SNAP-FAN SOLAR FAN KITS
INSTALLATION INSTRUCTIONS

For use with small, medium and large greenhouse kits

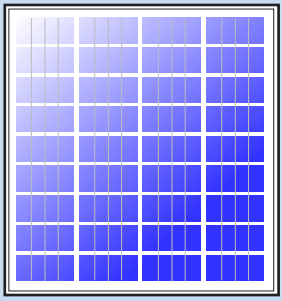
Only a qualified and licensed electrician or contractor shall install or service Solar Panel and Snap-Fan products.

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

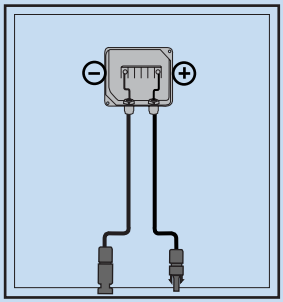
Refer to installation and operation manuals before installing, servicing or operating this unit.

Kit Components:

60 Watt Solar Panel



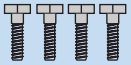
Front



Back

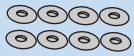
Solar Panel Mounting Hardware

(4) Z-brackets



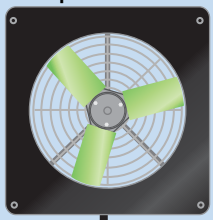
(4) Bolts

(4) Lock Nuts



(8) Washers

Snap-Fan



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

Fuse Holder

5 Amp Fuse

Replacement Brushes

See brush replacement instructions for more info.

Wiring Harness - 10 ft.

Solar panel to fan wiring harness

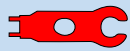
MC Spanner Wrench

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.

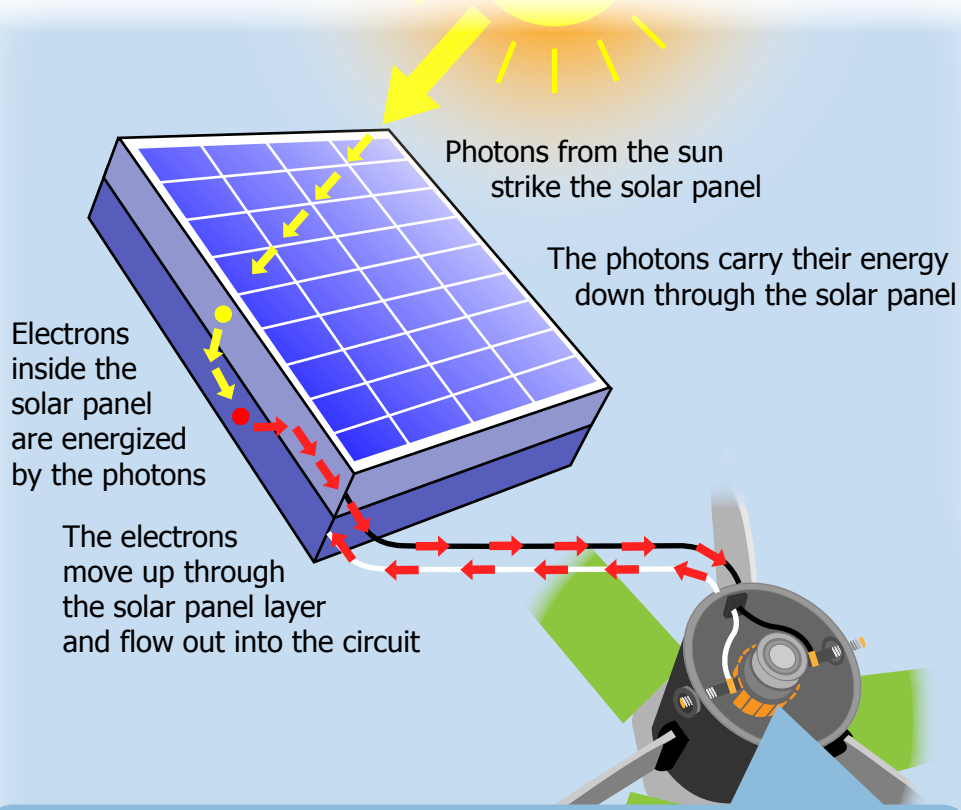
MALE

FEMALE



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

HOW YOUR SNAP-FAN WORKS

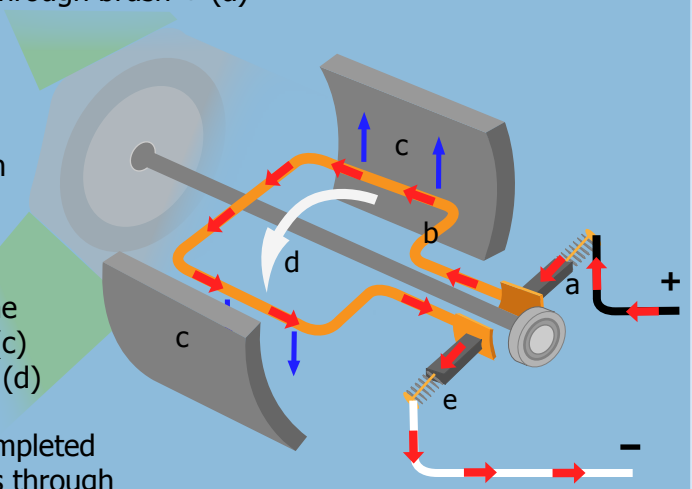


The flow of electrons, referred to as an electric current, enter the fan motor through brush + (a)

The electric current flows through the copper coil (b) inside the motor creating an electromagnetic field

The electromagnetic force is repelled by the permanent magnets (c) generating a rotation (d)

The circuit is then completed as the current returns through brush - (e) to the solar panel

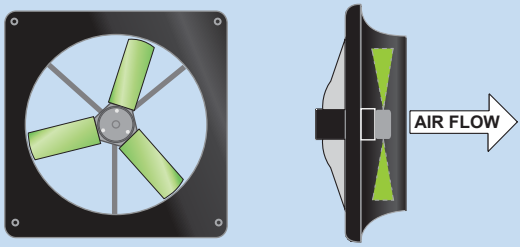


The amount of current available (amps) and the speed at which it flows (volts) determines the rotational speed of the fan.

