



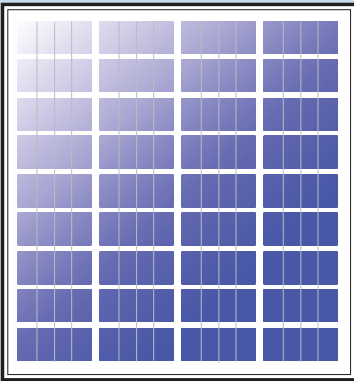
SNAP-FAN SOLAR FAN KITS BRUSHLESS FAN INSTALLATION INSTRUCTIONS



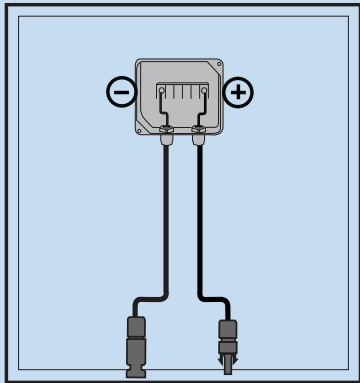
- Only a qualified and licensed electrician or contractor shall install or service Solar Panel and Snap-Fan products.
- All applicable electrical safety precautions and building codes must be adhered to and followed when installing this product.
- Refer to installation and operation manuals before installing, servicing or operating this unit.

Kit Components:

Solar Panel

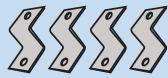


Front

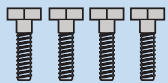


Back

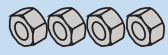
Solar Panel Mounting Hardware



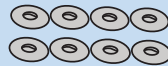
(4) Z-brackets



(4) Bolts

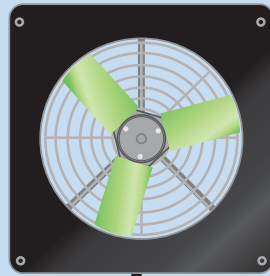


(4) Lock Nuts

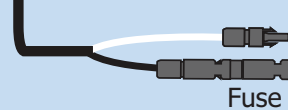


(8) Washers

Snap-Fan



(12", 16" or 20")
with intake guard



Fuse

PV Cable - 10 ft.



MC Spanner Wrench

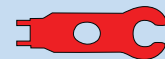
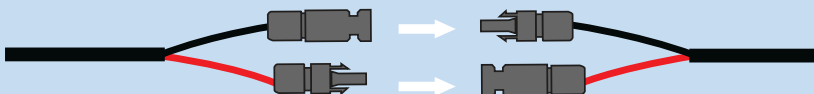


MC Connectors

These connectors are located at the end of the cables on the solar panel as well as at the end of the provided cords. When connecting, be sure to match male and female connectors of the same color. Once connected, you will need a MC spanner wrench to disconnect.

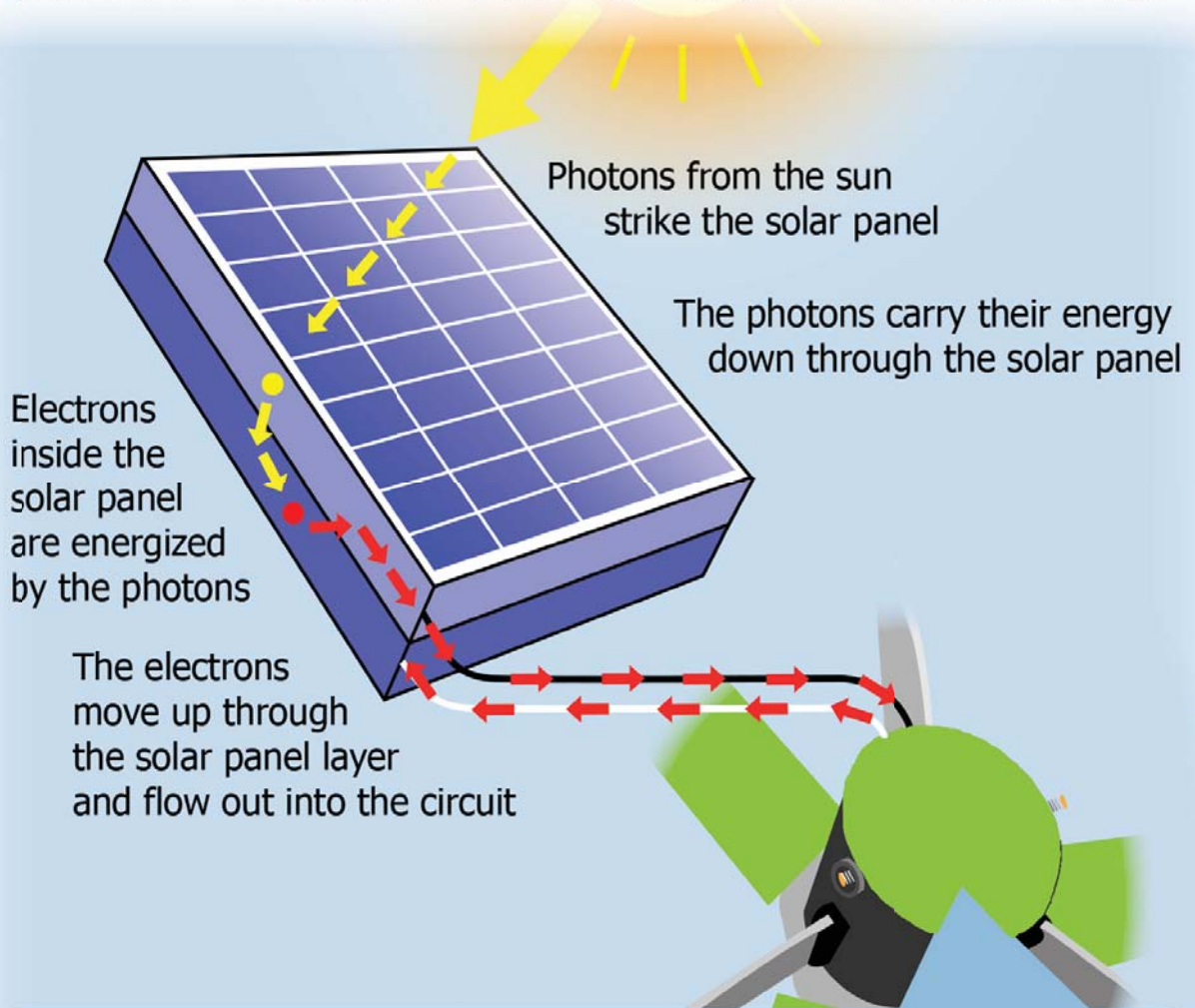
MALE

FEMALE



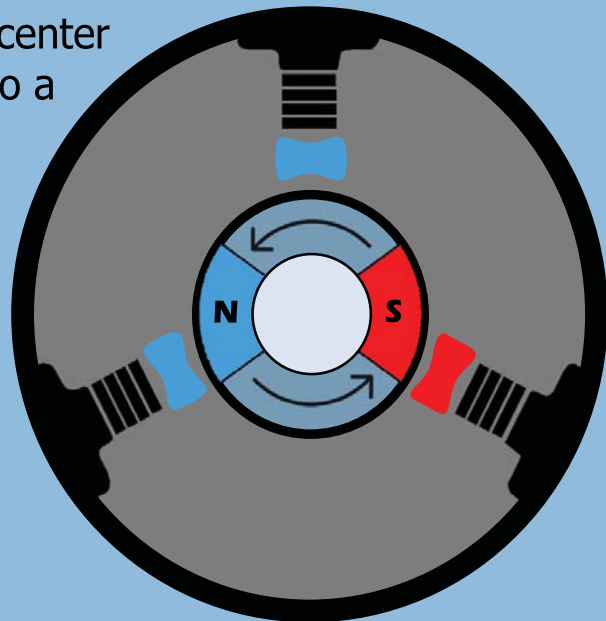
MC Spanner Wrench
provided in kits
to disconnect these
MC connectors.

