bracket.
5. Determine the distance the motor unit will sit from the sash. (Make sure sash is fully closed before aligning motor unit.) The DC Marvel motor unit shuts off in the closing direction based off of amperage draw being monitored in the control circuitry. This feature allows great flexibility in the mounting position of the motor unit. For mounting suggestions and minimum conditions refer to AmesburyTruth's website at www.amesburytruth.com/products/windows/skylights
 - a) Choose which set of pivot holes in the motor unit that will be used with the selected frame mounting bracket to position the motor correctly. Insert cap screws into the selected pivot holes in the motor unit. (1 cap screw per side).
 - b) Slide frame bracket "A" onto cap screws and position on sill using the template markings as a starting location.
 - c) Align the frame bracket screw holes with the pre-drill center lines on the template. Moving motor unit closer or farther from the sash until it is in the correct position. Mark screw location. Distance between sash and motor unit must be greater than .875 [22.2mm].
 - d) Drill pilot holes (2 for each bracket) into frame. Pilot holes should be centered in bracket screw holes.

Motor Installation for Sill Mount Brackets



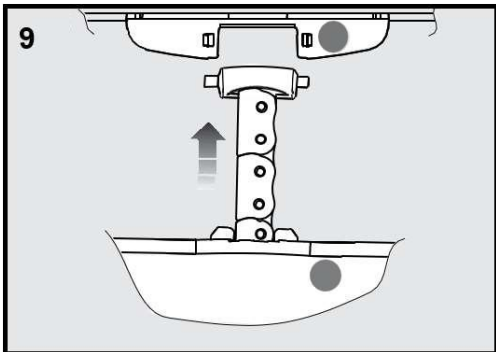
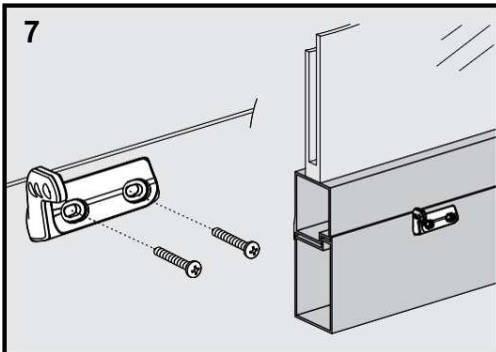
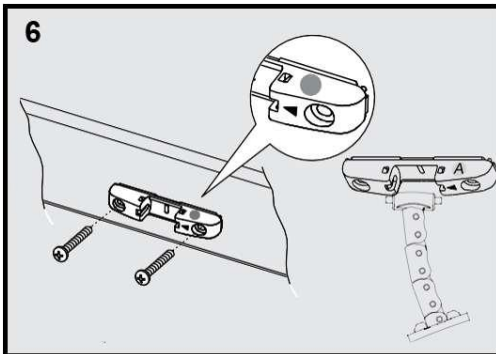
6. Install the sash bracket with screws provided.
 - a) It is necessary to properly orient the sash bracket with respect to the motor unit in order for the quick disconnect feature to work. The graphic at left shows the proper orientation. The arrow on the sash bracket is to show how the bracket is to be oriented with respect to how the chain bends. In addition to the arrow on the sash bracket showing orientation, colored stickers have also been included on the sash bracket and motor unit to help orient the bracket with respect to the motor unit. (ie: If the green sticker is on top of the motor unit the sash bracket should be oriented so the green sticker on the bracket is also on top).
7. Attach the motor unit with frame brackets to the window or skylight frame with the screws provided.
8. Complete electrical wiring and test to ensure proper function. (Refer to page 12 for wiring diagrams).
9. Cycle the motor unit in order to advance the chain enough to snap the chain into the sash bracket.
10. Cycle the unit fully open and fully closed to check function.

Motor Installation for Face Mount Brackets



1. Plan wire exit location on window or skylight.
2. Locate centerline (A) of window or skylight.
3. Align appropriate template (B) with centerline (A).
4. Drill pilot holes for sash bracket.
5. Determine the distance the motor unit will sit from the sash. (Make sure sash is fully closed before aligning motor unit.) The DC Marvel motor unit shuts off in the closing direction based off of amperage draw being monitored in the control circuitry. This feature allows great flexibility in the mounting position of the motor unit. For mounting suggestions and minimum conditions refer to AmesburyTruth's website at www.amesburytruth.com/products/windows/skylights
 - a) Choose which set of pivot holes in the motor unit that will be used with the face mount frame mounting bracket to position the motor correctly. Insert cap screws into the selected pivot holes in the motor unit. (1 cap screw per side).
 - b) Slide frame bracket "A" onto cap screws and position on sill using the template markings as a starting location.
 - c) Align the frame bracket screw holes with the pre-drill center lines on the template. Moving motor unit closer or farther from the sash until it is in the correct position. Mark screw location. Distance between sash and motor unit must be greater than .875 [22.2mm].
 - d) Drill pilot holes (2 for each bracket) into frame. Pilot holes should be centered in bracket screw holes.