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

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, Snap-Fan disclaims all warranties for the product, and specifically disclaims any warranty for consequential damages.

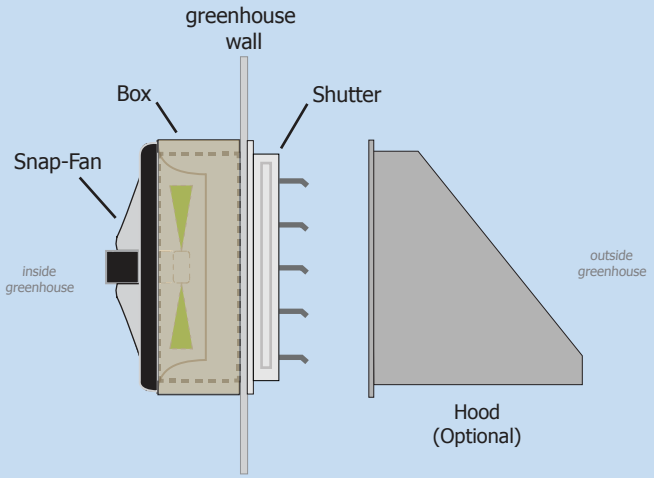


Small Hobby Kit
12" Snap-Fan

Medium Hobby Kit
16" Snap-Fan

Large Hobby Kit
20" Snap-Fan

Completed installation side view



The Elements

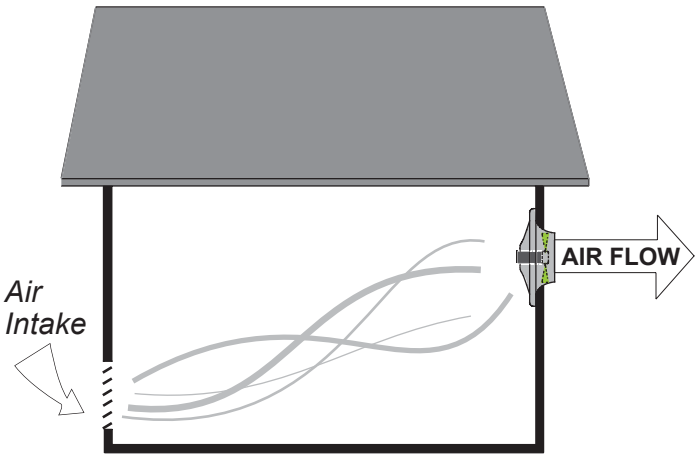
Shelter your Snap-Fan from inclement weather and natural hazards such as, not limited to; wind, water, rain, hail, dust, ice, snow and nesting birds. If you do not plan on using your Snap-Fan during wet winter months please remove it and store in a dry location, as long periods of moisture shortens the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

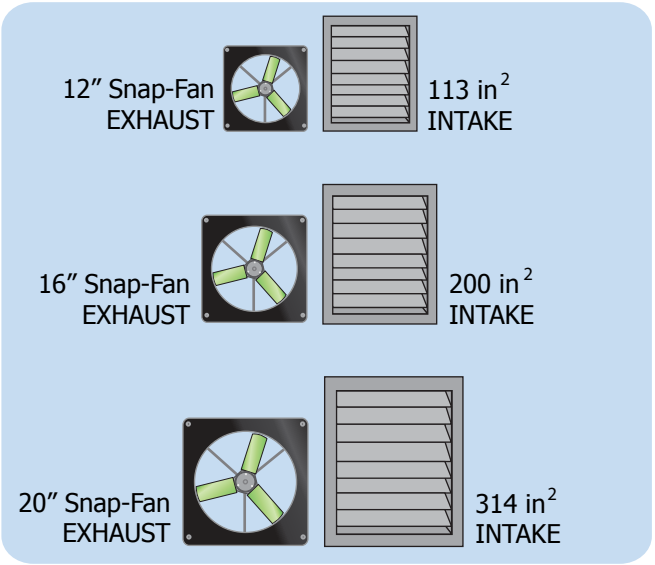
Be sure to place the fan in a suitable location to maximize air movement. Typically Snap-Fans are installed close to room's ceiling to both exchange and circulate warm interior air with cool air from outside. The air intake opening should be placed at a low spot on the opposite end of the structure, bringing cool air across it.



Air Intake

We recommended 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 snapfans.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.