HOW YOUR SNAP-FAN WORKS



The blade is attached to the motor shaft (rotor) that goes through the center of the motor and is attached to a circular permanent magnet inside the motor.

As magnetic fields either attract or repel each other this can be harnessed to make motion.



2 The amount of current available (amps) and the speed at which it flows (volts) determines the rotational speed of the fan.

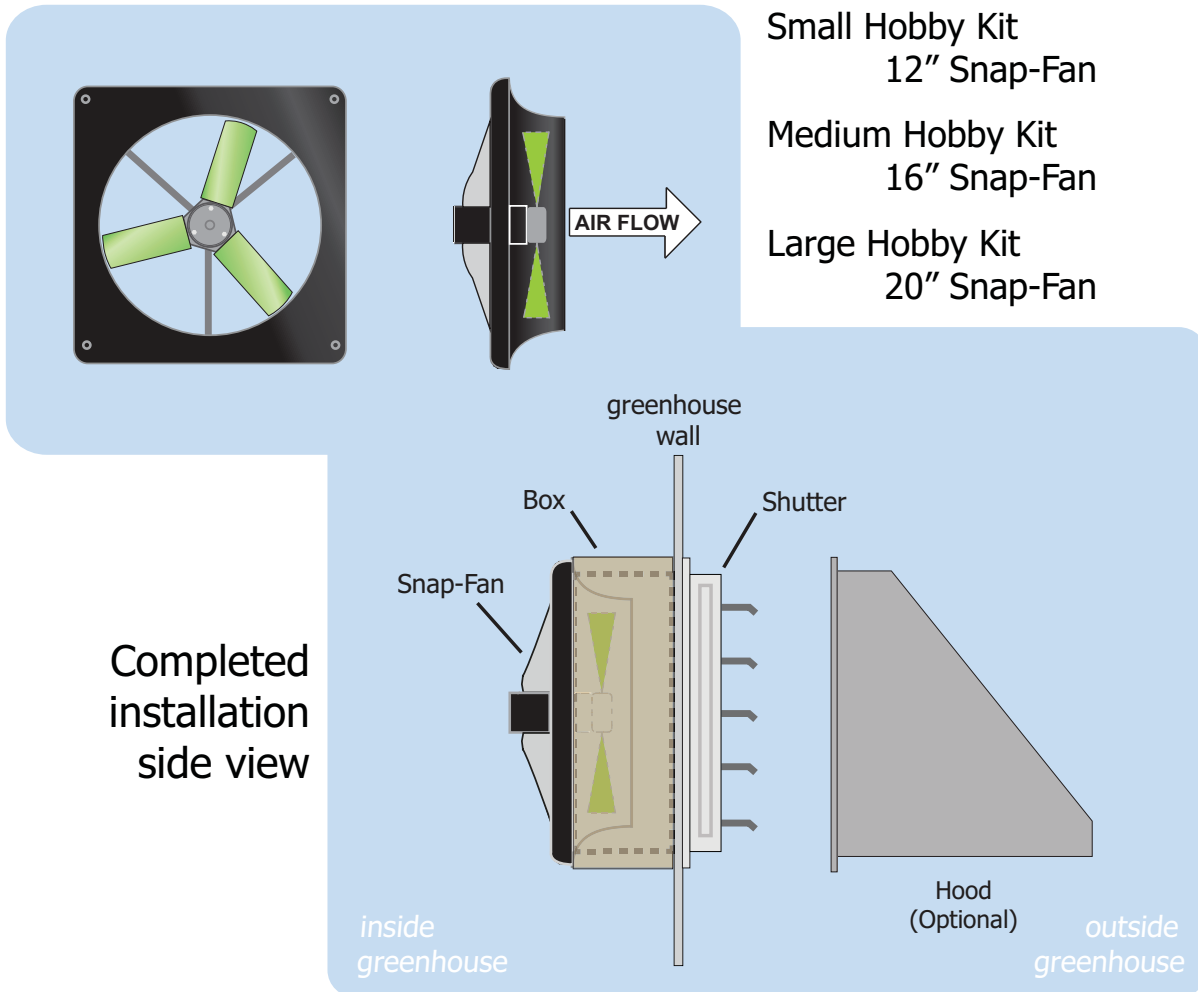
Thank you for purchasing a Snap-Fan Hobby Greenhouse Solar Fan Kit!

- Page 4 **Installing Snap-Fan:** Mount Snap-Fan first, before installing other kit components or additions. Review proper placement to ensure optimal location for air intake or exhaust.
- Page 7 **Dimensions:** Fan dimensions for 12" (small), 16" (medium) and 20" (large) Snap-Fan. Mounting Box dimensions. Shutter dimensions for small, medium and large.
- Page 10 **Installing Solar Panel:** mounting solar panel with provided mounting brackets. If you purchased a POLE MOUNT, please see instructions included within your pole mount packaging.
- Page 11 **Wiring Instructions:** wiring your Snap-Fan to your solar panel. If you are installing any additions including circulation fan or thermostat, please read addition instructions before you begin.
- Page 13 **Circulation Fan Kit Instructions:** placement, mounting and wiring. Please read full manual before you begin installation.
- Page 15 **Thermostat Kit:** placement and wiring. Please read full manual before you begin installation.
- Page 16 **Return Policy and Warranty**

SNAP-FAN INSTALLATION



Only a qualified and licensed electrician or contractor should install or service Snap-Fan products. If someone other than a licensed electrician installs a Snap-Fan, disclaims all warranties for the product, and specifically disclaims any warranty for consequential damages.



The Elements

Shelter your Snap-Fan from inclement weather and natural hazards such as, not limited to; wind, water, rain, hail, dust, ice, snow and nesting birds. If you do not plan on using your Snap-Fan during wet winter months please remove it and store in a dry location, as long periods of moisture shortens the life span of the motor. Snap-Fan must not be placed in harsh fertilizer environments.

Safety Information



All applicable electrical safety precautions and building codes must be adhered to and followed when installing this product.



Occupational Safety and Health Administration (OSHA) requires finger guards at locations under eight feet from the floor.



Refer to installation and operation manuals before installing, servicing or operating this unit.

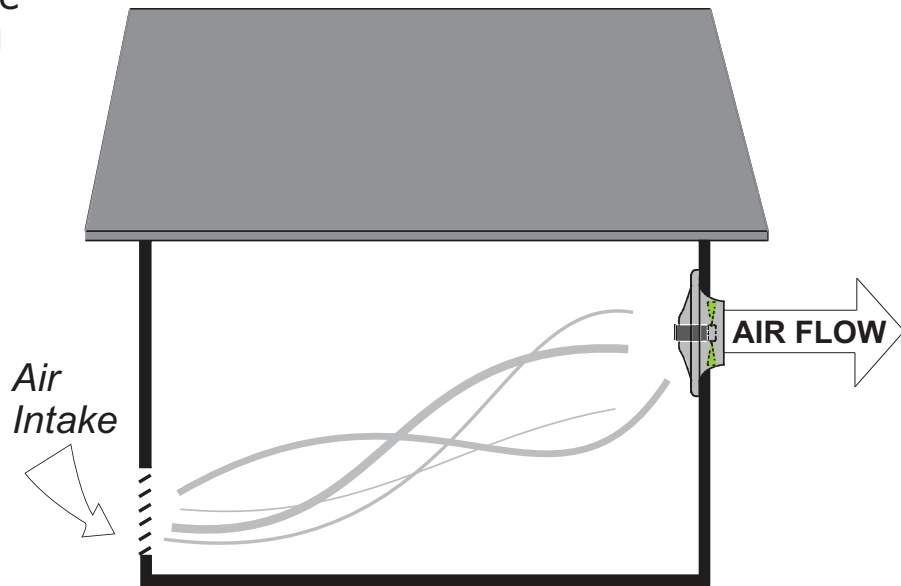


DO NOT CUT AWAY ANY FRAMING FROM THE ORIGINAL STRUCTURE, AS IT MAY EFFECT LOAD BEARING CAPACITY.