Motor Installation for Face Mount Brackets

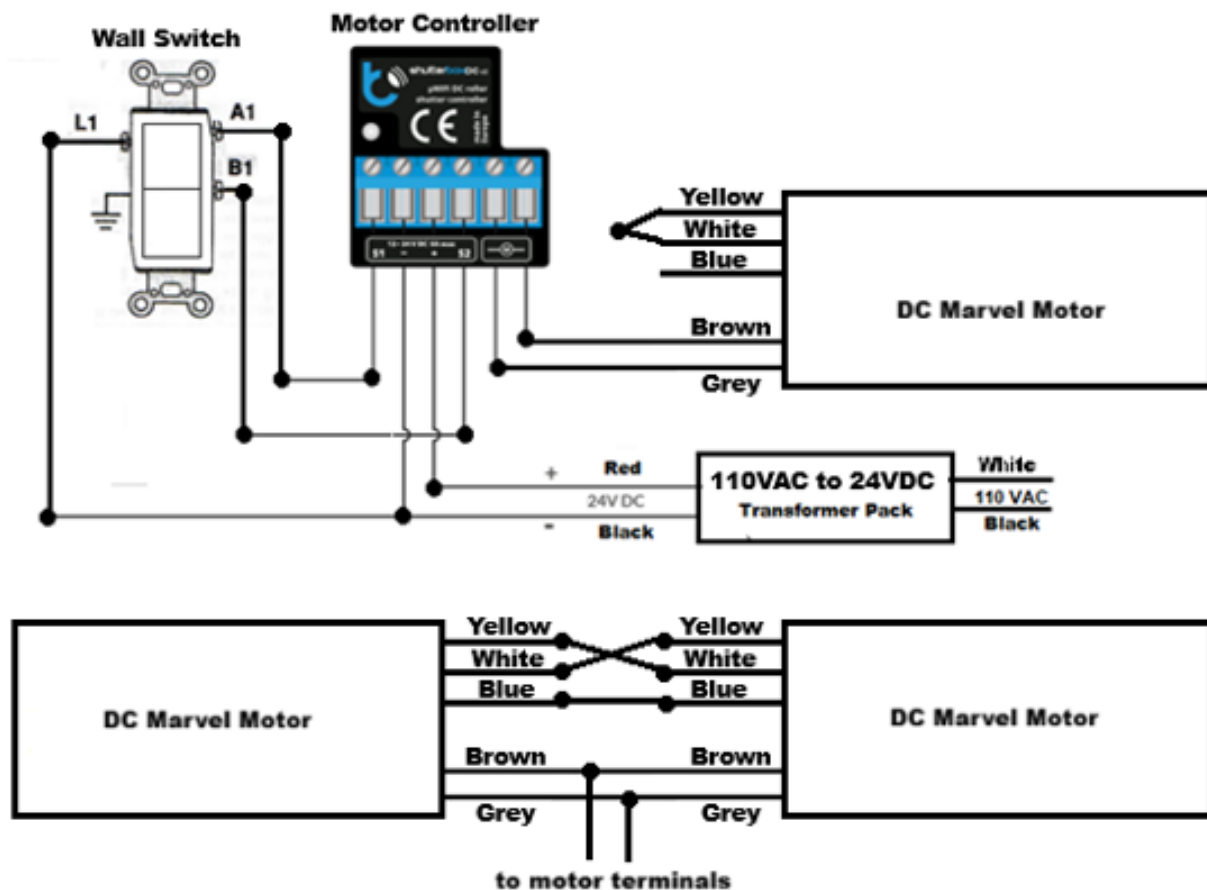


6. Install sash bracket with screws provided.
 - a) It is necessary to properly orient the sash bracket with respect to the motor unit in order for the quick disconnect feature to work. The graphic at left shows the proper orientation. The arrow on the sash bracket is to show how the bracket is to be oriented with respect to how the chain bends. In addition to the arrow on the sash bracket showing orientation, colored stickers have also been included on the sash bracket and motor unit to help orient the bracket with respect to the motor unit. (ie: If the red sticker is on top of the motor unit the sash bracket should be oriented so the red sticker on the bracket is also on top).
7. Attach the motor unit with frame brackets to the window or skylight frame with the screws provided.
8. Complete electrical wiring and test to ensure proper function. (Refer to page 12 for wiring diagrams).
9. Cycle the motor unit in order to advance the chain enough to snap the chain into the sash bracket.
10. Cycle the unit fully open and fully closed to check function.