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

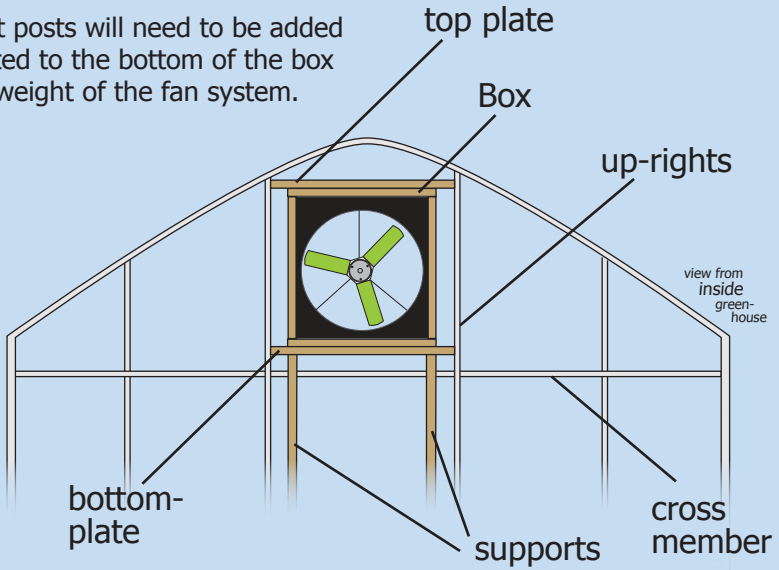
1

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.

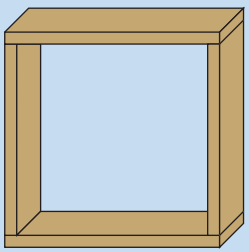
Measure the distance between the two up-rights on the end wall of the greenhouse, or locate a cross member at a suitable height to act as a shelf to mount your box onto.

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.



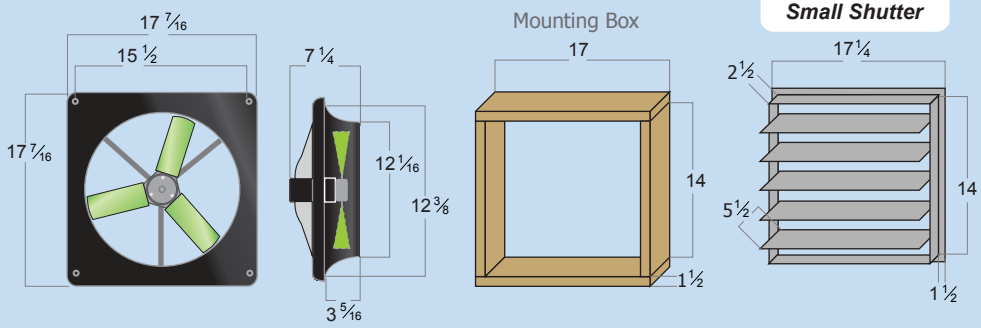
This will help frame in your fan.

See next page for box dimensions.

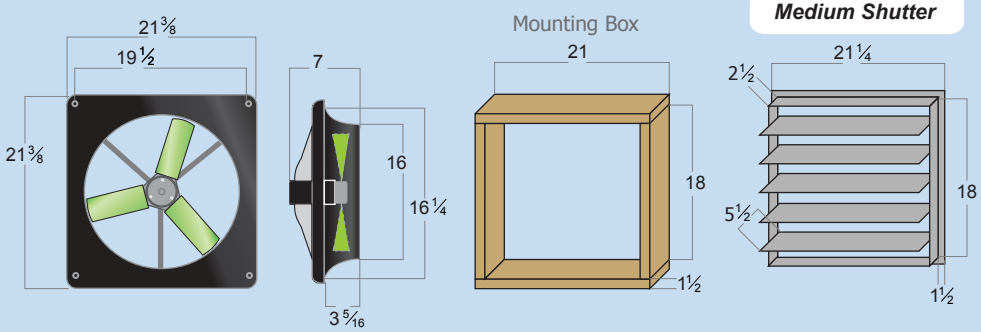
FAN MOUNTING BOX DIMENSIONS

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

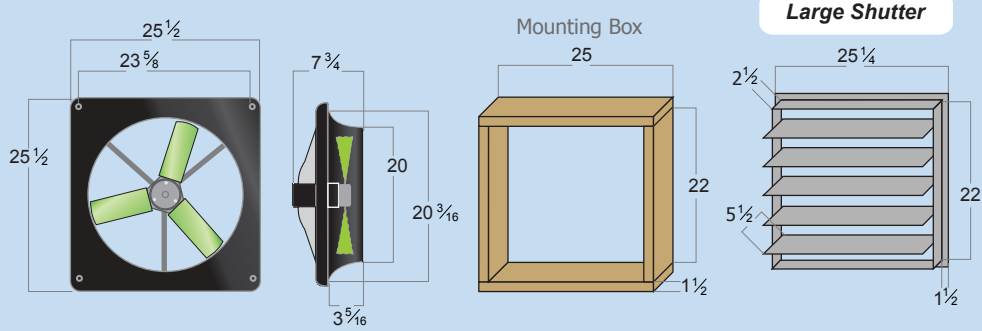
12" SNAP-FAN
Small Hobby Kit



16" SNAP-FAN
Medium Hobby Kit



20" SNAP-FAN
Large Hobby Kit



3

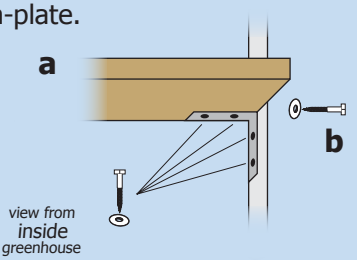
From inside, secure the bottom-plate to metal framing of the greenhouse.

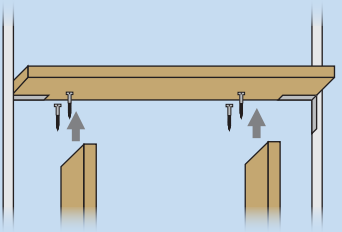
a. Connect the bottom-plate to the up-rights using L brackets.

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.

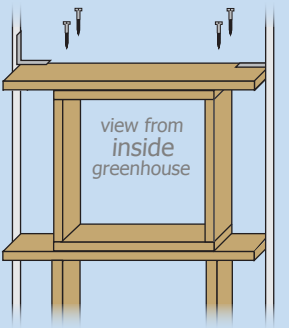
4

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.