Proper Placement

Be sure to place the fan in a suitable location to maximize air movement. Typically Snap-Fans are installed close to room's ceiling to both exchange and circulate warm interior air with cool air from outside.

The air intake opening should be placed at a low spot on the opposite end of the structure, bringing cool air across it.



Air Intake

We recommend the surface area of your air intake be 1.5 times the surface area of the exhaust air (size of opening of fan).

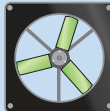

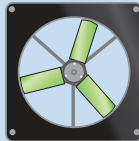
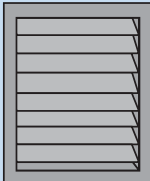
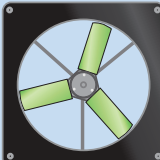
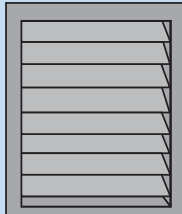
See chart for the square inches of each recommended air intake.

Visit snap-fan.com for intake louver options for each Solar Fan Kit size:



Tip:

Cover intake and exhaust openings with "Rabbit Wire" (1/4" mesh) if rodents are a potential problem.

12" Snap-Fan EXHAUST			288 in ² INTAKE
16" Snap-Fan EXHAUST			648 in ² INTAKE
20" Snap-Fan EXHAUST			1,296 in ² INTAKE

These instructions are representational and may require alterations to adapt to your individual greenhouse design.

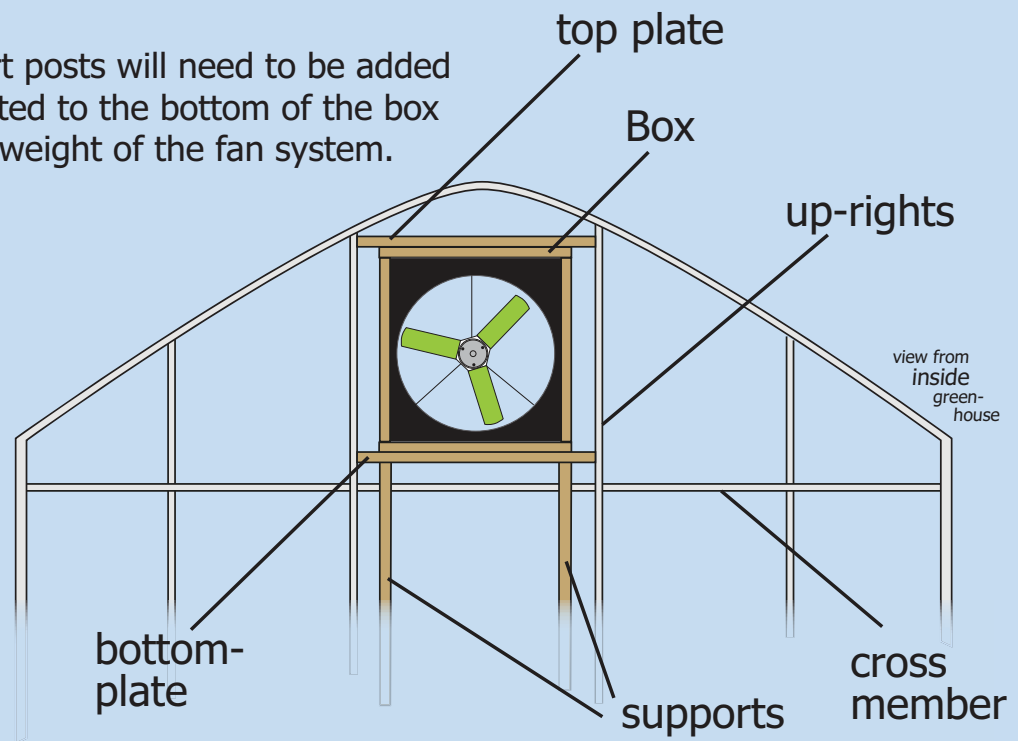
1

Choose a location to install your Snap-Fan and air intake.

Exhausting hot air from the highest point possible is recommended. See "proper placement" and "air intake" on previous page.

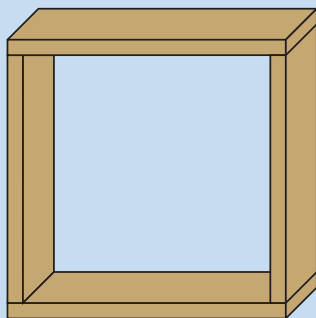
Measure the distance between the two up-rights on the end wall of the greenhouse, or locate a cross member at a suitable height to act as a shelf to mount your box onto.

Side support posts will need to be added and connected to the bottom of the box to hold the weight of the fan system.



2

Build a square box for fan to be mounted in.



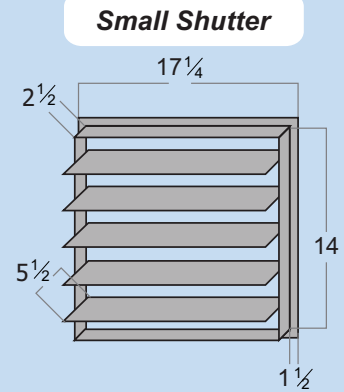
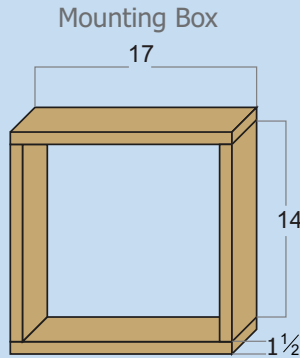
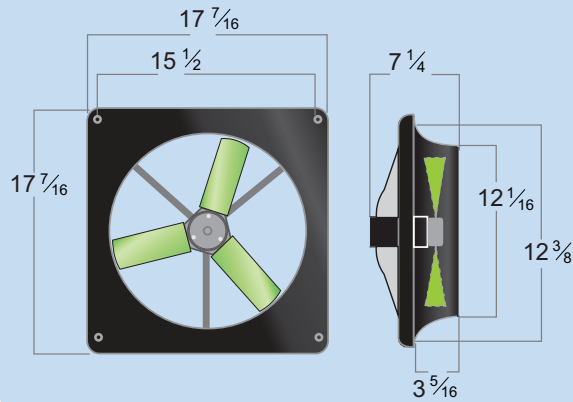
This will help frame in your fan.
See next page for box dimensions.

FOR CHARLEY'S HERITAGE GREENHOUSES, THE WOOD FAN FRAME IS INCLUDED WITH THE REAR WALL.