Switch Installation & Wiring Diagram

Please refer to wiring instructions included with Sentry 3 Motor Control kit for electrical requirements and installation & setup instructions for the controller

- For a Single Motor Setup, please note that the yellow and white wires from the power cable must be spliced together for the motor to work properly.
- For a Dual Motor Setup, please note that the yellow wire from one motor must be spliced to the white wire from the other (repeated for both motors). The blue wires must be spliced together.
 - Only two motors can be paired for synchronous operation.



Common Problems

Apply Power & Test Application

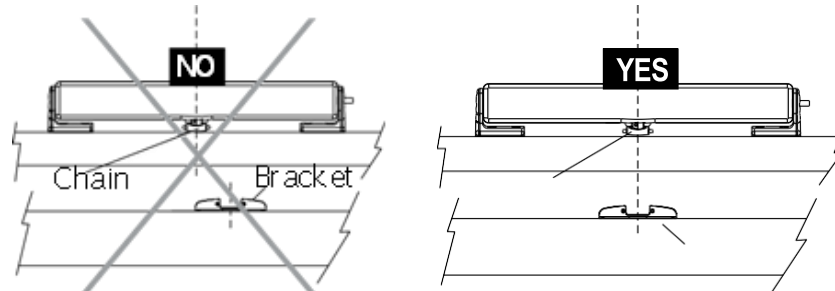
- Note: More extensive troubleshooting guide can be found in the Sentry 3 Installation Instructions.
- Note: Additional Technical assistance can be found by logging onto www.amesburytruth.com/products/windows/skylights

Motor Does Not Run...

- Check to make sure power is on and fuses/breakers at the electrical panel are good.
- Check to make sure the power cord connections are correct and well-made (verify against circuit diagram on page 12).

Motor Is Not Straight on My Window...

- Check to be sure the correct mounting holes are used in the mounting brackets and that all hardware is mounted level and on center.

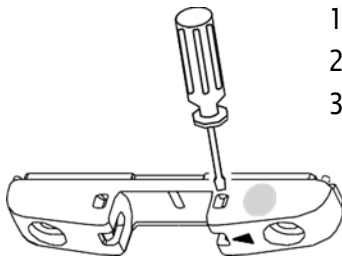


Window or Skylight Does Not Fully Close or Open...

- Check for obstructions between sash and frame.

Emergency Procedures

- Should it be necessary to close the window manually, due to power supply failure or mechanism block, follow these instructions:



1. Disconnect power from the unit.
2. Block the sash open.
3. Disconnect the sash bracket ...

To disconnect the sash bracket from the chain, insert a small, flat blade screwdriver into the access hole on the side of the bracket with the arrow. Then push the metal tab toward the closest mounting hole and separate the bracket from the chain. To attach the chain again, simply align the end of the chain with respect to the center line of the bracket clips and snap the pieces together.

4. Move the DC Marvel chain out of the way.
5. While supporting the weight of the sash, remove block and close the window or skylight

Support

AmesburyTruth has made every effort to make all pertinent information available to you through this instruction manual and our website. However, if you encounter a problem or question you cannot resolve to please call 1-800-324-4487 to speak to one of our hardware technicians or send an email to: **techserv@quanex.com**.

Before Contacting AmesburyTruth, Please Be Aware That:

- Complete product and troubleshooting information is available on our website at: **www.amesburytruth.com/products/windows/skylights**
- A qualified electrician is required to resolve most electrical issues
- Contact a qualified window service technician through your window dealer to resolve window or hardware related issues.
- AmesburyTruth does not have field service technicians. If you encounter a problem or question you cannot resolve, please call 1-800-324-4487 to speak to one of our hardware technicians or send an email describing the problem to: **techserv@quanex.com**.
- Replacement window hardware is available through the window manufacturer or through one of our authorized distributors. Consult the AmesburyTruth website at **www.amesburytruth.com** for the nearest distributor.