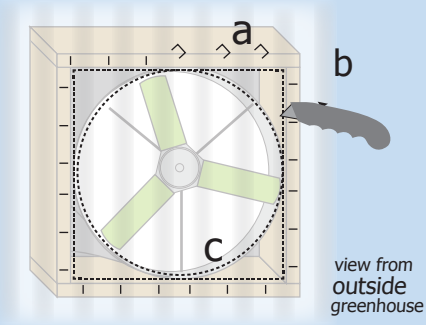
a



b

5

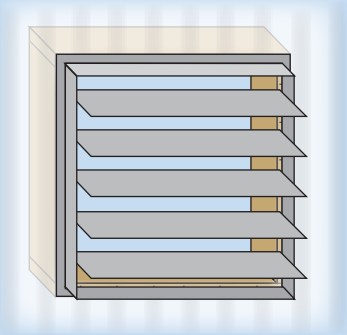
Cut out opening in the greenhouse wall



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.

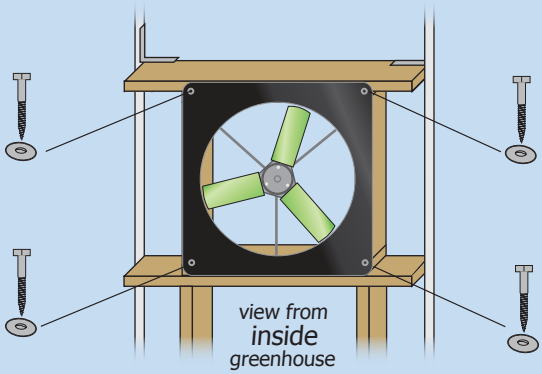
6



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**

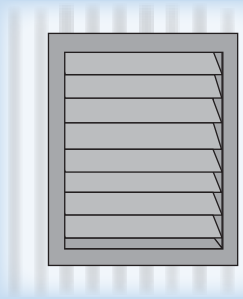
7



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.

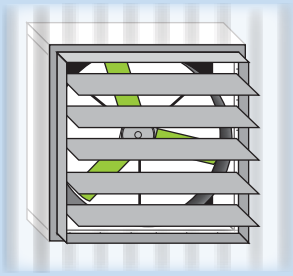
See below the finishing options/additions:

view from outside greenhouse



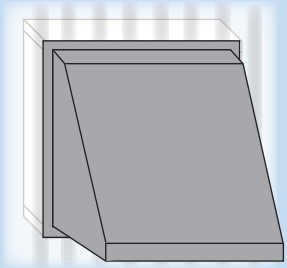
Intake louver
recommended

Lets fresh air in while helping keep the elements and critters out.



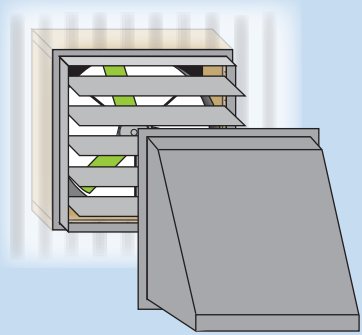
Exhaust shutter
recommended

Protects the fan when its not running.
Keeps warm air in when needed.
Helps keep critters out.



Hood
recommended

We recommend installing hood if you plan to run your fan during harsh weather conditions.



Hood with exhaust shutter

For complete fan and greenhouse protection exhaust shutter and hood may be used together.

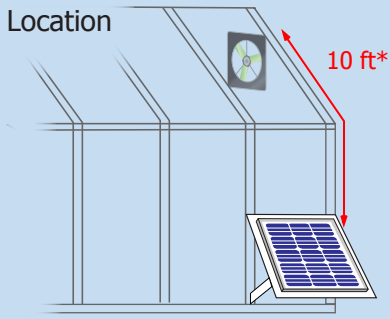
INSTALLING SOLAR PANEL: Platform Mount

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.

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.

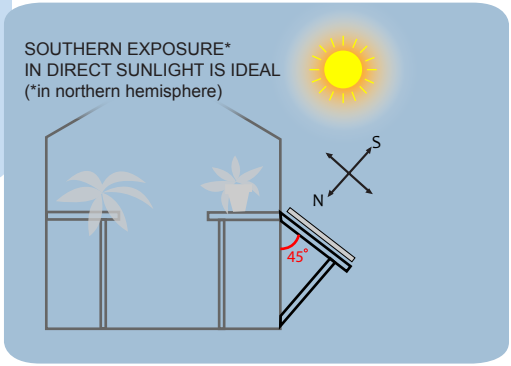
1

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 cable length (10ft).

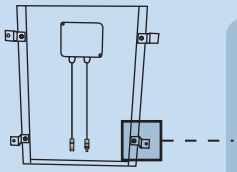
Unless you purchased additional feet for your cable length.

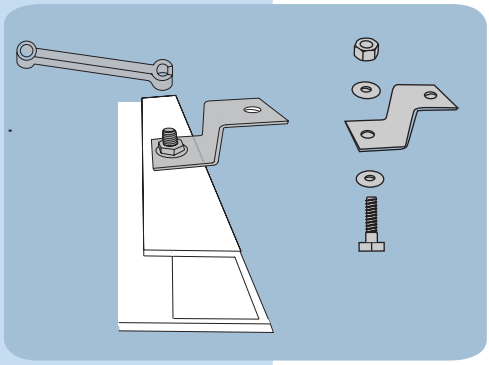


We recommend mounting solar panel on a user constructed plywood platform at a 45˚ angle facing south on the side wall of greenhouse.