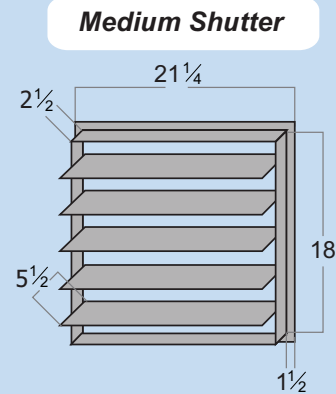
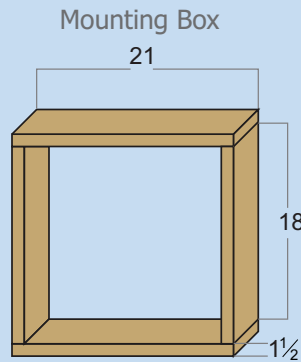
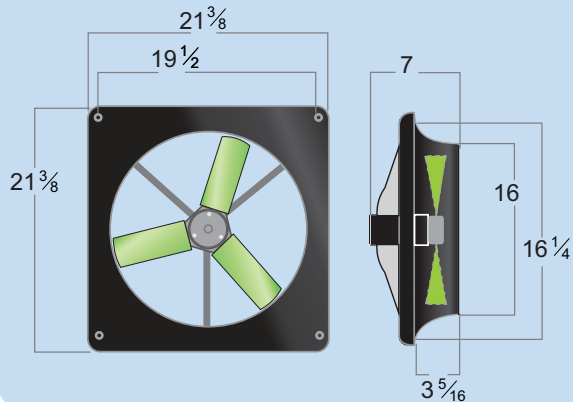
FAN MOUNTING BOX DIMENSIONS

Use this guide to determine the dimensions of the box necessary to mount your Snap-Fan. Applications vary by system design.

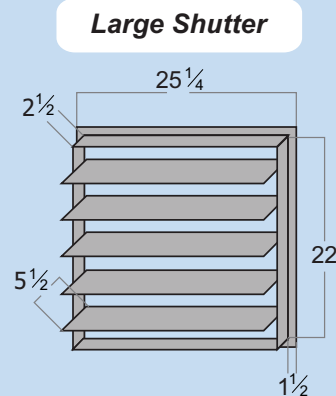
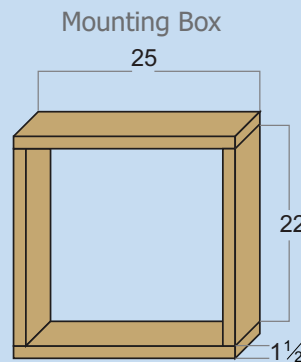
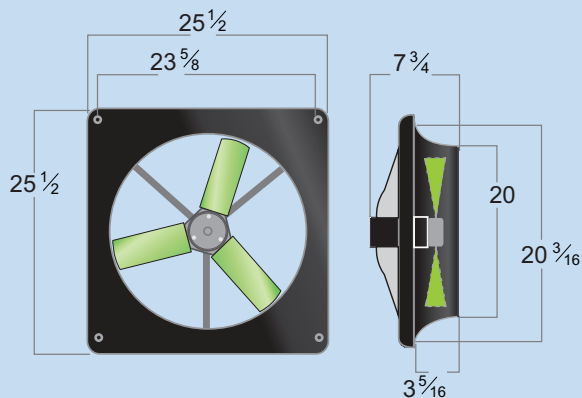
12" SNAP-FAN Small Hobby Kit



16" SNAP-FAN Medium Hobby Kit



20" SNAP-FAN Large Hobby Kit



3

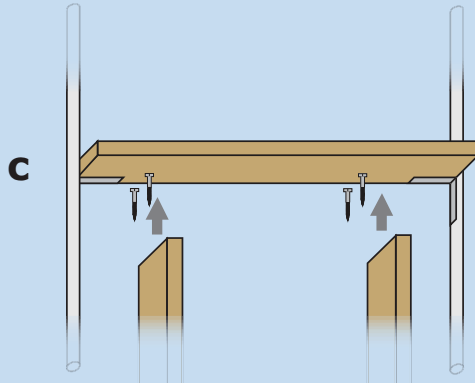
From inside, secure the bottom-plate to metal framing of the greenhouse.

a. Connect the bottom-plate to the up-rights using L. brackets.

OR

b. screw directly through metal up-right to bottom-plate.

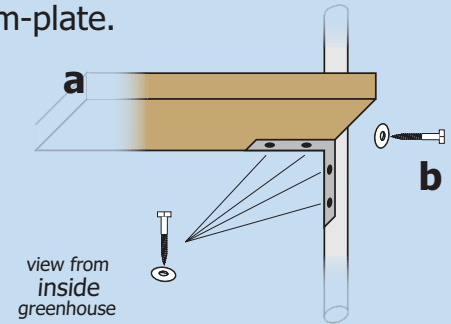
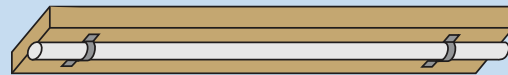
The front edge of the bottom-plate must be flush to the inside of the greenhouse wall.



c. Attach the side supports to the bottom-plate directly below where box will be mounted.

d. If a cross member is already in place you have the option of connecting the shelf to the greenhouse frame using saddle clamps, if it can sit flush with the inside of the greenhouse wall.

Be sure to still provide the support posts.



4

Securely attach box to the bottom-plate above supports. Once the box has been mounted, the top of the box must be secured to the greenhouse framing:

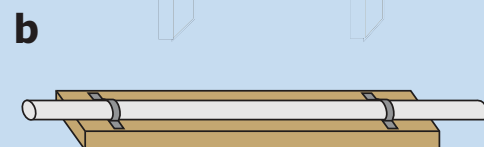
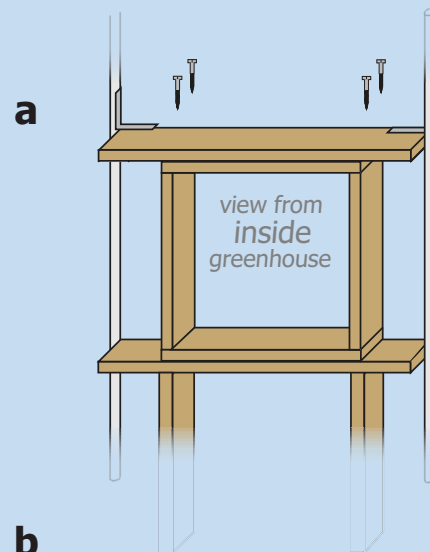
option a:

Create and attach a top-plate to finish out the framing.

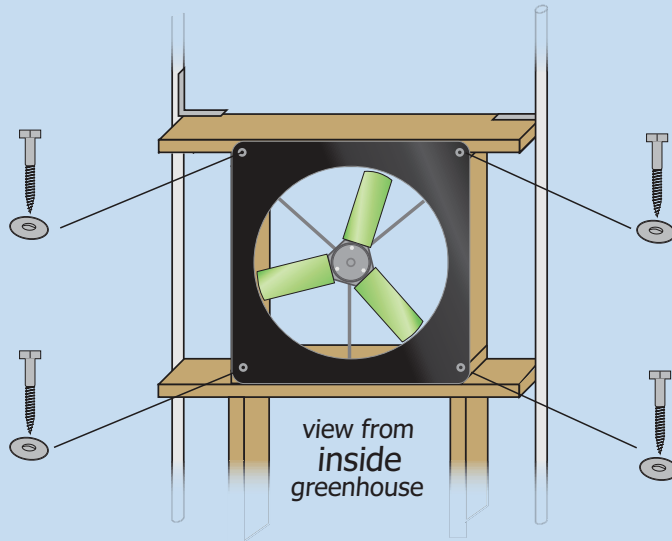
Connect top-plate to up-rights using L brackets.

option b:

If a cross member is already in place you have the option of connecting the top of the frame to the cross member using saddle clamps.



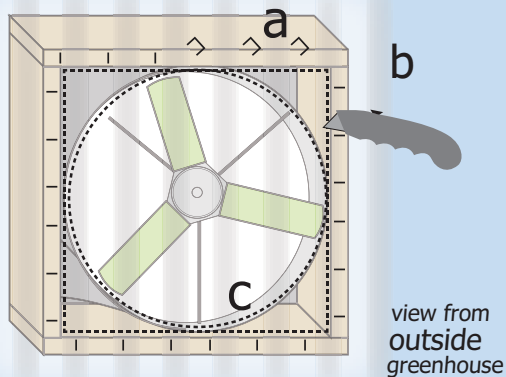
5



Mount fan onto box from the inside of the greenhouse using recommended 1/2in x 4in hex head lag screw and washer in all four corners.

6

Cut out opening in the greenhouse wall

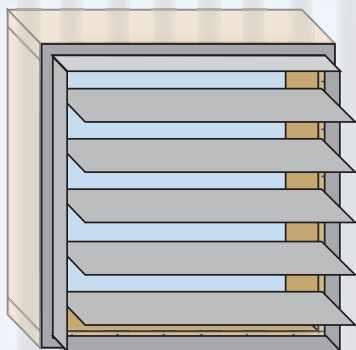


a. staple or finish nail the greenhouse siding to the wooden box all the way around.

b. Remove the greenhouse siding to allow air movement. Cut/saw just inside of the box.

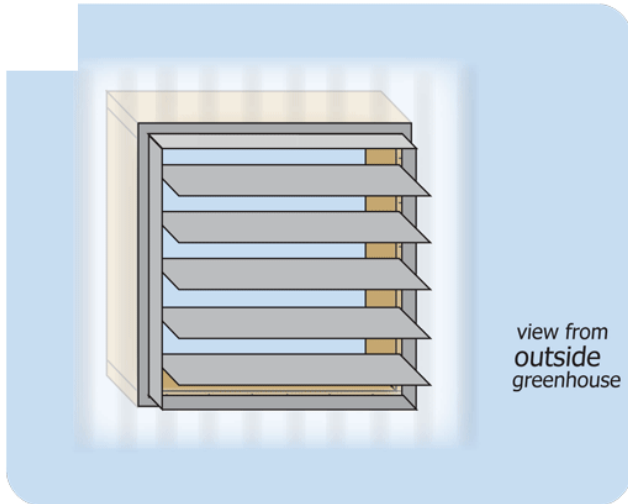
*You have the option **(c)** to cut around the end of the bell curve (opening) of the fan instead of a square. This is recommended if you are not adding a shutter and/or rain hood.

7



Install shutter to the wooden box from the outside of the greenhouse. The greenhouse siding will be sandwiched between box and shutter.

***SEE SHUTTER INSTALL INSTRUCTIONS**



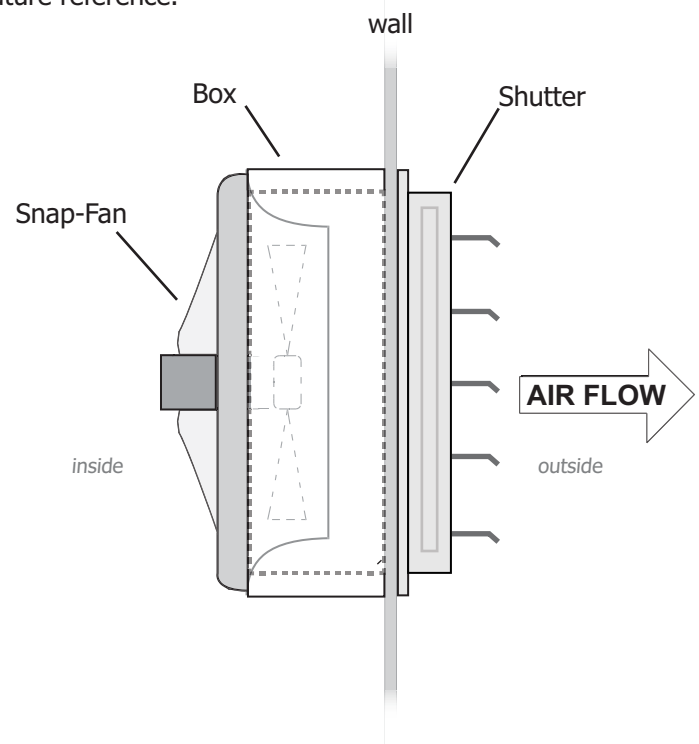
Install shutter to the wooden box from the outside of the greenhouse. The greenhouse siding will be sandwiched between box and shutter.

VERTICAL MOUNT WALL SHUTTERS


Single Panel Shutter 14 Thru 30 Inch For Use With Snap-Fans 12 Thru 28 Inch

Read carefully before attempting to assemble, install, operate, or maintain the product described. Protect yourself and others by observing all safety information. Failure to comply with instructions could result in personal injury and/or property damage. Retain instructions for future reference.

1. Upon receiving shutter/dampers, check for both obvious and hidden damage. If damage is found, record all necessary information on the bill of lading and file a claim with the freight carrier. Check to make sure all parts of the shipments are accounted for.
2. Proper handling of shutter/damper during installation is essential to ensure normal operation.
 - Lift or handle the damper by the frame, do not lift using the blades or linkage. When lifting multiple sections assembled, use sufficient support evenly distributed. Do not drag, apply excessive bending, racking or twisting.
 - Do not install shutter/damper leaning forward or backward.
 - Do not install screws or any other mounting hardware into the shutter/damper frame that will interfere with the shutter/damper blades and prevent them from opening and/or closing properly.
 - Mounting hardware, caulking and other necessary installation materials are not included.
 - Installed shutter/damper must be free of misalignment, such as squeezing, stretching, out of square, racking, twisting, etc...These conditions will prevent the damper from operating properly.
3. When installing a shutter/damper:
 - We generally recommend the hole opening to be 1/2" larger than the inside dimension (ID) of the width and height of the shutter/damper.
 - The shutter/damper frame should be mounted level and squarely on the outside wall. Care should be taken not to twist the shutter/damper frame. Never cover shutter/damper with siding or masonry work. Shutter should be mounted so it can be removed any time in case of damage.

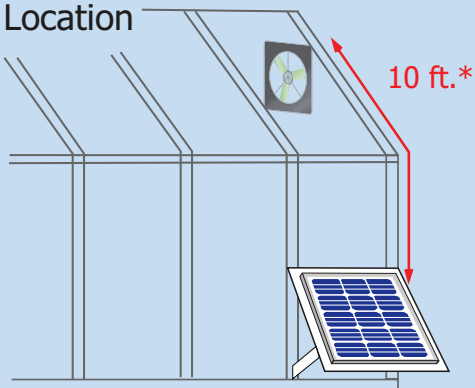


INSTALLING SOLAR PANEL: Platform Mount

 The solar panel produces electricity when exposed to light. **DO NOT DISCONNECT UNDER LOAD.** Do not handle or install when wet. Follow all applicable electrical safety precautions. **FRAGILE:** Glass surface to be handled with care. Do not damage or scratch front or rear surface. They are non-repairable if either side is damaged.

1

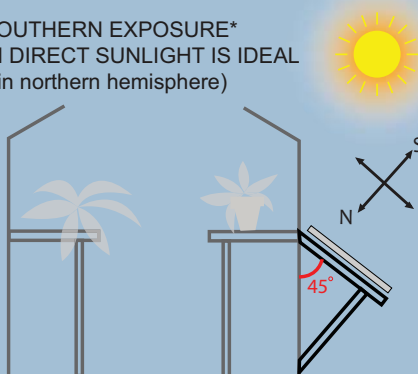
Location



Begin by choosing a location to mount your solar panel. *Measure distance between fan and solar panel mounting location to ensure it is within PV cable length (10ft - or purchased length). Additional length PV Cable Extensions are available. See page 17 for more information.

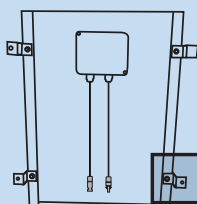
We recommend mounting solar panel on a user constructed plywood platform at a 45° angle facing south on the side wall of greenhouse.