2

Connect Z-brackets to solar panel racking



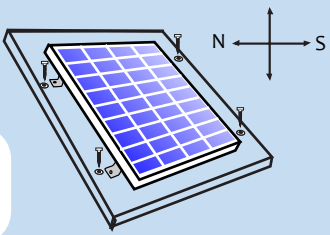


In your Kit you will find:
(4) Z-brackets
(4) bolts
(8) washers
(4) nuts

You will need:
(2) 10mm 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.

See POLE MOUNT instructions if installing on side of pole.

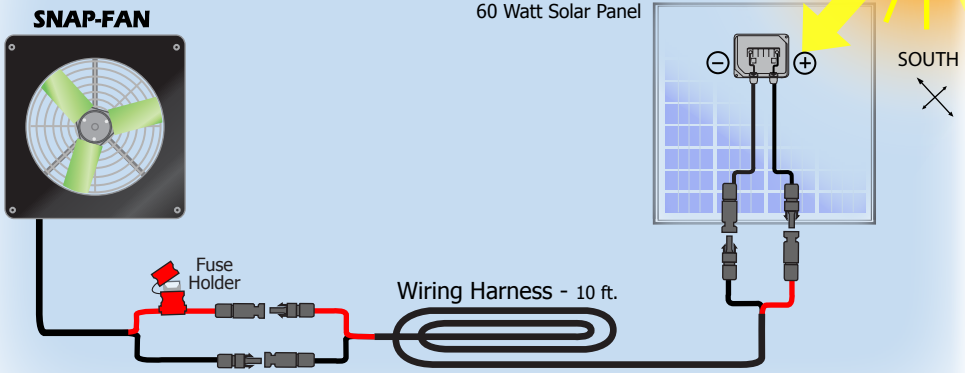
WIRING INSTRUCTIONS:

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

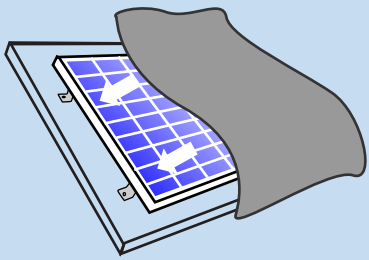
We recommend running motors on our solar panel at 18VDC as higher voltage/amperage on fan motors will decrease brush life. Running fan above 24VDC voids any and all warranties.

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



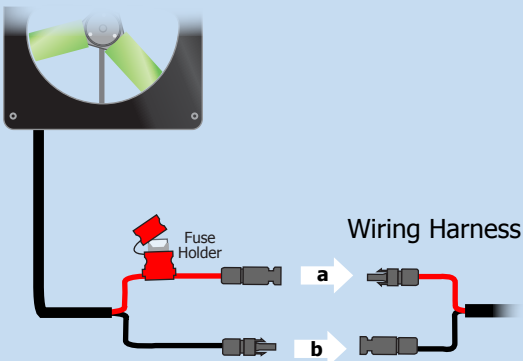
1



Cover solar panel with blanket or black plastic.

The solar panel produces electricity when exposed to light.

2 Connect Fan to Wiring Harness

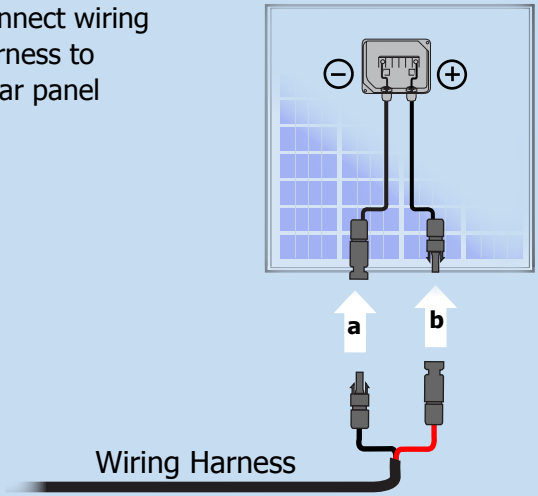


a. Match up RED WIRES by connecting female MC connector on fan with male MC connector on wiring harness.

b. Match up BLACK WIRES by connecting male MC connector on fan with female MC connector on wiring harness.

3

Connect wiring harness to solar panel

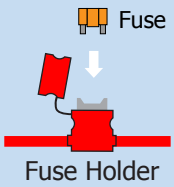


a. Match up BLACK WIRES by connecting female MC connector on solar panel with male MC connector on wiring harness.

b. Match up RED WIRES by connecting male MC connector on solar panel with female MC connector on wiring harness.

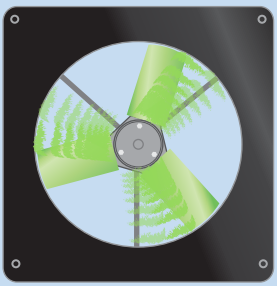
4

Fuse



Place 5 Amp FUSE in fuse holder then replace cap.

5



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. (see contact info below)

In winter months, if fan is not needed removing fuse in order to disconnect fan from receiving power will prolong fan brush 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.

Please contact Snap-Fan for any inquiries:
info@snap-fan.com (707) 822-7627

CIRCULATION FAN KIT

INSTALLATION and WIRING INSTRUCTIONS:

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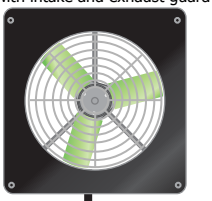
- All applicable electrical safety precautions and building codes must be adhered to and followed when installing this product.
- Refer to installation and operation manuals before installing, servicing or operating this unit.