SOUTHERN EXPOSURE*
IN DIRECT SUNLIGHT IS IDEAL
(*in northern hemisphere)



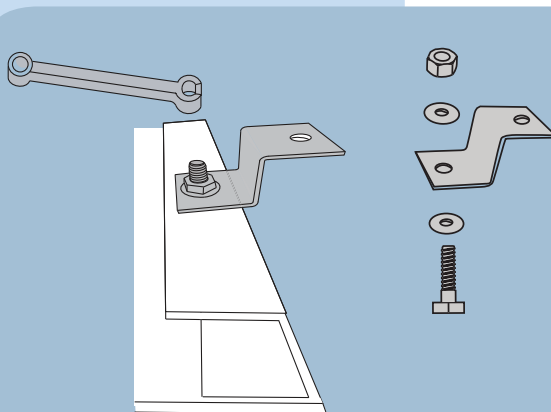
2

Connect Z-brackets to solar panel racking



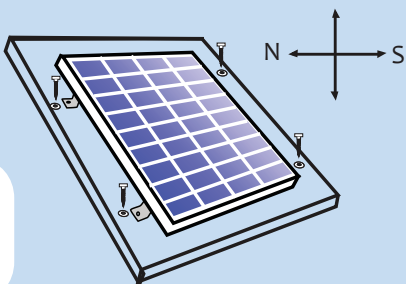
In your Kit
you will find:
(4) Z-brackets
(4) bolts
(8) washers
(4) nuts

You will need:
(2) $\frac{7}{16}$ " wrenches



Fasten all four
Z-brackets to
solar panel
rack with nuts,
bolts and
washers.


3



You will need:
(4) screws
(4) washers
caulk

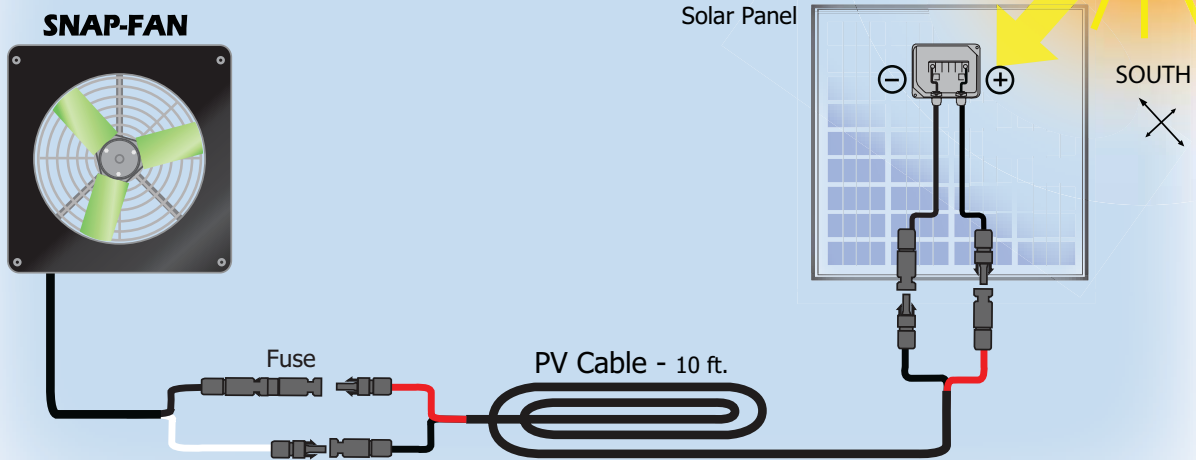
Mount solar panel to plywood platform. If mounting solar panel on a roof: Find rafters and predrill holes in roof for #5 screws. Caulk over holes. Set Z-brackets above caulk and fasten solar panel to roof with screws. Run the electrical cable across roof to the Snap-Fan.

WIRING INSTRUCTIONS:

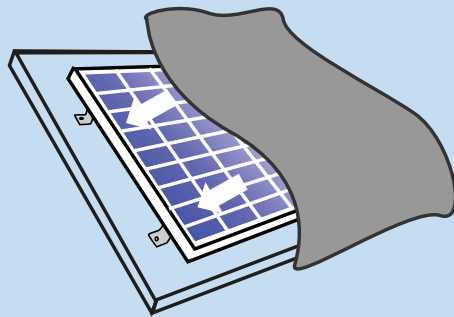
 Be aware of dangerously high DC voltages when connecting and disconnecting the Snap-Fan from the solar panel.

 The solar panel produces electricity when exposed to light. We recommend covering solar panel with a blanket to block sun light until all installation and connections are completed.

BASIC SOLAR FAN SYSTEM CONFIGURATION



1

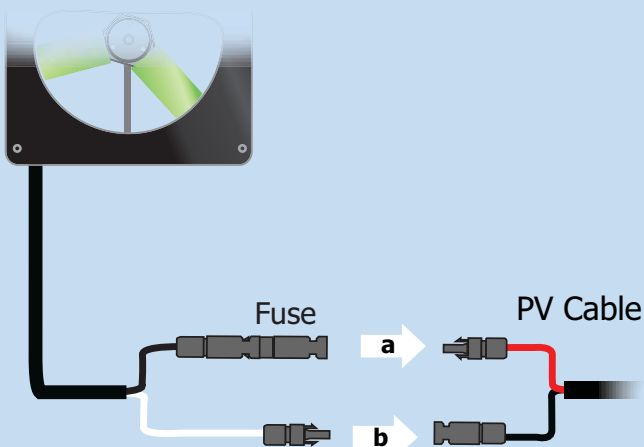


Cover solar panel with blanket or black plastic.

The solar panel produces electricity when exposed to light.

2

Connect Fan to PV Cable

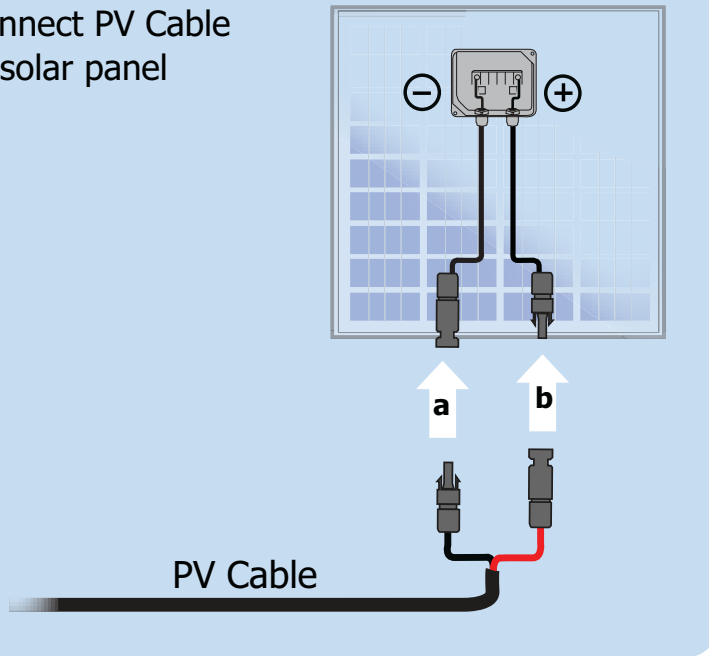


a. Connect the male connector on Red wire of PV cable with female end of fuse connector on Black wire of the fan.

b. Connect the female connector on Black wire of PV cable with male connector on White wire of the fan.

3

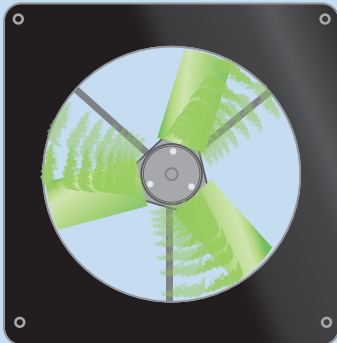
Connect PV Cable to solar panel



a. Connect the male connector on positive wire from solar panel with the female connector on Red wire of PV Cable

b. Connect the female connector on negative wire from solar panel with the male connector on Black wire of PV Cable.

4



Remove cover from solar panel
If solar panel is in direct sunlight,
fan should begin running.

If fan does not begin running:
re-cover solar panel and check all
connections are correct and secure.

If fan is still not running, contact
Snap-Fan for additional assistance.

In winter months, if fan is not needed disconnect fan from receiving power will prolong fan life. We recommend shielding fan from winter elements by either covering or storing in dry location when not in use. Shutters and rain hoods are available for purchase.

CIRCULATION FAN KIT

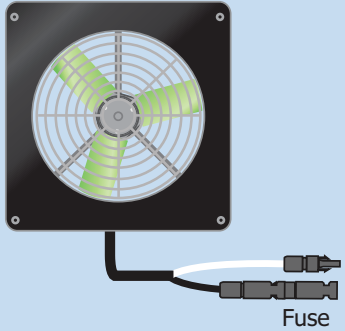
INSTALLATION and WIRING INSTRUCTIONS:





Only a qualified and licensed electrician or contractor shall install or service Solar Panel and Snap-Fan products. All applicable electrical safety precautions and building codes must be adhered to and followed when installing this product. Refer to installation and operation manuals before installing, servicing or operating this unit.

Kit includes:

12" Snap-Fan
with intake and exhaust guard



Chains for hanging fan 3ft 
3ft 

Branch Connectors  

PV Cable - 10 ft.



MC Spanner Wrench 

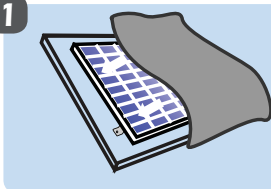
See instructions included in circulation fan packaging for complete install information.

EXISTING SYSTEM ADDITION

If you are adding to an existing solar fan system, some MC connectors will have to be disconnected using provided tool. Be sure to use caution: The solar panel produces electricity when exposed to light.

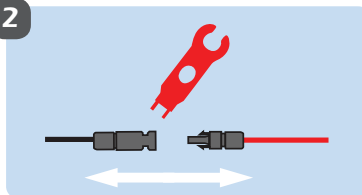
DO NOT DISCONNECT UNDER LOAD.

1



Cover solar panel with blanket or black plastic. The solar panel produces electricity when exposed to light.

2

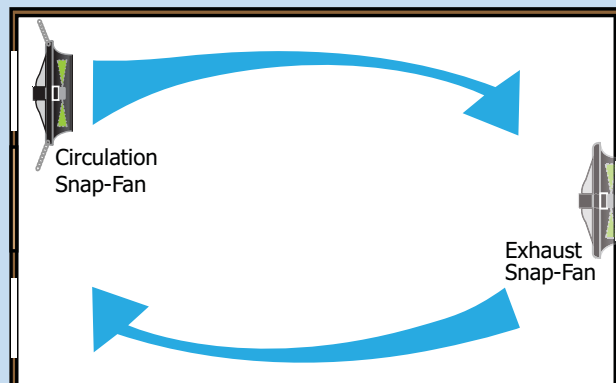


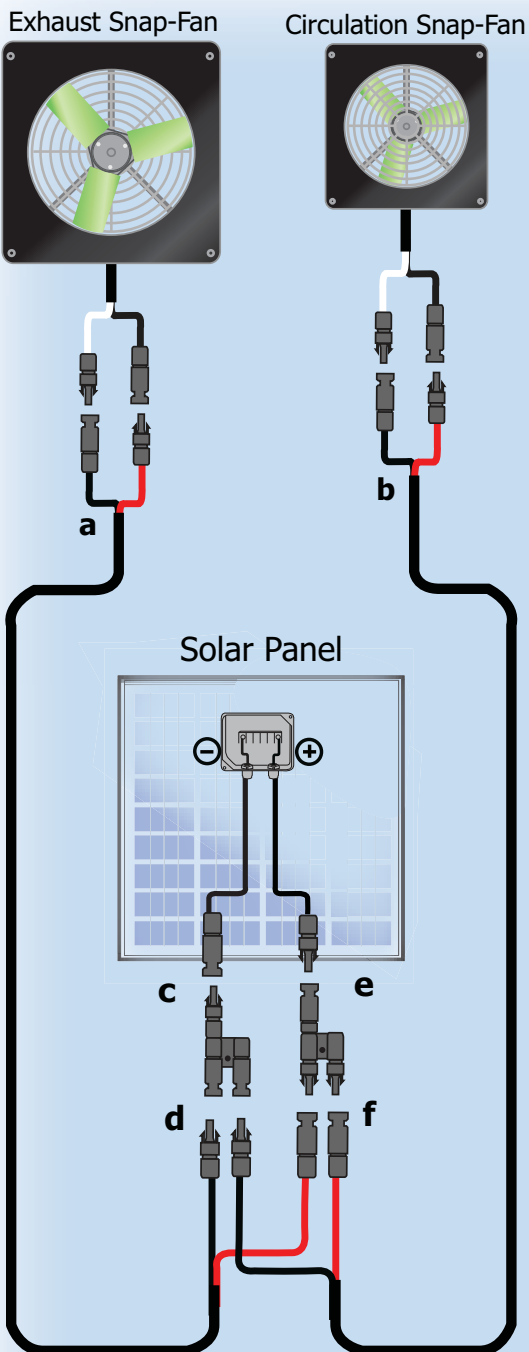
Disconnect MC Connector with MC Spanner Wrench

1

Location:

Mount circulation fan in one corner of your greenhouse to create an airflow that will circulate throughout the entire greenhouse. Use provided chains to hang fan from ceiling of greenhouse.





2

Connect two separate PV Cables to Snap-Fans as illustrated in the diagram at left.

3

Connect PV Cable **a** (exhaust fan) and **b** (circulation fan) to COVERED solar panel by using provided branch connectors:

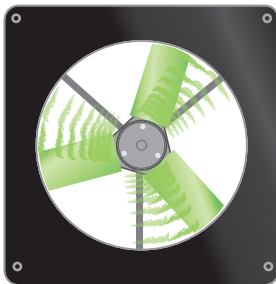
c. Connect female MC connector from solar panel to branch connector with single male MC connector end.

d. Match up BLACK WIRES/male MC connectors of PV Cables **a** and **b** to double female ends of branch connector.

e. Connect male MC connector from solar panel to branch connector with single female MC connector end.

f. Match up RED WIRES/female MC connectors of PV Cables **a** and **b** to double male ends of branch connector.

4



Remove cover from solar panel
If solar panel is in direct sunlight,
fan should begin running.

If fan does not begin running: re-cover solar panel and check all connections are correct and secure.
If fan is still not running, contact Snap-Fan.

We recommend one circulation fan with one exhaust fan per solar panel.
For larger greenhouses or multiple fan systems please contact Fogco:

info@fogco.com

THERMOSTAT KIT

INSTALLATION and WIRING INSTRUCTIONS:



Only a qualified and licensed electrician or contractor shall install or service Solar Panel and Snap-Fan products. All applicable electrical safety precautions and building codes must be adhered to and followed when installing this product.

See instructions included in thermostat packaging for complete install information.

EXISTING SYSTEM ADDITION

If you are adding to an existing solar fan system, some MC connectors will have to be disconnected using provided tool. Be sure to use caution: The solar panel produces electricity when exposed to light.

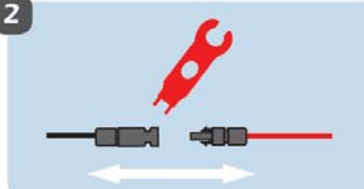
DO NOT DISCONNECT UNDER LOAD.

1



Cover solar panel with blanket or black plastic. The solar panel produces electricity when exposed to light.