Kit includes:

12" Snap-Fan
with intake and exhaust guard



Fuse Holder

5 Amp Fuse

Chains for hanging fan — 3ft, 3ft

Replacement Brushes

See brush replacement instructions for more info.

Branch Connectors

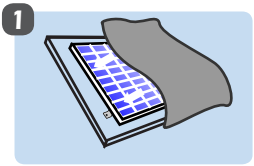
Wiring Harness - 10 ft.
Solar panel to fan wiring harness

MC Spanner Wrench

EXISTING SYSTEM ADDITION

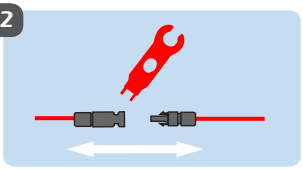
If you are adding to an existing solar fan system, some MC connectors will have to be disconnected using provided tool. Be sure to use caution:
The solar panel produces electricity when exposed to light.
DO NOT DISCONNECT UNDER LOAD.

1



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

2

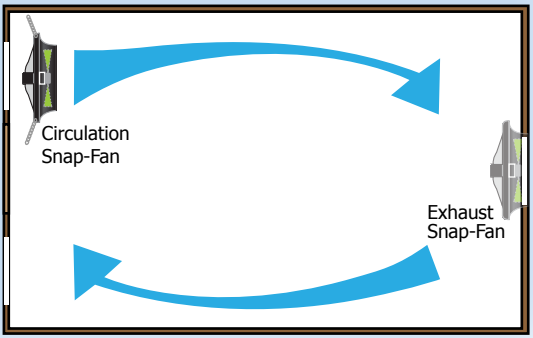


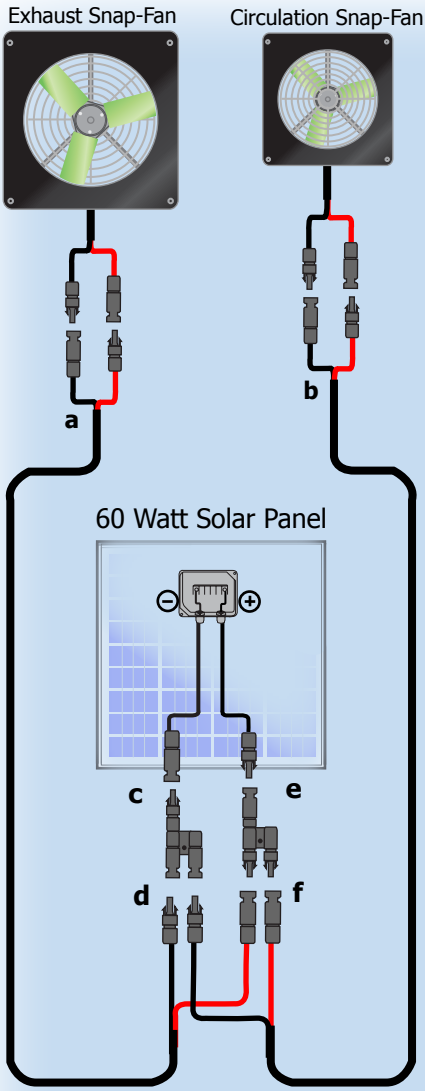
Disconnect MC Connector with MC Spanner Wrench

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 wire harness **a** to exhaust fan and wire harness **b** to circulation fan:

Match up BLACK WIRES by connecting male MC connector of fan with female MC connector of wiring harness.

Match up RED WIRES by connecting female MC connector of fan with male MC connector of wiring harness.

3

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

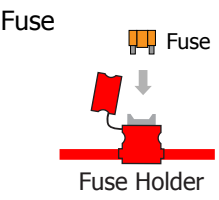
c. Connect female MC connector from solar panel to branch connector with single male MC connector end.

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

4



Place 5 Amp FUSE in fuse holder then replace cap.

5

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 Snap-Fan:

THERMOSTAT KIT

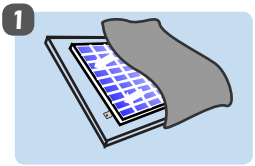
INSTALLATION and WIRING INSTRUCTIONS:

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.

EXISTING SYSTEM ADDITION

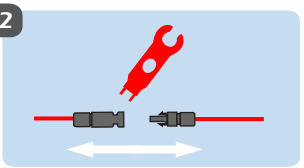
If you are adding to an existing solar fan system, some MC connectors will have to be disconnected using provided tool. Be sure to use caution: The solar panel produces electricity when exposed to light.
DO NOT DISCONNECT UNDER LOAD.

1



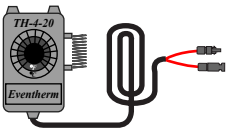
Cover solar panel with blanket or black plastic. The solar panel produces electricity when exposed to light.

2



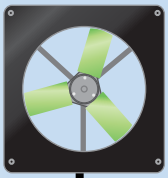
Disconnect MC Connector with MC Spanner Wrench

Kit includes:
TH-4-20 Thermostat with 10 ft PV cable



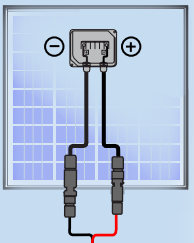
MC Spanner Wrench

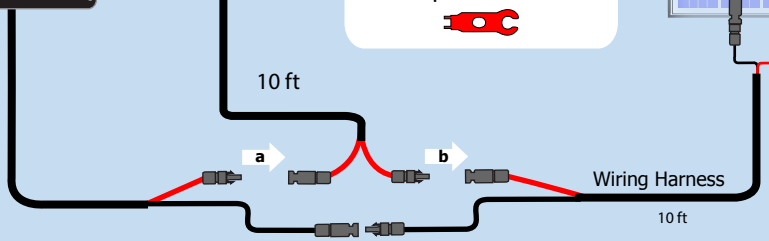
Exhaust Snap-Fan



Thermostat

60 Watt Solar Panel





1

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

2

Add in thermostat by connecting RED WIRES together with corresponding MC connectors:

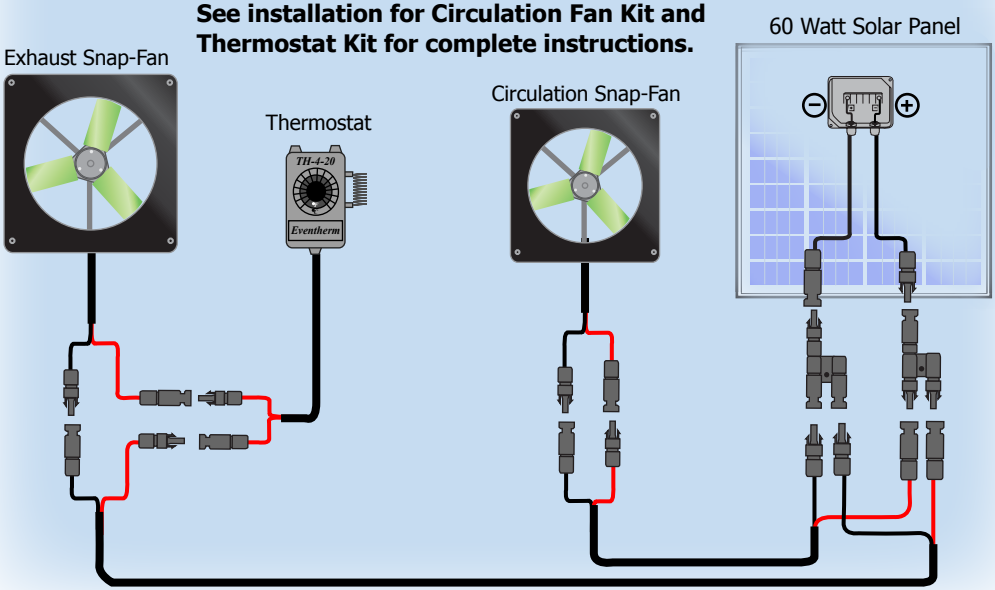
a. Male MC connector of fan to female MC connector of thermostat.

b. Male MC connector of thermostat to female MC connector of wiring harness.

Wiring Solar Kit with Optional Thermostat and Circulation Fan

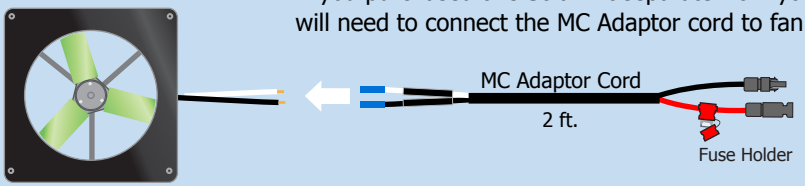
If you wish to add a thermostat as well as a circulation fan to your solar greenhouse fan system we recommend wiring the thermostat to control the exhaust fan and bypass the circulation fan. This allows the circulation fan to run any time sun is hitting the panel while keeping the warm air inside your greenhouse as needed.

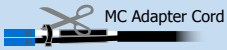
See installation for Circulation Fan Kit and Thermostat Kit for complete instructions.



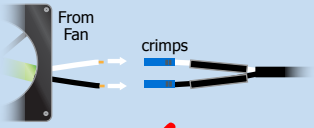
Connect Snap-Fan bare end wire to MC Adaptor Cord

If you purchased this Solar Kit separate from your Snap-Fan you will need to connect the MC Adaptor cord to fan before install.

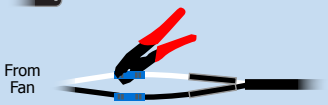




a. Carefully cut Zip-Ties on MC Adaptor Cord.



b. Insert black and white bare wire ends from fan into corresponding blue crimps. Insure black heat wraps are still on wire above crimps.



c. Use pliers/crimp tool to crimp spliced wires together.

d. Slide black heat wraps over crimps to cover spliced wires.

e. Apply heat with blow dryer or heat gun to heat wraps until they are tight (weather resistant).

BRUSH REPLACEMENT INSTRUCTIONS for SNAP-FAN SOLAR KITS

For Small (12”), Medium (16”) and Large (20”)

⚠ 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, Snap-Fan disclaims all warranties for the product, and specifically disclaims any warranty for consequential damages.

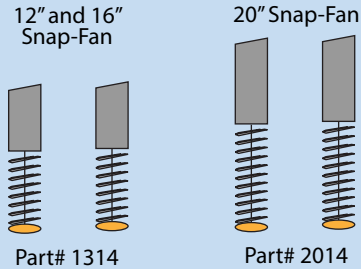
⚠ All applicable electrical safety precautions must be adhered to and followed when servicing this product.

⚠ Disconnect from power supply before servicing motor.

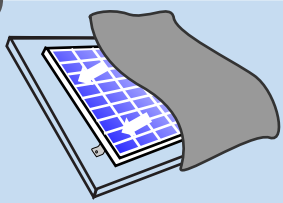
All Solar Snap-Fans have a DC Brush motor. Brush wear is normal. Brushes will need to be replaced after extended use depending on size of fan and amount of use per season.

Fan slowing and/or inconsistent operation generally indicates that it is time to replace the brushes.