2



Disconnect MC Connector with MC Spanner Wrench

Exhaust Snap-Fan

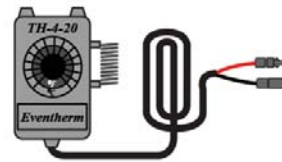


Thermostat



Kit includes:

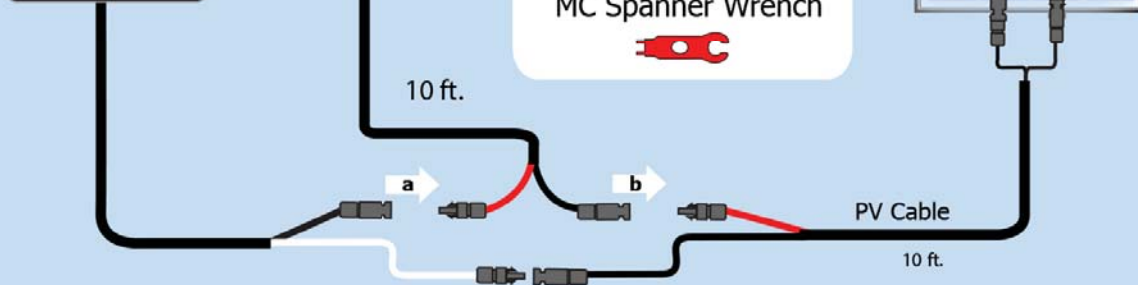
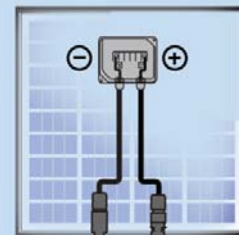
TH-4-20 Thermostat with 10 ft. PV cable



MC Spanner Wrench



Solar Panel



1

Mount thermostat in a location where you would like the air to be sampled from.

2

Add in thermostat by:

a. Connect female connector on black wire of thermostat with the male connector on Red wire of PV cable.

b. Connect male connector on red wire of thermostat with the female end of fuse connector on Black wire of fan.

Product Support & Contact Information

Snap-Fans are high efficiency ventilation fans designed to be used in ventilation applications. Using this equipment for any other purpose or in a manner not consistent with the operating recommendations within this manual will void the warranty and may cause personal injury.

Solar National Air Propulsion



Fogco
600 S 56th St, Ste 9
Chandler, AZ 85226
480-507-6478

For claims, please contact your retailer directly
or email us at: info@fogco.com
Visit fogco.com for replacement parts

RETAIL RETURN POLICY Only applicable if you ordered directly from Fogco.

The goal of Fogco is that its customers be completely satisfied with their purchase. If you are not completely satisfied, you have 30 days from the date of purchase to return the unused, undamaged product. Please first contact Fogco to obtain authorization for the return and RGA # and then return the product to Fogco. All returns are subject to a 25% restocking fee. Upon receipt, the purchase price, less any restocking fee, will be refunded so long as the product and its packaging is in merchantable condition. No returns will be accepted for products that are not in a merchantable condition. No returns will be accepted without prior authorization and all shipping costs are the sole responsibility of the purchaser. No returns will be accepted for products purchased from somewhere other than directly from Fogco – any such returns should be made to that location and made in conformance with that location's own return policy, (if any). Finally, no returns will be accepted for custom made or special order items. If you have any questions about this policy, please contact us. LIMITED WARRANTY

WARRANTY AND DISCLAIMER: Fogco extends this limited warranty to the original purchaser (the "Purchaser") and warrants that fans supplied by Fogco shall be free from original defects in workmanship and materials for five years from date of shipment, and warrants that electronics and fan accessories be free from original defects in workmanship and materials for one year from date of shipment provided those products have been properly handled, stored, installed, serviced, maintained and operated. This warranty shall not apply to products which have been improperly installed, altered or repaired without Fogco's express authorization, or altered or repaired in any way so as, in Fogco's judgment, to affect its performance or reliability or subjected to misuse, negligence, or accident, or incorrectly used in combination with other products. Improper installation specifically includes, but is not limited to: (1) the use of the Product in an environment where it is exposed to nominal voltage in excess of 24 volts DC, or in the case of an AC Product, in excess of the voltage specified on the Product ("overvoltage"); (2) use or storage in a setting where the product is exposed to inclement weather. Any damage that Fogco determines, in its sole discretion, as resulting from misuse shall not be covered by any warranty.

LIMITATION OF REMEDY AND DAMAGES: All claims under this warranty must be first made by telephone to Fogco at 480-507-5478, within 15 days after discovery of the defect and prior to the expiration of five years from the date of shipment by the Company of the product claimed defective, and Purchaser shall be barred from any remedy if Purchaser fails to make such claim within such period.

Within 30 days after receipt of a timely claim, Fogco will authorize the Purchaser to return the product to Fogco at Purchaser's sole expense for inspection by Fogco. Following such inspection, Fogco will replace, or at its option repair, free of charge, any product it determines to be defective, and it shall ship the repaired or replacement product to Purchaser F.O.B. point of shipment; provided, however, if circumstances are

such that as in Fogco's sole judgment repair or replacement is impractical or that the repair or replacement would result in further warranty work due to the particular use of the Product, the Purchaser's sole and exclusive remedy shall be a refund to the Purchaser of any part of the

invoice price paid to Fogco for the defective Product or part.

Under no circumstances shall Fogco be responsible for the cost of removal of the defective Product or part, damages due to removal, or any expenses incurred in shipping the Product or part to or from Fogco, or the installation of the repaired or replaced Product or part. The warranties set forth above do not apply to any components, accessories, parts or attachments manufactured by other manufacturers; such being subject to that manufacturer's warranty, if any. To the extent not prohibited by that manufacturer's warranty, Fogco shall pass through to Purchaser such manufacturer's warranty.

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No employee, agent, dealer, or other person is authorized to give any warranties on behalf of Fogco or to assume for Fogco any other liability in connection with any of its products except in writing and signed by an officer of Fogco.

TECHNICAL ADVICE AND RECOMMENDATIONS, DISCLAIMER: Notwithstanding any past practice or dealings or any custom of the trade, sales shall not include the furnishing of technical advice or assistance or system design. Any such assistance shall be at Fogco's sole option and may be subject to additional charge.

Fogco assumes no obligation or liability on account of any recommendations, opinions or advice as to the choice, installation or use of products. Any such recommendations, opinions or advice are given and shall be accepted at Purchaser's sole risk and shall not constitute any

warranty or guarantee of such Products, their performance, or their suitability for any particular purpose.

LIMITATION OF LIABILITY: The cumulative liability of Fogco to the Purchaser and any other persons for all claims in any way relating to or arising out of the Products, including, but not limited to, any cause of action sounding in contract, tort, or strict liability, shall not exceed the total amount of the purchase price paid for those Products which are the subject of any such claim. This limitation of liability is intended to apply without regard to whether other provisions of this agreement have been breached or have proven ineffective even if Fogco has been advised of the possibility of such claims or demands. In no event shall Fogco be liable to the Purchaser or any other person for any loss of profits or any incidental, special, exemplary, or consequential damages for any claims or demands brought by the Purchaser or such other persons.

INDEMNITY: Fogco's maximum liability to Purchaser and to any other user is as set forth above. Fogco makes no warranty to anyone for any products not manufactured by it and shall have no liability for any use or installation of any Products (whether manufactured by Fogco or other manufacturers) not specifically authorized by this sale. Purchaser acknowledges various warnings by Fogco regarding the products and its installation and use and acknowledges that the Product should only be installed by a competently trained and licensed electrician or contractor. If Fogco incurs any claims, lawsuits, settlements, or expenses (including attorney fees) for any loss, injury, death or property damage including, but not limited to, claims arising out of the Purchaser's or any end user's installation or use of the products, the Purchaser

shall indemnify and hold Fogco harmless unless such injury, death, or property damage unless such was the result of Fogco's sole negligence or willful misconduct..