Brushes

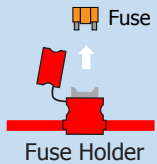


1 Disconnect fan from power supply:



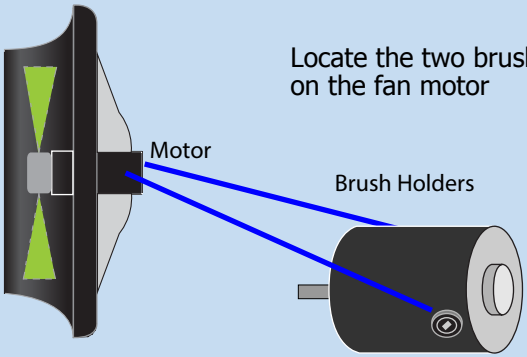
Cover solar panel with blanket or black plastic.

The solar panel produces electricity when exposed to light.



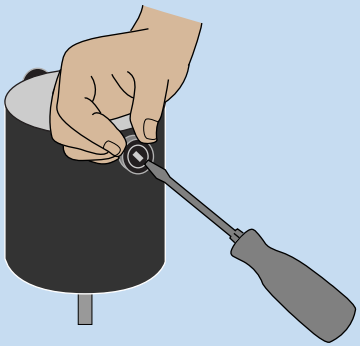
Remove fuse from fuse holder

2



Locate the two brush holders on the fan motor

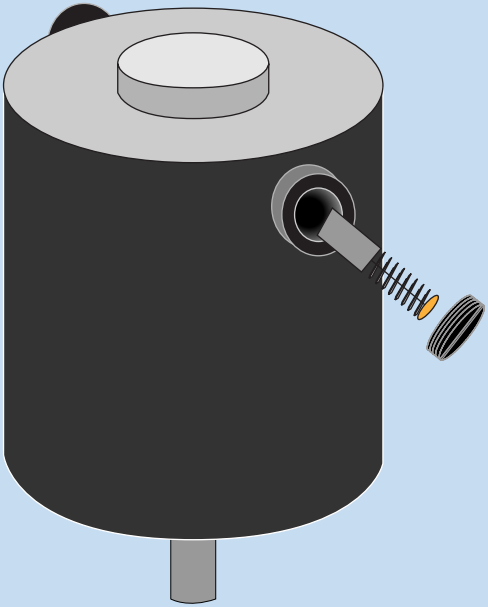
3



Remove cap of brush holder with a flat head screw driver. Hold brush holder in place to ensure it does not twist while removing cap.

Brush Holder Cap

4



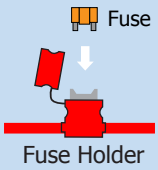
Remove worn brushes and replace with new brushes.

*Brush holders are very fragile. When replacing brushes, take care not to over tighten the brush holder cap.

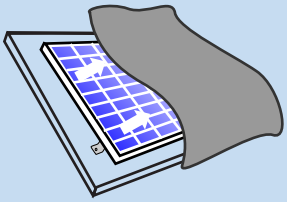
Fasten cap back onto brush holder.

Repeat with second brush on opposite side of motor.

Reconnect fan to power supply:



Insert fuse back into fuse holder



Remove cover from solar panel.

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

Snap-Fan, LLC
PO Box 4461
Arcata, CA 95518
(707) 822-7627

For claims, please contact your retailer directly or email us at: support@snap-fan.com
Visit snap-fan.com for replacement parts

RETAIL RETURN POLICY *Only applicable if you ordered directly from Snap-Fan, LLC.*

The goal of Snap-Fan, LLC, 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 product. Please first contact Snap-Fan to obtain authorization for the return and then return the product to Snap-Fan. Upon receipt, the purchase price 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, although if only the packaging is damaged, Snap-Fan will accept the return and charge a 10 percent repackaging fee. 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 Snap-Fan – 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: Snap-Fan, LLC, extends this limited warranty to the original purchaser (the "Purchaser") and warrants that products supplied by Snap-Fan shall be free from original defects in workmanship and materials **for two years** 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 the Snap-Fan's express authorization, or altered or repaired in any way so as, in the Snap-Fan'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 Snap-Fan 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 Snap-Fan at 707-822-SNAP, within 15 days after discovery of the defect and prior to the expiration of two 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, Snap-Fan will authorize the Purchaser to return the product to Snap-Fan at Purchaser's sole expense for inspection by Snap-Fan. Following such inspection, Snap-Fan 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 Snap-Fan'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 Snap-Fan for the defective Product or part.

Under no circumstances shall Snap-Fan 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 Snap-Fan, 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, Snap-Fan shall pass through to Purchaser such manufacturer's warranty.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, ARISING BY LAW OR OTHERWISE, INCLUDING WITHOUT LIMITATION THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WHICH ARE HEREBY EXPRESSLY DISCLAIMED AND WAIVED. THIS WARRANTY CONSTITUTES SNAP-FAN'S SOLE AND EXCLUSIVE WARRANTY FOR DEFECTIVE GOODS AND PURCHASER'S SOLE AND EXCLUSIVE REMEDY FOR DEFECTIVE PRODUCTS.

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

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 Snap-Fan's sole option and may be subject to additional charge.

Snap-Fan 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 Snap-Fan 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 Snap-Fan has been advised of the possibility of such claims or demands. In no event shall Snap-Fan 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: Snap-Fan's maximum liability to Purchaser and to any other user is as set forth above. Snap-Fan 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 Snap-Fan or other manufacturers) not specifically authorized by this sale. Purchaser acknowledges various warnings by Snap-Fan 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 Snap-Fan 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 Snap-Fan harmless unless such injury, death, or property damage unless such was the result of Snap-Fan's sole negligence or willful misconduct.